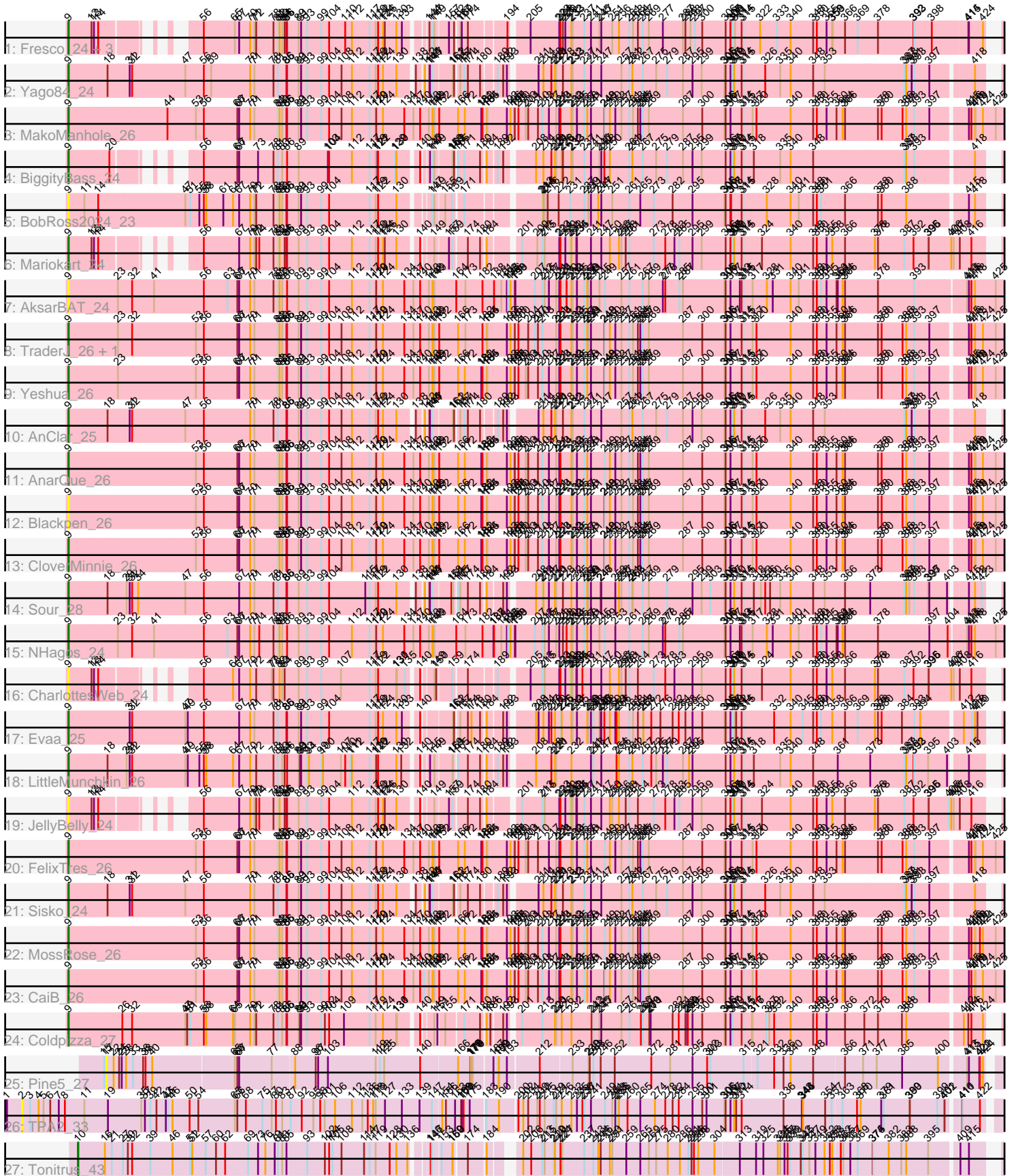


Zoomed Pham 311874



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 311874 Report

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

Pham number 311874 has 31 members, 8 are drafts.

Phages represented in each track:

- Track 1 : Fresco_24, Axumite_24, Shatter_24, Ligma_24
- Track 2 : Yago84_24
- Track 3 : MakoManhole_26
- Track 4 : BiggityBass_24
- Track 5 : BobRoss2024_23
- Track 6 : Mariokart_24
- Track 7 : AksarBAT_24
- Track 8 : TraderJ_26, Wooper_26
- Track 9 : Yeshua_26
- Track 10 : AnClar_25
- Track 11 : AnarQue_26
- Track 12 : Blackpen_26
- Track 13 : CloverMinnie_26
- Track 14 : Sour_28
- Track 15 : NHagos_24
- Track 16 : CharlottesWeb_24
- Track 17 : Evaa_25
- Track 18 : LittleMunchkin_26
- Track 19 : JellyBelly_24
- Track 20 : FelixTres_26
- Track 21 : Sisko_24
- Track 22 : MossRose_26
- Track 23 : CaiB_26
- Track 24 : Coldpizza_27
- Track 25 : Pine5_27
- Track 26 : TPA2_33
- Track 27 : Tonitrus_43

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

The start number called the most often in the published annotations is 9, it was called in 22 of the 23 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AksarBAT_24, AnClar_25, AnarQue_26, Axumite_24, BiggityBass_24, Blackpen_26, BobRoss2024_23, CaiB_26, CharlottesWeb_24, CloverMinnie_26, Coldpizza_27, Evaa_25, FelixTres_26, Fresco_24, JellyBelly_24, Ligma_24, LittleMunchkin_26, MakoManhole_26, Mariokart_24, MossRose_26, NHagos_24, Shatter_24, Sisko_24, Sour_28, TraderJ_26, Wooper_26, Yago84_24, Yeshua_26,

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

-

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

- Pine5_27, TPA2_33, Tonitrus_43,

Summary by start number:

Start 2:

- Found in 1 of 31 (3.2%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: TPA2_33 (singleton),

Start 9:

- Found in 28 of 31 (90.3%) of genes in pham
- Manual Annotations of this start: 22 of 23
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AksarBAT_24 (DR), AnClar_25 (DR), AnarQue_26 (DR), Axumite_24 (DR), BiggityBass_24 (DR), Blackpen_26 (DR), BobRoss2024_23 (DR), CaiB_26 (DR), CharlottesWeb_24 (DR), CloverMinnie_26 (DR), Coldpizza_27 (DR), Evaa_25 (DR), FelixTres_26 (DR), Fresco_24 (DR), JellyBelly_24 (DR), Ligma_24 (DR), LittleMunchkin_26 (DR), MakoManhole_26 (DR), Mariokart_24 (DR), MossRose_26 (DR), NHagos_24 (DR), Shatter_24 (DR), Sisko_24 (DR), Sour_28 (DR), TraderJ_26 (DR), Wooper_26 (DR), Yago84_24 (DR), Yeshua_26 (DR),

Start 10:

- Found in 1 of 31 (3.2%) of genes in pham
- Manual Annotations of this start: 1 of 23
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Tonitrus_43 (singleton),

Start 17:

- Found in 1 of 31 (3.2%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Pine5_27 (singleton),

Summary by clusters:

There are 2 clusters represented in this pham: singleton, DR,

Info for manual annotations of cluster DR:

- Start number 9 was manually annotated 22 times for cluster DR.

Gene Information:

Gene: AksarBAT_24 Start: 18149, Stop: 24019, Start Num: 9

Candidate Starts for AksarBAT_24:

(Start: 9 @18149 has 22 MA's), (23, 18389), (32, 18458), (41, 18566), (56, 18791), (63, 18902), (66, 18950), (67, 18959), (70, 19013), (71, 19034), (78, 19127), (81, 19148), (82, 19157), (83, 19169), (86, 19193), (89, 19247), (93, 19289), (99, 19358), (104, 19397), (112, 19505), (117, 19592), (119, 19622), (120, 19625), (124, 19658), (134, 19763), (137, 19808), (140, 19841), (143, 19883), (148, 19901), (149, 19910), (164, 20018), (173, 20063), (182, 20144), (188, 20201), (191, 20237), (193, 20264), (195, 20270), (196, 20282), (198, 20303), (199, 20306), (207, 20402), (213, 20438), (215, 20450), (217, 20471), (221, 20507), (223, 20522), (224, 20528), (230, 20558), (232, 20582), (233, 20588), (235, 20609), (237, 20645), (238, 20660), (239, 20666), (241, 20678), (245, 20720), (249, 20747), (257, 20828), (261, 20867), (267, 20933), (269, 20963), (277, 21032), (278, 21044), (285, 21113), (287, 21131), (305, 21326), (306, 21332), (307, 21356), (313, 21401), (314, 21410), (315, 21419), (317, 21464), (328, 21533), (331, 21554), (340, 21626), (341, 21665), (348, 21728), (350, 21746), (351, 21767), (355, 21794), (360, 21842), (361, 21848), (364, 21872), (366, 21884), (378, 22040), (393, 22205), (413, 22427), (415, 22436), (416, 22448), (418, 22466), (425, 22568), (432, 22673), (437, 22709), (446, 22796), (449, 22832), (452, 22844), (455, 22871), (458, 22898), (459, 22919), (463, 22955), (464, 22997), (467, 23036), (472, 23081), (476, 23132), (478, 23150), (485, 23189), (487, 23201), (494, 23291), (497, 23303), (498, 23309), (503, 23321), (508, 23363), (510, 23375), (517, 23477), (527, 23525), (528, 23534), (532, 23552), (533, 23558), (541, 23654), (549, 23732), (553, 23768), (556, 23795), (560, 23816), (561, 23828), (562, 23846), (563, 23861), (565, 23885), (570, 23957), (574, 24011),

