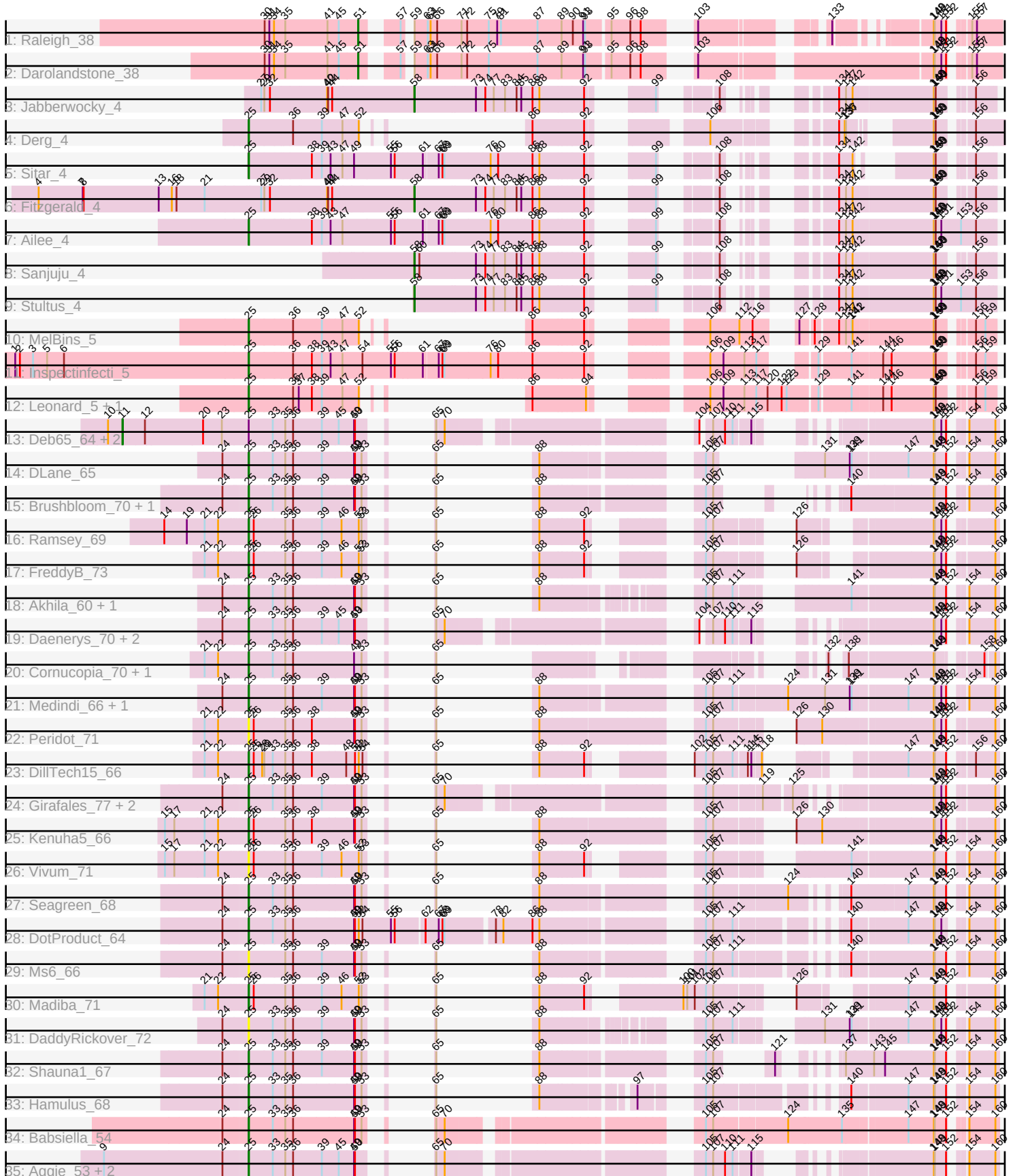


Pham 280550



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 280550 Report

This analysis was run 02/07/26 on database version 634.

Pham number 280550 has 48 members, 5 are drafts.

