

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 311714 Report

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

Pham number 311714 has 48 members, 6 are drafts.

Phages represented in each track:

- Track 1 : Angelique_18
- Track 2 : EnalisNailo_18, Lilas_18
- Track 3 : Confidence_18
- Track 4 : Bradissa_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 : Chipko_17
- Track 18 : PatriciaStar_16
- Track 19 : Doggs_16
- Track 20 : Lucky10_16
- Track 21 : Morkie_16, PhorbesPhlower_16, InLimbo_17
- Track 22 : Birdsong_17, MortyNRick_17
- Track 23 : BearBQ_17
- Track 24 : Ecliptus_22
- Track 25 : ODay_22
- Track 26 : Crater_16, Apricot_17
- Track 27 : Kuwabara_17
- Track 28 : Keelan_49
- Track 29 : Volt_53, Ronaldo_54, Ziko_54
- Track 30 : Guey18_56
- Track 31 : Fryberger_51
- Track 32 : PSonyx_15
- Track 33 : Taotie_15
- Track 34 : MicyPS_15
- Track 35 : Sleepyhead_16
- Track 36 : Juicebox_17
- Track 37 : REQ3_48

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

The start number called the most often in the published annotations is 12, it was called in 17 of the 42 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:

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

- Apricot_17, BearBQ_17, Birdsong_17, Chipko_17, Coriander_17, Crater_16, Dmitri_17, Doggs_16, Ecliptus_22, Fryberger_51, Guey18_56, InLimbo_17, Juicebox_17, Keelan_49, Kuwabara_17, Lucky10_16, MicyPS_15, Moonflower_17, Morkie_16, MortyNRick_17, ODay_22, PSonyx_15, PatriciaStar_16, PhorbesPhlower_16, REQ3_48, RayTheFireFly_17, Ronaldo_54, Sleepyhead_16, Taotie_15, Volt_53, Ziko_54,

Summary by start number:

Start 1:

- Found in 7 of 48 (14.6%) of genes in pham
- Manual Annotations of this start: 4 of 42
- Called 85.7% of time when present
- Phage (with cluster) where this start called: Chipko_17 (DB), Coriander_17 (DB), Dmitri_17 (DB), Doggs_16 (DB), PatriciaStar_16 (DB), RayTheFireFly_17 (DB),

Start 3:

- Found in 3 of 48 (6.2%) 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 12:

- Found in 17 of 48 (35.4%) of genes in pham
- Manual Annotations of this start: 17 of 42
- 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 15:

- Found in 3 of 48 (6.2%) of genes in pham
- Manual Annotations of this start: 2 of 42

- Called 100.0% of time when present
- Phage (with cluster) where this start called: MicyPS_15 (EQ), PSonyx_15 (EQ), Taotie_15 (EQ),

Start 17:

- Found in 1 of 48 (2.1%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: REQ3_48 (singleton),

Start 23:

- Found in 3 of 48 (6.2%) of genes in pham
- Manual Annotations of this start: 3 of 42
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BearBQ_17 (DN), Birdsong_17 (DN), MortyNRick_17 (DN),

Start 24:

- Found in 2 of 48 (4.2%) of genes in pham
- Manual Annotations of this start: 2 of 42
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ecliptus_22 (DN), ODay_22 (DN),

Start 27:

- Found in 31 of 48 (64.6%) of genes in pham
- Manual Annotations of this start: 1 of 42
- Called 3.2% of time when present
- Phage (with cluster) where this start called: Lucky10_16 (DH),

Start 28:

- Found in 1 of 48 (2.1%) of genes in pham
- Manual Annotations of this start: 1 of 42
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sleepyhead_16 (singleton),

Start 29:

- Found in 16 of 48 (33.3%) of genes in pham
- Manual Annotations of this start: 12 of 42
- Called 81.2% of time when present
- Phage (with cluster) where this start called: Apricot_17 (DN3), Crater_16 (DN3), Fryberger_51 (DP), Guey18_56 (DP), InLimbo_17 (DH), Juicebox_17 (singleton), Keelan_49 (DP), Kuwabara_17 (DN4), Morkie_16 (DH), PhorbesPhlower_16 (DH), Ronaldo_54 (DP), Volt_53 (DP), Ziko_54 (DP),

Summary by clusters:

There are 15 clusters represented in this pham: DN, CY3, CY1, CY7, DH, CY5, CY2, CY4, DB, singleton, DN4, DN3, EQ, DP, CY6,

Info for manual annotations of cluster CY1:

- Start number 12 was manually annotated 9 times for cluster CY1.

Info for manual annotations of cluster CY2:

- Start number 12 was manually annotated 1 time for cluster CY2.

Info for manual annotations of cluster CY3:

- Start number 12 was manually annotated 2 times for cluster CY3.

Info for manual annotations of cluster CY4:

- Start number 12 was manually annotated 2 times for cluster CY4.

Info for manual annotations of cluster CY5:

- Start number 12 was manually annotated 1 time for cluster CY5.

Info for manual annotations of cluster CY6:

- Start number 12 was manually annotated 1 time for cluster CY6.

Info for manual annotations of cluster CY7:

- Start number 12 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 27 was manually annotated 1 time for cluster DH.
- Start number 29 was manually annotated 2 times for cluster DH.

Info for manual annotations of cluster DN:

- Start number 23 was manually annotated 3 times for cluster DN.
- Start number 24 was manually annotated 2 times for cluster DN.

Info for manual annotations of cluster DN3:

- Start number 29 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DN4:

- Start number 29 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster DP:

- Start number 29 was manually annotated 6 times for cluster DP.

Info for manual annotations of cluster EQ:

- Start number 15 was manually annotated 2 times for cluster EQ.

Gene Information:

Gene: Angelique_18 Start: 11177, Stop: 16801, Start Num: 12

Candidate Starts for Angelique_18:

(Start: 12 @11177 has 17 MA's), (14, 11210), (20, 11390), (22, 11402), (26, 11441), (Start: 27 @11450 has 1 MA's), (30, 11474), (36, 11558), (39, 11600), (75, 11831), (76, 11858), (87, 11954), (88, 11957), (92, 11978), (101, 12050), (105, 12104), (111, 12155), (113, 12167), (115, 12194), (116, 12209), (129, 12314), (130, 12326), (139, 12398), (141, 12419), (150, 12473), (155, 12512), (157, 12533), (159, 12548), (166, 12581), (169, 12593), (175, 12623), (179, 12656), (189, 12698), (200, 12791), (206, 12824), (207, 12827), (209, 12833), (212, 12842), (213, 12845), (220, 12908), (223, 12941), (230, 12980), (238, 13010), (251, 13094), (262, 13151), (275, 13259), (278, 13298), (281, 13310), (303,

13472), (306, 13490), (307, 13505), (311, 13532), (318, 13583), (319, 13598), (322, 13625), (323, 13631), (333, 13709), (338, 13763), (339, 13772), (341, 13802), (366, 13976), (369, 14006), (406, 14237), (409, 14249), (424, 14339), (432, 14387), (438, 14423), (441, 14447), (449, 14498), (451, 14504), (457, 14549), (463, 14570), (476, 14681), (496, 14873), (518, 15008), (561, 15248), (566, 15314), (571, 15335), (572, 15344), (577, 15371), (583, 15449), (584, 15473), (596, 15614), (609, 15749), (614, 15776), (621, 15842), (624, 15896), (637, 15998), (649, 16097), (669, 16232), (700, 16421), (717, 16547), (722, 16577), (733, 16613), (734, 16616), (746, 16691),

Gene: Apricot_17 Start: 9635, Stop: 15046, Start Num: 29

Candidate Starts for Apricot_17:

(Start: 27 @9629 has 1 MA's), (Start: 29 @9635 has 12 MA's), (35, 9713), (38, 9755), (39, 9767), (61, 9908), (63, 9914), (70, 9950), (76, 10010), (79, 10028), (80, 10046), (84, 10067), (89, 10118), (90, 10121), (91, 10124), (94, 10148), (95, 10151), (103, 10217), (105, 10247), (114, 10325), (119, 10370), (121, 10394), (128, 10448), (131, 10469), (148, 10607), (154, 10643), (156, 10670), (159, 10691), (163, 10706), (171, 10745), (174, 10757), (176, 10769), (186, 10829), (189, 10841), (202, 10892), (227, 10967), (231, 10988), (242, 11036), (245, 11054), (263, 11123), (267, 11147), (273, 11204), (276, 11234), (278, 11267), (294, 11384), (303, 11441), (306, 11459), (307, 11474), (318, 11552), (330, 11657), (331, 11669), (332, 11675), (342, 11789), (343, 11792), (353, 11876), (356, 11906), (358, 11918), (366, 11969), (370, 12002), (377, 12071), (380, 12086), (388, 12128), (398, 12182), (401, 12197), (407, 12236), (409, 12242), (412, 12266), (422, 12326), (424, 12332), (425, 12335), (435, 12404), (449, 12491), (451, 12497), (452, 12506), (457, 12542), (464, 12566), (483, 12677), (487, 12689), (508, 12896), (514, 12959), (515, 12968), (520, 13001), (526, 13058), (528, 13085), (538, 13151), (540, 13169), (542, 13181), (561, 13208), (564, 13238), (566, 13274), (571, 13295), (574, 13307), (577, 13331), (583, 13409), (584, 13433), (586, 13448), (594, 13538), (605, 13658), (606, 13673), (608, 13694), (609, 13703), (620, 13790), (644, 14033), (656, 14123), (675, 14273), (680, 14297), (682, 14306), (685, 14333), (690, 14381), (694, 14399), (696, 14417), (699, 14441), (709, 14501), (729, 14624), (736, 14675), (741, 14702), (751, 14801), (755, 14813), (769, 14909), (772, 14927), (773, 14939), (777, 15029),

Gene: BearBQ_17 Start: 9908, Stop: 16477, Start Num: 23

Candidate Starts for BearBQ_17:

(Start: 23 @9908 has 3 MA's), (30, 9965), (32, 9983), (38, 10067), (39, 10079), (41, 10091), (47, 10115), (51, 10145), (58, 10190), (61, 10220), (63, 10226), (75, 10295), (76, 10322), (79, 10340), (80, 10358), (83, 10370), (84, 10379), (89, 10430), (90, 10433), (91, 10436), (94, 10460), (95, 10463), (104, 10550), (105, 10559), (114, 10637), (119, 10682), (121, 10706), (125, 10739), (126, 10742), (135, 10829), (138, 10850), (154, 10955), (156, 10982), (161, 11009), (166, 11036), (167, 11039), (176, 11081), (177, 11099), (178, 11102), (194, 11174), (201, 11216), (210, 11237), (218, 11264), (221, 11273), (226, 11288), (229, 11306), (238, 11339), (242, 11372), (249, 11405), (250, 11414), (251, 11423), (255, 11444), (260, 11468), (263, 11483), (266, 11504), (267, 11507), (273, 11564), (276, 11594), (278, 11627), (300, 11765), (303, 11801), (307, 11834), (311, 11861), (314, 11888), (317, 11906), (324, 11966), (328, 12008), (331, 12029), (337, 12080), (339, 12101), (342, 12149), (343, 12152), (361, 12290), (366, 12329), (372, 12371), (377, 12431), (383, 12458), (387, 12479), (397, 12536), (401, 12557), (412, 12629), (417, 12671), (418, 12674), (426, 12707), (430, 12731), (432, 12743), (441, 12803), (449, 12854), (451, 12860), (452, 12869), (458, 12911), (464, 12929), (467, 12959), (503, 13157), (512, 13238), (515, 13256), (520, 13289), (521, 13301), (525, 13337), (528, 13373), (531, 13397), (533, 13400), (537, 13421), (540, 13457), (542, 13469), (543, 13508), (544, 13535), (545, 13562), (546, 13634), (547, 13664), (548, 13700), (549, 13868), (550, 13946), (551, 13997), (552, 14150), (553, 14285), (554, 14294), (555, 14315), (556, 14318), (557, 14327), (558, 14345), (559, 14375), (560, 14408), (561, 14612), (563, 14630), (564, 14642), (566, 14678), (571, 14699), (581, 14789), (583, 14813), (584, 14837), (594, 14945), (604, 15068), (606, 15092), (608, 15113), (609, 15122), (610, 15125), (615, 15152), (620, 15212), (644, 15455), (653, 15536), (654, 15539), (656, 15545), (675, 15704), (680, 15728), (682, 15737), (688, 15782), (689, 15794), (694, 15827), (696, 15845), (709, 15938), (725, 16043), (731, 16064), (740, 16118), (744, 16157), (750,

16229), (759, 16259), (765, 16298), (767, 16331), (772, 16370), (775, 16418), (776, 16451), (778, 16463),

