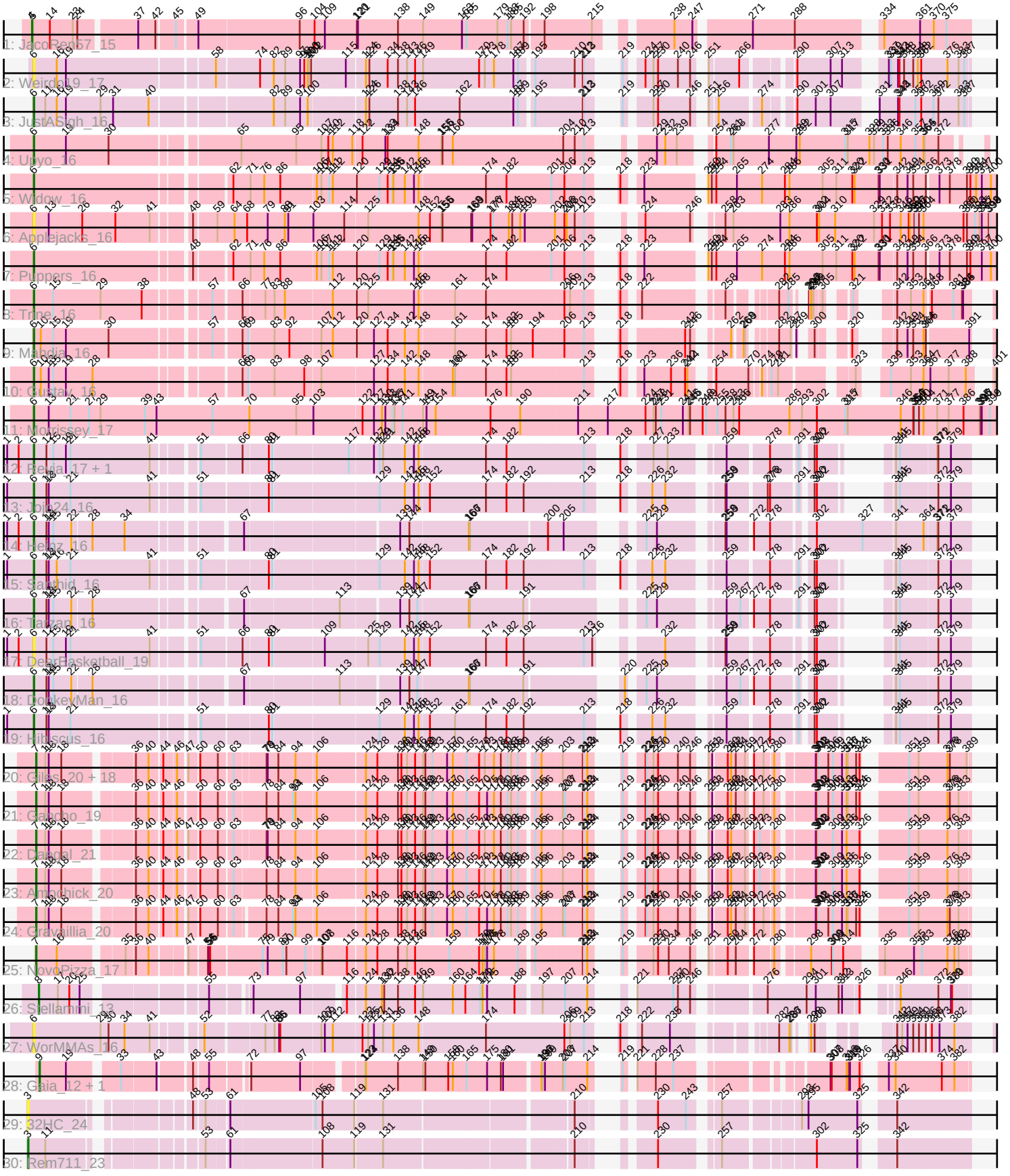
Zoomed Pham 347721



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 347721 Report

This analysis was run 11/14/26 on database version 672.

Pham number 347721 has 50 members, 6 are drafts.

Phages represented in each track:
- Track 1 : JacoRen57_15
- Track 2 : Weirdo19_17
- Track 3 : JustASigh_16
- Track 4 : Upyo_16
- Track 5 : Widow_16
- Track 6 : Applejacks_16
- Track 7 : Puppers_16
- Track 8 : Trine_16
- Track 9 : Mahdia_16
- Track 10 : Gustav_16
- Track 11 : Morrissey_17
- Track 12 : Reyja_17, DinoNuggs_17
- Track 13 : Jojo24_16
- Track 14 : Heinz_16
- Track 15 : Santhid_16
- Track 16 : Tarzan_16
- Track 17 : DearBasketball_19
- Track 18 : DonkeyMan_16
- Track 19 : Hibiscus_16
- Track 20 : Giles_20, HH92_20, Dewey_20, Wishmaker_20, Forge_20, OBUpride_20, Ubuntu_20, Luke_20, Luna22_20, LilHazelnut_20, Hail_20, Kinbote_20, BloominB_20, Evanesce_20, Hadrien_20, DeepSoil15_20, Amymech_20, Ein37_20, Webster2_20
- Track 21 : Gancho_19
- Track 22 : Daegal_21
- Track 23 : Amochick_20
- Track 24 : Gravaillia_20
- Track 25 : NovoPizza_17
- Track 26 : Stellammi_13
- Track 27 : WorMMAs_16
- Track 28 : Gaia_12, Nebkiss_13
- Track 29 : 32HC_24
- Track 30 : Rem711_23

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

The start number called the most often in the published annotations is 7, it was called in 24 of the 44 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Amochick_20, Amymech_20, BloominB_20, Daegal_21, DeepSoil15_20, Dewey_20, Ein37_20, Evanesce_20, Forge_20, Gancho_19, Giles_20, Gravaillia_20, HH92_20, Hadrien_20, Hail_20, Kinbote_20, LilHazelnut_20, Luke_20, Luna22_20, NovoPizza_17, OBUpride_20, Ubuntu_20, Webster2_20, Wishmaker_20,

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

Genes that do not have the "Most Annotated" start:
• 32HC_24, Applejacks_16, DearBasketball_19, DinoNuggs_17, DonkeyMan_16, Gaia_12, Gustav_16, Heinz_16, Hibiscus_16, JacoRen57_15, Jojo24_16, JustASigh_16, Mahdia_16, Morrissey_17, Nebkiss_13, Puppers_16, Rem711_23, Reyja_17, Santhid_16, Stellammi_13, Tarzan_16, Trine_16, Upyo_16, Weirdo19_17, Widow_16, WorMMAs_16,

Summary by start number:

Start 3:
• Found in 2 of 50 (4.0%) of genes in pham
• Manual Annotations of this start: 1 of 44
• Called 100.0% of time when present
• Phage (with cluster) where this start called: 32HC_24 (Z), Rem711_23 (Z),

Start 4:
• Found in 1 of 50 (2.0%) of genes in pham
• Manual Annotations of this start: 1 of 44
• Called 100.0% of time when present
• Phage (with cluster) where this start called: JacoRen57_15 (AB),

Start 6:
• Found in 20 of 50 (40.0%) of genes in pham
• Manual Annotations of this start: 15 of 44
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Applejacks_16 (CD), DearBasketball_19 (DY), DinoNuggs_17 (DY), DonkeyMan_16 (DY), Gustav_16 (CD), Heinz_16 (DY), Hibiscus_16 (DY), Jojo24_16 (DY), JustASigh_16 (AH), Mahdia_16 (CD), Morrissey_17 (CD), Puppers_16 (CD), Reyja_17 (DY), Santhid_16 (DY), Tarzan_16 (DY), Trine_16 (CD), Upyo_16 (CD), Weirdo19_17 (AH), Widow_16 (CD), WorMMAs_16 (UNK),

Start 7:
• Found in 24 of 50 (48.0%) of genes in pham
• Manual Annotations of this start: 24 of 44
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Amochick_20 (Q), Amymech_20 (Q), BloominB_20 (Q), Daegal_21 (Q), DeepSoil15_20 (Q), Dewey_20 (Q), Ein37_20 (Q), Evanesce_20 (Q), Forge_20 (Q), Gancho_19 (Q), Giles_20 (Q), Gravaillia_20 (Q), HH92_20 (Q), Hadrien_20 (Q), Hail_20 (Q), Kinbote_20 (Q), LilHazelnut_20 (Q),

Luke_20 (Q), Luna22_20 (Q), NovoPizza_17 (Q), OBUpride_20 (Q), Ubuntu_20 (Q), Webster2_20 (Q), Wishmaker_20 (Q),

Start 8:
• Found in 1 of 50 (2.0%) of genes in pham
• Manual Annotations of this start: 1 of 44
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Stellammi_13 (UNK),

Start 9:
• Found in 2 of 50 (4.0%) of genes in pham
• Manual Annotations of this start: 2 of 44
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Gaia_12 (X), Nebkiss_13 (X),

Summary by clusters:

There are 8 clusters represented in this pham: AB, AH, Z, CD, Q, DY, X, UNK,

Info for manual annotations of cluster AB:
•Start number 4 was manually annotated 1 time for cluster AB.

Info for manual annotations of cluster AH:
•Start number 6 was manually annotated 1 time for cluster AH.

Info for manual annotations of cluster CD:
•Start number 6 was manually annotated 7 times for cluster CD.

Info for manual annotations of cluster DY:
•Start number 6 was manually annotated 7 times for cluster DY.

Info for manual annotations of cluster Q:
•Start number 7 was manually annotated 24 times for cluster Q.

Info for manual annotations of cluster UNK:
•Start number 8 was manually annotated 1 time for cluster UNK.

Info for manual annotations of cluster X:
•Start number 9 was manually annotated 2 times for cluster X.

Info for manual annotations of cluster Z:
•Start number 3 was manually annotated 1 time for cluster Z.

Gene Information:

Gene: 32HC_24 Start: 13803, Stop: 17879, Start Num: 3
Candidate Starts for 32HC_24:
(Start: 3 @13803 has 1 MA's), (48, 14139), (53, 14160), (61, 14211), (105, 14421), (108, 14439), (119, 14520), (131, 14589), (210, 15036), (230, 15144), (243, 15213), (257, 15264), (293, 15429), (295, 15444), (325, 15561), (342, 15618), (453, 16047), (486, 16272), (513, 16386), (524, 16449), (555, 16572), (564, 16617), (595, 16761), (599, 16782), (609, 16848), (699, 17499), (720, 17643), (753,

17775), (763, 17826), (766, 17856), (767, 17862),

Gene: Amochick_20 Start: 12219, Stop: 16304, Start Num: 7
Candidate Starts for Amochick_20:
(Start: 7 @12219 has 24 MA's), (11, 12243), (13, 12249), (18, 12282), (36, 12435), (40, 12465), (44, 12495), (46, 12525), (50, 12564), (60, 12606), (63, 12639), (78, 12708), (84, 12738), (94, 12783), (106, 12831), (124, 12948), (128, 12978), (138, 13032), (140, 13041), (143, 13056), (146, 13074), (149, 13095), (150, 13101), (153, 13119), (157, 13158), (160, 13173), (165, 13209), (170, 13242), (173, 13257), (178, 13281), (180, 13299), (183, 13317), (185, 13326), (189, 13344), (195, 13374), (196, 13389), (203, 13440), (212, 13491), (213, 13494), (214, 13503), (219, 13524), (224, 13557), (225, 13560), (227, 13578), (230, 13590), (240, 13641), (246, 13671), (251, 13686), (253, 13695), (260, 13728), (262, 13737), (269, 13773), (272, 13782), (273, 13797), (280, 13824), (301, 13902), (302, 13905), (303, 13908), (309, 13947), (313, 13965), (316, 13977), (326, 14007), (351, 14088), (359, 14112), (376, 14187), (383, 14214), (417, 14280), (422, 14313), (423, 14319), (429, 14352), (443, 14427), (446, 14439), (447, 14454), (448, 14457), (459, 14532), (461, 14553), (472, 14625), (474, 14628), (488, 14721), (494, 14754), (502, 14793), (507, 14805), (515, 14826), (535, 14895), (536, 14898), (541, 14934), (544, 14946), (547, 14961), (552, 14985), (553, 14988), (570, 15066), (572, 15075), (583, 15123), (590, 15156), (596, 15183), (608, 15264), (623, 15327), (629, 15369), (645, 15444), (656, 15543), (660, 15585), (669, 15663), (677, 15726), (682, 15768), (686, 15828), (688, 15846), (693, 15876), (696, 15885), (697, 15891), (702, 15906), (717, 16026), (722, 16044), (723, 16059), (725, 16062), (730, 16080), (736, 16128), (739, 16143), (745, 16176), (750, 16194), (759, 16233), (762, 16242), (763, 16254), (765, 16272), (769, 16296),

