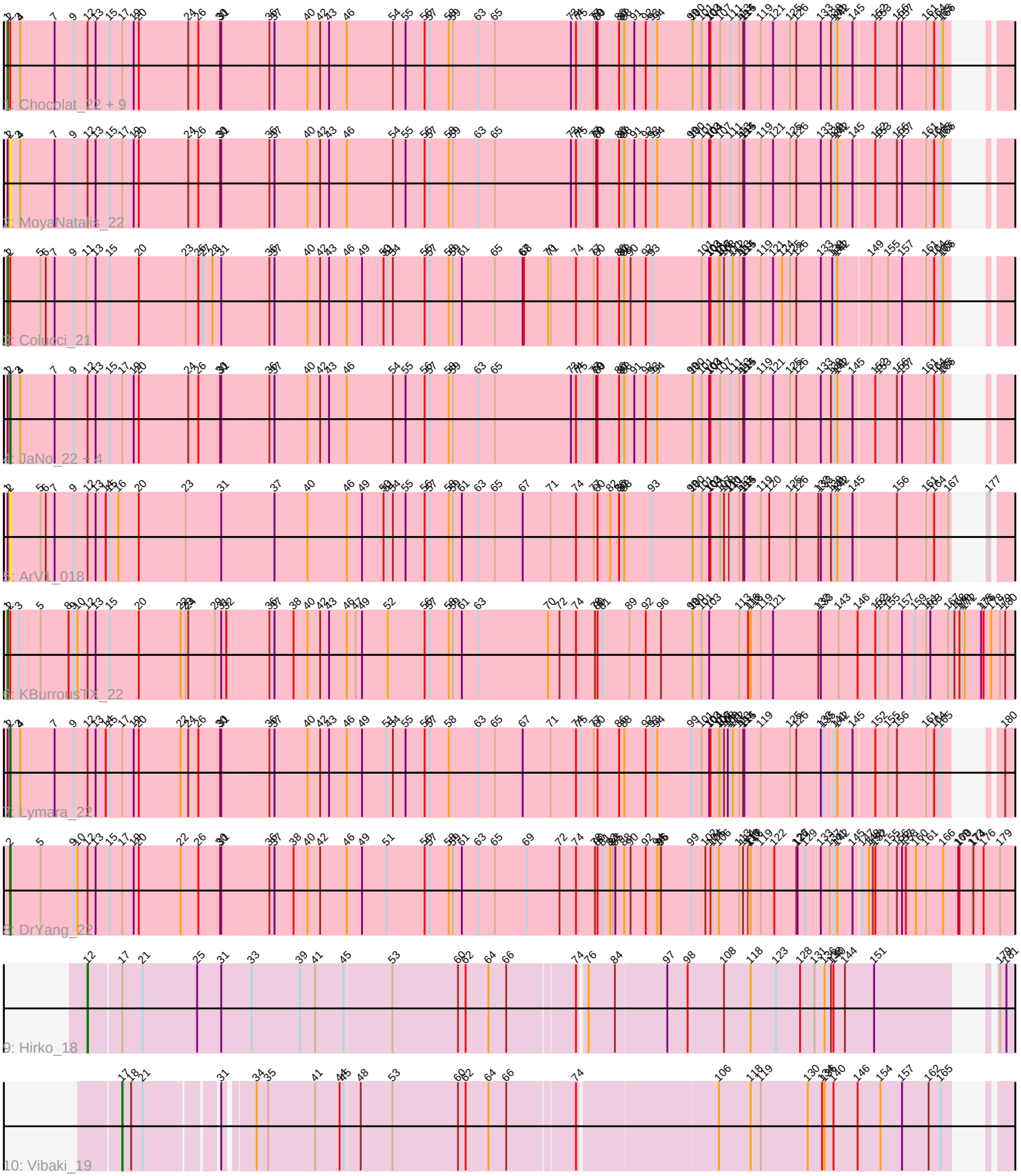
Zoomed Pham 195769



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 195769 Report

This analysis was run 12/09/24 on database version 580.

Pham number 195769 has 23 members, 2 are drafts.

Phages represented in each track:
• Track 1 : Chocolat_22, Kabreeze_22, Scavito_22, Conboy_22, PrincessTrina_22, Chipper1996_220, Chubster_22, RosiePosie_22, EdgarPoe_22, HumptyDumpty_22
• Track 2 : MoyaNatalis_22
• Track 3 : Colucci_21
• Track 4 : JaNo_22, Linus_22, Mordred_22, Tophat_22, JayCookie_22
• Track 5 : ArV1_018
• Track 6 : KBurrousTX_22
• Track 7 : Lymara_22
• Track 8 : DrYang_22
• Track 9 : Hirko_18
• Track 10 : Vibaki_19

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

The start number called the most often in the published annotations is 1, it was called in 12 of the 21 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Chipper1996_220, Chocolat_22, Chubster_22, Colucci_21, Conboy_22, EdgarPoe_22, HumptyDumpty_22, KBurrousTX_22, Kabreeze_22, PrincessTrina_22, RosiePosie_22, Scavito_22,

Genes that have the "Most Annotated" start but do not call it:
• ArV1_018, JaNo_22, JayCookie_22, Linus_22, Lymara_22, Mordred_22, MoyaNatalis_22, Tophat_22,

Genes that do not have the "Most Annotated" start:
• DrYang_22, Hirko_18, Vibaki_19,

Summary by start number:

Start 1:
• Found in 20 of 23 (87.0%) of genes in pham
• Manual Annotations of this start: 12 of 21

• Called 60.0% of time when present
• Phage (with cluster) where this start called: Chipper1996_220 (AR), Chocolat_22 (AR), Chubster_22 (AR), Colucci_21 (AR), Conboy_22 (AR), EdgarPoe_22 (AR), HumptyDumpty_22 (AR), KBurrousTX_22 (AR), Kabreeze_22 (AR), PrincessTrina_22 (AR), RosiePosie_22 (AR), Scavito_22 (AR),

Start 2:
• Found in 21 of 23 (91.3%) of genes in pham
• Manual Annotations of this start: 7 of 21
• Called 42.9% of time when present
• Phage (with cluster) where this start called: ArV1_018 (AR), DrYang_22 (AR), JaNo_22 (AR), JayCookie_22 (AR), Linus_22 (AR), Lymara_22 (AR), Mordred_22 (AR), MoyaNatalis_22 (AR), Tophat_22 (AR),

Start 12:
• Found in 21 of 23 (91.3%) of genes in pham
• Manual Annotations of this start: 1 of 21
• Called 4.8% of time when present
• Phage (with cluster) where this start called: Hirko_18 (FL),

Start 17:
• Found in 20 of 23 (87.0%) of genes in pham
• Manual Annotations of this start: 1 of 21
• Called 5.0% of time when present
• Phage (with cluster) where this start called: Vibaki_19 (FL),

Summary by clusters:

There are 2 clusters represented in this pham: AR, FL,

Info for manual annotations of cluster AR:
•Start number 1 was manually annotated 12 times for cluster AR.
•Start number 2 was manually annotated 7 times for cluster AR.

