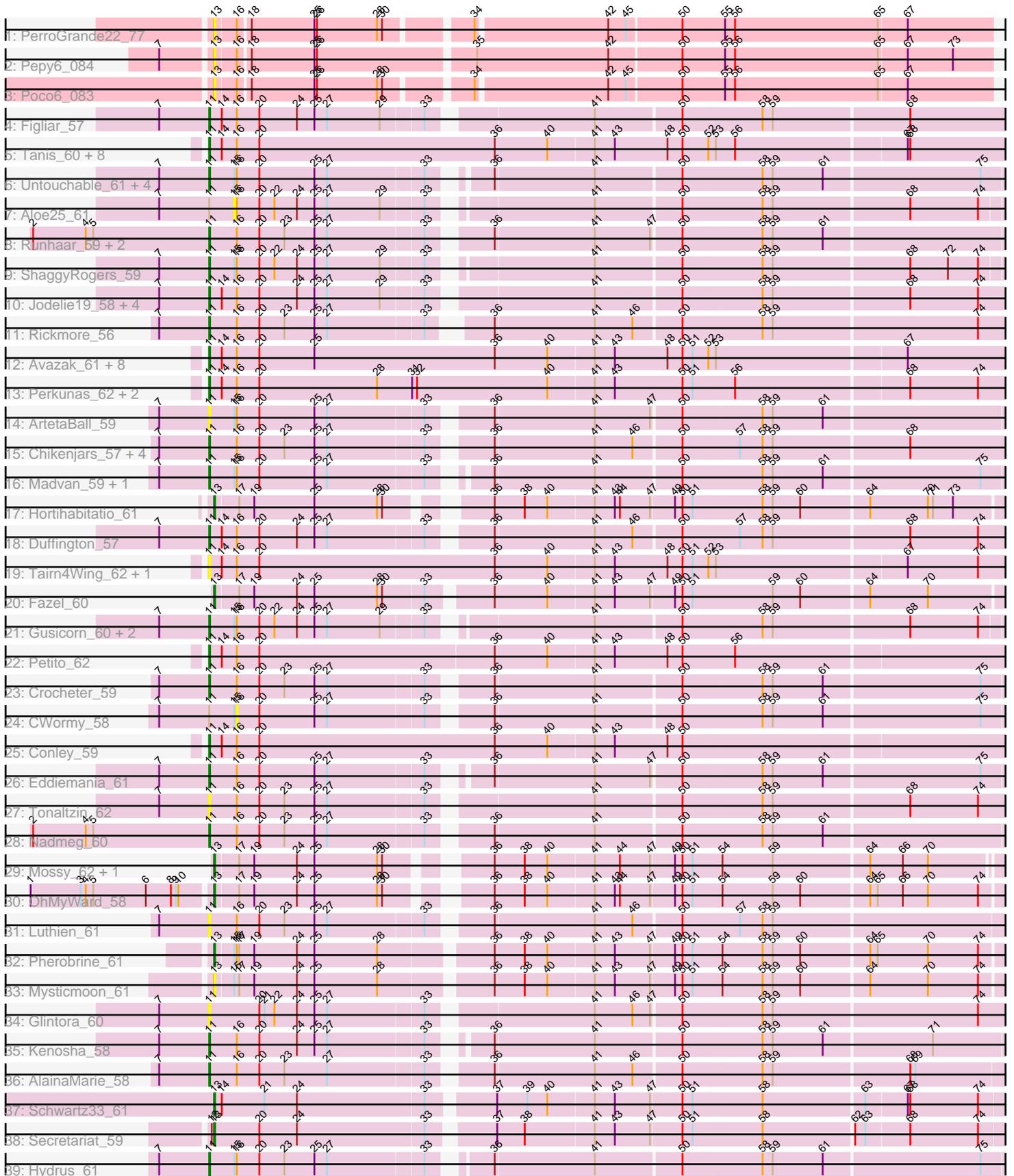# Pham 291107

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 291107 Report

This analysis was run 03/28/26 on database version 641.

Pham number 291107 has 76 members, 20 are drafts.

