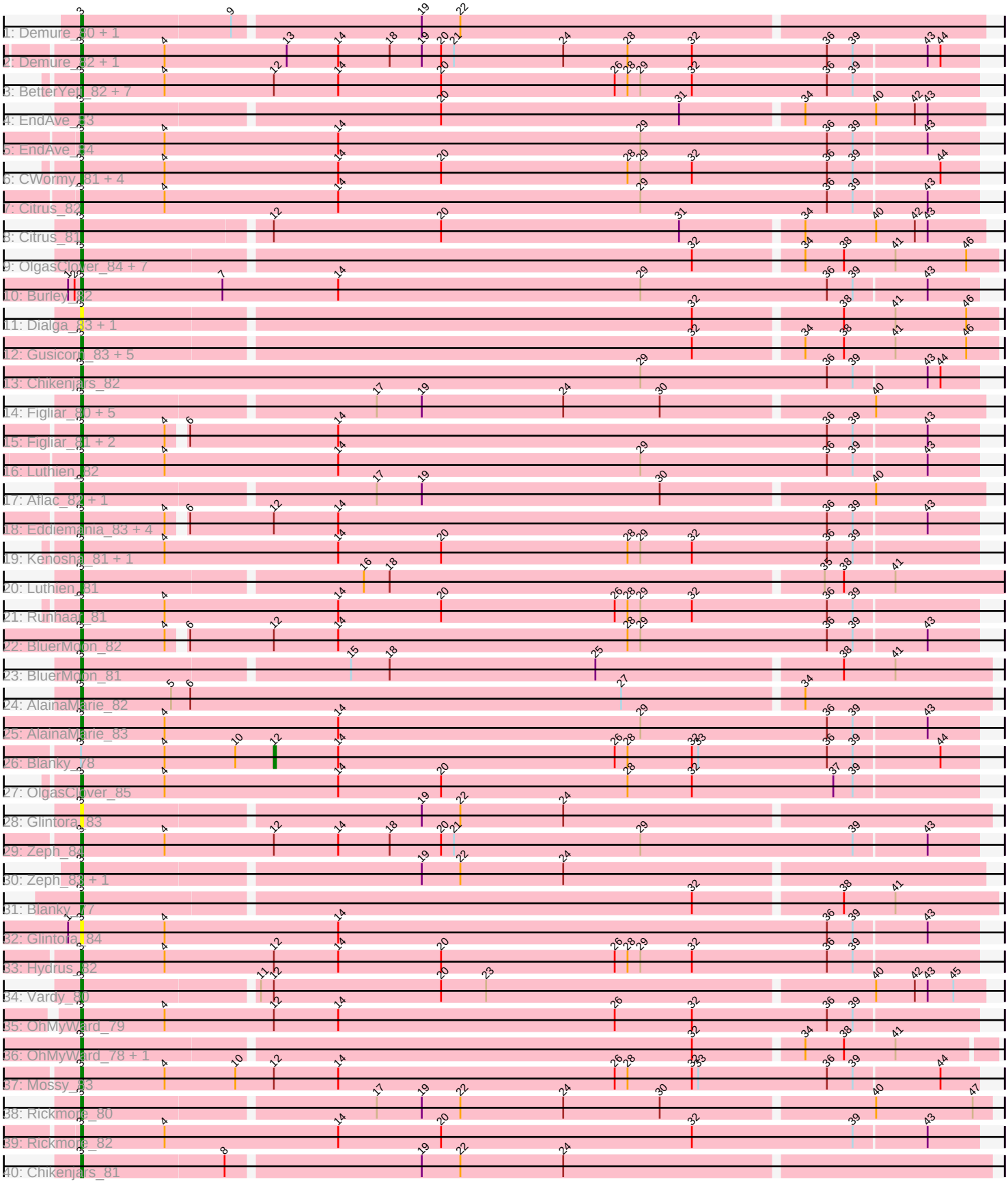
Pham 347525


1: Demure_80 + 1
2: Demure_82 + 1
3: BetterYet_82 + 7
4: EndAve_83
5: EndAve_84
6: CWormy_81 + 4
7: Citrus_82
8: Citrus_81
9: OlgasClover_84 + 7
10: Burley_82
11: Dialga_83 + 1
12: Gusicorn_83 + 5
13: Chikenjars_82
14: Figliar_80 + 5
15: Figliar_81 + 2
16: Luthien_82
17: Aflac_82 + 1
18: Eddiemania_83 + 4
19: Kenosha_81 + 1
20: Luthien_81
21: Runhaan_81
22: BluerMoon_82
23: BluerMoon_81
24: AlainaMarie_82
25: AlainaMarie_83
26: Blanky_78
27: OlgasClover_85
28: Glintora_83
29: Zeph_84
30: Zeph_83 + 1
31: Blanky_77
32: Glintora_84
33: Hydrus_82
34: Vardy_80
35: OhMyWard_79
36: OhMyWard_78 + 1
37: Mossy_83
38: Rickmote_80
39: Rickmote_82
40: Chikenjars_81

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 347525 Report

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

Pham number 347525 has 81 members, 9 are drafts.

