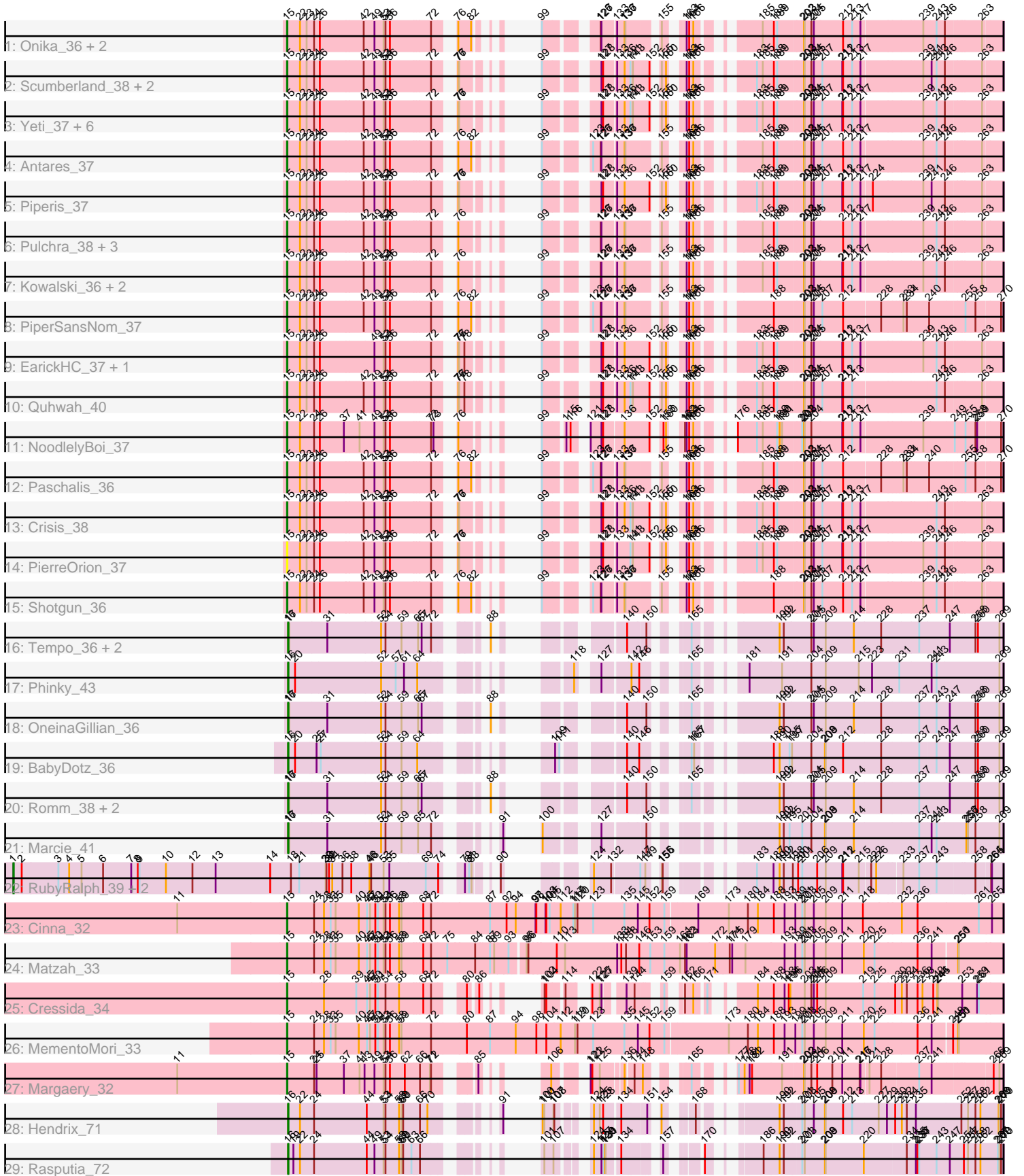


Pham 195647



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 195647 Report

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

Pham number 195647 has 51 members, 2 are drafts.

Phages represented in each track:

- Track 1 : Onika_36, Cranjjs_38, CrazyRich_36
- Track 2 : Scumberland_38, Selwyn23_38, LittleFortune_38
- Track 3 : Yeti_37, Honeyfin_38, Phrancesco_37, Ganandorf_36, Jefe_37, Phorgeous_36, Busephilis_36
- Track 4 : Antares_37
- Track 5 : Piperis_37
- Track 6 : Pulchra_38, Jollipop_37, Hermeonysus_36, BrazzalePHS_36
- Track 7 : Kowalski_36, Ramiel05_36, Savannah_36
- Track 8 : PiperSansNom_37
- Track 9 : EarickHC_37, KaiHaiDragon_37
- Track 10 : Quhwah_40
- Track 11 : NoodlelyBoi_37
- Track 12 : Paschalis_36
- Track 13 : Crisis_38
- Track 14 : PierreOrion_37
- Track 15 : Shotgun_36
- Track 16 : Tempo_36, Fregley_37, CandC_35
- Track 17 : Phinky_43
- Track 18 : OneinaGillian_36
- Track 19 : BabyDotz_36
- Track 20 : Romm_38, Kelcole_35, RobinRose_38
- Track 21 : Marcie_41
- Track 22 : RubyRalph_39, SadLad_41, Fransoyer_39
- Track 23 : Cinna_32
- Track 24 : Matzah_33
- Track 25 : Cressida_34
- Track 26 : MementoMori_33
- Track 27 : Margaery_32
- Track 28 : Hendrix_71
- Track 29 : Rasputia_72

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

The start number called the most often in the published annotations is 15, it was called in 35 of the 49 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Antares_37, BrazzalePHS_36, Busephilis_36, Cinna_32, Cranjis_38, CrazyRich_36, Cressida_34, Crisis_38, EarickHC_37, Ganandorf_36, Hermeonysus_36, Honeyfin_38, Jefe_37, Jollipop_37, KaiHaiDragon_37, Kowalski_36, LittleFortune_38, Margaery_32, Matzah_33, MementoMori_33, NoodlelyBoi_37, Onika_36, Paschalis_36, Phorgeous_36, Phrancesco_37, PierreOrion_37, PiperSansNom_37, Piperis_37, Pulchra_38, Quhwah_40, Ramiel05_36, Savannah_36, Scumberland_38, Selwyn23_38, Shotgun_36, Yeti_37,

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

-

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

- BabyDotz_36, CandC_35, Fransoyer_39, Fregley_37, Hendrix_71, Kelcole_35, Marcie_41, OneinaGillian_36, Phinky_43, Rasputia_72, RobinRose_38, Romm_38, RubyRalph_39, SadLad_41, Tempo_36,