Phages represented in each track:
• Track 1 : PerroGrande22_77
• Track 2 : Pepy6_084
• Track 3 : Poco6_083
• Track 4 : Figliar_57
• Track 5 : Tanis_60, NoPickles_59, Capybara_60, Gravy_59, Magel_61, Gill_60, Kerry_59, Roney_60, Odesza_59
• Track 6 : Untouchable_61, Zeph_61, Demure_57, Arataki_58, Phepper_60
• Track 7 : Aloe25_61
• Track 8 : Runhaar_59, Burley_59, Vardy_58
• Track 9 : ShaggyRogers_59
• Track 10 : Jodelie19_58, OlgasClover_60, TenaciousP_59, MajinBuu_59, Aflac_58
• Track 11 : Rickmore_56
• Track 12 : Avazak_61, Artorias_60, Football_62, FortCran_60, Dancer_60, Bugg_62, JulesRay_60, ChickyNuggy_62, Captrips_59
• Track 13 : Perkunas_62, Talon44_62, SweetCrkHerbs_62
• Track 14 : ArtetaBall_59
• Track 15 : Chikenjars_57, EndAve_60, Nithya_59, Citrus_58, BluerMoon_57
• Track 16 : Madvan_59, Dialga_59
• Track 17 : Hortihabitatio_61
• Track 18 : Duffington_57
• Track 19 : Tairn4Wing_62, Trufflozitus_64
• Track 20 : Fazel_60
• Track 21 : Gusicorn_60, BetterYeti_59, PestoPenguin_62
• Track 22 : Petito_62
• Track 23 : Crocheter_59
• Track 24 : CWormy_58
• Track 25 : Conley_59
• Track 26 : Eddiemania_61
• Track 27 : Tonaltzin_62
• Track 28 : Nadmeg_60
• Track 29 : Mossy_62, Blanky_59
• Track 30 : OhMyWard_58
• Track 31 : Luthien_61
• Track 32 : Pherobrine_61
• Track 33 : Mysticmoon_61
• Track 34 : Glintora_60
• Track 35 : Kenosha_58

- Track 36 : AlainaMarie_58
- Track 37 : Schwartz33_61
- Track 38 : Secretariat_59
- Track 39 : 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 49 of the 56 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
- Aflac_58, AlainaMarie_58, Arataki_58, ArtetaBall_59, Artorias_60, Avazak_61, BetterYeti_59, BluerMoon_57, Bugg_62, Burley_59, Captrips_59, Capybara_60, ChickyNuggy_62, Chikenjars_57, Citrus_58, Conley_59, Crocheter_59, Dancer_60, Demure_57, Dialga_59, Duffington_57, Eddiemania_61, EndAve_60, Figliar_57, Football_62, FortCran_60, Gill_60, Glintora_60, Gravy_59, Gusicorn_60, Hydrus_61, Jodelie19_58, JulesRay_60, Kenosha_58, Kerry_59, Luthien_61, Madvan_59, Magel_61, MajinBuu_59, Nadmeg_60, Nithya_59, NoPickles_59, Odesza_59, OlgasClover_60, Perkunas_62, PestoPenguin_62, Petito_62, Phepper_60, Rickmore_56, Roney_60, Runhaar_59, ShaggyRogers_59, SweetCrkHerbs_62, Tairn4Wing_62, Talon44_62, Tanis_60, TenaciousP_59, Tonaltzin_62, Trufflozitus_64, Untouchable_61, Vardy_58, Zeph_61,

Genes that have the "Most Annotated" start but do not call it:
- Aloe25_61, CWormy_58,

Genes that do not have the "Most Annotated" start:
- Blanky_59, Fazel_60, Hortihabitatio_61, Mossy_62, Mysticmoon_61, OhMyWard_58, Pepy6_084, PerroGrande22_77, Pherobrine_61, Poco6_083, Schwartz33_61, Secretariat_59,

Summary by start number:

Start 11:
- Found in 64 of 76 (84.2%) of genes in pham
- Manual Annotations of this start: 49 of 56
- Called 96.9% of time when present
- Phage (with cluster) where this start called: Aflac_58 (DJ), AlainaMarie_58 (DJ), Arataki_58 (DJ), ArtetaBall_59 (DJ), Artorias_60 (DJ), Avazak_61 (DJ), BetterYeti_59 (DJ), BluerMoon_57 (DJ), Bugg_62 (DJ), Burley_59 (DJ), Captrips_59 (DJ), Capybara_60 (DJ), ChickyNuggy_62 (DJ), Chikenjars_57 (DJ), Citrus_58 (DJ), Conley_59 (DJ), Crocheter_59 (DJ), Dancer_60 (DJ), Demure_57 (DJ), Dialga_59 (DJ), Duffington_57 (DJ), Eddiemania_61 (DJ), EndAve_60 (DJ), Figliar_57 (DJ), Football_62 (DJ), FortCran_60 (DJ), Gill_60 (DJ), Glintora_60 (DJ), Gravy_59 (DJ), Gusicorn_60 (DJ), Hydrus_61 (DJ), Jodelie19_58 (DJ), JulesRay_60 (DJ), Kenosha_58 (DJ), Kerry_59 (DJ), Luthien_61 (DJ), Madvan_59 (DJ), Magel_61 (DJ), MajinBuu_59 (DJ), Nadmeg_60 (DJ), Nithya_59 (DJ), NoPickles_59 (DJ), Odesza_59 (DJ), OlgasClover_60 (DJ), Perkunas_62 (DJ), PestoPenguin_62 (DJ), Petito_62 (DJ), Phepper_60 (DJ), Rickmore_56 (DJ), Roney_60 (DJ), Runhaar_59 (DJ), ShaggyRogers_59 (DJ), SweetCrkHerbs_62 (DJ), Tairn4Wing_62 (DJ), Talon44_62