Phages represented in each track:
• Track 1 : Demure_80, Burley_81
• Track 2 : Demure_82, Arataki_81
• Track 3 : BetterYeti_82, ShaggyRogers_82, Aloe25_84, Crocheter_83, Madvan_82, Gusicorn_84, Untouchable_84, PestoPenguin_84
• Track 4 : EndAve_83
• Track 5 : EndAve_84
• Track 6 : CWormy_81, ArtetaBall_82, Nadmeg_82, Dialga_84, Nithya_81
• Track 7 : Citrus_82
• Track 8 : Citrus_81
• Track 9 : OlgasClover_84, Nadmeg_81, Madvan_81, Kenosha_80, Runhaar_80, Untouchable_83, Phepper_82, Nithya_80
• Track 10 : Burley_82
• Track 11 : Dialga_83, ArtetaBall_81
• Track 12 : Gusicorn_83, ShaggyRogers_81, Crocheter_82, BetterYeti_81, Aloe25_83, PestoPenguin_83
• Track 13 : Chikenjars_82
• Track 14 : Figliar_80, Jodelie19_80, Eddiemania_82, TenaciousP_82, Tonaltzin_81, MajinBuu_82
• Track 15 : Figliar_81, MajinBuu_83, Jodelie19_81
• Track 16 : Luthien_82
• Track 17 : Aflac_82, Duffington_82
• Track 18 : Eddiemania_83, TenaciousP_83, Tonaltzin_82, Duffington_83, Aflac_83
• Track 19 : Kenosha_81, Phepper_83
• Track 20 : Luthien_81
• Track 21 : Runhaar_81
• Track 22 : BluerMoon_82
• Track 23 : BluerMoon_81
• Track 24 : AlainaMarie_82
• Track 25 : AlainaMarie_83
• Track 26 : Blanky_78
• Track 27 : OlgasClover_85
• Track 28 : Glintora_83
• Track 29 : Zeph_84
• Track 30 : Zeph_83, Hydrus_81
• Track 31 : Blanky_77
• Track 32 : Glintora_84
• Track 33 : Hydrus_82

• Track 34 : Vardy_80
• Track 35 : OhMyWard_79
• Track 36 : OhMyWard_78, Mossy_82
• Track 37 : Mossy_83
• Track 38 : Rickmore_80
• Track 39 : Rickmore_82
• Track 40 : Chikenjars_81

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

The start number called the most often in the published annotations is 3, it was called in 71 of the 72 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Aflac_82, Aflac_83, AlainaMarie_82, AlainaMarie_83, Aloe25_83, Aloe25_84, Arataki_81, ArtetaBall_81, ArtetaBall_82, BetterYeti_81, BetterYeti_82, Blanky_77, BluerMoon_81, BluerMoon_82, Burley_81, Burley_82, CWormy_81, Chikenjars_81, Chikenjars_82, Citrus_81, Citrus_82, Crocheter_82, Crocheter_83, Demure_80, Demure_82, Dialga_83, Dialga_84, Duffington_82, Duffington_83, Eddiemania_82, Eddiemania_83, EndAve_83, EndAve_84, Figliar_80, Figliar_81, Glintora_83, Glintora_84, Gusicorn_83, Gusicorn_84, Hydrus_81, Hydrus_82, Jodelie19_80, Jodelie19_81, Kenosha_80, Kenosha_81, Luthien_81, Luthien_82, Madvan_81, Madvan_82, MajinBuu_82, MajinBuu_83, Mossy_82, Mossy_83, Nadmeg_81, Nadmeg_82, Nithya_80, Nithya_81, OhMyWard_78, OhMyWard_79, OlgasClover_84, OlgasClover_85, PestoPenguin_83, PestoPenguin_84, Phepper_82, Phepper_83, Rickmore_80, Rickmore_82, Runhaar_80, Runhaar_81, ShaggyRogers_81, ShaggyRogers_82, TenaciousP_82, TenaciousP_83, Tonaltzin_81, Tonaltzin_82, Untouchable_83, Untouchable_84, Vardy_80, Zeph_83, Zeph_84,

Genes that have the "Most Annotated" start but do not call it:
• Blanky_78,

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

Summary by start number:

Start 3:
• Found in 81 of 81 (100.0%) of genes in pham
• Manual Annotations of this start: 71 of 72
• Called 98.8% of time when present
• Phage (with cluster) where this start called: Aflac_82 (DJ), Aflac_83 (DJ), AlainaMarie_82 (DJ), AlainaMarie_83 (DJ), Aloe25_83 (DJ), Aloe25_84 (DJ), Arataki_81 (DJ), ArtetaBall_81 (DJ), ArtetaBall_82 (DJ), BetterYeti_81 (DJ), BetterYeti_82 (DJ), Blanky_77 (DJ), BluerMoon_81 (DJ), BluerMoon_82 (DJ), Burley_81 (DJ), Burley_82 (DJ), CWormy_81 (DJ), Chikenjars_81 (DJ), Chikenjars_82 (DJ), Citrus_81 (DJ), Citrus_82 (DJ), Crocheter_82 (DJ), Crocheter_83 (DJ), Demure_80 (DJ), Demure_82 (DJ), Dialga_83 (DJ), Dialga_84 (DJ), Duffington_82 (DJ), Duffington_83 (DJ), Eddiemania_82 (DJ), Eddiemania_83 (DJ),

EndAve_83 (DJ), EndAve_84 (DJ), Figliar_80 (DJ), Figliar_81 (DJ), Glintora_83 (DJ), Glintora_84 (DJ), Gusicorn_83 (DJ), Gusicorn_84 (DJ), Hydrus_81 (DJ), Hydrus_82 (DJ), Jodelie19_80 (DJ), Jodelie19_81 (DJ), Kenosha_80 (DJ), Kenosha_81 (DJ), Luthien_81 (DJ), Luthien_82 (DJ), Madvan_81 (DJ), Madvan_82 (DJ), MajinBuu_82 (DJ), MajinBuu_83 (DJ), Mossy_82 (DJ), Mossy_83 (DJ), Nadmeg_81 (DJ), Nadmeg_82 (DJ), Nithya_80 (DJ), Nithya_81 (DJ), OhMyWard_78 (DJ), OhMyWard_79 (DJ), OlgasClover_84 (DJ), OlgasClover_85 (DJ), PestoPenguin_83 (DJ), PestoPenguin_84 (DJ), Phepper_82 (DJ), Phepper_83 (DJ), Rickmore_80 (DJ), Rickmore_82 (DJ), Runhaar_80 (DJ), Runhaar_81 (DJ), ShaggyRogers_81 (DJ), ShaggyRogers_82 (DJ), TenaciousP_82 (DJ), TenaciousP_83 (DJ), Tonaltzin_81 (DJ), Tonaltzin_82 (DJ), Untouchable_83 (DJ), Untouchable_84 (DJ), Vardy_80 (DJ), Zeph_83 (DJ), Zeph_84 (DJ),

Start 12:
• Found in 21 of 81 (25.9%) of genes in pham
• Manual Annotations of this start: 1 of 72
• Called 4.8% of time when present
• Phage (with cluster) where this start called: Blanky_78 (DJ),

Summary by clusters:

There is one cluster represented in this pham: DJ

Info for manual annotations of cluster DJ:
•Start number 3 was manually annotated 71 times for cluster DJ.
•Start number 12 was manually annotated 1 time for cluster DJ.

Gene Information:

Gene: Aflac_82 Start: 53154, Stop: 53564, Start Num: 3
Candidate Starts for Aflac_82:
(Start: 3 @53154 has 71 MA's), (17, 53286), (19, 53307), (30, 53418), (40, 53514),

Gene: Aflac_83 Start: 53564, Stop: 53974, Start Num: 3
Candidate Starts for Aflac_83:
(Start: 3 @53564 has 71 MA's), (4, 53603), (6, 53609), (Start: 12 @53648 has 1 MA's), (14, 53678), (36, 53906), (39, 53918), (43, 53951),

Gene: AlainaMarie_82 Start: 53199, Stop: 53618, Start Num: 3
Candidate Starts for AlainaMarie_82:
(Start: 3 @53199 has 71 MA's), (5, 53241), (6, 53250), (27, 53451), (34, 53532),

Gene: AlainaMarie_83 Start: 53618, Stop: 54034, Start Num: 3
Candidate Starts for AlainaMarie_83:
(Start: 3 @53618 has 71 MA's), (4, 53657), (14, 53738), (29, 53879), (36, 53966), (39, 53978), (43, 54011),

Gene: Aloe25_84 Start: 53019, Stop: 53435, Start Num: 3
Candidate Starts for Aloe25_84:
(Start: 3 @53019 has 71 MA's), (4, 53058), (Start: 12 @53109 has 1 MA's), (14, 53139), (20, 53187), (26, 53268), (28, 53274), (29, 53280), (32, 53304), (36, 53367), (39, 53379),