Phages represented in each track:

- Track 1 : Raleigh_38
- Track 2 : Darolandstone_38
- Track 3 : Jabberwocky_4
- Track 4 : Derg_4
- Track 5 : Sitar_4
- Track 6 : Fitzgerald_4
- Track 7 : Ailee_4
- Track 8 : Sanjuju_4
- Track 9 : Stultus_4
- Track 10 : MelBins_5
- Track 11 : Inspectinfecti_5
- Track 12 : Leonard_5, Phinally_5
- Track 13 : Deb65_64, Nimbo_63, Geralt_64
- Track 14 : DLane_65
- Track 15 : Brushbloom_70, Batiatus_66
- Track 16 : Ramsey_69
- Track 17 : FreddyB_73
- Track 18 : Akhila_60, MilanaBonita_59
- Track 19 : Daenerys_70, PHappiness_71, OldBen_68
- Track 20 : Cornucopia_70, VRedHorse_68
- Track 21 : Medindi_66, Filuzino_68
- Track 22 : Peridot_71
- Track 23 : DillTech15_66
- Track 24 : Girafales_77, Quico_77, Florinda_80
- Track 25 : Kenuha5_66
- Track 26 : Vivum_71
- Track 27 : Seagreen_68
- Track 28 : DotProduct_64
- Track 29 : Ms6_66
- Track 30 : Madiba_71
- Track 31 : DaddyRickover_72
- Track 32 : Shauna1_67
- Track 33 : Hamulus_68
- Track 34 : Babsiella_54
- Track 35 : Aggie_53, Silvy_53, Philonius_55

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

The start number called the most often in the published annotations is 25, it was called in 34 of the 43 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• Aggie_53, Ailee_4, Akhila_60, Babsiella_54, Batiatus_66, Brushbloom_70, Cornucopia_70, DLane_65, DaddyRickover_72, Daenerys_70, Derg_4, DillTech15_66, DotProduct_64, Filuzino_68, Florinda_80, FreddyB_73, Girafales_77, Hamulus_68, Inspectinfecti_5, Kenuha5_66, Leonard_5, Madiba_71, Medindi_66, MelBins_5, MilanaBonita_59, Ms6_66, OldBen_68, PHappiness_71, Peridot_71, Philonius_55, Phinally_5, Quico_77, Ramsey_69, Seagreen_68, Shauna1_67, Silvy_53, Sitar_4, VRedHorse_68, Vivum_71,

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

• Deb65_64, Geralt_64, Nimbo_63,

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

• Darolandstone_38, Fitzgerald_4, Jabberwocky_4, Raleigh_38, Sanjuju_4, Stultus_4,

Summary by start number:

Start 11:

- Found in 3 of 48 (6.2%) of genes in pham
- Manual Annotations of this start: 3 of 43
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Deb65_64 (F1), Geralt_64 (F1), Nimbo_63 (F1),

Start 25:

- Found in 42 of 48 (87.5%) of genes in pham
- Manual Annotations of this start: 34 of 43
- Called 92.9% of time when present
- Phage (with cluster) where this start called: Aggie_53 (N), Ailee_4 (DE1), Akhila_60 (F1), Babsiella_54 (I1), Batiatus_66 (F1), Brushbloom_70 (F1), Cornucopia_70 (F1), DLane_65 (F1), DaddyRickover_72 (F1), Daenerys_70 (F1), Derg_4 (DE1), DillTech15_66 (F1), DotProduct_64 (F1), Filuzino_68 (F1), Florinda_80 (F1), FreddyB_73 (F1), Girafales_77 (F1), Hamulus_68 (F1), Inspectinfecti_5 (DE2), Kenuha5_66 (F1), Leonard_5 (DE2), Madiba_71 (F1), Medindi_66 (F1), MelBins_5 (DE2), MilanaBonita_59 (F1), Ms6_66 (F1), OldBen_68 (F1), PHappiness_71 (F1), Peridot_71 (F1), Philonius_55 (N), Phinally_5 (DE2), Quico_77 (F1), Ramsey_69 (F1), Seagreen_68 (F1), Shauna1_67 (F1), Silvy_53 (N), Sitar_4 (DE1), VRedHorse_68 (F1), Vivum_71 (F1),

Start 51:

- Found in 2 of 48 (4.2%) of genes in pham
- Manual Annotations of this start: 2 of 43
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Darolandstone_38 (BC2), Raleigh_38 (BC2),

Start 58:

- Found in 4 of 48 (8.3%) of genes in pham
- Manual Annotations of this start: 4 of 43
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fitzgerald_4 (DE1), Jabberwocky_4 (DE1), Sanjuju_4 (DE1), Stultus_4 (DE1),

Summary by clusters:

There are 6 clusters represented in this pham: F1, I1, DE1, DE2, N, BC2,

Info for manual annotations of cluster BC2:

- Start number 51 was manually annotated 2 times for cluster BC2.

Info for manual annotations of cluster DE1:

- Start number 25 was manually annotated 3 times for cluster DE1.
- Start number 58 was manually annotated 4 times for cluster DE1.

Info for manual annotations of cluster DE2:

- Start number 25 was manually annotated 4 times for cluster DE2.

