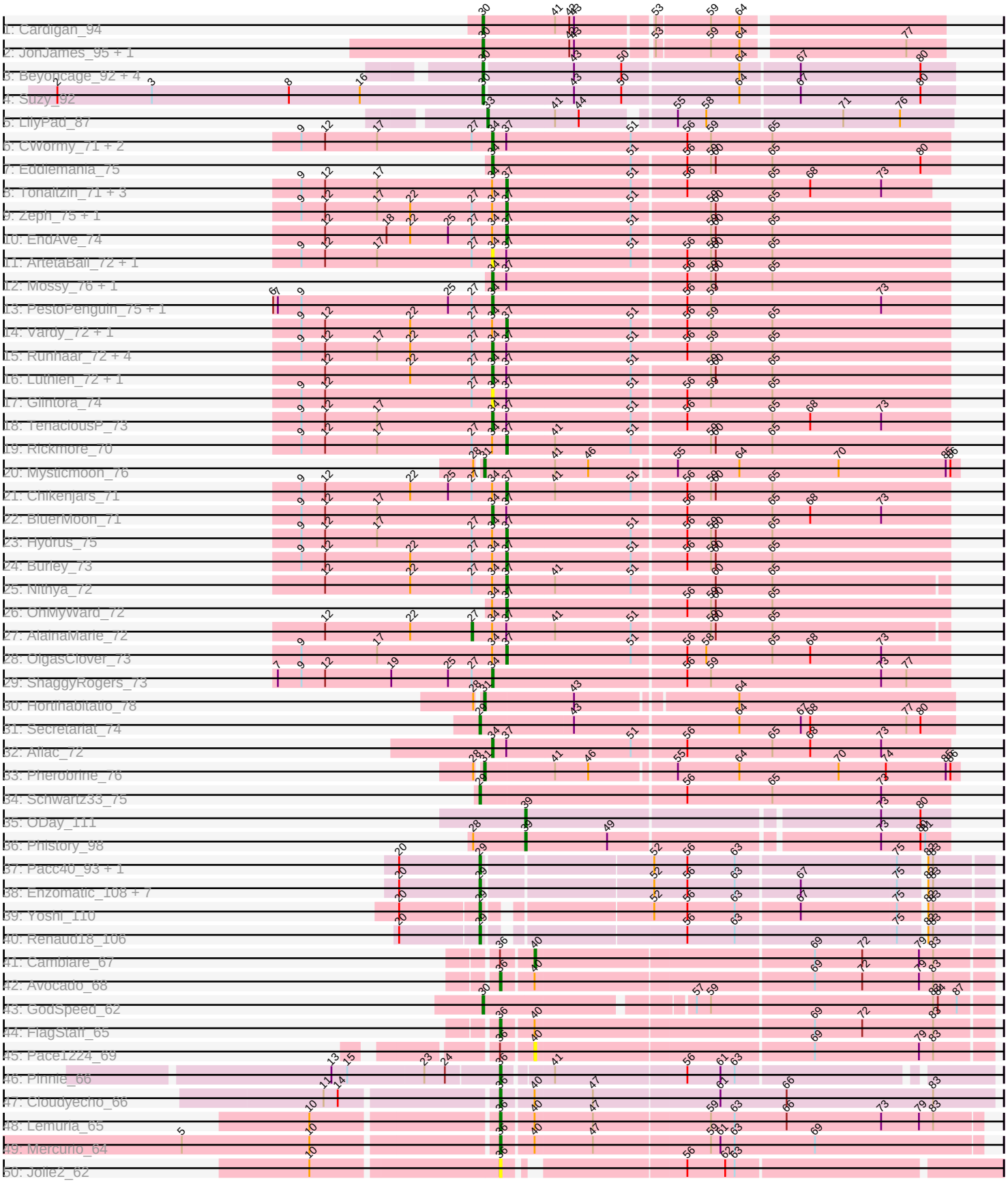
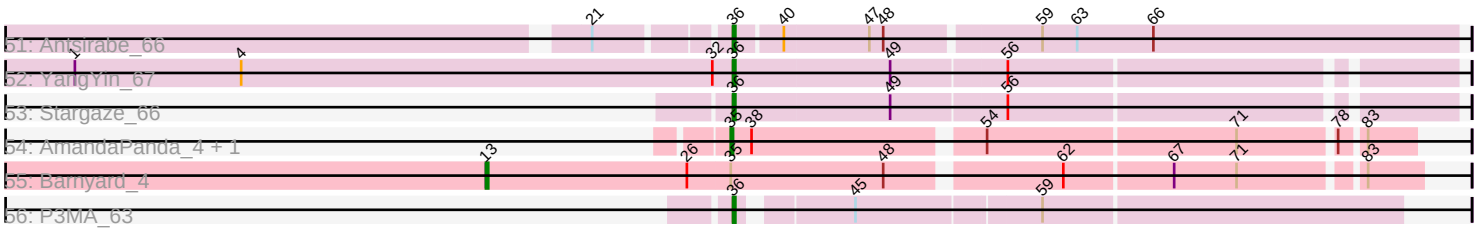
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1: Cardigan_94
2: JonJames_95 + 1
3: Beyoncage_92 + 4
4: Suzy_92
5: LilyPad_87
6: CWormy_71 + 2
7: Eddiemania_75
8: Tonaltzin_71 + 3
9: Zeph_75 + 1
10: EndAve_74
11: ArletaBall_72 + 1
12: Mossy_76 + 1
13: PestoPenguin_75 + 1
14: Vardy_72 + 1
15: Runhaar_72 + 4
16: Luthien_72 + 1
17: Glintora_74
18: TenaciousP_73
19: Rickmore_70
20: Mysticmoon_76
21: Chikenjars_71
22: BluerMoon_71
23: Hydrus_75
24: Burley_73
25: Nithya_72
26: OhMyWard_72
27: AlainaMarie_72
28: OlgasClover_73
29: ShaggyRogers_73
30: Hortihabitatio_78
31: Secretariat_74
32: Aflac_72
33: Pherobrine_76
34: Schwartz33_75
35: ODay_111
36: Phistory_98
37: Pacc40_93 + 1
38: Enzomatic_108 + 7
39: Yoshi_110
40: Renaud18_106
41: Camblare_67
42: Avocado_68
43: GodSpeed_62
44: FlagStaff_65
45: Pace1224_69
46: Pinnie_66
47: Cloudyecho_66
48: Lemuria_65
49: Mercurio_64
50: Jolie2_62