Gene: Aloe25_83 Start: 52603, Stop: 53019, Start Num: 3
Candidate Starts for Aloe25_83:
(Start: 3 @52603 has 71 MA's), (32, 52882), (34, 52930), (38, 52948), (41, 52972), (46, 53005),

Gene: Arataki_81 Start: 52635, Stop: 53051, Start Num: 3
Candidate Starts for Arataki_81:
(Start: 3 @52635 has 71 MA's), (4, 52674), (13, 52731), (14, 52755), (18, 52779), (19, 52794), (20, 52803), (21, 52809), (24, 52860), (28, 52890), (32, 52920), (36, 52983), (39, 52995), (43, 53028), (44, 53034),

Gene: ArtetaBall_82 Start: 53195, Stop: 53611, Start Num: 3
Candidate Starts for ArtetaBall_82:
(Start: 3 @53195 has 71 MA's), (4, 53234), (14, 53315), (20, 53363), (28, 53450), (29, 53456), (32, 53480), (36, 53543), (39, 53555), (44, 53594),

Gene: ArtetaBall_81 Start: 52779, Stop: 53195, Start Num: 3
Candidate Starts for ArtetaBall_81:
(Start: 3 @52779 has 71 MA's), (32, 53058), (38, 53124), (41, 53148), (46, 53181),

Gene: BetterYeti_82 Start: 53018, Stop: 53434, Start Num: 3
Candidate Starts for BetterYeti_82:
(Start: 3 @53018 has 71 MA's), (4, 53057), (Start: 12 @53108 has 1 MA's), (14, 53138), (20, 53186), (26, 53267), (28, 53273), (29, 53279), (32, 53303), (36, 53366), (39, 53378),

Gene: BetterYeti_81 Start: 52602, Stop: 53018, Start Num: 3
Candidate Starts for BetterYeti_81:
(Start: 3 @52602 has 71 MA's), (32, 52881), (34, 52929), (38, 52947), (41, 52971), (46, 53004),

Gene: Blanky_78 Start: 54170, Stop: 54496, Start Num: 12
Candidate Starts for Blanky_78:
(Start: 3 @54080 has 71 MA's), (4, 54119), (10, 54152), (Start: 12 @54170 has 1 MA's), (14, 54200), (26, 54329), (28, 54335), (32, 54365), (33, 54368), (36, 54428), (39, 54440), (44, 54479),

Gene: Blanky_77 Start: 53664, Stop: 54080, Start Num: 3
Candidate Starts for Blanky_77:
(Start: 3 @53664 has 71 MA's), (32, 53943), (38, 54009), (41, 54033),

Gene: BluerMoon_82 Start: 53519, Stop: 53929, Start Num: 3
Candidate Starts for BluerMoon_82:
(Start: 3 @53519 has 71 MA's), (4, 53558), (6, 53564), (Start: 12 @53603 has 1 MA's), (14, 53633), (28, 53768), (29, 53774), (36, 53861), (39, 53873), (43, 53906),

Gene: BluerMoon_81 Start: 53106, Stop: 53519, Start Num: 3
Candidate Starts for BluerMoon_81:
(Start: 3 @53106 has 71 MA's), (15, 53226), (18, 53244), (25, 53340), (38, 53451), (41, 53475),

Gene: Burley_81 Start: 52236, Stop: 52649, Start Num: 3
Candidate Starts for Burley_81:
(Start: 3 @52236 has 71 MA's), (9, 52305), (19, 52389), (22, 52407),

Gene: Burley_82 Start: 52649, Stop: 53065, Start Num: 3
Candidate Starts for Burley_82:

(1, 52643), (2, 52646), (Start: 3 @52649 has 71 MA's), (7, 52715), (14, 52769), (29, 52910), (36, 52997), (39, 53009), (43, 53042),

Gene: CWormy_81 Start: 52622, Stop: 53038, Start Num: 3
Candidate Starts for CWormy_81:
(Start: 3 @52622 has 71 MA's), (4, 52661), (14, 52742), (20, 52790), (28, 52877), (29, 52883), (32, 52907), (36, 52970), (39, 52982), (44, 53021),

Gene: Chikenjars_82 Start: 53605, Stop: 54021, Start Num: 3
Candidate Starts for Chikenjars_82:
(Start: 3 @53605 has 71 MA's), (29, 53866), (36, 53953), (39, 53965), (43, 53998), (44, 54004),