Info for manual annotations of cluster FL:
•Start number 12 was manually annotated 1 time for cluster FL.
•Start number 17 was manually annotated 1 time for cluster FL.

Gene Information:

Gene: ArV1_018 Start: 14054, Stop: 17587, Start Num: 2
Candidate Starts for ArV1_018:
(Start: 1 @14048 has 12 MA's), (Start: 2 @14054 has 7 MA's), (5, 14126), (6, 14138), (7, 14159), (9, 14204), (Start: 12 @14237 has 1 MA's), (13, 14255), (14, 14279), (15, 14288), (16, 14309), (20, 14357), (23, 14468), (31, 14552), (37, 14669), (40, 14744), (46, 14837), (49, 14873), (50, 14924), (51, 14930), (54, 14945), (55, 14975), (56, 15020), (57, 15032), (58, 15077), (59, 15086), (61, 15107), (63, 15146), (65, 15185), (67, 15251), (71, 15317), (74, 15377), (77, 15419), (80, 15428), (82, 15458), (86, 15479), (87, 15485), (88, 15491), (93, 15557), (99, 15650), (100, 15653), (101, 15674), (103, 15692), (104, 15695), (107, 15716), (108, 15725), (110, 15737), (111, 15740), (113, 15761), (114, 15770), (115, 15773), (119, 15812), (120, 15827), (125, 15875), (126, 15890), (132, 15941), (133, 15947), (138, 15971), (141, 15980), (142, 15986), (145, 16022), (156, 16121), (161, 16190), (164, 16208),

(167, 16241), (177, 16253), (183, 16325), (184, 16352), (187, 16373), (189, 16442), (190, 16448), (191, 16463), (194, 16484), (195, 16505), (201, 16562), (208, 16595), (209, 16598), (212, 16622), (216, 16691), (219, 16727), (220, 16730), (221, 16733), (225, 16775), (227, 16796), (232, 16835), (237, 16898), (238, 16955), (244, 17096), (245, 17108), (249, 17177), (252, 17219), (254, 17249), (255, 17288), (256, 17309), (259, 17354), (261, 17417), (262, 17426), (267, 17489), (271, 17546),

Gene: Chipper1996_220 Start: 15723, Stop: 19265, Start Num: 1
Candidate Starts for Chipper1996_220:
(Start: 1 @15723 has 12 MA's), (Start: 2 @15729 has 7 MA's), (3, 15750), (4, 15753), (7, 15834), (9, 15879), (Start: 12 @15912 has 1 MA's), (13, 15930), (15, 15963), (Start: 17 @15993 has 1 MA's), (19, 16020), (20, 16032), (24, 16149), (26, 16173), (30, 16224), (31, 16227), (36, 16332), (37, 16344), (40, 16419), (42, 16449), (43, 16470), (46, 16512), (54, 16620), (55, 16650), (56, 16695), (57, 16707), (58, 16752), (59, 16761), (63, 16821), (65, 16860), (73, 17040), (74, 17052), (75, 17061), (77, 17094), (79, 17100), (80, 17103), (86, 17154), (87, 17160), (88, 17166), (91, 17190), (92, 17217), (93, 17232), (94, 17244), (99, 17325), (100, 17328), (101, 17349), (103, 17367), (104, 17370), (107, 17391), (111, 17415), (113, 17436), (114, 17445), (115, 17448), (119, 17487), (121, 17511), (125, 17550), (126, 17565), (133, 17622), (138, 17646), (141, 17655), (142, 17661), (145, 17697), (152, 17745), (153, 17754), (156, 17796), (157, 17808), (161, 17865), (164, 17883), (165, 17898), (166, 17904), (183, 18000), (184, 18027), (187, 18048), (189, 18117), (191, 18138), (194, 18159), (201, 18237), (208, 18270), (209, 18273), (212, 18297), (216, 18366), (219, 18402), (220, 18405), (221, 18408), (222, 18423), (227, 18471), (231, 18507), (232, 18510), (237, 18573), (241, 18705), (244, 18771), (247, 18813), (249, 18852), (252, 18897), (255, 18966), (256, 18987), (259, 19032), (261, 19095), (264, 19134), (265, 19149), (269, 19200), (270, 19212),

Gene: Chocolat_22 Start: 15724, Stop: 19266, Start Num: 1
Candidate Starts for Chocolat_22:
(Start: 1 @15724 has 12 MA's), (Start: 2 @15730 has 7 MA's), (3, 15751), (4, 15754), (7, 15835), (9, 15880), (Start: 12 @15913 has 1 MA's), (13, 15931), (15, 15964), (Start: 17 @15994 has 1 MA's), (19, 16021), (20, 16033), (24, 16150), (26, 16174), (30, 16225), (31, 16228), (36, 16333), (37, 16345), (40, 16420), (42, 16450), (43, 16471), (46, 16513), (54, 16621), (55, 16651), (56, 16696), (57, 16708), (58, 16753), (59, 16762), (63, 16822), (65, 16861), (73, 17041), (74, 17053), (75, 17062), (77, 17095), (79, 17101), (80, 17104), (86, 17155), (87, 17161), (88, 17167), (91, 17191), (92, 17218), (93, 17233), (94, 17245), (99, 17326), (100, 17329), (101, 17350), (103, 17368), (104, 17371), (107, 17392), (111, 17416), (113, 17437), (114, 17446), (115, 17449), (119, 17488), (121, 17512), (125, 17551), (126, 17566), (133, 17623), (138, 17647), (141, 17656), (142, 17662), (145, 17698), (152, 17746), (153, 17755), (156, 17797), (157, 17809), (161, 17866), (164, 17884), (165, 17899), (166, 17905), (183, 18001), (184, 18028), (187, 18049), (189, 18118), (191, 18139), (194, 18160), (201, 18238), (208, 18271), (209, 18274), (212, 18298), (216, 18367), (219, 18403), (220, 18406), (221, 18409), (222, 18424), (227, 18472), (231, 18508), (232, 18511), (237, 18574), (241, 18706), (244, 18772), (247, 18814), (249, 18853), (252, 18898), (255, 18967), (256, 18988), (259, 19033), (261, 19096), (264, 19135), (265, 19150), (269, 19201), (270, 19213),