Gene: Amymech_20 Start: 12222, Stop: 16301, Start Num: 7
Candidate Starts for Amymech_20:
(Start: 7 @12222 has 24 MA's), (11, 12246), (13, 12252), (18, 12285), (36, 12438), (40, 12468), (44, 12498), (46, 12528), (47, 12546), (50, 12567), (60, 12609), (63, 12642), (78, 12708), (79, 12711), (84, 12738), (94, 12783), (106, 12831), (124, 12948), (128, 12978), (138, 13032), (140, 13041), (143, 13056), (146, 13074), (149, 13095), (150, 13101), (153, 13119), (157, 13158), (160, 13173), (165, 13209), (170, 13242), (173, 13257), (178, 13281), (180, 13299), (183, 13317), (185, 13326), (189, 13344), (195, 13374), (196, 13389), (203, 13440), (212, 13491), (213, 13494), (214, 13503), (219, 13524), (224, 13557), (225, 13560), (227, 13578), (230, 13590), (240, 13641), (246, 13671), (251, 13686), (253, 13695), (260, 13728), (262, 13737), (264, 13749), (269, 13773), (272, 13782), (275, 13806), (280, 13824), (301, 13902), (302, 13905), (303, 13908), (306, 13935), (309, 13947), (313, 13965), (316, 13977), (317, 13980), (324, 13998), (326, 14007), (351, 14088), (359, 14112), (376, 14187), (378, 14193), (389, 14235), (417, 14280), (422, 14313), (423, 14319), (443, 14427), (446, 14439), (447, 14454), (458, 14517), (459, 14529), (461, 14550), (465, 14580), (472, 14622), (474, 14625), (488, 14718), (494, 14751), (502, 14790), (507, 14802), (515, 14823), (535, 14892), (536, 14895), (541, 14931), (544, 14943), (547, 14958), (552, 14982), (553, 14985), (570, 15063), (572, 15072), (583, 15120), (590, 15153), (596, 15180), (608, 15261), (623, 15324), (629, 15366), (645, 15441), (656, 15540), (660, 15582), (669, 15660), (677, 15723), (682, 15765), (686, 15825), (688, 15843), (693, 15873), (696, 15882), (697, 15888), (702, 15903), (717, 16023), (722, 16041), (723, 16056), (725, 16059), (730, 16077), (736, 16125), (739, 16140), (745, 16173), (750, 16191), (759, 16230), (762, 16239), (763, 16251), (765, 16269), (769, 16293),

Gene: Applejacks_16 Start: 9709, Stop: 14226, Start Num: 6
Candidate Starts for Applejacks_16:
(Start: 6 @9709 has 15 MA's), (13, 9748), (26, 9835), (32, 9922), (41, 10012), (48, 10093), (59, 10147), (64, 10189), (68, 10222), (79, 10273), (88, 10318), (91, 10327), (103, 10393), (114, 10474), (125, 10528), (148, 10660), (152, 10690), (155, 10720), (156, 10723), (168, 10798), (169, 10801), (176, 10846), (177, 10852), (184, 10894), (186, 10903), (190, 10924), (193, 10936), (202, 11014), (206, 11035), (208, 11041), (210, 11062), (213, 11086), (224, 11140), (246, 11254), (258, 11293), (263, 11311), (283, 11425), (286, 11446), (302, 11518), (304, 11524), (310, 11566), (329, 11665), (332,

11686), (338, 11707), (346, 11734), (350, 11755), (352, 11758), (356, 11770), (357, 11773), (360, 11782), (364, 11794), (386, 11899), (390, 11908), (393, 11929), (395, 11941), (397, 11947), (398, 11965), (399, 11968), (411, 12052), (414, 12073), (416, 12079), (419, 12097), (420, 12100), (425, 12130), (430, 12166), (434, 12181), (437, 12214), (452, 12298), (455, 12322), (463, 12388), (464, 12394), (468, 12415), (471, 12439), (477, 12460), (496, 12598), (504, 12628), (510, 12649), (545, 12832), (571, 12973), (607, 13207), (624, 13297), (630, 13339), (638, 13384), (647, 13432), (668, 13552), (675, 13618), (678, 13639), (680, 13660), (681, 13666), (695, 13792), (702, 13813), (703, 13816), (710, 13858), (716, 13924), (718, 13942), (719, 13945), (727, 13978), (742, 14056), (746, 14077), (759, 14128),

Gene: BloominB_20 Start: 12222, Stop: 16301, Start Num: 7
Candidate Starts for BloominB_20:
(Start: 7 @12222 has 24 MA's), (11, 12246), (13, 12252), (18, 12285), (36, 12438), (40, 12468), (44, 12498), (46, 12528), (47, 12546), (50, 12567), (60, 12609), (63, 12642), (78, 12708), (79, 12711), (84, 12738), (94, 12783), (106, 12831), (124, 12948), (128, 12978), (138, 13032), (140, 13041), (143, 13056), (146, 13074), (149, 13095), (150, 13101), (153, 13119), (157, 13158), (160, 13173), (165, 13209), (170, 13242), (173, 13257), (178, 13281), (180, 13299), (183, 13317), (185, 13326), (189, 13344), (195, 13374), (196, 13389), (203, 13440), (212, 13491), (213, 13494), (214, 13503), (219, 13524), (224, 13557), (225, 13560), (227, 13578), (230, 13590), (240, 13641), (246, 13671), (251, 13686), (253, 13695), (260, 13728), (262, 13737), (264, 13749), (269, 13773), (272, 13782), (275, 13806), (280, 13824), (301, 13902), (302, 13905), (303, 13908), (306, 13935), (309, 13947), (313, 13965), (316, 13977), (317, 13980), (324, 13998), (326, 14007), (351, 14088), (359, 14112), (376, 14187), (378, 14193), (389, 14235), (417, 14280), (422, 14313), (423, 14319), (443, 14427), (446, 14439), (447, 14454), (458, 14517), (459, 14529), (461, 14550), (465, 14580), (472, 14622), (474, 14625), (488, 14718), (494, 14751), (502, 14790), (507, 14802), (515, 14823), (535, 14892), (536, 14895), (541, 14931), (544, 14943), (547, 14958), (552, 14982), (553, 14985), (570, 15063), (572, 15072), (583, 15120), (590, 15153), (596, 15180), (608, 15261), (623, 15324), (629, 15366), (645, 15441), (656, 15540), (660, 15582), (669, 15660), (677, 15723), (682, 15765), (686, 15825), (688, 15843), (693, 15873), (696, 15882), (697, 15888), (702, 15903), (717, 16023), (722, 16041), (723, 16056), (725, 16059), (730, 16077), (736, 16125), (739, 16140), (745, 16173), (750, 16191), (759, 16230), (762, 16239), (763, 16251), (765, 16269), (769, 16293),

Gene: Daegal_21 Start: 12510, Stop: 16592, Start Num: 7
Candidate Starts for Daegal_21:
(Start: 7 @12510 has 24 MA's), (11, 12534), (13, 12540), (18, 12573), (36, 12726), (40, 12756), (44, 12786), (46, 12816), (47, 12834), (50, 12855), (60, 12897), (63, 12930), (78, 12996), (79, 12999), (84, 13026), (94, 13071), (106, 13119), (124, 13236), (128, 13266), (138, 13320), (140, 13329), (143, 13344), (146, 13362), (149, 13383), (150, 13389), (153, 13407), (157, 13446), (160, 13461), (165, 13497), (170, 13530), (173, 13545), (178, 13569), (180, 13587), (183, 13605), (185, 13614), (189, 13632), (195, 13662), (196, 13677), (203, 13728), (212, 13779), (213, 13782), (214, 13791), (219, 13812), (224, 13845), (225, 13848), (227, 13866), (230, 13878), (240, 13929), (246, 13959), (251, 13974), (253, 13983), (260, 14016), (262, 14025), (269, 14061), (272, 14070), (273, 14085), (280, 14112), (301, 14190), (302, 14193), (303, 14196), (309, 14235), (313, 14253), (316, 14265), (326, 14295), (351, 14376), (359, 14400), (376, 14475), (383, 14502), (417, 14568), (422, 14601), (423, 14607), (429, 14640), (443, 14715), (446, 14727), (447, 14742), (448, 14745), (459, 14820), (461, 14841), (472, 14913), (474, 14916), (488, 15009), (494, 15042), (502, 15081), (507, 15093), (515, 15114), (535, 15183), (536, 15186), (541, 15222), (544, 15234), (547, 15249), (552, 15273), (553, 15276), (570, 15354), (572, 15363), (583, 15411), (590, 15444), (596, 15471), (608, 15552), (623, 15615), (629, 15657), (645, 15732), (656, 15831), (660, 15873), (669, 15951), (677, 16014), (682, 16056), (686, 16116), (688, 16134), (693, 16164), (696, 16173), (697, 16179), (702, 16194), (717, 16314), (722, 16332), (723, 16347), (725, 16350), (730, 16368), (736, 16416), (739, 16431), (745, 16464), (750, 16482), (759, 16521), (762, 16530), (763, 16542), (765, 16560), (769, 16584),

Gene: DearBasketball_19 Start: 10112, Stop: 14347, Start Num: 6
Candidate Starts for DearBasketball_19:
(1, 10043), (2, 10073), (Start: 6 @10112 has 15 MA's), (12, 10139), (15, 10157), (19, 10190), (21, 10202), (41, 10409), (51, 10502), (66, 10601), (80, 10664), (81, 10673), (109, 10799), (125, 10904), (129, 10931), (142, 10997), (145, 11018), (148, 11030), (152, 11054), (174, 11201), (182, 11255), (192, 11300), (213, 11450), (216, 11471), (232, 11570), (258, 11675), (259, 11678), (278, 11774), (300, 11855), (302, 11861), (341, 11942), (345, 11951), (372, 12044), (379, 12077), (403, 12137), (404, 12140), (428, 12230), (433, 12254), (437, 12290), (438, 12296), (441, 12311), (450, 12353), (457, 12404), (461, 12440), (468, 12491), (482, 12590), (498, 12692), (501, 12701), (514, 12752), (516, 12776), (520, 12803), (525, 12821), (527, 12830), (534, 12869), (545, 12938), (571, 13079), (599, 13247), (602, 13271), (605, 13295), (606, 13313), (637, 13502), (638, 13505), (642, 13523), (681, 13793), (692, 13901), (695, 13913), (710, 13979), (713, 14006), (716, 14045), (741, 14174),

Gene: DeepSoil15_20 Start: 12222, Stop: 16301, Start Num: 7
Candidate Starts for DeepSoil15_20:
(Start: 7 @12222 has 24 MA's), (11, 12246), (13, 12252), (18, 12285), (36, 12438), (40, 12468), (44, 12498), (46, 12528), (47, 12546), (50, 12567), (60, 12609), (63, 12642), (78, 12708), (79, 12711), (84, 12738), (94, 12783), (106, 12831), (124, 12948), (128, 12978), (138, 13032), (140, 13041), (143, 13056), (146, 13074), (149, 13095), (150, 13101), (153, 13119), (157, 13158), (160, 13173), (165, 13209), (170, 13242), (173, 13257), (178, 13281), (180, 13299), (183, 13317), (185, 13326), (189, 13344), (195, 13374), (196, 13389), (203, 13440), (212, 13491), (213, 13494), (214, 13503), (219, 13524), (224, 13557), (225, 13560), (227, 13578), (230, 13590), (240, 13641), (246, 13671), (251, 13686), (253, 13695), (260, 13728), (262, 13737), (264, 13749), (269, 13773), (272, 13782), (275, 13806), (280, 13824), (301, 13902), (302, 13905), (303, 13908), (306, 13935), (309, 13947), (313, 13965), (316, 13977), (317, 13980), (324, 13998), (326, 14007), (351, 14088), (359, 14112), (376, 14187), (378, 14193), (389, 14235), (417, 14280), (422, 14313), (423, 14319), (443, 14427), (446, 14439), (447, 14454), (458, 14517), (459, 14529), (461, 14550), (465, 14580), (472, 14622), (474, 14625), (488, 14718), (494, 14751), (502, 14790), (507, 14802), (515, 14823), (535, 14892), (536, 14895), (541, 14931), (544, 14943), (547, 14958), (552, 14982), (553, 14985), (570, 15063), (572, 15072), (583, 15120), (590, 15153), (596, 15180), (608, 15261), (623, 15324), (629, 15366), (645, 15441), (656, 15540), (660, 15582), (669, 15660), (677, 15723), (682, 15765), (686, 15825), (688, 15843), (693, 15873), (696, 15882), (697, 15888), (702, 15903), (717, 16023), (722, 16041), (723, 16056), (725, 16059), (730, 16077), (736, 16125), (739, 16140), (745, 16173), (750, 16191), (759, 16230), (762, 16239), (763, 16251), (765, 16269), (769, 16293),

