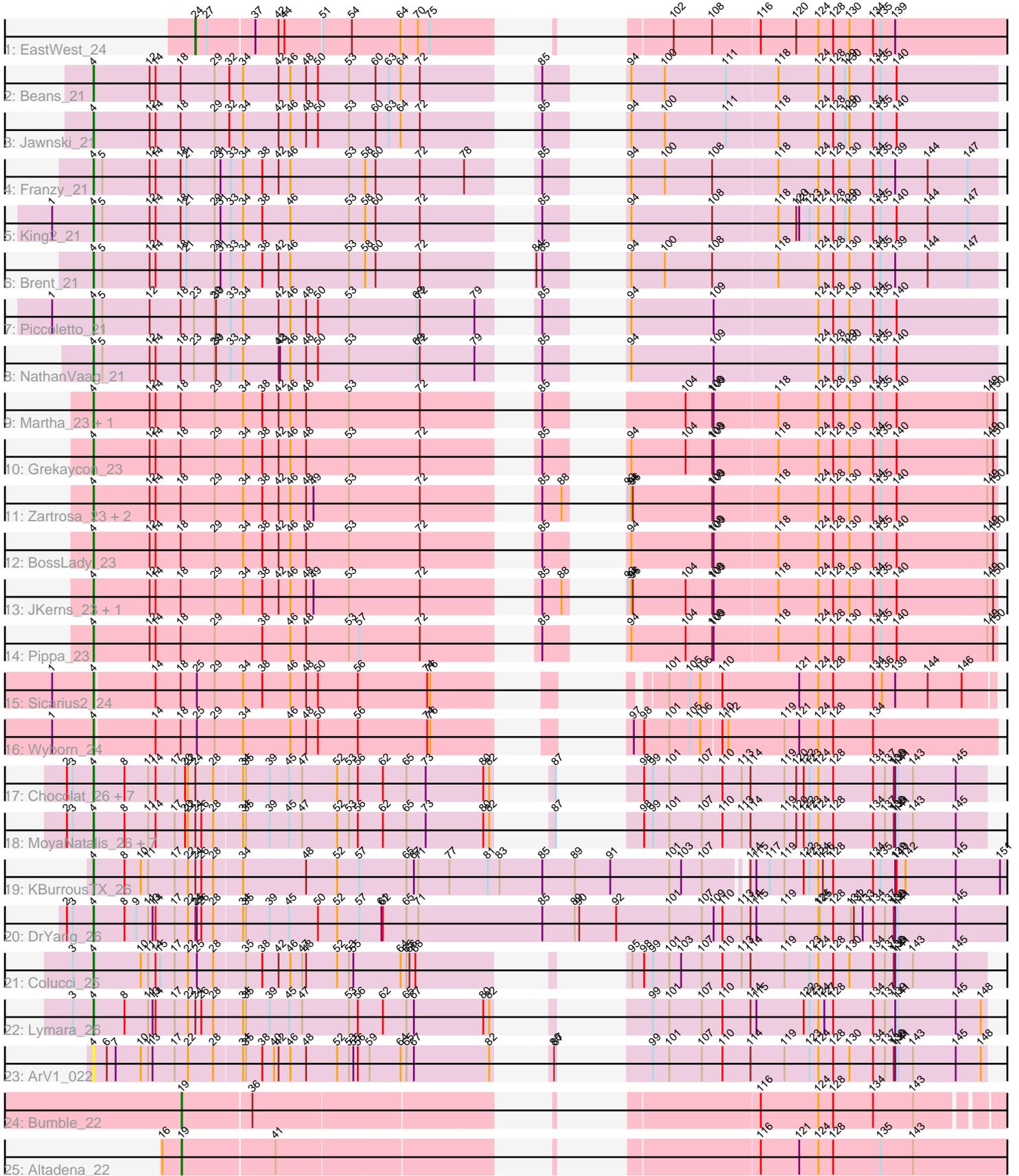# Zoomed Pham 283944

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 283944 Report

This analysis was run 02/23/26 on database version 636.

Pham number 283944 has 43 members, 2 are drafts.

Phages represented in each track:
• Track 1 : EastWest_24
• Track 2 : Beans_21
• Track 3 : Jawnski_21
• Track 4 : Franzy_21
• Track 5 : King2_21
• Track 6 : Brent_21
• Track 7 : Piccoletto_21
• Track 8 : NathanVaag_21
• Track 9 : Martha_23, TaeYoung_23
• Track 10 : Grekaycon_23
• Track 11 : Zartrosa_23, Sonny_23, Shade_23
• Track 12 : BossLady_23
• Track 13 : JKerns_23, Jordan_23
• Track 14 : Pippa_23
• Track 15 : Sicarius2_24
• Track 16 : Wyborn_24
• Track 17 : Chocolat_26, Mordred_26, Kabreeze_26, Scavito_26, Chipper1996_260, JaNo_26, Tophat_26, HumptyDumpty_26
• Track 18 : MoyaNatalis_26, Conboy_26, PrincessTrina_26, Chubster_26, RosiePosie_26, EdgarPoe_26, Linus_26, JayCookie_26
• Track 19 : KBurrousTX_26
• Track 20 : DrYang_26
• Track 21 : Colucci_25
• Track 22 : Lymara_26
• Track 23 : ArV1_022
• Track 24 : Bumble_22
• Track 25 : Altadena_22

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

The start number called the most often in the published annotations is 4, it was called in 38 of the 41 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• ArV1_022, Beans_21, BossLady_23, Brent_21, Chipper1996_260, Chocolat_26, Chubster_26, Colucci_25, Conboy_26, DrYang_26, EdgarPoe_26, Franzy_21, Grekaycon_23, HumptyDumpty_26, JKerns_23, JaNo_26, Jawnski_21, JayCookie_26, Jordan_23, KBurrousTX_26, Kabreeze_26, King2_21, Linus_26, Lymara_26, Martha_23, Mordred_26, MoyaNatalis_26, NathanVaag_21, Piccoletto_21, Pippa_23, PrincessTrina_26, RosiePosie_26, Scavito_26, Shade_23, Sicarius2_24, Sonny_23, TaeYoung_23, Tophat_26, Wyborn_24, Zartrosa_23,

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

Genes that do not have the "Most Annotated" start:
• Altadena_22, Bumble_22, EastWest_24,

Summary by start number:

Start 4:
• Found in 40 of 43 (93.0%) of genes in pham
• Manual Annotations of this start: 38 of 41
• Called 100.0% of time when present
• Phage (with cluster) where this start called: ArV1_022 (AR), Beans_21 (AO1), BossLady_23 (AO2), Brent_21 (AO1), Chipper1996_260 (AR), Chocolat_26 (AR), Chubster_26 (AR), Colucci_25 (AR), Conboy_26 (AR), DrYang_26 (AR), EdgarPoe_26 (AR), Franzy_21 (AO1), Grekaycon_23 (AO2), HumptyDumpty_26 (AR), JKerns_23 (AO2), JaNo_26 (AR), Jawnski_21 (AO1), JayCookie_26 (AR), Jordan_23 (AO2), KBurrousTX_26 (AR), Kabreeze_26 (AR), King2_21 (AO1), Linus_26 (AR), Lymara_26 (AR), Martha_23 (AO2), Mordred_26 (AR), MoyaNatalis_26 (AR), NathanVaag_21 (AO1), Piccoletto_21 (AO1), Pippa_23 (AO2), PrincessTrina_26 (AR), RosiePosie_26 (AR), Scavito_26 (AR), Shade_23 (AO2), Sicarius2_24 (AO2), Sonny_23 (AO2), TaeYoung_23 (AO2), Tophat_26 (AR), Wyborn_24 (AO2), Zartrosa_23 (AO2),

Start 19:
• Found in 2 of 43 (4.7%) of genes in pham
• Manual Annotations of this start: 2 of 41
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Altadena_22 (FH), Bumble_22 (FH),

Start 24:
• Found in 20 of 43 (46.5%) of genes in pham
• Manual Annotations of this start: 1 of 41
• Called 5.0% of time when present
• Phage (with cluster) where this start called: EastWest_24 (AO),

Summary by clusters:

There are 5 clusters represented in this pham: FH, AR, AO, AO2, AO1,

Info for manual annotations of cluster AO:
•Start number 24 was manually annotated 1 time for cluster AO.

Info for manual annotations of cluster AO1:
•Start number 4 was manually annotated 7 times for cluster AO1.

Info for manual annotations of cluster AO2:
•Start number 4 was manually annotated 12 times for cluster AO2.

Info for manual annotations of cluster AR:
•Start number 4 was manually annotated 19 times for cluster AR.

Info for manual annotations of cluster FH:
•Start number 19 was manually annotated 2 times for cluster FH.

Gene Information:

Gene: Altadena_22 Start: 18121, Stop: 20040, Start Num: 19
Candidate Starts for Altadena_22:
(16, 18082), (Start: 19 @18121 has 2 MA's), (41, 18295), (116, 18976), (121, 19051), (124, 19087), (128, 19117), (135, 19213), (143, 19279), (176, 19801), (178, 19819), (190, 19882),

Gene: ArV1_022 Start: 20005, Stop: 21969, Start Num: 4
Candidate Starts for ArV1_022:
(Start: 4 @20005 has 38 MA's), (6, 20026), (7, 20044), (10, 20095), (11, 20110), (13, 20119), (17, 20161), (22, 20188), (28, 20239), (34, 20293), (35, 20299), (38, 20332), (40, 20356), (42, 20365), (46, 20389), (48, 20419), (52, 20482), (53, 20506), (55, 20515), (56, 20524), (59, 20548), (64, 20611), (65, 20623), (67, 20638), (82, 20791), (86, 20809), (87, 20812), (99, 20866), (101, 20899), (107, 20965), (110, 21007), (114, 21064), (119, 21133), (123, 21181), (124, 21199), (128, 21229), (130, 21262), (134, 21310), (137, 21334), (138, 21352), (139, 21355), (141, 21361), (143, 21391), (145, 21478), (148, 21529), (162, 21562), (168, 21610), (170, 21640), (171, 21643), (173, 21649), (175, 21670), (177, 21691), (180, 21709), (191, 21781), (192, 21793), (193, 21799), (197, 21823), (206, 21883), (208, 21904), (216, 21958),

Gene: Beans_21 Start: 18506, Stop: 20575, Start Num: 4
Candidate Starts for Beans_21:
(Start: 4 @18506 has 38 MA's), (12, 18614), (14, 18626), (18, 18674), (29, 18743), (32, 18773), (34, 18800), (42, 18872), (46, 18896), (48, 18926), (50, 18950), (53, 19013), (60, 19067), (63, 19094), (64, 19118), (72, 19157), (85, 19322), (94, 19385), (100, 19451), (111, 19574), (118, 19670), (124, 19748), (128, 19778), (129, 19802), (130, 19811), (134, 19859), (135, 19874), (140, 19907), (159, 20123), (160, 20126), (161, 20165), (183, 20333), (194, 20408), (212, 20534), (214, 20549),

Gene: BossLady_23 Start: 18820, Stop: 20889, Start Num: 4
Candidate Starts for BossLady_23:
(Start: 4 @18820 has 38 MA's), (12, 18928), (14, 18940), (18, 18988), (29, 19057), (34, 19114), (38, 19153), (42, 19186), (46, 19210), (48, 19240), (53, 19327), (72, 19471), (85, 19636), (94, 19699), (108, 19861), (109, 19864), (118, 19984), (124, 20062), (128, 20092), (130, 20125), (134, 20173), (135, 20188), (140, 20221), (149, 20404), (150, 20416), (161, 20479), (167, 20524), (177, 20611), (183, 20647), (186, 20668), (194, 20722), (199, 20758), (201, 20764), (206, 20803), (212, 20848),

Gene: Brent_21 Start: 18489, Stop: 20555, Start Num: 4
Candidate Starts for Brent_21:
(Start: 4 @18489 has 38 MA's), (5, 18504), (12, 18597), (14, 18609), (18, 18657), (21, 18669), (29, 18726), (31, 18738), (33, 18759), (34, 18783), (38, 18822), (42, 18855), (46, 18879), (53, 18996), (58, 19029), (60, 19050), (72, 19140), (84, 19293), (85, 19305), (94, 19368), (100, 19434), (108, 19530), (118, 19653), (124, 19731), (128, 19761), (130, 19794), (134, 19842), (135, 19857), (139, 19887),

(144, 19953), (147, 20034), (159, 20106), (161, 20148), (174, 20253), (177, 20280), (183, 20316), (194, 20391), (204, 20454), (206, 20472), (212, 20517),

