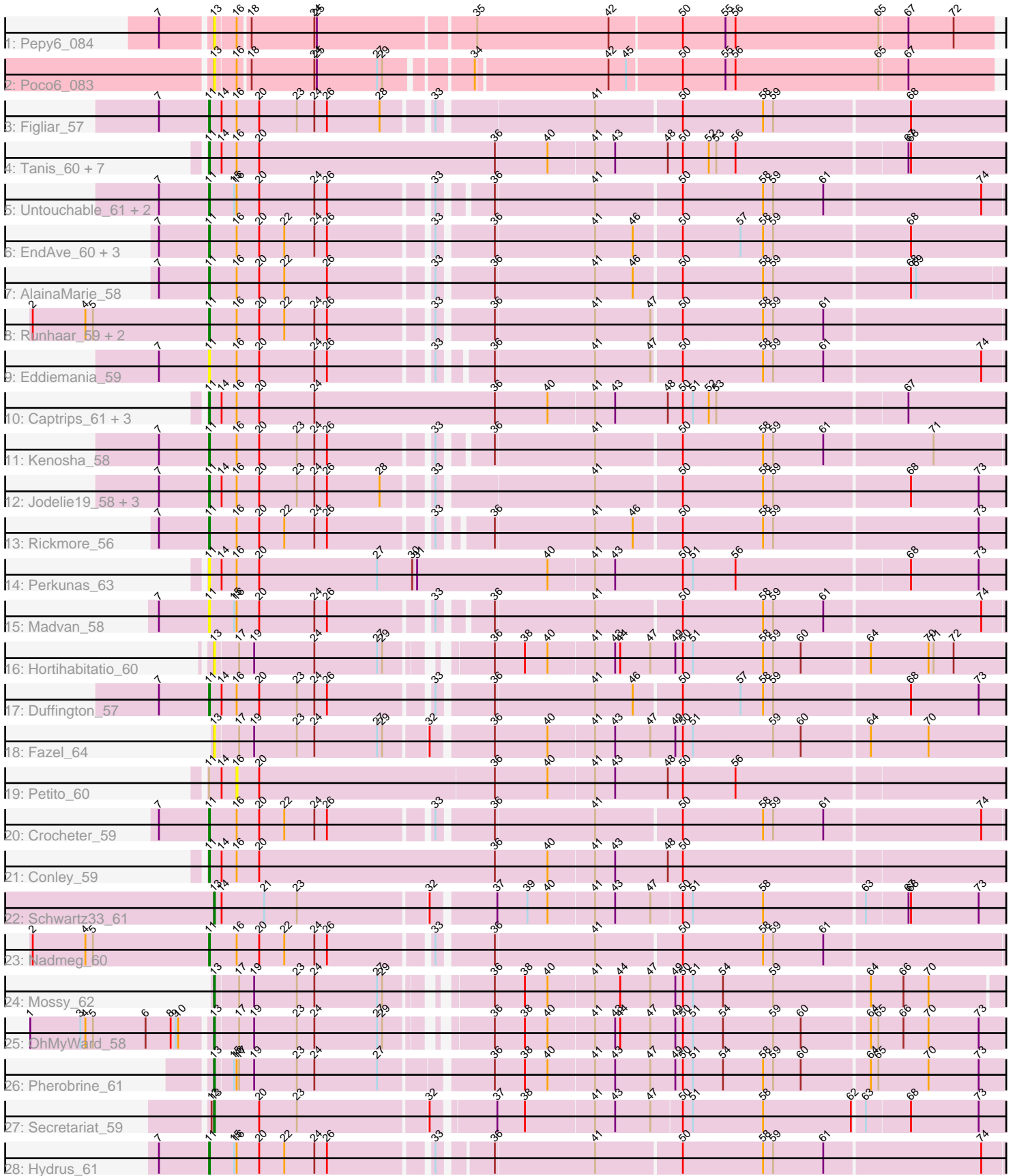


Pham 163684



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 163684 Report

This analysis was run 04/28/24 on database version 559.

Pham number 163684 has 48 members, 14 are drafts.

