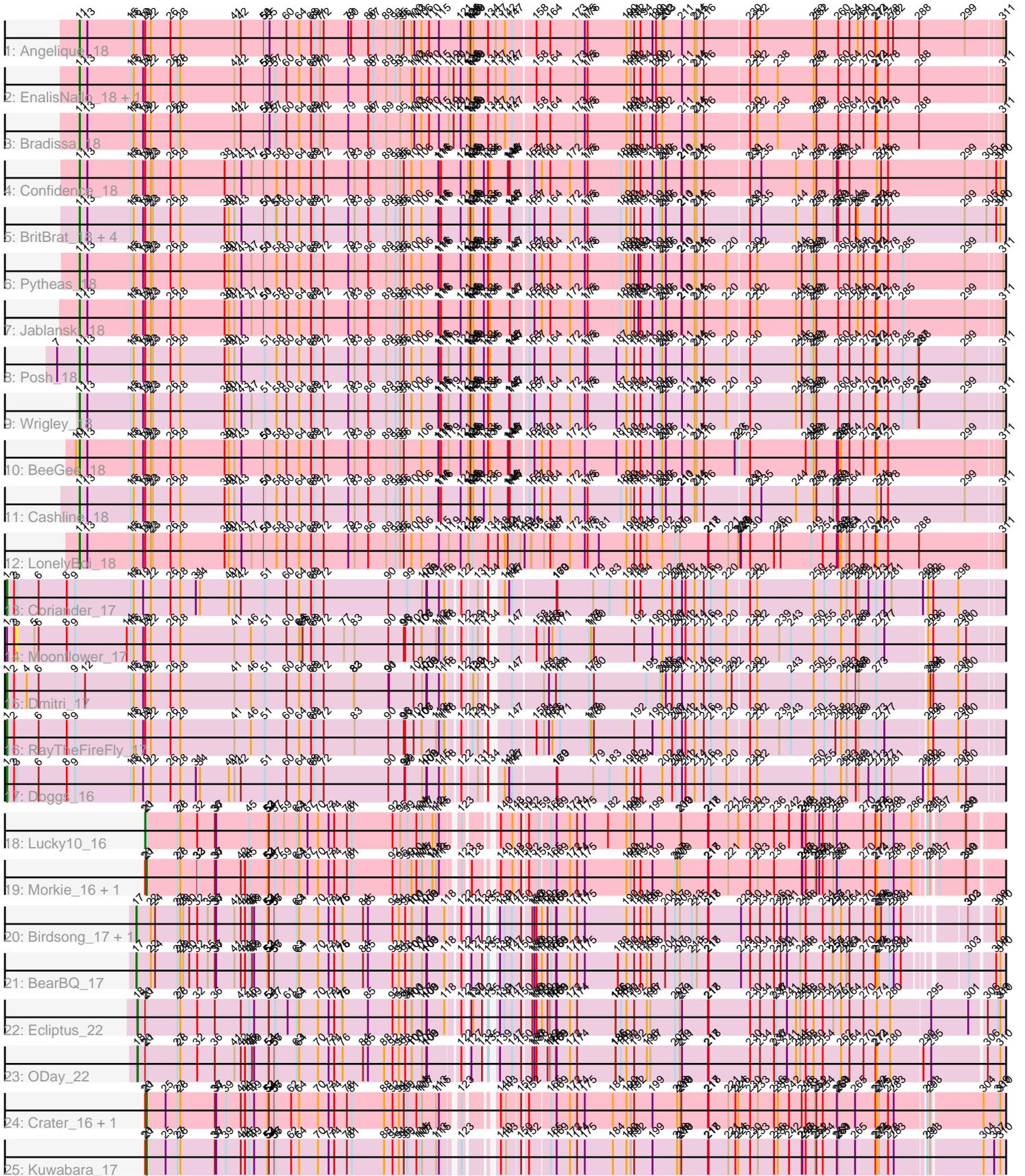


Zoomed Pham 291373



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 291373 Report

This analysis was run 03/28/26 on database version 641.

Pham number 291373 has 33 members, 1 are drafts.

Phages represented in each track:

- Track 1 : Angelique_18
- Track 2 : EnalisNailo_18, Lilas_18
- Track 3 : Bradissa_18
- Track 4 : Confidence_18
- Track 5 : BritBrat_18, Floral_18, EMSquaredA_18, Marteena_18, Pollux_18
- Track 6 : Pytheas_18
- Track 7 : Jablanski_18
- Track 8 : Posh_18
- Track 9 : Wrigley_18
- Track 10 : BeeGee_18
- Track 11 : Cashline_18
- Track 12 : LonelyBoi_18
- Track 13 : Coriander_17
- Track 14 : Moonflower_17
- Track 15 : Dmitri_17
- Track 16 : RayTheFireFly_17
- Track 17 : Doggs_16
- Track 18 : Lucky10_16
- Track 19 : Morkie_16, PhorbesPhlower_16
- Track 20 : Birdsong_17, MortyNRick_17
- Track 21 : BearBQ_17
- Track 22 : Ecliptus_22
- Track 23 : ODay_22
- Track 24 : Crater_16, Apricot_17
- Track 25 : Kuwabara_17

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

The start number called the most often in the published annotations is 11, it was called in 17 of the 32 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Angelique_18, BeeGee_18, Bradissa_18, BritBrat_18, Cashline_18, Confidence_18, EMSquaredA_18, EnalisNailo_18, Floral_18, Jablanski_18, Lilas_18, LonelyBoi_18,

Marteena_18, Pollux_18, Posh_18, Pytheas_18, Wrigley_18,

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

-

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

- Apricot_17, BearBQ_17, Birdsong_17, Coriander_17, Crater_16, Dmitri_17, Doggs_16, Ecliptus_22, Kuwabara_17, Lucky10_16, Moonflower_17, Morkie_16, MortyNRick_17, ODay_22, PhorbPhlower_16, RayTheFireFly_17,

Summary by start number:

Start 1:

- Found in 5 of 33 (15.2%) of genes in pham
- Manual Annotations of this start: 4 of 32
- Called 80.0% of time when present
- Phage (with cluster) where this start called: Coriander_17 (DB), Dmitri_17 (DB), Doggs_16 (DB), RayTheFireFly_17 (DB),

Start 3:

- Found in 3 of 33 (9.1%) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Moonflower_17 (DB),

Start 11:

- Found in 17 of 33 (51.5%) of genes in pham
- Manual Annotations of this start: 17 of 32
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Angelique_18 (CY1), BeeGee_18 (CY5), Bradissa_18 (CY1), BritBrat_18 (CY2), Cashline_18 (CY6), Confidence_18 (CY1), EMSquaredA_18 (CY1), EnalisNailo_18 (CY1), Floral_18 (CY1), Jablanski_18 (CY3), Lilas_18 (CY1), LonelyBoi_18 (CY7), Marteena_18 (CY1), Pollux_18 (CY1), Posh_18 (CY4), Pytheas_18 (CY3), Wrigley_18 (CY4),

Start 17:

- Found in 3 of 33 (9.1%) of genes in pham
- Manual Annotations of this start: 3 of 32
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BearBQ_17 (DN), Birdsong_17 (DN), MortyNRick_17 (DN),

Start 18:

- Found in 2 of 33 (6.1%) of genes in pham
- Manual Annotations of this start: 2 of 32
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ecliptus_22 (DN), ODay_22 (DN),

Start 20:

- Found in 28 of 33 (84.8%) of genes in pham
- Manual Annotations of this start: 1 of 32
- Called 3.6% of time when present
- Phage (with cluster) where this start called: Lucky10_16 (DH),

Start 21:

- Found in 8 of 33 (24.2%) of genes in pham
- Manual Annotations of this start: 5 of 32
- Called 62.5% of time when present
- Phage (with cluster) where this start called: Apricot_17 (DN3), Crater_16 (DN3), Kuwabara_17 (DN4), Morkie_16 (DH), PhorbesPhlower_16 (DH),

Summary by clusters:

There are 12 clusters represented in this pham: DN, CY3, CY1, CY7, DH, CY5, CY4, DB, DN4, DN3, CY2, CY6,

Info for manual annotations of cluster CY1:

- Start number 11 was manually annotated 9 times for cluster CY1.

Info for manual annotations of cluster CY2:

- Start number 11 was manually annotated 1 time for cluster CY2.

Info for manual annotations of cluster CY3:

- Start number 11 was manually annotated 2 times for cluster CY3.

Info for manual annotations of cluster CY4:

- Start number 11 was manually annotated 2 times for cluster CY4.

Info for manual annotations of cluster CY5:

- Start number 11 was manually annotated 1 time for cluster CY5.

Info for manual annotations of cluster CY6:

- Start number 11 was manually annotated 1 time for cluster CY6.

Info for manual annotations of cluster CY7:

- Start number 11 was manually annotated 1 time for cluster CY7.

Info for manual annotations of cluster DB:

- Start number 1 was manually annotated 4 times for cluster DB.

Info for manual annotations of cluster DH:

- Start number 20 was manually annotated 1 time for cluster DH.
- Start number 21 was manually annotated 2 times for cluster DH.

Info for manual annotations of cluster DN:

- Start number 17 was manually annotated 3 times for cluster DN.
- Start number 18 was manually annotated 2 times for cluster DN.

Info for manual annotations of cluster DN3:

- Start number 21 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DN4:

- Start number 21 was manually annotated 1 time for cluster DN4.