Gene: Chubster_22 Start: 15494, Stop: 19036, Start Num: 1
Candidate Starts for Chubster_22:
(Start: 1 @15494 has 12 MA's), (Start: 2 @15500 has 7 MA's), (3, 15521), (4, 15524), (7, 15605), (9, 15650), (Start: 12 @15683 has 1 MA's), (13, 15701), (15, 15734), (Start: 17 @15764 has 1 MA's), (19, 15791), (20, 15803), (24, 15920), (26, 15944), (30, 15995), (31, 15998), (36, 16103), (37, 16115), (40, 16190), (42, 16220), (43, 16241), (46, 16283), (54, 16391), (55, 16421), (56, 16466), (57, 16478), (58, 16523), (59, 16532), (63, 16592), (65, 16631), (73, 16811), (74, 16823), (75, 16832), (77, 16865), (79, 16871), (80, 16874), (86, 16925), (87, 16931), (88, 16937), (91, 16961), (92, 16988), (93, 17003), (94, 17015), (99, 17096), (100, 17099), (101, 17120), (103, 17138), (104, 17141), (107, 17162), (111, 17186), (113, 17207), (114, 17216), (115, 17219), (119, 17258), (121, 17282), (125, 17321), (126, 17336), (133, 17393), (138, 17417), (141, 17426), (142, 17432), (145, 17468), (152, 17516), (153,

17525), (156, 17567), (157, 17579), (161, 17636), (164, 17654), (165, 17669), (166, 17675), (183, 17771), (184, 17798), (187, 17819), (189, 17888), (191, 17909), (194, 17930), (201, 18008), (208, 18041), (209, 18044), (212, 18068), (216, 18137), (219, 18173), (220, 18176), (221, 18179), (222, 18194), (227, 18242), (231, 18278), (232, 18281), (237, 18344), (241, 18476), (244, 18542), (247, 18584), (249, 18623), (252, 18668), (255, 18737), (256, 18758), (259, 18803), (261, 18866), (264, 18905), (265, 18920), (269, 18971), (270, 18983),

Gene: Colucci_21 Start: 15200, Stop: 18736, Start Num: 1
Candidate Starts for Colucci_21:
(Start: 1 @15200 has 12 MA's), (Start: 2 @15206 has 7 MA's), (5, 15278), (6, 15290), (7, 15311), (9, 15356), (11, 15386), (13, 15407), (15, 15440), (20, 15509), (23, 15620), (26, 15650), (27, 15662), (28, 15683), (31, 15704), (36, 15809), (37, 15821), (40, 15896), (42, 15926), (43, 15947), (46, 15989), (49, 16025), (50, 16076), (51, 16082), (54, 16097), (56, 16172), (57, 16184), (58, 16229), (59, 16238), (61, 16259), (65, 16337), (67, 16403), (68, 16406), (70, 16463), (71, 16469), (74, 16529), (77, 16571), (80, 16580), (86, 16631), (87, 16637), (88, 16643), (90, 16658), (92, 16694), (93, 16709), (101, 16826), (103, 16844), (104, 16847), (106, 16865), (107, 16868), (108, 16877), (111, 16892), (112, 16898), (113, 16913), (114, 16922), (115, 16925), (119, 16964), (121, 16988), (124, 17009), (125, 17027), (126, 17042), (133, 17099), (139, 17126), (141, 17132), (142, 17138), (149, 17213), (155, 17252), (157, 17285), (161, 17342), (164, 17360), (165, 17375), (166, 17381), (183, 17477), (184, 17504), (189, 17594), (191, 17615), (192, 17630), (194, 17636), (201, 17714), (202, 17717), (207, 17744), (208, 17747), (209, 17750), (210, 17765), (219, 17879), (222, 17900), (225, 17927), (227, 17948), (229, 17969), (230, 17975), (233, 17996), (237, 18050), (244, 18248), (245, 18260), (249, 18329), (251, 18353), (252, 18371), (255, 18437), (256, 18458), (259, 18503), (263, 18599), (264, 18605), (272, 18716),

Gene: Conboy_22 Start: 15722, Stop: 19264, Start Num: 1
Candidate Starts for Conboy_22:
(Start: 1 @15722 has 12 MA's), (Start: 2 @15728 has 7 MA's), (3, 15749), (4, 15752), (7, 15833), (9, 15878), (Start: 12 @15911 has 1 MA's), (13, 15929), (15, 15962), (Start: 17 @15992 has 1 MA's), (19, 16019), (20, 16031), (24, 16148), (26, 16172), (30, 16223), (31, 16226), (36, 16331), (37, 16343), (40, 16418), (42, 16448), (43, 16469), (46, 16511), (54, 16619), (55, 16649), (56, 16694), (57, 16706), (58, 16751), (59, 16760), (63, 16820), (65, 16859), (73, 17039), (74, 17051), (75, 17060), (77, 17093), (79, 17099), (80, 17102), (86, 17153), (87, 17159), (88, 17165), (91, 17189), (92, 17216), (93, 17231), (94, 17243), (99, 17324), (100, 17327), (101, 17348), (103, 17366), (104, 17369), (107, 17390), (111, 17414), (113, 17435), (114, 17444), (115, 17447), (119, 17486), (121, 17510), (125, 17549), (126, 17564), (133, 17621), (138, 17645), (141, 17654), (142, 17660), (145, 17696), (152, 17744), (153, 17753), (156, 17795), (157, 17807), (161, 17864), (164, 17882), (165, 17897), (166, 17903), (183, 17999), (184, 18026), (187, 18047), (189, 18116), (191, 18137), (194, 18158), (201, 18236), (208, 18269), (209, 18272), (212, 18296), (216, 18365), (219, 18401), (220, 18404), (221, 18407), (222, 18422), (227, 18470), (231, 18506), (232, 18509), (237, 18572), (241, 18704), (244, 18770), (247, 18812), (249, 18851), (252, 18896), (255, 18965), (256, 18986), (259, 19031), (261, 19094), (264, 19133), (265, 19148), (269, 19199), (270, 19211),