Phages represented in each track:

- Track 1 : Pepy6_084
- Track 2 : Poco6_083
- Track 3 : Figliar_57
- Track 4 : Tanis_60, Copybara_60, Gravy_59, Magel_61, Gill_60, Kerry_59, Roney_60, Odesza_59
- Track 5 : Untouchable_61, Zeph_63, Phepper_60
- Track 6 : EndAve_60, Chikenjars_57, Nithya_59, BluerMoon_60
- Track 7 : AlainaMarie_58
- Track 8 : Runhaar_59, Burley_59, Vardy_58
- Track 9 : Eddiemania_59
- Track 10 : Captrips_61, Avazak_61, Artorias_60, FortCran_64
- Track 11 : Kenosha_58
- Track 12 : Jodelie19_58, OlgasClover_60, Aflac_58, TenaciousP_64
- Track 13 : Rickmore_56
- Track 14 : Perkunas_63
- Track 15 : Madvan_58
- Track 16 : Hortihabitatio_60
- Track 17 : Duffington_57
- Track 18 : Fazel_64
- Track 19 : Petite_60
- Track 20 : Crocheter_59
- Track 21 : Conley_59
- Track 22 : Schwartz33_61
- Track 23 : Nadmeg_60
- Track 24 : Mossy_62
- Track 25 : OhMyWard_58
- Track 26 : Pherobrine_61
- Track 27 : Secretariat_59
- Track 28 : Hydrus_61

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

The start number called the most often in the published annotations is 11, it was called in 29 of the 34 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aflac_58, AlainaMarie_58, Artorias_60, Avazak_61, BluerMoon_60, Burley_59, Captrips_61, Copybara_60, Chikenjars_57, Conley_59, Crocheter_59, Duffington_57, Eddiemania_59, EndAve_60, Figliar_57, FortCran_64, Gill_60, Gravy_59, Hydrus_61, Jodelie19_58, Kenosha_58, Kerry_59, Madvan_58, Magel_61, Nadmeg_60, Nithya_59, Odesza_59, OlgasClover_60, Perkunas_63, Phepper_60, Rickmore_56, Roney_60, Runhaar_59, Tanis_60, TenaciousP_64, Untouchable_61, Vardy_58, Zeph_63,

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

- Petito_60,

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

- Fazel_64, Hortihabitatio_60, Mossy_62, OhMyWard_58, Pepy6_084, Pherobrine_61, Poco6_083, Schwartz33_61, Secretariat_59,

Summary by start number:

Start 11:

- Found in 39 of 48 (81.2%) of genes in pham
- Manual Annotations of this start: 29 of 34
- Called 97.4% of time when present
- Phage (with cluster) where this start called: Aflac_58 (DJ), AlainaMarie_58 (DJ), Artorias_60 (DJ), Avazak_61 (DJ), BluerMoon_60 (DJ), Burley_59 (DJ), Captrips_61 (DJ), Copybara_60 (DJ), Chikenjars_57 (DJ), Conley_59 (DJ), Crocheter_59 (DJ), Duffington_57 (DJ), Eddiemania_59 (DJ), EndAve_60 (DJ), Figliar_57 (DJ), FortCran_64 (DJ), Gill_60 (DJ), Gravy_59 (DJ), Hydrus_61 (DJ), Jodelie19_58 (DJ), Kenosha_58 (DJ), Kerry_59 (DJ), Madvan_58 (DJ), Magel_61 (DJ), Nadmeg_60 (DJ), Nithya_59 (DJ), Odesza_59 (DJ), OlgasClover_60 (DJ), Perkunas_63 (DJ), Phepper_60 (DJ), Rickmore_56 (DJ), Roney_60 (DJ), Runhaar_59 (DJ), Tanis_60 (DJ), TenaciousP_64 (DJ), Untouchable_61 (DJ), Vardy_58 (DJ), Zeph_63 (DJ),

Start 13:

- Found in 9 of 48 (18.8%) of genes in pham
- Manual Annotations of this start: 5 of 34
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fazel_64 (DJ), Hortihabitatio_60 (DJ), Mossy_62 (DJ), OhMyWard_58 (DJ), Pepy6_084 (CC), Pherobrine_61 (DJ), Poco6_083 (CC), Schwartz33_61 (DJ), Secretariat_59 (DJ),

Start 16:

- Found in 42 of 48 (87.5%) of genes in pham
- No Manual Annotations of this start.
- Called 2.4% of time when present
- Phage (with cluster) where this start called: Petito_60 (DJ),

Summary by clusters:

There are 2 clusters represented in this pham: CC, DJ,

Info for manual annotations of cluster DJ:

- Start number 11 was manually annotated 29 times for cluster DJ.
- Start number 13 was manually annotated 5 times for cluster DJ.