Gene: BeeGee_18 Start: 10997, Stop: 16621, Start Num: 12

Candidate Starts for BeeGee_18:

(11, 10982), (Start: 12 @10997 has 17 MA's), (14, 11030), (20, 11210), (22, 11222), (26, 11261), (Start: 27 @11270 has 1 MA's), (30, 11294), (31, 11303), (36, 11378), (39, 11420), (68, 11609), (72, 11627), (75, 11651), (77, 11681), (87, 11774), (88, 11777), (96, 11828), (101, 11870), (105, 11924), (111, 11975), (113, 11987), (116, 12029), (129, 12134), (133, 12161), (139, 12218), (150, 12293), (155, 12332), (157, 12353), (159, 12368), (175, 12443), (188, 12515), (189, 12518), (190, 12527), (195, 12560), (200, 12611), (206, 12644), (207, 12647), (209, 12653), (212, 12662), (213, 12665), (219, 12710), (220, 12728), (222, 12737), (233, 12812), (234, 12818), (235, 12821), (238, 12830), (246, 12884), (250, 12905), (255, 12935), (262, 12971), (273, 13055), (278, 13118), (299, 13250), (303, 13292), (307, 13325), (311, 13352), (318, 13403), (321, 13436), (322, 13445), (325, 13460), (333, 13529), (338, 13583), (339, 13592), (341, 13622), (355, 13742), (357, 13754), (366, 13796), (401, 14024), (405, 14048), (406, 14057), (409, 14069), (422, 14153), (424, 14159), (426, 14171), (432, 14207), (441, 14267), (449, 14318), (451, 14324), (457, 14369), (496, 14693), (518, 14828), (561, 15068), (566, 15134), (571, 15155), (572, 15164), (577, 15191), (583, 15269), (584, 15293), (592, 15386), (594, 15410), (596, 15434), (606, 15539), (609, 15569), (621, 15662), (624, 15716), (637, 15818), (649, 15917), (700, 16241), (717, 16367), (722, 16397), (733, 16433), (734, 16436), (746, 16511), (760, 16607),

Gene: Birdsong_17 Start: 9908, Stop: 15370, Start Num: 23

Candidate Starts for Birdsong_17:

(Start: 23 @9908 has 3 MA's), (30, 9965), (32, 9983), (38, 10067), (39, 10079), (41, 10091), (47, 10115), (51, 10145), (58, 10190), (61, 10220), (63, 10226), (75, 10295), (76, 10322), (79, 10340), (80, 10358), (83, 10370), (84, 10379), (89, 10430), (90, 10433), (91, 10436), (94, 10460), (95, 10463), (104, 10550), (105, 10559), (114, 10637), (119, 10682), (121, 10706), (125, 10739), (126, 10742), (135, 10829), (138, 10850), (154, 10955), (156, 10982), (161, 11009), (166, 11036), (167, 11039), (176, 11081), (177, 11099), (178, 11102), (194, 11174), (201, 11216), (210, 11237), (218, 11264), (221, 11273), (226, 11288), (229, 11306), (238, 11339), (242, 11372), (249, 11405), (250, 11414), (251, 11423), (255, 11444), (260, 11468), (263, 11483), (266, 11504), (267, 11507), (273, 11564), (276, 11594), (278, 11627), (303, 11801), (307, 11834), (311, 11861), (314, 11888), (317, 11906), (324, 11966), (328, 12008), (331, 12029), (337, 12080), (339, 12101), (342, 12149), (343, 12152), (361, 12290), (366, 12329), (372, 12371), (377, 12431), (383, 12458), (387, 12479), (397, 12536), (401, 12557), (412, 12629), (417, 12671), (418, 12674), (426, 12707), (432, 12743), (441, 12803), (449, 12854), (451, 12860), (452, 12869), (453, 12878), (458, 12911), (464, 12929), (467, 12959), (502, 13154), (503, 13157), (512, 13238), (515, 13256), (520, 13289), (521, 13301), (525, 13337), (528, 13373), (531, 13397), (533, 13400), (537, 13421), (540, 13457), (542, 13469), (561, 13496), (563, 13514), (564, 13526), (566, 13562), (571, 13583), (581, 13673), (583, 13697), (584, 13721), (594, 13829), (604, 13952), (606, 13976), (609, 14006), (610, 14009), (615, 14036), (644, 14339), (653, 14420), (654, 14423), (656, 14429), (676, 14594), (680, 14612), (682, 14621), (688, 14666), (689, 14678), (694, 14714), (696, 14732), (709, 14831), (725, 14936), (731, 14957), (740, 15011), (744, 15050), (750, 15122), (759, 15152), (765, 15191), (767, 15224), (772, 15263), (775, 15311), (776, 15344), (778, 15356),

Gene: Bradissa_18 Start: 11180, Stop: 16804, Start Num: 12

Candidate Starts for Bradissa_18:

(Start: 12 @11180 has 17 MA's), (14, 11213), (20, 11393), (22, 11405), (26, 11444), (Start: 27 @11453 has 1 MA's), (30, 11477), (36, 11561), (38, 11591), (39, 11603), (75, 11834), (76, 11861), (87, 11957), (88, 11960), (92, 11981), (95, 12005), (101, 12053), (105, 12107), (111, 12158), (113, 12170), (115, 12197), (116, 12212), (129, 12317), (139, 12401), (141, 12422), (150, 12476), (157, 12536), (166, 12584), (169, 12596), (175, 12626), (179, 12659), (189, 12701), (195, 12743), (198, 12764), (200,

12794), (206, 12827), (207, 12830), (209, 12836), (212, 12845), (213, 12848), (220, 12911), (223, 12944), (230, 12983), (238, 13013), (251, 13097), (262, 13154), (275, 13262), (278, 13301), (281, 13313), (303, 13475), (306, 13493), (307, 13508), (311, 13535), (318, 13586), (319, 13601), (322, 13628), (333, 13712), (338, 13766), (339, 13775), (341, 13805), (366, 13979), (369, 14009), (380, 14096), (406, 14240), (409, 14252), (424, 14342), (432, 14390), (441, 14450), (449, 14501), (451, 14507), (457, 14552), (476, 14684), (518, 15011), (528, 15116), (561, 15251), (564, 15281), (566, 15317), (571, 15338), (572, 15347), (577, 15374), (583, 15452), (584, 15476), (596, 15617), (606, 15722), (609, 15752), (610, 15755), (621, 15845), (624, 15899), (637, 16001), (669, 16235), (697, 16403), (700, 16424), (717, 16550), (722, 16580), (733, 16616), (734, 16619),

Gene: BritBrat_18 Start: 11003, Stop: 16657, Start Num: 12

Candidate Starts for BritBrat_18:

(Start: 12 @11003 has 17 MA's), (14, 11036), (20, 11216), (22, 11228), (26, 11267), (Start: 27 @11276 has 1 MA's), (30, 11300), (31, 11309), (36, 11384), (39, 11426), (68, 11615), (72, 11633), (75, 11657), (77, 11687), (87, 11780), (88, 11783), (95, 11828), (96, 11834), (101, 11876), (105, 11930), (111, 11981), (113, 11993), (116, 12035), (129, 12140), (133, 12167), (139, 12224), (150, 12299), (155, 12338), (157, 12359), (159, 12374), (166, 12407), (175, 12449), (188, 12521), (189, 12524), (190, 12533), (200, 12617), (206, 12650), (207, 12653), (209, 12659), (212, 12668), (213, 12671), (219, 12716), (220, 12734), (222, 12743), (234, 12824), (235, 12827), (238, 12836), (246, 12890), (250, 12911), (262, 12977), (273, 13061), (278, 13124), (281, 13136), (302, 13274), (303, 13298), (306, 13316), (307, 13331), (311, 13358), (318, 13409), (321, 13442), (322, 13451), (325, 13466), (332, 13532), (333, 13535), (338, 13589), (339, 13598), (341, 13628), (366, 13802), (367, 13811), (374, 13850), (393, 13991), (406, 14063), (409, 14075), (418, 14144), (422, 14159), (424, 14165), (432, 14213), (436, 14240), (438, 14249), (449, 14324), (451, 14330), (453, 14348), (457, 14375), (496, 14699), (509, 14792), (512, 14834), (515, 14852), (561, 15104), (566, 15170), (571, 15191), (572, 15200), (577, 15227), (583, 15305), (584, 15329), (592, 15422), (594, 15446), (596, 15470), (606, 15575), (609, 15605), (621, 15698), (624, 15752), (637, 15854), (649, 15953), (697, 16256), (717, 16403), (722, 16433), (733, 16469), (734, 16472), (746, 16547), (760, 16643),

Gene: Cashline_18 Start: 10857, Stop: 16481, Start Num: 12

Candidate Starts for Cashline_18:

(Start: 12 @10857 has 17 MA's), (14, 10890), (20, 11070), (22, 11082), (26, 11121), (Start: 27 @11130 has 1 MA's), (30, 11154), (31, 11163), (36, 11238), (39, 11280), (68, 11469), (72, 11487), (75, 11511), (77, 11541), (87, 11634), (88, 11637), (96, 11688), (101, 11730), (105, 11784), (111, 11835), (113, 11847), (116, 11889), (129, 11994), (133, 12021), (139, 12078), (150, 12153), (155, 12192), (157, 12213), (159, 12228), (166, 12261), (175, 12303), (188, 12375), (189, 12378), (190, 12387), (200, 12471), (206, 12504), (207, 12507), (209, 12513), (212, 12522), (213, 12525), (219, 12570), (222, 12597), (233, 12672), (234, 12678), (235, 12681), (238, 12690), (246, 12744), (250, 12765), (255, 12795), (262, 12831), (273, 12915), (278, 12978), (281, 12990), (302, 13128), (303, 13152), (306, 13170), (307, 13185), (311, 13212), (318, 13263), (321, 13296), (322, 13305), (325, 13320), (332, 13386), (333, 13389), (338, 13443), (339, 13452), (341, 13482), (366, 13656), (367, 13665), (374, 13704), (393, 13845), (406, 13917), (409, 13929), (418, 13998), (422, 14013), (424, 14019), (432, 14067), (451, 14184), (453, 14202), (457, 14229), (496, 14553), (518, 14688), (561, 14928), (566, 14994), (571, 15015), (572, 15024), (577, 15051), (583, 15129), (584, 15153), (592, 15246), (594, 15270), (596, 15294), (606, 15399), (609, 15429), (621, 15522), (624, 15576), (637, 15678), (649, 15777), (700, 16101), (717, 16227), (722, 16257), (733, 16293), (734, 16296), (746, 16371), (760, 16467),

Gene: Chipko_17 Start: 10890, Stop: 16577, Start Num: 1

Candidate Starts for Chipko_17:

(Start: 1 @10890 has 4 MA's), (2, 10920), (4, 10974), (6, 11025), (10, 11181), (13, 11223), (20, 11418), (22, 11430), (26, 11469), (Start: 27 @11478 has 1 MA's), (30, 11502), (36, 11586), (39, 11628), (75, 11859), (81, 11928), (88, 11985), (101, 12078), (105, 12132), (111, 12183), (113, 12195), (116,

12237), (133, 12369), (146, 12465), (152, 12510), (159, 12576), (160, 12579), (161, 12582), (168, 12618), (176, 12654), (178, 12675), (184, 12705), (186, 12714), (189, 12726), (192, 12738), (194, 12747), (201, 12789), (204, 12798), (217, 12837), (220, 12852), (234, 12900), (238, 12912), (251, 12996), (257, 13026), (261, 13047), (264, 13062), (269, 13095), (283, 13218), (284, 13227), (286, 13239), (307, 13392), (313, 13443), (318, 13470), (322, 13512), (327, 13554), (328, 13566), (333, 13596), (334, 13611), (338, 13650), (341, 13689), (344, 13719), (351, 13779), (366, 13863), (369, 13893), (383, 13992), (390, 14031), (406, 14124), (413, 14169), (426, 14232), (430, 14256), (436, 14289), (437, 14292), (439, 14301), (450, 14367), (452, 14379), (482, 14544), (485, 14553), (489, 14565), (494, 14664), (498, 14697), (519, 14844), (520, 14847), (521, 14859), (523, 14880), (527, 14907), (541, 15024), (565, 15102), (567, 15123), (571, 15144), (587, 15279), (589, 15297), (606, 15462), (609, 15492), (615, 15522), (632, 15726), (637, 15744), (641, 15762), (664, 15939), (671, 15999), (672, 16008), (681, 16053), (716, 16317), (722, 16350), (724, 16353), (731, 16374), (738, 16416), (739, 16419), (744, 16455), (754, 16530), (755, 16536), (757, 16539), (762, 16566), (763, 16569),