(DJ), Tanis_60 (DJ), TenaciousP_59 (DJ), Tonaltzin_62 (DJ), Trufflozitus_64 (DJ), Untouchable_61 (DJ), Vardy_58 (DJ), Zeph_61 (DJ),

Start 13:
• Found in 12 of 76 (15.8%) of genes in pham
• Manual Annotations of this start: 7 of 56
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Blanky_59 (DJ), Fazel_60 (DJ), Hortihabitatio_61 (DJ), Mossy_62 (DJ), Mysticmoon_61 (DJ), OhMyWard_58 (DJ), Pepy6_084 (CC), PerroGrande22_77 (CC), Pherobrine_61 (DJ), Poco6_083 (CC), Schwartz33_61 (DJ), Secretariat_59 (DJ),

Start 15:
• Found in 17 of 76 (22.4%) of genes in pham
• No Manual Annotations of this start.
• Called 5.9% of time when present
• Phage (with cluster) where this start called: Aloe25_61 (DJ),

Start 16:
• Found in 67 of 76 (88.2%) of genes in pham
• No Manual Annotations of this start.
• Called 1.5% of time when present
• Phage (with cluster) where this start called: CWormy_58 (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 49 times for cluster DJ.
•Start number 13 was manually annotated 7 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 49 MA's), (14, 40417), (16, 40435), (20, 40462), (24, 40507), (25, 40528), (27, 40543), (29, 40606), (33, 40654), (41, 40831), (50, 40930), (58, 41023), (59, 41035), (68, 41194), (74, 41275),

Gene: AlainaMarie_58 Start: 40386, Stop: 41294, Start Num: 11
Candidate Starts for AlainaMarie_58:
(7, 40326), (Start: 11 @40386 has 49 MA's), (16, 40419), (20, 40446), (23, 40476), (27, 40527), (33, 40638), (36, 40698), (41, 40815), (46, 40860), (50, 40914), (58, 41007), (59, 41019), (68, 41178), (69, 41184),

Gene: Aloe25_61 Start: 40509, Stop: 41378, Start Num: 15
Candidate Starts for Aloe25_61:
(7, 40419), (Start: 11 @40479 has 49 MA's), (15, 40509), (16, 40512), (20, 40539), (22, 40557), (24, 40584), (25, 40605), (27, 40620), (29, 40683), (33, 40731), (41, 40902), (50, 41001), (58, 41094), (59,

41106), (68, 41265), (74, 41346),

Gene: Arataki_58 Start: 40076, Stop: 40975, Start Num: 11
Candidate Starts for Arataki_58:
(7, 40016), (Start: 11 @40076 has 49 MA's), (15, 40106), (16, 40109), (20, 40136), (25, 40202), (27, 40217), (33, 40328), (36, 40379), (41, 40496), (50, 40595), (58, 40688), (59, 40700), (61, 40760), (75, 40943),

Gene: ArtetaBall_59 Start: 40704, Stop: 41612, Start Num: 11
Candidate Starts for ArtetaBall_59:
(7, 40644), (Start: 11 @40704 has 49 MA's), (15, 40734), (16, 40737), (20, 40764), (25, 40830), (27, 40845), (33, 40956), (36, 41016), (41, 41133), (47, 41199), (50, 41232), (58, 41325), (59, 41337), (61, 41397),

Gene: Artorias_60 Start: 40583, Stop: 41527, Start Num: 11
Candidate Starts for Artorias_60:
(Start: 11 @40583 has 49 MA's), (14, 40598), (16, 40616), (20, 40643), (25, 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 49 MA's), (14, 40925), (16, 40943), (20, 40970), (25, 41036), (36, 41252), (40, 41315), (41, 41369), (43, 41393), (48, 41456), (50, 41474), (51, 41486), (52, 41504), (53, 41513), (67, 41732),