Gene: DrYang_22 Start: 15693, Stop: 19463, Start Num: 2
Candidate Starts for DrYang_22:
(Start: 2 @15693 has 7 MA's), (5, 15765), (9, 15843), (10, 15852), (Start: 12 @15876 has 1 MA's), (13, 15894), (15, 15927), (Start: 17 @15957 has 1 MA's), (19, 15984), (20, 15996), (22, 16095), (26, 16137), (30, 16188), (31, 16191), (36, 16296), (37, 16308), (38, 16350), (40, 16383), (42, 16413), (46, 16476), (49, 16512), (51, 16569), (56, 16659), (57, 16671), (58, 16716), (59, 16725), (61, 16746), (63, 16785), (65, 16824), (69, 16899), (72, 16977), (74, 17016), (78, 17061), (80, 17067), (81, 17079), (82, 17097), (83, 17103), (85, 17109), (88, 17130), (90, 17145), (92, 17181), (94, 17208), (95, 17214), (96, 17217), (99, 17289), (102, 17322), (104, 17334), (105, 17340), (106, 17352), (113, 17400), (114, 17409), (116, 17421), (117, 17424), (118, 17427), (119, 17451), (122, 17478), (126, 17529), (127,

17532), (129, 17550), (133, 17586), (137, 17607), (141, 17619), (142, 17625), (145, 17661), (147, 17679), (148, 17694), (150, 17703), (152, 17709), (155, 17739), (156, 17760), (157, 17772), (158, 17781), (160, 17805), (161, 17829), (166, 17868), (169, 17904), (170, 17907), (173, 17937), (174, 17940), (176, 17964), (179, 18003), (183, 18066), (184, 18093), (189, 18183), (191, 18204), (195, 18246), (200, 18333), (202, 18339), (203, 18360), (205, 18441), (206, 18453), (207, 18468), (214, 18537), (218, 18588), (219, 18603), (221, 18609), (224, 18633), (225, 18651), (227, 18672), (231, 18708), (234, 18723), (237, 18774), (241, 18906), (244, 18972), (249, 19053), (255, 19164), (256, 19185), (259, 19230), (261, 19293), (262, 19302), (264, 19332), (268, 19386), (271, 19422),

Gene: EdgarPoe_22 Start: 15722, Stop: 19264, Start Num: 1
Candidate Starts for EdgarPoe_22:
(Start: 1 @15722 has 12 MA's), (Start: 2 @15728 has 7 MA's), (3, 15749), (4, 15752), (7, 15833), (9, 15878), (Start: 12 @15911 has 1 MA's), (13, 15929), (15, 15962), (Start: 17 @15992 has 1 MA's), (19, 16019), (20, 16031), (24, 16148), (26, 16172), (30, 16223), (31, 16226), (36, 16331), (37, 16343), (40, 16418), (42, 16448), (43, 16469), (46, 16511), (54, 16619), (55, 16649), (56, 16694), (57, 16706), (58, 16751), (59, 16760), (63, 16820), (65, 16859), (73, 17039), (74, 17051), (75, 17060), (77, 17093), (79, 17099), (80, 17102), (86, 17153), (87, 17159), (88, 17165), (91, 17189), (92, 17216), (93, 17231), (94, 17243), (99, 17324), (100, 17327), (101, 17348), (103, 17366), (104, 17369), (107, 17390), (111, 17414), (113, 17435), (114, 17444), (115, 17447), (119, 17486), (121, 17510), (125, 17549), (126, 17564), (133, 17621), (138, 17645), (141, 17654), (142, 17660), (145, 17696), (152, 17744), (153, 17753), (156, 17795), (157, 17807), (161, 17864), (164, 17882), (165, 17897), (166, 17903), (183, 17999), (184, 18026), (187, 18047), (189, 18116), (191, 18137), (194, 18158), (201, 18236), (208, 18269), (209, 18272), (212, 18296), (216, 18365), (219, 18401), (220, 18404), (221, 18407), (222, 18422), (227, 18470), (231, 18506), (232, 18509), (237, 18572), (241, 18704), (244, 18770), (247, 18812), (249, 18851), (252, 18896), (255, 18965), (256, 18986), (259, 19031), (261, 19094), (264, 19133), (265, 19148), (269, 19199), (270, 19211),

Gene: Hirko_18 Start: 14681, Stop: 17965, Start Num: 12
Candidate Starts for Hirko_18:
(Start: 12 @14681 has 1 MA's), (Start: 17 @14750 has 1 MA's), (21, 14795), (25, 14921), (31, 14978), (33, 15050), (39, 15164), (41, 15200), (45, 15266), (53, 15371), (60, 15518), (62, 15536), (64, 15584), (66, 15626), (74, 15773), (76, 15791), (84, 15848), (97, 15962), (98, 16010), (108, 16091), (118, 16154), (123, 16214), (128, 16271), (131, 16304), (136, 16328), (138, 16343), (140, 16349), (144, 16376), (151, 16445), (179, 16640), (181, 16655), (182, 16682), (183, 16703), (186, 16742), (193, 16859), (196, 16898), (197, 16907), (213, 17033), (215, 17042), (223, 17129), (226, 17168), (228, 17177), (230, 17201), (235, 17240), (239, 17375), (240, 17378), (246, 17507), (249, 17555), (253, 17627), (259, 17735), (260, 17789), (265, 17852), (266, 17864), (270, 17912),

Gene: HumptyDumpty_22 Start: 15721, Stop: 19263, Start Num: 1
Candidate Starts for HumptyDumpty_22:
(Start: 1 @15721 has 12 MA's), (Start: 2 @15727 has 7 MA's), (3, 15748), (4, 15751), (7, 15832), (9, 15877), (Start: 12 @15910 has 1 MA's), (13, 15928), (15, 15961), (Start: 17 @15991 has 1 MA's), (19, 16018), (20, 16030), (24, 16147), (26, 16171), (30, 16222), (31, 16225), (36, 16330), (37, 16342), (40, 16417), (42, 16447), (43, 16468), (46, 16510), (54, 16618), (55, 16648), (56, 16693), (57, 16705), (58, 16750), (59, 16759), (63, 16819), (65, 16858), (73, 17038), (74, 17050), (75, 17059), (77, 17092), (79, 17098), (80, 17101), (86, 17152), (87, 17158), (88, 17164), (91, 17188), (92, 17215), (93, 17230), (94, 17242), (99, 17323), (100, 17326), (101, 17347), (103, 17365), (104, 17368), (107, 17389), (111, 17413), (113, 17434), (114, 17443), (115, 17446), (119, 17485), (121, 17509), (125, 17548), (126, 17563), (133, 17620), (138, 17644), (141, 17653), (142, 17659), (145, 17695), (152, 17743), (153, 17752), (156, 17794), (157, 17806), (161, 17863), (164, 17881), (165, 17896), (166, 17902), (183, 17998), (184, 18025), (187, 18046), (189, 18115), (191, 18136), (194, 18157), (201, 18235), (208, 18268), (209, 18271), (212, 18295), (216, 18364), (219, 18400), (220, 18403), (221, 18406), (222, 18421), (227, 18469), (231, 18505), (232, 18508), (237, 18571), (241, 18703), (244, 18769), (247,