Gene: Confidence_18 Start: 10997, Stop: 16651, Start Num: 12

Candidate Starts for Confidence_18:

(Start: 12 @10997 has 17 MA's), (14, 11030), (20, 11210), (22, 11222), (26, 11261), (Start: 27 @11270 has 1 MA's), (30, 11294), (31, 11303), (36, 11378), (39, 11420), (68, 11609), (75, 11651), (77, 11681), (82, 11723), (87, 11774), (88, 11777), (96, 11828), (101, 11870), (105, 11924), (111, 11975), (113, 11987), (116, 12029), (129, 12134), (133, 12161), (139, 12218), (150, 12293), (155, 12332), (157, 12353), (159, 12368), (166, 12401), (175, 12443), (188, 12515), (189, 12518), (190, 12527), (200, 12611), (206, 12644), (207, 12647), (209, 12653), (212, 12662), (213, 12665), (219, 12710), (220, 12728), (222, 12737), (233, 12812), (234, 12818), (235, 12821), (238, 12830), (246, 12884), (250, 12905), (255, 12935), (262, 12971), (273, 13055), (278, 13118), (281, 13130), (302, 13268), (303, 13292), (306, 13310), (307, 13325), (311, 13352), (318, 13403), (321, 13436), (322, 13445), (325, 13460), (332, 13526), (333, 13529), (338, 13583), (339, 13592), (341, 13622), (366, 13796), (367, 13805), (374, 13844), (393, 13985), (406, 14057), (409, 14069), (418, 14138), (422, 14153), (424, 14159), (432, 14207), (451, 14324), (453, 14342), (457, 14369), (496, 14693), (509, 14786), (512, 14828), (515, 14846), (561, 15098), (566, 15164), (571, 15185), (572, 15194), (577, 15221), (583, 15299), (584, 15323), (592, 15416), (596, 15464), (606, 15569), (609, 15599), (621, 15692), (624, 15746), (637, 15848), (649, 15947), (697, 16250), (700, 16271), (717, 16397), (722, 16427), (733, 16463), (734, 16466), (746, 16541), (760, 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), (9, 11141), (10, 11177), (20, 11414), (22, 11426), (26, 11465), (30, 11498), (36, 11582), (39, 11624), (50, 11690), (54, 11708), (72, 11831), (75, 11855), (76, 11882), (88, 11981), (101, 12074), (105, 12128), (111, 12179), (113, 12191), (116, 12233), (152, 12506), (163, 12587), (176, 12650), (177, 12668), (178, 12671), (189, 12722), (194, 12743), (201, 12785), (217, 12833), (220, 12848), (230, 12878), (234, 12896), (238, 12908), (267, 13076), (268, 13079), (285, 13229), (292, 13298), (303, 13358), (307, 13391), (311, 13418), (322, 13511), (327, 13553), (328, 13565), (333, 13595), (334, 13610), (338, 13649), (341, 13688), (344, 13718), (351, 13778), (366, 13862), (369, 13892), (406, 14123), (413, 14168), (426, 14231), (430, 14255), (436, 14288), (439, 14300), (444, 14339), (450, 14366), (455, 14399), (461, 14429), (478, 14534), (482, 14543), (489, 14564), (494, 14663), (519, 14843), (520, 14846), (521, 14858), (523, 14879), (527, 14906), (565, 15101), (567, 15122), (569, 15125), (571, 15143), (587, 15278), (605, 15446), (609, 15491), (615, 15521), (624, 15629), (637, 15731), (649, 15830), (664, 15926), (671, 15986), (681, 16040), (714, 16298), (716, 16304), (722, 16337), (724, 16340), (731, 16361), (738, 16403), (739, 16406), (744, 16442), (754, 16517), (755, 16523), (757, 16526), (762, 16553),

Gene: Crater_16 Start: 9635, Stop: 15046, Start Num: 29

Candidate Starts for Crater_16:

(Start: 27 @9629 has 1 MA's), (Start: 29 @9635 has 12 MA's), (35, 9713), (38, 9755), (39, 9767), (61, 9908), (63, 9914), (70, 9950), (76, 10010), (79, 10028), (80, 10046), (84, 10067), (89, 10118), (90, 10121), (91, 10124), (94, 10148), (95, 10151), (103, 10217), (105, 10247), (114, 10325), (119, 10370), (121, 10394), (128, 10448), (131, 10469), (148, 10607), (154, 10643), (156, 10670), (159, 10691), (163, 10706), (171, 10745), (174, 10757), (176, 10769), (186, 10829), (189, 10841), (202, 10892), (227, 10967), (231, 10988), (242, 11036), (245, 11054), (263, 11123), (267, 11147), (273, 11204), (276, 11234), (278, 11267), (294, 11384), (303, 11441), (306, 11459), (307, 11474), (318, 11552), (330, 11657), (331, 11669), (332, 11675), (342, 11789), (343, 11792), (353, 11876), (356, 11906), (358, 11918), (366, 11969), (370, 12002), (377, 12071), (380, 12086), (388, 12128), (398, 12182), (401, 12197), (407, 12236), (409, 12242), (412, 12266), (422, 12326), (424, 12332), (425, 12335), (435, 12404), (449, 12491), (451, 12497), (452, 12506), (457, 12542), (464, 12566), (483, 12677), (487, 12689), (508, 12896), (514, 12959), (515, 12968), (520, 13001), (526, 13058), (528, 13085), (538, 13151), (540, 13169), (542, 13181), (561, 13208), (564, 13238), (566, 13274), (571, 13295), (574, 13307), (577, 13331), (583, 13409), (584, 13433), (586, 13448), (594, 13538), (605, 13658), (606, 13673), (608, 13694), (609, 13703), (620, 13790), (644, 14033), (656, 14123), (675, 14273), (680, 14297), (682, 14306), (685, 14333), (690, 14381), (694, 14399), (696, 14417), (699, 14441), (709, 14501), (729, 14624), (736, 14675), (741, 14702), (751, 14801), (755, 14813), (769, 14909), (772, 14927), (773, 14939), (777, 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), (10, 11162), (13, 11204), (20, 11399), (22, 11411), (26, 11450), (Start: 27 @11459 has 1 MA's), (30, 11483), (36, 11567), (39, 11609), (75, 11840), (81, 11909), (88, 11966), (101, 12059), (105, 12113), (111, 12164), (113, 12176), (116, 12218), (132, 12347), (133, 12350), (152, 12491), (153, 12494), (168, 12599), (176, 12635), (177, 12653), (178, 12656), (189, 12707), (194, 12728), (201, 12770), (212, 12800), (213, 12803), (217, 12818), (220, 12833), (238, 12893), (257, 13007), (261, 13028), (266, 13058), (269, 13076), (283, 13199), (286, 13220), (313, 13424), (321, 13484), (322, 13493), (325, 13508), (327, 13535), (328, 13547), (333, 13577), (338, 13631), (341, 13670), (344, 13700), (351, 13760), (354, 13781), (366, 13844), (369, 13874), (390, 14012), (406, 14105), (413, 14150), (426, 14213), (430, 14237), (436, 14270), (437, 14273), (439, 14282), (450, 14348), (482, 14525), (485, 14534), (489, 14546), (494, 14645), (498, 14678), (519, 14825), (520, 14828), (521, 14840), (523, 14861), (527, 14888), (541, 15005), (565, 15083), (567, 15104), (571, 15125), (587, 15260), (609, 15476), (611, 15485), (615, 15506), (637, 15728), (641, 15746), (664, 15923), (671, 15983), (672, 15992), (681, 16037), (716, 16301), (722, 16334), (724, 16337), (731, 16358), (738, 16400), (739, 16403), (744, 16439), (754, 16514), (755, 16520), (757, 16523), (762, 16550), (763, 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), (9, 10841), (10, 10877), (20, 11114), (22, 11126), (26, 11165), (30, 11198), (36, 11282), (39, 11324), (50, 11390), (54, 11408), (72, 11531), (75, 11555), (76, 11582), (88, 11681), (101, 11774), (105, 11828), (111, 11879), (113, 11891), (116, 11933), (152, 12206), (160, 12275), (161, 12278), (163, 12287), (176, 12350), (177, 12368), (178, 12371), (189, 12422), (194, 12443), (201, 12485), (217, 12533), (220, 12548), (230, 12578), (234, 12596), (238, 12608), (267, 12776), (268, 12779), (285, 12929), (292, 12998), (303, 13058), (307, 13091), (311, 13118), (322, 13211), (327, 13253), (328, 13265), (333, 13295), (334, 13310), (338, 13349), (341, 13388), (344, 13418), (351, 13478), (366, 13562), (369, 13592), (406, 13823), (413, 13868), (426, 13931), (430, 13955), (436, 13988), (439, 14000), (444, 14039), (450, 14066), (455, 14099), (461, 14129), (478, 14234), (482, 14243), (489, 14264), (494, 14363), (498, 14396), (520, 14546), (521, 14558), (523, 14579), (527, 14606), (565, 14801), (567, 14822), (569, 14825), (571, 14843), (587, 14978), (605, 15146), (609, 15191), (615, 15221), (624, 15329), (631, 15401), (637, 15431), (649, 15530), (664, 15629), (671, 15689), (686, 15782), (704, 15890), (707, 15902), (714, 15998), (716, 16004), (722, 16037), (724, 16040), (738, 16103), (739, 16106), (754, 16217), (755,

16223), (757, 16226), (762, 16253), (763, 16256),

Gene: EMSquaredA_18 Start: 11003, Stop: 16657, Start Num: 12

Candidate Starts for EMSquaredA_18:

(Start: 12 @11003 has 17 MA's), (14, 11036), (20, 11216), (22, 11228), (26, 11267), (Start: 27 @11276 has 1 MA's), (30, 11300), (31, 11309), (36, 11384), (39, 11426), (68, 11615), (72, 11633), (75, 11657), (77, 11687), (87, 11780), (88, 11783), (95, 11828), (96, 11834), (101, 11876), (105, 11930), (111, 11981), (113, 11993), (116, 12035), (129, 12140), (133, 12167), (139, 12224), (150, 12299), (155, 12338), (157, 12359), (159, 12374), (166, 12407), (175, 12449), (188, 12521), (189, 12524), (190, 12533), (200, 12617), (206, 12650), (207, 12653), (209, 12659), (212, 12668), (213, 12671), (219, 12716), (220, 12734), (222, 12743), (234, 12824), (235, 12827), (238, 12836), (246, 12890), (250, 12911), (262, 12977), (273, 13061), (278, 13124), (281, 13136), (302, 13274), (303, 13298), (306, 13316), (307, 13331), (311, 13358), (318, 13409), (321, 13442), (322, 13451), (325, 13466), (332, 13532), (333, 13535), (338, 13589), (339, 13598), (341, 13628), (366, 13802), (367, 13811), (374, 13850), (393, 13991), (406, 14063), (409, 14075), (418, 14144), (422, 14159), (424, 14165), (432, 14213), (436, 14240), (438, 14249), (449, 14324), (451, 14330), (453, 14348), (457, 14375), (496, 14699), (509, 14792), (512, 14834), (515, 14852), (561, 15104), (566, 15170), (571, 15191), (572, 15200), (577, 15227), (583, 15305), (584, 15329), (592, 15422), (594, 15446), (596, 15470), (606, 15575), (609, 15605), (621, 15698), (624, 15752), (637, 15854), (649, 15953), (697, 16256), (717, 16403), (722, 16433), (733, 16469), (734, 16472), (746, 16547), (760, 16643),

Gene: Ecliptus_22 Start: 11993, Stop: 17506, Start Num: 24

Candidate Starts for Ecliptus_22:

(Start: 24 @11993 has 2 MA's), (Start: 27 @12026 has 1 MA's), (Start: 29 @12032 has 12 MA's), (38, 12152), (39, 12164), (51, 12230), (61, 12305), (76, 12407), (80, 12443), (84, 12464), (90, 12518), (91, 12521), (95, 12548), (102, 12599), (104, 12635), (105, 12644), (114, 12722), (119, 12767), (121, 12791), (125, 12824), (126, 12827), (138, 12935), (154, 13040), (156, 13067), (161, 13094), (163, 13103), (166, 13121), (167, 13124), (176, 13166), (177, 13184), (178, 13187), (194, 13259), (201, 13301), (210, 13322), (213, 13328), (218, 13349), (221, 13358), (226, 13373), (229, 13391), (238, 13424), (242, 13457), (249, 13490), (250, 13499), (251, 13508), (255, 13529), (260, 13553), (262, 13565), (263, 13568), (266, 13589), (267, 13592), (273, 13649), (276, 13679), (296, 13838), (297, 13841), (302, 13862), (303, 13886), (307, 13919), (314, 13973), (316, 13988), (328, 14093), (331, 14114), (333, 14123), (342, 14234), (343, 14237), (366, 14414), (372, 14456), (377, 14516), (379, 14525), (387, 14564), (393, 14603), (397, 14621), (401, 14642), (406, 14675), (412, 14714), (418, 14759), (426, 14792), (432, 14828), (441, 14888), (451, 14945), (459, 14999), (488, 15152), (501, 15305), (510, 15359), (514, 15404), (515, 15413), (520, 15446), (533, 15551), (540, 15608), (561, 15647), (566, 15713), (571, 15734), (582, 15842), (583, 15848), (584, 15872), (594, 15986), (596, 16010), (602, 16085), (606, 16121), (608, 16142), (609, 16151), (610, 16154), (615, 16181), (644, 16484), (653, 16565), (654, 16568), (656, 16574), (676, 16739), (680, 16757), (682, 16766), (688, 16811), (689, 16823), (694, 16856), (696, 16874), (709, 16967), (725, 17072), (731, 17093), (740, 17147), (744, 17186), (750, 17258), (759, 17288), (765, 17327), (767, 17360), (772, 17399), (775, 17447), (776, 17480), (778, 17492),

Gene: EnalisNailo_18 Start: 11182, Stop: 16806, Start Num: 12

Candidate Starts for EnalisNailo_18:

(Start: 12 @11182 has 17 MA's), (14, 11215), (20, 11395), (22, 11407), (26, 11446), (Start: 27 @11455 has 1 MA's), (30, 11479), (36, 11563), (38, 11593), (39, 11605), (75, 11836), (76, 11863), (87, 11959), (88, 11962), (92, 11983), (95, 12007), (101, 12055), (105, 12109), (111, 12160), (113, 12172), (115, 12199), (116, 12214), (129, 12319), (139, 12403), (141, 12424), (150, 12478), (155, 12517), (157, 12538), (166, 12586), (169, 12598), (175, 12628), (179, 12661), (189, 12703), (195, 12745), (198, 12766), (200, 12796), (206, 12829), (207, 12832), (209, 12838), (212, 12847), (213, 12850), (220, 12913), (223, 12946), (230, 12985), (238, 13015), (251, 13099), (262, 13156), (275, 13264), (278, 13303), (281, 13315), (303, 13477), (306, 13495), (307, 13510), (311, 13537), (318, 13588), (319,

13603), (322, 13630), (333, 13714), (338, 13768), (339, 13777), (341, 13807), (366, 13981), (369, 14011), (380, 14098), (406, 14242), (409, 14254), (424, 14344), (432, 14392), (441, 14452), (449, 14503), (451, 14509), (457, 14554), (476, 14686), (518, 15013), (528, 15118), (561, 15253), (564, 15283), (566, 15319), (571, 15340), (572, 15349), (577, 15376), (583, 15454), (584, 15478), (596, 15619), (606, 15724), (609, 15754), (610, 15757), (621, 15847), (624, 15901), (637, 16003), (669, 16237), (697, 16405), (700, 16426), (717, 16552), (722, 16582), (733, 16618), (734, 16621),

Gene: Floral_18 Start: 11003, Stop: 16657, Start Num: 12

Candidate Starts for Floral_18:

(Start: 12 @11003 has 17 MA's), (14, 11036), (20, 11216), (22, 11228), (26, 11267), (Start: 27 @11276 has 1 MA's), (30, 11300), (31, 11309), (36, 11384), (39, 11426), (68, 11615), (72, 11633), (75, 11657), (77, 11687), (87, 11780), (88, 11783), (95, 11828), (96, 11834), (101, 11876), (105, 11930), (111, 11981), (113, 11993), (116, 12035), (129, 12140), (133, 12167), (139, 12224), (150, 12299), (155, 12338), (157, 12359), (159, 12374), (166, 12407), (175, 12449), (188, 12521), (189, 12524), (190, 12533), (200, 12617), (206, 12650), (207, 12653), (209, 12659), (212, 12668), (213, 12671), (219, 12716), (220, 12734), (222, 12743), (234, 12824), (235, 12827), (238, 12836), (246, 12890), (250, 12911), (262, 12977), (273, 13061), (278, 13124), (281, 13136), (302, 13274), (303, 13298), (306, 13316), (307, 13331), (311, 13358), (318, 13409), (321, 13442), (322, 13451), (325, 13466), (332, 13532), (333, 13535), (338, 13589), (339, 13598), (341, 13628), (366, 13802), (367, 13811), (374, 13850), (393, 13991), (406, 14063), (409, 14075), (418, 14144), (422, 14159), (424, 14165), (432, 14213), (436, 14240), (438, 14249), (449, 14324), (451, 14330), (453, 14348), (457, 14375), (496, 14699), (509, 14792), (512, 14834), (515, 14852), (561, 15104), (566, 15170), (571, 15191), (572, 15200), (577, 15227), (583, 15305), (584, 15329), (592, 15422), (594, 15446), (596, 15470), (606, 15575), (609, 15605), (621, 15698), (624, 15752), (637, 15854), (649, 15953), (697, 16256), (717, 16403), (722, 16433), (733, 16469), (734, 16472), (746, 16547), (760, 16643),

Gene: Fryberger_51 Start: 21435, Stop: 26990, Start Num: 29

Candidate Starts for Fryberger_51:

(Start: 29 @21435 has 12 MA's), (34, 21501), (35, 21513), (42, 21585), (55, 21654), (61, 21714), (64, 21729), (66, 21747), (69, 21759), (74, 21789), (78, 21822), (89, 21924), (90, 21927), (98, 21969), (99, 21993), (104, 22044), (117, 22164), (118, 22167), (120, 22185), (121, 22200), (132, 22284), (134, 22290), (141, 22371), (146, 22395), (150, 22431), (153, 22443), (155, 22470), (158, 22497), (178, 22605), (187, 22650), (197, 22719), (199, 22731), (251, 23070), (257, 23100), (261, 23121), (262, 23127), (270, 23193), (277, 23259), (295, 23412), (301, 23442), (305, 23481), (306, 23484), (309, 23514), (315, 23556), (321, 23610), (327, 23661), (329, 23676), (330, 23682), (333, 23703), (338, 23757), (341, 23796), (344, 23826), (348, 23856), (349, 23880), (365, 23970), (366, 23979), (369, 24009), (372, 24021), (382, 24102), (393, 24168), (396, 24180), (419, 24333), (420, 24336), (429, 24381), (447, 24498), (464, 24588), (467, 24618), (470, 24657), (473, 24666), (474, 24681), (492, 24756), (528, 25035), (530, 25041), (561, 25173), (574, 25272), (583, 25368), (588, 25446), (606, 25653), (618, 25764), (634, 25929), (640, 25953), (643, 26010), (657, 26097), (673, 26235), (674, 26253), (679, 26274), (693, 26376), (699, 26421), (705, 26445), (726, 26595), (735, 26655), (742, 26685), (745, 26712), (747, 26727), (751, 26781), (758, 26796), (768, 26877), (769, 26892), (775, 26967),

Gene: Guey18_56 Start: 22628, Stop: 28183, Start Num: 29

Candidate Starts for Guey18_56:

(Start: 29 @22628 has 12 MA's), (34, 22694), (35, 22706), (42, 22778), (61, 22907), (64, 22922), (66, 22940), (69, 22952), (74, 22982), (78, 23015), (89, 23117), (90, 23120), (98, 23162), (99, 23186), (104, 23237), (117, 23357), (118, 23360), (120, 23378), (121, 23393), (132, 23477), (134, 23483), (141, 23564), (146, 23588), (150, 23624), (153, 23636), (155, 23663), (158, 23690), (178, 23798), (187, 23843), (197, 23912), (199, 23924), (251, 24263), (257, 24293), (261, 24314), (262, 24320), (270, 24386), (277, 24452), (295, 24605), (298, 24617), (301, 24635), (305, 24674), (306, 24677), (309, 24707), (315, 24749), (321, 24803), (327, 24854), (329, 24869), (330, 24875), (333, 24896), (338,

24950), (341, 24989), (344, 25019), (348, 25049), (365, 25163), (366, 25172), (369, 25202), (372, 25214), (382, 25295), (393, 25361), (396, 25373), (419, 25526), (420, 25529), (429, 25574), (447, 25691), (464, 25781), (467, 25811), (470, 25850), (473, 25859), (474, 25874), (492, 25949), (528, 26228), (530, 26234), (561, 26366), (574, 26465), (583, 26561), (588, 26639), (603, 26819), (606, 26846), (618, 26957), (634, 27122), (640, 27146), (643, 27203), (657, 27290), (673, 27428), (674, 27446), (679, 27467), (693, 27569), (705, 27638), (742, 27878), (745, 27905), (747, 27920), (751, 27974), (768, 28070), (769, 28085), (775, 28160),

Gene: InLimbo_17 Start: 8855, Stop: 14248, Start Num: 29

Candidate Starts for InLimbo_17:

(Start: 27 @8849 has 1 MA's), (Start: 29 @8855 has 12 MA's), (38, 8975), (39, 8987), (51, 9053), (53, 9056), (61, 9128), (63, 9134), (76, 9230), (79, 9248), (80, 9266), (89, 9338), (90, 9341), (91, 9344), (95, 9371), (99, 9407), (104, 9458), (105, 9467), (109, 9503), (114, 9545), (119, 9590), (121, 9614), (128, 9668), (131, 9689), (154, 9863), (157, 9896), (163, 9926), (166, 9944), (171, 9965), (174, 9977), (176, 9989), (181, 10028), (183, 10034), (186, 10049), (189, 10061), (202, 10112), (211, 10133), (227, 10187), (239, 10235), (242, 10256), (245, 10274), (253, 10304), (263, 10343), (267, 10367), (273, 10424), (276, 10454), (278, 10487), (303, 10661), (306, 10679), (307, 10694), (311, 10721), (318, 10772), (328, 10868), (330, 10877), (331, 10889), (342, 11009), (343, 11012), (353, 11096), (366, 11189), (370, 11222), (377, 11291), (398, 11402), (400, 11405), (401, 11417), (407, 11456), (409, 11462), (410, 11474), (412, 11486), (418, 11531), (422, 11546), (425, 11555), (441, 11660), (449, 11711), (451, 11717), (458, 11768), (464, 11786), (471, 11861), (483, 11897), (487, 11909), (490, 11930), (496, 12035), (498, 12041), (520, 12191), (521, 12203), (522, 12212), (524, 12236), (540, 12353), (542, 12365), (561, 12392), (564, 12422), (566, 12458), (571, 12479), (583, 12593), (584, 12617), (594, 12725), (606, 12863), (609, 12893), (615, 12923), (620, 12983), (644, 13226), (656, 13316), (682, 13508), (694, 13598), (696, 13616), (718, 13784), (731, 13835), (740, 13889), (741, 13904), (750, 14000), (759, 14030), (765, 14069), (767, 14102), (769, 14123), (770, 14135), (771, 14138), (776, 14222), (778, 14234),

Gene: Jablanski_18 Start: 11132, Stop: 16768, Start Num: 12

Candidate Starts for Jablanski_18:

(Start: 12 @11132 has 17 MA's), (14, 11165), (20, 11345), (22, 11357), (26, 11396), (Start: 27 @11405 has 1 MA's), (30, 11429), (31, 11438), (36, 11513), (39, 11555), (68, 11744), (72, 11762), (75, 11786), (77, 11816), (82, 11858), (87, 11909), (88, 11912), (96, 11963), (101, 12005), (105, 12059), (111, 12110), (113, 12122), (116, 12164), (129, 12269), (133, 12296), (139, 12353), (150, 12428), (155, 12467), (157, 12488), (159, 12503), (166, 12536), (175, 12578), (188, 12650), (189, 12653), (190, 12662), (200, 12746), (206, 12779), (207, 12782), (209, 12788), (212, 12797), (213, 12800), (219, 12845), (220, 12863), (222, 12872), (235, 12956), (238, 12965), (246, 13019), (250, 13040), (255, 13070), (262, 13106), (273, 13190), (278, 13253), (281, 13265), (302, 13403), (303, 13427), (306, 13445), (307, 13460), (310, 13478), (311, 13487), (318, 13538), (321, 13571), (322, 13580), (325, 13595), (332, 13661), (333, 13664), (338, 13718), (339, 13727), (341, 13757), (351, 13847), (366, 13931), (369, 13961), (393, 14120), (398, 14144), (405, 14183), (406, 14192), (409, 14204), (424, 14294), (432, 14342), (438, 14378), (441, 14402), (449, 14453), (451, 14459), (457, 14504), (468, 14567), (496, 14828), (518, 14963), (561, 15203), (566, 15269), (571, 15290), (572, 15299), (577, 15326), (583, 15404), (584, 15428), (592, 15521), (596, 15569), (606, 15674), (607, 15686), (609, 15704), (621, 15797), (624, 15851), (627, 15875), (637, 15953), (649, 16052), (669, 16199), (700, 16388), (717, 16514), (722, 16544), (733, 16580), (734, 16583), (760, 16754),

