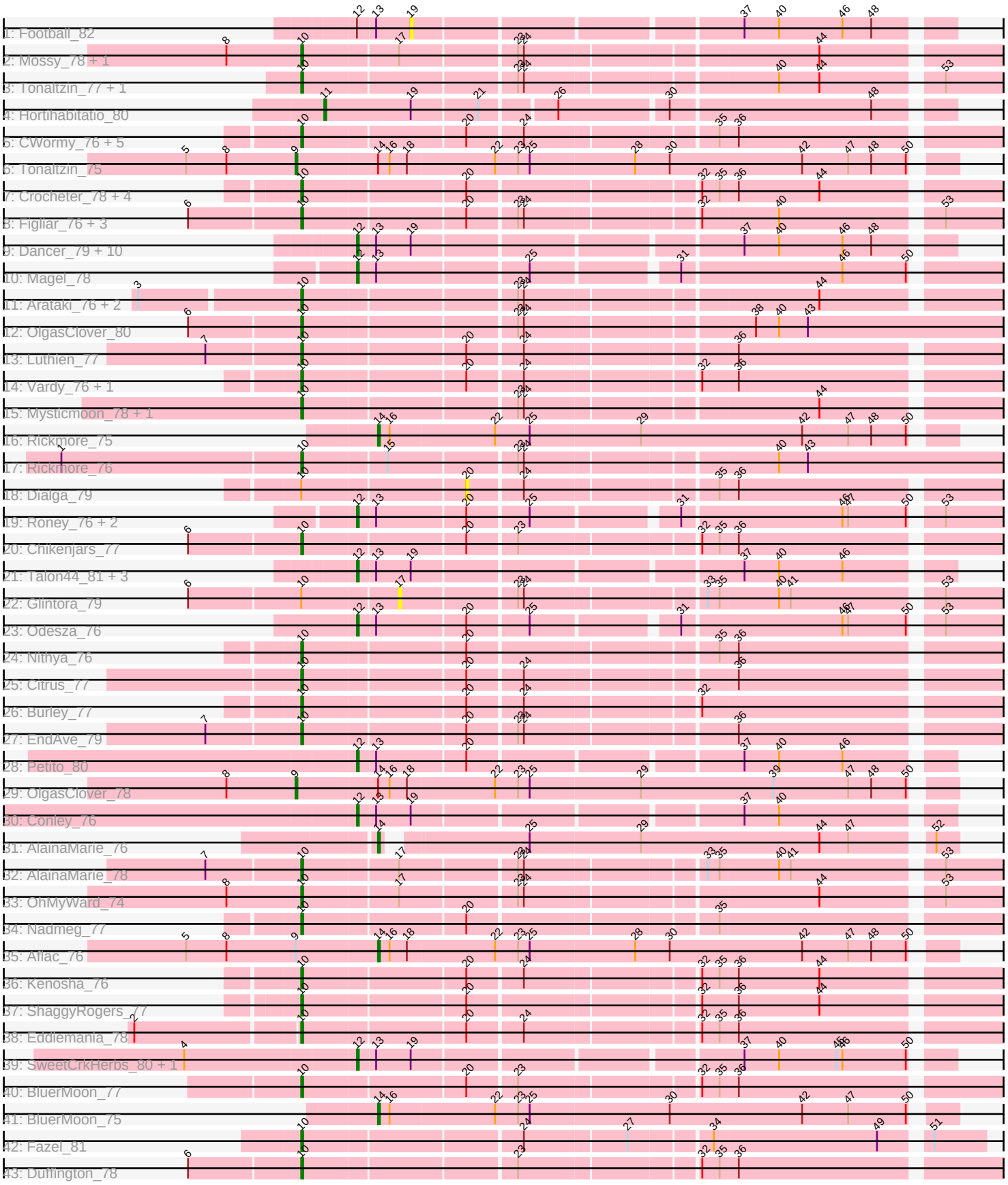
Pham 339621


1: Football_82
2: Mossy_78 + 1
3: Tonaltzin_77 + 1
4: Hortihabitatio_80
5: CWormy_76 + 5
6: Tonaltzin_75
7: Crocheter_78 + 4
8: Figliar_76 + 3
9: Dancer_79 + 10
10: Magel_78
11: Arataki_76 + 2
12: OlgasClover_80
13: Luthien_77
14: Vardy_76 + 1
15: Mysticmoon_78 + 1
16: Rickmore_75
17: Rickmore_76
18: Dialga_79
19: Roney_76 + 2
20: Chikenjars_77
21: Talon44_81 + 3
22: Glintora_79
23: Odesza_76
24: Nithya_76
25: Citrus_77
26: Burley_77
27: EndAve_79
28: Petito_80
29: OlgasClover_78
30: Conley_76
31: AlainaMarie_76
32: AlainaMarie_78
33: OhMyWard_74
34: Nadmeg_77
35: Aflac_76
36: Kenosha_76
37: ShaggyRogers_77
38: Eddiemania_78
39: SweetCrkHerbs_80 + 1
40: BluerMoon_77
41: BluerMoon_75
42: Fazel_81
43: Duffington_78

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 339621 Report

This analysis was run 11/14/26 on database version 672.

Pham number 339621 has 77 members, 10 are drafts.

Phages represented in each track:
• Track 1 : Football_82
• Track 2 : Mossy_78, Blanky_73
• Track 3 : Tonaltzin_77, Aflac_78
• Track 4 : Hortihabitatio_80
• Track 5 : CWormy_76, ArtetaBall_77, Madvan_77, Phepper_78, Untouchable_79, Runhaar_76
• Track 6 : Tonaltzin_75
• Track 7 : Crocheter_78, PestoPenguin_79, BetterYeti_77, Aloe25_79, Gusicorn_79
• Track 8 : Figliar_76, TenaciousP_78, Jodelie19_76, MajinBuu_78
• Track 9 : Dancer_79, JulesRay_79, Kerry_76, Tairn4Wing_82, ChickyNuggy_82, Bugg_83, Capybara_77, Trufflozitus_80, Gravy_76, Artorias_79, FortCran_79
• Track 10 : Magel_78
• Track 11 : Arataki_76, Demure_76, Hydrus_77
• Track 12 : OlgasClover_80
• Track 13 : Luthien_77
• Track 14 : Vardy_76, Zeph_79