Gene: BetterYeti_59 Start: 40478, Stop: 41377, Start Num: 11
Candidate Starts for BetterYeti_59:
(7, 40418), (Start: 11 @40478 has 49 MA's), (15, 40508), (16, 40511), (20, 40538), (22, 40556), (24, 40583), (25, 40604), (27, 40619), (29, 40682), (33, 40730), (41, 40901), (50, 41000), (58, 41093), (59, 41105), (68, 41264), (74, 41345),

Gene: Blanky_59 Start: 42008, Stop: 42886, Start Num: 13
Candidate Starts for Blanky_59:
(Start: 13 @42008 has 7 MA's), (17, 42035), (19, 42053), (24, 42104), (25, 42125), (28, 42200), (30, 42206), (36, 42299), (38, 42335), (40, 42362), (41, 42416), (44, 42446), (47, 42482), (49, 42509), (50, 42518), (51, 42530), (54, 42563), (59, 42623), (64, 42734), (66, 42773), (70, 42803),

Gene: BluerMoon_57 Start: 40431, Stop: 41342, Start Num: 11
Candidate Starts for BluerMoon_57:
(7, 40371), (Start: 11 @40431 has 49 MA's), (16, 40464), (20, 40491), (23, 40521), (25, 40557), (27, 40572), (33, 40683), (36, 40743), (41, 40860), (46, 40905), (50, 40959), (57, 41025), (58, 41052), (59, 41064), (68, 41223),

Gene: Bugg_62 Start: 40628, Stop: 41572, Start Num: 11
Candidate Starts for Bugg_62:
(Start: 11 @40628 has 49 MA's), (14, 40643), (16, 40661), (20, 40688), (25, 40754), (36, 40970), (40, 41033), (41, 41087), (43, 41111), (48, 41174), (50, 41192), (51, 41204), (52, 41222), (53, 41231), (67, 41450),

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 49 MA's), (16, 40198), (20, 40225), (23, 40255), (25, 40291), (27, 40306), (33, 40417), (36, 40477), (41, 40594), (47, 40660), (50, 40693), (58, 40786), (59, 40798), (61, 40858),

Gene: CWormy_58 Start: 40151, Stop: 41026, Start Num: 16
Candidate Starts for CWormy_58:
(7, 40058), (Start: 11 @40118 has 49 MA's), (15, 40148), (16, 40151), (20, 40178), (25, 40244), (27, 40259), (33, 40370), (36, 40430), (41, 40547), (50, 40646), (58, 40739), (59, 40751), (61, 40811), (75, 40994),

Gene: Captrips_59 Start: 40058, Stop: 41002, Start Num: 11
Candidate Starts for Captrips_59:
(Start: 11 @40058 has 49 MA's), (14, 40073), (16, 40091), (20, 40118), (25, 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 49 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: ChickyNuggy_62 Start: 40654, Stop: 41598, Start Num: 11
Candidate Starts for ChickyNuggy_62:
(Start: 11 @40654 has 49 MA's), (14, 40669), (16, 40687), (20, 40714), (25, 40780), (36, 40996), (40, 41059), (41, 41113), (43, 41137), (48, 41200), (50, 41218), (51, 41230), (52, 41248), (53, 41257), (67, 41476),

Gene: Chikenjars_57 Start: 40399, Stop: 41310, Start Num: 11
Candidate Starts for Chikenjars_57:
(7, 40339), (Start: 11 @40399 has 49 MA's), (16, 40432), (20, 40459), (23, 40489), (25, 40525), (27, 40540), (33, 40651), (36, 40711), (41, 40828), (46, 40873), (50, 40927), (57, 40993), (58, 41020), (59, 41032), (68, 41191),

Gene: Citrus_58 Start: 40676, Stop: 41584, Start Num: 11
Candidate Starts for Citrus_58:
(7, 40616), (Start: 11 @40676 has 49 MA's), (16, 40709), (20, 40736), (23, 40766), (25, 40802), (27, 40817), (33, 40928), (36, 40988), (41, 41105), (46, 41150), (50, 41204), (57, 41270), (58, 41297), (59, 41309), (68, 41468),

Gene: Conley_59 Start: 41139, Stop: 42083, Start Num: 11
Candidate Starts for Conley_59:
(Start: 11 @41139 has 49 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 49 MA's), (16, 40595), (20, 40622), (23, 40652), (25, 40688), (27, 40703), (33, 40814), (36, 40874), (41, 40991), (50, 41090), (58, 41183), (59, 41195), (61, 41255), (75, 41438),

Gene: Dancer_60 Start: 40318, Stop: 41262, Start Num: 11
Candidate Starts for Dancer_60:

(Start: 11 @40318 has 49 MA's), (14, 40333), (16, 40351), (20, 40378), (25, 40444), (36, 40660), (40, 40723), (41, 40777), (43, 40801), (48, 40864), (50, 40882), (51, 40894), (52, 40912), (53, 40921), (67, 41140),