Gene Information:

Gene: Aflac_58 Start: 40402, Stop: 41313, Start Num: 11

Candidate Starts for Aflac_58:

(7, 40342), (Start: 11 @40402 has 29 MA's), (14, 40417), (16, 40435), (20, 40462), (23, 40507), (24, 40528), (26, 40543), (28, 40606), (33, 40654), (41, 40831), (50, 40930), (58, 41023), (59, 41035), (68, 41194), (73, 41275),

Gene: AlainaMarie_58 Start: 40386, Stop: 41294, Start Num: 11

Candidate Starts for AlainaMarie_58:

(7, 40326), (Start: 11 @40386 has 29 MA's), (16, 40419), (20, 40446), (22, 40476), (26, 40527), (33, 40638), (36, 40698), (41, 40815), (46, 40860), (50, 40914), (58, 41007), (59, 41019), (68, 41178), (69, 41184),

Gene: Artorias_60 Start: 40583, Stop: 41527, Start Num: 11

Candidate Starts for Artorias_60:

(Start: 11 @40583 has 29 MA's), (14, 40598), (16, 40616), (20, 40643), (24, 40709), (36, 40925), (40, 40988), (41, 41042), (43, 41066), (48, 41129), (50, 41147), (51, 41159), (52, 41177), (53, 41186), (67, 41405),

Gene: Avazak_61 Start: 40910, Stop: 41854, Start Num: 11

Candidate Starts for Avazak_61:

(Start: 11 @40910 has 29 MA's), (14, 40925), (16, 40943), (20, 40970), (24, 41036), (36, 41252), (40, 41315), (41, 41369), (43, 41393), (48, 41456), (50, 41474), (51, 41486), (52, 41504), (53, 41513), (67, 41732),

Gene: BluerMoon_60 Start: 40431, Stop: 41342, Start Num: 11

Candidate Starts for BluerMoon_60:

(7, 40371), (Start: 11 @40431 has 29 MA's), (16, 40464), (20, 40491), (22, 40521), (24, 40557), (26, 40572), (33, 40683), (36, 40743), (41, 40860), (46, 40905), (50, 40959), (57, 41025), (58, 41052), (59, 41064), (68, 41223),

Gene: Burley_59 Start: 40165, Stop: 41073, Start Num: 11

Candidate Starts for Burley_59:

(2, 39955), (4, 40018), (5, 40027), (Start: 11 @40165 has 29 MA's), (16, 40198), (20, 40225), (22, 40255), (24, 40291), (26, 40306), (33, 40417), (36, 40477), (41, 40594), (47, 40660), (50, 40693), (58, 40786), (59, 40798), (61, 40858),

Gene: Captrips_61 Start: 40058, Stop: 41002, Start Num: 11

Candidate Starts for Captrips_61:

(Start: 11 @40058 has 29 MA's), (14, 40073), (16, 40091), (20, 40118), (24, 40184), (36, 40400), (40, 40463), (41, 40517), (43, 40541), (48, 40604), (50, 40622), (51, 40634), (52, 40652), (53, 40661), (67, 40880),

Gene: Capybara_60 Start: 40389, Stop: 41333, Start Num: 11

Candidate Starts for Capybara_60:

(Start: 11 @40389 has 29 MA's), (14, 40404), (16, 40422), (20, 40449), (36, 40731), (40, 40794), (41, 40848), (43, 40872), (48, 40935), (50, 40953), (52, 40983), (53, 40992), (56, 41013), (67, 41211), (68,

41214),

Gene: Chikenjars_57 Start: 40399, Stop: 41310, Start Num: 11

Candidate Starts for Chikenjars_57:

(7, 40339), (Start: 11 @40399 has 29 MA's), (16, 40432), (20, 40459), (22, 40489), (24, 40525), (26, 40540), (33, 40651), (36, 40711), (41, 40828), (46, 40873), (50, 40927), (57, 40993), (58, 41020), (59, 41032), (68, 41191),

Gene: Conley_59 Start: 41139, Stop: 42083, Start Num: 11

Candidate Starts for Conley_59:

(Start: 11 @41139 has 29 MA's), (14, 41154), (16, 41172), (20, 41199), (36, 41481), (40, 41544), (41, 41598), (43, 41622), (48, 41685), (50, 41703),