• Track 15 : Mysticmoon_78, Pherobrine_78
• Track 16 : Rickmore_75
• Track 17 : Rickmore_76
• Track 18 : Dialga_79
• Track 19 : Roney_76, Tanis_77, Gill_77
• Track 20 : Chikenjars_77
• Track 21 : Talon44_81, Captrips_78, NoPickles_78, Avazak_80
• Track 22 : Glintora_79
• Track 23 : Odesza_76
• Track 24 : Nithya_76
• Track 25 : Citrus_77
• Track 26 : Burley_77
• Track 27 : EndAve_79
• Track 28 : Petito_80
• Track 29 : OlgasClover_78
• Track 30 : Conley_76
• Track 31 : AlainaMarie_76
• Track 32 : AlainaMarie_78
• Track 33 : OhMyWard_74
• Track 34 : Nadmeg_77
• Track 35 : Aflac_76

• Track 36 : Kenosha_76
• Track 37 : ShaggyRogers_77
• Track 38 : Eddiemania_78
• Track 39 : SweetCrkHerbs_80, Perkunas_79
• Track 40 : BluerMoon_77
• Track 41 : BluerMoon_75
• Track 42 : Fazel_81
• Track 43 : Duffington_78

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

The start number called the most often in the published annotations is 10, it was called in 40 of the 67 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Aflac_78, AlainaMarie_78, Aloe25_79, Arataki_76, ArtetaBall_77, BetterYeti_77, Blanky_73, BluerMoon_77, Burley_77, CWormy_76, Chikenjars_77, Citrus_77, Crocheter_78, Demure_76, Duffington_78, Eddiemania_78, EndAve_79, Fazel_81, Figliar_76, Gusicorn_79, Hydrus_77, Jodelie19_76, Kenosha_76, Luthien_77, Madvan_77, MajinBuu_78, Mossy_78, Mysticmoon_78, Nadmeg_77, Nithya_76, OhMyWard_74, OlgasClover_80, PestoPenguin_79, Phepper_78, Pherobrine_78, Rickmore_76, Runhaar_76, ShaggyRogers_77, TenaciousP_78, Tonaltzin_77, Untouchable_79, Vardy_76, Zeph_79,

Genes that have the "Most Annotated" start but do not call it:
• Dialga_79, Glintora_79,