Gene: Bumble_22 Start: 18132, Stop: 19916, Start Num: 19
Candidate Starts for Bumble_22:
(Start: 19 @18132 has 2 MA's), (36, 18264), (116, 18984), (124, 19098), (128, 19128), (134, 19209), (143, 19290), (169, 19623), (176, 19662), (198, 19794), (205, 19839),

Gene: Chipper1996_260 Start: 21687, Stop: 23657, Start Num: 4
Candidate Starts for Chipper1996_260:
(2, 21633), (3, 21645), (Start: 4 @21687 has 38 MA's), (8, 21750), (11, 21798), (14, 21813), (17, 21849), (20, 21870), (22, 21876), (Start: 24 @21891 has 1 MA's), (28, 21927), (34, 21981), (35, 21987), (39, 22035), (45, 22074), (47, 22101), (52, 22170), (53, 22194), (56, 22212), (62, 22263), (65, 22311), (73, 22350), (80, 22467), (82, 22479), (87, 22500), (98, 22536), (99, 22554), (101, 22587), (107, 22653), (110, 22695), (113, 22734), (114, 22752), (119, 22821), (120, 22845), (122, 22860), (123, 22869), (124, 22887), (128, 22917), (134, 22998), (137, 23022), (138, 23040), (139, 23043), (141, 23049), (143, 23079), (145, 23166), (168, 23298), (174, 23352), (177, 23379), (191, 23469), (192, 23481), (204, 23553), (206, 23571), (208, 23592), (210, 23598), (211, 23601), (213, 23625), (215, 23637), (216, 23646),

Gene: Chocolat_26 Start: 21687, Stop: 23657, Start Num: 4
Candidate Starts for Chocolat_26:
(2, 21633), (3, 21645), (Start: 4 @21687 has 38 MA's), (8, 21750), (11, 21798), (14, 21813), (17, 21849), (20, 21870), (22, 21876), (Start: 24 @21891 has 1 MA's), (28, 21927), (34, 21981), (35, 21987), (39, 22035), (45, 22074), (47, 22101), (52, 22170), (53, 22194), (56, 22212), (62, 22263), (65, 22311), (73, 22350), (80, 22467), (82, 22479), (87, 22500), (98, 22536), (99, 22554), (101, 22587), (107, 22653), (110, 22695), (113, 22734), (114, 22752), (119, 22821), (120, 22845), (122, 22860), (123, 22869), (124, 22887), (128, 22917), (134, 22998), (137, 23022), (138, 23040), (139, 23043), (141, 23049), (143, 23079), (145, 23166), (168, 23298), (174, 23352), (177, 23379), (191, 23469), (192, 23481), (204, 23553), (206, 23571), (208, 23592), (210, 23598), (211, 23601), (213, 23625), (215, 23637), (216, 23646),

Gene: Chubster_26 Start: 21458, Stop: 23428, Start Num: 4
Candidate Starts for Chubster_26:
(2, 21404), (3, 21416), (Start: 4 @21458 has 38 MA's), (8, 21521), (11, 21569), (14, 21584), (17, 21620), (20, 21641), (22, 21647), (Start: 24 @21662 has 1 MA's), (26, 21674), (28, 21698), (34, 21752), (35, 21758), (39, 21806), (45, 21845), (47, 21872), (52, 21941), (53, 21965), (56, 21983), (62, 22034), (65, 22082), (73, 22121), (80, 22238), (82, 22250), (87, 22271), (98, 22307), (99, 22325), (101, 22358), (107, 22424), (110, 22466), (113, 22505), (114, 22523), (119, 22592), (120, 22616), (122, 22631), (123, 22640), (124, 22658), (128, 22688), (134, 22769), (137, 22793), (138, 22811), (139, 22814), (141, 22820), (143, 22850), (145, 22937), (168, 23069), (174, 23123), (177, 23150), (191, 23240), (192, 23252), (204, 23324), (206, 23342), (208, 23363), (210, 23369), (211, 23372), (213, 23396), (215, 23408), (216, 23417),

Gene: Colucci_25 Start: 21154, Stop: 23121, Start Num: 4
Candidate Starts for Colucci_25:
(3, 21112), (Start: 4 @21154 has 38 MA's), (10, 21247), (11, 21262), (14, 21277), (15, 21286), (17, 21313), (22, 21340), (25, 21358), (28, 21391), (35, 21451), (38, 21484), (42, 21517), (46, 21541), (47, 21565), (48, 21571), (52, 21634), (53, 21658), (55, 21667), (64, 21763), (65, 21775), (66, 21781), (68, 21793), (95, 21976), (98, 22000), (99, 22018), (101, 22051), (103, 22075), (107, 22117), (110, 22159), (113, 22198), (114, 22216), (119, 22285), (123, 22333), (124, 22351), (128, 22381), (130, 22414), (134, 22462), (137, 22486), (138, 22504), (139, 22507), (141, 22513), (143, 22543), (145, 22630), (162, 22714), (163, 22720), (168, 22762), (177, 22843), (180, 22861), (183, 22879), (191, 22933),

(192, 22945), (204, 23017), (206, 23035), (210, 23062), (211, 23065), (213, 23089), (215, 23101), (216, 23110),

Gene: Conboy_26 Start: 21686, Stop: 23656, Start Num: 4
Candidate Starts for Conboy_26:
(2, 21632), (3, 21644), (Start: 4 @21686 has 38 MA's), (8, 21749), (11, 21797), (14, 21812), (17, 21848), (20, 21869), (22, 21875), (Start: 24 @21890 has 1 MA's), (26, 21902), (28, 21926), (34, 21980), (35, 21986), (39, 22034), (45, 22073), (47, 22100), (52, 22169), (53, 22193), (56, 22211), (62, 22262), (65, 22310), (73, 22349), (80, 22466), (82, 22478), (87, 22499), (98, 22535), (99, 22553), (101, 22586), (107, 22652), (110, 22694), (113, 22733), (114, 22751), (119, 22820), (120, 22844), (122, 22859), (123, 22868), (124, 22886), (128, 22916), (134, 22997), (137, 23021), (138, 23039), (139, 23042), (141, 23048), (143, 23078), (145, 23165), (168, 23297), (174, 23351), (177, 23378), (191, 23468), (192, 23480), (204, 23552), (206, 23570), (208, 23591), (210, 23597), (211, 23600), (213, 23624), (215, 23636), (216, 23645),