Gene: Demure_57 Start: 40076, Stop: 40975, Start Num: 11
Candidate Starts for Demure_57:
(7, 40016), (Start: 11 @40076 has 49 MA's), (15, 40106), (16, 40109), (20, 40136), (25, 40202), (27, 40217), (33, 40328), (36, 40379), (41, 40496), (50, 40595), (58, 40688), (59, 40700), (61, 40760), (75, 40943),

Gene: Dialga_59 Start: 40732, Stop: 41631, Start Num: 11
Candidate Starts for Dialga_59:
(7, 40672), (Start: 11 @40732 has 49 MA's), (15, 40762), (16, 40765), (20, 40792), (25, 40858), (27, 40873), (33, 40984), (36, 41035), (41, 41152), (50, 41251), (58, 41344), (59, 41356), (61, 41416), (75, 41599),

Gene: Duffington_57 Start: 40095, Stop: 41006, Start Num: 11
Candidate Starts for Duffington_57:
(7, 40035), (Start: 11 @40095 has 49 MA's), (14, 40110), (16, 40128), (20, 40155), (24, 40200), (25, 40221), (27, 40236), (33, 40347), (36, 40407), (41, 40524), (46, 40569), (50, 40623), (57, 40689), (58, 40716), (59, 40728), (68, 40887), (74, 40968),

Gene: Eddiemania_61 Start: 41307, Stop: 42206, Start Num: 11
Candidate Starts for Eddiemania_61:
(7, 41247), (Start: 11 @41307 has 49 MA's), (16, 41340), (20, 41367), (25, 41433), (27, 41448), (33, 41559), (36, 41610), (41, 41727), (47, 41793), (50, 41826), (58, 41919), (59, 41931), (61, 41991), (75, 42174),

Gene: EndAve_60 Start: 40567, Stop: 41478, Start Num: 11
Candidate Starts for EndAve_60:
(7, 40507), (Start: 11 @40567 has 49 MA's), (16, 40600), (20, 40627), (23, 40657), (25, 40693), (27, 40708), (33, 40819), (36, 40879), (41, 40996), (46, 41041), (50, 41095), (57, 41161), (58, 41188), (59, 41200), (68, 41359),

Gene: Fazel_60 Start: 40348, Stop: 41253, Start Num: 13
Candidate Starts for Fazel_60:
(Start: 13 @40348 has 7 MA's), (17, 40375), (19, 40393), (24, 40444), (25, 40465), (28, 40540), (30, 40546), (33, 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 49 MA's), (14, 40485), (16, 40503), (20, 40530), (24, 40575), (25, 40596), (27, 40611), (29, 40674), (33, 40722), (41, 40899), (50, 40998), (58, 41091), (59, 41103), (68, 41262),

Gene: Football_62 Start: 40209, Stop: 41153, Start Num: 11
Candidate Starts for Football_62:
(Start: 11 @40209 has 49 MA's), (14, 40224), (16, 40242), (20, 40269), (25, 40335), (36, 40551), (40, 40614), (41, 40668), (43, 40692), (48, 40755), (50, 40773), (51, 40785), (52, 40803), (53, 40812), (67, 41031),

Gene: FortCran_60 Start: 40583, Stop: 41527, Start Num: 11

Candidate Starts for FortCran_60:
(Start: 11 @40583 has 49 MA's), (14, 40598), (16, 40616), (20, 40643), (25, 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 49 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: Glintora_60 Start: 41015, Stop: 41926, Start Num: 11
Candidate Starts for Glintora_60:
(7, 40955), (Start: 11 @41015 has 49 MA's), (20, 41075), (21, 41081), (22, 41093), (24, 41120), (25, 41141), (27, 41156), (33, 41267), (41, 41444), (46, 41489), (47, 41510), (50, 41543), (58, 41636), (59, 41648), (74, 41888),

Gene: Gravy_59 Start: 40079, Stop: 41023, Start Num: 11
Candidate Starts for Gravy_59:
(Start: 11 @40079 has 49 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: Gusicorn_60 Start: 40479, Stop: 41378, Start Num: 11
Candidate Starts for Gusicorn_60:
(7, 40419), (Start: 11 @40479 has 49 MA's), (15, 40509), (16, 40512), (20, 40539), (22, 40557), (24, 40584), (25, 40605), (27, 40620), (29, 40683), (33, 40731), (41, 40902), (50, 41001), (58, 41094), (59, 41106), (68, 41265), (74, 41346),