Genes that do not have the "Most Annotated" start:
• Aflac_76, AlainaMarie_76, Artorias_79, Avazak_80, BluerMoon_75, Bugg_83, Captrips_78, Capybara_77, ChickyNuggy_82, Conley_76, Dancer_79, Football_82, FortCran_79, Gill_77, Gravy_76, Hortihabitatio_80, JulesRay_79, Kerry_76, Magel_78, NoPickles_78, Odesza_76, OlgasClover_78, Perkunas_79, Petito_80, Rickmore_75, Roney_76, SweetCrkHerbs_80, Tairn4Wing_82, Talon44_81, Tanis_77, Tonaltzin_75, Trufflozitus_80,

Summary by start number:

Start 9:
• Found in 3 of 77 (3.9%) of genes in pham
• Manual Annotations of this start: 2 of 67
• Called 66.7% of time when present
• Phage (with cluster) where this start called: OlgasClover_78 (DJ), Tonaltzin_75 (DJ),

Start 10:
• Found in 45 of 77 (58.4%) of genes in pham
• Manual Annotations of this start: 40 of 67
• Called 95.6% of time when present
• Phage (with cluster) where this start called: Aflac_78 (DJ), AlainaMarie_78 (DJ), Aloe25_79 (DJ), Arataki_76 (DJ), ArtetaBall_77 (DJ), BetterYeti_77 (DJ), Blanky_73 (DJ), BluerMoon_77 (DJ), Burley_77 (DJ), CWormy_76 (DJ), Chikenjars_77 (DJ),

Citrus_77 (DJ), Crocheter_78 (DJ), Demure_76 (DJ), Duffington_78 (DJ), Eddiemania_78 (DJ), EndAve_79 (DJ), Fazel_81 (DJ), Figliar_76 (DJ), Gusicorn_79 (DJ), Hydrus_77 (DJ), Jodelie19_76 (DJ), Kenosha_76 (DJ), Luthien_77 (DJ), Madvan_77 (DJ), MajinBuu_78 (DJ), Mossy_78 (DJ), Mysticmoon_78 (DJ), Nadmeg_77 (DJ), Nithya_76 (DJ), OhMyWard_74 (DJ), OlgasClover_80 (DJ), PestoPenguin_79 (DJ), Phepper_78 (DJ), Pherobrine_78 (DJ), Rickmore_76 (DJ), Runhaar_76 (DJ), ShaggyRogers_77 (DJ), TenaciousP_78 (DJ), Tonaltzin_77 (DJ), Untouchable_79 (DJ), Vardy_76 (DJ), Zeph_79 (DJ),

Start 11:
• Found in 1 of 77 (1.3%) of genes in pham
• Manual Annotations of this start: 1 of 67
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Hortihabitatio_80 (DJ),

Start 12:
• Found in 25 of 77 (32.5%) of genes in pham
• Manual Annotations of this start: 20 of 67
• Called 96.0% of time when present
• Phage (with cluster) where this start called: Artorias_79 (DJ), Avazak_80 (DJ), Bugg_83 (DJ), Captrips_78 (DJ), Capybara_77 (DJ), ChickyNuggy_82 (DJ), Conley_76 (DJ), Dancer_79 (DJ), FortCran_79 (DJ), Gill_77 (DJ), Gravy_76 (DJ), JulesRay_79 (DJ), Kerry_76 (DJ), Magel_78 (DJ), NoPickles_78 (DJ), Odesza_76 (DJ), Perkunas_79 (DJ), Petito_80 (DJ), Roney_76 (DJ), SweetCrkHerbs_80 (DJ), Tairn4Wing_82 (DJ), Talon44_81 (DJ), Tanis_77 (DJ), Trufflozitus_80 (DJ),

Start 14:
• Found in 6 of 77 (7.8%) of genes in pham
• Manual Annotations of this start: 4 of 67
• Called 66.7% of time when present
• Phage (with cluster) where this start called: Aflac_76 (DJ), AlainaMarie_76 (DJ), BluerMoon_75 (DJ), Rickmore_75 (DJ),

Start 17:
• Found in 5 of 77 (6.5%) of genes in pham
• No Manual Annotations of this start.
• Called 20.0% of time when present
• Phage (with cluster) where this start called: Glintora_79 (DJ),

Start 19:
• Found in 20 of 77 (26.0%) of genes in pham
• No Manual Annotations of this start.
• Called 5.0% of time when present
• Phage (with cluster) where this start called: Football_82 (DJ),

Start 20:
• Found in 34 of 77 (44.2%) of genes in pham
• No Manual Annotations of this start.
• Called 2.9% of time when present
• Phage (with cluster) where this start called: Dialga_79 (DJ),

Summary by clusters:

There is one cluster represented in this pham: DJ

Info for manual annotations of cluster DJ:
•Start number 9 was manually annotated 2 times for cluster DJ.
•Start number 10 was manually annotated 40 times for cluster DJ.
•Start number 11 was manually annotated 1 time for cluster DJ.
•Start number 12 was manually annotated 20 times for cluster DJ.
•Start number 14 was manually annotated 4 times for cluster DJ.