Gene: DrYang_26 Start: 21885, Stop: 24371, Start Num: 4
Candidate Starts for DrYang_26:
(2, 21831), (3, 21843), (Start: 4 @21885 has 38 MA's), (8, 21948), (9, 21972), (11, 21996), (13, 22005), (14, 22011), (17, 22047), (22, 22074), (Start: 24 @22089 has 1 MA's), (25, 22092), (26, 22101), (28, 22125), (34, 22179), (35, 22185), (39, 22233), (45, 22272), (50, 22329), (52, 22368), (57, 22413), (61, 22458), (62, 22461), (65, 22509), (71, 22533), (85, 22785), (89, 22851), (90, 22860), (92, 22935), (101, 23043), (107, 23109), (109, 23133), (110, 23151), (113, 23190), (114, 23208), (115, 23220), (119, 23277), (124, 23343), (125, 23346), (128, 23373), (131, 23409), (132, 23415), (133, 23433), (134, 23454), (137, 23478), (138, 23496), (139, 23499), (141, 23505), (145, 23622), (152, 23754), (153, 23817), (155, 23823), (156, 23862), (164, 23967), (168, 24000), (174, 24054), (175, 24060), (177, 24081), (180, 24099), (186, 24138), (189, 24156), (191, 24171), (192, 24183), (206, 24285), (208, 24306), (213, 24339), (215, 24351), (217, 24363),

Gene: EastWest_24 Start: 18793, Stop: 20760, Start Num: 24
Candidate Starts for EastWest_24:
(Start: 24 @18793 has 1 MA's), (27, 18814), (37, 18901), (42, 18946), (44, 18958), (51, 19027), (54, 19084), (64, 19180), (70, 19210), (75, 19234), (102, 19453), (108, 19531), (116, 19621), (120, 19690), (124, 19735), (128, 19765), (130, 19798), (134, 19846), (135, 19861), (139, 19891), (161, 20326), (175, 20440), (181, 20491), (186, 20518), (188, 20533), (200, 20614), (218, 20743),

Gene: EdgarPoe_26 Start: 21686, Stop: 23656, Start Num: 4
Candidate Starts for EdgarPoe_26:
(2, 21632), (3, 21644), (Start: 4 @21686 has 38 MA's), (8, 21749), (11, 21797), (14, 21812), (17, 21848), (20, 21869), (22, 21875), (Start: 24 @21890 has 1 MA's), (26, 21902), (28, 21926), (34, 21980), (35, 21986), (39, 22034), (45, 22073), (47, 22100), (52, 22169), (53, 22193), (56, 22211), (62, 22262), (65, 22310), (73, 22349), (80, 22466), (82, 22478), (87, 22499), (98, 22535), (99, 22553), (101, 22586), (107, 22652), (110, 22694), (113, 22733), (114, 22751), (119, 22820), (120, 22844), (122, 22859), (123, 22868), (124, 22886), (128, 22916), (134, 22997), (137, 23021), (138, 23039), (139, 23042), (141, 23048), (143, 23078), (145, 23165), (168, 23297), (174, 23351), (177, 23378), (191, 23468), (192, 23480), (204, 23552), (206, 23570), (208, 23591), (210, 23597), (211, 23600), (213, 23624), (215, 23636), (216, 23645),

Gene: Franzy_21 Start: 18488, Stop: 20554, Start Num: 4
Candidate Starts for Franzy_21:
(Start: 4 @18488 has 38 MA's), (5, 18503), (12, 18596), (14, 18608), (18, 18656), (21, 18668), (29, 18725), (31, 18737), (33, 18758), (34, 18782), (38, 18821), (42, 18854), (46, 18878), (53, 18995), (58, 19028), (60, 19049), (72, 19139), (78, 19229), (85, 19304), (94, 19367), (100, 19433), (108, 19529), (118, 19652), (124, 19730), (128, 19760), (130, 19793), (134, 19841), (135, 19856), (139, 19886),

(144, 19952), (147, 20033), (159, 20105), (161, 20147), (174, 20252), (177, 20279), (183, 20315), (186, 20336), (194, 20390), (204, 20453), (206, 20471), (212, 20516),

Gene: Grekaycon_23 Start: 18829, Stop: 20898, Start Num: 4
Candidate Starts for Grekaycon_23:
(Start: 4 @18829 has 38 MA's), (12, 18937), (14, 18949), (18, 18997), (29, 19066), (34, 19123), (38, 19162), (42, 19195), (46, 19219), (48, 19249), (53, 19336), (72, 19480), (85, 19645), (94, 19708), (104, 19816), (108, 19870), (109, 19873), (118, 19993), (124, 20071), (128, 20101), (130, 20134), (134, 20182), (135, 20197), (140, 20230), (149, 20413), (150, 20425), (161, 20488), (167, 20533), (172, 20575), (177, 20620), (183, 20656), (186, 20677), (194, 20731), (199, 20767), (206, 20812), (212, 20857),

Gene: HumptyDumpty_26 Start: 21685, Stop: 23655, Start Num: 4
Candidate Starts for HumptyDumpty_26:
(2, 21631), (3, 21643), (Start: 4 @21685 has 38 MA's), (8, 21748), (11, 21796), (14, 21811), (17, 21847), (20, 21868), (22, 21874), (Start: 24 @21889 has 1 MA's), (28, 21925), (34, 21979), (35, 21985), (39, 22033), (45, 22072), (47, 22099), (52, 22168), (53, 22192), (56, 22210), (62, 22261), (65, 22309), (73, 22348), (80, 22465), (82, 22477), (87, 22498), (98, 22534), (99, 22552), (101, 22585), (107, 22651), (110, 22693), (113, 22732), (114, 22750), (119, 22819), (120, 22843), (122, 22858), (123, 22867), (124, 22885), (128, 22915), (134, 22996), (137, 23020), (138, 23038), (139, 23041), (141, 23047), (143, 23077), (145, 23164), (168, 23296), (174, 23350), (177, 23377), (191, 23467), (192, 23479), (204, 23551), (206, 23569), (208, 23590), (210, 23596), (211, 23599), (213, 23623), (215, 23635), (216, 23644),