Gene: Crocheter_59 Start: 40562, Stop: 41470, Start Num: 11

Candidate Starts for Crocheter_59:

(7, 40502), (Start: 11 @40562 has 29 MA's), (16, 40595), (20, 40622), (22, 40652), (24, 40688), (26, 40703), (33, 40814), (36, 40874), (41, 40991), (50, 41090), (58, 41183), (59, 41195), (61, 41255), (74, 41438),

Gene: Duffington_57 Start: 40095, Stop: 41006, Start Num: 11

Candidate Starts for Duffington_57:

(7, 40035), (Start: 11 @40095 has 29 MA's), (14, 40110), (16, 40128), (20, 40155), (23, 40200), (24, 40221), (26, 40236), (33, 40347), (36, 40407), (41, 40524), (46, 40569), (50, 40623), (57, 40689), (58, 40716), (59, 40728), (68, 40887), (73, 40968),

Gene: Eddiemania_59 Start: 41307, Stop: 42206, Start Num: 11

Candidate Starts for Eddiemania_59:

(7, 41247), (Start: 11 @41307 has 29 MA's), (16, 41340), (20, 41367), (24, 41433), (26, 41448), (33, 41559), (36, 41610), (41, 41727), (47, 41793), (50, 41826), (58, 41919), (59, 41931), (61, 41991), (74, 42174),

Gene: EndAve_60 Start: 40567, Stop: 41478, Start Num: 11

Candidate Starts for EndAve_60:

(7, 40507), (Start: 11 @40567 has 29 MA's), (16, 40600), (20, 40627), (22, 40657), (24, 40693), (26, 40708), (33, 40819), (36, 40879), (41, 40996), (46, 41041), (50, 41095), (57, 41161), (58, 41188), (59, 41200), (68, 41359),

Gene: Fazel_64 Start: 40348, Stop: 41253, Start Num: 13

Candidate Starts for Fazel_64:

(Start: 13 @40348 has 5 MA's), (17, 40375), (19, 40393), (23, 40444), (24, 40465), (27, 40540), (29, 40546), (32, 40594), (36, 40660), (40, 40723), (41, 40777), (43, 40801), (47, 40843), (49, 40870), (50, 40879), (51, 40891), (59, 40984), (60, 41017), (64, 41095), (70, 41164),

Gene: Figliar_57 Start: 40470, Stop: 41381, Start Num: 11

Candidate Starts for Figliar_57:

(7, 40410), (Start: 11 @40470 has 29 MA's), (14, 40485), (16, 40503), (20, 40530), (23, 40575), (24, 40596), (26, 40611), (28, 40674), (33, 40722), (41, 40899), (50, 40998), (58, 41091), (59, 41103), (68, 41262),

Gene: FortCran_64 Start: 40583, Stop: 41527, Start Num: 11

Candidate Starts for FortCran_64:

(Start: 11 @40583 has 29 MA's), (14, 40598), (16, 40616), (20, 40643), (24, 40709), (36, 40925), (40, 40988), (41, 41042), (43, 41066), (48, 41129), (50, 41147), (51, 41159), (52, 41177), (53, 41186), (67,

41405),

Gene: Gill_60 Start: 40406, Stop: 41350, Start Num: 11

Candidate Starts for Gill_60:

(Start: 11 @40406 has 29 MA's), (14, 40421), (16, 40439), (20, 40466), (36, 40748), (40, 40811), (41, 40865), (43, 40889), (48, 40952), (50, 40970), (52, 41000), (53, 41009), (56, 41030), (67, 41228), (68, 41231),

Gene: Gravy_59 Start: 40079, Stop: 41023, Start Num: 11

Candidate Starts for Gravy_59:

(Start: 11 @40079 has 29 MA's), (14, 40094), (16, 40112), (20, 40139), (36, 40421), (40, 40484), (41, 40538), (43, 40562), (48, 40625), (50, 40643), (52, 40673), (53, 40682), (56, 40703), (67, 40901), (68, 40904),

Gene: Hortihabitatio_60 Start: 41174, Stop: 42058, Start Num: 13

Candidate Starts for Hortihabitatio_60:

(Start: 13 @41174 has 5 MA's), (17, 41201), (19, 41219), (24, 41291), (27, 41366), (29, 41372), (36, 41465), (38, 41501), (40, 41528), (41, 41582), (43, 41606), (44, 41612), (47, 41648), (49, 41675), (50, 41684), (51, 41696), (58, 41777), (59, 41789), (60, 41822), (64, 41900), (70, 41969), (71, 41975), (72, 41999),

Gene: Hydrus_61 Start: 41331, Stop: 42233, Start Num: 11

Candidate Starts for Hydrus_61:

(7, 41271), (Start: 11 @41331 has 29 MA's), (15, 41361), (16, 41364), (20, 41391), (22, 41421), (24, 41457), (26, 41472), (33, 41583), (36, 41637), (41, 41754), (50, 41853), (58, 41946), (59, 41958), (61, 42018), (74, 42201),

Gene: Jodelie19_58 Start: 41874, Stop: 42785, Start Num: 11

Candidate Starts for Jodelie19_58:

(7, 41814), (Start: 11 @41874 has 29 MA's), (14, 41889), (16, 41907), (20, 41934), (23, 41979), (24, 42000), (26, 42015), (28, 42078), (33, 42126), (41, 42303), (50, 42402), (58, 42495), (59, 42507), (68, 42666), (73, 42747),

Gene: Kenosha_58 Start: 40793, Stop: 41692, Start Num: 11

Candidate Starts for Kenosha_58:

(7, 40733), (Start: 11 @40793 has 29 MA's), (16, 40826), (20, 40853), (23, 40898), (24, 40919), (26, 40934), (33, 41045), (36, 41096), (41, 41213), (50, 41312), (58, 41405), (59, 41417), (61, 41477), (71, 41603),

Gene: Kerry_59 Start: 40079, Stop: 41023, Start Num: 11

Candidate Starts for Kerry_59:

(Start: 11 @40079 has 29 MA's), (14, 40094), (16, 40112), (20, 40139), (36, 40421), (40, 40484), (41, 40538), (43, 40562), (48, 40625), (50, 40643), (52, 40673), (53, 40682), (56, 40703), (67, 40901), (68, 40904),

Gene: Madvan_58 Start: 40202, Stop: 41101, Start Num: 11

Candidate Starts for Madvan_58:

(7, 40142), (Start: 11 @40202 has 29 MA's), (15, 40232), (16, 40235), (20, 40262), (24, 40328), (26, 40343), (33, 40454), (36, 40505), (41, 40622), (50, 40721), (58, 40814), (59, 40826), (61, 40886), (74, 41069),

Gene: Magel_61 Start: 40322, Stop: 41266, Start Num: 11

Candidate Starts for Magel_61:

(Start: 11 @40322 has 29 MA's), (14, 40337), (16, 40355), (20, 40382), (36, 40664), (40, 40727), (41, 40781), (43, 40805), (48, 40868), (50, 40886), (52, 40916), (53, 40925), (56, 40946), (67, 41144), (68, 41147),

Gene: Mossy_62 Start: 42220, Stop: 43098, Start Num: 13

Candidate Starts for Mossy_62:

(Start: 13 @42220 has 5 MA's), (17, 42247), (19, 42265), (23, 42316), (24, 42337), (27, 42412), (29, 42418), (36, 42511), (38, 42547), (40, 42574), (41, 42628), (44, 42658), (47, 42694), (49, 42721), (50, 42730), (51, 42742), (54, 42775), (59, 42835), (64, 42946), (66, 42985), (70, 43015),

Gene: Nadmeg_60 Start: 41448, Stop: 42356, Start Num: 11

Candidate Starts for Nadmeg_60:

(2, 41238), (4, 41301), (5, 41310), (Start: 11 @41448 has 29 MA's), (16, 41481), (20, 41508), (22, 41538), (24, 41574), (26, 41589), (33, 41700), (36, 41760), (41, 41877), (50, 41976), (58, 42069), (59, 42081), (61, 42141),

Gene: Nithya_59 Start: 40310, Stop: 41221, Start Num: 11

Candidate Starts for Nithya_59:

(7, 40250), (Start: 11 @40310 has 29 MA's), (16, 40343), (20, 40370), (22, 40400), (24, 40436), (26, 40451), (33, 40562), (36, 40622), (41, 40739), (46, 40784), (50, 40838), (57, 40904), (58, 40931), (59, 40943), (68, 41102),