Gene: Juicebox_17 Start: 11025, Stop: 16616, Start Num: 29

Candidate Starts for Juicebox_17:

(Start: 29 @11025 has 12 MA's), (33, 11091), (35, 11103), (46, 11196), (52, 11223), (55, 11238), (65, 11319), (66, 11331), (69, 11343), (71, 11352), (79, 11418), (80, 11436), (84, 11457), (87, 11499), (97, 11550), (103, 11607), (112, 11694), (116, 11739), (121, 11784), (137, 11925), (144, 11967), (149, 12012), (162, 12105), (170, 12144), (175, 12171), (182, 12216), (193, 12264), (203, 12348), (205,

12369), (224, 12492), (237, 12558), (243, 12615), (251, 12669), (256, 12693), (258, 12702), (261, 12720), (262, 12726), (267, 12753), (271, 12798), (282, 12888), (294, 12993), (296, 13002), (308, 13098), (322, 13212), (326, 13236), (330, 13275), (346, 13440), (358, 13542), (362, 13563), (376, 13689), (378, 13695), (385, 13728), (392, 13773), (399, 13809), (403, 13836), (409, 13872), (415, 13926), (428, 13989), (443, 14091), (448, 14118), (461, 14190), (465, 14214), (469, 14256), (472, 14280), (487, 14352), (497, 14499), (499, 14508), (507, 14553), (565, 15048), (566, 15066), (568, 15069), (576, 15120), (579, 15141), (580, 15168), (595, 15378), (606, 15501), (609, 15531), (612, 15552), (616, 15564), (625, 15708), (626, 15711), (646, 15879), (661, 15999), (671, 16062), (672, 16071), (677, 16101), (678, 16104), (683, 16137), (697, 16227), (698, 16242), (703, 16263), (712, 16362), (713, 16365), (715, 16383), (721, 16410), (724, 16419), (728, 16428), (731, 16443), (732, 16452), (748, 16563), (749, 16584), (753, 16611),

Gene: Keelan_49 Start: 21419, Stop: 26977, Start Num: 29

Candidate Starts for Keelan_49:

(19, 21353), (Start: 29 @21419 has 12 MA's), (35, 21497), (42, 21569), (45, 21584), (61, 21698), (66, 21731), (69, 21743), (74, 21773), (78, 21806), (89, 21908), (90, 21911), (93, 21920), (98, 21953), (103, 22007), (104, 22028), (117, 22148), (120, 22169), (121, 22184), (141, 22355), (163, 22505), (180, 22601), (189, 22640), (196, 22691), (197, 22703), (199, 22715), (236, 22937), (239, 22946), (262, 23099), (279, 23264), (282, 23276), (293, 23372), (295, 23384), (301, 23414), (306, 23456), (309, 23486), (315, 23528), (316, 23540), (321, 23582), (327, 23633), (330, 23654), (332, 23672), (333, 23675), (337, 23717), (338, 23729), (341, 23768), (348, 23828), (357, 23903), (366, 23951), (372, 23993), (382, 24074), (383, 24080), (391, 24128), (393, 24140), (416, 24296), (433, 24377), (440, 24425), (443, 24452), (447, 24470), (454, 24518), (458, 24542), (464, 24560), (479, 24671), (492, 24740), (504, 24815), (530, 25025), (561, 25157), (574, 25256), (583, 25352), (584, 25376), (588, 25430), (598, 25541), (606, 25643), (618, 25754), (634, 25919), (640, 25943), (652, 26075), (674, 26240), (679, 26261), (687, 26318), (693, 26363), (699, 26408), (705, 26432), (726, 26582), (737, 26654), (742, 26672), (744, 26693), (745, 26699), (751, 26768), (756, 26777), (761, 26801), (770, 26891), (775, 26954),

Gene: Kuwabara_17 Start: 9635, Stop: 15067, Start Num: 29

Candidate Starts for Kuwabara_17:

(Start: 27 @9629 has 1 MA's), (Start: 29 @9635 has 12 MA's), (35, 9713), (38, 9755), (39, 9767), (61, 9908), (63, 9914), (70, 9950), (76, 10010), (79, 10028), (80, 10046), (84, 10067), (89, 10118), (90, 10121), (91, 10124), (94, 10148), (95, 10151), (103, 10217), (105, 10247), (114, 10325), (119, 10370), (121, 10394), (128, 10448), (131, 10469), (148, 10607), (154, 10643), (156, 10670), (159, 10691), (163, 10706), (171, 10745), (174, 10757), (176, 10769), (186, 10829), (189, 10841), (202, 10892), (227, 10967), (231, 10988), (242, 11036), (245, 11054), (263, 11123), (267, 11147), (273, 11204), (276, 11234), (278, 11267), (294, 11384), (303, 11441), (306, 11459), (307, 11474), (318, 11552), (330, 11657), (331, 11669), (332, 11675), (342, 11789), (343, 11792), (353, 11876), (356, 11906), (358, 11918), (366, 11969), (370, 12002), (377, 12071), (380, 12086), (388, 12128), (398, 12182), (400, 12185), (401, 12197), (407, 12236), (409, 12242), (412, 12266), (422, 12326), (424, 12332), (425, 12335), (435, 12404), (449, 12491), (451, 12497), (452, 12506), (457, 12542), (464, 12566), (483, 12677), (487, 12689), (508, 12896), (511, 12941), (515, 12968), (520, 13001), (528, 13079), (531, 13103), (533, 13106), (540, 13163), (542, 13175), (561, 13202), (563, 13220), (566, 13268), (571, 13289), (581, 13379), (583, 13403), (584, 13427), (594, 13535), (604, 13658), (606, 13682), (608, 13703), (609, 13712), (610, 13715), (615, 13742), (620, 13802), (644, 14045), (653, 14126), (654, 14129), (656, 14135), (676, 14300), (680, 14318), (682, 14327), (688, 14372), (689, 14384), (694, 14417), (696, 14435), (709, 14528), (725, 14633), (731, 14654), (740, 14708), (744, 14747), (750, 14819), (759, 14849), (765, 14888), (767, 14921), (772, 14960), (775, 15008), (776, 15041), (778, 15053),

Gene: Lilas_18 Start: 11182, Stop: 16806, Start Num: 12

Candidate Starts for Lilas_18:

(Start: 12 @11182 has 17 MA's), (14, 11215), (20, 11395), (22, 11407), (26, 11446), (Start: 27 @11455 has 1 MA's), (30, 11479), (36, 11563), (38, 11593), (39, 11605), (75, 11836), (76, 11863), (87, 11959), (88, 11962), (92, 11983), (95, 12007), (101, 12055), (105, 12109), (111, 12160), (113, 12172), (115, 12199), (116, 12214), (129, 12319), (139, 12403), (141, 12424), (150, 12478), (155, 12517), (157, 12538), (166, 12586), (169, 12598), (175, 12628), (179, 12661), (189, 12703), (195, 12745), (198, 12766), (200, 12796), (206, 12829), (207, 12832), (209, 12838), (212, 12847), (213, 12850), (220, 12913), (223, 12946), (230, 12985), (238, 13015), (251, 13099), (262, 13156), (275, 13264), (278, 13303), (281, 13315), (303, 13477), (306, 13495), (307, 13510), (311, 13537), (318, 13588), (319, 13603), (322, 13630), (333, 13714), (338, 13768), (339, 13777), (341, 13807), (366, 13981), (369, 14011), (380, 14098), (406, 14242), (409, 14254), (424, 14344), (432, 14392), (441, 14452), (449, 14503), (451, 14509), (457, 14554), (476, 14686), (518, 15013), (528, 15118), (561, 15253), (564, 15283), (566, 15319), (571, 15340), (572, 15349), (577, 15376), (583, 15454), (584, 15478), (596, 15619), (606, 15724), (609, 15754), (610, 15757), (621, 15847), (624, 15901), (637, 16003), (669, 16237), (697, 16405), (700, 16426), (717, 16552), (722, 16582), (733, 16618), (734, 16621),

Gene: LonelyBoi_18 Start: 11131, Stop: 16809, Start Num: 12

Candidate Starts for LonelyBoi_18:

(Start: 12 @11131 has 17 MA's), (14, 11164), (20, 11344), (22, 11356), (26, 11395), (Start: 27 @11404 has 1 MA's), (30, 11428), (31, 11437), (36, 11512), (39, 11554), (68, 11743), (72, 11761), (75, 11785), (77, 11815), (82, 11857), (87, 11908), (88, 11911), (96, 11962), (101, 12004), (105, 12058), (111, 12109), (113, 12121), (116, 12163), (129, 12268), (133, 12295), (139, 12352), (150, 12427), (155, 12466), (157, 12487), (159, 12502), (166, 12535), (175, 12577), (189, 12652), (195, 12694), (200, 12745), (206, 12778), (207, 12781), (212, 12796), (220, 12862), (225, 12904), (230, 12934), (233, 12946), (238, 12964), (241, 13000), (244, 13018), (247, 13045), (248, 13048), (257, 13099), (262, 13126), (265, 13138), (273, 13210), (278, 13273), (281, 13285), (289, 13330), (303, 13447), (307, 13480), (311, 13507), (314, 13534), (322, 13600), (328, 13654), (331, 13675), (342, 13795), (343, 13798), (353, 13882), (358, 13924), (359, 13927), (360, 13933), (361, 13936), (366, 13975), (377, 14077), (383, 14104), (405, 14233), (412, 14281), (422, 14341), (424, 14347), (426, 14359), (430, 14383), (432, 14395), (441, 14455), (449, 14506), (451, 14512), (457, 14557), (476, 14689), (518, 15016), (561, 15256), (566, 15322), (571, 15343), (572, 15352), (577, 15379), (583, 15457), (584, 15481), (592, 15574), (594, 15598), (596, 15622), (606, 15727), (609, 15757), (621, 15850), (624, 15904), (637, 16006), (649, 16105), (697, 16408), (700, 16429), (717, 16555), (722, 16585), (733, 16621), (734, 16624), (746, 16699), (760, 16795),

Gene: Lucky10_16 Start: 8884, Stop: 14280, Start Num: 27

Candidate Starts for Lucky10_16:

(Start: 27 @8884 has 1 MA's), (Start: 29 @8890 has 12 MA's), (38, 9010), (39, 9022), (51, 9088), (61, 9163), (63, 9169), (80, 9301), (89, 9373), (90, 9376), (91, 9379), (95, 9406), (99, 9442), (104, 9493), (105, 9502), (109, 9538), (114, 9580), (119, 9625), (121, 9649), (128, 9703), (131, 9724), (154, 9898), (157, 9931), (163, 9961), (171, 10000), (174, 10012), (176, 10024), (183, 10069), (186, 10084), (189, 10096), (202, 10147), (227, 10222), (239, 10270), (242, 10291), (245, 10309), (253, 10339), (263, 10378), (267, 10402), (273, 10459), (276, 10489), (278, 10522), (290, 10618), (303, 10696), (306, 10714), (307, 10729), (318, 10807), (331, 10924), (332, 10930), (342, 11044), (343, 11047), (353, 11131), (358, 11173), (366, 11224), (370, 11257), (377, 11326), (388, 11383), (398, 11437), (400, 11440), (401, 11452), (407, 11491), (410, 11509), (412, 11521), (418, 11566), (422, 11581), (441, 11695), (449, 11746), (451, 11752), (453, 11770), (458, 11803), (464, 11821), (471, 11896), (483, 11932), (487, 11944), (490, 11965), (496, 12070), (498, 12076), (520, 12226), (521, 12238), (522, 12247), (527, 12286), (531, 12328), (540, 12388), (542, 12400), (561, 12427), (564, 12457), (566, 12493), (571, 12514), (583, 12628), (584, 12652), (606, 12895), (607, 12907), (609, 12925), (620, 13015), (644, 13258), (659, 13378), (682, 13540), (694, 13630), (696, 13648), (718, 13816), (731, 13867), (740, 13921), (741, 13936), (750, 14032), (759, 14062), (765, 14101), (767, 14134), (769, 14155), (770, 14167), (771, 14170), (775, 14221), (776, 14254), (778, 14266),

Gene: Marteena_18 Start: 11003, Stop: 16657, Start Num: 12

Candidate Starts for Marteena_18:

(Start: 12 @11003 has 17 MA's), (14, 11036), (20, 11216), (22, 11228), (26, 11267), (Start: 27 @11276 has 1 MA's), (30, 11300), (31, 11309), (36, 11384), (39, 11426), (68, 11615), (72, 11633), (75, 11657), (77, 11687), (87, 11780), (88, 11783), (95, 11828), (96, 11834), (101, 11876), (105, 11930), (111, 11981), (113, 11993), (116, 12035), (129, 12140), (133, 12167), (139, 12224), (150, 12299), (155, 12338), (157, 12359), (159, 12374), (166, 12407), (175, 12449), (188, 12521), (189, 12524), (190, 12533), (200, 12617), (206, 12650), (207, 12653), (209, 12659), (212, 12668), (213, 12671), (219, 12716), (220, 12734), (222, 12743), (234, 12824), (235, 12827), (238, 12836), (246, 12890), (250, 12911), (262, 12977), (273, 13061), (278, 13124), (281, 13136), (302, 13274), (303, 13298), (306, 13316), (307, 13331), (311, 13358), (318, 13409), (321, 13442), (322, 13451), (325, 13466), (332, 13532), (333, 13535), (338, 13589), (339, 13598), (341, 13628), (366, 13802), (367, 13811), (374, 13850), (393, 13991), (406, 14063), (409, 14075), (418, 14144), (422, 14159), (424, 14165), (432, 14213), (436, 14240), (438, 14249), (449, 14324), (451, 14330), (453, 14348), (457, 14375), (496, 14699), (509, 14792), (512, 14834), (515, 14852), (561, 15104), (566, 15170), (571, 15191), (572, 15200), (577, 15227), (583, 15305), (584, 15329), (592, 15422), (594, 15446), (596, 15470), (606, 15575), (609, 15605), (621, 15698), (624, 15752), (637, 15854), (649, 15953), (697, 16256), (717, 16403), (722, 16433), (733, 16469), (734, 16472), (746, 16547), (760, 16643),

Gene: MicyPS_15 Start: 10507, Stop: 16509, Start Num: 15

Candidate Starts for MicyPS_15:

(Start: 15 @10507 has 2 MA's), (16, 10558), (40, 10885), (43, 10900), (59, 11017), (60, 11023), (61, 11032), (62, 11035), (73, 11098), (75, 11110), (142, 11722), (149, 11767), (157, 11830), (164, 11872), (165, 11875), (173, 11908), (191, 12001), (196, 12040), (197, 12046), (202, 12085), (214, 12133), (252, 12391), (262, 12445), (279, 12586), (280, 12592), (306, 12778), (310, 12811), (316, 12862), (320, 12895), (331, 12985), (336, 13021), (347, 13144), (364, 13264), (366, 13273), (367, 13282), (368, 13294), (371, 13309), (381, 13393), (384, 13405), (392, 13456), (394, 13468), (395, 13477), (402, 13510), (408, 13552), (423, 13645), (427, 13660), (430, 13681), (456, 13846), (460, 13867), (462, 13873), (471, 13957), (477, 13999), (486, 14032), (493, 14125), (495, 14164), (506, 14242), (524, 14407), (529, 14446), (536, 14497), (539, 14536), (541, 14545), (562, 14665), (575, 14764), (585, 14899), (597, 15046), (609, 15190), (617, 15259), (628, 15394), (655, 15604), (660, 15640), (669, 15727), (684, 15820), (688, 15850), (691, 15889), (692, 15892), (708, 16015), (711, 16057), (719, 16096), (727, 16126), (730, 16138), (743, 16225), (744, 16231), (752, 16309), (757, 16321), (759, 16333), (765, 16372), (766, 16402), (768, 16414), (773, 16459), (774, 16474),

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), (9, 10873), (10, 10909), (18, 11128), (20, 11146), (22, 11158), (26, 11197), (Start: 27 @11206 has 1 MA's), (30, 11230), (36, 11314), (39, 11356), (75, 11587), (81, 11656), (88, 11713), (101, 11806), (105, 11860), (106, 11866), (107, 11875), (111, 11911), (113, 11923), (116, 11965), (127, 12052), (133, 12097), (152, 12238), (159, 12304), (161, 12310), (168, 12346), (175, 12379), (176, 12382), (186, 12442), (189, 12454), (192, 12466), (194, 12475), (201, 12517), (212, 12547), (217, 12565), (220, 12580), (238, 12640), (251, 12724), (257, 12754), (261, 12775), (264, 12790), (269, 12823), (283, 12946), (284, 12955), (286, 12967), (307, 13120), (318, 13198), (322, 13240), (327, 13282), (328, 13294), (333, 13324), (334, 13339), (338, 13378), (341, 13417), (344, 13447), (351, 13507), (366, 13591), (369, 13621), (382, 13714), (390, 13759), (406, 13852), (413, 13897), (426, 13960), (436, 14017), (439, 14029), (450, 14095), (455, 14128), (482, 14272), (489, 14293), (494, 14392), (498, 14425), (519, 14572), (520, 14575), (521, 14587), (523, 14608), (527, 14635), (541, 14752), (565, 14830), (567, 14851), (569, 14854), (571, 14872), (587, 15007), (605, 15178), (609, 15223), (637, 15475), (641, 15493), (663, 15664), (671, 15733), (686, 15826), (704, 15934), (707, 15946), (714, 16042), (716, 16048), (722, 16081), (724, 16084), (731, 16105), (738, 16147), (739, 16150), (744, 16186), (754, 16261), (755, 16267), (757, 16270), (762, 16297), (763, 16300),

Gene: Morkie_16 Start: 8855, Stop: 14248, Start Num: 29

Candidate Starts for Morkie_16:

(Start: 27 @8849 has 1 MA's), (Start: 29 @8855 has 12 MA's), (38, 8975), (39, 8987), (51, 9053), (53, 9056), (61, 9128), (63, 9134), (76, 9230), (79, 9248), (80, 9266), (89, 9338), (90, 9341), (91, 9344), (95, 9371), (99, 9407), (104, 9458), (105, 9467), (109, 9503), (114, 9545), (119, 9590), (121, 9614), (128, 9668), (131, 9689), (154, 9863), (157, 9896), (163, 9926), (166, 9944), (171, 9965), (174, 9977), (176, 9989), (181, 10028), (183, 10034), (186, 10049), (189, 10061), (202, 10112), (211, 10133), (227, 10187), (239, 10235), (242, 10256), (245, 10274), (253, 10304), (263, 10343), (267, 10367), (273, 10424), (276, 10454), (278, 10487), (303, 10661), (306, 10679), (307, 10694), (311, 10721), (318, 10772), (328, 10868), (330, 10877), (331, 10889), (342, 11009), (343, 11012), (353, 11096), (366, 11189), (370, 11222), (377, 11291), (398, 11402), (400, 11405), (401, 11417), (407, 11456), (409, 11462), (410, 11474), (412, 11486), (418, 11531), (422, 11546), (425, 11555), (441, 11660), (449, 11711), (451, 11717), (458, 11768), (464, 11786), (471, 11861), (483, 11897), (487, 11909), (490, 11930), (496, 12035), (498, 12041), (520, 12191), (521, 12203), (522, 12212), (524, 12236), (540, 12353), (542, 12365), (561, 12392), (564, 12422), (566, 12458), (571, 12479), (583, 12593), (584, 12617), (594, 12725), (606, 12863), (609, 12893), (615, 12923), (620, 12983), (644, 13226), (656, 13316), (682, 13508), (694, 13598), (696, 13616), (718, 13784), (731, 13835), (740, 13889), (741, 13904), (750, 14000), (759, 14030), (765, 14069), (767, 14102), (769, 14123), (770, 14135), (771, 14138), (776, 14222), (778, 14234),

Gene: MortyNRick_17 Start: 9908, Stop: 15370, Start Num: 23

Candidate Starts for MortyNRick_17:

(Start: 23 @9908 has 3 MA's), (30, 9965), (32, 9983), (38, 10067), (39, 10079), (41, 10091), (47, 10115), (51, 10145), (58, 10190), (61, 10220), (63, 10226), (75, 10295), (76, 10322), (79, 10340), (80, 10358), (83, 10370), (84, 10379), (89, 10430), (90, 10433), (91, 10436), (94, 10460), (95, 10463), (104, 10550), (105, 10559), (114, 10637), (119, 10682), (121, 10706), (125, 10739), (126, 10742), (135, 10829), (138, 10850), (154, 10955), (156, 10982), (161, 11009), (166, 11036), (167, 11039), (176, 11081), (177, 11099), (178, 11102), (194, 11174), (201, 11216), (210, 11237), (218, 11264), (221, 11273), (226, 11288), (229, 11306), (238, 11339), (242, 11372), (249, 11405), (250, 11414), (251, 11423), (255, 11444), (260, 11468), (263, 11483), (266, 11504), (267, 11507), (273, 11564), (276, 11594), (278, 11627), (303, 11801), (307, 11834), (311, 11861), (314, 11888), (317, 11906), (324, 11966), (328, 12008), (331, 12029), (337, 12080), (339, 12101), (342, 12149), (343, 12152), (361, 12290), (366, 12329), (372, 12371), (377, 12431), (383, 12458), (387, 12479), (397, 12536), (401, 12557), (412, 12629), (417, 12671), (418, 12674), (426, 12707), (432, 12743), (441, 12803), (449, 12854), (451, 12860), (452, 12869), (453, 12878), (458, 12911), (464, 12929), (467, 12959), (502, 13154), (503, 13157), (512, 13238), (515, 13256), (520, 13289), (521, 13301), (525, 13337), (528, 13373), (531, 13397), (533, 13400), (537, 13421), (540, 13457), (542, 13469), (561, 13496), (563, 13514), (564, 13526), (566, 13562), (571, 13583), (581, 13673), (583, 13697), (584, 13721), (594, 13829), (604, 13952), (606, 13976), (609, 14006), (610, 14009), (615, 14036), (644, 14339), (653, 14420), (654, 14423), (656, 14429), (676, 14594), (680, 14612), (682, 14621), (688, 14666), (689, 14678), (694, 14714), (696, 14732), (709, 14831), (725, 14936), (731, 14957), (740, 15011), (744, 15050), (750, 15122), (759, 15152), (765, 15191), (767, 15224), (772, 15263), (775, 15311), (776, 15344), (778, 15356),

Gene: ODay_22 Start: 12098, Stop: 17611, Start Num: 24

Candidate Starts for ODay_22:

(Start: 24 @12098 has 2 MA's), (Start: 27 @12131 has 1 MA's), (Start: 29 @12137 has 12 MA's), (38, 12257), (39, 12269), (51, 12335), (61, 12410), (75, 12485), (76, 12512), (79, 12530), (80, 12548), (83, 12560), (84, 12569), (90, 12623), (91, 12626), (94, 12650), (95, 12653), (104, 12740), (105, 12749), (114, 12827), (119, 12872), (121, 12896), (126, 12932), (135, 13019), (138, 13040), (148, 13109), (154, 13145), (156, 13172), (161, 13199), (166, 13226), (167, 13229), (176, 13271), (177, 13289), (178, 13292), (201, 13406), (210, 13427), (218, 13454), (221, 13463), (226, 13478), (238, 13529),

(242, 13562), (249, 13595), (250, 13604), (251, 13613), (260, 13658), (262, 13670), (263, 13673), (266, 13694), (267, 13697), (273, 13754), (276, 13784), (296, 13943), (297, 13946), (302, 13967), (303, 13991), (307, 14024), (314, 14078), (316, 14093), (328, 14198), (331, 14219), (333, 14228), (342, 14339), (343, 14342), (366, 14519), (372, 14561), (377, 14621), (379, 14630), (387, 14669), (393, 14708), (397, 14726), (401, 14747), (406, 14780), (412, 14819), (426, 14897), (432, 14933), (441, 14993), (449, 15044), (451, 15050), (459, 15104), (480, 15230), (488, 15257), (510, 15464), (515, 15518), (522, 15572), (533, 15656), (540, 15713), (561, 15752), (566, 15818), (571, 15839), (577, 15875), (578, 15890), (583, 15953), (584, 15977), (592, 16067), (594, 16091), (596, 16115), (602, 16190), (604, 16202), (606, 16226), (608, 16247), (609, 16256), (615, 16286), (620, 16346), (644, 16589), (653, 16670), (654, 16673), (656, 16679), (676, 16844), (680, 16862), (682, 16871), (688, 16916), (689, 16928), (694, 16961), (696, 16979), (709, 17072), (725, 17177), (731, 17198), (740, 17252), (744, 17291), (750, 17363), (759, 17393), (765, 17432), (767, 17465), (772, 17504), (775, 17552), (776, 17585), (778, 17597),

Gene: PSonyx_15 Start: 10611, Stop: 16625, Start Num: 15

Candidate Starts for PSonyx_15:

(Start: 15 @10611 has 2 MA's), (16, 10662), (43, 11004), (48, 11040), (59, 11121), (60, 11127), (61, 11136), (62, 11139), (67, 11172), (73, 11202), (75, 11214), (142, 11826), (149, 11871), (157, 11934), (173, 12012), (185, 12078), (191, 12105), (196, 12144), (197, 12150), (202, 12189), (214, 12237), (262, 12549), (306, 12882), (310, 12915), (316, 12966), (320, 12999), (331, 13089), (333, 13098), (336, 13125), (347, 13248), (364, 13368), (366, 13377), (367, 13386), (368, 13398), (381, 13497), (384, 13509), (394, 13572), (395, 13581), (408, 13656), (411, 13677), (423, 13749), (427, 13764), (460, 13971), (471, 14061), (477, 14103), (486, 14136), (493, 14229), (506, 14346), (517, 14439), (524, 14511), (529, 14550), (534, 14577), (536, 14601), (541, 14649), (562, 14769), (575, 14868), (597, 15153), (609, 15297), (617, 15366), (628, 15501), (655, 15711), (660, 15747), (669, 15834), (684, 15927), (688, 15957), (691, 15996), (695, 16011), (701, 16053), (702, 16056), (710, 16146), (720, 16212), (723, 16227), (730, 16248), (743, 16341), (744, 16347), (752, 16425), (757, 16437), (759, 16449), (764, 16479), (765, 16488), (766, 16518), (768, 16530), (773, 16575), (774, 16590),

Gene: PatriciaStar_16 Start: 10219, Stop: 15909, Start Num: 1

Candidate Starts for PatriciaStar_16:

(Start: 1 @10219 has 4 MA's), (2, 10249), (4, 10303), (6, 10354), (8, 10444), (10, 10510), (20, 10747), (22, 10759), (26, 10798), (Start: 27 @10807 has 1 MA's), (30, 10831), (36, 10915), (39, 10957), (75, 11188), (81, 11257), (88, 11314), (101, 11407), (105, 11461), (108, 11488), (111, 11512), (113, 11524), (116, 11566), (131, 11686), (133, 11698), (152, 11839), (176, 11983), (178, 12004), (189, 12055), (192, 12067), (201, 12118), (217, 12166), (220, 12181), (238, 12241), (257, 12355), (261, 12376), (266, 12406), (269, 12424), (276, 12496), (283, 12547), (286, 12568), (309, 12736), (313, 12772), (321, 12832), (322, 12841), (327, 12883), (328, 12895), (333, 12925), (334, 12940), (338, 12979), (341, 13018), (344, 13048), (351, 13108), (366, 13192), (369, 13222), (382, 13315), (390, 13360), (406, 13453), (413, 13498), (426, 13561), (430, 13585), (436, 13618), (437, 13621), (439, 13630), (450, 13696), (455, 13729), (478, 13864), (482, 13873), (485, 13882), (489, 13894), (494, 13993), (498, 14026), (519, 14173), (520, 14176), (521, 14188), (523, 14209), (527, 14236), (541, 14353), (565, 14431), (567, 14452), (571, 14473), (587, 14608), (609, 14824), (615, 14854), (637, 15076), (641, 15094), (671, 15334), (686, 15427), (704, 15535), (706, 15541), (716, 15649), (731, 15706), (738, 15748), (739, 15751), (744, 15787), (754, 15862), (755, 15868), (757, 15871), (762, 15898), (763, 15901),

Gene: PhorbesPhlower_16 Start: 8855, Stop: 14248, Start Num: 29

Candidate Starts for PhorbesPhlower_16:

(Start: 27 @8849 has 1 MA's), (Start: 29 @8855 has 12 MA's), (38, 8975), (39, 8987), (51, 9053), (53, 9056), (61, 9128), (63, 9134), (76, 9230), (79, 9248), (80, 9266), (89, 9338), (90, 9341), (91, 9344), (95, 9371), (99, 9407), (104, 9458), (105, 9467), (109, 9503), (114, 9545), (119, 9590), (121, 9614), (128, 9668), (131, 9689), (154, 9863), (157, 9896), (163, 9926), (166, 9944), (171, 9965), (174, 9977), (176,

9989), (181, 10028), (183, 10034), (186, 10049), (189, 10061), (202, 10112), (211, 10133), (227, 10187), (239, 10235), (242, 10256), (245, 10274), (253, 10304), (263, 10343), (267, 10367), (273, 10424), (276, 10454), (278, 10487), (303, 10661), (306, 10679), (307, 10694), (311, 10721), (318, 10772), (328, 10868), (330, 10877), (331, 10889), (342, 11009), (343, 11012), (353, 11096), (366, 11189), (370, 11222), (377, 11291), (398, 11402), (400, 11405), (401, 11417), (407, 11456), (409, 11462), (410, 11474), (412, 11486), (418, 11531), (422, 11546), (425, 11555), (441, 11660), (449, 11711), (451, 11717), (458, 11768), (464, 11786), (471, 11861), (483, 11897), (487, 11909), (490, 11930), (496, 12035), (498, 12041), (520, 12191), (521, 12203), (522, 12212), (524, 12236), (540, 12353), (542, 12365), (561, 12392), (564, 12422), (566, 12458), (571, 12479), (583, 12593), (584, 12617), (594, 12725), (606, 12863), (609, 12893), (615, 12923), (620, 12983), (644, 13226), (656, 13316), (682, 13508), (694, 13598), (696, 13616), (718, 13784), (731, 13835), (740, 13889), (741, 13904), (750, 14000), (759, 14030), (765, 14069), (767, 14102), (769, 14123), (770, 14135), (771, 14138), (776, 14222), (778, 14234),

Gene: Pollux_18 Start: 11003, Stop: 16657, Start Num: 12

Candidate Starts for Pollux_18:

(Start: 12 @11003 has 17 MA's), (14, 11036), (20, 11216), (22, 11228), (26, 11267), (Start: 27 @11276 has 1 MA's), (30, 11300), (31, 11309), (36, 11384), (39, 11426), (68, 11615), (72, 11633), (75, 11657), (77, 11687), (87, 11780), (88, 11783), (95, 11828), (96, 11834), (101, 11876), (105, 11930), (111, 11981), (113, 11993), (116, 12035), (129, 12140), (133, 12167), (139, 12224), (150, 12299), (155, 12338), (157, 12359), (159, 12374), (166, 12407), (175, 12449), (188, 12521), (189, 12524), (190, 12533), (200, 12617), (206, 12650), (207, 12653), (209, 12659), (212, 12668), (213, 12671), (219, 12716), (220, 12734), (222, 12743), (234, 12824), (235, 12827), (238, 12836), (246, 12890), (250, 12911), (262, 12977), (273, 13061), (278, 13124), (281, 13136), (302, 13274), (303, 13298), (306, 13316), (307, 13331), (311, 13358), (318, 13409), (321, 13442), (322, 13451), (325, 13466), (332, 13532), (333, 13535), (338, 13589), (339, 13598), (341, 13628), (366, 13802), (367, 13811), (374, 13850), (393, 13991), (406, 14063), (409, 14075), (418, 14144), (422, 14159), (424, 14165), (432, 14213), (436, 14240), (438, 14249), (449, 14324), (451, 14330), (453, 14348), (457, 14375), (496, 14699), (509, 14792), (512, 14834), (515, 14852), (561, 15104), (566, 15170), (571, 15191), (572, 15200), (577, 15227), (583, 15305), (584, 15329), (592, 15422), (594, 15446), (596, 15470), (606, 15575), (609, 15605), (621, 15698), (624, 15752), (637, 15854), (649, 15953), (697, 16256), (717, 16403), (722, 16433), (733, 16469), (734, 16472), (746, 16547), (760, 16643),

Gene: Posh_18 Start: 11000, Stop: 16621, Start Num: 12

Candidate Starts for Posh_18:

(7, 10904), (Start: 12 @11000 has 17 MA's), (14, 11033), (20, 11213), (22, 11225), (26, 11264), (Start: 27 @11273 has 1 MA's), (30, 11297), (31, 11306), (36, 11381), (39, 11423), (68, 11612), (72, 11630), (75, 11654), (77, 11684), (88, 11780), (96, 11831), (101, 11873), (105, 11927), (111, 11978), (113, 11990), (116, 12032), (129, 12137), (133, 12164), (139, 12221), (150, 12296), (155, 12335), (157, 12356), (159, 12371), (166, 12404), (175, 12446), (188, 12518), (189, 12521), (190, 12530), (195, 12563), (200, 12614), (206, 12647), (207, 12650), (209, 12656), (212, 12665), (213, 12668), (219, 12713), (220, 12731), (222, 12740), (234, 12821), (235, 12824), (238, 12833), (246, 12887), (250, 12908), (262, 12974), (273, 13058), (278, 13121), (281, 13133), (299, 13253), (303, 13295), (307, 13328), (311, 13355), (318, 13406), (321, 13439), (322, 13448), (325, 13463), (333, 13532), (338, 13586), (339, 13595), (341, 13625), (351, 13715), (366, 13799), (393, 13988), (398, 14012), (405, 14051), (406, 14060), (409, 14072), (424, 14162), (432, 14210), (441, 14270), (449, 14321), (451, 14327), (457, 14372), (468, 14435), (475, 14495), (476, 14501), (496, 14693), (518, 14828), (561, 15068), (566, 15134), (571, 15155), (572, 15164), (577, 15191), (583, 15269), (584, 15293), (592, 15386), (596, 15434), (606, 15539), (607, 15551), (609, 15569), (610, 15572), (621, 15662), (624, 15716), (627, 15740), (637, 15818), (649, 15917), (697, 16220), (700, 16241), (717, 16367), (722, 16397), (733, 16433), (734, 16436), (746, 16511), (760, 16607),

Gene: Pytheas_18 Start: 11131, Stop: 16767, Start Num: 12

Candidate Starts for Pytheas_18:

(Start: 12 @11131 has 17 MA's), (14, 11164), (20, 11344), (22, 11356), (26, 11395), (Start: 27 @11404 has 1 MA's), (30, 11428), (31, 11437), (36, 11512), (39, 11554), (68, 11743), (72, 11761), (75, 11785), (77, 11815), (82, 11857), (87, 11908), (88, 11911), (96, 11962), (101, 12004), (105, 12058), (111, 12109), (113, 12121), (116, 12163), (129, 12268), (133, 12295), (139, 12352), (150, 12427), (155, 12466), (157, 12487), (159, 12502), (166, 12535), (175, 12577), (188, 12649), (189, 12652), (190, 12661), (200, 12745), (206, 12778), (207, 12781), (209, 12787), (212, 12796), (213, 12799), (219, 12844), (220, 12862), (222, 12871), (235, 12955), (238, 12964), (246, 13018), (250, 13039), (255, 13069), (262, 13105), (273, 13189), (278, 13252), (281, 13264), (302, 13402), (303, 13426), (306, 13444), (307, 13459), (310, 13477), (311, 13486), (318, 13537), (321, 13570), (322, 13579), (325, 13594), (332, 13660), (333, 13663), (338, 13717), (339, 13726), (341, 13756), (351, 13846), (366, 13930), (369, 13960), (393, 14119), (398, 14143), (405, 14182), (406, 14191), (409, 14203), (424, 14293), (432, 14341), (438, 14377), (441, 14401), (449, 14452), (451, 14458), (457, 14503), (468, 14566), (496, 14827), (518, 14962), (561, 15202), (566, 15268), (571, 15289), (572, 15298), (577, 15325), (583, 15403), (584, 15427), (592, 15520), (596, 15568), (606, 15673), (607, 15685), (609, 15703), (621, 15796), (624, 15850), (627, 15874), (637, 15952), (649, 16051), (669, 16198), (700, 16387), (717, 16513), (722, 16543), (733, 16579), (734, 16582), (760, 16753),

Gene: REQ3_48 Start: 26599, Stop: 31356, Start Num: 17

Candidate Starts for REQ3_48:

(17, 26599), (21, 26686), (25, 26728), (37, 26878), (44, 26917), (49, 26950), (55, 26980), (66, 27073), (69, 27085), (71, 27094), (74, 27115), (78, 27148), (85, 27226), (86, 27232), (87, 27241), (100, 27328), (110, 27424), (117, 27490), (119, 27502), (122, 27535), (125, 27559), (136, 27643), (140, 27661), (143, 27679), (145, 27688), (147, 27706), (151, 27730), (167, 27835), (169, 27844), (172, 27859), (177, 27895), (180, 27910), (186, 27937), (189, 27949), (208, 28039), (213, 28054), (215, 28060), (232, 28138), (242, 28198), (263, 28297), (272, 28363), (304, 28594), (345, 28963), (350, 29011), (363, 29074), (404, 29332), (414, 29413), (431, 29491), (445, 29572), (463, 29668), (466, 29698), (500, 29902), (505, 29917), (535, 30151), (573, 30331), (590, 30523), (599, 30625), (600, 30649), (619, 30835), (622, 30853), (633, 30991), (645, 31078), (647, 31099), (648, 31108), (662, 31207), (665, 31225), (670, 31264),