Gene: Dewey_20 Start: 12222, Stop: 16301, Start Num: 7
Candidate Starts for Dewey_20:
(Start: 7 @12222 has 24 MA's), (11, 12246), (13, 12252), (18, 12285), (36, 12438), (40, 12468), (44, 12498), (46, 12528), (47, 12546), (50, 12567), (60, 12609), (63, 12642), (78, 12708), (79, 12711), (84, 12738), (94, 12783), (106, 12831), (124, 12948), (128, 12978), (138, 13032), (140, 13041), (143, 13056), (146, 13074), (149, 13095), (150, 13101), (153, 13119), (157, 13158), (160, 13173), (165, 13209), (170, 13242), (173, 13257), (178, 13281), (180, 13299), (183, 13317), (185, 13326), (189, 13344), (195, 13374), (196, 13389), (203, 13440), (212, 13491), (213, 13494), (214, 13503), (219, 13524), (224, 13557), (225, 13560), (227, 13578), (230, 13590), (240, 13641), (246, 13671), (251, 13686), (253, 13695), (260, 13728), (262, 13737), (264, 13749), (269, 13773), (272, 13782), (275, 13806), (280, 13824), (301, 13902), (302, 13905), (303, 13908), (306, 13935), (309, 13947), (313, 13965), (316, 13977), (317, 13980), (324, 13998), (326, 14007), (351, 14088), (359, 14112), (376, 14187), (378, 14193), (389, 14235), (417, 14280), (422, 14313), (423, 14319), (443, 14427), (446, 14439), (447, 14454), (458, 14517), (459, 14529), (461, 14550), (465, 14580), (472, 14622), (474, 14625), (488, 14718), (494, 14751), (502, 14790), (507, 14802), (515, 14823), (535, 14892), (536, 14895), (541, 14931), (544, 14943), (547, 14958), (552, 14982), (553, 14985), (570, 15063), (572, 15072), (583, 15120), (590, 15153), (596, 15180), (608, 15261), (623, 15324), (629, 15366), (645, 15441), (656, 15540), (660, 15582), (669, 15660), (677, 15723), (682, 15765), (686, 15825), (688,

15843), (693, 15873), (696, 15882), (697, 15888), (702, 15903), (717, 16023), (722, 16041), (723, 16056), (725, 16059), (730, 16077), (736, 16125), (739, 16140), (745, 16173), (750, 16191), (759, 16230), (762, 16239), (763, 16251), (765, 16269), (769, 16293),

Gene: DinoNuggs_17 Start: 10078, Stop: 14313, Start Num: 6
Candidate Starts for DinoNuggs_17:
(1, 10009), (2, 10039), (Start: 6 @10078 has 15 MA's), (12, 10105), (15, 10123), (19, 10156), (21, 10168), (41, 10375), (51, 10468), (66, 10567), (80, 10630), (81, 10639), (117, 10825), (127, 10885), (129, 10897), (131, 10906), (142, 10963), (145, 10984), (148, 10996), (174, 11167), (182, 11221), (213, 11416), (218, 11446), (227, 11506), (233, 11542), (259, 11644), (278, 11740), (291, 11800), (300, 11821), (302, 11827), (341, 11908), (345, 11917), (371, 12007), (372, 12010), (379, 12043), (403, 12103), (404, 12106), (428, 12196), (433, 12220), (437, 12256), (438, 12262), (441, 12277), (450, 12319), (457, 12370), (461, 12406), (468, 12457), (482, 12556), (498, 12658), (501, 12667), (514, 12718), (516, 12742), (520, 12769), (525, 12787), (527, 12796), (534, 12835), (545, 12904), (571, 13045), (599, 13213), (602, 13237), (605, 13261), (606, 13279), (637, 13468), (638, 13471), (642, 13489), (681, 13759), (695, 13879), (710, 13945), (716, 14011), (741, 14140),

Gene: DonkeyMan_16 Start: 9948, Stop: 14102, Start Num: 6
Candidate Starts for DonkeyMan_16:
(Start: 6 @9948 has 15 MA's), (12, 9975), (13, 9981), (15, 9993), (22, 10035), (28, 10083), (67, 10419), (113, 10641), (139, 10773), (144, 10794), (147, 10812), (166, 10941), (167, 10944), (191, 11073), (220, 11253), (225, 11283), (229, 11307), (259, 11436), (267, 11472), (272, 11493), (278, 11532), (291, 11592), (300, 11613), (302, 11619), (341, 11700), (345, 11709), (372, 11802), (379, 11835), (404, 11898), (428, 11988), (433, 12012), (437, 12048), (438, 12054), (441, 12069), (450, 12111), (457, 12162), (461, 12198), (468, 12249), (482, 12348), (498, 12450), (501, 12459), (514, 12510), (516, 12534), (520, 12561), (525, 12579), (527, 12588), (534, 12627), (545, 12696), (571, 12837), (599, 13005), (602, 13029), (605, 13053), (606, 13071), (637, 13254), (638, 13257), (642, 13275), (681, 13548), (695, 13668), (710, 13734), (713, 13761), (716, 13800), (741, 13929),

Gene: Ein37_20 Start: 12222, Stop: 16301, Start Num: 7
Candidate Starts for Ein37_20:
(Start: 7 @12222 has 24 MA's), (11, 12246), (13, 12252), (18, 12285), (36, 12438), (40, 12468), (44, 12498), (46, 12528), (47, 12546), (50, 12567), (60, 12609), (63, 12642), (78, 12708), (79, 12711), (84, 12738), (94, 12783), (106, 12831), (124, 12948), (128, 12978), (138, 13032), (140, 13041), (143, 13056), (146, 13074), (149, 13095), (150, 13101), (153, 13119), (157, 13158), (160, 13173), (165, 13209), (170, 13242), (173, 13257), (178, 13281), (180, 13299), (183, 13317), (185, 13326), (189, 13344), (195, 13374), (196, 13389), (203, 13440), (212, 13491), (213, 13494), (214, 13503), (219, 13524), (224, 13557), (225, 13560), (227, 13578), (230, 13590), (240, 13641), (246, 13671), (251, 13686), (253, 13695), (260, 13728), (262, 13737), (264, 13749), (269, 13773), (272, 13782), (275, 13806), (280, 13824), (301, 13902), (302, 13905), (303, 13908), (306, 13935), (309, 13947), (313, 13965), (316, 13977), (317, 13980), (324, 13998), (326, 14007), (351, 14088), (359, 14112), (376, 14187), (378, 14193), (389, 14235), (417, 14280), (422, 14313), (423, 14319), (443, 14427), (446, 14439), (447, 14454), (458, 14517), (459, 14529), (461, 14550), (465, 14580), (472, 14622), (474, 14625), (488, 14718), (494, 14751), (502, 14790), (507, 14802), (515, 14823), (535, 14892), (536, 14895), (541, 14931), (544, 14943), (547, 14958), (552, 14982), (553, 14985), (570, 15063), (572, 15072), (583, 15120), (590, 15153), (596, 15180), (608, 15261), (623, 15324), (629, 15366), (645, 15441), (656, 15540), (660, 15582), (669, 15660), (677, 15723), (682, 15765), (686, 15825), (688, 15843), (693, 15873), (696, 15882), (697, 15888), (702, 15903), (717, 16023), (722, 16041), (723, 16056), (725, 16059), (730, 16077), (736, 16125), (739, 16140), (745, 16173), (750, 16191), (759, 16230), (762, 16239), (763, 16251), (765, 16269), (769, 16293),

Gene: Evanesce_20 Start: 12222, Stop: 16301, Start Num: 7
Candidate Starts for Evanesce_20:

(Start: 7 @12222 has 24 MA's), (11, 12246), (13, 12252), (18, 12285), (36, 12438), (40, 12468), (44, 12498), (46, 12528), (47, 12546), (50, 12567), (60, 12609), (63, 12642), (78, 12708), (79, 12711), (84, 12738), (94, 12783), (106, 12831), (124, 12948), (128, 12978), (138, 13032), (140, 13041), (143, 13056), (146, 13074), (149, 13095), (150, 13101), (153, 13119), (157, 13158), (160, 13173), (165, 13209), (170, 13242), (173, 13257), (178, 13281), (180, 13299), (183, 13317), (185, 13326), (189, 13344), (195, 13374), (196, 13389), (203, 13440), (212, 13491), (213, 13494), (214, 13503), (219, 13524), (224, 13557), (225, 13560), (227, 13578), (230, 13590), (240, 13641), (246, 13671), (251, 13686), (253, 13695), (260, 13728), (262, 13737), (264, 13749), (269, 13773), (272, 13782), (275, 13806), (280, 13824), (301, 13902), (302, 13905), (303, 13908), (306, 13935), (309, 13947), (313, 13965), (316, 13977), (317, 13980), (324, 13998), (326, 14007), (351, 14088), (359, 14112), (376, 14187), (378, 14193), (389, 14235), (417, 14280), (422, 14313), (423, 14319), (443, 14427), (446, 14439), (447, 14454), (458, 14517), (459, 14529), (461, 14550), (465, 14580), (472, 14622), (474, 14625), (488, 14718), (494, 14751), (502, 14790), (507, 14802), (515, 14823), (535, 14892), (536, 14895), (541, 14931), (544, 14943), (547, 14958), (552, 14982), (553, 14985), (570, 15063), (572, 15072), (583, 15120), (590, 15153), (596, 15180), (608, 15261), (623, 15324), (629, 15366), (645, 15441), (656, 15540), (660, 15582), (669, 15660), (677, 15723), (682, 15765), (686, 15825), (688, 15843), (693, 15873), (696, 15882), (697, 15888), (702, 15903), (717, 16023), (722, 16041), (723, 16056), (725, 16059), (730, 16077), (736, 16125), (739, 16140), (745, 16173), (750, 16191), (759, 16230), (762, 16239), (763, 16251), (765, 16269), (769, 16293),

Gene: Forge_20 Start: 12222, Stop: 16301, Start Num: 7
Candidate Starts for Forge_20:
(Start: 7 @12222 has 24 MA's), (11, 12246), (13, 12252), (18, 12285), (36, 12438), (40, 12468), (44, 12498), (46, 12528), (47, 12546), (50, 12567), (60, 12609), (63, 12642), (78, 12708), (79, 12711), (84, 12738), (94, 12783), (106, 12831), (124, 12948), (128, 12978), (138, 13032), (140, 13041), (143, 13056), (146, 13074), (149, 13095), (150, 13101), (153, 13119), (157, 13158), (160, 13173), (165, 13209), (170, 13242), (173, 13257), (178, 13281), (180, 13299), (183, 13317), (185, 13326), (189, 13344), (195, 13374), (196, 13389), (203, 13440), (212, 13491), (213, 13494), (214, 13503), (219, 13524), (224, 13557), (225, 13560), (227, 13578), (230, 13590), (240, 13641), (246, 13671), (251, 13686), (253, 13695), (260, 13728), (262, 13737), (264, 13749), (269, 13773), (272, 13782), (275, 13806), (280, 13824), (301, 13902), (302, 13905), (303, 13908), (306, 13935), (309, 13947), (313, 13965), (316, 13977), (317, 13980), (324, 13998), (326, 14007), (351, 14088), (359, 14112), (376, 14187), (378, 14193), (389, 14235), (417, 14280), (422, 14313), (423, 14319), (443, 14427), (446, 14439), (447, 14454), (458, 14517), (459, 14529), (461, 14550), (465, 14580), (472, 14622), (474, 14625), (488, 14718), (494, 14751), (502, 14790), (507, 14802), (515, 14823), (535, 14892), (536, 14895), (541, 14931), (544, 14943), (547, 14958), (552, 14982), (553, 14985), (570, 15063), (572, 15072), (583, 15120), (590, 15153), (596, 15180), (608, 15261), (623, 15324), (629, 15366), (645, 15441), (656, 15540), (660, 15582), (669, 15660), (677, 15723), (682, 15765), (686, 15825), (688, 15843), (693, 15873), (696, 15882), (697, 15888), (702, 15903), (717, 16023), (722, 16041), (723, 16056), (725, 16059), (730, 16077), (736, 16125), (739, 16140), (745, 16173), (750, 16191), (759, 16230), (762, 16239), (763, 16251), (765, 16269), (769, 16293),

Gene: Gaia_12 Start: 9452, Stop: 13315, Start Num: 9
Candidate Starts for Gaia_12:
(Start: 9 @9452 has 2 MA's), (19, 9518), (33, 9629), (43, 9713), (48, 9785), (55, 9815), (72, 9890), (97, 10010), (123, 10139), (124, 10142), (138, 10226), (149, 10289), (150, 10295), (158, 10355), (160, 10367), (165, 10403), (175, 10457), (180, 10493), (181, 10499), (196, 10583), (197, 10586), (199, 10592), (203, 10634), (207, 10640), (214, 10697), (219, 10718), (221, 10730), (228, 10778), (237, 10823), (307, 11114), (308, 11117), (316, 11153), (318, 11159), (319, 11162), (326, 11186), (337, 11219), (340, 11237), (374, 11357), (382, 11390), (427, 11525), (433, 11561), (436, 11594), (468, 11807), (482, 11906), (490, 11957), (497, 12005), (503, 12023), (505, 12029), (518, 12071), (519, 12080), (530, 12083), (537, 12107), (548, 12143), (566, 12233), (583, 12281), (585, 12284), (603, 12320), (620, 12386), (630, 12440), (644, 12479), (648, 12488), (650, 12503), (674, 12707), (676,