Gene: AnClar_25 Start: 20494, Stop: 25980, Start Num: 9

Candidate Starts for AnClar_25:

(Start: 9 @20494 has 22 MA's), (18, 20683), (31, 20791), (32, 20803), (47, 21061), (56, 21136), (70, 21358), (71, 21379), (78, 21472), (81, 21493), (85, 21535), (86, 21538), (89, 21592), (91, 21604), (93, 21634), (99, 21703), (104, 21742), (108, 21799), (112, 21850), (117, 21937), (119, 21967), (122, 21979), (124, 22003), (130, 22069), (138, 22135), (142, 22159), (144, 22168), (145, 22171), (147, 22180), (161, 22264), (162, 22270), (167, 22285), (171, 22303), (174, 22318), (180, 22366), (189, 22423), (192, 22450), (193, 22459), (211, 22576), (214, 22600), (218, 22639), (220, 22657), (221, 22663), (228, 22696), (232, 22738), (233, 22744), (237, 22801), (241, 22834), (247, 22885), (257, 22984), (261, 23023), (262, 23038), (267, 23089), (275, 23155), (279, 23209), (287, 23287), (295, 23332), (299, 23377), (305, 23482), (306, 23488), (307, 23512), (309, 23521), (310, 23530), (314, 23566), (315, 23575), (326, 23680), (335, 23746), (340, 23794), (348, 23902), (353, 23953), (387, 24319), (388, 24328), (391, 24352), (393, 24364), (397, 24433), (418, 24604), (426, 24676), (431, 24715), (435, 24733), (437, 24754), (448, 24853), (449, 24877), (452, 24889), (454, 24904), (455, 24916), (463, 25000), (470, 25057), (473, 25075), (475, 25084), (485, 25162), (497, 25252), (498, 25258), (504, 25279), (506, 25303), (508, 25312), (517, 25426), (525, 25465), (533, 25507), (536, 25540), (543, 25636), (546, 25669), (547, 25681), (560, 25777), (562, 25807), (570, 25918), (574, 25972),

Gene: AnarQue_26 Start: 19634, Stop: 25498, Start Num: 9

Candidate Starts for AnarQue_26:

(Start: 9 @19634 has 22 MA's), (53, 20249), (56, 20276), (66, 20435), (67, 20444), (70, 20498), (71, 20519), (81, 20633), (82, 20642), (83, 20654), (85, 20675), (86, 20678), (89, 20732), (91, 20744), (93, 20774), (99, 20843), (104, 20882), (108, 20939), (112, 20990), (117, 21077), (119, 21107), (120, 21110), (124, 21143), (134, 21248), (137, 21293), (140, 21326), (143, 21368), (148, 21386), (149, 21395), (152, 21419), (166, 21512), (172, 21545), (181, 21623), (182, 21629), (184, 21650), (185, 21653), (193, 21749), (196, 21767), (197, 21785), (198, 21788), (200, 21806), (203, 21842), (204, 21854), (210, 21902), (213, 21923), (217, 21956), (221, 21992), (223, 22007), (224, 22013), (232, 22067), (233, 22073), (235, 22094), (237, 22130), (238, 22145), (241, 22163), (249, 22232), (250,

22256), (253, 22283), (257, 22313), (261, 22352), (263, 22370), (264, 22394), (265, 22406), (267, 22418), (269, 22448), (287, 22616), (300, 22709), (305, 22811), (306, 22817), (307, 22841), (314, 22895), (315, 22904), (317, 22949), (320, 22967), (340, 23111), (348, 23213), (350, 23231), (355, 23279), (360, 23327), (364, 23357), (366, 23369), (378, 23525), (380, 23543), (386, 23636), (388, 23654), (393, 23690), (397, 23759), (415, 23909), (416, 23921), (418, 23939), (419, 23942), (424, 23978), (425, 24041), (432, 24146), (437, 24182), (446, 24269), (448, 24281), (449, 24305), (452, 24317), (455, 24344), (458, 24371), (459, 24392), (460, 24401), (463, 24428), (464, 24470), (476, 24605), (477, 24608), (478, 24623), (479, 24632), (487, 24674), (490, 24722), (493, 24758), (497, 24782), (498, 24788), (503, 24800), (505, 24821), (508, 24842), (517, 24956), (528, 25013), (529, 25016), (532, 25031), (533, 25037), (541, 25133), (549, 25211), (560, 25295), (562, 25325), (565, 25364), (567, 25376), (570, 25436), (574, 25490),

Gene: Axumite_24 Start: 18254, Stop: 23506, Start Num: 9

Candidate Starts for Axumite_24:

(Start: 9 @18254 has 22 MA's), (12, 18365), (13, 18377), (14, 18398), (56, 18653), (65, 18800), (67, 18821), (70, 18875), (71, 18896), (72, 18905), (78, 18989), (81, 19010), (82, 19019), (83, 19031), (84, 19043), (85, 19052), (86, 19055), (89, 19109), (91, 19121), (93, 19151), (99, 19220), (104, 19259), (110, 19334), (112, 19367), (117, 19454), (119, 19484), (122, 19496), (124, 19520), (126, 19529), (130, 19586), (133, 19613), (144, 19685), (147, 19697), (149, 19709), (157, 19766), (162, 19787), (167, 19802), (169, 19808), (174, 19835), (194, 19979), (205, 20054), (223, 20195), (224, 20201), (228, 20213), (229, 20225), (232, 20255), (233, 20261), (237, 20318), (241, 20351), (245, 20393), (247, 20402), (251, 20456), (256, 20489), (261, 20540), (263, 20558), (264, 20582), (267, 20606), (269, 20636), (277, 20705), (287, 20804), (288, 20816), (293, 20840), (297, 20861), (300, 20897), (306, 21005), (307, 21029), (308, 21032), (309, 21038), (311, 21050), (314, 21083), (315, 21092), (322, 21173), (333, 21242), (340, 21299), (348, 21401), (350, 21419), (355, 21467), (358, 21494), (359, 21497), (366, 21557), (369, 21617), (378, 21713), (392, 21875), (393, 21878), (398, 21959), (414, 22106), (415, 22109), (424, 22178), (432, 22253), (434, 22259), (437, 22289), (447, 22379), (449, 22412), (452, 22424), (454, 22439), (455, 22451), (458, 22478), (459, 22499), (463, 22535), (470, 22592), (475, 22619), (505, 22817), (508, 22838), (513, 22871), (517, 22952), (518, 22955), (525, 22991), (533, 23033), (536, 23066), (541, 23141), (546, 23195), (551, 23234), (560, 23303), (562, 23333), (565, 23372), (568, 23396), (570, 23444), (574, 23498),

Gene: BiggityBass_24 Start: 20531, Stop: 25771, Start Num: 9

Candidate Starts for BiggityBass_24:

(Start: 9 @20531 has 22 MA's), (20, 20729), (56, 20930), (66, 21089), (67, 21098), (73, 21191), (78, 21266), (81, 21287), (83, 21308), (86, 21332), (89, 21386), (103, 21530), (104, 21536), (112, 21644), (117, 21731), (119, 21761), (121, 21770), (122, 21773), (129, 21857), (130, 21863), (140, 21944), (145, 21965), (147, 21974), (149, 21986), (159, 22055), (161, 22058), (162, 22064), (165, 22067), (171, 22097), (180, 22160), (184, 22178), (189, 22217), (192, 22244), (208, 22358), (214, 22394), (218, 22433), (220, 22451), (221, 22457), (226, 22484), (228, 22490), (232, 22532), (233, 22538), (237, 22595), (241, 22628), (245, 22670), (247, 22679), (248, 22694), (250, 22721), (261, 22817), (262, 22832), (267, 22883), (275, 22949), (279, 23003), (287, 23081), (295, 23126), (299, 23171), (306, 23282), (307, 23306), (309, 23315), (310, 23324), (314, 23360), (315, 23369), (318, 23420), (335, 23540), (340, 23588), (348, 23696), (387, 24113), (388, 24122), (393, 24158), (418, 24398), (426, 24470), (431, 24509), (435, 24527), (437, 24548), (445, 24629), (448, 24647), (449, 24671), (452, 24683), (454, 24698), (455, 24710), (463, 24794), (470, 24851), (473, 24869), (475, 24878), (485, 24956), (498, 25049), (503, 25061), (504, 25070), (506, 25094), (508, 25103), (517, 25217), (525, 25256), (532, 25292), (533, 25298), (536, 25331), (543, 25427), (546, 25460), (560, 25568), (562, 25598), (570, 25709), (574, 25763),

Gene: Blackpen_26 Start: 19052, Stop: 24916, Start Num: 9

Candidate Starts for Blackpen_26:

(Start: 9 @19052 has 22 MA's), (53, 19667), (56, 19694), (66, 19853), (67, 19862), (70, 19916), (71, 19937), (81, 20051), (82, 20060), (83, 20072), (85, 20093), (86, 20096), (89, 20150), (91, 20162), (93, 20192), (99, 20261), (104, 20300), (108, 20357), (112, 20408), (117, 20495), (119, 20525), (120, 20528), (124, 20561), (134, 20666), (137, 20711), (140, 20744), (143, 20786), (148, 20804), (149, 20813), (152, 20837), (166, 20930), (172, 20963), (181, 21041), (182, 21047), (184, 21068), (185, 21071), (193, 21167), (196, 21185), (197, 21203), (198, 21206), (200, 21224), (203, 21260), (204, 21272), (210, 21320), (213, 21341), (217, 21374), (221, 21410), (223, 21425), (224, 21431), (232, 21485), (233, 21491), (235, 21512), (237, 21548), (238, 21563), (241, 21581), (248, 21647), (249, 21650), (250, 21674), (253, 21701), (257, 21731), (261, 21770), (263, 21788), (264, 21812), (265, 21824), (267, 21836), (269, 21866), (287, 22034), (300, 22127), (305, 22229), (306, 22235), (307, 22259), (314, 22313), (315, 22322), (317, 22367), (320, 22385), (340, 22529), (348, 22631), (350, 22649), (355, 22697), (360, 22745), (364, 22775), (366, 22787), (378, 22943), (380, 22961), (386, 23054), (388, 23072), (393, 23108), (397, 23177), (415, 23327), (416, 23339), (418, 23357), (419, 23360), (424, 23396), (425, 23459), (432, 23564), (437, 23600), (446, 23687), (448, 23699), (449, 23723), (452, 23735), (455, 23762), (458, 23789), (459, 23810), (460, 23819), (463, 23846), (464, 23888), (476, 24023), (477, 24026), (478, 24041), (479, 24050), (487, 24092), (490, 24140), (497, 24200), (498, 24206), (499, 24212), (503, 24218), (505, 24239), (508, 24260), (517, 24374), (528, 24431), (529, 24434), (532, 24449), (533, 24455), (541, 24551), (549, 24629), (553, 24665), (560, 24713), (562, 24743), (565, 24782), (567, 24794), (570, 24854), (574, 24908),

Gene: BobRoss2024_23 Start: 18016, Stop: 23535, Start Num: 9

Candidate Starts for BobRoss2024_23:

(Start: 9 @18016 has 22 MA's), (11, 18094), (14, 18160), (47, 18583), (51, 18607), (55, 18646), (56, 18658), (58, 18670), (61, 18748), (64, 18796), (67, 18826), (70, 18880), (71, 18901), (72, 18910), (78, 18994), (81, 19015), (82, 19024), (83, 19036), (85, 19057), (86, 19060), (89, 19114), (91, 19126), (93, 19156), (99, 19225), (104, 19264), (117, 19459), (119, 19489), (122, 19501), (130, 19591), (147, 19702), (149, 19714), (155, 19756), (159, 19786), (171, 19825), (213, 20116), (214, 20122), (215, 20128), (216, 20143), (222, 20197), (231, 20254), (237, 20323), (239, 20344), (241, 20356), (244, 20392), (247, 20407), (251, 20461), (261, 20545), (265, 20599), (273, 20665), (282, 20758), (295, 20854), (305, 21004), (306, 21010), (307, 21034), (308, 21037), (314, 21088), (315, 21097), (328, 21211), (340, 21304), (341, 21343), (348, 21406), (350, 21424), (351, 21445), (366, 21562), (378, 21718), (380, 21736), (388, 21847), (415, 22105), (418, 22135), (433, 22240), (445, 22357), (446, 22363), (449, 22399), (455, 22438), (484, 22693), (485, 22696), (497, 22807), (498, 22813), (504, 22834), (508, 22867), (526, 23026), (528, 23038), (532, 23056), (536, 23095), (542, 23179), (543, 23191), (560, 23332), (562, 23362), (564, 23383),

Gene: CaiB_26 Start: 19620, Stop: 25484, Start Num: 9

Candidate Starts for CaiB_26:

(Start: 9 @19620 has 22 MA's), (53, 20235), (56, 20262), (66, 20421), (67, 20430), (70, 20484), (71, 20505), (81, 20619), (82, 20628), (83, 20640), (85, 20661), (86, 20664), (89, 20718), (91, 20730), (93, 20760), (99, 20829), (104, 20868), (108, 20925), (112, 20976), (117, 21063), (119, 21093), (120, 21096), (124, 21129), (134, 21234), (137, 21279), (140, 21312), (141, 21330), (143, 21354), (148, 21372), (149, 21381), (152, 21405), (166, 21498), (172, 21531), (181, 21609), (182, 21615), (184, 21636), (185, 21639), (193, 21735), (196, 21753), (197, 21771), (198, 21774), (200, 21792), (203, 21828), (204, 21840), (210, 21888), (213, 21909), (217, 21942), (221, 21978), (223, 21993), (224, 21999), (232, 22053), (233, 22059), (235, 22080), (237, 22116), (238, 22131), (241, 22149), (248, 22215), (249, 22218), (250, 22242), (253, 22269), (257, 22299), (261, 22338), (263, 22356), (264, 22380), (265, 22392), (267, 22404), (269, 22434), (287, 22602), (300, 22695), (305, 22797), (306, 22803), (307, 22827), (314, 22881), (315, 22890), (317, 22935), (320, 22953), (340, 23097), (348, 23199), (350, 23217), (355, 23265), (360, 23313), (364, 23343), (366, 23355), (378, 23511), (380, 23529), (386, 23622), (388, 23640), (393, 23676), (397, 23745), (415, 23895), (416, 23907), (418, 23925), (419, 23928), (424, 23964), (425, 24027), (432, 24132), (437, 24168), (446, 24255), (448, 24267), (449, 24291), (452, 24303), (455, 24330), (458, 24357), (459, 24378), (460, 24387), (463,

24414), (464, 24456), (476, 24591), (477, 24594), (478, 24609), (479, 24618), (487, 24660), (490, 24708), (497, 24768), (498, 24774), (503, 24786), (505, 24807), (508, 24828), (517, 24942), (528, 24999), (529, 25002), (532, 25017), (533, 25023), (541, 25119), (549, 25197), (553, 25233), (560, 25281), (562, 25311), (565, 25350), (567, 25362), (570, 25422), (574, 25476),

Gene: CharlottesWeb_24 Start: 18138, Stop: 23423, Start Num: 9

Candidate Starts for CharlottesWeb_24:

(Start: 9 @18138 has 22 MA's), (12, 18249), (13, 18261), (14, 18282), (56, 18537), (64, 18675), (67, 18705), (70, 18759), (72, 18789), (77, 18864), (78, 18873), (82, 18903), (83, 18915), (84, 18927), (89, 18993), (93, 19035), (99, 19104), (107, 19197), (117, 19338), (119, 19368), (122, 19380), (130, 19470), (131, 19473), (135, 19512), (140, 19551), (149, 19593), (150, 19602), (159, 19665), (174, 19719), (189, 19824), (205, 19938), (213, 19995), (215, 20007), (223, 20079), (224, 20085), (229, 20109), (231, 20133), (232, 20139), (233, 20145), (234, 20163), (235, 20166), (236, 20193), (241, 20235), (247, 20286), (250, 20328), (256, 20373), (257, 20385), (258, 20406), (261, 20424), (264, 20466), (273, 20544), (278, 20601), (283, 20646), (295, 20733), (299, 20778), (306, 20889), (307, 20913), (308, 20916), (309, 20922), (310, 20931), (314, 20967), (315, 20976), (324, 21066), (340, 21186), (348, 21288), (350, 21306), (355, 21354), (358, 21381), (366, 21444), (376, 21585), (378, 21600), (387, 21720), (392, 21762), (395, 21828), (396, 21831), (406, 21939), (407, 21951), (408, 21981), (416, 22032), (445, 22281), (452, 22335), (455, 22362), (458, 22389), (483, 22599), (485, 22611), (490, 22635), (503, 22713), (504, 22722), (506, 22746), (508, 22755), (514, 22815), (518, 22872), (520, 22884), (528, 22926), (529, 22929), (533, 22950), (539, 23034), (543, 23079), (546, 23112), (550, 23139), (556, 23199), (560, 23220), (562, 23250), (565, 23289), (568, 23313), (570, 23361), (574, 23415),

Gene: CloverMinnie_26 Start: 19560, Stop: 25424, Start Num: 9

Candidate Starts for CloverMinnie_26:

(Start: 9 @19560 has 22 MA's), (53, 20175), (56, 20202), (66, 20361), (67, 20370), (70, 20424), (71, 20445), (81, 20559), (82, 20568), (83, 20580), (85, 20601), (86, 20604), (89, 20658), (91, 20670), (93, 20700), (99, 20769), (104, 20808), (108, 20865), (112, 20916), (117, 21003), (119, 21033), (120, 21036), (124, 21069), (134, 21174), (137, 21219), (140, 21252), (143, 21294), (148, 21312), (149, 21321), (152, 21345), (166, 21438), (172, 21471), (181, 21549), (182, 21555), (184, 21576), (185, 21579), (193, 21675), (196, 21693), (197, 21711), (198, 21714), (200, 21732), (203, 21768), (204, 21780), (210, 21828), (213, 21849), (217, 21882), (221, 21918), (223, 21933), (224, 21939), (232, 21993), (233, 21999), (235, 22020), (237, 22056), (238, 22071), (241, 22089), (248, 22155), (249, 22158), (250, 22182), (253, 22209), (257, 22239), (261, 22278), (263, 22296), (264, 22320), (265, 22332), (267, 22344), (269, 22374), (287, 22542), (300, 22635), (305, 22737), (306, 22743), (307, 22767), (314, 22821), (315, 22830), (317, 22875), (320, 22893), (340, 23037), (348, 23139), (350, 23157), (355, 23205), (360, 23253), (364, 23283), (366, 23295), (378, 23451), (380, 23469), (386, 23562), (388, 23580), (393, 23616), (397, 23685), (415, 23835), (416, 23847), (418, 23865), (419, 23868), (424, 23904), (425, 23967), (432, 24072), (437, 24108), (446, 24195), (448, 24207), (449, 24231), (452, 24243), (455, 24270), (458, 24297), (459, 24318), (460, 24327), (463, 24354), (464, 24396), (476, 24531), (477, 24534), (478, 24549), (479, 24558), (487, 24600), (490, 24648), (497, 24708), (498, 24714), (503, 24726), (505, 24747), (508, 24768), (517, 24882), (528, 24939), (529, 24942), (532, 24957), (533, 24963), (541, 25059), (549, 25137), (553, 25173), (560, 25221), (562, 25251), (565, 25290), (567, 25302), (570, 25362), (574, 25416),