Gene: Hortihabitatio_61 Start: 41174, Stop: 42058, Start Num: 13
Candidate Starts for Hortihabitatio_61:
(Start: 13 @41174 has 7 MA's), (17, 41201), (19, 41219), (25, 41291), (28, 41366), (30, 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), (73, 41999),

Gene: Hydrus_61 Start: 41331, Stop: 42233, Start Num: 11
Candidate Starts for Hydrus_61:
(7, 41271), (Start: 11 @41331 has 49 MA's), (15, 41361), (16, 41364), (20, 41391), (23, 41421), (25, 41457), (27, 41472), (33, 41583), (36, 41637), (41, 41754), (50, 41853), (58, 41946), (59, 41958), (61, 42018), (75, 42201),

Gene: Jodelie19_58 Start: 41874, Stop: 42785, Start Num: 11
Candidate Starts for Jodelie19_58:
(7, 41814), (Start: 11 @41874 has 49 MA's), (14, 41889), (16, 41907), (20, 41934), (24, 41979), (25, 42000), (27, 42015), (29, 42078), (33, 42126), (41, 42303), (50, 42402), (58, 42495), (59, 42507), (68, 42666), (74, 42747),

Gene: JulesRay_60 Start: 40579, Stop: 41523, Start Num: 11
Candidate Starts for JulesRay_60:
(Start: 11 @40579 has 49 MA's), (14, 40594), (16, 40612), (20, 40639), (25, 40705), (36, 40921), (40, 40984), (41, 41038), (43, 41062), (48, 41125), (50, 41143), (51, 41155), (52, 41173), (53, 41182), (67, 41401),

Gene: Kenosha_58 Start: 40793, Stop: 41692, Start Num: 11
Candidate Starts for Kenosha_58:
(7, 40733), (Start: 11 @40793 has 49 MA's), (16, 40826), (20, 40853), (24, 40898), (25, 40919), (27, 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 49 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: Luthien_61 Start: 40564, Stop: 41472, Start Num: 11
Candidate Starts for Luthien_61:
(7, 40504), (Start: 11 @40564 has 49 MA's), (16, 40597), (20, 40624), (23, 40654), (25, 40690), (27, 40705), (33, 40816), (36, 40876), (41, 40993), (46, 41038), (50, 41092), (57, 41158), (58, 41185), (59, 41197),

Gene: Madvan_59 Start: 40202, Stop: 41101, Start Num: 11
Candidate Starts for Madvan_59:
(7, 40142), (Start: 11 @40202 has 49 MA's), (15, 40232), (16, 40235), (20, 40262), (25, 40328), (27, 40343), (33, 40454), (36, 40505), (41, 40622), (50, 40721), (58, 40814), (59, 40826), (61, 40886), (75, 41069),

Gene: Magel_61 Start: 40322, Stop: 41266, Start Num: 11
Candidate Starts for Magel_61:
(Start: 11 @40322 has 49 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: MajinBuu_59 Start: 40852, Stop: 41763, Start Num: 11
Candidate Starts for MajinBuu_59:
(7, 40792), (Start: 11 @40852 has 49 MA's), (14, 40867), (16, 40885), (20, 40912), (24, 40957), (25, 40978), (27, 40993), (29, 41056), (33, 41104), (41, 41281), (50, 41380), (58, 41473), (59, 41485), (68, 41644), (74, 41725),

Gene: Mossy_62 Start: 42220, Stop: 43098, Start Num: 13
Candidate Starts for Mossy_62:
(Start: 13 @42220 has 7 MA's), (17, 42247), (19, 42265), (24, 42316), (25, 42337), (28, 42412), (30, 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: Mysticmoon_61 Start: 41647, Stop: 42552, Start Num: 13
Candidate Starts for Mysticmoon_61:
(Start: 13 @41647 has 7 MA's), (15, 41668), (17, 41674), (19, 41692), (24, 41743), (25, 41764), (28, 41839), (36, 41959), (38, 41995), (40, 42022), (41, 42076), (43, 42100), (47, 42142), (49, 42169), (50, 42178), (51, 42190), (54, 42223), (58, 42271), (59, 42283), (60, 42316), (64, 42394), (70, 42463), (74, 42523),

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 49 MA's), (16, 41481), (20, 41508), (23, 41538), (25, 41574), (27, 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 49 MA's), (16, 40343), (20, 40370), (23, 40400), (25, 40436), (27, 40451), (33, 40562), (36, 40622), (41, 40739), (46, 40784), (50, 40838), (57, 40904), (58, 40931), (59, 40943), (68, 41102),