Gene: JKerns_23 Start: 18856, Stop: 20925, Start Num: 4
Candidate Starts for JKerns_23:
(Start: 4 @18856 has 38 MA's), (12, 18964), (14, 18976), (18, 19024), (29, 19093), (34, 19150), (38, 19189), (42, 19222), (46, 19246), (48, 19276), (49, 19291), (53, 19363), (72, 19507), (85, 19672), (88, 19711), (93, 19729), (94, 19735), (96, 19738), (104, 19843), (108, 19897), (109, 19900), (118, 20020), (124, 20098), (128, 20128), (130, 20161), (134, 20209), (135, 20224), (140, 20257), (149, 20440), (150, 20452), (161, 20515), (167, 20560), (177, 20647), (183, 20683), (186, 20704), (194, 20758), (199, 20794), (201, 20800), (206, 20839), (212, 20884),

Gene: JaNo_26 Start: 21685, Stop: 23655, Start Num: 4
Candidate Starts for JaNo_26:
(2, 21631), (3, 21643), (Start: 4 @21685 has 38 MA's), (8, 21748), (11, 21796), (14, 21811), (17, 21847), (20, 21868), (22, 21874), (Start: 24 @21889 has 1 MA's), (28, 21925), (34, 21979), (35, 21985), (39, 22033), (45, 22072), (47, 22099), (52, 22168), (53, 22192), (56, 22210), (62, 22261), (65, 22309), (73, 22348), (80, 22465), (82, 22477), (87, 22498), (98, 22534), (99, 22552), (101, 22585), (107, 22651), (110, 22693), (113, 22732), (114, 22750), (119, 22819), (120, 22843), (122, 22858), (123, 22867), (124, 22885), (128, 22915), (134, 22996), (137, 23020), (138, 23038), (139, 23041), (141, 23047), (143, 23077), (145, 23164), (168, 23296), (174, 23350), (177, 23377), (191, 23467), (192, 23479), (204, 23551), (206, 23569), (208, 23590), (210, 23596), (211, 23599), (213, 23623), (215, 23635), (216, 23644),

Gene: Jawnski_21 Start: 18501, Stop: 20570, Start Num: 4
Candidate Starts for Jawnski_21:
(Start: 4 @18501 has 38 MA's), (12, 18609), (14, 18621), (18, 18669), (29, 18738), (32, 18768), (34, 18795), (42, 18867), (46, 18891), (48, 18921), (50, 18945), (53, 19008), (60, 19062), (63, 19089), (64, 19113), (72, 19152), (85, 19317), (94, 19380), (100, 19446), (111, 19569), (118, 19665), (124, 19743), (128, 19773), (129, 19797), (130, 19806), (134, 19854), (135, 19869), (140, 19902), (159, 20118), (161, 20160), (183, 20328), (194, 20403), (212, 20529), (214, 20544),

Gene: JayCookie_26 Start: 21688, Stop: 23658, Start Num: 4
Candidate Starts for JayCookie_26:
(2, 21634), (3, 21646), (Start: 4 @21688 has 38 MA's), (8, 21751), (11, 21799), (14, 21814), (17, 21850), (20, 21871), (22, 21877), (Start: 24 @21892 has 1 MA's), (26, 21904), (28, 21928), (34, 21982), (35, 21988), (39, 22036), (45, 22075), (47, 22102), (52, 22171), (53, 22195), (56, 22213), (62, 22264), (65, 22312), (73, 22351), (80, 22468), (82, 22480), (87, 22501), (98, 22537), (99, 22555), (101, 22588), (107, 22654), (110, 22696), (113, 22735), (114, 22753), (119, 22822), (120, 22846), (122, 22861), (123, 22870), (124, 22888), (128, 22918), (134, 22999), (137, 23023), (138, 23041), (139, 23044), (141, 23050), (143, 23080), (145, 23167), (168, 23299), (174, 23353), (177, 23380), (191, 23470), (192, 23482), (204, 23554), (206, 23572), (208, 23593), (210, 23599), (211, 23602), (213, 23626), (215, 23638), (216, 23647),

Gene: Jordan_23 Start: 18826, Stop: 20895, Start Num: 4
Candidate Starts for Jordan_23:
(Start: 4 @18826 has 38 MA's), (12, 18934), (14, 18946), (18, 18994), (29, 19063), (34, 19120), (38, 19159), (42, 19192), (46, 19216), (48, 19246), (49, 19261), (53, 19333), (72, 19477), (85, 19642), (88, 19681), (93, 19699), (94, 19705), (96, 19708), (104, 19813), (108, 19867), (109, 19870), (118, 19990), (124, 20068), (128, 20098), (130, 20131), (134, 20179), (135, 20194), (140, 20227), (149, 20410), (150, 20422), (161, 20485), (167, 20530), (177, 20617), (183, 20653), (186, 20674), (194, 20728), (199, 20764), (201, 20770), (206, 20809), (212, 20854),

Gene: KBurrousTX_26 Start: 21713, Stop: 24196, Start Num: 4
Candidate Starts for KBurrousTX_26:
(Start: 4 @21713 has 38 MA's), (8, 21773), (10, 21806), (11, 21821), (17, 21872), (22, 21899), (Start: 24 @21914 has 1 MA's), (26, 21926), (28, 21950), (34, 22004), (48, 22130), (52, 22193), (57, 22238), (65, 22334), (67, 22349), (71, 22358), (77, 22421), (81, 22499), (83, 22523), (85, 22610), (89, 22676), (91, 22748), (101, 22868), (103, 22892), (107, 22934), (114, 23006), (115, 23018), (117, 23045), (119, 23075), (122, 23114), (123, 23123), (124, 23141), (126, 23150), (128, 23171), (134, 23252), (135, 23267), (139, 23297), (140, 23300), (142, 23318), (145, 23420), (151, 23510), (152, 23552), (154, 23618), (156, 23660), (157, 23717), (158, 23726), (168, 23837), (174, 23891), (180, 23936), (183, 23954), (186, 23975), (191, 24008), (192, 24020), (202, 24074), (206, 24110), (208, 24131), (217, 24188),