12716), (694, 12872), (708, 12944), (715, 12992), (716, 13016), (719, 13037), (721, 13040), (724, 13061), (752, 13202), (754, 13211), (755, 13217),

Gene: Gancho_19 Start: 11937, Stop: 16022, Start Num: 7
Candidate Starts for Gancho_19:
(Start: 7 @11937 has 24 MA's), (11, 11961), (13, 11967), (18, 12000), (36, 12153), (40, 12183), (44, 12213), (46, 12243), (50, 12282), (60, 12324), (63, 12357), (78, 12426), (84, 12456), (93, 12495), (94, 12501), (106, 12549), (124, 12666), (128, 12696), (138, 12750), (140, 12759), (143, 12774), (146, 12792), (149, 12813), (150, 12819), (153, 12837), (157, 12876), (160, 12891), (165, 12927), (170, 12960), (175, 12981), (178, 12999), (180, 13017), (183, 13035), (185, 13044), (189, 13062), (195, 13092), (196, 13107), (203, 13158), (207, 13164), (212, 13209), (213, 13212), (214, 13221), (219, 13242), (224, 13275), (225, 13278), (227, 13296), (230, 13308), (240, 13359), (246, 13389), (251, 13404), (253, 13413), (260, 13446), (262, 13455), (264, 13467), (269, 13491), (272, 13500), (275, 13524), (280, 13542), (301, 13620), (302, 13623), (303, 13626), (306, 13653), (309, 13665), (313, 13683), (316, 13695), (317, 13698), (324, 13716), (326, 13725), (351, 13806), (359, 13830), (376, 13905), (378, 13911), (383, 13932), (422, 14031), (423, 14037), (429, 14070), (443, 14145), (446, 14157), (447, 14172), (448, 14175), (459, 14250), (461, 14271), (465, 14301), (472, 14343), (474, 14346), (502, 14511), (507, 14523), (515, 14544), (535, 14613), (536, 14616), (541, 14652), (544, 14664), (552, 14703), (553, 14706), (570, 14784), (572, 14793), (583, 14841), (590, 14874), (596, 14901), (608, 14982), (629, 15087), (645, 15162), (656, 15261), (660, 15303), (669, 15381), (677, 15444), (682, 15486), (685, 15522), (686, 15546), (688, 15564), (693, 15594), (696, 15603), (697, 15609), (702, 15624), (717, 15744), (722, 15762), (723, 15777), (725, 15780), (730, 15798), (736, 15846), (739, 15861), (745, 15894), (750, 15912), (759, 15951), (762, 15960), (763, 15972), (765, 15990), (769, 16014),

Gene: Giles_20 Start: 12222, Stop: 16301, Start Num: 7
Candidate Starts for Giles_20:
(Start: 7 @12222 has 24 MA's), (11, 12246), (13, 12252), (18, 12285), (36, 12438), (40, 12468), (44, 12498), (46, 12528), (47, 12546), (50, 12567), (60, 12609), (63, 12642), (78, 12708), (79, 12711), (84, 12738), (94, 12783), (106, 12831), (124, 12948), (128, 12978), (138, 13032), (140, 13041), (143, 13056), (146, 13074), (149, 13095), (150, 13101), (153, 13119), (157, 13158), (160, 13173), (165, 13209), (170, 13242), (173, 13257), (178, 13281), (180, 13299), (183, 13317), (185, 13326), (189, 13344), (195, 13374), (196, 13389), (203, 13440), (212, 13491), (213, 13494), (214, 13503), (219, 13524), (224, 13557), (225, 13560), (227, 13578), (230, 13590), (240, 13641), (246, 13671), (251, 13686), (253, 13695), (260, 13728), (262, 13737), (264, 13749), (269, 13773), (272, 13782), (275, 13806), (280, 13824), (301, 13902), (302, 13905), (303, 13908), (306, 13935), (309, 13947), (313, 13965), (316, 13977), (317, 13980), (324, 13998), (326, 14007), (351, 14088), (359, 14112), (376, 14187), (378, 14193), (389, 14235), (417, 14280), (422, 14313), (423, 14319), (443, 14427), (446, 14439), (447, 14454), (458, 14517), (459, 14529), (461, 14550), (465, 14580), (472, 14622), (474, 14625), (488, 14718), (494, 14751), (502, 14790), (507, 14802), (515, 14823), (535, 14892), (536, 14895), (541, 14931), (544, 14943), (547, 14958), (552, 14982), (553, 14985), (570, 15063), (572, 15072), (583, 15120), (590, 15153), (596, 15180), (608, 15261), (623, 15324), (629, 15366), (645, 15441), (656, 15540), (660, 15582), (669, 15660), (677, 15723), (682, 15765), (686, 15825), (688, 15843), (693, 15873), (696, 15882), (697, 15888), (702, 15903), (717, 16023), (722, 16041), (723, 16056), (725, 16059), (730, 16077), (736, 16125), (739, 16140), (745, 16173), (750, 16191), (759, 16230), (762, 16239), (763, 16251), (765, 16269), (769, 16293),

Gene: Gravaillia_20 Start: 11955, Stop: 16028, Start Num: 7
Candidate Starts for Gravaillia_20:
(Start: 7 @11955 has 24 MA's), (11, 11979), (13, 11985), (18, 12018), (36, 12171), (40, 12201), (44, 12231), (46, 12261), (47, 12279), (50, 12300), (60, 12342), (63, 12375), (78, 12432), (84, 12462), (93, 12501), (94, 12507), (106, 12555), (124, 12672), (128, 12702), (138, 12756), (140, 12765), (143, 12780), (146, 12798), (149, 12819), (150, 12825), (153, 12843), (157, 12882), (160, 12897), (165,

12933), (170, 12966), (175, 12987), (178, 13005), (180, 13023), (183, 13041), (185, 13050), (189, 13068), (195, 13098), (196, 13113), (203, 13164), (207, 13170), (212, 13215), (213, 13218), (214, 13227), (219, 13248), (224, 13281), (225, 13284), (227, 13302), (230, 13314), (240, 13365), (246, 13395), (251, 13410), (253, 13419), (260, 13452), (262, 13461), (264, 13473), (269, 13497), (272, 13506), (275, 13530), (280, 13548), (301, 13626), (302, 13629), (303, 13632), (306, 13659), (309, 13671), (313, 13689), (316, 13701), (317, 13704), (324, 13722), (326, 13731), (351, 13812), (359, 13836), (376, 13911), (378, 13917), (383, 13938), (422, 14037), (423, 14043), (429, 14076), (443, 14151), (446, 14163), (447, 14178), (448, 14181), (459, 14256), (461, 14277), (465, 14307), (472, 14349), (474, 14352), (502, 14517), (507, 14529), (515, 14550), (535, 14619), (536, 14622), (541, 14658), (544, 14670), (552, 14709), (553, 14712), (570, 14790), (572, 14799), (583, 14847), (590, 14880), (596, 14907), (608, 14988), (629, 15093), (645, 15168), (656, 15267), (660, 15309), (669, 15387), (677, 15450), (682, 15492), (685, 15528), (686, 15552), (688, 15570), (693, 15600), (696, 15609), (697, 15615), (702, 15630), (717, 15750), (722, 15768), (723, 15783), (725, 15786), (730, 15804), (736, 15852), (739, 15867), (745, 15900), (750, 15918), (759, 15957), (762, 15966), (763, 15978), (765, 15996), (769, 16020),

Gene: Gustav_16 Start: 9814, Stop: 14301, Start Num: 6
Candidate Starts for Gustav_16:
(Start: 6 @9814 has 15 MA's), (10, 9832), (13, 9853), (15, 9865), (19, 9898), (28, 9967), (66, 10306), (69, 10321), (83, 10381), (98, 10459), (107, 10498), (127, 10627), (134, 10660), (142, 10705), (148, 10738), (160, 10822), (161, 10828), (174, 10909), (182, 10963), (185, 10975), (213, 11158), (218, 11188), (223, 11224), (236, 11293), (242, 11326), (244, 11332), (254, 11362), (270, 11443), (274, 11464), (279, 11482), (281, 11497), (323, 11650), (339, 11689), (353, 11737), (364, 11770), (367, 11788), (377, 11836), (388, 11878), (401, 11905), (405, 11929), (407, 11941), (408, 11944), (410, 11953), (412, 11965), (420, 12004), (424, 12031), (437, 12118), (441, 12139), (450, 12181), (458, 12235), (461, 12268), (462, 12289), (463, 12292), (464, 12298), (469, 12322), (487, 12448), (491, 12472), (496, 12517), (501, 12532), (504, 12547), (509, 12565), (514, 12583), (533, 12688), (569, 12892), (571, 12901), (663, 13576), (673, 13642), (681, 13705), (684, 13750), (689, 13798), (690, 13807), (700, 13846), (705, 13882), (707, 13891), (711, 13903), (729, 14029), (740, 14107), (741, 14119), (742, 14122), (745, 14143), (746, 14146), (758, 14200),

Gene: HH92_20 Start: 12222, Stop: 16301, Start Num: 7
Candidate Starts for HH92_20:
(Start: 7 @12222 has 24 MA's), (11, 12246), (13, 12252), (18, 12285), (36, 12438), (40, 12468), (44, 12498), (46, 12528), (47, 12546), (50, 12567), (60, 12609), (63, 12642), (78, 12708), (79, 12711), (84, 12738), (94, 12783), (106, 12831), (124, 12948), (128, 12978), (138, 13032), (140, 13041), (143, 13056), (146, 13074), (149, 13095), (150, 13101), (153, 13119), (157, 13158), (160, 13173), (165, 13209), (170, 13242), (173, 13257), (178, 13281), (180, 13299), (183, 13317), (185, 13326), (189, 13344), (195, 13374), (196, 13389), (203, 13440), (212, 13491), (213, 13494), (214, 13503), (219, 13524), (224, 13557), (225, 13560), (227, 13578), (230, 13590), (240, 13641), (246, 13671), (251, 13686), (253, 13695), (260, 13728), (262, 13737), (264, 13749), (269, 13773), (272, 13782), (275, 13806), (280, 13824), (301, 13902), (302, 13905), (303, 13908), (306, 13935), (309, 13947), (313, 13965), (316, 13977), (317, 13980), (324, 13998), (326, 14007), (351, 14088), (359, 14112), (376, 14187), (378, 14193), (389, 14235), (417, 14280), (422, 14313), (423, 14319), (443, 14427), (446, 14439), (447, 14454), (458, 14517), (459, 14529), (461, 14550), (465, 14580), (472, 14622), (474, 14625), (488, 14718), (494, 14751), (502, 14790), (507, 14802), (515, 14823), (535, 14892), (536, 14895), (541, 14931), (544, 14943), (547, 14958), (552, 14982), (553, 14985), (570, 15063), (572, 15072), (583, 15120), (590, 15153), (596, 15180), (608, 15261), (623, 15324), (629, 15366), (645, 15441), (656, 15540), (660, 15582), (669, 15660), (677, 15723), (682, 15765), (686, 15825), (688, 15843), (693, 15873), (696, 15882), (697, 15888), (702, 15903), (717, 16023), (722, 16041), (723, 16056), (725, 16059), (730, 16077), (736, 16125), (739, 16140), (745, 16173), (750, 16191), (759, 16230), (762, 16239), (763, 16251), (765, 16269), (769, 16293),