Summary by start number:

Start 1:

- Found in 3 of 51 (5.9%) of genes in pham
- Manual Annotations of this start: 3 of 49
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fransoyer_39 (EG), RubyRalph_39 (EG), SadLad_41 (EG),

Start 15:

- Found in 36 of 51 (70.6%) of genes in pham
- Manual Annotations of this start: 35 of 49
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Antares_37 (EC), BrazzalePHS_36 (EC), Busephilis_36 (EC), Cinna_32 (EI), Cranjis_38 (EC), CrazyRich_36 (EC), Cressida_34 (EI), Crisis_38 (EC), EarickHC_37 (EC), Ganandorf_36 (EC), Hermeonysus_36 (EC), Honeyfin_38 (EC), Jefe_37 (EC), Jollipop_37 (EC), KaiHaiDragon_37 (EC), Kowalski_36 (EC), LittleFortune_38 (EC), Margaery_32 (EI), Matzah_33 (EI), MementoMori_33 (EI), NoodlelyBoi_37 (EC), Onika_36 (EC), Paschalis_36 (EC), Phorgeous_36 (EC), Phrancesco_37 (EC), PierreOrion_37 (EC), PiperSansNom_37 (EC), Piperis_37 (EC), Pulchra_38 (EC), Quhwah_40 (EC), Ramiel05_36 (EC), Savannah_36 (EC), Scumberland_38 (EC), Selwyn23_38 (EC), Shotgun_36 (EC), Yeti_37 (EC),

Start 16:

- Found in 12 of 51 (23.5%) of genes in pham
- Manual Annotations of this start: 11 of 49
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BabyDotz_36 (EG), CandC_35 (EG), Fregley_37 (EG), Hendrix_71 (GC), Kelcole_35 (EG), Marcie_41 (EG), OneinaGillian_36 (EG), Phinky_43 (EG), Rasputia_72 (GC), RobinRose_38 (EG), Romm_38 (EG), Tempo_36 (EG),

Summary by clusters:

There are 4 clusters represented in this pham: EI, EG, GC, EC,

Info for manual annotations of cluster EC:

- Start number 15 was manually annotated 30 times for cluster EC.

Info for manual annotations of cluster EG:

- Start number 1 was manually annotated 3 times for cluster EG.
- Start number 16 was manually annotated 9 times for cluster EG.

Info for manual annotations of cluster EI:

- Start number 15 was manually annotated 5 times for cluster EI.

Info for manual annotations of cluster GC:

- Start number 16 was manually annotated 2 times for cluster GC.

Gene Information:

Gene: Antares_37 Start: 23711, Stop: 25657, Start Num: 15

Candidate Starts for Antares_37:

(Start: 15 @23711 has 35 MA's), (22, 23756), (23, 23780), (24, 23807), (26, 23828), (42, 23984), (49, 24020), (53, 24053), (54, 24059), (56, 24074), (72, 24218), (76, 24260), (82, 24305), (99, 24338), (123, 24446), (126, 24473), (127, 24476), (133, 24521), (136, 24548), (137, 24551), (155, 24641), (163, 24680), (164, 24689), (166, 24704), (185, 24851), (188, 24890), (189, 24902), (202, 24992), (203, 24995), (204, 25019), (205, 25028), (207, 25058), (212, 25133), (213, 25166), (217, 25196), (239, 25403), (243, 25442), (246, 25472), (263, 25589),

Gene: BabyDotz_36 Start: 26482, Stop: 28446, Start Num: 16

Candidate Starts for BabyDotz_36:

(Start: 16 @26482 has 11 MA's), (20, 26506), (25, 26578), (27, 26593), (52, 26809), (54, 26824), (59, 26881), (64, 26932), (109, 27151), (111, 27166), (140, 27319), (146, 27361), (165, 27451), (167, 27460), (188, 27640), (190, 27661), (195, 27694), (197, 27703), (204, 27769), (208, 27817), (209, 27820), (212, 27883), (228, 28018), (237, 28147), (243, 28204), (247, 28252), (258, 28345), (260, 28354), (269, 28432),

Gene: BrazzalePHS_36 Start: 23506, Stop: 25452, Start Num: 15

Candidate Starts for BrazzalePHS_36:

(Start: 15 @23506 has 35 MA's), (22, 23551), (23, 23575), (24, 23602), (26, 23623), (42, 23779), (49, 23815), (53, 23848), (54, 23854), (56, 23869), (72, 24013), (76, 24055), (99, 24133), (126, 24268), (127, 24271), (133, 24316), (136, 24343), (137, 24346), (155, 24436), (163, 24475), (164, 24484), (166, 24499), (185, 24646), (188, 24685), (189, 24697), (202, 24787), (203, 24790), (204, 24814), (205, 24823), (212, 24928), (213, 24961), (217, 24991), (239, 25198), (243, 25237), (246, 25267), (263, 25384),

Gene: Busephilis_36 Start: 23441, Stop: 25393, Start Num: 15

Candidate Starts for Busephilis_36:

(Start: 15 @23441 has 35 MA's), (22, 23486), (23, 23510), (24, 23537), (26, 23558), (42, 23714), (49, 23750), (53, 23783), (54, 23789), (56, 23804), (72, 23948), (76, 23990), (77, 23993), (99, 24074), (127, 24212), (128, 24218), (133, 24257), (136, 24284), (141, 24305), (143, 24314), (152, 24368), (155, 24377), (160, 24392), (163, 24416), (164, 24425), (166, 24440), (183, 24566), (185, 24587),

(188, 24626), (189, 24638), (202, 24728), (203, 24731), (204, 24755), (205, 24764), (207, 24794), (211, 24866), (212, 24869), (213, 24902), (217, 24932), (239, 25139), (243, 25178), (246, 25208), (263, 25325),

Gene: CandC_35 Start: 24614, Stop: 26587, Start Num: 16

Candidate Starts for CandC_35:

(Start: 16 @24614 has 11 MA's), (17, 24617), (31, 24752), (52, 24944), (54, 24959), (59, 25016), (65, 25070), (67, 25082), (72, 25115), (88, 25220), (140, 25454), (150, 25511), (165, 25586), (190, 25796), (192, 25811), (204, 25910), (205, 25919), (209, 25961), (214, 26063), (228, 26159), (237, 26288), (247, 26393), (258, 26486), (260, 26495), (269, 26573),

Gene: Cinna_32 Start: 22859, Stop: 25375, Start Num: 15

Candidate Starts for Cinna_32:

(11, 22466), (Start: 15 @22859 has 35 MA's), (24, 22952), (28, 22985), (33, 23009), (35, 23027), (40, 23111), (45, 23141), (47, 23150), (50, 23168), (51, 23177), (53, 23198), (54, 23204), (56, 23219), (58, 23252), (59, 23261), (68, 23336), (72, 23363), (87, 23570), (92, 23630), (94, 23663), (97, 23735), (98, 23738), (103, 23771), (104, 23774), (105, 23786), (112, 23825), (117, 23870), (119, 23876), (120, 23885), (123, 23942), (135, 24053), (145, 24101), (152, 24140), (159, 24194), (169, 24296), (173, 24407), (180, 24476), (184, 24512), (188, 24569), (193, 24608), (199, 24641), (201, 24665), (203, 24674), (205, 24707), (209, 24749), (211, 24809), (218, 24884), (232, 25019), (236, 25076), (261, 25289), (265, 25334),

Gene: Cranjis_38 Start: 23666, Stop: 25612, Start Num: 15

Candidate Starts for Cranjis_38:

(Start: 15 @23666 has 35 MA's), (22, 23711), (23, 23735), (24, 23762), (26, 23783), (42, 23939), (49, 23975), (53, 24008), (54, 24014), (56, 24029), (72, 24173), (76, 24215), (82, 24260), (99, 24293), (126, 24428), (127, 24431), (133, 24476), (136, 24503), (137, 24506), (155, 24596), (163, 24635), (164, 24644), (166, 24659), (185, 24806), (188, 24845), (189, 24857), (202, 24947), (203, 24950), (204, 24974), (205, 24983), (212, 25088), (213, 25121), (217, 25151), (239, 25358), (243, 25397), (246, 25427), (263, 25544),

Gene: CrazyRich_36 Start: 23475, Stop: 25421, Start Num: 15

Candidate Starts for CrazyRich_36:

(Start: 15 @23475 has 35 MA's), (22, 23520), (23, 23544), (24, 23571), (26, 23592), (42, 23748), (49, 23784), (53, 23817), (54, 23823), (56, 23838), (72, 23982), (76, 24024), (82, 24069), (99, 24102), (126, 24237), (127, 24240), (133, 24285), (136, 24312), (137, 24315), (155, 24405), (163, 24444), (164, 24453), (166, 24468), (185, 24615), (188, 24654), (189, 24666), (202, 24756), (203, 24759), (204, 24783), (205, 24792), (212, 24897), (213, 24930), (217, 24960), (239, 25167), (243, 25206), (246, 25236), (263, 25353),

Gene: Cressida_34 Start: 22922, Stop: 24850, Start Num: 15

Candidate Starts for Cressida_34:

(Start: 15 @22922 has 35 MA's), (28, 23048), (39, 23165), (45, 23204), (47, 23213), (50, 23231), (51, 23240), (54, 23267), (58, 23315), (68, 23399), (72, 23426), (80, 23495), (86, 23522), (102, 23558), (104, 23564), (114, 23615), (122, 23651), (125, 23678), (127, 23684), (139, 23738), (144, 23765), (159, 23816), (162, 23837), (166, 23867), (171, 23900), (184, 23990), (188, 24047), (193, 24086), (194, 24101), (196, 24107), (203, 24152), (204, 24176), (205, 24185), (206, 24197), (209, 24227), (219, 24362), (225, 24401), (230, 24473), (232, 24494), (234, 24512), (236, 24551), (238, 24569), (242, 24602), (244, 24617), (245, 24620), (253, 24704), (259, 24758), (261, 24764),

Gene: Crisis_38 Start: 23460, Stop: 25412, Start Num: 15

Candidate Starts for Crisis_38:

(Start: 15 @23460 has 35 MA's), (22, 23505), (23, 23529), (24, 23556), (26, 23577), (42, 23733), (49, 23769), (53, 23802), (54, 23808), (56, 23823), (72, 23967), (76, 24009), (77, 24012), (99, 24093), (127, 24231), (128, 24237), (133, 24276), (136, 24303), (141, 24324), (143, 24333), (152, 24387), (155, 24396), (160, 24411), (163, 24435), (164, 24444), (166, 24459), (183, 24585), (185, 24606), (188, 24645), (189, 24657), (202, 24747), (203, 24750), (204, 24774), (205, 24783), (207, 24813), (211, 24885), (212, 24888), (213, 24921), (217, 24951), (243, 25197), (246, 25227), (263, 25344),

Gene: EarickHC_37 Start: 23386, Stop: 25338, Start Num: 15

Candidate Starts for EarickHC_37:

(Start: 15 @23386 has 35 MA's), (22, 23431), (23, 23455), (24, 23482), (26, 23503), (49, 23695), (53, 23728), (54, 23734), (56, 23749), (72, 23893), (76, 23935), (77, 23938), (78, 23956), (99, 24019), (127, 24157), (128, 24163), (133, 24202), (136, 24229), (152, 24313), (155, 24322), (160, 24337), (163, 24361), (164, 24370), (166, 24385), (183, 24511), (185, 24532), (188, 24571), (189, 24583), (202, 24673), (203, 24676), (204, 24700), (205, 24709), (211, 24811), (212, 24814), (213, 24847), (217, 24877), (239, 25084), (243, 25123), (246, 25153), (263, 25270),

Gene: Fransoyer_39 Start: 25911, Stop: 28880, Start Num: 1

Candidate Starts for Fransoyer_39:

(Start: 1 @25911 has 3 MA's), (2, 25941), (3, 26073), (4, 26112), (5, 26157), (6, 26235), (7, 26337), (8, 26361), (9, 26367), (10, 26463), (12, 26559), (13, 26643), (14, 26841), (18, 26916), (21, 26943), (29, 27033), (30, 27036), (32, 27045), (34, 27057), (36, 27090), (38, 27117), (46, 27183), (48, 27189), (53, 27234), (55, 27255), (69, 27384), (74, 27429), (79, 27471), (81, 27486), (83, 27495), (90, 27528), (124, 27660), (132, 27720), (147, 27816), (149, 27834), (155, 27858), (156, 27861), (183, 28047), (187, 28107), (190, 28128), (192, 28143), (198, 28176), (200, 28194), (201, 28209), (206, 28263), (209, 28293), (211, 28353), (212, 28356), (215, 28413), (222, 28443), (226, 28461), (233, 28545), (237, 28602), (243, 28656), (258, 28788), (264, 28836), (265, 28839),