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51: Anisirabe_66
52: YangYin_67
53: Stargaze_66
54: AmandaPanda_4 + 1
55: Barnyard_4
56: P3MA_63

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 347506 Report

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

Pham number 347506 has 85 members, 11 are drafts.

Phages represented in each track:
- Track 1 : Cardigan_94
- Track 2 : JonJames_95, Yvonnetastic_93
- Track 3 : Beyoncage_92, BiteSize_92, Djokovic_92, Madi_91, Terapin_93
- Track 4 : Suzy_92
- Track 5 : LilyPad_87
- Track 6 : CWormy_71, Demure_72, Arataki_72
- Track 7 : Eddiemania_75
- Track 8 : Tonaltzin_71, Jodelie19_71, Figliar_71, MajinBuu_73
- Track 9 : Zeph_75, Duffington_72
- Track 10 : EndAve_74
- Track 11 : ArtetaBall_72, Dialga_74
- Track 12 : Mossy_76, Blanky_71
- Track 13 : PestoPenguin_75, BetterYeti_73
- Track 14 : Vardy_72, Kenosha_72
- Track 15 : Runhaar_72, Phepper_74, Untouchable_75, Nadmeg_74, Madvan_73
- Track 16 : Luthien_72, Citrus_72
- Track 17 : Glintora_74
- Track 18 : TenaciousP_73
- Track 19 : Rickmore_70
- Track 20 : Mysticmoon_76
- Track 21 : Chikenjars_71
- Track 22 : BluerMoon_71
- Track 23 : Hydrus_75
- Track 24 : Burley_73
- Track 25 : Nithya_72
- Track 26 : OhMyWard_72
- Track 27 : AlainaMarie_72
- Track 28 : OlgasClover_73
- Track 29 : ShaggyRogers_73
- Track 30 : Hortihabitatio_78
- Track 31 : Secretariat_74
- Track 32 : Aflac_72
- Track 33 : Pherobrine_76
- Track 34 : Schwartz33_75
- Track 35 : ODay_111
- Track 36 : Phistory_98
- Track 37 : Pacc40_93, BlueCrab_98