Gene: Hadrien_20 Start: 12222, Stop: 16301, Start Num: 7
Candidate Starts for Hadrien_20:
(Start: 7 @12222 has 24 MA's), (11, 12246), (13, 12252), (18, 12285), (36, 12438), (40, 12468), (44, 12498), (46, 12528), (47, 12546), (50, 12567), (60, 12609), (63, 12642), (78, 12708), (79, 12711), (84, 12738), (94, 12783), (106, 12831), (124, 12948), (128, 12978), (138, 13032), (140, 13041), (143, 13056), (146, 13074), (149, 13095), (150, 13101), (153, 13119), (157, 13158), (160, 13173), (165, 13209), (170, 13242), (173, 13257), (178, 13281), (180, 13299), (183, 13317), (185, 13326), (189, 13344), (195, 13374), (196, 13389), (203, 13440), (212, 13491), (213, 13494), (214, 13503), (219, 13524), (224, 13557), (225, 13560), (227, 13578), (230, 13590), (240, 13641), (246, 13671), (251, 13686), (253, 13695), (260, 13728), (262, 13737), (264, 13749), (269, 13773), (272, 13782), (275, 13806), (280, 13824), (301, 13902), (302, 13905), (303, 13908), (306, 13935), (309, 13947), (313, 13965), (316, 13977), (317, 13980), (324, 13998), (326, 14007), (351, 14088), (359, 14112), (376, 14187), (378, 14193), (389, 14235), (417, 14280), (422, 14313), (423, 14319), (443, 14427), (446, 14439), (447, 14454), (458, 14517), (459, 14529), (461, 14550), (465, 14580), (472, 14622), (474, 14625), (488, 14718), (494, 14751), (502, 14790), (507, 14802), (515, 14823), (535, 14892), (536, 14895), (541, 14931), (544, 14943), (547, 14958), (552, 14982), (553, 14985), (570, 15063), (572, 15072), (583, 15120), (590, 15153), (596, 15180), (608, 15261), (623, 15324), (629, 15366), (645, 15441), (656, 15540), (660, 15582), (669, 15660), (677, 15723), (682, 15765), (686, 15825), (688, 15843), (693, 15873), (696, 15882), (697, 15888), (702, 15903), (717, 16023), (722, 16041), (723, 16056), (725, 16059), (730, 16077), (736, 16125), (739, 16140), (745, 16173), (750, 16191), (759, 16230), (762, 16239), (763, 16251), (765, 16269), (769, 16293),

Gene: Hail_20 Start: 12222, Stop: 16301, Start Num: 7
Candidate Starts for Hail_20:
(Start: 7 @12222 has 24 MA's), (11, 12246), (13, 12252), (18, 12285), (36, 12438), (40, 12468), (44, 12498), (46, 12528), (47, 12546), (50, 12567), (60, 12609), (63, 12642), (78, 12708), (79, 12711), (84, 12738), (94, 12783), (106, 12831), (124, 12948), (128, 12978), (138, 13032), (140, 13041), (143, 13056), (146, 13074), (149, 13095), (150, 13101), (153, 13119), (157, 13158), (160, 13173), (165, 13209), (170, 13242), (173, 13257), (178, 13281), (180, 13299), (183, 13317), (185, 13326), (189, 13344), (195, 13374), (196, 13389), (203, 13440), (212, 13491), (213, 13494), (214, 13503), (219, 13524), (224, 13557), (225, 13560), (227, 13578), (230, 13590), (240, 13641), (246, 13671), (251, 13686), (253, 13695), (260, 13728), (262, 13737), (264, 13749), (269, 13773), (272, 13782), (275, 13806), (280, 13824), (301, 13902), (302, 13905), (303, 13908), (306, 13935), (309, 13947), (313, 13965), (316, 13977), (317, 13980), (324, 13998), (326, 14007), (351, 14088), (359, 14112), (376, 14187), (378, 14193), (389, 14235), (417, 14280), (422, 14313), (423, 14319), (443, 14427), (446, 14439), (447, 14454), (458, 14517), (459, 14529), (461, 14550), (465, 14580), (472, 14622), (474, 14625), (488, 14718), (494, 14751), (502, 14790), (507, 14802), (515, 14823), (535, 14892), (536, 14895), (541, 14931), (544, 14943), (547, 14958), (552, 14982), (553, 14985), (570, 15063), (572, 15072), (583, 15120), (590, 15153), (596, 15180), (608, 15261), (623, 15324), (629, 15366), (645, 15441), (656, 15540), (660, 15582), (669, 15660), (677, 15723), (682, 15765), (686, 15825), (688, 15843), (693, 15873), (696, 15882), (697, 15888), (702, 15903), (717, 16023), (722, 16041), (723, 16056), (725, 16059), (730, 16077), (736, 16125), (739, 16140), (745, 16173), (750, 16191), (759, 16230), (762, 16239), (763, 16251), (765, 16269), (769, 16293),

Gene: Heinz_16 Start: 9889, Stop: 14187, Start Num: 6
Candidate Starts for Heinz_16:
(1, 9820), (2, 9850), (Start: 6 @9889 has 15 MA's), (12, 9916), (13, 9922), (15, 9934), (22, 9976), (28, 10024), (34, 10108), (67, 10360), (139, 10714), (144, 10735), (166, 10882), (167, 10885), (200, 11065), (205, 11098), (225, 11224), (229, 11248), (258, 11374), (259, 11377), (272, 11434), (278, 11473), (302, 11560), (327, 11680), (341, 11761), (364, 11830), (371, 11860), (372, 11863), (379, 11896), (403, 11956), (404, 11959), (428, 12049), (437, 12109), (438, 12115), (441, 12130), (442, 12133), (450, 12172), (457, 12223), (461, 12259), (468, 12310), (482, 12409), (501, 12520), (514, 12571), (516, 12595), (520, 12622), (525, 12640), (527, 12649), (534, 12688), (545, 12757), (571,

12898), (578, 12928), (605, 13114), (637, 13324), (638, 13327), (681, 13627), (687, 13705), (695, 13753), (710, 13819), (713, 13846), (716, 13885), (737, 13990), (738, 13993), (741, 14014), (748, 14047), (749, 14050),

Gene: Hibiscus_16 Start: 9906, Stop: 14141, Start Num: 6
Candidate Starts for Hibiscus_16:
(1, 9837), (Start: 6 @9906 has 15 MA's), (12, 9933), (13, 9939), (21, 9996), (51, 10296), (80, 10458), (81, 10467), (129, 10725), (142, 10791), (145, 10812), (148, 10824), (152, 10848), (161, 10914), (174, 10995), (182, 11049), (192, 11094), (213, 11244), (218, 11274), (226, 11331), (232, 11364), (259, 11472), (278, 11568), (291, 11628), (300, 11649), (302, 11655), (341, 11736), (345, 11745), (372, 11838), (379, 11871), (420, 11970), (433, 12048), (437, 12084), (438, 12090), (440, 12102), (441, 12105), (450, 12147), (457, 12198), (461, 12234), (468, 12285), (482, 12384), (484, 12399), (501, 12495), (509, 12528), (514, 12546), (516, 12570), (520, 12597), (525, 12615), (527, 12624), (534, 12663), (545, 12732), (571, 12873), (578, 12903), (599, 13038), (612, 13146), (637, 13290), (638, 13293), (681, 13581), (695, 13707), (710, 13773), (713, 13800), (716, 13839), (732, 13926), (741, 13968),

Gene: JacoRen57_15 Start: 9894, Stop: 14315, Start Num: 4
Candidate Starts for JacoRen57_15:
(Start: 4 @9894 has 1 MA's), (5, 9897), (14, 9939), (23, 9999), (24, 10011), (37, 10146), (42, 10191), (45, 10236), (49, 10284), (96, 10542), (104, 10581), (109, 10608), (120, 10692), (121, 10695), (138, 10800), (149, 10863), (163, 10965), (165, 10977), (179, 11055), (183, 11082), (185, 11091), (192, 11124), (198, 11169), (215, 11292), (238, 11436), (247, 11481), (271, 11610), (288, 11718), (334, 11898), (361, 11991), (370, 12027), (375, 12060), (402, 12129), (428, 12225), (435, 12279), (452, 12372), (466, 12480), (481, 12582), (496, 12690), (499, 12702), (501, 12711), (525, 12822), (532, 12846), (549, 12927), (551, 12942), (563, 13002), (565, 13017), (573, 13053), (579, 13077), (581, 13089), (588, 13122), (598, 13182), (601, 13197), (610, 13269), (619, 13314), (625, 13350), (634, 13404), (640, 13437), (643, 13458), (658, 13572), (659, 13605), (668, 13677), (691, 13887), (698, 13914), (709, 13974), (716, 14049), (728, 14106), (751, 14229), (757, 14256), (760, 14265), (765, 14304),

Gene: Jojo24_16 Start: 9900, Stop: 14138, Start Num: 6
Candidate Starts for Jojo24_16:
(1, 9831), (Start: 6 @9900 has 15 MA's), (12, 9927), (13, 9933), (21, 9990), (41, 10197), (51, 10290), (80, 10452), (81, 10461), (129, 10719), (142, 10785), (145, 10806), (148, 10818), (152, 10842), (174, 10989), (182, 11043), (192, 11088), (213, 11238), (218, 11268), (226, 11325), (232, 11358), (258, 11463), (259, 11466), (276, 11556), (278, 11562), (291, 11622), (300, 11643), (302, 11649), (341, 11730), (345, 11739), (372, 11832), (379, 11865), (403, 11925), (404, 11928), (420, 11964), (437, 12078), (438, 12084), (440, 12096), (441, 12099), (450, 12141), (457, 12192), (461, 12228), (468, 12279), (469, 12282), (482, 12378), (484, 12393), (501, 12489), (514, 12540), (516, 12564), (520, 12591), (525, 12609), (527, 12618), (534, 12657), (545, 12726), (571, 12867), (578, 12897), (599, 13032), (606, 13098), (612, 13140), (637, 13281), (638, 13284), (681, 13578), (695, 13704), (710, 13770), (716, 13836), (732, 13923), (741, 13965),

Gene: JustASigh_16 Start: 11096, Stop: 15256, Start Num: 6
Candidate Starts for JustASigh_16:
(Start: 6 @11096 has 15 MA's), (11, 11126), (16, 11153), (19, 11177), (29, 11267), (31, 11300), (40, 11393), (82, 11678), (89, 11708), (97, 11747), (100, 11765), (124, 11900), (126, 11909), (138, 11984), (143, 12008), (146, 12026), (162, 12143), (187, 12284), (189, 12296), (195, 12326), (212, 12443), (213, 12446), (219, 12476), (227, 12530), (230, 12542), (246, 12620), (251, 12635), (256, 12653), (274, 12752), (290, 12809), (301, 12851), (307, 12890), (331, 12953), (343, 13001), (344, 13004), (357, 13046), (362, 13061), (369, 13091), (372, 13103), (383, 13154), (387, 13166), (418, 13220), (419, 13232), (428, 13286), (431, 13304), (433, 13310), (439, 13352), (456, 13436), (460, 13466),

(470, 13541), (480, 13595), (508, 13739), (529, 13808), (538, 13838), (539, 13856), (540, 13859), (542, 13874), (546, 13895), (552, 13922), (557, 13949), (562, 13976), (567, 13994), (570, 14006), (571, 14012), (584, 14060), (593, 14114), (597, 14141), (614, 14234), (615, 14240), (632, 14345), (655, 14495), (667, 14612), (670, 14648), (701, 14864), (723, 15029), (730, 15050), (731, 15068), (746, 15131), (750, 15143), (768, 15242), (770, 15245),

Gene: Kinbote_20 Start: 12222, Stop: 16301, Start Num: 7
Candidate Starts for Kinbote_20:
(Start: 7 @12222 has 24 MA's), (11, 12246), (13, 12252), (18, 12285), (36, 12438), (40, 12468), (44, 12498), (46, 12528), (47, 12546), (50, 12567), (60, 12609), (63, 12642), (78, 12708), (79, 12711), (84, 12738), (94, 12783), (106, 12831), (124, 12948), (128, 12978), (138, 13032), (140, 13041), (143, 13056), (146, 13074), (149, 13095), (150, 13101), (153, 13119), (157, 13158), (160, 13173), (165, 13209), (170, 13242), (173, 13257), (178, 13281), (180, 13299), (183, 13317), (185, 13326), (189, 13344), (195, 13374), (196, 13389), (203, 13440), (212, 13491), (213, 13494), (214, 13503), (219, 13524), (224, 13557), (225, 13560), (227, 13578), (230, 13590), (240, 13641), (246, 13671), (251, 13686), (253, 13695), (260, 13728), (262, 13737), (264, 13749), (269, 13773), (272, 13782), (275, 13806), (280, 13824), (301, 13902), (302, 13905), (303, 13908), (306, 13935), (309, 13947), (313, 13965), (316, 13977), (317, 13980), (324, 13998), (326, 14007), (351, 14088), (359, 14112), (376, 14187), (378, 14193), (389, 14235), (417, 14280), (422, 14313), (423, 14319), (443, 14427), (446, 14439), (447, 14454), (458, 14517), (459, 14529), (461, 14550), (465, 14580), (472, 14622), (474, 14625), (488, 14718), (494, 14751), (502, 14790), (507, 14802), (515, 14823), (535, 14892), (536, 14895), (541, 14931), (544, 14943), (547, 14958), (552, 14982), (553, 14985), (570, 15063), (572, 15072), (583, 15120), (590, 15153), (596, 15180), (608, 15261), (623, 15324), (629, 15366), (645, 15441), (656, 15540), (660, 15582), (669, 15660), (677, 15723), (682, 15765), (686, 15825), (688, 15843), (693, 15873), (696, 15882), (697, 15888), (702, 15903), (717, 16023), (722, 16041), (723, 16056), (725, 16059), (730, 16077), (736, 16125), (739, 16140), (745, 16173), (750, 16191), (759, 16230), (762, 16239), (763, 16251), (765, 16269), (769, 16293),