Gene: Fregley_37 Start: 25184, Stop: 27157, Start Num: 16

Candidate Starts for Fregley_37:

(Start: 16 @25184 has 11 MA's), (17, 25187), (31, 25322), (52, 25514), (54, 25529), (59, 25586), (65, 25640), (67, 25652), (72, 25685), (88, 25790), (140, 26024), (150, 26081), (165, 26156), (190, 26366), (192, 26381), (204, 26480), (205, 26489), (209, 26531), (214, 26633), (228, 26729), (237, 26858), (247, 26963), (258, 27056), (260, 27065), (269, 27143),

Gene: Ganandorf_36 Start: 23522, Stop: 25474, Start Num: 15

Candidate Starts for Ganandorf_36:

(Start: 15 @23522 has 35 MA's), (22, 23567), (23, 23591), (24, 23618), (26, 23639), (42, 23795), (49, 23831), (53, 23864), (54, 23870), (56, 23885), (72, 24029), (76, 24071), (77, 24074), (99, 24155), (127, 24293), (128, 24299), (133, 24338), (136, 24365), (141, 24386), (143, 24395), (152, 24449), (155, 24458), (160, 24473), (163, 24497), (164, 24506), (166, 24521), (183, 24647), (185, 24668), (188, 24707), (189, 24719), (202, 24809), (203, 24812), (204, 24836), (205, 24845), (207, 24875), (211, 24947), (212, 24950), (213, 24983), (217, 25013), (239, 25220), (243, 25259), (246, 25289), (263, 25406),

Gene: Hendrix_71 Start: 44066, Stop: 46000, Start Num: 16

Candidate Starts for Hendrix_71:

(Start: 16 @44066 has 11 MA's), (22, 44108), (24, 44156), (44, 44342), (53, 44402), (54, 44408), (58, 44456), (59, 44465), (60, 44471), (66, 44528), (70, 44555), (91, 44684), (100, 44690), (101, 44696), (107, 44726), (108, 44729), (124, 44792), (125, 44813), (128, 44825), (134, 44876), (151, 44951), (154, 44963), (168, 45026), (190, 45209), (192, 45224), (201, 45284), (203, 45293), (205, 45323), (208, 45362), (209, 45365), (212, 45428), (213, 45461), (227, 45554), (229, 45584), (230, 45614), (232, 45638), (234, 45656), (235, 45686), (252, 45848), (257, 45872), (258, 45899), (262, 45917), (268, 45983), (269, 45986), (270, 45992),

Gene: Hermeonysus_36 Start: 23395, Stop: 25341, Start Num: 15

Candidate Starts for Hermeonysus_36:

(Start: 15 @23395 has 35 MA's), (22, 23440), (23, 23464), (24, 23491), (26, 23512), (42, 23668), (49, 23704), (53, 23737), (54, 23743), (56, 23758), (72, 23902), (76, 23944), (99, 24022), (126, 24157), (127, 24160), (133, 24205), (136, 24232), (137, 24235), (155, 24325), (163, 24364), (164, 24373), (166, 24388), (185, 24535), (188, 24574), (189, 24586), (202, 24676), (203, 24679), (204, 24703), (205, 24712), (212, 24817), (213, 24850), (217, 24880), (239, 25087), (243, 25126), (246, 25156), (263, 25273),

Gene: Honeyfin_38 Start: 23710, Stop: 25662, Start Num: 15

Candidate Starts for Honeyfin_38:

(Start: 15 @23710 has 35 MA's), (22, 23755), (23, 23779), (24, 23806), (26, 23827), (42, 23983), (49, 24019), (53, 24052), (54, 24058), (56, 24073), (72, 24217), (76, 24259), (77, 24262), (99, 24343), (127, 24481), (128, 24487), (133, 24526), (136, 24553), (141, 24574), (143, 24583), (152, 24637), (155, 24646), (160, 24661), (163, 24685), (164, 24694), (166, 24709), (183, 24835), (185, 24856), (188, 24895), (189, 24907), (202, 24997), (203, 25000), (204, 25024), (205, 25033), (207, 25063), (211, 25135), (212, 25138), (213, 25171), (217, 25201), (239, 25408), (243, 25447), (246, 25477), (263, 25594),

Gene: Jefe_37 Start: 23447, Stop: 25399, Start Num: 15

Candidate Starts for Jefe_37:

(Start: 15 @23447 has 35 MA's), (22, 23492), (23, 23516), (24, 23543), (26, 23564), (42, 23720), (49, 23756), (53, 23789), (54, 23795), (56, 23810), (72, 23954), (76, 23996), (77, 23999), (99, 24080), (127, 24218), (128, 24224), (133, 24263), (136, 24290), (141, 24311), (143, 24320), (152, 24374), (155, 24383), (160, 24398), (163, 24422), (164, 24431), (166, 24446), (183, 24572), (185, 24593), (188, 24632), (189, 24644), (202, 24734), (203, 24737), (204, 24761), (205, 24770), (207, 24800), (211, 24872), (212, 24875), (213, 24908), (217, 24938), (239, 25145), (243, 25184), (246, 25214), (263, 25331),

Gene: Jollipop_37 Start: 23792, Stop: 25738, Start Num: 15

Candidate Starts for Jollipop_37:

(Start: 15 @23792 has 35 MA's), (22, 23837), (23, 23861), (24, 23888), (26, 23909), (42, 24065), (49, 24101), (53, 24134), (54, 24140), (56, 24155), (72, 24299), (76, 24341), (99, 24419), (126, 24554), (127, 24557), (133, 24602), (136, 24629), (137, 24632), (155, 24722), (163, 24761), (164, 24770), (166, 24785), (185, 24932), (188, 24971), (189, 24983), (202, 25073), (203, 25076), (204, 25100), (205, 25109), (212, 25214), (213, 25247), (217, 25277), (239, 25484), (243, 25523), (246, 25553), (263, 25670),

Gene: KaiHaiDragon_37 Start: 23386, Stop: 25338, Start Num: 15

Candidate Starts for KaiHaiDragon_37:

(Start: 15 @23386 has 35 MA's), (22, 23431), (23, 23455), (24, 23482), (26, 23503), (49, 23695), (53, 23728), (54, 23734), (56, 23749), (72, 23893), (76, 23935), (77, 23938), (78, 23956), (99, 24019), (127, 24157), (128, 24163), (133, 24202), (136, 24229), (152, 24313), (155, 24322), (160, 24337), (163, 24361), (164, 24370), (166, 24385), (183, 24511), (185, 24532), (188, 24571), (189, 24583), (202, 24673), (203, 24676), (204, 24700), (205, 24709), (211, 24811), (212, 24814), (213, 24847), (217, 24877), (239, 25084), (243, 25123), (246, 25153), (263, 25270),