Gene: NoPickles_59 Start: 39744, Stop: 40688, Start Num: 11
Candidate Starts for NoPickles_59:
(Start: 11 @39744 has 49 MA's), (14, 39759), (16, 39777), (20, 39804), (36, 40086), (40, 40149), (41, 40203), (43, 40227), (48, 40290), (50, 40308), (52, 40338), (53, 40347), (56, 40368), (67, 40566), (68, 40569),

Gene: Odesza_59 Start: 40266, Stop: 41210, Start Num: 11
Candidate Starts for Odesza_59:
(Start: 11 @40266 has 49 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 7 MA's), (17, 42000), (19, 42018), (24, 42069), (25, 42090), (28, 42165), (30, 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), (74, 42828),

Gene: OlgasClover_60 Start: 41455, Stop: 42366, Start Num: 11
Candidate Starts for OlgasClover_60:
(7, 41395), (Start: 11 @41455 has 49 MA's), (14, 41470), (16, 41488), (20, 41515), (24, 41560), (25, 41581), (27, 41596), (29, 41659), (33, 41707), (41, 41884), (50, 41983), (58, 42076), (59, 42088), (68, 42247), (74, 42328),

Gene: Pepy6_084 Start: 50892, Stop: 51794, Start Num: 13
Candidate Starts for Pepy6_084:
(7, 50835), (Start: 13 @50892 has 7 MA's), (16, 50916), (18, 50928), (25, 51003), (26, 51006), (35, 51186), (42, 51342), (50, 51426), (55, 51477), (56, 51489), (65, 51660), (67, 51693), (73, 51747),

Gene: Perkunas_62 Start: 40655, Stop: 41599, Start Num: 11
Candidate Starts for Perkunas_62:
(Start: 11 @40655 has 49 MA's), (14, 40670), (16, 40688), (20, 40715), (28, 40856), (31, 40898), (32, 40904), (40, 41060), (41, 41114), (43, 41138), (50, 41219), (51, 41231), (56, 41279), (68, 41480), (74, 41561),

Gene: PerroGrande22_77 Start: 52624, Stop: 53508, Start Num: 13
Candidate Starts for PerroGrande22_77:
(Start: 13 @52624 has 7 MA's), (16, 52648), (18, 52660), (25, 52735), (26, 52738), (28, 52810), (30, 52816), (34, 52906), (42, 53056), (45, 53077), (50, 53140), (55, 53191), (56, 53203), (65, 53374), (67, 53407),

Gene: PestoPenguin_62 Start: 40479, Stop: 41378, Start Num: 11
Candidate Starts for PestoPenguin_62:
(7, 40419), (Start: 11 @40479 has 49 MA's), (15, 40509), (16, 40512), (20, 40539), (22, 40557), (24, 40584), (25, 40605), (27, 40620), (29, 40683), (33, 40731), (41, 40902), (50, 41001), (58, 41094), (59, 41106), (68, 41265), (74, 41346),

Gene: Petito_62 Start: 41813, Stop: 42754, Start Num: 11
Candidate Starts for Petito_62:
(Start: 11 @41813 has 49 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 49 MA's), (15, 40492), (16, 40495), (20, 40522), (25, 40588), (27, 40603), (33, 40714), (36, 40765), (41, 40882), (50, 40981), (58, 41074), (59, 41086), (61, 41146), (75, 41329),

Gene: Pherobrine_61 Start: 42057, Stop: 42962, Start Num: 13
Candidate Starts for Pherobrine_61:
(Start: 13 @42057 has 7 MA's), (15, 42078), (16, 42081), (17, 42084), (19, 42102), (24, 42153), (25, 42174), (28, 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), (74, 42933),

Gene: Poco6_083 Start: 52419, Stop: 53303, Start Num: 13
Candidate Starts for Poco6_083:
(Start: 13 @52419 has 7 MA's), (16, 52443), (18, 52455), (25, 52530), (26, 52533), (28, 52605), (30, 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 49 MA's), (16, 38844), (20, 38871), (23, 38901), (25, 38937), (27, 38952), (33, 39063), (36, 39114), (41, 39231), (46, 39276), (50, 39330), (58, 39423), (59, 39435), (74, 39675),

Gene: Roney_60 Start: 40432, Stop: 41376, Start Num: 11
Candidate Starts for Roney_60:
(Start: 11 @40432 has 49 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 49 MA's), (16, 40297), (20, 40324), (23, 40354), (25, 40390), (27, 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 7 MA's), (14, 40699), (21, 40750), (24, 40789), (33, 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), (74, 41566),