Gene: Coldpizza_27 Start: 22439, Stop: 27937, Start Num: 9

Candidate Starts for Coldpizza_27:

(Start: 9 @22439 has 22 MA's), (26, 22697), (32, 22745), (47, 23003), (48, 23012), (51, 23027), (56, 23078), (58, 23090), (64, 23216), (65, 23225), (70, 23300), (71, 23321), (72, 23330), (78, 23414), (81, 23435), (83, 23456), (85, 23477), (86, 23480), (89, 23534), (90, 23540), (91, 23546), (93, 23576), (99, 23645), (102, 23663), (104, 23684), (109, 23753), (117, 23879), (119, 23909), (124, 23945), (130, 24011), (131, 24014), (140, 24092), (149, 24134), (151, 24149), (155, 24176), (171, 24245), (180,

24308), (184, 24326), (186, 24344), (192, 24392), (193, 24401), (201, 24437), (213, 24536), (220, 24599), (221, 24605), (226, 24632), (232, 24680), (242, 24779), (243, 24788), (245, 24818), (247, 24827), (257, 24926), (261, 24965), (266, 25022), (267, 25031), (269, 25061), (270, 25064), (271, 25070), (282, 25178), (284, 25208), (288, 25241), (289, 25250), (290, 25253), (295, 25274), (300, 25322), (305, 25424), (306, 25430), (307, 25454), (309, 25463), (314, 25508), (315, 25517), (316, 25559), (317, 25562), (327, 25628), (329, 25643), (332, 25667), (340, 25739), (348, 25841), (350, 25859), (355, 25907), (366, 25997), (372, 26087), (378, 26153), (384, 26261), (388, 26282), (412, 26516), (414, 26534), (416, 26549), (424, 26606), (430, 26663), (437, 26702), (445, 26783), (448, 26801), (450, 26831), (452, 26837), (455, 26864), (458, 26891), (463, 26948), (484, 27119), (492, 27188), (504, 27242), (505, 27254), (506, 27266), (508, 27275), (523, 27422), (532, 27464), (533, 27470), (539, 27554), (556, 27719), (558, 27731), (560, 27740), (562, 27770), (574, 27929),

Gene: Evaa_25 Start: 19484, Stop: 24991, Start Num: 9

Candidate Starts for Evaa_25:

(Start: 9 @19484 has 22 MA's), (31, 19778), (32, 19790), (47, 20048), (49, 20060), (56, 20123), (67, 20291), (70, 20345), (71, 20366), (78, 20459), (81, 20480), (85, 20522), (86, 20525), (89, 20579), (91, 20591), (93, 20621), (99, 20690), (104, 20729), (117, 20924), (119, 20954), (122, 20966), (124, 20990), (130, 21056), (133, 21083), (140, 21137), (161, 21251), (162, 21257), (167, 21272), (174, 21305), (178, 21320), (180, 21353), (184, 21371), (192, 21437), (193, 21446), (208, 21551), (211, 21563), (214, 21587), (217, 21614), (218, 21626), (220, 21644), (225, 21674), (226, 21677), (232, 21725), (233, 21731), (235, 21752), (238, 21803), (239, 21809), (241, 21821), (243, 21833), (245, 21863), (246, 21869), (247, 21872), (248, 21887), (250, 21914), (253, 21941), (254, 21947), (256, 21959), (261, 22010), (263, 22028), (264, 22052), (267, 22076), (268, 22079), (272, 22118), (276, 22163), (282, 22223), (284, 22253), (288, 22286), (295, 22319), (300, 22367), (305, 22469), (306, 22475), (307, 22499), (309, 22508), (311, 22520), (312, 22526), (314, 22553), (315, 22562), (332, 22712), (340, 22784), (345, 22841), (348, 22886), (350, 22904), (351, 22925), (358, 22979), (366, 23042), (369, 23102), (376, 23183), (378, 23198), (380, 23216), (384, 23306), (393, 23363), (394, 23393), (412, 23561), (417, 23597), (418, 23612), (420, 23624), (438, 23762), (439, 23768), (445, 23828), (448, 23846), (452, 23882), (455, 23909), (458, 23936), (463, 23993), (470, 24062), (475, 24089), (486, 24176), (494, 24257), (495, 24263), (504, 24296), (505, 24308), (508, 24329), (510, 24341), (516, 24440), (520, 24458), (526, 24488), (527, 24491), (529, 24503), (532, 24518), (533, 24524), (536, 24557), (539, 24608), (546, 24686), (548, 24701), (554, 24755), (556, 24773), (560, 24794), (562, 24824), (570, 24929), (574, 24983),

Gene: FelixTres_26 Start: 19623, Stop: 25487, Start Num: 9

Candidate Starts for FelixTres_26:

(Start: 9 @19623 has 22 MA's), (53, 20238), (56, 20265), (66, 20424), (67, 20433), (70, 20487), (71, 20508), (81, 20622), (82, 20631), (83, 20643), (85, 20664), (86, 20667), (89, 20721), (91, 20733), (93, 20763), (99, 20832), (104, 20871), (108, 20928), (112, 20979), (117, 21066), (119, 21096), (120, 21099), (124, 21132), (134, 21237), (137, 21282), (140, 21315), (143, 21357), (148, 21375), (149, 21384), (152, 21408), (166, 21501), (172, 21534), (181, 21612), (182, 21618), (184, 21639), (185, 21642), (193, 21738), (196, 21756), (197, 21774), (198, 21777), (200, 21795), (203, 21831), (204, 21843), (210, 21891), (217, 21945), (221, 21981), (223, 21996), (224, 22002), (232, 22056), (233, 22062), (235, 22083), (237, 22119), (238, 22134), (241, 22152), (249, 22221), (250, 22245), (253, 22272), (257, 22302), (261, 22341), (263, 22359), (264, 22383), (265, 22395), (267, 22407), (269, 22437), (287, 22605), (300, 22698), (305, 22800), (306, 22806), (307, 22830), (314, 22884), (315, 22893), (317, 22938), (320, 22956), (340, 23100), (348, 23202), (350, 23220), (355, 23268), (360, 23316), (364, 23346), (366, 23358), (378, 23514), (380, 23532), (386, 23625), (388, 23643), (393, 23679), (397, 23748), (415, 23898), (416, 23910), (418, 23928), (419, 23931), (424, 23967), (425, 24030), (432, 24135), (437, 24171), (446, 24258), (448, 24270), (449, 24294), (452, 24306), (455, 24333), (458, 24360), (459, 24381), (460, 24390), (463, 24417), (464, 24459), (476, 24594), (477, 24597), (478, 24612), (479, 24621), (487, 24663), (490, 24711), (493, 24747), (497, 24771), (498, 24777), (503, 24789), (505, 24810), (508, 24831), (517, 24945), (528, 25002), (529, 25005), (532,

25020), (533, 25026), (541, 25122), (545, 25167), (549, 25200), (553, 25236), (560, 25284), (562, 25314), (565, 25353), (567, 25365), (570, 25425), (574, 25479),

Gene: Fresco_24 Start: 18254, Stop: 23506, Start Num: 9

Candidate Starts for Fresco_24:

(Start: 9 @18254 has 22 MA's), (12, 18365), (13, 18377), (14, 18398), (56, 18653), (65, 18800), (67, 18821), (70, 18875), (71, 18896), (72, 18905), (78, 18989), (81, 19010), (82, 19019), (83, 19031), (84, 19043), (85, 19052), (86, 19055), (89, 19109), (91, 19121), (93, 19151), (99, 19220), (104, 19259), (110, 19334), (112, 19367), (117, 19454), (119, 19484), (122, 19496), (124, 19520), (126, 19529), (130, 19586), (133, 19613), (144, 19685), (147, 19697), (149, 19709), (157, 19766), (162, 19787), (167, 19802), (169, 19808), (174, 19835), (194, 19979), (205, 20054), (223, 20195), (224, 20201), (228, 20213), (229, 20225), (232, 20255), (233, 20261), (237, 20318), (241, 20351), (245, 20393), (247, 20402), (251, 20456), (256, 20489), (261, 20540), (263, 20558), (264, 20582), (267, 20606), (269, 20636), (277, 20705), (287, 20804), (288, 20816), (293, 20840), (297, 20861), (300, 20897), (306, 21005), (307, 21029), (308, 21032), (309, 21038), (311, 21050), (314, 21083), (315, 21092), (322, 21173), (333, 21242), (340, 21299), (348, 21401), (350, 21419), (355, 21467), (358, 21494), (359, 21497), (366, 21557), (369, 21617), (378, 21713), (392, 21875), (393, 21878), (398, 21959), (414, 22106), (415, 22109), (424, 22178), (432, 22253), (434, 22259), (437, 22289), (447, 22379), (449, 22412), (452, 22424), (454, 22439), (455, 22451), (458, 22478), (459, 22499), (463, 22535), (470, 22592), (475, 22619), (505, 22817), (508, 22838), (513, 22871), (517, 22952), (518, 22955), (525, 22991), (533, 23033), (536, 23066), (541, 23141), (546, 23195), (551, 23234), (560, 23303), (562, 23333), (565, 23372), (568, 23396), (570, 23444), (574, 23498),