Gene Information:

Gene: Aflac_78 Start: 51861, Stop: 52208, Start Num: 10
Candidate Starts for Aflac_78:
(Start: 10 @51861 has 40 MA's), (23, 51966), (24, 51969), (40, 52092), (44, 52113), (53, 52170),

Gene: Aflac_76 Start: 51417, Stop: 51707, Start Num: 14
Candidate Starts for Aflac_76:
(5, 51318), (8, 51339), (Start: 9 @51375 has 2 MA's), (Start: 14 @51417 has 4 MA's), (16, 51423), (18, 51432), (22, 51477), (23, 51489), (25, 51495), (28, 51549), (30, 51567), (42, 51636), (47, 51660), (48, 51672), (50, 51690),

Gene: AlainaMarie_76 Start: 51470, Stop: 51748, Start Num: 14
Candidate Starts for AlainaMarie_76:
(Start: 14 @51470 has 4 MA's), (25, 51536), (29, 51593), (44, 51686), (47, 51701), (52, 51737),

Gene: AlainaMarie_78 Start: 51906, Stop: 52253, Start Num: 10
Candidate Starts for AlainaMarie_78:
(7, 51858), (Start: 10 @51906 has 40 MA's), (17, 51954), (23, 52011), (24, 52014), (33, 52101), (35, 52107), (40, 52137), (41, 52143), (53, 52215),

Gene: Aloe25_79 Start: 51286, Stop: 51633, Start Num: 10
Candidate Starts for Aloe25_79:
(Start: 10 @51286 has 40 MA's), (20, 51367), (32, 51478), (35, 51487), (36, 51496), (44, 51538),

Gene: Arataki_76 Start: 50900, Stop: 51247, Start Num: 10
Candidate Starts for Arataki_76:
(3, 50819), (Start: 10 @50900 has 40 MA's), (23, 51005), (24, 51008), (44, 51152),

Gene: ArtetaBall_77 Start: 51462, Stop: 51809, Start Num: 10
Candidate Starts for ArtetaBall_77:
(Start: 10 @51462 has 40 MA's), (20, 51543), (24, 51570), (35, 51663), (36, 51672),

Gene: Artorias_79 Start: 51103, Stop: 51390, Start Num: 12
Candidate Starts for Artorias_79:
(Start: 12 @51103 has 20 MA's), (13, 51112), (19, 51130), (37, 51289), (40, 51307), (46, 51340), (48, 51355),

Gene: Avazak_80 Start: 51785, Stop: 52072, Start Num: 12
Candidate Starts for Avazak_80:
(Start: 12 @51785 has 20 MA's), (13, 51794), (19, 51812), (37, 51971), (40, 51989), (46, 52022),

Gene: BetterYeti_77 Start: 51285, Stop: 51632, Start Num: 10
Candidate Starts for BetterYeti_77:
(Start: 10 @51285 has 40 MA's), (20, 51366), (32, 51477), (35, 51486), (36, 51495), (44, 51537),

Gene: Blanky_73 Start: 52347, Stop: 52694, Start Num: 10
Candidate Starts for Blanky_73:
(8, 52308), (Start: 10 @52347 has 40 MA's), (17, 52395), (23, 52452), (24, 52455), (44, 52599),

Gene: BluerMoon_77 Start: 51813, Stop: 52160, Start Num: 10
Candidate Starts for BluerMoon_77:
(Start: 10 @51813 has 40 MA's), (20, 51894), (23, 51918), (32, 52005), (35, 52014), (36, 52023),

Gene: BluerMoon_75 Start: 51369, Stop: 51659, Start Num: 14
Candidate Starts for BluerMoon_75:
(Start: 14 @51369 has 4 MA's), (16, 51375), (22, 51429), (23, 51441), (25, 51447), (30, 51519), (42, 51588), (47, 51612), (50, 51642),

Gene: Bugg_83 Start: 51148, Stop: 51435, Start Num: 12
Candidate Starts for Bugg_83:
(Start: 12 @51148 has 20 MA's), (13, 51157), (19, 51175), (37, 51334), (40, 51352), (46, 51385), (48, 51400),