Gene: Kelcole_35 Start: 25066, Stop: 27039, Start Num: 16

Candidate Starts for Kelcole_35:

(Start: 16 @25066 has 11 MA's), (17, 25069), (31, 25204), (52, 25396), (54, 25411), (59, 25468), (65, 25522), (67, 25534), (88, 25672), (140, 25906), (150, 25963), (165, 26038), (190, 26248), (192, 26263), (204, 26362), (205, 26371), (209, 26413), (214, 26515), (228, 26611), (237, 26740), (247,

26845), (258, 26938), (260, 26947), (269, 27025),

Gene: Kowalski_36 Start: 23502, Stop: 25448, Start Num: 15

Candidate Starts for Kowalski_36:

(Start: 15 @23502 has 35 MA's), (22, 23547), (23, 23571), (24, 23598), (26, 23619), (42, 23775), (49, 23811), (53, 23844), (54, 23850), (56, 23865), (72, 24009), (76, 24051), (99, 24129), (126, 24264), (127, 24267), (133, 24312), (136, 24339), (137, 24342), (155, 24432), (163, 24471), (164, 24480), (166, 24495), (185, 24642), (188, 24681), (189, 24693), (202, 24783), (203, 24786), (204, 24810), (205, 24819), (211, 24921), (212, 24924), (213, 24957), (217, 24987), (239, 25194), (243, 25233), (246, 25263), (263, 25380),

Gene: LittleFortune_38 Start: 23752, Stop: 25704, Start Num: 15

Candidate Starts for LittleFortune_38:

(Start: 15 @23752 has 35 MA's), (22, 23797), (23, 23821), (24, 23848), (26, 23869), (42, 24025), (49, 24061), (53, 24094), (54, 24100), (56, 24115), (72, 24259), (76, 24301), (77, 24304), (99, 24385), (127, 24523), (128, 24529), (133, 24568), (136, 24595), (141, 24616), (143, 24625), (152, 24679), (155, 24688), (160, 24703), (163, 24727), (164, 24736), (166, 24751), (183, 24877), (185, 24898), (188, 24937), (189, 24949), (202, 25039), (203, 25042), (204, 25066), (205, 25075), (207, 25105), (211, 25177), (212, 25180), (213, 25213), (217, 25243), (239, 25450), (241, 25471), (243, 25489), (246, 25519), (263, 25636),

Gene: Marcie_41 Start: 25722, Stop: 27695, Start Num: 16

Candidate Starts for Marcie_41:

(Start: 16 @25722 has 11 MA's), (17, 25725), (31, 25860), (52, 26052), (54, 26067), (59, 26124), (65, 26178), (72, 26223), (91, 26340), (100, 26349), (127, 26484), (150, 26619), (190, 26904), (192, 26919), (195, 26940), (201, 26985), (204, 27018), (208, 27066), (209, 27069), (214, 27171), (237, 27396), (241, 27438), (243, 27456), (256, 27561), (257, 27567), (258, 27594), (269, 27681),

Gene: Margaery_32 Start: 22803, Stop: 24701, Start Num: 15

Candidate Starts for Margaery_32:

(11, 22407), (Start: 15 @22803 has 35 MA's), (24, 22899), (25, 22908), (37, 23007), (41, 23061), (43, 23079), (49, 23112), (53, 23145), (54, 23151), (56, 23166), (62, 23220), (66, 23271), (71, 23307), (72, 23310), (85, 23406), (106, 23466), (121, 23529), (122, 23535), (125, 23562), (136, 23625), (144, 23649), (148, 23673), (165, 23751), (177, 23820), (178, 23841), (181, 23859), (182, 23868), (191, 23976), (202, 24048), (203, 24051), (204, 24075), (206, 24096), (210, 24150), (211, 24186), (216, 24249), (217, 24252), (221, 24273), (228, 24315), (237, 24432), (241, 24468), (266, 24666), (269, 24687),

Gene: Matzah_33 Start: 22835, Stop: 25315, Start Num: 15

Candidate Starts for Matzah_33:

(Start: 15 @22835 has 35 MA's), (24, 22928), (28, 22961), (33, 22985), (35, 23003), (40, 23087), (45, 23117), (47, 23126), (50, 23144), (51, 23153), (53, 23174), (54, 23180), (56, 23195), (58, 23228), (59, 23237), (68, 23312), (72, 23339), (75, 23396), (84, 23495), (87, 23543), (89, 23558), (93, 23600), (95, 23645), (96, 23651), (110, 23747), (113, 23777), (133, 23963), (134, 23978), (138, 23993), (146, 24041), (153, 24080), (159, 24131), (161, 24188), (162, 24206), (163, 24212), (172, 24314), (174, 24362), (175, 24371), (179, 24419), (193, 24560), (199, 24593), (201, 24617), (203, 24626), (205, 24659), (209, 24701), (211, 24761), (220, 24839), (225, 24875), (236, 25025), (241, 25070), (250, 25154), (251, 25157),

Gene: MementoMori_33 Start: 22559, Stop: 25063, Start Num: 15

Candidate Starts for MementoMori_33:

(Start: 15 @22559 has 35 MA's), (24, 22652), (28, 22685), (33, 22709), (35, 22727), (40, 22811), (45, 22841), (47, 22850), (50, 22868), (51, 22877), (53, 22898), (54, 22904), (56, 22919), (58, 22952), (59,

22961), (72, 23063), (80, 23186), (87, 23270), (94, 23363), (98, 23438), (104, 23474), (112, 23525), (119, 23576), (120, 23585), (123, 23642), (135, 23753), (145, 23801), (152, 23840), (159, 23894), (173, 24107), (180, 24176), (184, 24212), (188, 24269), (193, 24308), (199, 24341), (201, 24365), (203, 24374), (205, 24407), (209, 24449), (211, 24509), (220, 24587), (225, 24623), (236, 24773), (241, 24818), (248, 24884), (250, 24902), (251, 24905),

Gene: NoodlelyBoi_37 Start: 23832, Stop: 25775, Start Num: 15

Candidate Starts for NoodlelyBoi_37:

(Start: 15 @23832 has 35 MA's), (22, 23877), (24, 23928), (26, 23949), (37, 24036), (41, 24090), (49, 24141), (53, 24174), (54, 24180), (56, 24195), (72, 24339), (73, 24348), (76, 24381), (99, 24459), (115, 24522), (116, 24537), (121, 24558), (127, 24597), (128, 24603), (136, 24669), (152, 24750), (158, 24765), (160, 24774), (162, 24792), (163, 24798), (164, 24807), (166, 24822), (176, 24882), (183, 24948), (185, 24969), (189, 25020), (190, 25029), (191, 25038), (201, 25104), (202, 25110), (203, 25113), (204, 25137), (211, 25248), (212, 25251), (213, 25284), (217, 25314), (239, 25521), (249, 25617), (255, 25647), (258, 25683), (259, 25689), (270, 25767),

Gene: OneinaGillian_36 Start: 24713, Stop: 26689, Start Num: 16

Candidate Starts for OneinaGillian_36:

(Start: 16 @24713 has 11 MA's), (17, 24716), (31, 24851), (52, 25043), (54, 25058), (59, 25115), (65, 25169), (67, 25181), (88, 25319), (140, 25553), (150, 25610), (165, 25685), (190, 25895), (192, 25910), (204, 26009), (205, 26018), (209, 26060), (214, 26162), (228, 26258), (237, 26387), (243, 26447), (247, 26495), (258, 26588), (260, 26597), (269, 26675),

Gene: Onika_36 Start: 23477, Stop: 25423, Start Num: 15

Candidate Starts for Onika_36:

(Start: 15 @23477 has 35 MA's), (22, 23522), (23, 23546), (24, 23573), (26, 23594), (42, 23750), (49, 23786), (53, 23819), (54, 23825), (56, 23840), (72, 23984), (76, 24026), (82, 24071), (99, 24104), (126, 24239), (127, 24242), (133, 24287), (136, 24314), (137, 24317), (155, 24407), (163, 24446), (164, 24455), (166, 24470), (185, 24617), (188, 24656), (189, 24668), (202, 24758), (203, 24761), (204, 24785), (205, 24794), (212, 24899), (213, 24932), (217, 24962), (239, 25169), (243, 25208), (246, 25238), (263, 25355),

Gene: Paschalis_36 Start: 23490, Stop: 25430, Start Num: 15

Candidate Starts for Paschalis_36:

(Start: 15 @23490 has 35 MA's), (22, 23535), (23, 23559), (24, 23586), (26, 23607), (42, 23763), (49, 23799), (53, 23832), (54, 23838), (56, 23853), (72, 23997), (76, 24039), (82, 24084), (99, 24117), (123, 24225), (126, 24252), (127, 24255), (133, 24300), (136, 24327), (137, 24330), (155, 24420), (163, 24459), (164, 24468), (166, 24483), (185, 24630), (188, 24669), (189, 24681), (202, 24771), (203, 24774), (204, 24798), (205, 24807), (207, 24837), (212, 24912), (228, 25041), (233, 25110), (234, 25122), (240, 25191), (255, 25302), (258, 25338), (270, 25422),

Gene: Phinky_43 Start: 27523, Stop: 29499, Start Num: 16

Candidate Starts for Phinky_43:

(Start: 16 @27523 has 11 MA's), (20, 27547), (52, 27850), (57, 27901), (61, 27931), (64, 27973), (118, 28234), (127, 28285), (142, 28378), (146, 28405), (165, 28495), (181, 28597), (191, 28714), (204, 28813), (209, 28864), (215, 28984), (223, 29029), (231, 29128), (241, 29242), (243, 29260), (269, 29485),

Gene: Phorgeous_36 Start: 23344, Stop: 25296, Start Num: 15

Candidate Starts for Phorgeous_36:

(Start: 15 @23344 has 35 MA's), (22, 23389), (23, 23413), (24, 23440), (26, 23461), (42, 23617), (49, 23653), (53, 23686), (54, 23692), (56, 23707), (72, 23851), (76, 23893), (77, 23896), (99, 23977), (127, 24115), (128, 24121), (133, 24160), (136, 24187), (141, 24208), (143, 24217), (152, 24271),

(155, 24280), (160, 24295), (163, 24319), (164, 24328), (166, 24343), (183, 24469), (185, 24490), (188, 24529), (189, 24541), (202, 24631), (203, 24634), (204, 24658), (205, 24667), (207, 24697), (211, 24769), (212, 24772), (213, 24805), (217, 24835), (239, 25042), (243, 25081), (246, 25111), (263, 25228),

Gene: Phrancesco_37 Start: 23622, Stop: 25574, Start Num: 15

Candidate Starts for Phrancesco_37:

(Start: 15 @23622 has 35 MA's), (22, 23667), (23, 23691), (24, 23718), (26, 23739), (42, 23895), (49, 23931), (53, 23964), (54, 23970), (56, 23985), (72, 24129), (76, 24171), (77, 24174), (99, 24255), (127, 24393), (128, 24399), (133, 24438), (136, 24465), (141, 24486), (143, 24495), (152, 24549), (155, 24558), (160, 24573), (163, 24597), (164, 24606), (166, 24621), (183, 24747), (185, 24768), (188, 24807), (189, 24819), (202, 24909), (203, 24912), (204, 24936), (205, 24945), (207, 24975), (211, 25047), (212, 25050), (213, 25083), (217, 25113), (239, 25320), (243, 25359), (246, 25389), (263, 25506),

Gene: PierreOrion_37 Start: 23645, Stop: 25597, Start Num: 15

Candidate Starts for PierreOrion_37:

(Start: 15 @23645 has 35 MA's), (22, 23690), (23, 23714), (24, 23741), (26, 23762), (42, 23918), (49, 23954), (53, 23987), (54, 23993), (56, 24008), (72, 24152), (76, 24194), (77, 24197), (99, 24278), (127, 24416), (128, 24422), (133, 24461), (141, 24509), (143, 24518), (152, 24572), (155, 24581), (160, 24596), (163, 24620), (164, 24629), (166, 24644), (183, 24770), (185, 24791), (188, 24830), (189, 24842), (202, 24932), (203, 24935), (204, 24959), (205, 24968), (207, 24998), (211, 25070), (212, 25073), (213, 25106), (217, 25136), (239, 25343), (243, 25382), (246, 25412), (263, 25529),

Gene: PiperSansNom_37 Start: 23797, Stop: 25737, Start Num: 15

Candidate Starts for PiperSansNom_37:

(Start: 15 @23797 has 35 MA's), (22, 23842), (23, 23866), (24, 23893), (26, 23914), (42, 24070), (49, 24106), (53, 24139), (54, 24145), (56, 24160), (72, 24304), (76, 24346), (82, 24391), (99, 24424), (123, 24532), (126, 24559), (127, 24562), (133, 24607), (136, 24634), (137, 24637), (155, 24727), (163, 24766), (164, 24775), (166, 24790), (188, 24976), (202, 25078), (203, 25081), (204, 25105), (205, 25114), (207, 25144), (212, 25219), (228, 25348), (233, 25417), (234, 25429), (240, 25498), (255, 25609), (258, 25645), (270, 25729),