Gene: LilHazelnut_20 Start: 12222, Stop: 16301, Start Num: 7
Candidate Starts for LilHazelnut_20:
(Start: 7 @12222 has 24 MA's), (11, 12246), (13, 12252), (18, 12285), (36, 12438), (40, 12468), (44, 12498), (46, 12528), (47, 12546), (50, 12567), (60, 12609), (63, 12642), (78, 12708), (79, 12711), (84, 12738), (94, 12783), (106, 12831), (124, 12948), (128, 12978), (138, 13032), (140, 13041), (143, 13056), (146, 13074), (149, 13095), (150, 13101), (153, 13119), (157, 13158), (160, 13173), (165, 13209), (170, 13242), (173, 13257), (178, 13281), (180, 13299), (183, 13317), (185, 13326), (189, 13344), (195, 13374), (196, 13389), (203, 13440), (212, 13491), (213, 13494), (214, 13503), (219, 13524), (224, 13557), (225, 13560), (227, 13578), (230, 13590), (240, 13641), (246, 13671), (251, 13686), (253, 13695), (260, 13728), (262, 13737), (264, 13749), (269, 13773), (272, 13782), (275, 13806), (280, 13824), (301, 13902), (302, 13905), (303, 13908), (306, 13935), (309, 13947), (313, 13965), (316, 13977), (317, 13980), (324, 13998), (326, 14007), (351, 14088), (359, 14112), (376, 14187), (378, 14193), (389, 14235), (417, 14280), (422, 14313), (423, 14319), (443, 14427), (446, 14439), (447, 14454), (458, 14517), (459, 14529), (461, 14550), (465, 14580), (472, 14622), (474, 14625), (488, 14718), (494, 14751), (502, 14790), (507, 14802), (515, 14823), (535, 14892), (536, 14895), (541, 14931), (544, 14943), (547, 14958), (552, 14982), (553, 14985), (570, 15063), (572, 15072), (583, 15120), (590, 15153), (596, 15180), (608, 15261), (623, 15324), (629, 15366), (645, 15441), (656, 15540), (660, 15582), (669, 15660), (677, 15723), (682, 15765), (686, 15825), (688, 15843), (693, 15873), (696, 15882), (697, 15888), (702, 15903), (717, 16023), (722, 16041), (723, 16056), (725, 16059), (730, 16077), (736, 16125), (739, 16140), (745, 16173), (750, 16191), (759, 16230), (762, 16239), (763, 16251), (765, 16269), (769, 16293),

Gene: Luke_20 Start: 12222, Stop: 16301, Start Num: 7
Candidate Starts for Luke_20:

(Start: 7 @12222 has 24 MA's), (11, 12246), (13, 12252), (18, 12285), (36, 12438), (40, 12468), (44, 12498), (46, 12528), (47, 12546), (50, 12567), (60, 12609), (63, 12642), (78, 12708), (79, 12711), (84, 12738), (94, 12783), (106, 12831), (124, 12948), (128, 12978), (138, 13032), (140, 13041), (143, 13056), (146, 13074), (149, 13095), (150, 13101), (153, 13119), (157, 13158), (160, 13173), (165, 13209), (170, 13242), (173, 13257), (178, 13281), (180, 13299), (183, 13317), (185, 13326), (189, 13344), (195, 13374), (196, 13389), (203, 13440), (212, 13491), (213, 13494), (214, 13503), (219, 13524), (224, 13557), (225, 13560), (227, 13578), (230, 13590), (240, 13641), (246, 13671), (251, 13686), (253, 13695), (260, 13728), (262, 13737), (264, 13749), (269, 13773), (272, 13782), (275, 13806), (280, 13824), (301, 13902), (302, 13905), (303, 13908), (306, 13935), (309, 13947), (313, 13965), (316, 13977), (317, 13980), (324, 13998), (326, 14007), (351, 14088), (359, 14112), (376, 14187), (378, 14193), (389, 14235), (417, 14280), (422, 14313), (423, 14319), (443, 14427), (446, 14439), (447, 14454), (458, 14517), (459, 14529), (461, 14550), (465, 14580), (472, 14622), (474, 14625), (488, 14718), (494, 14751), (502, 14790), (507, 14802), (515, 14823), (535, 14892), (536, 14895), (541, 14931), (544, 14943), (547, 14958), (552, 14982), (553, 14985), (570, 15063), (572, 15072), (583, 15120), (590, 15153), (596, 15180), (608, 15261), (623, 15324), (629, 15366), (645, 15441), (656, 15540), (660, 15582), (669, 15660), (677, 15723), (682, 15765), (686, 15825), (688, 15843), (693, 15873), (696, 15882), (697, 15888), (702, 15903), (717, 16023), (722, 16041), (723, 16056), (725, 16059), (730, 16077), (736, 16125), (739, 16140), (745, 16173), (750, 16191), (759, 16230), (762, 16239), (763, 16251), (765, 16269), (769, 16293),

Gene: Luna22_20 Start: 12222, Stop: 16301, Start Num: 7
Candidate Starts for Luna22_20:
(Start: 7 @12222 has 24 MA's), (11, 12246), (13, 12252), (18, 12285), (36, 12438), (40, 12468), (44, 12498), (46, 12528), (47, 12546), (50, 12567), (60, 12609), (63, 12642), (78, 12708), (79, 12711), (84, 12738), (94, 12783), (106, 12831), (124, 12948), (128, 12978), (138, 13032), (140, 13041), (143, 13056), (146, 13074), (149, 13095), (150, 13101), (153, 13119), (157, 13158), (160, 13173), (165, 13209), (170, 13242), (173, 13257), (178, 13281), (180, 13299), (183, 13317), (185, 13326), (189, 13344), (195, 13374), (196, 13389), (203, 13440), (212, 13491), (213, 13494), (214, 13503), (219, 13524), (224, 13557), (225, 13560), (227, 13578), (230, 13590), (240, 13641), (246, 13671), (251, 13686), (253, 13695), (260, 13728), (262, 13737), (264, 13749), (269, 13773), (272, 13782), (275, 13806), (280, 13824), (301, 13902), (302, 13905), (303, 13908), (306, 13935), (309, 13947), (313, 13965), (316, 13977), (317, 13980), (324, 13998), (326, 14007), (351, 14088), (359, 14112), (376, 14187), (378, 14193), (389, 14235), (417, 14280), (422, 14313), (423, 14319), (443, 14427), (446, 14439), (447, 14454), (458, 14517), (459, 14529), (461, 14550), (465, 14580), (472, 14622), (474, 14625), (488, 14718), (494, 14751), (502, 14790), (507, 14802), (515, 14823), (535, 14892), (536, 14895), (541, 14931), (544, 14943), (547, 14958), (552, 14982), (553, 14985), (570, 15063), (572, 15072), (583, 15120), (590, 15153), (596, 15180), (608, 15261), (623, 15324), (629, 15366), (645, 15441), (656, 15540), (660, 15582), (669, 15660), (677, 15723), (682, 15765), (686, 15825), (688, 15843), (693, 15873), (696, 15882), (697, 15888), (702, 15903), (717, 16023), (722, 16041), (723, 16056), (725, 16059), (730, 16077), (736, 16125), (739, 16140), (745, 16173), (750, 16191), (759, 16230), (762, 16239), (763, 16251), (765, 16269), (769, 16293),

Gene: Mahdia_16 Start: 9733, Stop: 13983, Start Num: 6
Candidate Starts for Mahdia_16:
(Start: 6 @9733 has 15 MA's), (10, 9751), (15, 9784), (19, 9817), (30, 9928), (57, 10159), (66, 10225), (69, 10240), (83, 10300), (92, 10339), (107, 10417), (112, 10447), (120, 10501), (127, 10546), (134, 10579), (142, 10624), (148, 10657), (161, 10747), (174, 10828), (182, 10882), (185, 10894), (194, 10951), (206, 11026), (213, 11077), (218, 11107), (242, 11245), (246, 11257), (262, 11317), (268, 11338), (269, 11341), (282, 11392), (287, 11419), (289, 11422), (300, 11440), (320, 11488), (342, 11533), (349, 11557), (354, 11572), (364, 11599), (366, 11605), (391, 11704), (405, 11731), (406, 11737), (420, 11758), (435, 11866), (437, 11872), (441, 11893), (461, 12022), (462, 12043), (463, 12046), (464, 12052), (469, 12076), (476, 12112), (477, 12118), (496, 12259), (514, 12325), (517, 12349), (522, 12376), (531, 12412), (533, 12427), (571, 12649), (630, 13030), (679, 13396), (681,

13420), (685, 13471), (686, 13492), (695, 13546), (703, 13570), (710, 13612), (716, 13678), (718, 13696), (737, 13783), (742, 13810), (744, 13828), (746, 13831),

Gene: Morrissey_17 Start: 10161, Stop: 15197, Start Num: 6
Candidate Starts for Morrissey_17:
(Start: 6 @10161 has 15 MA's), (13, 10200), (21, 10257), (27, 10305), (29, 10335), (39, 10452), (43, 10482), (57, 10629), (70, 10725), (95, 10848), (103, 10893), (122, 11016), (127, 11046), (130, 11067), (133, 11076), (135, 11094), (137, 11100), (141, 11121), (149, 11175), (151, 11184), (154, 11208), (176, 11349), (190, 11427), (211, 11574), (217, 11652), (224, 11751), (227, 11772), (228, 11778), (231, 11793), (241, 11847), (245, 11862), (246, 11865), (248, 11898), (249, 11907), (255, 11937), (258, 11958), (263, 11976), (266, 11991), (286, 12111), (293, 12144), (302, 12183), (315, 12258), (317, 12264), (346, 12399), (354, 12432), (356, 12435), (357, 12438), (360, 12447), (364, 12459), (371, 12495), (377, 12525), (386, 12564), (395, 12606), (396, 12609), (397, 12612), (399, 12633), (403, 12663), (414, 12738), (416, 12744), (425, 12795), (428, 12819), (441, 12900), (458, 12996), (460, 13017), (461, 13029), (462, 13050), (463, 13053), (469, 13083), (476, 13119), (487, 13209), (491, 13233), (496, 13278), (504, 13308), (509, 13326), (514, 13344), (516, 13365), (517, 13368), (569, 13623), (571, 13632), (606, 13866), (626, 13998), (627, 14004), (630, 14022), (637, 14064), (653, 14181), (664, 14433), (665, 14460), (672, 14565), (679, 14607), (680, 14625), (681, 14631), (695, 14757), (703, 14781), (705, 14805), (710, 14823), (712, 14829), (716, 14889), (741, 15018), (742, 15021), (744, 15039), (746, 15042), (759, 15099),

Gene: Nebkiss_13 Start: 9453, Stop: 13316, Start Num: 9
Candidate Starts for Nebkiss_13:
(Start: 9 @9453 has 2 MA's), (19, 9519), (33, 9630), (43, 9714), (48, 9786), (55, 9816), (72, 9891), (97, 10011), (123, 10140), (124, 10143), (138, 10227), (149, 10290), (150, 10296), (158, 10356), (160, 10368), (165, 10404), (175, 10458), (180, 10494), (181, 10500), (196, 10584), (197, 10587), (199, 10593), (203, 10635), (207, 10641), (214, 10698), (219, 10719), (221, 10731), (228, 10779), (237, 10824), (307, 11115), (308, 11118), (316, 11154), (318, 11160), (319, 11163), (326, 11187), (337, 11220), (340, 11238), (374, 11358), (382, 11391), (427, 11526), (433, 11562), (436, 11595), (468, 11808), (482, 11907), (490, 11958), (497, 12006), (503, 12024), (505, 12030), (518, 12072), (519, 12081), (530, 12084), (537, 12108), (548, 12144), (566, 12234), (583, 12282), (585, 12285), (603, 12321), (620, 12387), (630, 12441), (644, 12480), (648, 12489), (650, 12504), (674, 12708), (676, 12717), (694, 12873), (708, 12945), (715, 12993), (716, 13017), (719, 13038), (721, 13041), (724, 13062), (752, 13203), (754, 13212), (755, 13218),

Gene: NovoPizza_17 Start: 12303, Stop: 16601, Start Num: 7
Candidate Starts for NovoPizza_17:
(Start: 7 @12303 has 24 MA's), (16, 12354), (35, 12498), (36, 12519), (40, 12549), (47, 12627), (54, 12666), (55, 12669), (56, 12672), (75, 12795), (79, 12807), (87, 12846), (90, 12855), (99, 12903), (107, 12939), (108, 12942), (116, 13002), (124, 13044), (128, 13074), (138, 13128), (143, 13152), (146, 13170), (159, 13260), (170, 13338), (172, 13347), (173, 13353), (175, 13359), (178, 13377), (189, 13440), (195, 13470), (212, 13587), (213, 13590), (214, 13599), (219, 13620), (227, 13674), (230, 13686), (234, 13713), (246, 13767), (251, 13782), (260, 13824), (264, 13845), (272, 13878), (280, 13920), (298, 13986), (308, 14040), (309, 14043), (314, 14064), (335, 14121), (355, 14196), (363, 14217), (376, 14283), (382, 14301), (383, 14310), (417, 14376), (423, 14415), (445, 14538), (447, 14556), (451, 14583), (474, 14745), (488, 14847), (489, 14856), (495, 14910), (500, 14925), (520, 15015), (521, 15018), (526, 15036), (543, 15123), (560, 15210), (561, 15213), (568, 15252), (580, 15303), (597, 15402), (611, 15495), (613, 15510), (618, 15540), (636, 15663), (656, 15810), (660, 15852), (661, 15873), (686, 16107), (701, 16182), (722, 16332), (723, 16347), (734, 16401), (736, 16413), (747, 16476), (750, 16491), (759, 16530),