18811), (249, 18850), (252, 18895), (255, 18964), (256, 18985), (259, 19030), (261, 19093), (264, 19132), (265, 19147), (269, 19198), (270, 19210),

Gene: JaNo_22 Start: 15727, Stop: 19263, Start Num: 2
Candidate Starts for JaNo_22:
(Start: 1 @15721 has 12 MA's), (Start: 2 @15727 has 7 MA's), (3, 15748), (4, 15751), (7, 15832), (9, 15877), (Start: 12 @15910 has 1 MA's), (13, 15928), (15, 15961), (Start: 17 @15991 has 1 MA's), (19, 16018), (20, 16030), (24, 16147), (26, 16171), (30, 16222), (31, 16225), (36, 16330), (37, 16342), (40, 16417), (42, 16447), (43, 16468), (46, 16510), (54, 16618), (55, 16648), (56, 16693), (57, 16705), (58, 16750), (59, 16759), (63, 16819), (65, 16858), (73, 17038), (74, 17050), (75, 17059), (77, 17092), (79, 17098), (80, 17101), (86, 17152), (87, 17158), (88, 17164), (91, 17188), (92, 17215), (93, 17230), (94, 17242), (99, 17323), (100, 17326), (101, 17347), (103, 17365), (104, 17368), (107, 17389), (111, 17413), (113, 17434), (114, 17443), (115, 17446), (119, 17485), (121, 17509), (125, 17548), (126, 17563), (133, 17620), (138, 17644), (141, 17653), (142, 17659), (145, 17695), (152, 17743), (153, 17752), (156, 17794), (157, 17806), (161, 17863), (164, 17881), (165, 17896), (166, 17902), (183, 17998), (184, 18025), (187, 18046), (189, 18115), (191, 18136), (194, 18157), (201, 18235), (208, 18268), (209, 18271), (212, 18295), (216, 18364), (219, 18400), (220, 18403), (221, 18406), (222, 18421), (227, 18469), (231, 18505), (232, 18508), (237, 18571), (241, 18703), (244, 18769), (247, 18811), (249, 18850), (252, 18895), (255, 18964), (256, 18985), (259, 19030), (261, 19093), (264, 19132), (265, 19147), (269, 19198), (270, 19210),

Gene: JayCookie_22 Start: 15730, Stop: 19266, Start Num: 2
Candidate Starts for JayCookie_22:
(Start: 1 @15724 has 12 MA's), (Start: 2 @15730 has 7 MA's), (3, 15751), (4, 15754), (7, 15835), (9, 15880), (Start: 12 @15913 has 1 MA's), (13, 15931), (15, 15964), (Start: 17 @15994 has 1 MA's), (19, 16021), (20, 16033), (24, 16150), (26, 16174), (30, 16225), (31, 16228), (36, 16333), (37, 16345), (40, 16420), (42, 16450), (43, 16471), (46, 16513), (54, 16621), (55, 16651), (56, 16696), (57, 16708), (58, 16753), (59, 16762), (63, 16822), (65, 16861), (73, 17041), (74, 17053), (75, 17062), (77, 17095), (79, 17101), (80, 17104), (86, 17155), (87, 17161), (88, 17167), (91, 17191), (92, 17218), (93, 17233), (94, 17245), (99, 17326), (100, 17329), (101, 17350), (103, 17368), (104, 17371), (107, 17392), (111, 17416), (113, 17437), (114, 17446), (115, 17449), (119, 17488), (121, 17512), (125, 17551), (126, 17566), (133, 17623), (138, 17647), (141, 17656), (142, 17662), (145, 17698), (152, 17746), (153, 17755), (156, 17797), (157, 17809), (161, 17866), (164, 17884), (165, 17899), (166, 17905), (183, 18001), (184, 18028), (187, 18049), (189, 18118), (191, 18139), (194, 18160), (201, 18238), (208, 18271), (209, 18274), (212, 18298), (216, 18367), (219, 18403), (220, 18406), (221, 18409), (222, 18424), (227, 18472), (231, 18508), (232, 18511), (237, 18574), (241, 18706), (244, 18772), (247, 18814), (249, 18853), (252, 18898), (255, 18967), (256, 18988), (259, 19033), (261, 19096), (264, 19135), (265, 19150), (269, 19201), (270, 19213),

Gene: KBurrousTX_22 Start: 15522, Stop: 19298, Start Num: 1
Candidate Starts for KBurrousTX_22:
(Start: 1 @15522 has 12 MA's), (Start: 2 @15528 has 7 MA's), (3, 15549), (5, 15600), (8, 15666), (9, 15678), (10, 15687), (Start: 12 @15711 has 1 MA's), (13, 15729), (15, 15762), (20, 15831), (22, 15930), (23, 15942), (24, 15948), (29, 16011), (31, 16026), (32, 16038), (36, 16131), (37, 16143), (38, 16185), (40, 16218), (42, 16248), (43, 16269), (46, 16311), (47, 16332), (49, 16347), (52, 16407), (56, 16494), (57, 16506), (58, 16551), (59, 16560), (61, 16581), (63, 16620), (70, 16785), (72, 16812), (74, 16851), (78, 16896), (80, 16902), (81, 16914), (89, 16977), (92, 17016), (96, 17052), (99, 17124), (100, 17127), (101, 17148), (103, 17166), (113, 17235), (116, 17256), (118, 17262), (119, 17286), (121, 17310), (132, 17415), (133, 17421), (143, 17463), (146, 17508), (152, 17550), (153, 17559), (155, 17580), (157, 17613), (159, 17643), (161, 17670), (163, 17679), (167, 17721), (168, 17733), (170, 17745), (171, 17751), (172, 17757), (175, 17796), (176, 17802), (178, 17820), (179, 17841), (180, 17853), (183, 17904), (189, 18021), (191, 18042), (195, 18084), (198, 18129), (200, 18171), (201, 18174), (202, 18177), (204, 18219), (206, 18291), (207, 18306), (209, 18312), (217, 18414),