Gene Information:

Gene: Angelique_18 Start: 11177, Stop: 16801, Start Num: 11

Candidate Starts for Angelique_18:

(Start: 11 @11177 has 17 MA's), (13, 11210), (15, 11390), (16, 11402), (19, 11441), (Start: 20 @11450 has 1 MA's), (22, 11474), (26, 11558), (28, 11600), (41, 11831), (42, 11858), (50, 11954), (51, 11957), (55, 11978), (60, 12050), (64, 12104), (68, 12155), (69, 12167), (71, 12194), (72, 12209), (79, 12314), (80, 12326), (86, 12398), (87, 12419), (89, 12473), (93, 12512), (95, 12533), (96, 12548), (100, 12581), (103, 12593), (106, 12623), (110, 12656), (115, 12698), (121, 12791), (124, 12824), (125, 12827), (126, 12833), (129, 12842), (130, 12845), (134, 12908), (137, 12941), (142, 12980), (147, 13010), (158, 13094), (164, 13151), (173, 13259), (175, 13298), (176, 13310), (190, 13472), (191, 13490), (192, 13505), (194, 13532), (199, 13583), (200, 13598), (202, 13625), (203, 13631), (211, 13709), (214, 13763), (215, 13772), (216, 13802), (230, 13976), (232, 14006), (250, 14237), (252, 14249), (260, 14339), (264, 14387), (268, 14423), (270, 14447), (272, 14498), (274, 14504), (278, 14549), (282, 14570), (288, 14681), (299, 14873), (311, 15008), (347, 15248), (351, 15314), (354, 15335), (355, 15344), (357, 15371), (361, 15449), (362, 15473), (367, 15614), (374, 15749), (377, 15776), (380, 15842), (381, 15896), (384, 15998), (387, 16097), (395, 16232), (412, 16421), (419, 16547), (421, 16577), (426, 16613), (427, 16616), (433, 16691),

Gene: Apricot_17 Start: 9635, Stop: 15046, Start Num: 21

Candidate Starts for Apricot_17:

(Start: 20 @9629 has 1 MA's), (Start: 21 @9635 has 5 MA's), (25, 9713), (27, 9755), (28, 9767), (36, 9908), (37, 9914), (39, 9950), (42, 10010), (44, 10028), (45, 10046), (49, 10067), (52, 10118), (53, 10121), (54, 10124), (56, 10148), (57, 10151), (62, 10217), (64, 10247), (70, 10325), (73, 10370), (74, 10394), (78, 10448), (81, 10469), (88, 10607), (92, 10643), (94, 10670), (96, 10691), (99, 10706), (104, 10745), (105, 10757), (107, 10769), (113, 10829), (115, 10841), (123, 10892), (140, 10967), (143, 10988), (150, 11036), (152, 11054), (165, 11123), (169, 11147), (172, 11204), (174, 11234), (175, 11267), (184, 11384), (190, 11441), (191, 11459), (192, 11474), (199, 11552), (208, 11657), (209, 11669), (210, 11675), (217, 11789), (218, 11792), (221, 11876), (224, 11906), (226, 11918), (230, 11969), (233, 12002), (236, 12071), (238, 12086), (242, 12128), (246, 12182), (248, 12197), (251, 12236), (252, 12242), (254, 12266), (259, 12326), (260, 12332), (261, 12335), (265, 12404), (272, 12491), (274, 12497), (275, 12506), (278, 12542), (283, 12566), (291, 12677), (293, 12689), (304, 12896), (309, 12959), (310, 12968), (313, 13001), (319, 13058), (321, 13085), (325, 13151), (326, 13169), (328, 13181), (347, 13208), (349, 13238), (351, 13274), (354, 13295), (356, 13307), (357, 13331), (361, 13409), (362, 13433), (363, 13448), (366, 13538), (370, 13658), (371, 13673), (373, 13694), (374, 13703), (379, 13790), (386, 14033), (390, 14123), (398, 14273), (400, 14297), (402, 14306), (403, 14333), (407, 14381), (408, 14399), (409, 14417), (411, 14441), (416, 14501), (424, 14624), (428, 14675), (431, 14702), (435, 14801), (437, 14813), (445, 14909), (448, 14927), (449, 14939), (452, 15029),

Gene: BearBQ_17 Start: 9908, Stop: 16477, Start Num: 17

Candidate Starts for BearBQ_17:

(Start: 17 @9908 has 3 MA's), (22, 9965), (24, 9983), (27, 10067), (28, 10079), (29, 10091), (30, 10115), (32, 10145), (35, 10190), (36, 10220), (37, 10226), (41, 10295), (42, 10322), (44, 10340), (45, 10358), (48, 10370), (49, 10379), (52, 10430), (53, 10433), (54, 10436), (56, 10460), (57, 10463), (63, 10550), (64, 10559), (70, 10637), (73, 10682), (74, 10706), (75, 10739), (76, 10742), (84, 10829), (85, 10850), (92, 10955), (94, 10982), (98, 11009), (100, 11036), (101, 11039), (107, 11081), (108, 11099), (109, 11102), (118, 11174), (122, 11216), (127, 11237), (132, 11264), (135, 11273), (139, 11288), (141, 11306), (147, 11339), (150, 11372), (156, 11405), (157, 11414), (158, 11423), (160, 11444), (162, 11468), (165, 11483), (168, 11504), (169, 11507), (172, 11564), (174, 11594), (175, 11627), (188, 11765), (190, 11801), (192, 11834), (194, 11861), (196, 11888), (198, 11906), (204, 11966), (207, 12008), (209, 12029), (213, 12080), (215, 12101), (217, 12149), (218, 12152), (229, 12290), (230, 12329), (234, 12371), (236, 12431), (240, 12458), (241, 12479), (245, 12536), (248, 12557),

(254, 12629), (256, 12671), (257, 12674), (262, 12707), (263, 12731), (264, 12743), (270, 12803), (272, 12854), (274, 12860), (275, 12869), (279, 12911), (283, 12929), (284, 12959), (303, 13157), (308, 13238), (310, 13256), (313, 13289), (314, 13301), (318, 13337), (321, 13373), (322, 13397), (323, 13400), (324, 13421), (326, 13457), (328, 13469), (329, 13508), (330, 13535), (331, 13562), (332, 13634), (333, 13664), (334, 13700), (335, 13868), (336, 13946), (337, 13997), (338, 14150), (339, 14285), (340, 14294), (341, 14315), (342, 14318), (343, 14327), (344, 14345), (345, 14375), (346, 14408), (347, 14612), (348, 14630), (349, 14642), (351, 14678), (354, 14699), (359, 14789), (361, 14813), (362, 14837), (366, 14945), (369, 15068), (371, 15092), (373, 15113), (374, 15122), (375, 15125), (378, 15152), (379, 15212), (386, 15455), (388, 15536), (389, 15539), (390, 15545), (398, 15704), (400, 15728), (402, 15737), (405, 15782), (406, 15794), (408, 15827), (409, 15845), (416, 15938), (423, 16043), (425, 16064), (430, 16118), (432, 16157), (434, 16229), (439, 16259), (443, 16298), (444, 16331), (448, 16370), (450, 16418), (451, 16451), (453, 16463),

Gene: BeeGee_18 Start: 10997, Stop: 16621, Start Num: 11

Candidate Starts for BeeGee_18:

(10, 10982), (Start: 11 @10997 has 17 MA's), (13, 11030), (15, 11210), (16, 11222), (19, 11261), (Start: 20 @11270 has 1 MA's), (22, 11294), (23, 11303), (26, 11378), (28, 11420), (38, 11609), (40, 11627), (41, 11651), (43, 11681), (50, 11774), (51, 11777), (58, 11828), (60, 11870), (64, 11924), (68, 11975), (69, 11987), (72, 12029), (79, 12134), (83, 12161), (86, 12218), (89, 12293), (93, 12332), (95, 12353), (96, 12368), (106, 12443), (114, 12515), (115, 12518), (116, 12527), (119, 12560), (121, 12611), (124, 12644), (125, 12647), (126, 12653), (129, 12662), (130, 12665), (133, 12710), (134, 12728), (136, 12737), (144, 12812), (145, 12818), (146, 12821), (147, 12830), (153, 12884), (157, 12905), (160, 12935), (164, 12971), (172, 13055), (175, 13118), (187, 13250), (190, 13292), (192, 13325), (194, 13352), (199, 13403), (201, 13436), (202, 13445), (205, 13460), (211, 13529), (214, 13583), (215, 13592), (216, 13622), (223, 13742), (225, 13754), (230, 13796), (248, 14024), (249, 14048), (250, 14057), (252, 14069), (259, 14153), (260, 14159), (262, 14171), (264, 14207), (270, 14267), (272, 14318), (274, 14324), (278, 14369), (299, 14693), (311, 14828), (347, 15068), (351, 15134), (354, 15155), (355, 15164), (357, 15191), (361, 15269), (362, 15293), (365, 15386), (366, 15410), (367, 15434), (371, 15539), (374, 15569), (380, 15662), (381, 15716), (384, 15818), (387, 15917), (412, 16241), (419, 16367), (421, 16397), (426, 16433), (427, 16436), (433, 16511), (440, 16607),

Gene: Birdsong_17 Start: 9908, Stop: 15370, Start Num: 17

Candidate Starts for Birdsong_17:

(Start: 17 @9908 has 3 MA's), (22, 9965), (24, 9983), (27, 10067), (28, 10079), (29, 10091), (30, 10115), (32, 10145), (35, 10190), (36, 10220), (37, 10226), (41, 10295), (42, 10322), (44, 10340), (45, 10358), (48, 10370), (49, 10379), (52, 10430), (53, 10433), (54, 10436), (56, 10460), (57, 10463), (63, 10550), (64, 10559), (70, 10637), (73, 10682), (74, 10706), (75, 10739), (76, 10742), (84, 10829), (85, 10850), (92, 10955), (94, 10982), (98, 11009), (100, 11036), (101, 11039), (107, 11081), (108, 11099), (109, 11102), (118, 11174), (122, 11216), (127, 11237), (132, 11264), (135, 11273), (139, 11288), (141, 11306), (147, 11339), (150, 11372), (156, 11405), (157, 11414), (158, 11423), (160, 11444), (162, 11468), (165, 11483), (168, 11504), (169, 11507), (172, 11564), (174, 11594), (175, 11627), (190, 11801), (192, 11834), (194, 11861), (196, 11888), (198, 11906), (204, 11966), (207, 12008), (209, 12029), (213, 12080), (215, 12101), (217, 12149), (218, 12152), (229, 12290), (230, 12329), (234, 12371), (236, 12431), (240, 12458), (241, 12479), (245, 12536), (248, 12557), (254, 12629), (256, 12671), (257, 12674), (262, 12707), (264, 12743), (270, 12803), (272, 12854), (274, 12860), (275, 12869), (276, 12878), (279, 12911), (283, 12929), (284, 12959), (302, 13154), (303, 13157), (308, 13238), (310, 13256), (313, 13289), (314, 13301), (318, 13337), (321, 13373), (322, 13397), (323, 13400), (324, 13421), (326, 13457), (328, 13469), (347, 13496), (348, 13514), (349, 13526), (351, 13562), (354, 13583), (359, 13673), (361, 13697), (362, 13721), (366, 13829), (369, 13952), (371, 13976), (374, 14006), (375, 14009), (378, 14036), (386, 14339), (388, 14420), (389, 14423), (390, 14429), (399, 14594), (400, 14612), (402, 14621), (405, 14666), (406, 14678), (408, 14714), (409, 14732), (416, 14831), (423, 14936), (425, 14957), (430, 15011), (432, 15050), (434, 15122),