Gene: Burley_77 Start: 50918, Stop: 51265, Start Num: 10
Candidate Starts for Burley_77:
(Start: 10 @50918 has 40 MA's), (20, 50999), (24, 51026), (32, 51110),

Gene: CWormy_76 Start: 50879, Stop: 51226, Start Num: 10
Candidate Starts for CWormy_76:
(Start: 10 @50879 has 40 MA's), (20, 50960), (24, 50987), (35, 51080), (36, 51089),

Gene: Captrips_78 Start: 50933, Stop: 51220, Start Num: 12
Candidate Starts for Captrips_78:
(Start: 12 @50933 has 20 MA's), (13, 50942), (19, 50960), (37, 51119), (40, 51137), (46, 51170),

Gene: Capybara_77 Start: 50770, Stop: 51057, Start Num: 12
Candidate Starts for Capybara_77:
(Start: 12 @50770 has 20 MA's), (13, 50779), (19, 50797), (37, 50956), (40, 50974), (46, 51007), (48, 51022),

Gene: ChickyNuggy_82 Start: 51527, Stop: 51814, Start Num: 12
Candidate Starts for ChickyNuggy_82:
(Start: 12 @51527 has 20 MA's), (13, 51536), (19, 51554), (37, 51713), (40, 51731), (46, 51764), (48, 51779),

Gene: Chikenjars_77 Start: 51872, Stop: 52219, Start Num: 10
Candidate Starts for Chikenjars_77:
(6, 51815), (Start: 10 @51872 has 40 MA's), (20, 51953), (23, 51977), (32, 52064), (35, 52073), (36, 52082),

Gene: Citrus_77 Start: 51922, Stop: 52269, Start Num: 10
Candidate Starts for Citrus_77:
(Start: 10 @51922 has 40 MA's), (20, 52003), (24, 52030), (36, 52132),

Gene: Conley_76 Start: 51234, Stop: 51521, Start Num: 12
Candidate Starts for Conley_76:
(Start: 12 @51234 has 20 MA's), (13, 51243), (19, 51261), (37, 51420), (40, 51438),

Gene: Crocheter_78 Start: 51379, Stop: 51726, Start Num: 10
Candidate Starts for Crocheter_78:
(Start: 10 @51379 has 40 MA's), (20, 51460), (32, 51571), (35, 51580), (36, 51589), (44, 51631),

Gene: Dancer_79 Start: 50840, Stop: 51127, Start Num: 12
Candidate Starts for Dancer_79:
(Start: 12 @50840 has 20 MA's), (13, 50849), (19, 50867), (37, 51026), (40, 51044), (46, 51077), (48, 51092),

Gene: Demure_76 Start: 50900, Stop: 51247, Start Num: 10
Candidate Starts for Demure_76:
(3, 50819), (Start: 10 @50900 has 40 MA's), (23, 51005), (24, 51008), (44, 51152),

Gene: Dialga_79 Start: 51562, Stop: 51828, Start Num: 20
Candidate Starts for Dialga_79:
(Start: 10 @51481 has 40 MA's), (20, 51562), (24, 51589), (35, 51682), (36, 51691),

Gene: Duffington_78 Start: 51842, Stop: 52189, Start Num: 10
Candidate Starts for Duffington_78:
(6, 51785), (Start: 10 @51842 has 40 MA's), (23, 51947), (32, 52034), (35, 52043), (36, 52052),

Gene: Eddiemania_78 Start: 51958, Stop: 52305, Start Num: 10
Candidate Starts for Eddiemania_78:
(2, 51877), (Start: 10 @51958 has 40 MA's), (20, 52039), (24, 52066), (32, 52150), (35, 52159), (36, 52168),

Gene: EndAve_79 Start: 51816, Stop: 52163, Start Num: 10
Candidate Starts for EndAve_79:
(7, 51768), (Start: 10 @51816 has 40 MA's), (20, 51897), (23, 51921), (24, 51924), (36, 52026),

Gene: Fazel_81 Start: 51842, Stop: 52171, Start Num: 10
Candidate Starts for Fazel_81:
(Start: 10 @51842 has 40 MA's), (24, 51950), (27, 52001), (34, 52040), (49, 52124), (51, 52145),

Gene: Figliar_76 Start: 51641, Stop: 51988, Start Num: 10
Candidate Starts for Figliar_76:
(6, 51584), (Start: 10 @51641 has 40 MA's), (20, 51722), (23, 51746), (24, 51749), (32, 51833), (40, 51872), (53, 51950),