Gene: Kabreeze_26 Start: 21685, Stop: 23655, Start Num: 4
Candidate Starts for Kabreeze_26:
(2, 21631), (3, 21643), (Start: 4 @21685 has 38 MA's), (8, 21748), (11, 21796), (14, 21811), (17, 21847), (20, 21868), (22, 21874), (Start: 24 @21889 has 1 MA's), (28, 21925), (34, 21979), (35, 21985), (39, 22033), (45, 22072), (47, 22099), (52, 22168), (53, 22192), (56, 22210), (62, 22261), (65, 22309), (73, 22348), (80, 22465), (82, 22477), (87, 22498), (98, 22534), (99, 22552), (101, 22585), (107, 22651), (110, 22693), (113, 22732), (114, 22750), (119, 22819), (120, 22843), (122, 22858), (123, 22867), (124, 22885), (128, 22915), (134, 22996), (137, 23020), (138, 23038), (139, 23041), (141, 23047), (143, 23077), (145, 23164), (168, 23296), (174, 23350), (177, 23377), (191, 23467), (192, 23479), (204, 23551), (206, 23569), (208, 23590), (210, 23596), (211, 23599), (213, 23623), (215, 23635), (216, 23644),

Gene: King2_21 Start: 18492, Stop: 20561, Start Num: 4
Candidate Starts for King2_21:
(1, 18408), (Start: 4 @18492 has 38 MA's), (5, 18507), (12, 18600), (14, 18612), (18, 18660), (21, 18672), (29, 18729), (31, 18741), (33, 18762), (34, 18786), (38, 18825), (46, 18882), (53, 18999), (58, 19032), (60, 19053), (72, 19143), (85, 19308), (94, 19371), (108, 19533), (118, 19656), (120, 19692), (121, 19698), (123, 19716), (124, 19734), (128, 19764), (129, 19788), (130, 19797), (134, 19845), (135, 19860), (140, 19893), (144, 19956), (147, 20037), (159, 20109), (161, 20151), (166, 20181), (177, 20283), (183, 20319), (184, 20337), (212, 20520), (214, 20535),

Gene: Linus_26 Start: 21685, Stop: 23655, Start Num: 4
Candidate Starts for Linus_26:
(2, 21631), (3, 21643), (Start: 4 @21685 has 38 MA's), (8, 21748), (11, 21796), (14, 21811), (17, 21847), (20, 21868), (22, 21874), (Start: 24 @21889 has 1 MA's), (26, 21901), (28, 21925), (34, 21979), (35, 21985), (39, 22033), (45, 22072), (47, 22099), (52, 22168), (53, 22192), (56, 22210), (62, 22261), (65, 22309), (73, 22348), (80, 22465), (82, 22477), (87, 22498), (98, 22534), (99, 22552), (101, 22585), (107, 22651), (110, 22693), (113, 22732), (114, 22750), (119, 22819), (120, 22843), (122, 22858), (123, 22867), (124, 22885), (128, 22915), (134, 22996), (137, 23020), (138, 23038), (139, 23041), (141, 23047), (143, 23077), (145, 23164), (168, 23296), (174, 23350), (177, 23377), (191, 23467), (192, 23479), (204, 23551), (206, 23569), (208, 23590), (210, 23596), (211, 23599), (213, 23623), (215, 23635), (216, 23644),

Gene: Lymara_26 Start: 21683, Stop: 23653, Start Num: 4
Candidate Starts for Lymara_26:
(3, 21641), (Start: 4 @21683 has 38 MA's), (8, 21746), (11, 21794), (13, 21803), (14, 21809), (17, 21845), (22, 21872), (Start: 24 @21887 has 1 MA's), (26, 21899), (28, 21923), (34, 21977), (35, 21983), (39, 22031), (45, 22070), (47, 22097), (53, 22190), (56, 22208), (62, 22259), (65, 22307), (67, 22322), (80, 22463), (82, 22475), (99, 22550), (101, 22583), (107, 22649), (110, 22691), (114, 22748), (115, 22760), (122, 22856), (123, 22865), (124, 22883), (127, 22895), (128, 22913), (134, 22994), (137, 23018), (139, 23039), (141, 23045), (145, 23162), (148, 23213), (162, 23246), (168, 23294), (177, 23375), (180, 23393), (186, 23432), (191, 23465), (192, 23477), (193, 23483), (204, 23549), (206, 23567), (208, 23588), (210, 23594), (213, 23621), (216, 23642),

Gene: Martha_23 Start: 18767, Stop: 20836, Start Num: 4
Candidate Starts for Martha_23:
(Start: 4 @18767 has 38 MA's), (12, 18875), (14, 18887), (18, 18935), (29, 19004), (34, 19061), (38, 19100), (42, 19133), (46, 19157), (48, 19187), (53, 19274), (72, 19418), (85, 19583), (104, 19754), (108, 19808), (109, 19811), (118, 19931), (124, 20009), (128, 20039), (130, 20072), (134, 20120), (135, 20135), (140, 20168), (149, 20351), (150, 20363), (161, 20426), (167, 20471), (177, 20558), (183, 20594), (186, 20615), (194, 20669), (199, 20705), (201, 20711), (206, 20750), (212, 20795),

Gene: Mordred_26 Start: 21685, Stop: 23655, Start Num: 4
Candidate Starts for Mordred_26:
(2, 21631), (3, 21643), (Start: 4 @21685 has 38 MA's), (8, 21748), (11, 21796), (14, 21811), (17, 21847), (20, 21868), (22, 21874), (Start: 24 @21889 has 1 MA's), (28, 21925), (34, 21979), (35, 21985), (39, 22033), (45, 22072), (47, 22099), (52, 22168), (53, 22192), (56, 22210), (62, 22261), (65, 22309), (73, 22348), (80, 22465), (82, 22477), (87, 22498), (98, 22534), (99, 22552), (101, 22585), (107, 22651), (110, 22693), (113, 22732), (114, 22750), (119, 22819), (120, 22843), (122, 22858), (123, 22867), (124, 22885), (128, 22915), (134, 22996), (137, 23020), (138, 23038), (139, 23041), (141, 23047), (143, 23077), (145, 23164), (168, 23296), (174, 23350), (177, 23377), (191, 23467), (192, 23479), (204, 23551), (206, 23569), (208, 23590), (210, 23596), (211, 23599), (213, 23623), (215, 23635), (216, 23644),