(220, 18444), (221, 18447), (227, 18510), (231, 18546), (232, 18549), (236, 18606), (238, 18669), (241, 18744), (242, 18789), (249, 18891), (252, 18933), (255, 19002), (256, 19023), (259, 19068), (262, 19140), (267, 19200), (270, 19245),

Gene: Kabreeze_22 Start: 15721, Stop: 19263, Start Num: 1
Candidate Starts for Kabreeze_22:
(Start: 1 @15721 has 12 MA's), (Start: 2 @15727 has 7 MA's), (3, 15748), (4, 15751), (7, 15832), (9, 15877), (Start: 12 @15910 has 1 MA's), (13, 15928), (15, 15961), (Start: 17 @15991 has 1 MA's), (19, 16018), (20, 16030), (24, 16147), (26, 16171), (30, 16222), (31, 16225), (36, 16330), (37, 16342), (40, 16417), (42, 16447), (43, 16468), (46, 16510), (54, 16618), (55, 16648), (56, 16693), (57, 16705), (58, 16750), (59, 16759), (63, 16819), (65, 16858), (73, 17038), (74, 17050), (75, 17059), (77, 17092), (79, 17098), (80, 17101), (86, 17152), (87, 17158), (88, 17164), (91, 17188), (92, 17215), (93, 17230), (94, 17242), (99, 17323), (100, 17326), (101, 17347), (103, 17365), (104, 17368), (107, 17389), (111, 17413), (113, 17434), (114, 17443), (115, 17446), (119, 17485), (121, 17509), (125, 17548), (126, 17563), (133, 17620), (138, 17644), (141, 17653), (142, 17659), (145, 17695), (152, 17743), (153, 17752), (156, 17794), (157, 17806), (161, 17863), (164, 17881), (165, 17896), (166, 17902), (183, 17998), (184, 18025), (187, 18046), (189, 18115), (191, 18136), (194, 18157), (201, 18235), (208, 18268), (209, 18271), (212, 18295), (216, 18364), (219, 18400), (220, 18403), (221, 18406), (222, 18421), (227, 18469), (231, 18505), (232, 18508), (237, 18571), (241, 18703), (244, 18769), (247, 18811), (249, 18850), (252, 18895), (255, 18964), (256, 18985), (259, 19030), (261, 19093), (264, 19132), (265, 19147), (269, 19198), (270, 19210),

Gene: Linus_22 Start: 15727, Stop: 19263, Start Num: 2
Candidate Starts for Linus_22:
(Start: 1 @15721 has 12 MA's), (Start: 2 @15727 has 7 MA's), (3, 15748), (4, 15751), (7, 15832), (9, 15877), (Start: 12 @15910 has 1 MA's), (13, 15928), (15, 15961), (Start: 17 @15991 has 1 MA's), (19, 16018), (20, 16030), (24, 16147), (26, 16171), (30, 16222), (31, 16225), (36, 16330), (37, 16342), (40, 16417), (42, 16447), (43, 16468), (46, 16510), (54, 16618), (55, 16648), (56, 16693), (57, 16705), (58, 16750), (59, 16759), (63, 16819), (65, 16858), (73, 17038), (74, 17050), (75, 17059), (77, 17092), (79, 17098), (80, 17101), (86, 17152), (87, 17158), (88, 17164), (91, 17188), (92, 17215), (93, 17230), (94, 17242), (99, 17323), (100, 17326), (101, 17347), (103, 17365), (104, 17368), (107, 17389), (111, 17413), (113, 17434), (114, 17443), (115, 17446), (119, 17485), (121, 17509), (125, 17548), (126, 17563), (133, 17620), (138, 17644), (141, 17653), (142, 17659), (145, 17695), (152, 17743), (153, 17752), (156, 17794), (157, 17806), (161, 17863), (164, 17881), (165, 17896), (166, 17902), (183, 17998), (184, 18025), (187, 18046), (189, 18115), (191, 18136), (194, 18157), (201, 18235), (208, 18268), (209, 18271), (212, 18295), (216, 18364), (219, 18400), (220, 18403), (221, 18406), (222, 18421), (227, 18469), (231, 18505), (232, 18508), (237, 18571), (241, 18703), (244, 18769), (247, 18811), (249, 18850), (252, 18895), (255, 18964), (256, 18985), (259, 19030), (261, 19093), (264, 19132), (265, 19147), (269, 19198), (270, 19210),

Gene: Lymara_22 Start: 15725, Stop: 19261, Start Num: 2
Candidate Starts for Lymara_22:
(Start: 1 @15719 has 12 MA's), (Start: 2 @15725 has 7 MA's), (3, 15746), (4, 15749), (7, 15830), (9, 15875), (Start: 12 @15908 has 1 MA's), (13, 15926), (14, 15950), (15, 15959), (Start: 17 @15989 has 1 MA's), (19, 16016), (20, 16028), (22, 16127), (24, 16145), (26, 16169), (30, 16220), (31, 16223), (36, 16328), (37, 16340), (40, 16415), (42, 16445), (43, 16466), (46, 16508), (49, 16544), (51, 16601), (54, 16616), (55, 16646), (56, 16691), (57, 16703), (58, 16748), (63, 16817), (65, 16856), (67, 16922), (71, 16988), (74, 17048), (75, 17057), (77, 17090), (80, 17099), (86, 17150), (88, 17162), (92, 17213), (93, 17228), (94, 17240), (99, 17321), (101, 17345), (103, 17363), (104, 17366), (106, 17384), (107, 17387), (108, 17396), (109, 17405), (111, 17411), (112, 17417), (113, 17432), (114, 17441), (115, 17444), (119, 17483), (125, 17546), (126, 17561), (133, 17618), (135, 17624), (141, 17651), (142, 17657), (145, 17693), (152, 17741), (155, 17771), (156, 17792), (161, 17861), (164, 17879), (165, 17894), (180, 17945), (183, 17996), (184, 18023), (189, 18113), (190, 18119), (191, 18134), (195,

18176), (201, 18233), (208, 18266), (209, 18269), (212, 18293), (219, 18398), (220, 18401), (221, 18404), (227, 18467), (231, 18503), (237, 18569), (244, 18767), (245, 18779), (248, 18845), (249, 18848), (250, 18854), (252, 18893), (254, 18923), (255, 18962), (256, 18983), (259, 19028), (261, 19091), (265, 19145), (269, 19196), (270, 19208),