Gene: JellyBelly_24 Start: 18141, Stop: 23426, Start Num: 9

Candidate Starts for JellyBelly_24:

(Start: 9 @18141 has 22 MA's), (12, 18252), (13, 18264), (14, 18285), (56, 18540), (67, 18708), (70, 18762), (71, 18783), (72, 18792), (74, 18807), (78, 18876), (81, 18897), (82, 18906), (84, 18930), (85, 18939), (86, 18942), (89, 18996), (93, 19038), (99, 19107), (104, 19146), (112, 19254), (117, 19341), (119, 19371), (122, 19383), (124, 19407), (126, 19416), (130, 19473), (140, 19554), (149, 19596), (157, 19653), (159, 19668), (174, 19722), (180, 19770), (184, 19788), (201, 19899), (213, 19998), (215, 20010), (223, 20082), (224, 20088), (229, 20112), (231, 20136), (232, 20142), (233, 20148), (234, 20166), (235, 20169), (237, 20205), (241, 20238), (247, 20289), (250, 20331), (251, 20343), (256, 20376), (258, 20409), (261, 20427), (264, 20469), (273, 20547), (278, 20604), (283, 20649), (285, 20673), (295, 20736), (299, 20781), (306, 20892), (307, 20916), (308, 20919), (309, 20925), (310, 20934), (314, 20970), (315, 20979), (324, 21069), (340, 21189), (348, 21291), (350, 21309), (355, 21357), (358, 21384), (366, 21447), (376, 21588), (378, 21603), (387, 21723), (392, 21765), (395, 21831), (396, 21834), (405, 21930), (406, 21942), (407, 21954), (408, 21984), (416, 22035), (445, 22284), (452, 22338), (455, 22365), (458, 22392), (483, 22602), (485, 22614), (490, 22638), (503, 22716), (504, 22725), (506, 22749), (508, 22758), (514, 22818), (518, 22875), (520, 22887), (528, 22929), (529, 22932), (533, 22953), (537, 22989), (539, 23037), (543, 23082), (546, 23115), (550, 23142), (556, 23202), (560, 23223), (562, 23253), (565, 23292), (568, 23316), (570, 23364), (574, 23418),

Gene: Ligma_24 Start: 18254, Stop: 23506, Start Num: 9

Candidate Starts for Ligma_24:

(Start: 9 @18254 has 22 MA's), (12, 18365), (13, 18377), (14, 18398), (56, 18653), (65, 18800), (67, 18821), (70, 18875), (71, 18896), (72, 18905), (78, 18989), (81, 19010), (82, 19019), (83, 19031), (84, 19043), (85, 19052), (86, 19055), (89, 19109), (91, 19121), (93, 19151), (99, 19220), (104, 19259), (110, 19334), (112, 19367), (117, 19454), (119, 19484), (122, 19496), (124, 19520), (126, 19529), (130, 19586), (133, 19613), (144, 19685), (147, 19697), (149, 19709), (157, 19766), (162, 19787), (167, 19802), (169, 19808), (174, 19835), (194, 19979), (205, 20054), (223, 20195), (224, 20201), (228, 20213), (229, 20225), (232, 20255), (233, 20261), (237, 20318), (241, 20351), (245, 20393), (247, 20402), (251, 20456), (256, 20489), (261, 20540), (263, 20558), (264, 20582), (267, 20606),

(269, 20636), (277, 20705), (287, 20804), (288, 20816), (293, 20840), (297, 20861), (300, 20897), (306, 21005), (307, 21029), (308, 21032), (309, 21038), (311, 21050), (314, 21083), (315, 21092), (322, 21173), (333, 21242), (340, 21299), (348, 21401), (350, 21419), (355, 21467), (358, 21494), (359, 21497), (366, 21557), (369, 21617), (378, 21713), (392, 21875), (393, 21878), (398, 21959), (414, 22106), (415, 22109), (424, 22178), (432, 22253), (434, 22259), (437, 22289), (447, 22379), (449, 22412), (452, 22424), (454, 22439), (455, 22451), (458, 22478), (459, 22499), (463, 22535), (470, 22592), (475, 22619), (505, 22817), (508, 22838), (513, 22871), (517, 22952), (518, 22955), (525, 22991), (533, 23033), (536, 23066), (541, 23141), (546, 23195), (551, 23234), (560, 23303), (562, 23333), (565, 23372), (568, 23396), (570, 23444), (574, 23498),

Gene: LittleMunchkin_26 Start: 21076, Stop: 26559, Start Num: 9

Candidate Starts for LittleMunchkin_26:

(Start: 9 @21076 has 22 MA's), (18, 21265), (29, 21358), (31, 21373), (32, 21385), (47, 21643), (49, 21655), (55, 21706), (56, 21718), (58, 21730), (64, 21856), (67, 21886), (70, 21940), (72, 21970), (78, 22054), (81, 22075), (83, 22096), (84, 22108), (86, 22120), (89, 22174), (90, 22180), (91, 22186), (93, 22216), (94, 22225), (99, 22285), (100, 22294), (107, 22378), (110, 22399), (111, 22426), (112, 22432), (117, 22519), (119, 22549), (120, 22552), (122, 22561), (130, 22651), (132, 22675), (140, 22732), (145, 22753), (149, 22774), (159, 22843), (161, 22846), (165, 22855), (174, 22900), (180, 22948), (184, 22966), (189, 23005), (192, 23032), (193, 23041), (208, 23146), (218, 23221), (220, 23239), (221, 23245), (232, 23320), (241, 23416), (243, 23428), (247, 23467), (254, 23542), (256, 23554), (261, 23605), (262, 23620), (267, 23671), (272, 23713), (275, 23737), (277, 23770), (279, 23791), (287, 23869), (292, 23899), (295, 23914), (306, 24070), (307, 24094), (310, 24112), (314, 24148), (315, 24157), (318, 24208), (335, 24328), (340, 24376), (348, 24484), (361, 24598), (373, 24748), (387, 24901), (388, 24910), (392, 24943), (393, 24946), (395, 25009), (403, 25099), (415, 25156), (431, 25297), (432, 25300), (435, 25315), (437, 25336), (452, 25471), (454, 25486), (455, 25498), (463, 25582), (470, 25639), (475, 25666), (484, 25741), (485, 25744), (488, 25753), (490, 25771), (498, 25837), (503, 25849), (505, 25870), (506, 25882), (508, 25891), (517, 26005), (523, 26038), (525, 26044), (531, 26074), (533, 26086), (536, 26119), (543, 26215), (546, 26248), (556, 26335), (560, 26356), (562, 26386), (565, 26425), (570, 26497), (571, 26500), (574, 26551),

Gene: MakoManhole_26 Start: 19638, Stop: 25502, Start Num: 9

Candidate Starts for MakoManhole_26:

(Start: 9 @19638 has 22 MA's), (44, 20121), (53, 20253), (56, 20280), (66, 20439), (67, 20448), (70, 20502), (71, 20523), (81, 20637), (82, 20646), (83, 20658), (85, 20679), (86, 20682), (89, 20736), (91, 20748), (93, 20778), (99, 20847), (104, 20886), (108, 20943), (112, 20994), (117, 21081), (119, 21111), (120, 21114), (124, 21147), (134, 21252), (137, 21297), (140, 21330), (143, 21372), (148, 21390), (149, 21399), (152, 21423), (166, 21516), (172, 21549), (181, 21627), (182, 21633), (184, 21654), (185, 21657), (193, 21753), (196, 21771), (197, 21789), (198, 21792), (200, 21810), (203, 21846), (204, 21858), (210, 21906), (213, 21927), (217, 21960), (221, 21996), (223, 22011), (224, 22017), (232, 22071), (233, 22077), (235, 22098), (237, 22134), (238, 22149), (241, 22167), (248, 22233), (249, 22236), (250, 22260), (253, 22287), (257, 22317), (261, 22356), (263, 22374), (264, 22398), (265, 22410), (267, 22422), (269, 22452), (287, 22620), (300, 22713), (305, 22815), (306, 22821), (307, 22845), (314, 22899), (315, 22908), (317, 22953), (320, 22971), (340, 23115), (348, 23217), (350, 23235), (355, 23283), (360, 23331), (364, 23361), (366, 23373), (378, 23529), (380, 23547), (386, 23640), (388, 23658), (393, 23694), (397, 23763), (415, 23913), (416, 23925), (418, 23943), (419, 23946), (424, 23982), (425, 24045), (432, 24150), (437, 24186), (446, 24273), (448, 24285), (449, 24309), (452, 24321), (455, 24348), (458, 24375), (459, 24396), (460, 24405), (463, 24432), (464, 24474), (476, 24609), (477, 24612), (478, 24627), (479, 24636), (487, 24678), (490, 24726), (497, 24786), (498, 24792), (503, 24804), (505, 24825), (508, 24846), (517, 24960), (528, 25017), (529, 25020), (532, 25035), (533, 25041), (541, 25137), (545, 25182), (549, 25215), (553, 25251), (560, 25299), (562, 25329), (565, 25368), (567, 25380), (570, 25440), (574, 25494),

Gene: Mariokart_24 Start: 18137, Stop: 23422, Start Num: 9

Candidate Starts for Mariokart_24:

(Start: 9 @18137 has 22 MA's), (12, 18248), (13, 18260), (14, 18281), (56, 18536), (67, 18704), (70, 18758), (71, 18779), (72, 18788), (74, 18803), (78, 18872), (81, 18893), (82, 18902), (84, 18926), (85, 18935), (86, 18938), (89, 18992), (93, 19034), (99, 19103), (104, 19142), (112, 19250), (117, 19337), (119, 19367), (122, 19379), (124, 19403), (126, 19412), (130, 19469), (140, 19550), (149, 19592), (157, 19649), (159, 19664), (174, 19718), (180, 19766), (184, 19784), (201, 19895), (209, 19970), (213, 19994), (215, 20006), (223, 20078), (224, 20084), (229, 20108), (231, 20132), (232, 20138), (234, 20162), (235, 20165), (241, 20234), (247, 20285), (250, 20327), (256, 20372), (257, 20384), (258, 20405), (261, 20423), (273, 20543), (278, 20600), (283, 20645), (285, 20669), (295, 20732), (299, 20777), (306, 20888), (307, 20912), (308, 20915), (309, 20921), (310, 20930), (314, 20966), (315, 20975), (324, 21065), (340, 21185), (348, 21287), (350, 21305), (355, 21353), (358, 21380), (366, 21443), (376, 21584), (378, 21599), (387, 21719), (392, 21761), (395, 21827), (396, 21830), (406, 21938), (407, 21950), (408, 21980), (416, 22031), (445, 22280), (452, 22334), (455, 22361), (458, 22388), (483, 22598), (485, 22610), (490, 22634), (503, 22712), (504, 22721), (506, 22745), (508, 22754), (514, 22814), (518, 22871), (520, 22883), (528, 22925), (529, 22928), (533, 22949), (537, 22985), (539, 23033), (543, 23078), (546, 23111), (550, 23138), (556, 23198), (560, 23219), (562, 23249), (565, 23288), (568, 23312), (570, 23360), (574, 23414),

Gene: MossRose_26 Start: 19617, Stop: 25481, Start Num: 9

Candidate Starts for MossRose_26:

(Start: 9 @19617 has 22 MA's), (53, 20232), (56, 20259), (66, 20418), (67, 20427), (70, 20481), (71, 20502), (81, 20616), (82, 20625), (83, 20637), (85, 20658), (86, 20661), (89, 20715), (91, 20727), (93, 20757), (99, 20826), (104, 20865), (108, 20922), (112, 20973), (117, 21060), (119, 21090), (120, 21093), (124, 21126), (134, 21231), (137, 21276), (140, 21309), (143, 21351), (148, 21369), (149, 21378), (152, 21402), (166, 21495), (172, 21528), (181, 21606), (182, 21612), (184, 21633), (185, 21636), (193, 21732), (196, 21750), (197, 21768), (198, 21771), (200, 21789), (203, 21825), (204, 21837), (210, 21885), (213, 21906), (217, 21939), (221, 21975), (223, 21990), (224, 21996), (232, 22050), (233, 22056), (235, 22077), (237, 22113), (238, 22128), (241, 22146), (249, 22215), (250, 22239), (253, 22266), (257, 22296), (261, 22335), (263, 22353), (264, 22377), (265, 22389), (267, 22401), (269, 22431), (287, 22599), (300, 22692), (305, 22794), (306, 22800), (307, 22824), (314, 22878), (315, 22887), (317, 22932), (320, 22950), (340, 23094), (348, 23196), (350, 23214), (355, 23262), (360, 23310), (364, 23340), (366, 23352), (378, 23508), (380, 23526), (386, 23619), (388, 23637), (393, 23673), (397, 23742), (415, 23892), (416, 23904), (418, 23922), (419, 23925), (422, 23946), (424, 23961), (425, 24024), (432, 24129), (437, 24165), (446, 24252), (448, 24264), (449, 24288), (452, 24300), (455, 24327), (458, 24354), (459, 24375), (460, 24384), (463, 24411), (464, 24453), (476, 24588), (477, 24591), (478, 24606), (479, 24615), (487, 24657), (490, 24705), (497, 24765), (498, 24771), (503, 24783), (505, 24804), (508, 24825), (517, 24939), (528, 24996), (529, 24999), (532, 25014), (533, 25020), (541, 25116), (549, 25194), (553, 25230), (560, 25278), (562, 25308), (565, 25347), (567, 25359), (570, 25419), (574, 25473),

Gene: NHagos_24 Start: 18152, Stop: 24022, Start Num: 9

Candidate Starts for NHagos_24:

(Start: 9 @18152 has 22 MA's), (23, 18392), (32, 18461), (41, 18569), (56, 18794), (63, 18905), (66, 18953), (67, 18962), (70, 19016), (71, 19037), (74, 19061), (78, 19130), (81, 19151), (82, 19160), (83, 19172), (86, 19196), (89, 19250), (93, 19292), (99, 19361), (104, 19400), (112, 19508), (117, 19595), (119, 19625), (120, 19628), (124, 19661), (134, 19766), (137, 19811), (140, 19844), (143, 19886), (148, 19904), (149, 19913), (164, 20021), (173, 20066), (182, 20147), (187, 20201), (188, 20204), (191, 20240), (193, 20267), (195, 20273), (196, 20285), (198, 20306), (199, 20309), (207, 20405), (213, 20441), (215, 20453), (217, 20474), (221, 20510), (223, 20525), (228, 20543), (230, 20561), (232, 20585), (233, 20591), (235, 20612), (237, 20648), (238, 20663), (241, 20681), (245, 20723), (249, 20750), (253, 20801), (261, 20870), (267, 20936), (269, 20966), (277, 21035), (278, 21047), (285, 21116), (287, 21134), (305, 21329), (306, 21335), (307, 21359), (313, 21404), (314, 21413), (315, 21422), (317, 21467), (328, 21536), (331, 21557), (340, 21629), (341, 21668), (348, 21731),

(350, 21749), (351, 21770), (355, 21797), (360, 21845), (361, 21851), (364, 21875), (366, 21887), (378, 22043), (397, 22277), (404, 22364), (413, 22430), (415, 22439), (416, 22451), (418, 22469), (425, 22571), (432, 22676), (437, 22712), (446, 22799), (449, 22835), (452, 22847), (455, 22874), (458, 22901), (459, 22922), (463, 22958), (464, 23000), (467, 23039), (476, 23135), (477, 23138), (478, 23153), (485, 23192), (487, 23204), (494, 23294), (497, 23306), (498, 23312), (503, 23324), (508, 23366), (510, 23378), (517, 23480), (527, 23528), (528, 23537), (531, 23549), (532, 23555), (533, 23561), (541, 23657), (549, 23735), (553, 23771), (556, 23798), (560, 23819), (561, 23831), (562, 23849), (563, 23864), (565, 23888), (570, 23960), (574, 24014),

Gene: Pine5_27 Start: 20638, Stop: 25836, Start Num: 17

Candidate Starts for Pine5_27:

(15, 20629), (17, 20638), (22, 20671), (24, 20695), (25, 20707), (28, 20728), (33, 20761), (36, 20806), (38, 20818), (40, 20839), (65, 21193), (66, 21205), (67, 21214), (77, 21361), (88, 21454), (96, 21544), (97, 21556), (103, 21601), (119, 21811), (123, 21832), (125, 21850), (140, 22027), (166, 22189), (176, 22249), (177, 22252), (178, 22255), (179, 22261), (187, 22336), (189, 22357), (190, 22363), (193, 22402), (212, 22540), (233, 22675), (239, 22753), (240, 22759), (243, 22777), (246, 22813), (252, 22882), (272, 23059), (281, 23152), (295, 23260), (302, 23332), (303, 23347), (315, 23509), (321, 23563), (332, 23638), (336, 23683), (340, 23710), (348, 23818), (366, 23956), (371, 24040), (377, 24100), (385, 24217), (400, 24382), (413, 24472), (415, 24481), (421, 24532), (422, 24535), (424, 24550), (432, 24652), (440, 24712), (455, 24820), (462, 24895), (474, 24988), (491, 25129), (500, 25198), (502, 25201), (505, 25219), (511, 25261), (515, 25327), (516, 25342), (519, 25348), (530, 25402), (533, 25411), (534, 25414), (552, 25603), (553, 25612), (557, 25642), (559, 25648), (560, 25651), (566, 25720),

Gene: Shatter_24 Start: 18254, Stop: 23506, Start Num: 9

Candidate Starts for Shatter_24:

(Start: 9 @18254 has 22 MA's), (12, 18365), (13, 18377), (14, 18398), (56, 18653), (65, 18800), (67, 18821), (70, 18875), (71, 18896), (72, 18905), (78, 18989), (81, 19010), (82, 19019), (83, 19031), (84, 19043), (85, 19052), (86, 19055), (89, 19109), (91, 19121), (93, 19151), (99, 19220), (104, 19259), (110, 19334), (112, 19367), (117, 19454), (119, 19484), (122, 19496), (124, 19520), (126, 19529), (130, 19586), (133, 19613), (144, 19685), (147, 19697), (149, 19709), (157, 19766), (162, 19787), (167, 19802), (169, 19808), (174, 19835), (194, 19979), (205, 20054), (223, 20195), (224, 20201), (228, 20213), (229, 20225), (232, 20255), (233, 20261), (237, 20318), (241, 20351), (245, 20393), (247, 20402), (251, 20456), (256, 20489), (261, 20540), (263, 20558), (264, 20582), (267, 20606), (269, 20636), (277, 20705), (287, 20804), (288, 20816), (293, 20840), (297, 20861), (300, 20897), (306, 21005), (307, 21029), (308, 21032), (309, 21038), (311, 21050), (314, 21083), (315, 21092), (322, 21173), (333, 21242), (340, 21299), (348, 21401), (350, 21419), (355, 21467), (358, 21494), (359, 21497), (366, 21557), (369, 21617), (378, 21713), (392, 21875), (393, 21878), (398, 21959), (414, 22106), (415, 22109), (424, 22178), (432, 22253), (434, 22259), (437, 22289), (447, 22379), (449, 22412), (452, 22424), (454, 22439), (455, 22451), (458, 22478), (459, 22499), (463, 22535), (470, 22592), (475, 22619), (505, 22817), (508, 22838), (513, 22871), (517, 22952), (518, 22955), (525, 22991), (533, 23033), (536, 23066), (541, 23141), (546, 23195), (551, 23234), (560, 23303), (562, 23333), (565, 23372), (568, 23396), (570, 23444), (574, 23498),