Info for manual annotations of cluster F1:

- Start number 11 was manually annotated 3 times for cluster F1.
- Start number 25 was manually annotated 23 times for cluster F1.

Info for manual annotations of cluster I1:

- Start number 25 was manually annotated 1 time for cluster I1.

Info for manual annotations of cluster N:

- Start number 25 was manually annotated 3 times for cluster N.

Gene Information:

Gene: Aggie_53 Start: 35734, Stop: 37386, Start Num: 25

Candidate Starts for Aggie_53:

(9, 35296), (24, 35668), (Start: 25 @35734 has 34 MA's), (33, 35809), (35, 35845), (36, 35869), (39, 35956), (45, 36007), (49, 36055), (50, 36058), (65, 36106), (70, 36127), (105, 36757), (107, 36778), (110, 36814), (111, 36838), (115, 36883), (148, 37234), (149, 37237), (152, 37267), (154, 37294), (160, 37375),

Gene: Ailee_4 Start: 2435, Stop: 4309, Start Num: 25

Candidate Starts for Ailee_4:

(Start: 25 @2435 has 34 MA's), (38, 2627), (39, 2657), (43, 2684), (47, 2720), (55, 2873), (56, 2885), (61, 2972), (67, 3014), (68, 3026), (69, 3032), (76, 3176), (80, 3200), (86, 3296), (88, 3317), (92, 3452), (99, 3557), (108, 3653), (134, 3821), (137, 3842), (142, 3863), (148, 4112), (149, 4115), (150, 4118), (151, 4136), (153, 4199), (156, 4247),

Gene: Akhila_60 Start: 39092, Stop: 40543, Start Num: 25

Candidate Starts for Akhila_60:

(24, 39011), (Start: 25 @39092 has 34 MA's), (33, 39167), (35, 39203), (36, 39227), (49, 39413), (50, 39416), (53, 39437), (65, 39464), (88, 39485), (105, 39830), (107, 39851), (111, 39911), (141, 40151), (148, 40391), (149, 40394), (152, 40424), (154, 40451), (160, 40532),

Gene: Babsiella_54 Start: 36714, Stop: 38561, Start Num: 25

Candidate Starts for Babsiella_54:

(24, 36648), (Start: 25 @36714 has 34 MA's), (33, 36789), (35, 36825), (36, 36849), (49, 37035), (50, 37038), (53, 37059), (65, 37086), (70, 37107), (105, 37737), (107, 37758), (124, 37974), (135, 38139), (147, 38331), (148, 38409), (149, 38412), (152, 38442), (154, 38469), (160, 38550),

Gene: Batiatus_66 Start: 42780, Stop: 44096, Start Num: 25

Candidate Starts for Batiatus_66:

(24, 42714), (Start: 25 @42780 has 34 MA's), (33, 42855), (35, 42891), (36, 42915), (39, 43002), (49, 43101), (50, 43104), (53, 43125), (65, 43152), (88, 43173), (105, 43572), (107, 43593), (140, 43695), (148, 43944), (149, 43947), (152, 43977), (154, 44004), (160, 44085),

Gene: Brushbloom_70 Start: 43712, Stop: 45028, Start Num: 25

Candidate Starts for Brushbloom_70:

(24, 43646), (Start: 25 @43712 has 34 MA's), (33, 43787), (35, 43823), (36, 43847), (39, 43934), (49, 44033), (50, 44036), (53, 44057), (65, 44084), (88, 44105), (105, 44504), (107, 44525), (140, 44627), (148, 44876), (149, 44879), (152, 44909), (154, 44936), (160, 45017),

Gene: Cornucopia_70 Start: 43350, Stop: 44651, Start Num: 25

Candidate Starts for Cornucopia_70:

(21, 43227), (22, 43269), (Start: 25 @43350 has 34 MA's), (33, 43425), (35, 43461), (36, 43485), (49, 43671), (53, 43695), (65, 43722), (132, 44238), (138, 44259), (148, 44508), (149, 44511), (158, 44616), (160, 44640),

Gene: DLane_65 Start: 42636, Stop: 44030, Start Num: 25

Candidate Starts for DLane_65:

(24, 42555), (Start: 25 @42636 has 34 MA's), (33, 42711), (35, 42747), (36, 42771), (39, 42858), (49, 42957), (50, 42960), (53, 42981), (65, 43008), (88, 43029), (105, 43428), (107, 43449), (131, 43554), (139, 43632), (141, 43638), (147, 43800), (148, 43878), (149, 43881), (152, 43911), (154, 43938), (160, 44019),