Gene: Mordred_22 Start: 15727, Stop: 19263, Start Num: 2
Candidate Starts for Mordred_22:
(Start: 1 @15721 has 12 MA's), (Start: 2 @15727 has 7 MA's), (3, 15748), (4, 15751), (7, 15832), (9, 15877), (Start: 12 @15910 has 1 MA's), (13, 15928), (15, 15961), (Start: 17 @15991 has 1 MA's), (19, 16018), (20, 16030), (24, 16147), (26, 16171), (30, 16222), (31, 16225), (36, 16330), (37, 16342), (40, 16417), (42, 16447), (43, 16468), (46, 16510), (54, 16618), (55, 16648), (56, 16693), (57, 16705), (58, 16750), (59, 16759), (63, 16819), (65, 16858), (73, 17038), (74, 17050), (75, 17059), (77, 17092), (79, 17098), (80, 17101), (86, 17152), (87, 17158), (88, 17164), (91, 17188), (92, 17215), (93, 17230), (94, 17242), (99, 17323), (100, 17326), (101, 17347), (103, 17365), (104, 17368), (107, 17389), (111, 17413), (113, 17434), (114, 17443), (115, 17446), (119, 17485), (121, 17509), (125, 17548), (126, 17563), (133, 17620), (138, 17644), (141, 17653), (142, 17659), (145, 17695), (152, 17743), (153, 17752), (156, 17794), (157, 17806), (161, 17863), (164, 17881), (165, 17896), (166, 17902), (183, 17998), (184, 18025), (187, 18046), (189, 18115), (191, 18136), (194, 18157), (201, 18235), (208, 18268), (209, 18271), (212, 18295), (216, 18364), (219, 18400), (220, 18403), (221, 18406), (222, 18421), (227, 18469), (231, 18505), (232, 18508), (237, 18571), (241, 18703), (244, 18769), (247, 18811), (249, 18850), (252, 18895), (255, 18964), (256, 18985), (259, 19030), (261, 19093), (264, 19132), (265, 19147), (269, 19198), (270, 19210),

Gene: MoyaNatalis_22 Start: 15730, Stop: 19266, Start Num: 2
Candidate Starts for MoyaNatalis_22:
(Start: 1 @15724 has 12 MA's), (Start: 2 @15730 has 7 MA's), (3, 15751), (4, 15754), (7, 15835), (9, 15880), (Start: 12 @15913 has 1 MA's), (13, 15931), (15, 15964), (Start: 17 @15994 has 1 MA's), (19, 16021), (20, 16033), (24, 16150), (26, 16174), (30, 16225), (31, 16228), (36, 16333), (37, 16345), (40, 16420), (42, 16450), (43, 16471), (46, 16513), (54, 16621), (55, 16651), (56, 16696), (57, 16708), (58, 16753), (59, 16762), (63, 16822), (65, 16861), (73, 17041), (74, 17053), (75, 17062), (77, 17095), (79, 17101), (80, 17104), (86, 17155), (87, 17161), (88, 17167), (91, 17191), (92, 17218), (93, 17233), (94, 17245), (99, 17326), (100, 17329), (101, 17350), (103, 17368), (104, 17371), (107, 17392), (111, 17416), (113, 17437), (114, 17446), (115, 17449), (119, 17488), (121, 17512), (125, 17551), (126, 17566), (133, 17623), (138, 17647), (141, 17656), (142, 17662), (145, 17698), (152, 17746), (153, 17755), (156, 17797), (157, 17809), (161, 17866), (164, 17884), (165, 17899), (166, 17905), (183, 18001), (184, 18028), (187, 18049), (189, 18118), (191, 18139), (194, 18160), (201, 18238), (208, 18271), (209, 18274), (212, 18298), (216, 18367), (219, 18403), (220, 18406), (221, 18409), (222, 18424), (227, 18472), (231, 18508), (232, 18511), (237, 18574), (241, 18706), (244, 18772), (245, 18784), (249, 18853), (252, 18898), (255, 18967), (256, 18988), (259, 19033), (261, 19096), (264, 19135), (265, 19150), (269, 19201), (270, 19213),

Gene: PrincessTrina_22 Start: 15724, Stop: 19266, Start Num: 1
Candidate Starts for PrincessTrina_22:
(Start: 1 @15724 has 12 MA's), (Start: 2 @15730 has 7 MA's), (3, 15751), (4, 15754), (7, 15835), (9, 15880), (Start: 12 @15913 has 1 MA's), (13, 15931), (15, 15964), (Start: 17 @15994 has 1 MA's), (19, 16021), (20, 16033), (24, 16150), (26, 16174), (30, 16225), (31, 16228), (36, 16333), (37, 16345), (40, 16420), (42, 16450), (43, 16471), (46, 16513), (54, 16621), (55, 16651), (56, 16696), (57, 16708), (58, 16753), (59, 16762), (63, 16822), (65, 16861), (73, 17041), (74, 17053), (75, 17062), (77, 17095), (79, 17101), (80, 17104), (86, 17155), (87, 17161), (88, 17167), (91, 17191), (92, 17218), (93, 17233), (94, 17245), (99, 17326), (100, 17329), (101, 17350), (103, 17368), (104, 17371), (107, 17392), (111, 17416), (113, 17437), (114, 17446), (115, 17449), (119, 17488), (121, 17512), (125, 17551), (126, 17566), (133, 17623), (138, 17647), (141, 17656), (142, 17662), (145, 17698), (152, 17746), (153, 17755), (156, 17797), (157, 17809), (161, 17866), (164, 17884), (165, 17899), (166, 17905), (183,

18001), (184, 18028), (187, 18049), (189, 18118), (191, 18139), (194, 18160), (201, 18238), (208, 18271), (209, 18274), (212, 18298), (216, 18367), (219, 18403), (220, 18406), (221, 18409), (222, 18424), (227, 18472), (231, 18508), (232, 18511), (237, 18574), (241, 18706), (244, 18772), (247, 18814), (249, 18853), (252, 18898), (255, 18967), (256, 18988), (259, 19033), (261, 19096), (264, 19135), (265, 19150), (269, 19201), (270, 19213),

