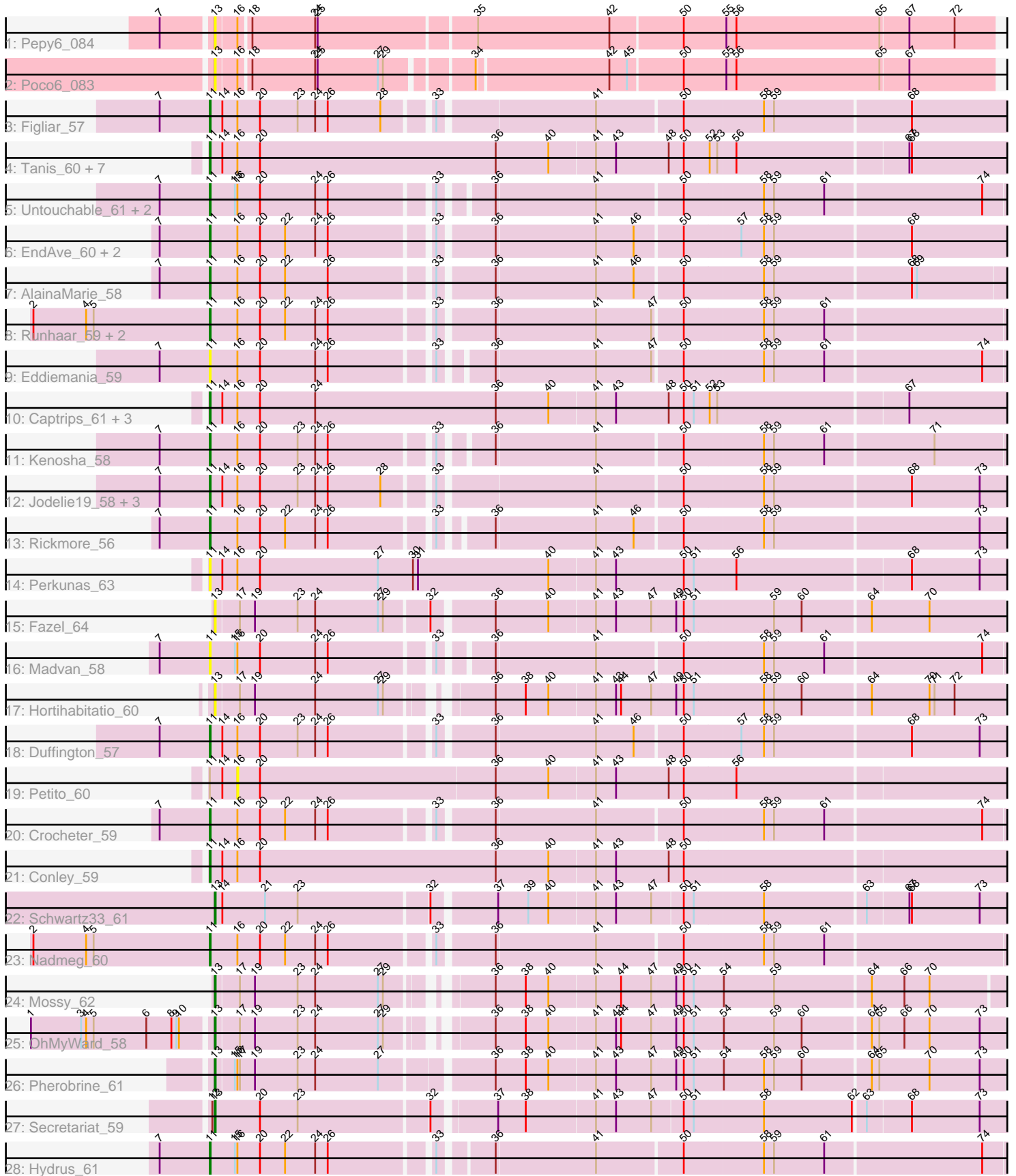


# Pham 154791



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 154791 Report

This analysis was run 04/12/24 on database version 558.

Pham number 154791 has 47 members, 13 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
- Track 7 : AlainaMarie\_58
- Track 8 : Runhaar\_59, Burley\_59, Vardy\_58
- Track 9 : Eddiemania\_59
- Track 10 : Captrips\_61, Avazak\_61, FortCran\_64, Artorias\_60
- Track 11 : Kenosha\_58
- Track 12 : Jodelie19\_58, OlgasClover\_60, Aflac\_58, TenaciousP\_64
- Track 13 : Rickmore\_56
- Track 14 : Perkunas\_63
- Track 15 : Fazel\_64
- Track 16 : Madvan\_58
- Track 17 : Hortihabitatio\_60
- Track 18 : Duffington\_57
- 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, Burley\_59, Captrips\_61, Capybara\_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 38 of 47 ( 80.9% ) 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), Burley\_59 (DJ), Captrips\_61 (DJ), Capybara\_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 47 ( 19.1% ) 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 41 of 47 ( 87.2% ) 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: 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: Petite\_60 Start: 41846, Stop: 42754, Start Num: 16

Candidate Starts for Petite\_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),