Gene: OBUpride_20 Start: 12216, Stop: 16295, Start Num: 7
Candidate Starts for OBUpride_20:

(Start: 7 @12216 has 24 MA's), (11, 12240), (13, 12246), (18, 12279), (36, 12432), (40, 12462), (44, 12492), (46, 12522), (47, 12540), (50, 12561), (60, 12603), (63, 12636), (78, 12702), (79, 12705), (84, 12732), (94, 12777), (106, 12825), (124, 12942), (128, 12972), (138, 13026), (140, 13035), (143, 13050), (146, 13068), (149, 13089), (150, 13095), (153, 13113), (157, 13152), (160, 13167), (165, 13203), (170, 13236), (173, 13251), (178, 13275), (180, 13293), (183, 13311), (185, 13320), (189, 13338), (195, 13368), (196, 13383), (203, 13434), (212, 13485), (213, 13488), (214, 13497), (219, 13518), (224, 13551), (225, 13554), (227, 13572), (230, 13584), (240, 13635), (246, 13665), (251, 13680), (253, 13689), (260, 13722), (262, 13731), (264, 13743), (269, 13767), (272, 13776), (275, 13800), (280, 13818), (301, 13896), (302, 13899), (303, 13902), (306, 13929), (309, 13941), (313, 13959), (316, 13971), (317, 13974), (324, 13992), (326, 14001), (351, 14082), (359, 14106), (376, 14181), (378, 14187), (389, 14229), (417, 14274), (422, 14307), (423, 14313), (443, 14421), (446, 14433), (447, 14448), (458, 14511), (459, 14523), (461, 14544), (465, 14574), (472, 14616), (474, 14619), (488, 14712), (494, 14745), (502, 14784), (507, 14796), (515, 14817), (535, 14886), (536, 14889), (541, 14925), (544, 14937), (547, 14952), (552, 14976), (553, 14979), (570, 15057), (572, 15066), (583, 15114), (590, 15147), (596, 15174), (608, 15255), (623, 15318), (629, 15360), (645, 15435), (656, 15534), (660, 15576), (669, 15654), (677, 15717), (682, 15759), (686, 15819), (688, 15837), (693, 15867), (696, 15876), (697, 15882), (702, 15897), (717, 16017), (722, 16035), (723, 16050), (725, 16053), (730, 16071), (736, 16119), (739, 16134), (745, 16167), (750, 16185), (759, 16224), (762, 16233), (763, 16245), (765, 16263), (769, 16287),

Gene: Puppers_16 Start: 9686, Stop: 14305, Start Num: 6
Candidate Starts for Puppers_16:
(Start: 6 @9686 has 15 MA's), (48, 10070), (62, 10154), (71, 10196), (76, 10232), (86, 10271), (106, 10361), (107, 10373), (111, 10394), (112, 10403), (120, 10457), (129, 10514), (134, 10535), (135, 10547), (136, 10550), (142, 10580), (145, 10601), (148, 10613), (174, 10784), (182, 10838), (201, 10952), (206, 10982), (213, 11033), (218, 11063), (223, 11099), (250, 11231), (252, 11240), (254, 11252), (265, 11303), (274, 11369), (284, 11429), (286, 11441), (305, 11528), (311, 11564), (320, 11606), (322, 11612), (330, 11675), (331, 11678), (342, 11717), (349, 11741), (354, 11756), (366, 11789), (373, 11813), (378, 11840), (390, 11882), (392, 11891), (397, 11921), (400, 11945), (406, 12005), (413, 12038), (415, 12050), (420, 12074), (421, 12077), (430, 12137), (436, 12182), (441, 12206), (450, 12248), (460, 12323), (461, 12335), (462, 12356), (463, 12359), (467, 12374), (484, 12500), (485, 12503), (506, 12632), (511, 12653), (514, 12662), (522, 12716), (523, 12722), (571, 12980), (600, 13151), (602, 13169), (621, 13316), (626, 13358), (681, 13739), (685, 13790), (687, 13817), (695, 13865), (703, 13889), (705, 13913), (710, 13931), (716, 13997), (737, 14102), (741, 14126), (742, 14129), (744, 14147), (746, 14150), (764, 14237),

Gene: Rem711_23 Start: 13850, Stop: 17929, Start Num: 3
Candidate Starts for Rem711_23:
(Start: 3 @13850 has 1 MA's), (11, 13895), (53, 14207), (61, 14258), (108, 14486), (119, 14567), (131, 14636), (210, 15083), (230, 15191), (257, 15311), (302, 15512), (325, 15608), (342, 15665), (453, 16094), (454, 16100), (486, 16316), (513, 16430), (524, 16493), (555, 16616), (564, 16661), (595, 16805), (599, 16826), (609, 16892), (635, 17030), (699, 17549), (720, 17693), (743, 17795), (763, 17876), (766, 17906), (767, 17912),

Gene: Reyja_17 Start: 10078, Stop: 14313, Start Num: 6
Candidate Starts for Reyja_17:
(1, 10009), (2, 10039), (Start: 6 @10078 has 15 MA's), (12, 10105), (15, 10123), (19, 10156), (21, 10168), (41, 10375), (51, 10468), (66, 10567), (80, 10630), (81, 10639), (117, 10825), (127, 10885), (129, 10897), (131, 10906), (142, 10963), (145, 10984), (148, 10996), (174, 11167), (182, 11221), (213, 11416), (218, 11446), (227, 11506), (233, 11542), (259, 11644), (278, 11740), (291, 11800), (300, 11821), (302, 11827), (341, 11908), (345, 11917), (371, 12007), (372, 12010), (379, 12043), (403, 12103), (404, 12106), (428, 12196), (433, 12220), (437, 12256), (438, 12262), (441, 12277), (450, 12319), (457, 12370), (461, 12406), (468, 12457), (482, 12556), (498, 12658), (501, 12667),

(514, 12718), (516, 12742), (520, 12769), (525, 12787), (527, 12796), (534, 12835), (545, 12904), (571, 13045), (599, 13213), (602, 13237), (605, 13261), (606, 13279), (637, 13468), (638, 13471), (642, 13489), (681, 13759), (695, 13879), (710, 13945), (716, 14011), (741, 14140),

Gene: Santhid_16 Start: 9908, Stop: 14146, Start Num: 6
Candidate Starts for Santhid_16:
(1, 9839), (Start: 6 @9908 has 15 MA's), (12, 9935), (13, 9941), (16, 9962), (21, 9998), (41, 10205), (51, 10298), (80, 10460), (81, 10469), (129, 10727), (142, 10793), (145, 10814), (148, 10826), (152, 10850), (174, 10997), (182, 11051), (192, 11096), (213, 11246), (218, 11276), (226, 11333), (232, 11366), (259, 11474), (278, 11570), (291, 11630), (300, 11651), (302, 11657), (341, 11738), (345, 11747), (372, 11840), (379, 11873), (403, 11933), (404, 11936), (420, 11972), (437, 12086), (438, 12092), (441, 12107), (450, 12149), (457, 12200), (461, 12236), (468, 12287), (482, 12386), (484, 12401), (501, 12497), (514, 12548), (516, 12572), (520, 12599), (525, 12617), (527, 12626), (534, 12665), (545, 12734), (571, 12875), (576, 12899), (578, 12905), (599, 13040), (612, 13148), (637, 13292), (638, 13295), (681, 13586), (683, 13616), (695, 13712), (703, 13736), (710, 13778), (713, 13805), (716, 13844), (732, 13931), (741, 13973), (742, 13976),

Gene: Stellammi_13 Start: 8345, Stop: 12694, Start Num: 8
Candidate Starts for Stellammi_13:
(Start: 8 @8345 has 1 MA's), (17, 8393), (20, 8423), (25, 8450), (55, 8711), (73, 8789), (97, 8903), (116, 8993), (124, 9035), (130, 9077), (132, 9083), (138, 9119), (146, 9161), (149, 9182), (160, 9260), (164, 9293), (171, 9332), (172, 9338), (175, 9350), (188, 9422), (197, 9479), (207, 9533), (214, 9590), (221, 9623), (237, 9716), (240, 9728), (246, 9755), (276, 9899), (294, 10001), (301, 10025), (312, 10082), (313, 10091), (326, 10130), (346, 10172), (372, 10271), (379, 10304), (380, 10307), (432, 10481), (438, 10523), (462, 10700), (469, 10733), (492, 10889), (496, 10928), (497, 10937), (502, 10955), (508, 10976), (528, 11090), (530, 11099), (548, 11195), (551, 11213), (554, 11222), (559, 11249), (574, 11336), (575, 11345), (583, 11381), (587, 11414), (591, 11438), (592, 11444), (594, 11456), (610, 11585), (620, 11663), (622, 11672), (631, 11741), (635, 11765), (651, 11861), (652, 11882), (662, 12002), (663, 12014), (666, 12035), (704, 12320), (706, 12329), (708, 12341), (714, 12380), (724, 12458), (743, 12560), (756, 12605),

Gene: Tarzan_16 Start: 9953, Stop: 14116, Start Num: 6
Candidate Starts for Tarzan_16:
(Start: 6 @9953 has 15 MA's), (12, 9980), (13, 9986), (15, 9998), (22, 10040), (28, 10088), (67, 10424), (113, 10646), (139, 10778), (144, 10799), (147, 10817), (166, 10946), (167, 10949), (191, 11078), (225, 11288), (229, 11312), (259, 11441), (267, 11477), (272, 11498), (278, 11537), (291, 11597), (300, 11618), (302, 11624), (341, 11705), (345, 11714), (372, 11807), (379, 11840), (403, 11900), (404, 11903), (428, 11993), (433, 12017), (437, 12053), (438, 12059), (441, 12074), (450, 12116), (457, 12167), (461, 12203), (468, 12254), (498, 12455), (501, 12464), (514, 12515), (516, 12539), (520, 12566), (525, 12584), (527, 12593), (534, 12632), (545, 12701), (571, 12842), (599, 13010), (602, 13034), (605, 13058), (617, 13151), (637, 13265), (638, 13268), (642, 13286), (681, 13562), (695, 13682), (710, 13748), (716, 13814), (741, 13943),

Gene: Trine_16 Start: 9668, Stop: 13906, Start Num: 6
Candidate Starts for Trine_16:
(Start: 6 @9668 has 15 MA's), (15, 9719), (29, 9842), (38, 9950), (57, 10094), (66, 10160), (77, 10214), (83, 10235), (88, 10262), (112, 10382), (120, 10436), (125, 10466), (145, 10580), (148, 10592), (161, 10682), (174, 10763), (206, 10961), (209, 10976), (213, 11012), (218, 11042), (222, 11072), (258, 11237), (282, 11327), (285, 11348), (296, 11360), (297, 11363), (298, 11366), (299, 11372), (305, 11390), (321, 11426), (342, 11468), (353, 11501), (364, 11534), (368, 11546), (381, 11600), (384, 11621), (385, 11624), (405, 11666), (409, 11678), (435, 11801), (436, 11804), (441, 11828), (450, 11870), (460, 11945), (461, 11957), (462, 11978), (471, 12032), (476, 12047), (479, 12068), (484, 12122), (501, 12209), (504, 12224), (514, 12260), (516, 12281), (571, 12527), (604, 12740), (624,

12884), (638, 12971), (642, 12989), (647, 13019), (668, 13223), (675, 13289), (680, 13331), (681, 13337), (685, 13388), (687, 13415), (695, 13463), (710, 13529), (716, 13595), (719, 13616), (737, 13700), (741, 13724), (742, 13727), (744, 13745), (758, 13805),