Gene: RosiePosie_22 Start: 15724, Stop: 19266, Start Num: 1
Candidate Starts for RosiePosie_22:
(Start: 1 @15724 has 12 MA's), (Start: 2 @15730 has 7 MA's), (3, 15751), (4, 15754), (7, 15835), (9, 15880), (Start: 12 @15913 has 1 MA's), (13, 15931), (15, 15964), (Start: 17 @15994 has 1 MA's), (19, 16021), (20, 16033), (24, 16150), (26, 16174), (30, 16225), (31, 16228), (36, 16333), (37, 16345), (40, 16420), (42, 16450), (43, 16471), (46, 16513), (54, 16621), (55, 16651), (56, 16696), (57, 16708), (58, 16753), (59, 16762), (63, 16822), (65, 16861), (73, 17041), (74, 17053), (75, 17062), (77, 17095), (79, 17101), (80, 17104), (86, 17155), (87, 17161), (88, 17167), (91, 17191), (92, 17218), (93, 17233), (94, 17245), (99, 17326), (100, 17329), (101, 17350), (103, 17368), (104, 17371), (107, 17392), (111, 17416), (113, 17437), (114, 17446), (115, 17449), (119, 17488), (121, 17512), (125, 17551), (126, 17566), (133, 17623), (138, 17647), (141, 17656), (142, 17662), (145, 17698), (152, 17746), (153, 17755), (156, 17797), (157, 17809), (161, 17866), (164, 17884), (165, 17899), (166, 17905), (183, 18001), (184, 18028), (187, 18049), (189, 18118), (191, 18139), (194, 18160), (201, 18238), (208, 18271), (209, 18274), (212, 18298), (216, 18367), (219, 18403), (220, 18406), (221, 18409), (222, 18424), (227, 18472), (231, 18508), (232, 18511), (237, 18574), (241, 18706), (244, 18772), (247, 18814), (249, 18853), (252, 18898), (255, 18967), (256, 18988), (259, 19033), (261, 19096), (264, 19135), (265, 19150), (269, 19201), (270, 19213),

Gene: Scavito_22 Start: 15721, Stop: 19263, Start Num: 1
Candidate Starts for Scavito_22:
(Start: 1 @15721 has 12 MA's), (Start: 2 @15727 has 7 MA's), (3, 15748), (4, 15751), (7, 15832), (9, 15877), (Start: 12 @15910 has 1 MA's), (13, 15928), (15, 15961), (Start: 17 @15991 has 1 MA's), (19, 16018), (20, 16030), (24, 16147), (26, 16171), (30, 16222), (31, 16225), (36, 16330), (37, 16342), (40, 16417), (42, 16447), (43, 16468), (46, 16510), (54, 16618), (55, 16648), (56, 16693), (57, 16705), (58, 16750), (59, 16759), (63, 16819), (65, 16858), (73, 17038), (74, 17050), (75, 17059), (77, 17092), (79, 17098), (80, 17101), (86, 17152), (87, 17158), (88, 17164), (91, 17188), (92, 17215), (93, 17230), (94, 17242), (99, 17323), (100, 17326), (101, 17347), (103, 17365), (104, 17368), (107, 17389), (111, 17413), (113, 17434), (114, 17443), (115, 17446), (119, 17485), (121, 17509), (125, 17548), (126, 17563), (133, 17620), (138, 17644), (141, 17653), (142, 17659), (145, 17695), (152, 17743), (153, 17752), (156, 17794), (157, 17806), (161, 17863), (164, 17881), (165, 17896), (166, 17902), (183, 17998), (184, 18025), (187, 18046), (189, 18115), (191, 18136), (194, 18157), (201, 18235), (208, 18268), (209, 18271), (212, 18295), (216, 18364), (219, 18400), (220, 18403), (221, 18406), (222, 18421), (227, 18469), (231, 18505), (232, 18508), (237, 18571), (241, 18703), (244, 18769), (247, 18811), (249, 18850), (252, 18895), (255, 18964), (256, 18985), (259, 19030), (261, 19093), (264, 19132), (265, 19147), (269, 19198), (270, 19210),

Gene: Tophat_22 Start: 15729, Stop: 19265, Start Num: 2
Candidate Starts for Tophat_22:
(Start: 1 @15723 has 12 MA's), (Start: 2 @15729 has 7 MA's), (3, 15750), (4, 15753), (7, 15834), (9, 15879), (Start: 12 @15912 has 1 MA's), (13, 15930), (15, 15963), (Start: 17 @15993 has 1 MA's), (19, 16020), (20, 16032), (24, 16149), (26, 16173), (30, 16224), (31, 16227), (36, 16332), (37, 16344), (40, 16419), (42, 16449), (43, 16470), (46, 16512), (54, 16620), (55, 16650), (56, 16695), (57, 16707), (58, 16752), (59, 16761), (63, 16821), (65, 16860), (73, 17040), (74, 17052), (75, 17061), (77, 17094), (79, 17100), (80, 17103), (86, 17154), (87, 17160), (88, 17166), (91, 17190), (92, 17217), (93, 17232), (94, 17244), (99, 17325), (100, 17328), (101, 17349), (103, 17367), (104, 17370), (107, 17391), (111, 17415), (113, 17436), (114, 17445), (115, 17448), (119, 17487), (121, 17511), (125, 17550), (126, 17565), (133, 17622), (138, 17646), (141, 17655), (142, 17661), (145, 17697), (152, 17745), (153,

17754), (156, 17796), (157, 17808), (161, 17865), (164, 17883), (165, 17898), (166, 17904), (183, 18000), (184, 18027), (187, 18048), (189, 18117), (191, 18138), (194, 18159), (201, 18237), (208, 18270), (209, 18273), (212, 18297), (216, 18366), (219, 18402), (220, 18405), (221, 18408), (222, 18423), (227, 18471), (231, 18507), (232, 18510), (237, 18573), (241, 18705), (244, 18771), (247, 18813), (249, 18852), (252, 18897), (255, 18966), (256, 18987), (259, 19032), (261, 19095), (264, 19134), (265, 19149), (269, 19200), (270, 19212),

Gene: Vibaki_19 Start: 15202, Stop: 18351, Start Num: 17
Candidate Starts for Vibaki_19:
(Start: 17 @15202 has 1 MA's), (18, 15223), (21, 15247), (31, 15397), (34, 15451), (35, 15475), (41, 15586), (44, 15643), (45, 15652), (48, 15685), (53, 15757), (60, 15904), (62, 15922), (64, 15970), (66, 16012), (74, 16159), (106, 16465), (118, 16540), (119, 16564), (130, 16675), (134, 16708), (136, 16714), (140, 16735), (146, 16792), (154, 16846), (157, 16897), (162, 16960), (165, 16987), (183, 17089), (185, 17119), (188, 17158), (193, 17245), (196, 17284), (199, 17317), (211, 17380), (213, 17419), (217, 17464), (221, 17497), (223, 17515), (226, 17554), (230, 17587), (233, 17608), (235, 17626), (239, 17761), (240, 17764), (243, 17848), (245, 17872), (249, 17941), (253, 18013), (257, 18082), (258, 18091), (259, 18121), (260, 18175), (265, 18238), (266, 18250), (270, 18298),