Gene: Secretariat_59 Start: 39647, Stop: 40552, Start Num: 13
Candidate Starts for Secretariat_59:
(12, 39644), (Start: 13 @39647 has 7 MA's), (20, 39701), (24, 39746), (33, 39896), (37, 39962), (38, 39995), (41, 40076), (43, 40100), (47, 40142), (50, 40178), (51, 40190), (58, 40271), (62, 40376), (63, 40388), (68, 40439), (74, 40520),

Gene: ShaggyRogers_59 Start: 40215, Stop: 41114, Start Num: 11
Candidate Starts for ShaggyRogers_59:
(7, 40155), (Start: 11 @40215 has 49 MA's), (15, 40245), (16, 40248), (20, 40275), (22, 40293), (24, 40320), (25, 40341), (27, 40356), (29, 40419), (33, 40467), (41, 40638), (50, 40737), (58, 40830), (59, 40842), (68, 41001), (72, 41046), (74, 41082),

Gene: SweetCrkHerbs_62 Start: 40347, Stop: 41291, Start Num: 11
Candidate Starts for SweetCrkHerbs_62:
(Start: 11 @40347 has 49 MA's), (14, 40362), (16, 40380), (20, 40407), (28, 40548), (31, 40590), (32, 40596), (40, 40752), (41, 40806), (43, 40830), (50, 40911), (51, 40923), (56, 40971), (68, 41172), (74, 41253),

Gene: Tairn4Wing_62 Start: 40423, Stop: 41367, Start Num: 11
Candidate Starts for Tairn4Wing_62:
(Start: 11 @40423 has 49 MA's), (14, 40438), (16, 40456), (20, 40483), (36, 40765), (40, 40828), (41, 40882), (43, 40906), (48, 40969), (50, 40987), (51, 40999), (52, 41017), (53, 41026), (67, 41245), (74, 41329),

Gene: Talon44_62 Start: 40689, Stop: 41633, Start Num: 11
Candidate Starts for Talon44_62:
(Start: 11 @40689 has 49 MA's), (14, 40704), (16, 40722), (20, 40749), (28, 40890), (31, 40932), (32, 40938), (40, 41094), (41, 41148), (43, 41172), (50, 41253), (51, 41265), (56, 41313), (68, 41514), (74, 41595),

Gene: Tanis_60 Start: 40252, Stop: 41196, Start Num: 11
Candidate Starts for Tanis_60:
(Start: 11 @40252 has 49 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_59 Start: 41836, Stop: 42747, Start Num: 11
Candidate Starts for TenaciousP_59:
(7, 41776), (Start: 11 @41836 has 49 MA's), (14, 41851), (16, 41869), (20, 41896), (24, 41941), (25, 41962), (27, 41977), (29, 42040), (33, 42088), (41, 42265), (50, 42364), (58, 42457), (59, 42469), (68, 42628), (74, 42709),

Gene: Tonaltzin_62 Start: 40406, Stop: 41317, Start Num: 11
Candidate Starts for Tonaltzin_62:
(7, 40346), (Start: 11 @40406 has 49 MA's), (16, 40439), (20, 40466), (23, 40496), (25, 40532), (27, 40547), (33, 40658), (41, 40835), (50, 40934), (58, 41027), (59, 41039), (68, 41198), (74, 41279),

Gene: Trufflozitus_64 Start: 40934, Stop: 41878, Start Num: 11
Candidate Starts for Trufflozitus_64:
(Start: 11 @40934 has 49 MA's), (14, 40949), (16, 40967), (20, 40994), (36, 41276), (40, 41339), (41, 41393), (43, 41417), (48, 41480), (50, 41498), (51, 41510), (52, 41528), (53, 41537), (67, 41756), (74, 41840),

Gene: Untouchable_61 Start: 41375, Stop: 42274, Start Num: 11
Candidate Starts for Untouchable_61:
(7, 41315), (Start: 11 @41375 has 49 MA's), (15, 41405), (16, 41408), (20, 41435), (25, 41501), (27, 41516), (33, 41627), (36, 41678), (41, 41795), (50, 41894), (58, 41987), (59, 41999), (61, 42059), (75, 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 49 MA's), (16, 40187), (20, 40214), (23, 40244), (25, 40280), (27, 40295), (33, 40406), (36, 40466), (41, 40583), (47, 40649), (50, 40682), (58, 40775), (59, 40787), (61, 40847),

Gene: Zeph_61 Start: 41301, Stop: 42200, Start Num: 11
Candidate Starts for Zeph_61:
(7, 41241), (Start: 11 @41301 has 49 MA's), (15, 41331), (16, 41334), (20, 41361), (25, 41427), (27, 41442), (33, 41553), (36, 41604), (41, 41721), (50, 41820), (58, 41913), (59, 41925), (61, 41985), (75, 42168),