Gene: MoyaNatalis_26 Start: 21688, Stop: 23658, Start Num: 4
Candidate Starts for MoyaNatalis_26:
(2, 21634), (3, 21646), (Start: 4 @21688 has 38 MA's), (8, 21751), (11, 21799), (14, 21814), (17, 21850), (20, 21871), (22, 21877), (Start: 24 @21892 has 1 MA's), (26, 21904), (28, 21928), (34, 21982), (35, 21988), (39, 22036), (45, 22075), (47, 22102), (52, 22171), (53, 22195), (56, 22213), (62, 22264), (65, 22312), (73, 22351), (80, 22468), (82, 22480), (87, 22501), (98, 22537), (99, 22555), (101, 22588), (107, 22654), (110, 22696), (113, 22735), (114, 22753), (119, 22822), (120, 22846), (122, 22861), (123, 22870), (124, 22888), (128, 22918), (134, 22999), (137, 23023), (138, 23041), (139, 23044), (141, 23050), (143, 23080), (145, 23167), (168, 23299), (174, 23353), (177, 23380), (191,

23470), (192, 23482), (204, 23554), (206, 23572), (208, 23593), (210, 23599), (211, 23602), (213, 23626), (215, 23638), (216, 23647),

Gene: NathanVaag_21 Start: 18498, Stop: 20567, Start Num: 4
Candidate Starts for NathanVaag_21:
(Start: 4 @18498 has 38 MA's), (5, 18513), (12, 18606), (14, 18618), (18, 18666), (23, 18693), (29, 18735), (30, 18738), (33, 18768), (34, 18792), (42, 18864), (43, 18867), (46, 18888), (48, 18918), (50, 18942), (53, 19005), (69, 19143), (72, 19149), (79, 19260), (85, 19314), (94, 19377), (109, 19542), (124, 19740), (128, 19770), (129, 19794), (130, 19803), (134, 19851), (135, 19866), (140, 19899), (159, 20115), (161, 20157), (177, 20289), (186, 20346), (187, 20352), (194, 20400), (195, 20406), (206, 20481), (212, 20526),

Gene: Piccoletto_21 Start: 18497, Stop: 20566, Start Num: 4
Candidate Starts for Piccoletto_21:
(1, 18413), (Start: 4 @18497 has 38 MA's), (5, 18512), (12, 18605), (18, 18665), (23, 18692), (29, 18734), (30, 18737), (33, 18767), (34, 18791), (42, 18863), (46, 18887), (48, 18917), (50, 18941), (53, 19004), (69, 19142), (72, 19148), (79, 19259), (85, 19313), (94, 19376), (109, 19541), (124, 19739), (128, 19769), (130, 19802), (134, 19850), (135, 19865), (140, 19898), (159, 20114), (161, 20156), (177, 20288), (186, 20345), (187, 20351), (194, 20399), (195, 20405), (206, 20480), (212, 20525),

Gene: Pippa_23 Start: 18865, Stop: 20934, Start Num: 4
Candidate Starts for Pippa_23:
(Start: 4 @18865 has 38 MA's), (12, 18973), (14, 18985), (18, 19033), (29, 19102), (38, 19198), (46, 19255), (48, 19285), (53, 19372), (57, 19393), (72, 19516), (85, 19681), (94, 19744), (104, 19852), (108, 19906), (109, 19909), (118, 20029), (124, 20107), (128, 20137), (130, 20170), (134, 20218), (135, 20233), (140, 20266), (149, 20449), (150, 20461), (161, 20524), (167, 20569), (177, 20656), (183, 20692), (186, 20713), (194, 20767), (199, 20803), (201, 20809), (206, 20848), (212, 20893),

Gene: PrincessTrina_26 Start: 21688, Stop: 23658, Start Num: 4
Candidate Starts for PrincessTrina_26:
(2, 21634), (3, 21646), (Start: 4 @21688 has 38 MA's), (8, 21751), (11, 21799), (14, 21814), (17, 21850), (20, 21871), (22, 21877), (Start: 24 @21892 has 1 MA's), (26, 21904), (28, 21928), (34, 21982), (35, 21988), (39, 22036), (45, 22075), (47, 22102), (52, 22171), (53, 22195), (56, 22213), (62, 22264), (65, 22312), (73, 22351), (80, 22468), (82, 22480), (87, 22501), (98, 22537), (99, 22555), (101, 22588), (107, 22654), (110, 22696), (113, 22735), (114, 22753), (119, 22822), (120, 22846), (122, 22861), (123, 22870), (124, 22888), (128, 22918), (134, 22999), (137, 23023), (138, 23041), (139, 23044), (141, 23050), (143, 23080), (145, 23167), (168, 23299), (174, 23353), (177, 23380), (191, 23470), (192, 23482), (204, 23554), (206, 23572), (208, 23593), (210, 23599), (211, 23602), (213, 23626), (215, 23638), (216, 23647),

Gene: RosiePosie_26 Start: 21688, Stop: 23658, Start Num: 4
Candidate Starts for RosiePosie_26:
(2, 21634), (3, 21646), (Start: 4 @21688 has 38 MA's), (8, 21751), (11, 21799), (14, 21814), (17, 21850), (20, 21871), (22, 21877), (Start: 24 @21892 has 1 MA's), (26, 21904), (28, 21928), (34, 21982), (35, 21988), (39, 22036), (45, 22075), (47, 22102), (52, 22171), (53, 22195), (56, 22213), (62, 22264), (65, 22312), (73, 22351), (80, 22468), (82, 22480), (87, 22501), (98, 22537), (99, 22555), (101, 22588), (107, 22654), (110, 22696), (113, 22735), (114, 22753), (119, 22822), (120, 22846), (122, 22861), (123, 22870), (124, 22888), (128, 22918), (134, 22999), (137, 23023), (138, 23041), (139, 23044), (141, 23050), (143, 23080), (145, 23167), (168, 23299), (174, 23353), (177, 23380), (191, 23470), (192, 23482), (204, 23554), (206, 23572), (208, 23593), (210, 23599), (211, 23602), (213, 23626), (215, 23638), (216, 23647),

Gene: Scavito_26 Start: 21685, Stop: 23655, Start Num: 4

Candidate Starts for Scavito_26:
(2, 21631), (3, 21643), (Start: 4 @21685 has 38 MA's), (8, 21748), (11, 21796), (14, 21811), (17, 21847), (20, 21868), (22, 21874), (Start: 24 @21889 has 1 MA's), (28, 21925), (34, 21979), (35, 21985), (39, 22033), (45, 22072), (47, 22099), (52, 22168), (53, 22192), (56, 22210), (62, 22261), (65, 22309), (73, 22348), (80, 22465), (82, 22477), (87, 22498), (98, 22534), (99, 22552), (101, 22585), (107, 22651), (110, 22693), (113, 22732), (114, 22750), (119, 22819), (120, 22843), (122, 22858), (123, 22867), (124, 22885), (128, 22915), (134, 22996), (137, 23020), (138, 23038), (139, 23041), (141, 23047), (143, 23077), (145, 23164), (168, 23296), (174, 23350), (177, 23377), (191, 23467), (192, 23479), (204, 23551), (206, 23569), (208, 23590), (210, 23596), (211, 23599), (213, 23623), (215, 23635), (216, 23644),