Gene: Odesza_59 Start: 40266, Stop: 41210, Start Num: 11

Candidate Starts for Odesza_59:

(Start: 11 @40266 has 29 MA's), (14, 40281), (16, 40299), (20, 40326), (36, 40608), (40, 40671), (41, 40725), (43, 40749), (48, 40812), (50, 40830), (52, 40860), (53, 40869), (56, 40890), (67, 41088), (68, 41091),

Gene: OhMyWard_58 Start: 41973, Stop: 42857, Start Num: 13

Candidate Starts for OhMyWard_58:

(1, 41763), (3, 41823), (4, 41829), (5, 41838), (6, 41901), (8, 41931), (9, 41937), (10, 41940), (Start: 13 @41973 has 5 MA's), (17, 42000), (19, 42018), (23, 42069), (24, 42090), (27, 42165), (29, 42171), (36, 42264), (38, 42300), (40, 42327), (41, 42381), (43, 42405), (44, 42411), (47, 42447), (49, 42474), (50, 42483), (51, 42495), (54, 42528), (59, 42588), (60, 42621), (64, 42699), (65, 42708), (66, 42738), (70, 42768), (73, 42828),

Gene: OlgasClover_60 Start: 41455, Stop: 42366, Start Num: 11

Candidate Starts for OlgasClover_60:

(7, 41395), (Start: 11 @41455 has 29 MA's), (14, 41470), (16, 41488), (20, 41515), (23, 41560), (24, 41581), (26, 41596), (28, 41659), (33, 41707), (41, 41884), (50, 41983), (58, 42076), (59, 42088), (68, 42247), (73, 42328),

Gene: Pepy6_084 Start: 50892, Stop: 51794, Start Num: 13

Candidate Starts for Pepy6_084:

(7, 50835), (Start: 13 @50892 has 5 MA's), (16, 50916), (18, 50928), (24, 51003), (25, 51006), (35, 51186), (42, 51342), (50, 51426), (55, 51477), (56, 51489), (65, 51660), (67, 51693), (72, 51747),

Gene: Perkunas_63 Start: 40655, Stop: 41599, Start Num: 11

Candidate Starts for Perkunas_63:

(Start: 11 @40655 has 29 MA's), (14, 40670), (16, 40688), (20, 40715), (27, 40856), (30, 40898), (31, 40904), (40, 41060), (41, 41114), (43, 41138), (50, 41219), (51, 41231), (56, 41279), (68, 41480), (73, 41561),

Gene: Petito_60 Start: 41846, Stop: 42754, Start Num: 16

Candidate Starts for Petito_60:

(Start: 11 @41813 has 29 MA's), (14, 41828), (16, 41846), (20, 41873), (36, 42152), (40, 42215), (41, 42269), (43, 42293), (48, 42356), (50, 42374), (56, 42434),

Gene: Phepper_60 Start: 40462, Stop: 41361, Start Num: 11

Candidate Starts for Phepper_60:

(7, 40402), (Start: 11 @40462 has 29 MA's), (15, 40492), (16, 40495), (20, 40522), (24, 40588), (26, 40603), (33, 40714), (36, 40765), (41, 40882), (50, 40981), (58, 41074), (59, 41086), (61, 41146), (74, 41329),

Gene: Pherobrine_61 Start: 42057, Stop: 42962, Start Num: 13

Candidate Starts for Pherobrine_61:

(Start: 13 @42057 has 5 MA's), (15, 42078), (16, 42081), (17, 42084), (19, 42102), (23, 42153), (24, 42174), (27, 42249), (36, 42369), (38, 42405), (40, 42432), (41, 42486), (43, 42510), (47, 42552), (49, 42579), (50, 42588), (51, 42600), (54, 42633), (58, 42681), (59, 42693), (60, 42726), (64, 42804), (65, 42813), (70, 42873), (73, 42933),

Gene: POCO6_083 Start: 52419, Stop: 53303, Start Num: 13

Candidate Starts for POCO6_083:

(Start: 13 @52419 has 5 MA's), (16, 52443), (18, 52455), (24, 52530), (25, 52533), (27, 52605), (29, 52611), (34, 52701), (42, 52851), (45, 52872), (50, 52935), (55, 52986), (56, 52998), (65, 53169), (67, 53202),

Gene: Rickmore_56 Start: 38811, Stop: 39713, Start Num: 11

Candidate Starts for Rickmore_56:

(7, 38751), (Start: 11 @38811 has 29 MA's), (16, 38844), (20, 38871), (22, 38901), (24, 38937), (26, 38952), (33, 39063), (36, 39114), (41, 39231), (46, 39276), (50, 39330), (58, 39423), (59, 39435), (73, 39675),

Gene: Roney_60 Start: 40432, Stop: 41376, Start Num: 11

Candidate Starts for Roney_60:

(Start: 11 @40432 has 29 MA's), (14, 40447), (16, 40465), (20, 40492), (36, 40774), (40, 40837), (41, 40891), (43, 40915), (48, 40978), (50, 40996), (52, 41026), (53, 41035), (56, 41056), (67, 41254), (68, 41257),

Gene: Runhaar_59 Start: 40264, Stop: 41172, Start Num: 11

Candidate Starts for Runhaar_59:

(2, 40054), (4, 40117), (5, 40126), (Start: 11 @40264 has 29 MA's), (16, 40297), (20, 40324), (22, 40354), (24, 40390), (26, 40405), (33, 40516), (36, 40576), (41, 40693), (47, 40759), (50, 40792), (58, 40885), (59, 40897), (61, 40957),

Gene: Schwartz33_61 Start: 40690, Stop: 41598, Start Num: 13

Candidate Starts for Schwartz33_61:

(Start: 13 @40690 has 5 MA's), (14, 40699), (21, 40750), (23, 40789), (32, 40939), (37, 41008), (39, 41044), (40, 41068), (41, 41122), (43, 41146), (47, 41188), (50, 41224), (51, 41236), (58, 41317), (63, 41434), (67, 41482), (68, 41485), (73, 41566),

Gene: Secretariat_59 Start: 39647, Stop: 40552, Start Num: 13

Candidate Starts for Secretariat_59:

(12, 39644), (Start: 13 @39647 has 5 MA's), (20, 39701), (23, 39746), (32, 39896), (37, 39962), (38, 39995), (41, 40076), (43, 40100), (47, 40142), (50, 40178), (51, 40190), (58, 40271), (62, 40376), (63, 40388), (68, 40439), (73, 40520),

Gene: Tanis_60 Start: 40252, Stop: 41196, Start Num: 11

Candidate Starts for Tanis_60:

(Start: 11 @40252 has 29 MA's), (14, 40267), (16, 40285), (20, 40312), (36, 40594), (40, 40657), (41, 40711), (43, 40735), (48, 40798), (50, 40816), (52, 40846), (53, 40855), (56, 40876), (67, 41074), (68, 41077),

Gene: TenaciousP_64 Start: 41836, Stop: 42747, Start Num: 11

Candidate Starts for TenaciousP_64:

(7, 41776), (Start: 11 @41836 has 29 MA's), (14, 41851), (16, 41869), (20, 41896), (23, 41941), (24, 41962), (26, 41977), (28, 42040), (33, 42088), (41, 42265), (50, 42364), (58, 42457), (59, 42469), (68, 42628), (73, 42709),

Gene: Untouchable_61 Start: 41375, Stop: 42274, Start Num: 11

Candidate Starts for Untouchable_61:

(7, 41315), (Start: 11 @41375 has 29 MA's), (15, 41405), (16, 41408), (20, 41435), (24, 41501), (26, 41516), (33, 41627), (36, 41678), (41, 41795), (50, 41894), (58, 41987), (59, 41999), (61, 42059), (74, 42242),

Gene: Vardy_58 Start: 40154, Stop: 41062, Start Num: 11

Candidate Starts for Vardy_58:

(2, 39944), (4, 40007), (5, 40016), (Start: 11 @40154 has 29 MA's), (16, 40187), (20, 40214), (22, 40244), (24, 40280), (26, 40295), (33, 40406), (36, 40466), (41, 40583), (47, 40649), (50, 40682), (58, 40775), (59, 40787), (61, 40847),

Gene: Zeph_63 Start: 41301, Stop: 42200, Start Num: 11

Candidate Starts for Zeph_63:

(7, 41241), (Start: 11 @41301 has 29 MA's), (15, 41331), (16, 41334), (20, 41361), (24, 41427), (26, 41442), (33, 41553), (36, 41604), (41, 41721), (50, 41820), (58, 41913), (59, 41925), (61, 41985), (74, 42168),