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), (9, 11153), (10, 11189), (20, 11426), (22, 11438), (26, 11477), (Start: 27 @11486 has 1 MA's), (30, 11510), (36, 11594), (39, 11636), (75, 11867), (81, 11936), (88, 11993), (101, 12086), (105, 12140), (111, 12191), (113, 12203), (116, 12245), (133, 12377), (152, 12518), (159, 12584), (161, 12590), (168, 12626), (175, 12659), (176, 12662), (186, 12722), (189, 12734), (192, 12746), (194, 12755), (201, 12797), (212, 12827), (217, 12845), (220, 12860), (238, 12920), (251, 13004), (257, 13034), (261, 13055), (264, 13070), (269, 13103), (283, 13226), (284, 13235), (286, 13247), (307, 13400), (318, 13478), (322, 13520), (327, 13562), (328, 13574), (333, 13604), (334, 13619), (338, 13658), (341, 13697), (344, 13727), (351, 13787), (366, 13871), (369, 13901), (382, 13994), (390, 14039), (406, 14132), (413, 14177), (421, 14219), (426, 14240), (430, 14264), (436, 14297), (439, 14309), (450, 14375), (455, 14408), (482, 14552), (489, 14573), (494, 14672), (498, 14705), (519, 14852), (520, 14855), (521, 14867), (523, 14888), (527, 14915), (541, 15032), (565, 15110), (567, 15131), (569, 15134), (605, 15458), (609, 15503), (637, 15755), (641, 15773), (658, 15920), (671, 16013), (686, 16106), (704, 16214), (706, 16220), (714, 16322), (716, 16328), (722, 16361), (724, 16364), (731, 16385), (738, 16427), (739, 16430), (744, 16466), (754, 16541), (755, 16547), (757, 16550), (762, 16577), (763, 16580),

Gene: Ronaldo_54 Start: 22393, Stop: 27948, Start Num: 29

Candidate Starts for Ronaldo_54:

(Start: 29 @22393 has 12 MA's), (34, 22459), (35, 22471), (42, 22543), (55, 22612), (61, 22672), (64, 22687), (66, 22705), (69, 22717), (74, 22747), (78, 22780), (89, 22882), (90, 22885), (98, 22927), (99,

22951), (104, 23002), (117, 23122), (118, 23125), (120, 23143), (121, 23158), (132, 23242), (134, 23248), (141, 23329), (146, 23353), (153, 23401), (155, 23428), (158, 23455), (178, 23563), (187, 23608), (197, 23677), (199, 23689), (251, 24028), (257, 24058), (261, 24079), (262, 24085), (277, 24217), (287, 24298), (295, 24370), (301, 24400), (305, 24439), (306, 24442), (309, 24472), (315, 24514), (321, 24568), (327, 24619), (329, 24634), (330, 24640), (333, 24661), (338, 24715), (341, 24754), (344, 24784), (348, 24814), (349, 24838), (365, 24928), (366, 24937), (369, 24967), (372, 24979), (382, 25060), (393, 25126), (396, 25138), (419, 25291), (420, 25294), (429, 25339), (447, 25456), (464, 25546), (467, 25576), (470, 25615), (473, 25624), (474, 25639), (492, 25714), (528, 25993), (530, 25999), (561, 26131), (574, 26230), (583, 26326), (588, 26404), (606, 26611), (618, 26722), (634, 26887), (640, 26911), (643, 26968), (657, 27055), (673, 27193), (674, 27211), (679, 27232), (693, 27334), (699, 27379), (705, 27403), (726, 27553), (735, 27613), (742, 27643), (745, 27670), (747, 27685), (751, 27739), (758, 27754), (768, 27835), (769, 27850), (775, 27925),

Gene: Sleepyhead_16 Start: 10123, Stop: 14886, Start Num: 28

Candidate Starts for Sleepyhead_16:

(Start: 28 @10123 has 1 MA's), (56, 10357), (57, 10369), (66, 10438), (71, 10459), (87, 10606), (105, 10744), (123, 10909), (124, 10912), (131, 10966), (141, 11062), (175, 11272), (216, 11488), (228, 11551), (240, 11599), (254, 11677), (258, 11698), (259, 11707), (274, 11806), (284, 11887), (288, 11914), (291, 11962), (304, 12046), (311, 12103), (312, 12124), (335, 12292), (340, 12364), (343, 12391), (352, 12469), (364, 12535), (373, 12586), (375, 12598), (386, 12685), (389, 12712), (409, 12829), (425, 12922), (434, 12979), (442, 13027), (446, 13057), (469, 13201), (484, 13276), (491, 13318), (493, 13354), (513, 13501), (516, 13516), (532, 13642), (570, 13834), (579, 13894), (586, 14005), (591, 14083), (593, 14104), (601, 14203), (613, 14320), (623, 14431), (629, 14506), (630, 14518), (635, 14542), (636, 14548), (638, 14557), (639, 14560), (642, 14614), (650, 14659), (651, 14689), (657, 14707), (666, 14782), (667, 14800), (668, 14809),

Gene: Taotie_15 Start: 11508, Stop: 17519, Start Num: 15

Candidate Starts for Taotie_15:

(Start: 15 @11508 has 2 MA's), (16, 11559), (43, 11901), (48, 11937), (59, 12018), (60, 12024), (61, 12033), (62, 12036), (67, 12069), (73, 12099), (75, 12111), (142, 12723), (149, 12768), (157, 12831), (173, 12909), (185, 12975), (191, 13002), (196, 13041), (197, 13047), (202, 13086), (214, 13134), (262, 13446), (306, 13779), (310, 13812), (316, 13863), (320, 13896), (331, 13986), (336, 14022), (347, 14145), (364, 14265), (366, 14274), (367, 14283), (368, 14295), (381, 14394), (384, 14406), (392, 14457), (394, 14469), (395, 14478), (402, 14511), (408, 14553), (411, 14574), (423, 14646), (427, 14661), (430, 14682), (460, 14868), (477, 15000), (481, 15015), (486, 15033), (493, 15126), (496, 15189), (524, 15408), (529, 15447), (534, 15474), (536, 15498), (539, 15537), (541, 15546), (562, 15666), (568, 15726), (575, 15765), (597, 16047), (609, 16191), (617, 16260), (628, 16395), (655, 16605), (660, 16641), (669, 16728), (684, 16821), (688, 16851), (691, 16890), (695, 16905), (701, 16947), (702, 16950), (710, 17040), (720, 17106), (723, 17121), (730, 17142), (743, 17235), (744, 17241), (752, 17319), (757, 17331), (759, 17343), (764, 17373), (765, 17382), (766, 17412), (768, 17424), (773, 17469), (774, 17484),

Gene: Volt_53 Start: 22393, Stop: 27948, Start Num: 29

Candidate Starts for Volt_53:

(Start: 29 @22393 has 12 MA's), (34, 22459), (35, 22471), (42, 22543), (55, 22612), (61, 22672), (64, 22687), (66, 22705), (69, 22717), (74, 22747), (78, 22780), (89, 22882), (90, 22885), (98, 22927), (99, 22951), (104, 23002), (117, 23122), (118, 23125), (120, 23143), (121, 23158), (132, 23242), (134, 23248), (141, 23329), (146, 23353), (153, 23401), (155, 23428), (158, 23455), (178, 23563), (187, 23608), (197, 23677), (199, 23689), (251, 24028), (257, 24058), (261, 24079), (262, 24085), (277, 24217), (287, 24298), (295, 24370), (301, 24400), (305, 24439), (306, 24442), (309, 24472), (315, 24514), (321, 24568), (327, 24619), (329, 24634), (330, 24640), (333, 24661), (338, 24715), (341, 24754), (344, 24784), (348, 24814), (349, 24838), (365, 24928), (366, 24937), (369, 24967), (372, 24979), (382, 25060), (393, 25126), (396, 25138), (419, 25291), (420, 25294), (429, 25339), (447,

25456), (464, 25546), (467, 25576), (470, 25615), (473, 25624), (474, 25639), (492, 25714), (528, 25993), (530, 25999), (561, 26131), (574, 26230), (583, 26326), (588, 26404), (606, 26611), (618, 26722), (634, 26887), (640, 26911), (643, 26968), (657, 27055), (673, 27193), (674, 27211), (679, 27232), (693, 27334), (699, 27379), (705, 27403), (726, 27553), (735, 27613), (742, 27643), (745, 27670), (747, 27685), (751, 27739), (758, 27754), (768, 27835), (769, 27850), (775, 27925),

Gene: Wrigley_18 Start: 10897, Stop: 16518, Start Num: 12

Candidate Starts for Wrigley_18:

(Start: 12 @10897 has 17 MA's), (14, 10930), (20, 11110), (22, 11122), (26, 11161), (Start: 27 @11170 has 1 MA's), (30, 11194), (31, 11203), (36, 11278), (39, 11320), (68, 11509), (72, 11527), (75, 11551), (77, 11581), (82, 11623), (88, 11677), (96, 11728), (101, 11770), (105, 11824), (111, 11875), (113, 11887), (116, 11929), (129, 12034), (133, 12061), (139, 12118), (150, 12193), (155, 12232), (157, 12253), (159, 12268), (166, 12301), (175, 12343), (188, 12415), (189, 12418), (190, 12427), (195, 12460), (200, 12511), (206, 12544), (207, 12547), (209, 12553), (212, 12562), (213, 12565), (219, 12610), (220, 12628), (222, 12637), (234, 12718), (235, 12721), (238, 12730), (246, 12784), (250, 12805), (262, 12871), (273, 12955), (278, 13018), (281, 13030), (299, 13150), (303, 13192), (307, 13225), (311, 13252), (318, 13303), (321, 13336), (322, 13345), (325, 13360), (333, 13429), (338, 13483), (339, 13492), (341, 13522), (351, 13612), (366, 13696), (393, 13885), (398, 13909), (405, 13948), (406, 13957), (409, 13969), (424, 14059), (432, 14107), (441, 14167), (449, 14218), (451, 14224), (457, 14269), (468, 14332), (475, 14392), (476, 14398), (496, 14590), (518, 14725), (561, 14965), (566, 15031), (571, 15052), (572, 15061), (577, 15088), (583, 15166), (584, 15190), (592, 15283), (596, 15331), (606, 15436), (607, 15448), (609, 15466), (621, 15559), (624, 15613), (627, 15637), (637, 15715), (649, 15814), (717, 16264), (722, 16294), (733, 16330), (734, 16333), (746, 16408), (760, 16504),

Gene: Ziko_54 Start: 22333, Stop: 27888, Start Num: 29

Candidate Starts for Ziko_54:

(Start: 29 @22333 has 12 MA's), (34, 22399), (35, 22411), (42, 22483), (55, 22552), (61, 22612), (64, 22627), (66, 22645), (69, 22657), (74, 22687), (78, 22720), (89, 22822), (90, 22825), (98, 22867), (99, 22891), (104, 22942), (117, 23062), (118, 23065), (120, 23083), (121, 23098), (132, 23182), (134, 23188), (141, 23269), (146, 23293), (153, 23341), (155, 23368), (158, 23395), (178, 23503), (187, 23548), (197, 23617), (199, 23629), (251, 23968), (257, 23998), (261, 24019), (262, 24025), (277, 24157), (287, 24238), (295, 24310), (301, 24340), (305, 24379), (306, 24382), (309, 24412), (315, 24454), (321, 24508), (327, 24559), (329, 24574), (330, 24580), (333, 24601), (338, 24655), (341, 24694), (344, 24724), (348, 24754), (349, 24778), (365, 24868), (366, 24877), (369, 24907), (372, 24919), (382, 25000), (393, 25066), (396, 25078), (419, 25231), (420, 25234), (429, 25279), (447, 25396), (464, 25486), (467, 25516), (470, 25555), (473, 25564), (474, 25579), (492, 25654), (528, 25933), (530, 25939), (561, 26071), (574, 26170), (583, 26266), (588, 26344), (606, 26551), (618, 26662), (634, 26827), (640, 26851), (643, 26908), (657, 26995), (673, 27133), (674, 27151), (679, 27172), (693, 27274), (699, 27319), (705, 27343), (726, 27493), (735, 27553), (742, 27583), (745, 27610), (747, 27625), (751, 27679), (758, 27694), (768, 27775), (769, 27790), (775, 27865),