Gene: Chikenjars_81 Start: 53192, Stop: 53605, Start Num: 3
Candidate Starts for Chikenjars_81:
(Start: 3 @53192 has 71 MA's), (8, 53258), (19, 53345), (22, 53363), (24, 53411),

Gene: Citrus_82 Start: 53631, Stop: 54047, Start Num: 3
Candidate Starts for Citrus_82:
(Start: 3 @53631 has 71 MA's), (4, 53670), (14, 53751), (29, 53892), (36, 53979), (39, 53991), (43, 54024),

Gene: Citrus_81 Start: 53221, Stop: 53631, Start Num: 3
Candidate Starts for Citrus_81:
(Start: 3 @53221 has 71 MA's), (Start: 12 @53305 has 1 MA's), (20, 53383), (31, 53494), (34, 53548), (40, 53581), (42, 53599), (43, 53605),

Gene: Crocheter_82 Start: 52696, Stop: 53112, Start Num: 3
Candidate Starts for Crocheter_82:
(Start: 3 @52696 has 71 MA's), (32, 52975), (34, 53023), (38, 53041), (41, 53065), (46, 53098),

Gene: Crocheter_83 Start: 53112, Stop: 53528, Start Num: 3
Candidate Starts for Crocheter_83:
(Start: 3 @53112 has 71 MA's), (4, 53151), (Start: 12 @53202 has 1 MA's), (14, 53232), (20, 53280), (26, 53361), (28, 53367), (29, 53373), (32, 53397), (36, 53460), (39, 53472),

Gene: Demure_80 Start: 52228, Stop: 52638, Start Num: 3
Candidate Starts for Demure_80:
(Start: 3 @52228 has 71 MA's), (9, 52297), (19, 52381), (22, 52399),

Gene: Demure_82 Start: 53045, Stop: 53461, Start Num: 3
Candidate Starts for Demure_82:
(Start: 3 @53045 has 71 MA's), (4, 53084), (13, 53141), (14, 53165), (18, 53189), (19, 53204), (20, 53213), (21, 53219), (24, 53270), (28, 53300), (32, 53330), (36, 53393), (39, 53405), (43, 53438), (44, 53444),

Gene: Dialga_83 Start: 52798, Stop: 53214, Start Num: 3
Candidate Starts for Dialga_83:
(Start: 3 @52798 has 71 MA's), (32, 53077), (38, 53143), (41, 53167), (46, 53200),

Gene: Dialga_84 Start: 53214, Stop: 53630, Start Num: 3
Candidate Starts for Dialga_84:
(Start: 3 @53214 has 71 MA's), (4, 53253), (14, 53334), (20, 53382), (28, 53469), (29, 53475), (32, 53499), (36, 53562), (39, 53574), (44, 53613),

Gene: Duffington_82 Start: 53156, Stop: 53566, Start Num: 3
Candidate Starts for Duffington_82:
(Start: 3 @53156 has 71 MA's), (17, 53288), (19, 53309), (30, 53420), (40, 53516),

Gene: Duffington_83 Start: 53566, Stop: 53976, Start Num: 3
Candidate Starts for Duffington_83:
(Start: 3 @53566 has 71 MA's), (4, 53605), (6, 53611), (Start: 12 @53650 has 1 MA's), (14, 53680), (36, 53908), (39, 53920), (43, 53953),

Gene: Eddiemania_82 Start: 53275, Stop: 53685, Start Num: 3
Candidate Starts for Eddiemania_82:
(Start: 3 @53275 has 71 MA's), (17, 53407), (19, 53428), (24, 53494), (30, 53539), (40, 53635),

Gene: Eddiemania_83 Start: 53685, Stop: 54095, Start Num: 3
Candidate Starts for Eddiemania_83:
(Start: 3 @53685 has 71 MA's), (4, 53724), (6, 53730), (Start: 12 @53769 has 1 MA's), (14, 53799), (36, 54027), (39, 54039), (43, 54072),

Gene: EndAve_83 Start: 53143, Stop: 53553, Start Num: 3
Candidate Starts for EndAve_83:
(Start: 3 @53143 has 71 MA's), (20, 53305), (31, 53416), (34, 53470), (40, 53503), (42, 53521), (43, 53527),

Gene: EndAve_84 Start: 53553, Stop: 53969, Start Num: 3
Candidate Starts for EndAve_84:
(Start: 3 @53553 has 71 MA's), (4, 53592), (14, 53673), (29, 53814), (36, 53901), (39, 53913), (43, 53946),

Gene: Figliar_80 Start: 52961, Stop: 53371, Start Num: 3
Candidate Starts for Figliar_80:
(Start: 3 @52961 has 71 MA's), (17, 53093), (19, 53114), (24, 53180), (30, 53225), (40, 53321),