Gene: DaddyRickover_72 Start: 45172, Stop: 46629, Start Num: 25

Candidate Starts for DaddyRickover_72:

(24, 45091), (Start: 25 @45172 has 34 MA's), (33, 45247), (35, 45283), (36, 45307), (39, 45394), (49, 45493), (50, 45496), (53, 45517), (65, 45544), (88, 45565), (105, 45910), (107, 45931), (111, 45991), (131, 46153), (139, 46231), (141, 46237), (147, 46399), (148, 46477), (149, 46480), (151, 46501), (152, 46510), (154, 46537), (160, 46618),

Gene: Daenerys_70 Start: 45291, Stop: 46922, Start Num: 25

Candidate Starts for Daenerys_70:

(24, 45210), (Start: 25 @45291 has 34 MA's), (33, 45366), (35, 45402), (36, 45426), (39, 45513), (45, 45564), (49, 45612), (50, 45615), (65, 45663), (70, 45684), (104, 46293), (107, 46314), (110, 46350), (111, 46374), (115, 46419), (148, 46770), (149, 46773), (151, 46794), (152, 46803), (154, 46830), (160, 46911),

Gene: Darolandstone_38 Start: 28753, Stop: 30447, Start Num: 51

Candidate Starts for Darolandstone_38:

(30, 28456), (31, 28471), (34, 28486), (35, 28522), (41, 28657), (45, 28693), (Start: 51 @28753 has 2 MA's), (57, 28831), (59, 28843), (63, 28885), (64, 28894), (66, 28915), (71, 28993), (72, 29011), (75, 29080), (87, 29233), (89, 29308), (91, 29377), (93, 29383), (95, 29452), (96, 29512), (98, 29545), (103, 29635), (148, 30283), (149, 30286), (151, 30307), (152, 30316), (155, 30352), (157, 30367),

Gene: Deb65_64 Start: 42619, Stop: 44643, Start Num: 11

Candidate Starts for Deb65_64:

(10, 42574), (Start: 11 @42619 has 3 MA's), (12, 42688), (20, 42871), (23, 42928), (Start: 25 @43012 has 34 MA's), (33, 43087), (35, 43123), (36, 43147), (39, 43234), (45, 43285), (49, 43333), (50, 43336), (65, 43384), (70, 43405), (104, 44014), (107, 44035), (110, 44071), (111, 44095), (115, 44140), (148, 44491), (149, 44494), (151, 44515), (152, 44524), (154, 44551), (160, 44632),

Gene: Derg_4 Start: 2405, Stop: 3790, Start Num: 25

Candidate Starts for Derg_4:

(Start: 25 @2405 has 34 MA's), (36, 2540), (39, 2627), (47, 2690), (52, 2741), (86, 2777), (92, 2933), (106, 3158), (134, 3425), (136, 3443), (137, 3446), (148, 3617), (149, 3620), (150, 3623), (156, 3701),

Gene: DillTech15_66 Start: 41528, Stop: 42871, Start Num: 25

Candidate Starts for DillTech15_66:

(21, 41405), (22, 41447), (Start: 25 @41528 has 34 MA's), (26, 41543), (28, 41570), (29, 41576), (33, 41603), (35, 41639), (36, 41663), (38, 41720), (48, 41825), (50, 41852), (52, 41864), (54, 41876), (65, 41900), (88, 41921), (92, 42056), (102, 42206), (105, 42242), (107, 42263), (111, 42323), (114, 42359), (115, 42368), (118, 42395), (147, 42638), (148, 42719), (149, 42722), (152, 42752), (156, 42800), (160, 42860),

Gene: DotProduct_64 Start: 41819, Stop: 43810, Start Num: 25

Candidate Starts for DotProduct_64:

(24, 41753), (Start: 25 @41819 has 34 MA's), (33, 41894), (35, 41930), (36, 41954), (49, 42140), (50, 42143), (52, 42155), (54, 42167), (55, 42257), (56, 42269), (62, 42356), (67, 42398), (68, 42410), (69, 42416), (78, 42560), (82, 42584), (86, 42677), (88, 42698), (105, 43097), (107, 43118), (111, 43178), (140, 43418), (147, 43580), (148, 43658), (149, 43661), (151, 43682), (154, 43718), (160, 43799),

Gene: Filuzino_68 Start: 42971, Stop: 44581, Start Num: 25

Candidate Starts for Filuzino_68:

(24, 42890), (Start: 25 @42971 has 34 MA's), (35, 43082), (36, 43106), (39, 43193), (49, 43292), (50, 43295), (53, 43316), (65, 43343), (88, 43364), (105, 43763), (107, 43784), (111, 43844), (124, 43994), (131, 44105), (139, 44183), (141, 44189), (147, 44351), (148, 44429), (149, 44432), (151, 44453), (152, 44462), (154, 44489), (160, 44570),