Gene: Shade_23 Start: 18805, Stop: 20874, Start Num: 4
Candidate Starts for Shade_23:
(Start: 4 @18805 has 38 MA's), (12, 18913), (14, 18925), (18, 18973), (29, 19042), (34, 19099), (38, 19138), (42, 19171), (46, 19195), (48, 19225), (49, 19240), (53, 19312), (72, 19456), (85, 19621), (88, 19660), (93, 19678), (94, 19684), (96, 19687), (108, 19846), (109, 19849), (118, 19969), (124, 20047), (128, 20077), (130, 20110), (134, 20158), (135, 20173), (140, 20206), (149, 20389), (150, 20401), (161, 20464), (167, 20509), (177, 20596), (183, 20632), (186, 20653), (194, 20707), (199, 20743), (201, 20749), (206, 20788), (212, 20833),

Gene: Sicarius2_24 Start: 19283, Stop: 21313, Start Num: 4
Candidate Starts for Sicarius2_24:
(1, 19202), (Start: 4 @19283 has 38 MA's), (14, 19400), (18, 19451), (25, 19484), (29, 19520), (34, 19577), (38, 19616), (46, 19673), (48, 19703), (50, 19727), (56, 19808), (74, 19946), (76, 19949), (101, 20159), (105, 20201), (106, 20222), (110, 20261), (121, 20417), (124, 20453), (128, 20483), (134, 20564), (136, 20582), (139, 20609), (144, 20675), (146, 20744), (159, 20897), (165, 20966), (179, 21077), (182, 21089), (185, 21110), (196, 21170), (203, 21212), (207, 21242),

Gene: Sonny_23 Start: 18826, Stop: 20895, Start Num: 4
Candidate Starts for Sonny_23:
(Start: 4 @18826 has 38 MA's), (12, 18934), (14, 18946), (18, 18994), (29, 19063), (34, 19120), (38, 19159), (42, 19192), (46, 19216), (48, 19246), (49, 19261), (53, 19333), (72, 19477), (85, 19642), (88, 19681), (93, 19699), (94, 19705), (96, 19708), (108, 19867), (109, 19870), (118, 19990), (124, 20068), (128, 20098), (130, 20131), (134, 20179), (135, 20194), (140, 20227), (149, 20410), (150, 20422), (161, 20485), (167, 20530), (177, 20617), (183, 20653), (186, 20674), (194, 20728), (199, 20764), (201, 20770), (206, 20809), (212, 20854),

Gene: TaeYoung_23 Start: 18830, Stop: 20899, Start Num: 4
Candidate Starts for TaeYoung_23:
(Start: 4 @18830 has 38 MA's), (12, 18938), (14, 18950), (18, 18998), (29, 19067), (34, 19124), (38, 19163), (42, 19196), (46, 19220), (48, 19250), (53, 19337), (72, 19481), (85, 19646), (104, 19817), (108, 19871), (109, 19874), (118, 19994), (124, 20072), (128, 20102), (130, 20135), (134, 20183), (135, 20198), (140, 20231), (149, 20414), (150, 20426), (161, 20489), (167, 20534), (177, 20621), (183, 20657), (186, 20678), (194, 20732), (199, 20768), (201, 20774), (206, 20813), (212, 20858),

Gene: Tophat_26 Start: 21687, Stop: 23657, Start Num: 4
Candidate Starts for Tophat_26:
(2, 21633), (3, 21645), (Start: 4 @21687 has 38 MA's), (8, 21750), (11, 21798), (14, 21813), (17, 21849), (20, 21870), (22, 21876), (Start: 24 @21891 has 1 MA's), (28, 21927), (34, 21981), (35, 21987), (39, 22035), (45, 22074), (47, 22101), (52, 22170), (53, 22194), (56, 22212), (62, 22263), (65, 22311), (73, 22350), (80, 22467), (82, 22479), (87, 22500), (98, 22536), (99, 22554), (101, 22587), (107, 22653), (110, 22695), (113, 22734), (114, 22752), (119, 22821), (120, 22845), (122, 22860), (123, 22869), (124, 22887), (128, 22917), (134, 22998), (137, 23022), (138, 23040), (139, 23043),

(141, 23049), (143, 23079), (145, 23166), (168, 23298), (174, 23352), (177, 23379), (191, 23469), (192, 23481), (204, 23553), (206, 23571), (208, 23592), (210, 23598), (211, 23601), (213, 23625), (215, 23637), (216, 23646),

Gene: Wyborn_24 Start: 19141, Stop: 21291, Start Num: 4
Candidate Starts for Wyborn_24:
(1, 19060), (Start: 4 @19141 has 38 MA's), (14, 19258), (18, 19309), (25, 19342), (29, 19378), (34, 19435), (46, 19531), (48, 19561), (50, 19585), (56, 19666), (74, 19804), (76, 19807), (97, 19975), (98, 19993), (101, 20044), (105, 20086), (106, 20107), (110, 20146), (112, 20158), (119, 20272), (121, 20302), (124, 20338), (128, 20368), (134, 20449), (161, 20839), (174, 20947), (183, 21016), (188, 21052), (192, 21082), (209, 21187), (219, 21250),

Gene: Zartrosa_23 Start: 18829, Stop: 20898, Start Num: 4
Candidate Starts for Zartrosa_23:
(Start: 4 @18829 has 38 MA's), (12, 18937), (14, 18949), (18, 18997), (29, 19066), (34, 19123), (38, 19162), (42, 19195), (46, 19219), (48, 19249), (49, 19264), (53, 19336), (72, 19480), (85, 19645), (88, 19684), (93, 19702), (94, 19708), (96, 19711), (108, 19870), (109, 19873), (118, 19993), (124, 20071), (128, 20101), (130, 20134), (134, 20182), (135, 20197), (140, 20230), (149, 20413), (150, 20425), (161, 20488), (167, 20533), (177, 20620), (183, 20656), (186, 20677), (194, 20731), (199, 20767), (201, 20773), (206, 20812), (212, 20857),