(439, 15152), (443, 15191), (444, 15224), (448, 15263), (450, 15311), (451, 15344), (453, 15356),

Gene: Bradissa_18 Start: 11180, Stop: 16804, Start Num: 11

Candidate Starts for Bradissa_18:

(Start: 11 @11180 has 17 MA's), (13, 11213), (15, 11393), (16, 11405), (19, 11444), (Start: 20 @11453 has 1 MA's), (22, 11477), (26, 11561), (27, 11591), (28, 11603), (41, 11834), (42, 11861), (50, 11957), (51, 11960), (55, 11981), (57, 12005), (60, 12053), (64, 12107), (68, 12158), (69, 12170), (71, 12197), (72, 12212), (79, 12317), (86, 12401), (87, 12422), (89, 12476), (95, 12536), (100, 12584), (103, 12596), (106, 12626), (110, 12659), (115, 12701), (119, 12743), (120, 12764), (121, 12794), (124, 12827), (125, 12830), (126, 12836), (129, 12845), (130, 12848), (134, 12911), (137, 12944), (142, 12983), (147, 13013), (158, 13097), (164, 13154), (173, 13262), (175, 13301), (176, 13313), (190, 13475), (191, 13493), (192, 13508), (194, 13535), (199, 13586), (200, 13601), (202, 13628), (211, 13712), (214, 13766), (215, 13775), (216, 13805), (230, 13979), (232, 14009), (238, 14096), (250, 14240), (252, 14252), (260, 14342), (264, 14390), (270, 14450), (272, 14501), (274, 14507), (278, 14552), (288, 14684), (311, 15011), (321, 15116), (347, 15251), (349, 15281), (351, 15317), (354, 15338), (355, 15347), (357, 15374), (361, 15452), (362, 15476), (367, 15617), (371, 15722), (374, 15752), (375, 15755), (380, 15845), (381, 15899), (384, 16001), (395, 16235), (410, 16403), (412, 16424), (419, 16550), (421, 16580), (426, 16616), (427, 16619),

Gene: BritBrat_18 Start: 11003, Stop: 16657, Start Num: 11

Candidate Starts for BritBrat_18:

(Start: 11 @11003 has 17 MA's), (13, 11036), (15, 11216), (16, 11228), (19, 11267), (Start: 20 @11276 has 1 MA's), (22, 11300), (23, 11309), (26, 11384), (28, 11426), (38, 11615), (40, 11633), (41, 11657), (43, 11687), (50, 11780), (51, 11783), (57, 11828), (58, 11834), (60, 11876), (64, 11930), (68, 11981), (69, 11993), (72, 12035), (79, 12140), (83, 12167), (86, 12224), (89, 12299), (93, 12338), (95, 12359), (96, 12374), (100, 12407), (106, 12449), (114, 12521), (115, 12524), (116, 12533), (121, 12617), (124, 12650), (125, 12653), (126, 12659), (129, 12668), (130, 12671), (133, 12716), (134, 12734), (136, 12743), (145, 12824), (146, 12827), (147, 12836), (153, 12890), (157, 12911), (164, 12977), (172, 13061), (175, 13124), (176, 13136), (189, 13274), (190, 13298), (191, 13316), (192, 13331), (194, 13358), (199, 13409), (201, 13442), (202, 13451), (205, 13466), (210, 13532), (211, 13535), (214, 13589), (215, 13598), (216, 13628), (230, 13802), (231, 13811), (235, 13850), (244, 13991), (250, 14063), (252, 14075), (257, 14144), (259, 14159), (260, 14165), (264, 14213), (266, 14240), (268, 14249), (272, 14324), (274, 14330), (276, 14348), (278, 14375), (299, 14699), (305, 14792), (308, 14834), (310, 14852), (347, 15104), (351, 15170), (354, 15191), (355, 15200), (357, 15227), (361, 15305), (362, 15329), (365, 15422), (366, 15446), (367, 15470), (371, 15575), (374, 15605), (380, 15698), (381, 15752), (384, 15854), (387, 15953), (410, 16256), (419, 16403), (421, 16433), (426, 16469), (427, 16472), (433, 16547), (440, 16643),

Gene: Cashline_18 Start: 10857, Stop: 16481, Start Num: 11

Candidate Starts for Cashline_18:

(Start: 11 @10857 has 17 MA's), (13, 10890), (15, 11070), (16, 11082), (19, 11121), (Start: 20 @11130 has 1 MA's), (22, 11154), (23, 11163), (26, 11238), (28, 11280), (38, 11469), (40, 11487), (41, 11511), (43, 11541), (50, 11634), (51, 11637), (58, 11688), (60, 11730), (64, 11784), (68, 11835), (69, 11847), (72, 11889), (79, 11994), (83, 12021), (86, 12078), (89, 12153), (93, 12192), (95, 12213), (96, 12228), (100, 12261), (106, 12303), (114, 12375), (115, 12378), (116, 12387), (121, 12471), (124, 12504), (125, 12507), (126, 12513), (129, 12522), (130, 12525), (133, 12570), (136, 12597), (144, 12672), (145, 12678), (146, 12681), (147, 12690), (153, 12744), (157, 12765), (160, 12795), (164, 12831), (172, 12915), (175, 12978), (176, 12990), (189, 13128), (190, 13152), (191, 13170), (192, 13185), (194, 13212), (199, 13263), (201, 13296), (202, 13305), (205, 13320), (210, 13386), (211, 13389), (214, 13443), (215, 13452), (216, 13482), (230, 13656), (231, 13665), (235, 13704), (244, 13845), (250, 13917), (252, 13929), (257, 13998), (259, 14013), (260, 14019), (264, 14067), (274, 14184), (276, 14202), (278, 14229), (299, 14553), (311, 14688), (347, 14928), (351, 14994), (354, 15015), (355, 15024), (357, 15051), (361, 15129), (362, 15153), (365, 15246), (366, 15270), (367, 15294),

(371, 15399), (374, 15429), (380, 15522), (381, 15576), (384, 15678), (387, 15777), (412, 16101), (419, 16227), (421, 16257), (426, 16293), (427, 16296), (433, 16371), (440, 16467),

Gene: Confidence_18 Start: 10997, Stop: 16651, Start Num: 11

Candidate Starts for Confidence_18:

(Start: 11 @10997 has 17 MA's), (13, 11030), (15, 11210), (16, 11222), (19, 11261), (Start: 20 @11270 has 1 MA's), (22, 11294), (23, 11303), (26, 11378), (28, 11420), (38, 11609), (41, 11651), (43, 11681), (47, 11723), (50, 11774), (51, 11777), (58, 11828), (60, 11870), (64, 11924), (68, 11975), (69, 11987), (72, 12029), (79, 12134), (83, 12161), (86, 12218), (89, 12293), (93, 12332), (95, 12353), (96, 12368), (100, 12401), (106, 12443), (114, 12515), (115, 12518), (116, 12527), (121, 12611), (124, 12644), (125, 12647), (126, 12653), (129, 12662), (130, 12665), (133, 12710), (134, 12728), (136, 12737), (144, 12812), (145, 12818), (146, 12821), (147, 12830), (153, 12884), (157, 12905), (160, 12935), (164, 12971), (172, 13055), (175, 13118), (176, 13130), (189, 13268), (190, 13292), (191, 13310), (192, 13325), (194, 13352), (199, 13403), (201, 13436), (202, 13445), (205, 13460), (210, 13526), (211, 13529), (214, 13583), (215, 13592), (216, 13622), (230, 13796), (231, 13805), (235, 13844), (244, 13985), (250, 14057), (252, 14069), (257, 14138), (259, 14153), (260, 14159), (264, 14207), (274, 14324), (276, 14342), (278, 14369), (299, 14693), (305, 14786), (308, 14828), (310, 14846), (347, 15098), (351, 15164), (354, 15185), (355, 15194), (357, 15221), (361, 15299), (362, 15323), (365, 15416), (367, 15464), (371, 15569), (374, 15599), (380, 15692), (381, 15746), (384, 15848), (387, 15947), (410, 16250), (412, 16271), (419, 16397), (421, 16427), (426, 16463), (427, 16466), (433, 16541), (440, 16637),

Gene: Coriander_17 Start: 10886, Stop: 16564, Start Num: 1

Candidate Starts for Coriander_17:

(Start: 1 @10886 has 4 MA's), (2, 10916), (3, 10928), (6, 11021), (8, 11141), (9, 11177), (15, 11414), (16, 11426), (19, 11465), (22, 11498), (26, 11582), (28, 11624), (31, 11690), (34, 11708), (40, 11831), (41, 11855), (42, 11882), (51, 11981), (60, 12074), (64, 12128), (68, 12179), (69, 12191), (72, 12233), (90, 12506), (99, 12587), (107, 12650), (108, 12668), (109, 12671), (115, 12722), (118, 12743), (122, 12785), (131, 12833), (134, 12848), (142, 12878), (145, 12896), (147, 12908), (169, 13076), (170, 13079), (179, 13229), (183, 13298), (190, 13358), (192, 13391), (194, 13418), (202, 13511), (206, 13553), (207, 13565), (211, 13595), (212, 13610), (214, 13649), (216, 13688), (219, 13718), (220, 13778), (230, 13862), (232, 13892), (250, 14123), (255, 14168), (262, 14231), (263, 14255), (266, 14288), (269, 14300), (271, 14339), (273, 14366), (277, 14399), (281, 14429), (289, 14534), (292, 14543), (296, 14564), (298, 14663), (312, 14843), (313, 14846), (314, 14858), (316, 14879), (320, 14906), (350, 15101), (352, 15122), (353, 15125), (355, 15143), (364, 15278), (370, 15446), (374, 15491), (378, 15521), (381, 15629), (384, 15731), (387, 15830), (394, 15926), (396, 15986), (401, 16040), (417, 16298), (418, 16304), (421, 16337), (422, 16340), (425, 16361), (429, 16403), (430, 16406), (432, 16442), (436, 16517), (437, 16523), (438, 16526), (441, 16553),

Gene: Crater_16 Start: 9635, Stop: 15046, Start Num: 21

Candidate Starts for Crater_16:

(Start: 20 @9629 has 1 MA's), (Start: 21 @9635 has 5 MA's), (25, 9713), (27, 9755), (28, 9767), (36, 9908), (37, 9914), (39, 9950), (42, 10010), (44, 10028), (45, 10046), (49, 10067), (52, 10118), (53, 10121), (54, 10124), (56, 10148), (57, 10151), (62, 10217), (64, 10247), (70, 10325), (73, 10370), (74, 10394), (78, 10448), (81, 10469), (88, 10607), (92, 10643), (94, 10670), (96, 10691), (99, 10706), (104, 10745), (105, 10757), (107, 10769), (113, 10829), (115, 10841), (123, 10892), (140, 10967), (143, 10988), (150, 11036), (152, 11054), (165, 11123), (169, 11147), (172, 11204), (174, 11234), (175, 11267), (184, 11384), (190, 11441), (191, 11459), (192, 11474), (199, 11552), (208, 11657), (209, 11669), (210, 11675), (217, 11789), (218, 11792), (221, 11876), (224, 11906), (226, 11918), (230, 11969), (233, 12002), (236, 12071), (238, 12086), (242, 12128), (246, 12182), (248, 12197), (251, 12236), (252, 12242), (254, 12266), (259, 12326), (260, 12332), (261, 12335), (265, 12404), (272, 12491), (274, 12497), (275, 12506), (278, 12542), (283, 12566), (291, 12677), (293, 12689), (304, 12896), (309, 12959), (310, 12968), (313, 13001), (319, 13058), (321, 13085), (325, 13151), (326,

13169), (328, 13181), (347, 13208), (349, 13238), (351, 13274), (354, 13295), (356, 13307), (357, 13331), (361, 13409), (362, 13433), (363, 13448), (366, 13538), (370, 13658), (371, 13673), (373, 13694), (374, 13703), (379, 13790), (386, 14033), (390, 14123), (398, 14273), (400, 14297), (402, 14306), (403, 14333), (407, 14381), (408, 14399), (409, 14417), (411, 14441), (416, 14501), (424, 14624), (428, 14675), (431, 14702), (435, 14801), (437, 14813), (445, 14909), (448, 14927), (449, 14939), (452, 15029),

Gene: Dmitri_17 Start: 10871, Stop: 16561, Start Num: 1

Candidate Starts for Dmitri_17:

(Start: 1 @10871 has 4 MA's), (2, 10901), (4, 10955), (6, 11006), (9, 11162), (12, 11204), (15, 11399), (16, 11411), (19, 11450), (Start: 20 @11459 has 1 MA's), (22, 11483), (26, 11567), (28, 11609), (41, 11840), (46, 11909), (51, 11966), (60, 12059), (64, 12113), (68, 12164), (69, 12176), (72, 12218), (82, 12347), (83, 12350), (90, 12491), (91, 12494), (102, 12599), (107, 12635), (108, 12653), (109, 12656), (115, 12707), (118, 12728), (122, 12770), (129, 12800), (130, 12803), (131, 12818), (134, 12833), (147, 12893), (161, 13007), (163, 13028), (168, 13058), (171, 13076), (177, 13199), (180, 13220), (195, 13424), (201, 13484), (202, 13493), (205, 13508), (206, 13535), (207, 13547), (211, 13577), (214, 13631), (216, 13670), (219, 13700), (220, 13760), (222, 13781), (230, 13844), (232, 13874), (243, 14012), (250, 14105), (255, 14150), (262, 14213), (263, 14237), (266, 14270), (267, 14273), (269, 14282), (273, 14348), (292, 14525), (294, 14534), (296, 14546), (298, 14645), (300, 14678), (312, 14825), (313, 14828), (314, 14840), (316, 14861), (320, 14888), (327, 15005), (350, 15083), (352, 15104), (355, 15125), (364, 15260), (374, 15476), (376, 15485), (378, 15506), (384, 15728), (385, 15746), (394, 15923), (396, 15983), (397, 15992), (401, 16037), (418, 16301), (421, 16334), (422, 16337), (425, 16358), (429, 16400), (430, 16403), (432, 16439), (436, 16514), (437, 16520), (438, 16523), (441, 16550), (442, 16553),

Gene: Doggs_16 Start: 10586, Stop: 16264, Start Num: 1

Candidate Starts for Doggs_16:

(Start: 1 @10586 has 4 MA's), (2, 10616), (3, 10628), (6, 10721), (8, 10841), (9, 10877), (15, 11114), (16, 11126), (19, 11165), (22, 11198), (26, 11282), (28, 11324), (31, 11390), (34, 11408), (40, 11531), (41, 11555), (42, 11582), (51, 11681), (60, 11774), (64, 11828), (68, 11879), (69, 11891), (72, 11933), (90, 12206), (97, 12275), (98, 12278), (99, 12287), (107, 12350), (108, 12368), (109, 12371), (115, 12422), (118, 12443), (122, 12485), (131, 12533), (134, 12548), (142, 12578), (145, 12596), (147, 12608), (169, 12776), (170, 12779), (179, 12929), (183, 12998), (190, 13058), (192, 13091), (194, 13118), (202, 13211), (206, 13253), (207, 13265), (211, 13295), (212, 13310), (214, 13349), (216, 13388), (219, 13418), (220, 13478), (230, 13562), (232, 13592), (250, 13823), (255, 13868), (262, 13931), (263, 13955), (266, 13988), (269, 14000), (271, 14039), (273, 14066), (277, 14099), (281, 14129), (289, 14234), (292, 14243), (296, 14264), (298, 14363), (300, 14396), (313, 14546), (314, 14558), (316, 14579), (320, 14606), (350, 14801), (352, 14822), (353, 14825), (355, 14843), (364, 14978), (370, 15146), (374, 15191), (378, 15221), (381, 15329), (383, 15401), (384, 15431), (387, 15530), (394, 15629), (396, 15689), (404, 15782), (413, 15890), (415, 15902), (417, 15998), (418, 16004), (421, 16037), (422, 16040), (429, 16103), (430, 16106), (436, 16217), (437, 16223), (438, 16226), (441, 16253), (442, 16256),

Gene: EMSquaredA_18 Start: 11003, Stop: 16657, Start Num: 11

Candidate Starts for EMSquaredA_18:

(Start: 11 @11003 has 17 MA's), (13, 11036), (15, 11216), (16, 11228), (19, 11267), (Start: 20 @11276 has 1 MA's), (22, 11300), (23, 11309), (26, 11384), (28, 11426), (38, 11615), (40, 11633), (41, 11657), (43, 11687), (50, 11780), (51, 11783), (57, 11828), (58, 11834), (60, 11876), (64, 11930), (68, 11981), (69, 11993), (72, 12035), (79, 12140), (83, 12167), (86, 12224), (89, 12299), (93, 12338), (95, 12359), (96, 12374), (100, 12407), (106, 12449), (114, 12521), (115, 12524), (116, 12533), (121, 12617), (124, 12650), (125, 12653), (126, 12659), (129, 12668), (130, 12671), (133, 12716), (134, 12734), (136, 12743), (145, 12824), (146, 12827), (147, 12836), (153, 12890), (157, 12911), (164, 12977), (172, 13061), (175, 13124), (176, 13136), (189, 13274), (190, 13298), (191, 13316), (192, 13331), (194,

13358), (199, 13409), (201, 13442), (202, 13451), (205, 13466), (210, 13532), (211, 13535), (214, 13589), (215, 13598), (216, 13628), (230, 13802), (231, 13811), (235, 13850), (244, 13991), (250, 14063), (252, 14075), (257, 14144), (259, 14159), (260, 14165), (264, 14213), (266, 14240), (268, 14249), (272, 14324), (274, 14330), (276, 14348), (278, 14375), (299, 14699), (305, 14792), (308, 14834), (310, 14852), (347, 15104), (351, 15170), (354, 15191), (355, 15200), (357, 15227), (361, 15305), (362, 15329), (365, 15422), (366, 15446), (367, 15470), (371, 15575), (374, 15605), (380, 15698), (381, 15752), (384, 15854), (387, 15953), (410, 16256), (419, 16403), (421, 16433), (426, 16469), (427, 16472), (433, 16547), (440, 16643),

Gene: Ecliptus_22 Start: 11993, Stop: 17506, Start Num: 18

Candidate Starts for Ecliptus_22:

(Start: 18 @11993 has 2 MA's), (Start: 20 @12026 has 1 MA's), (Start: 21 @12032 has 5 MA's), (27, 12152), (28, 12164), (32, 12230), (36, 12305), (42, 12407), (45, 12443), (49, 12464), (53, 12518), (54, 12521), (57, 12548), (61, 12599), (63, 12635), (64, 12644), (70, 12722), (73, 12767), (74, 12791), (75, 12824), (76, 12827), (85, 12935), (92, 13040), (94, 13067), (98, 13094), (99, 13103), (100, 13121), (101, 13124), (107, 13166), (108, 13184), (109, 13187), (118, 13259), (122, 13301), (127, 13322), (130, 13328), (132, 13349), (135, 13358), (139, 13373), (141, 13391), (147, 13424), (150, 13457), (156, 13490), (157, 13499), (158, 13508), (160, 13529), (162, 13553), (164, 13565), (165, 13568), (168, 13589), (169, 13592), (172, 13649), (174, 13679), (185, 13838), (186, 13841), (189, 13862), (190, 13886), (192, 13919), (196, 13973), (197, 13988), (207, 14093), (209, 14114), (211, 14123), (217, 14234), (218, 14237), (230, 14414), (234, 14456), (236, 14516), (237, 14525), (241, 14564), (244, 14603), (245, 14621), (248, 14642), (250, 14675), (254, 14714), (257, 14759), (262, 14792), (264, 14828), (270, 14888), (274, 14945), (280, 14999), (295, 15152), (301, 15305), (306, 15359), (309, 15404), (310, 15413), (313, 15446), (323, 15551), (326, 15608), (347, 15647), (351, 15713), (354, 15734), (360, 15842), (361, 15848), (362, 15872), (366, 15986), (367, 16010), (368, 16085), (371, 16121), (373, 16142), (374, 16151), (375, 16154), (378, 16181), (386, 16484), (388, 16565), (389, 16568), (390, 16574), (399, 16739), (400, 16757), (402, 16766), (405, 16811), (406, 16823), (408, 16856), (409, 16874), (416, 16967), (423, 17072), (425, 17093), (430, 17147), (432, 17186), (434, 17258), (439, 17288), (443, 17327), (444, 17360), (448, 17399), (450, 17447), (451, 17480), (453, 17492),

Gene: EnalisNailo_18 Start: 11182, Stop: 16806, Start Num: 11

Candidate Starts for EnalisNailo_18:

(Start: 11 @11182 has 17 MA's), (13, 11215), (15, 11395), (16, 11407), (19, 11446), (Start: 20 @11455 has 1 MA's), (22, 11479), (26, 11563), (27, 11593), (28, 11605), (41, 11836), (42, 11863), (50, 11959), (51, 11962), (55, 11983), (57, 12007), (60, 12055), (64, 12109), (68, 12160), (69, 12172), (71, 12199), (72, 12214), (79, 12319), (86, 12403), (87, 12424), (89, 12478), (93, 12517), (95, 12538), (100, 12586), (103, 12598), (106, 12628), (110, 12661), (115, 12703), (119, 12745), (120, 12766), (121, 12796), (124, 12829), (125, 12832), (126, 12838), (129, 12847), (130, 12850), (134, 12913), (137, 12946), (142, 12985), (147, 13015), (158, 13099), (164, 13156), (173, 13264), (175, 13303), (176, 13315), (190, 13477), (191, 13495), (192, 13510), (194, 13537), (199, 13588), (200, 13603), (202, 13630), (211, 13714), (214, 13768), (215, 13777), (216, 13807), (230, 13981), (232, 14011), (238, 14098), (250, 14242), (252, 14254), (260, 14344), (264, 14392), (270, 14452), (272, 14503), (274, 14509), (278, 14554), (288, 14686), (311, 15013), (321, 15118), (347, 15253), (349, 15283), (351, 15319), (354, 15340), (355, 15349), (357, 15376), (361, 15454), (362, 15478), (367, 15619), (371, 15724), (374, 15754), (375, 15757), (380, 15847), (381, 15901), (384, 16003), (395, 16237), (410, 16405), (412, 16426), (419, 16552), (421, 16582), (426, 16618), (427, 16621),

Gene: Floral_18 Start: 11003, Stop: 16657, Start Num: 11

Candidate Starts for Floral_18:

(Start: 11 @11003 has 17 MA's), (13, 11036), (15, 11216), (16, 11228), (19, 11267), (Start: 20 @11276 has 1 MA's), (22, 11300), (23, 11309), (26, 11384), (28, 11426), (38, 11615), (40, 11633), (41, 11657), (43, 11687), (50, 11780), (51, 11783), (57, 11828), (58, 11834), (60, 11876), (64, 11930), (68, 11981),

(69, 11993), (72, 12035), (79, 12140), (83, 12167), (86, 12224), (89, 12299), (93, 12338), (95, 12359), (96, 12374), (100, 12407), (106, 12449), (114, 12521), (115, 12524), (116, 12533), (121, 12617), (124, 12650), (125, 12653), (126, 12659), (129, 12668), (130, 12671), (133, 12716), (134, 12734), (136, 12743), (145, 12824), (146, 12827), (147, 12836), (153, 12890), (157, 12911), (164, 12977), (172, 13061), (175, 13124), (176, 13136), (189, 13274), (190, 13298), (191, 13316), (192, 13331), (194, 13358), (199, 13409), (201, 13442), (202, 13451), (205, 13466), (210, 13532), (211, 13535), (214, 13589), (215, 13598), (216, 13628), (230, 13802), (231, 13811), (235, 13850), (244, 13991), (250, 14063), (252, 14075), (257, 14144), (259, 14159), (260, 14165), (264, 14213), (266, 14240), (268, 14249), (272, 14324), (274, 14330), (276, 14348), (278, 14375), (299, 14699), (305, 14792), (308, 14834), (310, 14852), (347, 15104), (351, 15170), (354, 15191), (355, 15200), (357, 15227), (361, 15305), (362, 15329), (365, 15422), (366, 15446), (367, 15470), (371, 15575), (374, 15605), (380, 15698), (381, 15752), (384, 15854), (387, 15953), (410, 16256), (419, 16403), (421, 16433), (426, 16469), (427, 16472), (433, 16547), (440, 16643),

Gene: Jablanski_18 Start: 11132, Stop: 16768, Start Num: 11

Candidate Starts for Jablanski_18:

(Start: 11 @11132 has 17 MA's), (13, 11165), (15, 11345), (16, 11357), (19, 11396), (Start: 20 @11405 has 1 MA's), (22, 11429), (23, 11438), (26, 11513), (28, 11555), (38, 11744), (40, 11762), (41, 11786), (43, 11816), (47, 11858), (50, 11909), (51, 11912), (58, 11963), (60, 12005), (64, 12059), (68, 12110), (69, 12122), (72, 12164), (79, 12269), (83, 12296), (86, 12353), (89, 12428), (93, 12467), (95, 12488), (96, 12503), (100, 12536), (106, 12578), (114, 12650), (115, 12653), (116, 12662), (121, 12746), (124, 12779), (125, 12782), (126, 12788), (129, 12797), (130, 12800), (133, 12845), (134, 12863), (136, 12872), (146, 12956), (147, 12965), (153, 13019), (157, 13040), (160, 13070), (164, 13106), (172, 13190), (175, 13253), (176, 13265), (189, 13403), (190, 13427), (191, 13445), (192, 13460), (193, 13478), (194, 13487), (199, 13538), (201, 13571), (202, 13580), (205, 13595), (210, 13661), (211, 13664), (214, 13718), (215, 13727), (216, 13757), (220, 13847), (230, 13931), (232, 13961), (244, 14120), (246, 14144), (249, 14183), (250, 14192), (252, 14204), (260, 14294), (264, 14342), (268, 14378), (270, 14402), (272, 14453), (274, 14459), (278, 14504), (285, 14567), (299, 14828), (311, 14963), (347, 15203), (351, 15269), (354, 15290), (355, 15299), (357, 15326), (361, 15404), (362, 15428), (365, 15521), (367, 15569), (371, 15674), (372, 15686), (374, 15704), (380, 15797), (381, 15851), (382, 15875), (384, 15953), (387, 16052), (395, 16199), (412, 16388), (419, 16514), (421, 16544), (426, 16580), (427, 16583), (440, 16754),

Gene: Kuwabara_17 Start: 9635, Stop: 15067, Start Num: 21

Candidate Starts for Kuwabara_17:

(Start: 20 @9629 has 1 MA's), (Start: 21 @9635 has 5 MA's), (25, 9713), (27, 9755), (28, 9767), (36, 9908), (37, 9914), (39, 9950), (42, 10010), (44, 10028), (45, 10046), (49, 10067), (52, 10118), (53, 10121), (54, 10124), (56, 10148), (57, 10151), (62, 10217), (64, 10247), (70, 10325), (73, 10370), (74, 10394), (78, 10448), (81, 10469), (88, 10607), (92, 10643), (94, 10670), (96, 10691), (99, 10706), (104, 10745), (105, 10757), (107, 10769), (113, 10829), (115, 10841), (123, 10892), (140, 10967), (143, 10988), (150, 11036), (152, 11054), (165, 11123), (169, 11147), (172, 11204), (174, 11234), (175, 11267), (184, 11384), (190, 11441), (191, 11459), (192, 11474), (199, 11552), (208, 11657), (209, 11669), (210, 11675), (217, 11789), (218, 11792), (221, 11876), (224, 11906), (226, 11918), (230, 11969), (233, 12002), (236, 12071), (238, 12086), (242, 12128), (246, 12182), (247, 12185), (248, 12197), (251, 12236), (252, 12242), (254, 12266), (259, 12326), (260, 12332), (261, 12335), (265, 12404), (272, 12491), (274, 12497), (275, 12506), (278, 12542), (283, 12566), (291, 12677), (293, 12689), (304, 12896), (307, 12941), (310, 12968), (313, 13001), (321, 13079), (322, 13103), (323, 13106), (326, 13163), (328, 13175), (347, 13202), (348, 13220), (351, 13268), (354, 13289), (359, 13379), (361, 13403), (362, 13427), (366, 13535), (369, 13658), (371, 13682), (373, 13703), (374, 13712), (375, 13715), (378, 13742), (379, 13802), (386, 14045), (388, 14126), (389, 14129), (390, 14135), (399, 14300), (400, 14318), (402, 14327), (405, 14372), (406, 14384), (408, 14417), (409, 14435), (416, 14528), (423, 14633), (425, 14654), (430, 14708), (432, 14747), (434, 14819), (439, 14849), (443, 14888), (444, 14921), (448, 14960), (450, 15008), (451, 15041), (453, 15053),