Gene: Figliar_81 Start: 53371, Stop: 53781, Start Num: 3
Candidate Starts for Figliar_81:
(Start: 3 @53371 has 71 MA's), (4, 53410), (6, 53416), (14, 53485), (36, 53713), (39, 53725), (43, 53758),

Gene: Glintora_83 Start: 53328, Stop: 53741, Start Num: 3
Candidate Starts for Glintora_83:
(Start: 3 @53328 has 71 MA's), (19, 53481), (22, 53499), (24, 53547),

Gene: Glintora_84 Start: 53741, Stop: 54157, Start Num: 3
Candidate Starts for Glintora_84:
(1, 53735), (Start: 3 @53741 has 71 MA's), (4, 53780), (14, 53861), (36, 54089), (39, 54101), (43, 54134),

Gene: Gusicorn_83 Start: 52603, Stop: 53019, Start Num: 3
Candidate Starts for Gusicorn_83:
(Start: 3 @52603 has 71 MA's), (32, 52882), (34, 52930), (38, 52948), (41, 52972), (46, 53005),

Gene: Gusicorn_84 Start: 53019, Stop: 53435, Start Num: 3
Candidate Starts for Gusicorn_84:

(Start: 3 @53019 has 71 MA's), (4, 53058), (Start: 12 @53109 has 1 MA's), (14, 53139), (20, 53187), (26, 53268), (28, 53274), (29, 53280), (32, 53304), (36, 53367), (39, 53379),

Gene: Hydrus_81 Start: 52971, Stop: 53381, Start Num: 3
Candidate Starts for Hydrus_81:
(Start: 3 @52971 has 71 MA's), (19, 53124), (22, 53142), (24, 53190),

Gene: Hydrus_82 Start: 53381, Stop: 53797, Start Num: 3
Candidate Starts for Hydrus_82:
(Start: 3 @53381 has 71 MA's), (4, 53420), (Start: 12 @53471 has 1 MA's), (14, 53501), (20, 53549), (26, 53630), (28, 53636), (29, 53642), (32, 53666), (36, 53729), (39, 53741),

Gene: Jodelie19_80 Start: 54128, Stop: 54538, Start Num: 3
Candidate Starts for Jodelie19_80:
(Start: 3 @54128 has 71 MA's), (17, 54260), (19, 54281), (24, 54347), (30, 54392), (40, 54488),

Gene: Jodelie19_81 Start: 54538, Stop: 54948, Start Num: 3
Candidate Starts for Jodelie19_81:
(Start: 3 @54538 has 71 MA's), (4, 54577), (6, 54583), (14, 54652), (36, 54880), (39, 54892), (43, 54925),

Gene: Kenosha_81 Start: 53250, Stop: 53666, Start Num: 3
Candidate Starts for Kenosha_81:
(Start: 3 @53250 has 71 MA's), (4, 53289), (14, 53370), (20, 53418), (28, 53505), (29, 53511), (32, 53535), (36, 53598), (39, 53610),

Gene: Kenosha_80 Start: 52834, Stop: 53250, Start Num: 3
Candidate Starts for Kenosha_80:
(Start: 3 @52834 has 71 MA's), (32, 53113), (34, 53161), (38, 53179), (41, 53203), (46, 53236),

Gene: Luthien_82 Start: 53557, Stop: 53973, Start Num: 3
Candidate Starts for Luthien_82:
(Start: 3 @53557 has 71 MA's), (4, 53596), (14, 53677), (29, 53818), (36, 53905), (39, 53917), (43, 53950),

Gene: Luthien_81 Start: 53138, Stop: 53557, Start Num: 3
Candidate Starts for Luthien_81:
(Start: 3 @53138 has 71 MA's), (16, 53264), (18, 53276), (35, 53474), (38, 53483), (41, 53507),

Gene: Madvan_81 Start: 52291, Stop: 52707, Start Num: 3
Candidate Starts for Madvan_81:
(Start: 3 @52291 has 71 MA's), (32, 52570), (34, 52618), (38, 52636), (41, 52660), (46, 52693),

Gene: Madvan_82 Start: 52707, Stop: 53123, Start Num: 3
Candidate Starts for Madvan_82:
(Start: 3 @52707 has 71 MA's), (4, 52746), (Start: 12 @52797 has 1 MA's), (14, 52827), (20, 52875), (26, 52956), (28, 52962), (29, 52968), (32, 52992), (36, 53055), (39, 53067),

Gene: MajinBuu_83 Start: 53747, Stop: 54157, Start Num: 3
Candidate Starts for MajinBuu_83:
(Start: 3 @53747 has 71 MA's), (4, 53786), (6, 53792), (14, 53861), (36, 54089), (39, 54101), (43, 54134),