Gene: Football_82 Start: 50757, Stop: 51017, Start Num: 19
Candidate Starts for Football_82:
(Start: 12 @50730 has 20 MA's), (13, 50739), (19, 50757), (37, 50916), (40, 50934), (46, 50967), (48, 50982),

Gene: FortCran_79 Start: 51103, Stop: 51390, Start Num: 12
Candidate Starts for FortCran_79:
(Start: 12 @51103 has 20 MA's), (13, 51112), (19, 51130), (37, 51289), (40, 51307), (46, 51340), (48, 51355),

Gene: Gill_77 Start: 50798, Stop: 51109, Start Num: 12
Candidate Starts for Gill_77:
(Start: 12 @50798 has 20 MA's), (13, 50807), (20, 50852), (25, 50882), (31, 50951), (46, 51032), (47, 51035), (50, 51065), (53, 51077),

Gene: Glintora_79 Start: 52065, Stop: 52364, Start Num: 17
Candidate Starts for Glintora_79:
(6, 51960), (Start: 10 @52017 has 40 MA's), (17, 52065), (23, 52122), (24, 52125), (33, 52212), (35, 52218), (40, 52248), (41, 52254), (53, 52326),

Gene: Gravy_76 Start: 50460, Stop: 50747, Start Num: 12
Candidate Starts for Gravy_76:
(Start: 12 @50460 has 20 MA's), (13, 50469), (19, 50487), (37, 50646), (40, 50664), (46, 50697), (48, 50712),

Gene: Gusicorn_79 Start: 51286, Stop: 51633, Start Num: 10
Candidate Starts for Gusicorn_79:
(Start: 10 @51286 has 40 MA's), (20, 51367), (32, 51478), (35, 51487), (36, 51496), (44, 51538),

Gene: Hortihabitatio_80 Start: 52238, Stop: 52543, Start Num: 11
Candidate Starts for Hortihabitatio_80:
(Start: 11 @52238 has 1 MA's), (19, 52283), (21, 52316), (26, 52352), (30, 52406), (48, 52508),

Gene: Hydrus_77 Start: 51677, Stop: 52024, Start Num: 10
Candidate Starts for Hydrus_77:
(3, 51596), (Start: 10 @51677 has 40 MA's), (23, 51782), (24, 51785), (44, 51929),

Gene: Jodelie19_76 Start: 52808, Stop: 53155, Start Num: 10
Candidate Starts for Jodelie19_76:
(6, 52751), (Start: 10 @52808 has 40 MA's), (20, 52889), (23, 52913), (24, 52916), (32, 53000), (40, 53039), (53, 53117),

Gene: JulesRay_79 Start: 51452, Stop: 51739, Start Num: 12
Candidate Starts for JulesRay_79:
(Start: 12 @51452 has 20 MA's), (13, 51461), (19, 51479), (37, 51638), (40, 51656), (46, 51689), (48, 51704),

Gene: Kenosha_76 Start: 51507, Stop: 51854, Start Num: 10
Candidate Starts for Kenosha_76:
(Start: 10 @51507 has 40 MA's), (20, 51588), (24, 51615), (32, 51699), (35, 51708), (36, 51717), (44, 51759),

Gene: Kerry_76 Start: 50523, Stop: 50810, Start Num: 12
Candidate Starts for Kerry_76:
(Start: 12 @50523 has 20 MA's), (13, 50532), (19, 50550), (37, 50709), (40, 50727), (46, 50760), (48, 50775),

Gene: Luthien_77 Start: 51811, Stop: 52158, Start Num: 10
Candidate Starts for Luthien_77:
(7, 51763), (Start: 10 @51811 has 40 MA's), (20, 51892), (24, 51919), (36, 52021),

Gene: Madvan_77 Start: 50974, Stop: 51321, Start Num: 10
Candidate Starts for Madvan_77:

(Start: 10 @50974 has 40 MA's), (20, 51055), (24, 51082), (35, 51175), (36, 51184),

Gene: Magel_78 Start: 50713, Stop: 51024, Start Num: 12
Candidate Starts for Magel_78:
(Start: 12 @50713 has 20 MA's), (13, 50722), (25, 50797), (31, 50866), (46, 50947), (50, 50980),