Gene: Lilas_18 Start: 11182, Stop: 16806, Start Num: 11

Candidate Starts for Lilas_18:

(Start: 11 @11182 has 17 MA's), (13, 11215), (15, 11395), (16, 11407), (19, 11446), (Start: 20 @11455 has 1 MA's), (22, 11479), (26, 11563), (27, 11593), (28, 11605), (41, 11836), (42, 11863), (50, 11959), (51, 11962), (55, 11983), (57, 12007), (60, 12055), (64, 12109), (68, 12160), (69, 12172), (71, 12199), (72, 12214), (79, 12319), (86, 12403), (87, 12424), (89, 12478), (93, 12517), (95, 12538), (100, 12586), (103, 12598), (106, 12628), (110, 12661), (115, 12703), (119, 12745), (120, 12766), (121, 12796), (124, 12829), (125, 12832), (126, 12838), (129, 12847), (130, 12850), (134, 12913), (137, 12946), (142, 12985), (147, 13015), (158, 13099), (164, 13156), (173, 13264), (175, 13303), (176, 13315), (190, 13477), (191, 13495), (192, 13510), (194, 13537), (199, 13588), (200, 13603), (202, 13630), (211, 13714), (214, 13768), (215, 13777), (216, 13807), (230, 13981), (232, 14011), (238, 14098), (250, 14242), (252, 14254), (260, 14344), (264, 14392), (270, 14452), (272, 14503), (274, 14509), (278, 14554), (288, 14686), (311, 15013), (321, 15118), (347, 15253), (349, 15283), (351, 15319), (354, 15340), (355, 15349), (357, 15376), (361, 15454), (362, 15478), (367, 15619), (371, 15724), (374, 15754), (375, 15757), (380, 15847), (381, 15901), (384, 16003), (395, 16237), (410, 16405), (412, 16426), (419, 16552), (421, 16582), (426, 16618), (427, 16621),

Gene: LonelyBoi_18 Start: 11131, Stop: 16809, Start Num: 11

Candidate Starts for LonelyBoi_18:

(Start: 11 @11131 has 17 MA's), (13, 11164), (15, 11344), (16, 11356), (19, 11395), (Start: 20 @11404 has 1 MA's), (22, 11428), (23, 11437), (26, 11512), (28, 11554), (38, 11743), (40, 11761), (41, 11785), (43, 11815), (47, 11857), (50, 11908), (51, 11911), (58, 11962), (60, 12004), (64, 12058), (68, 12109), (69, 12121), (72, 12163), (79, 12268), (83, 12295), (86, 12352), (89, 12427), (93, 12466), (95, 12487), (96, 12502), (100, 12535), (106, 12577), (115, 12652), (119, 12694), (121, 12745), (124, 12778), (125, 12781), (129, 12796), (134, 12862), (138, 12904), (142, 12934), (144, 12946), (147, 12964), (149, 13000), (151, 13018), (154, 13045), (155, 13048), (161, 13099), (164, 13126), (167, 13138), (172, 13210), (175, 13273), (176, 13285), (181, 13330), (190, 13447), (192, 13480), (194, 13507), (196, 13534), (202, 13600), (207, 13654), (209, 13675), (217, 13795), (218, 13798), (221, 13882), (226, 13924), (227, 13927), (228, 13933), (229, 13936), (230, 13975), (236, 14077), (240, 14104), (249, 14233), (254, 14281), (259, 14341), (260, 14347), (262, 14359), (263, 14383), (264, 14395), (270, 14455), (272, 14506), (274, 14512), (278, 14557), (288, 14689), (311, 15016), (347, 15256), (351, 15322), (354, 15343), (355, 15352), (357, 15379), (361, 15457), (362, 15481), (365, 15574), (366, 15598), (367, 15622), (371, 15727), (374, 15757), (380, 15850), (381, 15904), (384, 16006), (387, 16105), (410, 16408), (412, 16429), (419, 16555), (421, 16585), (426, 16621), (427, 16624), (433, 16699), (440, 16795),

Gene: Lucky10_16 Start: 8884, Stop: 14280, Start Num: 20

Candidate Starts for Lucky10_16:

(Start: 20 @8884 has 1 MA's), (Start: 21 @8890 has 5 MA's), (27, 9010), (28, 9022), (32, 9088), (36, 9163), (37, 9169), (45, 9301), (52, 9373), (53, 9376), (54, 9379), (57, 9406), (59, 9442), (63, 9493), (64, 9502), (67, 9538), (70, 9580), (73, 9625), (74, 9649), (78, 9703), (81, 9724), (92, 9898), (95, 9931), (99, 9961), (104, 10000), (105, 10012), (107, 10024), (112, 10069), (113, 10084), (115, 10096), (123, 10147), (140, 10222), (148, 10270), (150, 10291), (152, 10309), (159, 10339), (165, 10378), (169, 10402), (172, 10459), (174, 10489), (175, 10522), (182, 10618), (190, 10696), (191, 10714), (192, 10729), (199, 10807), (209, 10924), (210, 10930), (217, 11044), (218, 11047), (221, 11131), (226, 11173), (230, 11224), (233, 11257), (236, 11326), (242, 11383), (246, 11437), (247, 11440), (248, 11452), (251, 11491), (253, 11509), (254, 11521), (257, 11566), (259, 11581), (270, 11695), (272, 11746), (274, 11752), (276, 11770), (279, 11803), (283, 11821), (286, 11896), (291, 11932), (293, 11944), (297, 11965), (299, 12070), (300, 12076), (313, 12226), (314, 12238), (315, 12247), (320, 12286), (322, 12328), (326, 12388), (328, 12400), (347, 12427), (349, 12457), (351, 12493), (354, 12514), (361, 12628), (362, 12652), (371, 12895), (372, 12907), (374, 12925), (379, 13015), (386, 13258), (392, 13378), (402, 13540), (408, 13630), (409, 13648), (420, 13816), (425, 13867), (430,

13921), (431, 13936), (434, 14032), (439, 14062), (443, 14101), (444, 14134), (445, 14155), (446, 14167), (447, 14170), (450, 14221), (451, 14254), (453, 14266),

Gene: Marteena_18 Start: 11003, Stop: 16657, Start Num: 11

Candidate Starts for Marteena_18:

(Start: 11 @11003 has 17 MA's), (13, 11036), (15, 11216), (16, 11228), (19, 11267), (Start: 20 @11276 has 1 MA's), (22, 11300), (23, 11309), (26, 11384), (28, 11426), (38, 11615), (40, 11633), (41, 11657), (43, 11687), (50, 11780), (51, 11783), (57, 11828), (58, 11834), (60, 11876), (64, 11930), (68, 11981), (69, 11993), (72, 12035), (79, 12140), (83, 12167), (86, 12224), (89, 12299), (93, 12338), (95, 12359), (96, 12374), (100, 12407), (106, 12449), (114, 12521), (115, 12524), (116, 12533), (121, 12617), (124, 12650), (125, 12653), (126, 12659), (129, 12668), (130, 12671), (133, 12716), (134, 12734), (136, 12743), (145, 12824), (146, 12827), (147, 12836), (153, 12890), (157, 12911), (164, 12977), (172, 13061), (175, 13124), (176, 13136), (189, 13274), (190, 13298), (191, 13316), (192, 13331), (194, 13358), (199, 13409), (201, 13442), (202, 13451), (205, 13466), (210, 13532), (211, 13535), (214, 13589), (215, 13598), (216, 13628), (230, 13802), (231, 13811), (235, 13850), (244, 13991), (250, 14063), (252, 14075), (257, 14144), (259, 14159), (260, 14165), (264, 14213), (266, 14240), (268, 14249), (272, 14324), (274, 14330), (276, 14348), (278, 14375), (299, 14699), (305, 14792), (308, 14834), (310, 14852), (347, 15104), (351, 15170), (354, 15191), (355, 15200), (357, 15227), (361, 15305), (362, 15329), (365, 15422), (366, 15446), (367, 15470), (371, 15575), (374, 15605), (380, 15698), (381, 15752), (384, 15854), (387, 15953), (410, 16256), (419, 16403), (421, 16433), (426, 16469), (427, 16472), (433, 16547), (440, 16643),

Gene: Moonflower_17 Start: 10660, Stop: 16308, Start Num: 3

Candidate Starts for Moonflower_17:

(Start: 1 @10618 has 4 MA's), (2, 10648), (3, 10660), (5, 10735), (6, 10753), (8, 10873), (9, 10909), (14, 11128), (15, 11146), (16, 11158), (19, 11197), (Start: 20 @11206 has 1 MA's), (22, 11230), (26, 11314), (28, 11356), (41, 11587), (46, 11656), (51, 11713), (60, 11806), (64, 11860), (65, 11866), (66, 11875), (68, 11911), (69, 11923), (72, 11965), (77, 12052), (83, 12097), (90, 12238), (96, 12304), (98, 12310), (102, 12346), (106, 12379), (107, 12382), (113, 12442), (115, 12454), (117, 12466), (118, 12475), (122, 12517), (129, 12547), (131, 12565), (134, 12580), (147, 12640), (158, 12724), (161, 12754), (163, 12775), (166, 12790), (171, 12823), (177, 12946), (178, 12955), (180, 12967), (192, 13120), (199, 13198), (202, 13240), (206, 13282), (207, 13294), (211, 13324), (212, 13339), (214, 13378), (216, 13417), (219, 13447), (220, 13507), (230, 13591), (232, 13621), (239, 13714), (243, 13759), (250, 13852), (255, 13897), (262, 13960), (266, 14017), (269, 14029), (273, 14095), (277, 14128), (292, 14272), (296, 14293), (298, 14392), (300, 14425), (312, 14572), (313, 14575), (314, 14587), (316, 14608), (320, 14635), (327, 14752), (350, 14830), (352, 14851), (353, 14854), (355, 14872), (364, 15007), (370, 15178), (374, 15223), (384, 15475), (385, 15493), (393, 15664), (396, 15733), (404, 15826), (413, 15934), (415, 15946), (417, 16042), (418, 16048), (421, 16081), (422, 16084), (425, 16105), (429, 16147), (430, 16150), (432, 16186), (436, 16261), (437, 16267), (438, 16270), (441, 16297), (442, 16300),