Gene: MajinBuu_82 Start: 53337, Stop: 53747, Start Num: 3
Candidate Starts for MajinBuu_82:
(Start: 3 @53337 has 71 MA's), (17, 53469), (19, 53490), (24, 53556), (30, 53601), (40, 53697),

Gene: Mossy_83 Start: 54302, Stop: 54718, Start Num: 3
Candidate Starts for Mossy_83:
(Start: 3 @54302 has 71 MA's), (4, 54341), (10, 54374), (Start: 12 @54392 has 1 MA's), (14, 54422), (26, 54551), (28, 54557), (32, 54587), (33, 54590), (36, 54650), (39, 54662), (44, 54701),

Gene: Mossy_82 Start: 53886, Stop: 54302, Start Num: 3
Candidate Starts for Mossy_82:
(Start: 3 @53886 has 71 MA's), (32, 54165), (34, 54213), (38, 54231), (41, 54255),

Gene: Nadmeg_81 Start: 53294, Stop: 53710, Start Num: 3
Candidate Starts for Nadmeg_81:
(Start: 3 @53294 has 71 MA's), (32, 53573), (34, 53621), (38, 53639), (41, 53663), (46, 53696),

Gene: Nadmeg_82 Start: 53710, Stop: 54126, Start Num: 3
Candidate Starts for Nadmeg_82:
(Start: 3 @53710 has 71 MA's), (4, 53749), (14, 53830), (20, 53878), (28, 53965), (29, 53971), (32, 53995), (36, 54058), (39, 54070), (44, 54109),

Gene: Nithya_80 Start: 52687, Stop: 53103, Start Num: 3
Candidate Starts for Nithya_80:
(Start: 3 @52687 has 71 MA's), (32, 52966), (34, 53014), (38, 53032), (41, 53056), (46, 53089),

Gene: Nithya_81 Start: 53103, Stop: 53519, Start Num: 3
Candidate Starts for Nithya_81:
(Start: 3 @53103 has 71 MA's), (4, 53142), (14, 53223), (20, 53271), (28, 53358), (29, 53364), (32, 53388), (36, 53451), (39, 53463), (44, 53502),

Gene: OhMyWard_79 Start: 54058, Stop: 54474, Start Num: 3
Candidate Starts for OhMyWard_79:
(Start: 3 @54058 has 71 MA's), (4, 54097), (Start: 12 @54148 has 1 MA's), (14, 54178), (26, 54307), (32, 54343), (36, 54406), (39, 54418),

Gene: OhMyWard_78 Start: 53645, Stop: 54058, Start Num: 3
Candidate Starts for OhMyWard_78:
(Start: 3 @53645 has 71 MA's), (32, 53924), (34, 53972), (38, 53990), (41, 54014),

Gene: OlgasClover_84 Start: 54030, Stop: 54446, Start Num: 3
Candidate Starts for OlgasClover_84:
(Start: 3 @54030 has 71 MA's), (32, 54309), (34, 54357), (38, 54375), (41, 54399), (46, 54432),

Gene: OlgasClover_85 Start: 54446, Stop: 54862, Start Num: 3
Candidate Starts for OlgasClover_85:
(Start: 3 @54446 has 71 MA's), (4, 54485), (14, 54566), (20, 54614), (28, 54701), (32, 54731), (37, 54797), (39, 54806),

Gene: PestoPenguin_83 Start: 52603, Stop: 53019, Start Num: 3
Candidate Starts for PestoPenguin_83:
(Start: 3 @52603 has 71 MA's), (32, 52882), (34, 52930), (38, 52948), (41, 52972), (46, 53005),

Gene: PestoPenguin_84 Start: 53019, Stop: 53435, Start Num: 3
Candidate Starts for PestoPenguin_84:
(Start: 3 @53019 has 71 MA's), (4, 53058), (Start: 12 @53109 has 1 MA's), (14, 53139), (20, 53187), (26, 53268), (28, 53274), (29, 53280), (32, 53304), (36, 53367), (39, 53379),

Gene: Phepper_82 Start: 52533, Stop: 52949, Start Num: 3
Candidate Starts for Phepper_82:
(Start: 3 @52533 has 71 MA's), (32, 52812), (34, 52860), (38, 52878), (41, 52902), (46, 52935),

Gene: Phepper_83 Start: 52949, Stop: 53365, Start Num: 3
Candidate Starts for Phepper_83:
(Start: 3 @52949 has 71 MA's), (4, 52988), (14, 53069), (20, 53117), (28, 53204), (29, 53210), (32, 53234), (36, 53297), (39, 53309),