Gene: MajinBuu_78 Start: 52023, Stop: 52370, Start Num: 10
Candidate Starts for MajinBuu_78:
(6, 51966), (Start: 10 @52023 has 40 MA's), (20, 52104), (23, 52128), (24, 52131), (32, 52215), (40, 52254), (53, 52332),

Gene: Mossy_78 Start: 52559, Stop: 52906, Start Num: 10
Candidate Starts for Mossy_78:
(8, 52520), (Start: 10 @52559 has 40 MA's), (17, 52607), (23, 52664), (24, 52667), (44, 52811),

Gene: Mysticmoon_78 Start: 52201, Stop: 52548, Start Num: 10
Candidate Starts for Mysticmoon_78:
(Start: 10 @52201 has 40 MA's), (23, 52306), (24, 52309), (44, 52453),

Gene: Nadmeg_77 Start: 51977, Stop: 52324, Start Num: 10
Candidate Starts for Nadmeg_77:
(Start: 10 @51977 has 40 MA's), (20, 52058), (35, 52178),

Gene: Nithya_76 Start: 51360, Stop: 51707, Start Num: 10
Candidate Starts for Nithya_76:
(Start: 10 @51360 has 40 MA's), (20, 51441), (35, 51561), (36, 51570),

Gene: NoPickles_78 Start: 50619, Stop: 50906, Start Num: 12
Candidate Starts for NoPickles_78:
(Start: 12 @50619 has 20 MA's), (13, 50628), (19, 50646), (37, 50805), (40, 50823), (46, 50856),

Gene: Odesza_76 Start: 50660, Stop: 50971, Start Num: 12
Candidate Starts for Odesza_76:
(Start: 12 @50660 has 20 MA's), (13, 50669), (20, 50714), (25, 50744), (31, 50813), (46, 50894), (47, 50897), (50, 50927), (53, 50939),

Gene: OhMyWard_74 Start: 52318, Stop: 52665, Start Num: 10
Candidate Starts for OhMyWard_74:
(8, 52279), (Start: 10 @52318 has 40 MA's), (17, 52366), (23, 52423), (24, 52426), (44, 52570), (53, 52627),

Gene: OlgasClover_80 Start: 52722, Stop: 53078, Start Num: 10
Candidate Starts for OlgasClover_80:
(6, 52665), (Start: 10 @52722 has 40 MA's), (23, 52827), (24, 52830), (38, 52941), (40, 52953), (43, 52968),

Gene: OlgasClover_78 Start: 52236, Stop: 52568, Start Num: 9
Candidate Starts for OlgasClover_78:
(8, 52200), (Start: 9 @52236 has 2 MA's), (Start: 14 @52278 has 4 MA's), (16, 52284), (18, 52293), (22, 52338), (23, 52350), (25, 52356), (29, 52413), (39, 52482), (47, 52521), (48, 52533), (50, 52551),

Gene: Perkunas_79 Start: 50720, Stop: 51007, Start Num: 12
Candidate Starts for Perkunas_79:

(4, 50633), (Start: 12 @50720 has 20 MA's), (13, 50729), (19, 50747), (37, 50906), (40, 50924), (45, 50954), (46, 50957), (50, 50990),

Gene: PestoPenguin_79 Start: 51286, Stop: 51633, Start Num: 10
Candidate Starts for PestoPenguin_79:
(Start: 10 @51286 has 40 MA's), (20, 51367), (32, 51478), (35, 51487), (36, 51496), (44, 51538),

Gene: Petito_80 Start: 52186, Stop: 52473, Start Num: 12
Candidate Starts for Petito_80:
(Start: 12 @52186 has 20 MA's), (13, 52195), (20, 52240), (37, 52372), (40, 52390), (46, 52423),

Gene: Phepper_78 Start: 51216, Stop: 51563, Start Num: 10
Candidate Starts for Phepper_78:
(Start: 10 @51216 has 40 MA's), (20, 51297), (24, 51324), (35, 51417), (36, 51426),

Gene: Pherobrine_78 Start: 52256, Stop: 52603, Start Num: 10
Candidate Starts for Pherobrine_78:
(Start: 10 @52256 has 40 MA's), (23, 52361), (24, 52364), (44, 52508),

Gene: Rickmore_75 Start: 50033, Stop: 50323, Start Num: 14
Candidate Starts for Rickmore_75:
(Start: 14 @50033 has 4 MA's), (16, 50039), (22, 50093), (25, 50111), (29, 50168), (42, 50252), (47, 50276), (48, 50288), (50, 50306),