Gene: Sisko_24 Start: 18501, Stop: 23987, Start Num: 9

Candidate Starts for Sisko_24:

(Start: 9 @18501 has 22 MA's), (18, 18690), (31, 18798), (32, 18810), (47, 19068), (56, 19143), (70, 19365), (71, 19386), (78, 19479), (81, 19500), (85, 19542), (86, 19545), (89, 19599), (91, 19611), (93, 19641), (99, 19710), (104, 19749), (108, 19806), (112, 19857), (117, 19944), (119, 19974), (122, 19986), (124, 20010), (130, 20076), (138, 20142), (142, 20166), (144, 20175), (145, 20178), (147, 20187), (161, 20271), (162, 20277), (167, 20292), (174, 20325), (180, 20373), (189, 20430), (192, 20457), (193, 20466), (211, 20583), (214, 20607), (218, 20646), (220, 20664), (221, 20670), (228, 20703), (232, 20745), (233, 20751), (237, 20808), (241, 20841), (247, 20892), (257, 20991), (261,

21030), (262, 21045), (267, 21096), (275, 21162), (279, 21216), (287, 21294), (295, 21339), (299, 21384), (305, 21489), (306, 21495), (307, 21519), (309, 21528), (310, 21537), (314, 21573), (315, 21582), (326, 21687), (335, 21753), (340, 21801), (348, 21909), (353, 21960), (387, 22326), (388, 22335), (391, 22359), (393, 22371), (397, 22440), (418, 22611), (426, 22683), (431, 22722), (435, 22740), (437, 22761), (448, 22860), (449, 22884), (452, 22896), (454, 22911), (455, 22923), (463, 23007), (470, 23064), (473, 23082), (475, 23091), (485, 23169), (497, 23259), (498, 23265), (504, 23286), (506, 23310), (508, 23319), (517, 23433), (525, 23472), (533, 23514), (536, 23547), (546, 23676), (547, 23688), (560, 23784), (562, 23814), (570, 23925), (574, 23979),

Gene: Sour_28 Start: 22231, Stop: 27735, Start Num: 9

Candidate Starts for Sour_28:

(Start: 9 @22231 has 22 MA's), (18, 22420), (29, 22513), (31, 22528), (32, 22540), (34, 22570), (47, 22798), (56, 22873), (67, 23041), (70, 23095), (71, 23116), (78, 23209), (81, 23230), (85, 23272), (86, 23275), (89, 23329), (93, 23371), (99, 23440), (104, 23479), (115, 23653), (117, 23674), (119, 23704), (122, 23716), (130, 23806), (138, 23872), (142, 23896), (144, 23905), (145, 23908), (147, 23917), (158, 23995), (161, 24001), (165, 24010), (167, 24022), (174, 24055), (180, 24103), (184, 24121), (192, 24187), (193, 24196), (208, 24301), (213, 24331), (214, 24337), (217, 24364), (220, 24394), (221, 24400), (228, 24433), (232, 24475), (235, 24502), (237, 24538), (238, 24553), (239, 24559), (241, 24571), (246, 24619), (247, 24622), (253, 24691), (256, 24709), (257, 24721), (261, 24760), (262, 24775), (263, 24778), (267, 24826), (269, 24856), (279, 24946), (295, 25069), (299, 25114), (303, 25156), (305, 25219), (306, 25225), (307, 25249), (310, 25267), (314, 25303), (315, 25312), (318, 25363), (323, 25396), (326, 25417), (330, 25441), (335, 25483), (340, 25531), (348, 25639), (353, 25690), (366, 25786), (373, 25903), (387, 26056), (388, 26065), (389, 26077), (393, 26101), (395, 26164), (397, 26170), (403, 26254), (415, 26311), (418, 26341), (423, 26374), (435, 26470), (437, 26491), (445, 26572), (452, 26626), (453, 26629), (455, 26653), (461, 26725), (469, 26812), (475, 26845), (483, 26911), (485, 26923), (490, 26947), (492, 26980), (497, 27007), (498, 27013), (503, 27025), (508, 27067), (517, 27181), (525, 27220), (531, 27250), (533, 27262), (536, 27295), (543, 27391), (546, 27424), (560, 27532), (562, 27562), (568, 27625), (570, 27673), (573, 27715), (574, 27727),

Gene: TPA2_33 Start: 20583, Stop: 27740, Start Num: 2

Candidate Starts for TPA2_33:

(1, 20508), (2, 20583), (3, 20622), (4, 20664), (5, 20688), (6, 20721), (7, 20763), (8, 20793), (11, 20889), (19, 21003), (35, 21162), (37, 21180), (39, 21201), (42, 21231), (43, 21273), (45, 21282), (46, 21306), (50, 21390), (54, 21432), (65, 21609), (66, 21621), (68, 21663), (75, 21744), (77, 21789), (80, 21810), (83, 21840), (87, 21882), (92, 21936), (95, 21987), (98, 22020), (101, 22041), (106, 22092), (112, 22173), (113, 22221), (116, 22248), (118, 22275), (119, 22287), (127, 22326), (133, 22407), (139, 22488), (147, 22542), (154, 22581), (156, 22599), (163, 22641), (168, 22668), (169, 22671), (170, 22680), (175, 22707), (183, 22764), (190, 22821), (200, 22899), (202, 22923), (204, 22947), (209, 22989), (212, 23001), (215, 23025), (219, 23067), (221, 23079), (226, 23103), (232, 23151), (235, 23178), (236, 23205), (237, 23214), (241, 23247), (249, 23316), (251, 23352), (253, 23367), (255, 23376), (256, 23385), (260, 23427), (265, 23490), (274, 23562), (278, 23613), (282, 23649), (284, 23679), (295, 23745), (300, 23793), (301, 23814), (305, 23895), (306, 23901), (307, 23925), (310, 23943), (312, 23952), (314, 23979), (336, 24162), (343, 24246), (344, 24249), (346, 24252), (354, 24348), (357, 24378), (363, 24411), (368, 24477), (370, 24495), (379, 24591), (381, 24603), (389, 24726), (390, 24729), (399, 24861), (401, 24894), (402, 24897), (410, 24939), (411, 24942), (422, 25023), (436, 25182), (443, 25242), (456, 25347), (481, 25581), (489, 25623), (496, 25710), (507, 25764), (524, 25911), (535, 25968), (538, 26031), (540, 26061), (544, 26100), (551, 26163), (552, 26175), (555, 26199), (569, 26358), (572, 26394), (575, 26427), (576, 26439), (577, 26502), (578, 26514), (579, 26526), (580, 26562), (581, 26625), (582, 26631), (583, 26655), (584, 26670), (585, 26709), (586, 26745), (587, 26766), (588, 26781), (589, 26811), (590, 26922), (591, 26934), (592, 26943), (593, 26952), (594, 26973), (595, 26988), (596, 26994), (597, 27006), (598, 27108), (599, 27189), (600, 27222), (601, 27384), (602, 27450), (603, 27543), (604, 27546), (605, 27576),

(606, 27615), (607, 27732),

Gene: Tonitrus_43 Start: 28674, Stop: 33584, Start Num: 10

Candidate Starts for Tonitrus_43:

(Start: 10 @28674 has 1 MA's), (16, 28806), (21, 28839), (27, 28893), (30, 28917), (32, 28938), (39, 29022), (46, 29127), (51, 29214), (52, 29223), (57, 29286), (60, 29337), (62, 29376), (69, 29487), (73, 29535), (76, 29571), (79, 29616), (81, 29631), (83, 29652), (85, 29673), (93, 29772), (102, 29859), (104, 29880), (105, 29895), (108, 29937), (114, 30048), (117, 30075), (119, 30105), (128, 30174), (130, 30207), (136, 30261), (146, 30312), (147, 30318), (153, 30354), (159, 30402), (160, 30405), (174, 30459), (184, 30525), (202, 30621), (206, 30660), (213, 30711), (215, 30723), (219, 30765), (220, 30771), (224, 30798), (227, 30807), (237, 30912), (243, 30957), (244, 30978), (246, 30990), (250, 31035), (251, 31047), (259, 31113), (265, 31179), (269, 31218), (275, 31254), (280, 31311), (286, 31371), (291, 31413), (294, 31428), (296, 31440), (298, 31461), (304, 31539), (313, 31644), (319, 31722), (325, 31758), (334, 31824), (335, 31836), (337, 31857), (338, 31872), (339, 31878), (342, 31926), (345, 31935), (347, 31959), (349, 31989), (352, 32034), (356, 32058), (358, 32070), (362, 32097), (365, 32109), (367, 32139), (369, 32172), (374, 32244), (375, 32247), (382, 32316), (383, 32373), (388, 32397), (395, 32493), (409, 32592), (415, 32628), (427, 32727), (428, 32736), (429, 32748), (431, 32757), (441, 32841), (442, 32853), (444, 32865), (451, 32928), (455, 32952), (457, 32961), (458, 32979), (460, 33006), (465, 33051), (466, 33060), (468, 33069), (471, 33102), (480, 33180), (482, 33183), (484, 33201), (501, 33321), (507, 33360), (509, 33375), (512, 33393), (521, 33504), (522, 33507), (531, 33555),