Gene: Piperis_37 Start: 23467, Stop: 25419, Start Num: 15

Candidate Starts for Piperis_37:

(Start: 15 @23467 has 35 MA's), (22, 23512), (23, 23536), (24, 23563), (26, 23584), (42, 23740), (49, 23776), (53, 23809), (54, 23815), (56, 23830), (72, 23974), (76, 24016), (77, 24019), (99, 24100), (127, 24238), (128, 24244), (133, 24283), (136, 24310), (152, 24394), (155, 24403), (160, 24418), (163, 24442), (164, 24451), (166, 24466), (183, 24592), (185, 24613), (188, 24652), (189, 24664), (202, 24754), (203, 24757), (204, 24781), (205, 24790), (207, 24820), (211, 24892), (212, 24895), (213, 24928), (217, 24958), (224, 24994), (239, 25165), (241, 25186), (246, 25234), (263, 25351),

Gene: Pulchra_38 Start: 23867, Stop: 25813, Start Num: 15

Candidate Starts for Pulchra_38:

(Start: 15 @23867 has 35 MA's), (22, 23912), (23, 23936), (24, 23963), (26, 23984), (42, 24140), (49, 24176), (53, 24209), (54, 24215), (56, 24230), (72, 24374), (76, 24416), (99, 24494), (126, 24629), (127, 24632), (133, 24677), (136, 24704), (137, 24707), (155, 24797), (163, 24836), (164, 24845), (166, 24860), (185, 25007), (188, 25046), (189, 25058), (202, 25148), (203, 25151), (204, 25175), (205, 25184), (212, 25289), (213, 25322), (217, 25352), (239, 25559), (243, 25598), (246, 25628), (263, 25745),

Gene: Quhwah_40 Start: 24093, Stop: 26045, Start Num: 15

Candidate Starts for Quhwah_40:

(Start: 15 @24093 has 35 MA's), (22, 24138), (23, 24162), (24, 24189), (26, 24210), (42, 24366), (49, 24402), (53, 24435), (54, 24441), (56, 24456), (72, 24600), (76, 24642), (77, 24645), (78, 24663), (99, 24726), (127, 24864), (128, 24870), (133, 24909), (136, 24936), (141, 24957), (143, 24966), (152, 25020), (155, 25029), (160, 25044), (163, 25068), (164, 25077), (166, 25092), (183, 25218), (185, 25239), (188, 25278), (189, 25290), (202, 25380), (203, 25383), (204, 25407), (205, 25416), (207, 25446), (211, 25518), (212, 25521), (213, 25554), (243, 25830), (246, 25860), (263, 25977),

Gene: Ramiel05_36 Start: 23502, Stop: 25448, Start Num: 15

Candidate Starts for Ramiel05_36:

(Start: 15 @23502 has 35 MA's), (22, 23547), (23, 23571), (24, 23598), (26, 23619), (42, 23775), (49, 23811), (53, 23844), (54, 23850), (56, 23865), (72, 24009), (76, 24051), (99, 24129), (126, 24264), (127, 24267), (133, 24312), (136, 24339), (137, 24342), (155, 24432), (163, 24471), (164, 24480), (166, 24495), (185, 24642), (188, 24681), (189, 24693), (202, 24783), (203, 24786), (204, 24810), (205, 24819), (211, 24921), (212, 24924), (213, 24957), (217, 24987), (239, 25194), (243, 25233), (246, 25263), (263, 25380),

Gene: Rasputia_72 Start: 44029, Stop: 45960, Start Num: 16

Candidate Starts for Rasputia_72:

(Start: 16 @44029 has 11 MA's), (19, 44047), (22, 44071), (24, 44119), (44, 44305), (49, 44332), (53, 44365), (54, 44371), (58, 44419), (59, 44428), (60, 44434), (63, 44464), (66, 44491), (101, 44659), (107, 44692), (124, 44758), (127, 44785), (129, 44794), (130, 44797), (131, 44800), (134, 44842), (157, 44935), (170, 45007), (186, 45118), (190, 45175), (192, 45190), (201, 45250), (203, 45259), (208, 45328), (209, 45331), (220, 45469), (234, 45616), (235, 45646), (236, 45652), (237, 45658), (243, 45718), (247, 45766), (254, 45817), (257, 45832), (258, 45859), (262, 45877), (267, 45940), (269, 45946), (270, 45952),

Gene: RobinRose_38 Start: 25217, Stop: 27190, Start Num: 16

Candidate Starts for RobinRose_38:

(Start: 16 @25217 has 11 MA's), (17, 25220), (31, 25355), (52, 25547), (54, 25562), (59, 25619), (65, 25673), (67, 25685), (88, 25823), (140, 26057), (150, 26114), (165, 26189), (190, 26399), (192, 26414), (204, 26513), (205, 26522), (209, 26564), (214, 26666), (228, 26762), (237, 26891), (247, 26996), (258, 27089), (260, 27098), (269, 27176),

Gene: Romm_38 Start: 25217, Stop: 27190, Start Num: 16

Candidate Starts for Romm_38:

(Start: 16 @25217 has 11 MA's), (17, 25220), (31, 25355), (52, 25547), (54, 25562), (59, 25619), (65, 25673), (67, 25685), (88, 25823), (140, 26057), (150, 26114), (165, 26189), (190, 26399), (192, 26414), (204, 26513), (205, 26522), (209, 26564), (214, 26666), (228, 26762), (237, 26891), (247, 26996), (258, 27089), (260, 27098), (269, 27176),

Gene: RubyRalph_39 Start: 25839, Stop: 28808, Start Num: 1

Candidate Starts for RubyRalph_39:

(Start: 1 @25839 has 3 MA's), (2, 25869), (3, 26001), (4, 26040), (5, 26085), (6, 26163), (7, 26265), (8, 26289), (9, 26295), (10, 26391), (12, 26487), (13, 26571), (14, 26769), (18, 26844), (21, 26871), (29, 26961), (30, 26964), (32, 26973), (34, 26985), (36, 27018), (38, 27045), (46, 27111), (48, 27117), (53, 27162), (55, 27183), (69, 27312), (74, 27357), (79, 27399), (81, 27414), (83, 27423), (90, 27456), (124, 27588), (132, 27648), (147, 27744), (149, 27762), (155, 27786), (156, 27789), (183, 27975), (187, 28035), (190, 28056), (192, 28071), (198, 28104), (200, 28122), (201, 28137), (206, 28191), (209, 28221), (211, 28281), (212, 28284), (215, 28341), (222, 28371), (226, 28389), (233, 28473), (237, 28530), (243, 28584), (258, 28716), (264, 28764), (265, 28767),