Gene: Rickmore_76 Start: 50323, Stop: 50679, Start Num: 10
Candidate Starts for Rickmore_76:
(1, 50200), (Start: 10 @50323 has 40 MA's), (15, 50365), (23, 50428), (24, 50431), (40, 50554), (43, 50569),

Gene: Roney_76 Start: 50823, Stop: 51134, Start Num: 12
Candidate Starts for Roney_76:
(Start: 12 @50823 has 20 MA's), (13, 50832), (20, 50877), (25, 50907), (31, 50976), (46, 51057), (47, 51060), (50, 51090), (53, 51102),

Gene: Runhaar_76 Start: 51025, Stop: 51372, Start Num: 10
Candidate Starts for Runhaar_76:
(Start: 10 @51025 has 40 MA's), (20, 51106), (24, 51133), (35, 51226), (36, 51235),

Gene: ShaggyRogers_77 Start: 51016, Stop: 51363, Start Num: 10
Candidate Starts for ShaggyRogers_77:
(Start: 10 @51016 has 40 MA's), (20, 51097), (32, 51208), (36, 51226), (44, 51268),

Gene: SweetCrkHerbs_80 Start: 50733, Stop: 51020, Start Num: 12
Candidate Starts for SweetCrkHerbs_80:
(4, 50646), (Start: 12 @50733 has 20 MA's), (13, 50742), (19, 50760), (37, 50919), (40, 50937), (45, 50967), (46, 50970), (50, 51003),

Gene: Tairn4Wing_82 Start: 50941, Stop: 51228, Start Num: 12
Candidate Starts for Tairn4Wing_82:
(Start: 12 @50941 has 20 MA's), (13, 50950), (19, 50968), (37, 51127), (40, 51145), (46, 51178), (48, 51193),

Gene: Talon44_81 Start: 51571, Stop: 51858, Start Num: 12

Candidate Starts for Talon44_81:
(Start: 12 @51571 has 20 MA's), (13, 51580), (19, 51598), (37, 51757), (40, 51775), (46, 51808),

Gene: Tanis_77 Start: 50643, Stop: 50954, Start Num: 12
Candidate Starts for Tanis_77:
(Start: 12 @50643 has 20 MA's), (13, 50652), (20, 50697), (25, 50727), (31, 50796), (46, 50877), (47, 50880), (50, 50910), (53, 50922),

Gene: TenaciousP_78 Start: 52770, Stop: 53117, Start Num: 10
Candidate Starts for TenaciousP_78:
(6, 52713), (Start: 10 @52770 has 40 MA's), (20, 52851), (23, 52875), (24, 52878), (32, 52962), (40, 53001), (53, 53079),

Gene: Tonaltzin_77 Start: 51629, Stop: 51976, Start Num: 10
Candidate Starts for Tonaltzin_77:
(Start: 10 @51629 has 40 MA's), (23, 51734), (24, 51737), (40, 51860), (44, 51881), (53, 51938),

Gene: Tonaltzin_75 Start: 51143, Stop: 51475, Start Num: 9
Candidate Starts for Tonaltzin_75:
(5, 51086), (8, 51107), (Start: 9 @51143 has 2 MA's), (Start: 14 @51185 has 4 MA's), (16, 51191), (18, 51200), (22, 51245), (23, 51257), (25, 51263), (28, 51317), (30, 51335), (42, 51404), (47, 51428), (48, 51440), (50, 51458),

Gene: Trufflozitus_80 Start: 51456, Stop: 51743, Start Num: 12
Candidate Starts for Trufflozitus_80:
(Start: 12 @51456 has 20 MA's), (13, 51465), (19, 51483), (37, 51642), (40, 51660), (46, 51693), (48, 51708),

Gene: Untouchable_79 Start: 52213, Stop: 52554, Start Num: 10
Candidate Starts for Untouchable_79:
(Start: 10 @52213 has 40 MA's), (20, 52294), (24, 52321), (35, 52414), (36, 52423),

Gene: Vardy_76 Start: 50912, Stop: 51259, Start Num: 10
Candidate Starts for Vardy_76:
(Start: 10 @50912 has 40 MA's), (20, 50993), (24, 51020), (32, 51104), (36, 51122),

Gene: Zeph_79 Start: 52050, Stop: 52397, Start Num: 10
Candidate Starts for Zeph_79:
(Start: 10 @52050 has 40 MA's), (20, 52131), (24, 52158), (32, 52242), (36, 52260),