Gene: TraderJ_26 Start: 19623, Stop: 25487, Start Num: 9

Candidate Starts for TraderJ_26:

(Start: 9 @19623 has 22 MA's), (23, 19863), (32, 19932), (53, 20238), (56, 20265), (66, 20424), (67, 20433), (70, 20487), (71, 20508), (81, 20622), (82, 20631), (83, 20643), (85, 20664), (86, 20667), (89, 20721), (91, 20733), (93, 20763), (99, 20832), (104, 20871), (108, 20928), (112, 20979), (117, 21066), (119, 21096), (120, 21099), (124, 21132), (134, 21237), (137, 21282), (140, 21315), (143, 21357), (148, 21375), (149, 21384), (152, 21408), (166, 21501), (173, 21537), (182, 21618), (184, 21639), (185, 21642), (193, 21738), (196, 21756), (198, 21777), (200, 21795), (204, 21843), (207, 21876), (210, 21891), (213, 21912), (221, 21981), (223, 21996), (224, 22002), (232, 22056), (233, 22062), (235, 22083), (237, 22119), (238, 22134), (239, 22140), (241, 22152), (248, 22218), (249, 22221), (250, 22245), (253, 22272), (257, 22302), (261, 22341), (263, 22359), (264, 22383), (265, 22395), (267, 22407), (269, 22437), (287, 22605), (300, 22698), (305, 22800), (306, 22806), (307, 22830), (314, 22884), (315, 22893), (317, 22938), (320, 22956), (340, 23100), (348, 23202), (350, 23220), (355, 23268), (360, 23316), (364, 23346), (366, 23358), (378, 23514), (380, 23532), (386, 23625), (388, 23643), (393, 23679), (397, 23748), (415, 23898), (416, 23910), (418, 23928), (424, 23967), (425, 24030), (432, 24135), (437, 24171), (446, 24258), (448, 24270), (449, 24294), (452, 24306), (455, 24333), (458, 24360), (459, 24381), (460, 24390), (463, 24417), (464, 24459), (476, 24594), (477, 24597), (478, 24612), (487, 24663), (490, 24711), (497, 24771), (498, 24777), (505, 24810), (508, 24831), (517, 24945), (528, 25002), (529, 25005), (532, 25020), (533, 25026), (541, 25122), (549, 25200), (553, 25236), (560, 25284), (562, 25314), (565, 25353), (567, 25365), (570, 25425), (574, 25479),

Gene: Wooper_26 Start: 19629, Stop: 25493, Start Num: 9

Candidate Starts for Wooper_26:

(Start: 9 @19629 has 22 MA's), (23, 19869), (32, 19938), (53, 20244), (56, 20271), (66, 20430), (67, 20439), (70, 20493), (71, 20514), (81, 20628), (82, 20637), (83, 20649), (85, 20670), (86, 20673), (89, 20727), (91, 20739), (93, 20769), (99, 20838), (104, 20877), (108, 20934), (112, 20985), (117, 21072), (119, 21102), (120, 21105), (124, 21138), (134, 21243), (137, 21288), (140, 21321), (143, 21363), (148, 21381), (149, 21390), (152, 21414), (166, 21507), (173, 21543), (182, 21624), (184, 21645), (185, 21648), (193, 21744), (196, 21762), (198, 21783), (200, 21801), (204, 21849), (207, 21882), (210, 21897), (213, 21918), (221, 21987), (223, 22002), (224, 22008), (232, 22062), (233, 22068),

(235, 22089), (237, 22125), (238, 22140), (239, 22146), (241, 22158), (248, 22224), (249, 22227), (250, 22251), (253, 22278), (257, 22308), (261, 22347), (263, 22365), (264, 22389), (265, 22401), (267, 22413), (269, 22443), (287, 22611), (300, 22704), (305, 22806), (306, 22812), (307, 22836), (314, 22890), (315, 22899), (317, 22944), (320, 22962), (340, 23106), (348, 23208), (350, 23226), (355, 23274), (360, 23322), (364, 23352), (366, 23364), (378, 23520), (380, 23538), (386, 23631), (388, 23649), (393, 23685), (397, 23754), (415, 23904), (416, 23916), (418, 23934), (424, 23973), (425, 24036), (432, 24141), (437, 24177), (446, 24264), (448, 24276), (449, 24300), (452, 24312), (455, 24339), (458, 24366), (459, 24387), (460, 24396), (463, 24423), (464, 24465), (476, 24600), (477, 24603), (478, 24618), (487, 24669), (490, 24717), (497, 24777), (498, 24783), (505, 24816), (508, 24837), (517, 24951), (528, 25008), (529, 25011), (532, 25026), (533, 25032), (541, 25128), (549, 25206), (553, 25242), (560, 25290), (562, 25320), (565, 25359), (567, 25371), (570, 25431), (574, 25485),

Gene: Yago84_24 Start: 18575, Stop: 24061, Start Num: 9

Candidate Starts for Yago84_24:

(Start: 9 @18575 has 22 MA's), (18, 18764), (31, 18872), (32, 18884), (47, 19142), (56, 19217), (59, 19253), (70, 19439), (71, 19460), (78, 19553), (81, 19574), (85, 19616), (86, 19619), (89, 19673), (91, 19685), (93, 19715), (99, 19784), (104, 19823), (108, 19880), (112, 19931), (117, 20018), (119, 20048), (122, 20060), (124, 20084), (130, 20150), (138, 20216), (142, 20240), (144, 20249), (145, 20252), (147, 20261), (161, 20345), (162, 20351), (167, 20366), (171, 20384), (174, 20399), (180, 20447), (189, 20504), (192, 20531), (193, 20540), (211, 20657), (214, 20681), (218, 20720), (220, 20738), (221, 20744), (228, 20777), (232, 20819), (233, 20825), (237, 20882), (241, 20915), (247, 20966), (257, 21065), (261, 21104), (262, 21119), (267, 21170), (275, 21236), (279, 21290), (287, 21368), (295, 21413), (299, 21458), (305, 21563), (306, 21569), (307, 21593), (309, 21602), (310, 21611), (314, 21647), (315, 21656), (326, 21761), (335, 21827), (340, 21875), (348, 21983), (353, 22034), (387, 22400), (388, 22409), (391, 22433), (393, 22445), (397, 22514), (418, 22685), (426, 22757), (431, 22796), (435, 22814), (437, 22835), (448, 22934), (449, 22958), (452, 22970), (454, 22985), (455, 22997), (463, 23081), (470, 23138), (473, 23156), (475, 23165), (485, 23243), (497, 23333), (498, 23339), (504, 23360), (506, 23384), (508, 23393), (517, 23507), (525, 23546), (533, 23588), (536, 23621), (546, 23750), (547, 23762), (560, 23858), (562, 23888), (570, 23999), (574, 24053),

Gene: Yeshua_26 Start: 19606, Stop: 25470, Start Num: 9

Candidate Starts for Yeshua_26:

(Start: 9 @19606 has 22 MA's), (23, 19846), (53, 20221), (56, 20248), (66, 20407), (67, 20416), (70, 20470), (71, 20491), (81, 20605), (82, 20614), (83, 20626), (85, 20647), (86, 20650), (89, 20704), (91, 20716), (93, 20746), (99, 20815), (104, 20854), (108, 20911), (112, 20962), (117, 21049), (119, 21079), (120, 21082), (124, 21115), (134, 21220), (137, 21265), (140, 21298), (143, 21340), (148, 21358), (149, 21367), (152, 21391), (166, 21484), (172, 21517), (181, 21595), (182, 21601), (184, 21622), (185, 21625), (193, 21721), (196, 21739), (197, 21757), (198, 21760), (200, 21778), (203, 21814), (204, 21826), (210, 21874), (213, 21895), (217, 21928), (221, 21964), (223, 21979), (224, 21985), (232, 22039), (233, 22045), (235, 22066), (237, 22102), (238, 22117), (241, 22135), (248, 22201), (249, 22204), (250, 22228), (253, 22255), (257, 22285), (261, 22324), (263, 22342), (264, 22366), (265, 22378), (267, 22390), (269, 22420), (287, 22588), (300, 22681), (305, 22783), (306, 22789), (307, 22813), (314, 22867), (315, 22876), (317, 22921), (320, 22939), (340, 23083), (348, 23185), (350, 23203), (355, 23251), (360, 23299), (364, 23329), (366, 23341), (378, 23497), (380, 23515), (386, 23608), (388, 23626), (393, 23662), (397, 23731), (415, 23881), (416, 23893), (418, 23911), (419, 23914), (424, 23950), (425, 24013), (432, 24118), (437, 24154), (446, 24241), (448, 24253), (449, 24277), (452, 24289), (455, 24316), (458, 24343), (459, 24364), (460, 24373), (463, 24400), (464, 24442), (476, 24577), (477, 24580), (478, 24595), (487, 24646), (490, 24694), (497, 24754), (498, 24760), (505, 24793), (508, 24814), (517, 24928), (528, 24985), (529, 24988), (532, 25003), (533, 25009), (541, 25105), (549, 25183), (553, 25219), (560, 25267), (562, 25297), (565, 25336), (567, 25348), (570, 25408), (574, 25462),