Gene: Morkie_16 Start: 8855, Stop: 14248, Start Num: 21

Candidate Starts for Morkie_16:

(Start: 20 @8849 has 1 MA's), (Start: 21 @8855 has 5 MA's), (27, 8975), (28, 8987), (32, 9053), (33, 9056), (36, 9128), (37, 9134), (42, 9230), (44, 9248), (45, 9266), (52, 9338), (53, 9341), (54, 9344), (57, 9371), (59, 9407), (63, 9458), (64, 9467), (67, 9503), (70, 9545), (73, 9590), (74, 9614), (78, 9668), (81, 9689), (92, 9863), (95, 9896), (99, 9926), (100, 9944), (104, 9965), (105, 9977), (107, 9989), (111, 10028), (112, 10034), (113, 10049), (115, 10061), (123, 10112), (128, 10133), (140, 10187), (148, 10235), (150, 10256), (152, 10274), (159, 10304), (165, 10343), (169, 10367), (172, 10424), (174, 10454), (175, 10487), (190, 10661), (191, 10679), (192, 10694), (194, 10721), (199, 10772), (207, 10868), (208, 10877), (209, 10889), (217, 11009), (218, 11012), (221, 11096), (230, 11189), (233, 11222), (236, 11291), (246, 11402), (247, 11405), (248, 11417), (251, 11456), (252, 11462), (253, 11474), (254, 11486), (257, 11531), (259, 11546), (261, 11555), (270, 11660), (272, 11711), (274,

11717), (279, 11768), (283, 11786), (286, 11861), (291, 11897), (293, 11909), (297, 11930), (299, 12035), (300, 12041), (313, 12191), (314, 12203), (315, 12212), (317, 12236), (326, 12353), (328, 12365), (347, 12392), (349, 12422), (351, 12458), (354, 12479), (361, 12593), (362, 12617), (366, 12725), (371, 12863), (374, 12893), (378, 12923), (379, 12983), (386, 13226), (390, 13316), (402, 13508), (408, 13598), (409, 13616), (420, 13784), (425, 13835), (430, 13889), (431, 13904), (434, 14000), (439, 14030), (443, 14069), (444, 14102), (445, 14123), (446, 14135), (447, 14138), (451, 14222), (453, 14234),

Gene: MortyNRick_17 Start: 9908, Stop: 15370, Start Num: 17

Candidate Starts for MortyNRick_17:

(Start: 17 @9908 has 3 MA's), (22, 9965), (24, 9983), (27, 10067), (28, 10079), (29, 10091), (30, 10115), (32, 10145), (35, 10190), (36, 10220), (37, 10226), (41, 10295), (42, 10322), (44, 10340), (45, 10358), (48, 10370), (49, 10379), (52, 10430), (53, 10433), (54, 10436), (56, 10460), (57, 10463), (63, 10550), (64, 10559), (70, 10637), (73, 10682), (74, 10706), (75, 10739), (76, 10742), (84, 10829), (85, 10850), (92, 10955), (94, 10982), (98, 11009), (100, 11036), (101, 11039), (107, 11081), (108, 11099), (109, 11102), (118, 11174), (122, 11216), (127, 11237), (132, 11264), (135, 11273), (139, 11288), (141, 11306), (147, 11339), (150, 11372), (156, 11405), (157, 11414), (158, 11423), (160, 11444), (162, 11468), (165, 11483), (168, 11504), (169, 11507), (172, 11564), (174, 11594), (175, 11627), (190, 11801), (192, 11834), (194, 11861), (196, 11888), (198, 11906), (204, 11966), (207, 12008), (209, 12029), (213, 12080), (215, 12101), (217, 12149), (218, 12152), (229, 12290), (230, 12329), (234, 12371), (236, 12431), (240, 12458), (241, 12479), (245, 12536), (248, 12557), (254, 12629), (256, 12671), (257, 12674), (262, 12707), (264, 12743), (270, 12803), (272, 12854), (274, 12860), (275, 12869), (276, 12878), (279, 12911), (283, 12929), (284, 12959), (302, 13154), (303, 13157), (308, 13238), (310, 13256), (313, 13289), (314, 13301), (318, 13337), (321, 13373), (322, 13397), (323, 13400), (324, 13421), (326, 13457), (328, 13469), (347, 13496), (348, 13514), (349, 13526), (351, 13562), (354, 13583), (359, 13673), (361, 13697), (362, 13721), (366, 13829), (369, 13952), (371, 13976), (374, 14006), (375, 14009), (378, 14036), (386, 14339), (388, 14420), (389, 14423), (390, 14429), (399, 14594), (400, 14612), (402, 14621), (405, 14666), (406, 14678), (408, 14714), (409, 14732), (416, 14831), (423, 14936), (425, 14957), (430, 15011), (432, 15050), (434, 15122), (439, 15152), (443, 15191), (444, 15224), (448, 15263), (450, 15311), (451, 15344), (453, 15356),

Gene: ODay_22 Start: 12098, Stop: 17611, Start Num: 18

Candidate Starts for ODay_22:

(Start: 18 @12098 has 2 MA's), (Start: 20 @12131 has 1 MA's), (Start: 21 @12137 has 5 MA's), (27, 12257), (28, 12269), (32, 12335), (36, 12410), (41, 12485), (42, 12512), (44, 12530), (45, 12548), (48, 12560), (49, 12569), (53, 12623), (54, 12626), (56, 12650), (57, 12653), (63, 12740), (64, 12749), (70, 12827), (73, 12872), (74, 12896), (76, 12932), (84, 13019), (85, 13040), (88, 13109), (92, 13145), (94, 13172), (98, 13199), (100, 13226), (101, 13229), (107, 13271), (108, 13289), (109, 13292), (122, 13406), (127, 13427), (132, 13454), (135, 13463), (139, 13478), (147, 13529), (150, 13562), (156, 13595), (157, 13604), (158, 13613), (162, 13658), (164, 13670), (165, 13673), (168, 13694), (169, 13697), (172, 13754), (174, 13784), (185, 13943), (186, 13946), (189, 13967), (190, 13991), (192, 14024), (196, 14078), (197, 14093), (207, 14198), (209, 14219), (211, 14228), (217, 14339), (218, 14342), (230, 14519), (234, 14561), (236, 14621), (237, 14630), (241, 14669), (244, 14708), (245, 14726), (248, 14747), (250, 14780), (254, 14819), (262, 14897), (264, 14933), (270, 14993), (272, 15044), (274, 15050), (280, 15104), (290, 15230), (295, 15257), (306, 15464), (310, 15518), (315, 15572), (323, 15656), (326, 15713), (347, 15752), (351, 15818), (354, 15839), (357, 15875), (358, 15890), (361, 15953), (362, 15977), (365, 16067), (366, 16091), (367, 16115), (368, 16190), (369, 16202), (371, 16226), (373, 16247), (374, 16256), (378, 16286), (379, 16346), (386, 16589), (388, 16670), (389, 16673), (390, 16679), (399, 16844), (400, 16862), (402, 16871), (405, 16916), (406, 16928), (408, 16961), (409, 16979), (416, 17072), (423, 17177), (425, 17198), (430, 17252), (432, 17291), (434, 17363), (439, 17393), (443, 17432), (444, 17465), (448, 17504), (450, 17552), (451, 17585), (453, 17597),

Gene: PhorbesPhlower_16 Start: 8855, Stop: 14248, Start Num: 21

Candidate Starts for PhorbesPhlower_16:

(Start: 20 @8849 has 1 MA's), (Start: 21 @8855 has 5 MA's), (27, 8975), (28, 8987), (32, 9053), (33, 9056), (36, 9128), (37, 9134), (42, 9230), (44, 9248), (45, 9266), (52, 9338), (53, 9341), (54, 9344), (57, 9371), (59, 9407), (63, 9458), (64, 9467), (67, 9503), (70, 9545), (73, 9590), (74, 9614), (78, 9668), (81, 9689), (92, 9863), (95, 9896), (99, 9926), (100, 9944), (104, 9965), (105, 9977), (107, 9989), (111, 10028), (112, 10034), (113, 10049), (115, 10061), (123, 10112), (128, 10133), (140, 10187), (148, 10235), (150, 10256), (152, 10274), (159, 10304), (165, 10343), (169, 10367), (172, 10424), (174, 10454), (175, 10487), (190, 10661), (191, 10679), (192, 10694), (194, 10721), (199, 10772), (207, 10868), (208, 10877), (209, 10889), (217, 11009), (218, 11012), (221, 11096), (230, 11189), (233, 11222), (236, 11291), (246, 11402), (247, 11405), (248, 11417), (251, 11456), (252, 11462), (253, 11474), (254, 11486), (257, 11531), (259, 11546), (261, 11555), (270, 11660), (272, 11711), (274, 11717), (279, 11768), (283, 11786), (286, 11861), (291, 11897), (293, 11909), (297, 11930), (299, 12035), (300, 12041), (313, 12191), (314, 12203), (315, 12212), (317, 12236), (326, 12353), (328, 12365), (347, 12392), (349, 12422), (351, 12458), (354, 12479), (361, 12593), (362, 12617), (366, 12725), (371, 12863), (374, 12893), (378, 12923), (379, 12983), (386, 13226), (390, 13316), (402, 13508), (408, 13598), (409, 13616), (420, 13784), (425, 13835), (430, 13889), (431, 13904), (434, 14000), (439, 14030), (443, 14069), (444, 14102), (445, 14123), (446, 14135), (447, 14138), (451, 14222), (453, 14234),

Gene: Pollux_18 Start: 11003, Stop: 16657, Start Num: 11

Candidate Starts for Pollux_18:

(Start: 11 @11003 has 17 MA's), (13, 11036), (15, 11216), (16, 11228), (19, 11267), (Start: 20 @11276 has 1 MA's), (22, 11300), (23, 11309), (26, 11384), (28, 11426), (38, 11615), (40, 11633), (41, 11657), (43, 11687), (50, 11780), (51, 11783), (57, 11828), (58, 11834), (60, 11876), (64, 11930), (68, 11981), (69, 11993), (72, 12035), (79, 12140), (83, 12167), (86, 12224), (89, 12299), (93, 12338), (95, 12359), (96, 12374), (100, 12407), (106, 12449), (114, 12521), (115, 12524), (116, 12533), (121, 12617), (124, 12650), (125, 12653), (126, 12659), (129, 12668), (130, 12671), (133, 12716), (134, 12734), (136, 12743), (145, 12824), (146, 12827), (147, 12836), (153, 12890), (157, 12911), (164, 12977), (172, 13061), (175, 13124), (176, 13136), (189, 13274), (190, 13298), (191, 13316), (192, 13331), (194, 13358), (199, 13409), (201, 13442), (202, 13451), (205, 13466), (210, 13532), (211, 13535), (214, 13589), (215, 13598), (216, 13628), (230, 13802), (231, 13811), (235, 13850), (244, 13991), (250, 14063), (252, 14075), (257, 14144), (259, 14159), (260, 14165), (264, 14213), (266, 14240), (268, 14249), (272, 14324), (274, 14330), (276, 14348), (278, 14375), (299, 14699), (305, 14792), (308, 14834), (310, 14852), (347, 15104), (351, 15170), (354, 15191), (355, 15200), (357, 15227), (361, 15305), (362, 15329), (365, 15422), (366, 15446), (367, 15470), (371, 15575), (374, 15605), (380, 15698), (381, 15752), (384, 15854), (387, 15953), (410, 16256), (419, 16403), (421, 16433), (426, 16469), (427, 16472), (433, 16547), (440, 16643),

Gene: Posh_18 Start: 11000, Stop: 16621, Start Num: 11

Candidate Starts for Posh_18:

(7, 10904), (Start: 11 @11000 has 17 MA's), (13, 11033), (15, 11213), (16, 11225), (19, 11264), (Start: 20 @11273 has 1 MA's), (22, 11297), (23, 11306), (26, 11381), (28, 11423), (38, 11612), (40, 11630), (41, 11654), (43, 11684), (51, 11780), (58, 11831), (60, 11873), (64, 11927), (68, 11978), (69, 11990), (72, 12032), (79, 12137), (83, 12164), (86, 12221), (89, 12296), (93, 12335), (95, 12356), (96, 12371), (100, 12404), (106, 12446), (114, 12518), (115, 12521), (116, 12530), (119, 12563), (121, 12614), (124, 12647), (125, 12650), (126, 12656), (129, 12665), (130, 12668), (133, 12713), (134, 12731), (136, 12740), (145, 12821), (146, 12824), (147, 12833), (153, 12887), (157, 12908), (164, 12974), (172, 13058), (175, 13121), (176, 13133), (187, 13253), (190, 13295), (192, 13328), (194, 13355), (199, 13406), (201, 13439), (202, 13448), (205, 13463), (211, 13532), (214, 13586), (215, 13595), (216, 13625), (220, 13715), (230, 13799), (244, 13988), (246, 14012), (249, 14051), (250, 14060), (252, 14072), (260, 14162), (264, 14210), (270, 14270), (272, 14321), (274, 14327), (278, 14372), (285, 14435), (287, 14495), (288, 14501), (299, 14693), (311, 14828), (347, 15068), (351, 15134),

(354, 15155), (355, 15164), (357, 15191), (361, 15269), (362, 15293), (365, 15386), (367, 15434), (371, 15539), (372, 15551), (374, 15569), (375, 15572), (380, 15662), (381, 15716), (382, 15740), (384, 15818), (387, 15917), (410, 16220), (412, 16241), (419, 16367), (421, 16397), (426, 16433), (427, 16436), (433, 16511), (440, 16607),

Gene: Pytheas_18 Start: 11131, Stop: 16767, Start Num: 11

Candidate Starts for Pytheas_18:

(Start: 11 @11131 has 17 MA's), (13, 11164), (15, 11344), (16, 11356), (19, 11395), (Start: 20 @11404 has 1 MA's), (22, 11428), (23, 11437), (26, 11512), (28, 11554), (38, 11743), (40, 11761), (41, 11785), (43, 11815), (47, 11857), (50, 11908), (51, 11911), (58, 11962), (60, 12004), (64, 12058), (68, 12109), (69, 12121), (72, 12163), (79, 12268), (83, 12295), (86, 12352), (89, 12427), (93, 12466), (95, 12487), (96, 12502), (100, 12535), (106, 12577), (114, 12649), (115, 12652), (116, 12661), (121, 12745), (124, 12778), (125, 12781), (126, 12787), (129, 12796), (130, 12799), (133, 12844), (134, 12862), (136, 12871), (146, 12955), (147, 12964), (153, 13018), (157, 13039), (160, 13069), (164, 13105), (172, 13189), (175, 13252), (176, 13264), (189, 13402), (190, 13426), (191, 13444), (192, 13459), (193, 13477), (194, 13486), (199, 13537), (201, 13570), (202, 13579), (205, 13594), (210, 13660), (211, 13663), (214, 13717), (215, 13726), (216, 13756), (220, 13846), (230, 13930), (232, 13960), (244, 14119), (246, 14143), (249, 14182), (250, 14191), (252, 14203), (260, 14293), (264, 14341), (268, 14377), (270, 14401), (272, 14452), (274, 14458), (278, 14503), (285, 14566), (299, 14827), (311, 14962), (347, 15202), (351, 15268), (354, 15289), (355, 15298), (357, 15325), (361, 15403), (362, 15427), (365, 15520), (367, 15568), (371, 15673), (372, 15685), (374, 15703), (380, 15796), (381, 15850), (382, 15874), (384, 15952), (387, 16051), (395, 16198), (412, 16387), (419, 16513), (421, 16543), (426, 16579), (427, 16582), (440, 16753),

Gene: RayTheFireFly_17 Start: 10898, Stop: 16588, Start Num: 1

Candidate Starts for RayTheFireFly_17:

(Start: 1 @10898 has 4 MA's), (2, 10928), (6, 11033), (8, 11153), (9, 11189), (15, 11426), (16, 11438), (19, 11477), (Start: 20 @11486 has 1 MA's), (22, 11510), (26, 11594), (28, 11636), (41, 11867), (46, 11936), (51, 11993), (60, 12086), (64, 12140), (68, 12191), (69, 12203), (72, 12245), (83, 12377), (90, 12518), (96, 12584), (98, 12590), (102, 12626), (106, 12659), (107, 12662), (113, 12722), (115, 12734), (117, 12746), (118, 12755), (122, 12797), (129, 12827), (131, 12845), (134, 12860), (147, 12920), (158, 13004), (161, 13034), (163, 13055), (166, 13070), (171, 13103), (177, 13226), (178, 13235), (180, 13247), (192, 13400), (199, 13478), (202, 13520), (206, 13562), (207, 13574), (211, 13604), (212, 13619), (214, 13658), (216, 13697), (219, 13727), (220, 13787), (230, 13871), (232, 13901), (239, 13994), (243, 14039), (250, 14132), (255, 14177), (258, 14219), (262, 14240), (263, 14264), (266, 14297), (269, 14309), (273, 14375), (277, 14408), (292, 14552), (296, 14573), (298, 14672), (300, 14705), (312, 14852), (313, 14855), (314, 14867), (316, 14888), (320, 14915), (327, 15032), (350, 15110), (352, 15131), (353, 15134), (370, 15458), (374, 15503), (384, 15755), (385, 15773), (391, 15920), (396, 16013), (404, 16106), (413, 16214), (414, 16220), (417, 16322), (418, 16328), (421, 16361), (422, 16364), (425, 16385), (429, 16427), (430, 16430), (432, 16466), (436, 16541), (437, 16547), (438, 16550), (441, 16577), (442, 16580),

Gene: Wrigley_18 Start: 10897, Stop: 16518, Start Num: 11

Candidate Starts for Wrigley_18:

(Start: 11 @10897 has 17 MA's), (13, 10930), (15, 11110), (16, 11122), (19, 11161), (Start: 20 @11170 has 1 MA's), (22, 11194), (23, 11203), (26, 11278), (28, 11320), (38, 11509), (40, 11527), (41, 11551), (43, 11581), (47, 11623), (51, 11677), (58, 11728), (60, 11770), (64, 11824), (68, 11875), (69, 11887), (72, 11929), (79, 12034), (83, 12061), (86, 12118), (89, 12193), (93, 12232), (95, 12253), (96, 12268), (100, 12301), (106, 12343), (114, 12415), (115, 12418), (116, 12427), (119, 12460), (121, 12511), (124, 12544), (125, 12547), (126, 12553), (129, 12562), (130, 12565), (133, 12610), (134, 12628), (136, 12637), (145, 12718), (146, 12721), (147, 12730), (153, 12784), (157, 12805), (164, 12871), (172, 12955), (175, 13018), (176, 13030), (187, 13150), (190, 13192), (192, 13225), (194, 13252), (199, 13303), (201, 13336), (202, 13345), (205, 13360), (211, 13429), (214, 13483), (215, 13492),

(216, 13522), (220, 13612), (230, 13696), (244, 13885), (246, 13909), (249, 13948), (250, 13957),
(252, 13969), (260, 14059), (264, 14107), (270, 14167), (272, 14218), (274, 14224), (278, 14269),
(285, 14332), (287, 14392), (288, 14398), (299, 14590), (311, 14725), (347, 14965), (351, 15031),
(354, 15052), (355, 15061), (357, 15088), (361, 15166), (362, 15190), (365, 15283), (367, 15331),
(371, 15436), (372, 15448), (374, 15466), (380, 15559), (381, 15613), (382, 15637), (384, 15715),
(387, 15814), (419, 16264), (421, 16294), (426, 16330), (427, 16333), (433, 16408), (440, 16504),