Gene: SadLad_41 Start: 26782, Stop: 29751, Start Num: 1

Candidate Starts for SadLad_41:

(Start: 1 @26782 has 3 MA's), (2, 26812), (3, 26944), (4, 26983), (5, 27028), (6, 27106), (7, 27208), (8, 27232), (9, 27238), (10, 27334), (12, 27430), (13, 27514), (14, 27712), (18, 27787), (21, 27814), (29, 27904), (30, 27907), (32, 27916), (34, 27928), (36, 27961), (38, 27988), (46, 28054), (48, 28060), (53, 28105), (55, 28126), (69, 28255), (74, 28300), (79, 28342), (81, 28357), (83, 28366), (90, 28399), (124, 28531), (132, 28591), (147, 28687), (149, 28705), (155, 28729), (156, 28732), (183, 28918), (187, 28978), (190, 28999), (192, 29014), (198, 29047), (200, 29065), (201, 29080), (206, 29134), (209, 29164), (211, 29224), (212, 29227), (215, 29284), (222, 29314), (226, 29332), (233, 29416), (237, 29473), (243, 29527), (258, 29659), (264, 29707), (265, 29710),

Gene: Savannah_36 Start: 23529, Stop: 25475, Start Num: 15

Candidate Starts for Savannah_36:

(Start: 15 @23529 has 35 MA's), (22, 23574), (23, 23598), (24, 23625), (26, 23646), (42, 23802), (49, 23838), (53, 23871), (54, 23877), (56, 23892), (72, 24036), (76, 24078), (99, 24156), (126, 24291), (127, 24294), (133, 24339), (136, 24366), (137, 24369), (155, 24459), (163, 24498), (164, 24507), (166, 24522), (185, 24669), (188, 24708), (189, 24720), (202, 24810), (203, 24813), (204, 24837), (205, 24846), (211, 24948), (212, 24951), (213, 24984), (217, 25014), (239, 25221), (243, 25260), (246, 25290), (263, 25407),

Gene: Scumberland_38 Start: 23718, Stop: 25670, Start Num: 15

Candidate Starts for Scumberland_38:

(Start: 15 @23718 has 35 MA's), (22, 23763), (23, 23787), (24, 23814), (26, 23835), (42, 23991), (49, 24027), (53, 24060), (54, 24066), (56, 24081), (72, 24225), (76, 24267), (77, 24270), (99, 24351), (127, 24489), (128, 24495), (133, 24534), (136, 24561), (141, 24582), (143, 24591), (152, 24645), (155, 24654), (160, 24669), (163, 24693), (164, 24702), (166, 24717), (183, 24843), (185, 24864), (188, 24903), (189, 24915), (202, 25005), (203, 25008), (204, 25032), (205, 25041), (207, 25071), (211, 25143), (212, 25146), (213, 25179), (217, 25209), (239, 25416), (241, 25437), (243, 25455), (246, 25485), (263, 25602),

Gene: Selwyn23_38 Start: 23695, Stop: 25647, Start Num: 15

Candidate Starts for Selwyn23_38:

(Start: 15 @23695 has 35 MA's), (22, 23740), (23, 23764), (24, 23791), (26, 23812), (42, 23968), (49, 24004), (53, 24037), (54, 24043), (56, 24058), (72, 24202), (76, 24244), (77, 24247), (99, 24328), (127, 24466), (128, 24472), (133, 24511), (136, 24538), (141, 24559), (143, 24568), (152, 24622), (155, 24631), (160, 24646), (163, 24670), (164, 24679), (166, 24694), (183, 24820), (185, 24841), (188, 24880), (189, 24892), (202, 24982), (203, 24985), (204, 25009), (205, 25018), (207, 25048), (211, 25120), (212, 25123), (213, 25156), (217, 25186), (239, 25393), (241, 25414), (243, 25432), (246, 25462), (263, 25579),

Gene: Shotgun_36 Start: 23328, Stop: 25274, Start Num: 15

Candidate Starts for Shotgun_36:

(Start: 15 @23328 has 35 MA's), (22, 23373), (23, 23397), (24, 23424), (26, 23445), (42, 23601), (49, 23637), (53, 23670), (54, 23676), (56, 23691), (72, 23835), (76, 23877), (82, 23922), (99, 23955), (123, 24063), (126, 24090), (127, 24093), (133, 24138), (136, 24165), (137, 24168), (155, 24258), (163, 24297), (164, 24306), (166, 24321), (188, 24507), (202, 24609), (203, 24612), (204, 24636), (205, 24645), (207, 24675), (212, 24750), (213, 24783), (217, 24813), (239, 25020), (243, 25059), (246, 25089), (263, 25206),

Gene: Tempo_36 Start: 25093, Stop: 27066, Start Num: 16

Candidate Starts for Tempo_36:

(Start: 16 @25093 has 11 MA's), (17, 25096), (31, 25231), (52, 25423), (54, 25438), (59, 25495), (65, 25549), (67, 25561), (72, 25594), (88, 25699), (140, 25933), (150, 25990), (165, 26065), (190, 26275), (192, 26290), (204, 26389), (205, 26398), (209, 26440), (214, 26542), (228, 26638), (237, 26767), (247, 26872), (258, 26965), (260, 26974), (269, 27052),

Gene: Yeti_37 Start: 23497, Stop: 25449, Start Num: 15

Candidate Starts for Yeti_37:

(Start: 15 @23497 has 35 MA's), (22, 23542), (23, 23566), (24, 23593), (26, 23614), (42, 23770), (49, 23806), (53, 23839), (54, 23845), (56, 23860), (72, 24004), (76, 24046), (77, 24049), (99, 24130), (127, 24268), (128, 24274), (133, 24313), (136, 24340), (141, 24361), (143, 24370), (152, 24424), (155, 24433), (160, 24448), (163, 24472), (164, 24481), (166, 24496), (183, 24622), (185, 24643), (188, 24682), (189, 24694), (202, 24784), (203, 24787), (204, 24811), (205, 24820), (207, 24850), (211, 24922), (212, 24925), (213, 24958), (217, 24988), (239, 25195), (243, 25234), (246, 25264), (263, 25381),