Gene: Ubuntu_20 Start: 12222, Stop: 16301, Start Num: 7
Candidate Starts for Ubuntu_20:
(Start: 7 @12222 has 24 MA's), (11, 12246), (13, 12252), (18, 12285), (36, 12438), (40, 12468), (44, 12498), (46, 12528), (47, 12546), (50, 12567), (60, 12609), (63, 12642), (78, 12708), (79, 12711), (84, 12738), (94, 12783), (106, 12831), (124, 12948), (128, 12978), (138, 13032), (140, 13041), (143, 13056), (146, 13074), (149, 13095), (150, 13101), (153, 13119), (157, 13158), (160, 13173), (165, 13209), (170, 13242), (173, 13257), (178, 13281), (180, 13299), (183, 13317), (185, 13326), (189, 13344), (195, 13374), (196, 13389), (203, 13440), (212, 13491), (213, 13494), (214, 13503), (219, 13524), (224, 13557), (225, 13560), (227, 13578), (230, 13590), (240, 13641), (246, 13671), (251, 13686), (253, 13695), (260, 13728), (262, 13737), (264, 13749), (269, 13773), (272, 13782), (275, 13806), (280, 13824), (301, 13902), (302, 13905), (303, 13908), (306, 13935), (309, 13947), (313, 13965), (316, 13977), (317, 13980), (324, 13998), (326, 14007), (351, 14088), (359, 14112), (376, 14187), (378, 14193), (389, 14235), (417, 14280), (422, 14313), (423, 14319), (443, 14427), (446, 14439), (447, 14454), (458, 14517), (459, 14529), (461, 14550), (465, 14580), (472, 14622), (474, 14625), (488, 14718), (494, 14751), (502, 14790), (507, 14802), (515, 14823), (535, 14892), (536, 14895), (541, 14931), (544, 14943), (547, 14958), (552, 14982), (553, 14985), (570, 15063), (572, 15072), (583, 15120), (590, 15153), (596, 15180), (608, 15261), (623, 15324), (629, 15366), (645, 15441), (656, 15540), (660, 15582), (669, 15660), (677, 15723), (682, 15765), (686, 15825), (688, 15843), (693, 15873), (696, 15882), (697, 15888), (702, 15903), (717, 16023), (722, 16041), (723, 16056), (725, 16059), (730, 16077), (736, 16125), (739, 16140), (745, 16173), (750, 16191), (759, 16230), (762, 16239), (763, 16251), (765, 16269), (769, 16293),

Gene: Upyo_16 Start: 9799, Stop: 14112, Start Num: 6
Candidate Starts for Upyo_16:
(Start: 6 @9799 has 15 MA's), (19, 9883), (30, 9994), (65, 10297), (95, 10438), (107, 10504), (110, 10522), (112, 10534), (118, 10582), (122, 10603), (133, 10663), (134, 10669), (148, 10750), (155, 10810), (156, 10813), (160, 10840), (204, 11122), (210, 11152), (213, 11176), (229, 11260), (232, 11281), (239, 11311), (254, 11362), (261, 11395), (263, 11401), (277, 11488), (289, 11554), (292, 11563), (315, 11683), (317, 11689), (328, 11743), (329, 11755), (333, 11779), (336, 11791), (346, 11824), (357, 11863), (364, 11884), (365, 11887), (372, 11923), (437, 12037), (438, 12043), (441, 12058), (449, 12097), (450, 12100), (460, 12175), (461, 12187), (463, 12211), (475, 12274), (487, 12373), (496, 12442), (509, 12490), (514, 12508), (517, 12532), (571, 12796), (628, 13165), (630, 13177), (638, 13222), (654, 13321), (671, 13486), (672, 13492), (679, 13534), (681, 13558), (695, 13678), (705, 13726), (710, 13744), (712, 13750), (716, 13810), (735, 13912), (741, 13939), (742, 13942), (746, 13963), (759, 14014),

Gene: Webster2_20 Start: 12222, Stop: 16301, Start Num: 7
Candidate Starts for Webster2_20:
(Start: 7 @12222 has 24 MA's), (11, 12246), (13, 12252), (18, 12285), (36, 12438), (40, 12468), (44, 12498), (46, 12528), (47, 12546), (50, 12567), (60, 12609), (63, 12642), (78, 12708), (79, 12711), (84, 12738), (94, 12783), (106, 12831), (124, 12948), (128, 12978), (138, 13032), (140, 13041), (143, 13056), (146, 13074), (149, 13095), (150, 13101), (153, 13119), (157, 13158), (160, 13173), (165, 13209), (170, 13242), (173, 13257), (178, 13281), (180, 13299), (183, 13317), (185, 13326), (189, 13344), (195, 13374), (196, 13389), (203, 13440), (212, 13491), (213, 13494), (214, 13503), (219, 13524), (224, 13557), (225, 13560), (227, 13578), (230, 13590), (240, 13641), (246, 13671), (251, 13686), (253, 13695), (260, 13728), (262, 13737), (264, 13749), (269, 13773), (272, 13782), (275, 13806), (280, 13824), (301, 13902), (302, 13905), (303, 13908), (306, 13935), (309, 13947), (313, 13965), (316, 13977), (317, 13980), (324, 13998), (326, 14007), (351, 14088), (359, 14112), (376, 14187), (378, 14193), (389, 14235), (417, 14280), (422, 14313), (423, 14319), (443, 14427), (446,

14439), (447, 14454), (458, 14517), (459, 14529), (461, 14550), (465, 14580), (472, 14622), (474, 14625), (488, 14718), (494, 14751), (502, 14790), (507, 14802), (515, 14823), (535, 14892), (536, 14895), (541, 14931), (544, 14943), (547, 14958), (552, 14982), (553, 14985), (570, 15063), (572, 15072), (583, 15120), (590, 15153), (596, 15180), (608, 15261), (623, 15324), (629, 15366), (645, 15441), (656, 15540), (660, 15582), (669, 15660), (677, 15723), (682, 15765), (686, 15825), (688, 15843), (693, 15873), (696, 15882), (697, 15888), (702, 15903), (717, 16023), (722, 16041), (723, 16056), (725, 16059), (730, 16077), (736, 16125), (739, 16140), (745, 16173), (750, 16191), (759, 16230), (762, 16239), (763, 16251), (765, 16269), (769, 16293),

Gene: Weirdo19_17 Start: 10901, Stop: 14980, Start Num: 6
Candidate Starts for Weirdo19_17:
(Start: 6 @10901 has 15 MA's), (16, 10958), (19, 10982), (58, 11345), (74, 11447), (82, 11480), (89, 11510), (97, 11549), (98, 11558), (100, 11567), (101, 11570), (102, 11576), (115, 11657), (124, 11702), (126, 11711), (134, 11759), (138, 11786), (143, 11810), (146, 11828), (149, 11849), (170, 11996), (173, 12011), (178, 12035), (187, 12086), (189, 12098), (195, 12128), (210, 12224), (212, 12245), (213, 12248), (219, 12278), (224, 12311), (227, 12332), (230, 12344), (240, 12395), (246, 12422), (251, 12437), (266, 12509), (290, 12611), (307, 12692), (313, 12713), (337, 12779), (339, 12785), (343, 12803), (344, 12806), (348, 12818), (354, 12842), (358, 12854), (362, 12863), (376, 12929), (383, 12956), (387, 12968), (419, 13034), (426, 13076), (428, 13088), (430, 13100), (433, 13112), (444, 13166), (473, 13352), (478, 13373), (480, 13397), (483, 13421), (488, 13442), (489, 13451), (493, 13472), (503, 13526), (508, 13541), (538, 13640), (542, 13676), (552, 13724), (556, 13742), (557, 13751), (558, 13754), (577, 13844), (586, 13892), (603, 13973), (614, 14030), (616, 14042), (619, 14054), (633, 14147), (639, 14174), (641, 14186), (646, 14210), (669, 14387), (701, 14609), (725, 14756), (726, 14765), (730, 14774), (733, 14795), (734, 14798), (761, 14903), (762, 14909), (768, 14966), (770, 14969),

Gene: Widow_16 Start: 9677, Stop: 14296, Start Num: 6
Candidate Starts for Widow_16:
(Start: 6 @9677 has 15 MA's), (62, 10145), (71, 10187), (76, 10223), (86, 10262), (106, 10352), (107, 10364), (111, 10385), (112, 10394), (120, 10448), (129, 10505), (134, 10526), (135, 10538), (136, 10541), (142, 10571), (145, 10592), (148, 10604), (174, 10775), (182, 10829), (201, 10943), (206, 10973), (213, 11024), (218, 11054), (223, 11090), (250, 11222), (252, 11231), (254, 11243), (265, 11294), (274, 11360), (284, 11420), (286, 11432), (305, 11519), (311, 11555), (320, 11597), (322, 11603), (330, 11666), (331, 11669), (342, 11708), (349, 11732), (354, 11747), (366, 11780), (373, 11804), (378, 11831), (390, 11873), (392, 11882), (394, 11897), (397, 11912), (400, 11936), (406, 11996), (413, 12029), (415, 12041), (420, 12065), (421, 12068), (430, 12128), (436, 12173), (441, 12197), (450, 12239), (460, 12314), (461, 12326), (462, 12347), (463, 12350), (484, 12491), (485, 12494), (506, 12623), (511, 12644), (514, 12653), (522, 12707), (523, 12713), (571, 12971), (600, 13142), (602, 13160), (621, 13307), (626, 13349), (672, 13664), (681, 13730), (685, 13781), (687, 13808), (695, 13856), (703, 13880), (705, 13904), (710, 13922), (716, 13988), (737, 14093), (741, 14117), (742, 14120), (744, 14138), (746, 14141), (764, 14228),

Gene: Wishmaker_20 Start: 12222, Stop: 16301, Start Num: 7
Candidate Starts for Wishmaker_20:
(Start: 7 @12222 has 24 MA's), (11, 12246), (13, 12252), (18, 12285), (36, 12438), (40, 12468), (44, 12498), (46, 12528), (47, 12546), (50, 12567), (60, 12609), (63, 12642), (78, 12708), (79, 12711), (84, 12738), (94, 12783), (106, 12831), (124, 12948), (128, 12978), (138, 13032), (140, 13041), (143, 13056), (146, 13074), (149, 13095), (150, 13101), (153, 13119), (157, 13158), (160, 13173), (165, 13209), (170, 13242), (173, 13257), (178, 13281), (180, 13299), (183, 13317), (185, 13326), (189, 13344), (195, 13374), (196, 13389), (203, 13440), (212, 13491), (213, 13494), (214, 13503), (219, 13524), (224, 13557), (225, 13560), (227, 13578), (230, 13590), (240, 13641), (246, 13671), (251, 13686), (253, 13695), (260, 13728), (262, 13737), (264, 13749), (269, 13773), (272, 13782), (275, 13806), (280, 13824), (301, 13902), (302, 13905), (303, 13908), (306, 13935), (309, 13947), (313,

13965), (316, 13977), (317, 13980), (324, 13998), (326, 14007), (351, 14088), (359, 14112), (376, 14187), (378, 14193), (389, 14235), (417, 14280), (422, 14313), (423, 14319), (443, 14427), (446, 14439), (447, 14454), (458, 14517), (459, 14529), (461, 14550), (465, 14580), (472, 14622), (474, 14625), (488, 14718), (494, 14751), (502, 14790), (507, 14802), (515, 14823), (535, 14892), (536, 14895), (541, 14931), (544, 14943), (547, 14958), (552, 14982), (553, 14985), (570, 15063), (572, 15072), (583, 15120), (590, 15153), (596, 15180), (608, 15261), (623, 15324), (629, 15366), (645, 15441), (656, 15540), (660, 15582), (669, 15660), (677, 15723), (682, 15765), (686, 15825), (688, 15843), (693, 15873), (696, 15882), (697, 15888), (702, 15903), (717, 16023), (722, 16041), (723, 16056), (725, 16059), (730, 16077), (736, 16125), (739, 16140), (745, 16173), (750, 16191), (759, 16230), (762, 16239), (763, 16251), (765, 16269), (769, 16293),

Gene: WorMMAs_16 Start: 9596, Stop: 13747, Start Num: 6
Candidate Starts for WorMMAs_16:
(Start: 6 @9596 has 15 MA's), (29, 9770), (30, 9791), (34, 9833), (41, 9899), (52, 10001), (77, 10142), (83, 10163), (85, 10175), (86, 10178), (107, 10280), (109, 10289), (112, 10310), (122, 10379), (125, 10394), (127, 10409), (131, 10430), (136, 10457), (148, 10520), (174, 10691), (206, 10889), (209, 10904), (213, 10940), (218, 10970), (222, 11000), (235, 11072), (282, 11255), (286, 11279), (287, 11282), (298, 11294), (300, 11303), (342, 11396), (347, 11408), (349, 11420), (354, 11435), (360, 11450), (366, 11468), (368, 11474), (373, 11492), (382, 11531), (406, 11600), (427, 11663), (436, 11732), (441, 11756), (450, 11798), (458, 11852), (460, 11873), (461, 11885), (463, 11909), (496, 12122), (501, 12137), (504, 12152), (512, 12185), (514, 12188), (517, 12212), (547, 12320), (550, 12338), (571, 12452), (582, 12503), (589, 12545), (604, 12662), (638, 12878), (649, 12938), (657, 12995), (672, 13118), (679, 13160), (681, 13184), (695, 13310), (703, 13334), (705, 13358), (710, 13376), (716, 13442), (742, 13574), (744, 13592), (746, 13595), (758, 13646),