Gene: Fitzgerald_4 Start: 2397, Stop: 3731, Start Num: 58

Candidate Starts for Fitzgerald_4:

(4, 1218), (7, 1359), (8, 1362), (13, 1602), (16, 1644), (18, 1659), (21, 1749), (27, 1923), (29, 1932), (32, 1950), (40, 2127), (42, 2130), (44, 2142), (Start: 58 @2397 has 4 MA's), (73, 2589), (74, 2619), (77, 2646), (83, 2682), (84, 2718), (85, 2733), (86, 2769), (88, 2790), (92, 2925), (99, 3030), (108, 3126), (134, 3294), (137, 3315), (142, 3336), (148, 3585), (149, 3588), (150, 3591), (156, 3669),

Gene: Florinda_80 Start: 44991, Stop: 46736, Start Num: 25

Candidate Starts for Florinda_80:

(24, 44925), (Start: 25 @44991 has 34 MA's), (33, 45066), (35, 45102), (36, 45126), (39, 45213), (49, 45312), (50, 45315), (53, 45336), (65, 45363), (70, 45384), (105, 46014), (107, 46035), (119, 46170), (125, 46251), (148, 46584), (149, 46587), (151, 46608), (152, 46617), (160, 46725),

Gene: FreddyB_73 Start: 44628, Stop: 45971, Start Num: 25

Candidate Starts for FreddyB_73:

(21, 44505), (22, 44547), (Start: 25 @44628 has 34 MA's), (26, 44643), (35, 44739), (36, 44763), (39, 44850), (46, 44910), (52, 44964), (53, 44973), (65, 45000), (88, 45021), (92, 45156), (105, 45342), (107, 45363), (126, 45498), (148, 45819), (149, 45822), (151, 45843), (152, 45852), (160, 45960),

Gene: Geralt_64 Start: 42618, Stop: 44642, Start Num: 11

Candidate Starts for Geralt_64:

(10, 42573), (Start: 11 @42618 has 3 MA's), (12, 42687), (20, 42870), (23, 42927), (Start: 25 @43011 has 34 MA's), (33, 43086), (35, 43122), (36, 43146), (39, 43233), (45, 43284), (49, 43332), (50, 43335), (65, 43383), (70, 43404), (104, 44013), (107, 44034), (110, 44070), (111, 44094), (115, 44139), (148, 44490), (149, 44493), (151, 44514), (152, 44523), (154, 44550), (160, 44631),

Gene: Girafales_77 Start: 44782, Stop: 46527, Start Num: 25

Candidate Starts for Girafales_77:

(24, 44716), (Start: 25 @44782 has 34 MA's), (33, 44857), (35, 44893), (36, 44917), (39, 45004), (49, 45103), (50, 45106), (53, 45127), (65, 45154), (70, 45175), (105, 45805), (107, 45826), (119, 45961), (125, 46042), (148, 46375), (149, 46378), (151, 46399), (152, 46408), (160, 46516),

Gene: Hamulus_68 Start: 43189, Stop: 44649, Start Num: 25

Candidate Starts for Hamulus_68:

(24, 43123), (Start: 25 @43189 has 34 MA's), (33, 43264), (35, 43300), (36, 43324), (49, 43510), (50, 43513), (53, 43534), (65, 43561), (88, 43582), (97, 43828), (105, 43936), (107, 43957), (140, 44257), (147, 44419), (148, 44497), (149, 44500), (152, 44530), (154, 44557), (160, 44638),

Gene: Inspectinfecti_5 Start: 2791, Stop: 4749, Start Num: 25

Candidate Starts for Inspectinfecti_5:

(1, 2047), (2, 2062), (3, 2104), (5, 2149), (6, 2203), (Start: 25 @2791 has 34 MA's), (36, 2926), (38, 2983), (39, 3013), (43, 3040), (47, 3076), (54, 3139), (55, 3229), (56, 3241), (61, 3328), (67, 3370), (68, 3382), (69, 3388), (76, 3532), (80, 3556), (86, 3652), (92, 3808), (106, 4033), (109, 4075), (113, 4138), (117, 4174), (129, 4270), (141, 4360), (144, 4444), (146, 4471), (148, 4603), (149, 4606), (150, 4609), (156, 4687), (159, 4717),

Gene: Jabberwocky_4 Start: 2397, Stop: 3731, Start Num: 58

Candidate Starts for Jabberwocky_4:

(27, 1923), (29, 1932), (32, 1950), (40, 2127), (42, 2130), (44, 2142), (Start: 58 @2397 has 4 MA's), (73, 2589), (74, 2619), (77, 2646), (83, 2682), (84, 2718), (85, 2733), (86, 2769), (88, 2790), (92, 2925), (99, 3030), (108, 3126), (134, 3294), (137, 3315), (142, 3336), (148, 3585), (149, 3588), (150, 3591), (156, 3669),

Gene: Kenuha5_66 Start: 44310, Stop: 45839, Start Num: 25

Candidate Starts for Kenuha5_66:

(15, 44061), (17, 44091), (21, 44187), (22, 44229), (Start: 25 @44310 has 34 MA's), (26, 44325), (35, 44421), (36, 44445), (38, 44502), (49, 44631), (50, 44634), (53, 44655), (65, 44682), (88, 44703), (105, 45117), (107, 45138), (126, 45273), (130, 45354), (148, 45687), (149, 45690), (151, 45711), (152, 45720), (160, 45828),

Gene: Leonard_5 Start: 2785, Stop: 4344, Start Num: 25

Candidate Starts for Leonard_5:

(Start: 25 @2785 has 34 MA's), (36, 2920), (37, 2938), (38, 2977), (39, 3007), (47, 3070), (52, 3121), (86, 3157), (94, 3319), (106, 3538), (109, 3580), (113, 3643), (117, 3679), (120, 3715), (122, 3760), (123, 3775), (129, 3862), (141, 3952), (144, 4039), (146, 4066), (148, 4198), (149, 4201), (150, 4204), (156, 4282), (159, 4312),

Gene: Madiba_71 Start: 44963, Stop: 46402, Start Num: 25

Candidate Starts for Madiba_71:

(21, 44840), (22, 44882), (Start: 25 @44963 has 34 MA's), (26, 44978), (35, 45074), (36, 45098), (39, 45185), (46, 45245), (52, 45299), (53, 45308), (65, 45335), (88, 45356), (92, 45491), (100, 45698), (101, 45710), (102, 45734), (105, 45770), (107, 45791), (126, 45926), (147, 46169), (148, 46250),

(149, 46253), (152, 46283), (160, 46391),

Gene: Medindi_66 Start: 41626, Stop: 43236, Start Num: 25

Candidate Starts for Medindi_66:

(24, 41545), (Start: 25 @41626 has 34 MA's), (35, 41737), (36, 41761), (39, 41848), (49, 41947), (50, 41950), (53, 41971), (65, 41998), (88, 42019), (105, 42418), (107, 42439), (111, 42499), (124, 42649), (131, 42760), (139, 42838), (141, 42844), (147, 43006), (148, 43084), (149, 43087), (151, 43108), (152, 43117), (154, 43144), (160, 43225),

Gene: MelBins_5 Start: 2786, Stop: 4273, Start Num: 25

Candidate Starts for MelBins_5:

(Start: 25 @2786 has 34 MA's), (36, 2921), (39, 3008), (47, 3071), (52, 3122), (86, 3158), (92, 3314), (106, 3539), (112, 3632), (116, 3674), (127, 3737), (128, 3773), (134, 3836), (137, 3857), (141, 3875), (142, 3878), (148, 4127), (149, 4130), (150, 4133), (156, 4211), (159, 4241),

Gene: MilanaBonita_59 Start: 39092, Stop: 40543, Start Num: 25

Candidate Starts for MilanaBonita_59:

(24, 39011), (Start: 25 @39092 has 34 MA's), (33, 39167), (35, 39203), (36, 39227), (49, 39413), (50, 39416), (53, 39437), (65, 39464), (88, 39485), (105, 39830), (107, 39851), (111, 39911), (141, 40151), (148, 40391), (149, 40394), (152, 40424), (154, 40451), (160, 40532),

Gene: Ms6_66 Start: 38754, Stop: 40259, Start Num: 25

Candidate Starts for Ms6_66:

(24, 38688), (Start: 25 @38754 has 34 MA's), (35, 38865), (36, 38889), (39, 38976), (49, 39075), (50, 39078), (53, 39099), (65, 39126), (88, 39147), (105, 39546), (107, 39567), (111, 39627), (140, 39867), (148, 40107), (149, 40110), (152, 40140), (154, 40167), (160, 40248),

Gene: Nimbo_63 Start: 42621, Stop: 44645, Start Num: 11

Candidate Starts for Nimbo_63:

(10, 42576), (Start: 11 @42621 has 3 MA's), (12, 42690), (20, 42873), (23, 42930), (Start: 25 @43014 has 34 MA's), (33, 43089), (35, 43125), (36, 43149), (39, 43236), (45, 43287), (49, 43335), (50, 43338), (65, 43386), (70, 43407), (104, 44016), (107, 44037), (110, 44073), (111, 44097), (115, 44142), (148, 44493), (149, 44496), (151, 44517), (152, 44526), (154, 44553), (160, 44634),

Gene: OldBen_68 Start: 44406, Stop: 46037, Start Num: 25

Candidate Starts for OldBen_68:

(24, 44325), (Start: 25 @44406 has 34 MA's), (33, 44481), (35, 44517), (36, 44541), (39, 44628), (45, 44679), (49, 44727), (50, 44730), (65, 44778), (70, 44799), (104, 45408), (107, 45429), (110, 45465), (111, 45489), (115, 45534), (148, 45885), (149, 45888), (151, 45909), (152, 45918), (154, 45945), (160, 46026),

Gene: PHappiness_71 Start: 45235, Stop: 46866, Start Num: 25

Candidate Starts for PHappiness_71:

(24, 45154), (Start: 25 @45235 has 34 MA's), (33, 45310), (35, 45346), (36, 45370), (39, 45457), (45, 45508), (49, 45556), (50, 45559), (65, 45607), (70, 45628), (104, 46237), (107, 46258), (110, 46294), (111, 46318), (115, 46363), (148, 46714), (149, 46717), (151, 46738), (152, 46747), (154, 46774), (160, 46855),

Gene: Peridot_71 Start: 43687, Stop: 45216, Start Num: 25

Candidate Starts for Peridot_71:

(21, 43564), (22, 43606), (Start: 25 @43687 has 34 MA's), (26, 43702), (35, 43798), (36, 43822), (38, 43879), (49, 44008), (50, 44011), (53, 44032), (65, 44059), (88, 44080), (105, 44494), (107, 44515), (126, 44650), (130, 44731), (148, 45064), (149, 45067), (151, 45088), (152, 45097), (160, 45205),

Gene: Philonius_55 Start: 35263, Stop: 36915, Start Num: 25

Candidate Starts for Philonius_55:

(9, 34825), (24, 35197), (Start: 25 @35263 has 34 MA's), (33, 35338), (35, 35374), (36, 35398), (39, 35485), (45, 35536), (49, 35584), (50, 35587), (65, 35635), (70, 35656), (105, 36286), (107, 36307), (110, 36343), (111, 36367), (115, 36412), (148, 36763), (149, 36766), (152, 36796), (154, 36823), (160, 36904),

Gene: Phinally_5 Start: 2785, Stop: 4341, Start Num: 25

Candidate Starts for Phinally_5:

(Start: 25 @2785 has 34 MA's), (36, 2920), (37, 2938), (38, 2977), (39, 3007), (47, 3070), (52, 3121), (86, 3157), (94, 3319), (106, 3538), (109, 3580), (113, 3643), (117, 3679), (120, 3715), (122, 3760), (123, 3775), (129, 3862), (141, 3952), (144, 4036), (146, 4063), (148, 4195), (149, 4198), (150, 4201), (156, 4279), (159, 4309),

Gene: Quico_77 Start: 44811, Stop: 46556, Start Num: 25

Candidate Starts for Quico_77:

(24, 44745), (Start: 25 @44811 has 34 MA's), (33, 44886), (35, 44922), (36, 44946), (39, 45033), (49, 45132), (50, 45135), (53, 45156), (65, 45183), (70, 45204), (105, 45834), (107, 45855), (119, 45990), (125, 46071), (148, 46404), (149, 46407), (151, 46428), (152, 46437), (160, 46545),

Gene: Raleigh_38 Start: 29256, Stop: 30815, Start Num: 51

Candidate Starts for Raleigh_38:

(30, 28959), (31, 28974), (34, 28989), (35, 29025), (41, 29160), (45, 29196), (Start: 51 @29256 has 2 MA's), (57, 29334), (59, 29346), (63, 29388), (64, 29397), (66, 29418), (71, 29496), (72, 29514), (75, 29583), (79, 29610), (81, 29622), (87, 29736), (89, 29811), (90, 29847), (91, 29880), (93, 29886), (95, 29955), (96, 30015), (98, 30048), (103, 30138), (133, 30435), (148, 30651), (149, 30654), (151, 30675), (152, 30684), (155, 30720), (157, 30735),

Gene: Ramsey_69 Start: 45364, Stop: 46707, Start Num: 25

Candidate Starts for Ramsey_69:

(14, 45112), (19, 45184), (21, 45241), (22, 45283), (Start: 25 @45364 has 34 MA's), (26, 45379), (35, 45475), (36, 45499), (39, 45586), (46, 45646), (52, 45700), (53, 45709), (65, 45736), (88, 45757), (92, 45892), (105, 46078), (107, 46099), (126, 46234), (148, 46555), (149, 46558), (151, 46579), (152, 46588), (160, 46696),

Gene: Sanjuju_4 Start: 2435, Stop: 3769, Start Num: 58

Candidate Starts for Sanjuju_4:

(Start: 58 @2435 has 4 MA's), (60, 2450), (73, 2627), (74, 2657), (77, 2684), (83, 2720), (84, 2756), (85, 2771), (86, 2807), (88, 2828), (92, 2963), (99, 3068), (108, 3164), (134, 3332), (137, 3353), (142, 3374), (148, 3623), (149, 3626), (150, 3629), (156, 3707),

Gene: Seagreen_68 Start: 42620, Stop: 44155, Start Num: 25

Candidate Starts for Seagreen_68:

(24, 42554), (Start: 25 @42620 has 34 MA's), (33, 42695), (35, 42731), (36, 42755), (49, 42941), (50, 42944), (53, 42965), (65, 42992), (88, 43013), (105, 43412), (107, 43433), (124, 43649), (140, 43754), (147, 43925), (148, 44003), (149, 44006), (152, 44036), (154, 44063), (160, 44144),

Gene: Shauna1_67 Start: 43160, Stop: 44527, Start Num: 25

Candidate Starts for Shauna1_67:

(24, 43094), (Start: 25 @43160 has 34 MA's), (33, 43235), (35, 43271), (36, 43295), (39, 43382), (49, 43481), (50, 43484), (53, 43505), (65, 43532), (88, 43553), (105, 43952), (107, 43973), (121, 44033), (137, 44105), (143, 44189), (145, 44222), (148, 44375), (149, 44378), (152, 44408), (154, 44435),

(160, 44516),

Gene: Silvy_53 Start: 35734, Stop: 37386, Start Num: 25

Candidate Starts for Silvy_53:

(9, 35296), (24, 35668), (Start: 25 @35734 has 34 MA's), (33, 35809), (35, 35845), (36, 35869), (39, 35956), (45, 36007), (49, 36055), (50, 36058), (65, 36106), (70, 36127), (105, 36757), (107, 36778), (110, 36814), (111, 36838), (115, 36883), (148, 37234), (149, 37237), (152, 37267), (154, 37294), (160, 37375),

Gene: Sitar_4 Start: 2434, Stop: 4143, Start Num: 25

Candidate Starts for Sitar_4:

(Start: 25 @2434 has 34 MA's), (38, 2626), (39, 2656), (43, 2683), (47, 2719), (49, 2755), (55, 2872), (56, 2884), (61, 2971), (67, 3013), (68, 3025), (69, 3031), (76, 3175), (80, 3199), (86, 3295), (88, 3316), (92, 3451), (99, 3556), (108, 3652), (134, 3820), (142, 3862), (148, 3997), (149, 4000), (150, 4003), (156, 4081),

Gene: Stultus_4 Start: 2433, Stop: 3818, Start Num: 58

Candidate Starts for Stultus_4:

(Start: 58 @2433 has 4 MA's), (73, 2625), (74, 2655), (77, 2682), (83, 2718), (84, 2754), (85, 2769), (86, 2805), (88, 2826), (92, 2961), (99, 3066), (108, 3162), (134, 3330), (137, 3351), (142, 3372), (148, 3621), (149, 3624), (150, 3627), (151, 3645), (153, 3708), (156, 3756),

Gene: VRedHorse_68 Start: 42168, Stop: 43469, Start Num: 25

Candidate Starts for VRedHorse_68:

(21, 42045), (22, 42087), (Start: 25 @42168 has 34 MA's), (33, 42243), (35, 42279), (36, 42303), (49, 42489), (53, 42513), (65, 42540), (132, 43056), (138, 43077), (148, 43326), (149, 43329), (158, 43434), (160, 43458),

Gene: Vivum_71 Start: 45738, Stop: 47165, Start Num: 25

Candidate Starts for Vivum_71:

(15, 45489), (17, 45519), (21, 45615), (22, 45657), (Start: 25 @45738 has 34 MA's), (26, 45753), (35, 45849), (36, 45873), (39, 45960), (46, 46020), (52, 46074), (53, 46083), (65, 46110), (88, 46131), (92, 46266), (105, 46452), (107, 46473), (141, 46773), (148, 47013), (149, 47016), (152, 47046), (154, 47073), (160, 47154),