Gene: Rickmore_80 Start: 51652, Stop: 52065, Start Num: 3
Candidate Starts for Rickmore_80:
(Start: 3 @51652 has 71 MA's), (17, 51784), (19, 51805), (22, 51823), (24, 51871), (30, 51916), (40, 52012), (47, 52057),

Gene: Rickmore_82 Start: 52469, Stop: 52885, Start Num: 3
Candidate Starts for Rickmore_82:
(Start: 3 @52469 has 71 MA's), (4, 52508), (14, 52589), (20, 52637), (32, 52754), (39, 52829), (43, 52862),

Gene: Runhaar_81 Start: 52758, Stop: 53174, Start Num: 3
Candidate Starts for Runhaar_81:
(Start: 3 @52758 has 71 MA's), (4, 52797), (14, 52878), (20, 52926), (26, 53007), (28, 53013), (29, 53019), (32, 53043), (36, 53106), (39, 53118),

Gene: Runhaar_80 Start: 52342, Stop: 52758, Start Num: 3
Candidate Starts for Runhaar_80:
(Start: 3 @52342 has 71 MA's), (32, 52621), (34, 52669), (38, 52687), (41, 52711), (46, 52744),

Gene: ShaggyRogers_81 Start: 52345, Stop: 52761, Start Num: 3
Candidate Starts for ShaggyRogers_81:
(Start: 3 @52345 has 71 MA's), (32, 52624), (34, 52672), (38, 52690), (41, 52714), (46, 52747),

Gene: ShaggyRogers_82 Start: 52761, Stop: 53177, Start Num: 3
Candidate Starts for ShaggyRogers_82:
(Start: 3 @52761 has 71 MA's), (4, 52800), (Start: 12 @52851 has 1 MA's), (14, 52881), (20, 52929), (26, 53010), (28, 53016), (29, 53022), (32, 53046), (36, 53109), (39, 53121),

Gene: TenaciousP_83 Start: 54500, Stop: 54910, Start Num: 3
Candidate Starts for TenaciousP_83:
(Start: 3 @54500 has 71 MA's), (4, 54539), (6, 54545), (Start: 12 @54584 has 1 MA's), (14, 54614), (36, 54842), (39, 54854), (43, 54887),

Gene: TenaciousP_82 Start: 54090, Stop: 54500, Start Num: 3
Candidate Starts for TenaciousP_82:
(Start: 3 @54090 has 71 MA's), (17, 54222), (19, 54243), (24, 54309), (30, 54354), (40, 54450),

Gene: Tonaltzin_82 Start: 53332, Stop: 53742, Start Num: 3
Candidate Starts for Tonaltzin_82:

(Start: 3 @53332 has 71 MA's), (4, 53371), (6, 53377), (Start: 12 @53416 has 1 MA's), (14, 53446), (36, 53674), (39, 53686), (43, 53719),

Gene: Tonaltzin_81 Start: 52922, Stop: 53332, Start Num: 3
Candidate Starts for Tonaltzin_81:
(Start: 3 @52922 has 71 MA's), (17, 53054), (19, 53075), (24, 53141), (30, 53186), (40, 53282),

Gene: Untouchable_83 Start: 53530, Stop: 53946, Start Num: 3
Candidate Starts for Untouchable_83:
(Start: 3 @53530 has 71 MA's), (32, 53809), (34, 53857), (38, 53875), (41, 53899), (46, 53932),

Gene: Untouchable_84 Start: 53946, Stop: 54362, Start Num: 3
Candidate Starts for Untouchable_84:
(Start: 3 @53946 has 71 MA's), (4, 53985), (Start: 12 @54036 has 1 MA's), (14, 54066), (20, 54114), (26, 54195), (28, 54201), (29, 54207), (32, 54231), (36, 54294), (39, 54306),

Gene: Vardy_80 Start: 52229, Stop: 52639, Start Num: 3
Candidate Starts for Vardy_80:
(Start: 3 @52229 has 71 MA's), (11, 52307), (Start: 12 @52313 has 1 MA's), (20, 52391), (23, 52412), (40, 52589), (42, 52607), (43, 52613), (45, 52625),

Gene: Zeph_84 Start: 53754, Stop: 54170, Start Num: 3
Candidate Starts for Zeph_84:
(Start: 3 @53754 has 71 MA's), (4, 53793), (Start: 12 @53844 has 1 MA's), (14, 53874), (18, 53898), (20, 53922), (21, 53928), (29, 54015), (39, 54114), (43, 54147),

Gene: Zeph_83 Start: 53344, Stop: 53754, Start Num: 3
Candidate Starts for Zeph_83:
(Start: 3 @53344 has 71 MA's), (19, 53497), (22, 53515), (24, 53563),