• Track 38 : Enzomatic_108, Galactic_99, BuzzLyseyear_104, Polo2Bam_107, Demsculpinboyz_111, LunaBlu_102, SeaLumen_104, NewHope4_103
• Track 39 : Yoshi_110
• Track 40 : Renaud18_106
• Track 41 : Cambiare_67
• Track 42 : Avocado_68
• Track 43 : GodSpeed_62
• Track 44 : FlagStaff_65
• Track 45 : Pace1224_69
• Track 46 : Pinnie_66
• Track 47 : Cloudyecho_66
• Track 48 : Lemuria_65
• Track 49 : Mercurio_64
• Track 50 : Jolie2_62
• Track 51 : Antsirabe_66
• Track 52 : YangYin_67
• Track 53 : Stargaze_66
• Track 54 : AmandaPanda_4, DrLupo_4
• Track 55 : Barnyard_4
• Track 56 : P3MA_63

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

The start number called the most often in the published annotations is 34, it was called in 17 of the 74 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Aflac_72, Arataki_72, ArtetaBall_72, BetterYeti_73, Blanky_71, BluerMoon_71, CWormy_71, Citrus_72, Demure_72, Dialga_74, Eddiemania_75, Glintora_74, Luthien_72, Madvan_73, Mossy_76, Nadmeg_74, PestoPenguin_75, Phepper_74, Runhaar_72, ShaggyRogers_73, TenaciousP_73, Untouchable_75,

Genes that have the "Most Annotated" start but do not call it:
• AlainaMarie_72, Burley_73, Chikenjars_71, Duffington_72, EndAve_74, Figliar_71, Hydrus_75, Jodelie19_71, Kenosha_72, MajinBuu_73, Nithya_72, OhMyWard_72, OlgasClover_73, Rickmore_70, Tonaltzin_71, Vardy_72, Zeph_75,

Genes that do not have the "Most Annotated" start:
• AmandaPanda_4, Antsirabe_66, Avocado_68, Barnyard_4, Beyoncage_92, BiteSize_92, BlueCrab_98, BuzzLyseyear_104, Cambiare_67, Cardigan_94, Cloudyecho_66, Demsculpinboyz_111, Djokovic_92, DrLupo_4, Enzomatic_108, FlagStaff_65, Galactic_99, GodSpeed_62, Hortihabitatio_78, Jolie2_62, JonJames_95, Lemuria_65, LilyPad_87, LunaBlu_102, Madi_91, Mercurio_64, Mysticmoon_76, NewHope4_103, ODay_111, P3MA_63, Pacc40_93, Pace1224_69, Pherobrine_76, Phistory_98, Pinnie_66, Polo2Bam_107, Renaud18_106, Schwartz33_75, SeaLumen_104, Secretariat_74, Stargaze_66, Suzy_92, Terapin_93, YangYin_67, Yoshi_110, Yvonnetastic_93,

Summary by start number:

Start 13:
• Found in 2 of 85 (2.4%) of genes in pham
• Manual Annotations of this start: 1 of 74
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Barnyard_4 (H2),

Start 27:
• Found in 27 of 85 (31.8%) of genes in pham
• Manual Annotations of this start: 1 of 74
• Called 3.7% of time when present
• Phage (with cluster) where this start called: AlainaMarie_72 (DJ),

Start 29:
• Found in 14 of 85 (16.5%) of genes in pham
• Manual Annotations of this start: 11 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: BlueCrab_98 (F1), BuzzLyseyear_104 (F1), Demsculpinboyz_111 (F2), Enzomatic_108 (F1), Galactic_99 (F1), LunaBlu_102 (F1), NewHope4_103 (F1), Pacc40_93 (F1), Polo2Bam_107 (F1), Renaud18_106 (F4), Schwartz33_75 (DJ), SeaLumen_104 (F1), Secretariat_74 (DJ), Yoshi_110 (F2),

Start 30:
• Found in 10 of 85 (11.8%) of genes in pham
• Manual Annotations of this start: 10 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Beyoncage_92 (DG1), BiteSize_92 (DG1), Cardigan_94 (DD), Djokovic_92 (DG1), GodSpeed_62 (G2), JonJames_95 (DD), Madi_91 (DG1), Suzy_92 (DG1), Terapin_93 (DG1), Yvonnetastic_93 (DD),

Start 31:
• Found in 3 of 85 (3.5%) of genes in pham
• Manual Annotations of this start: 3 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Hortihabitatio_78 (DJ), Mysticmoon_76 (DJ), Pherobrine_76 (DJ),

Start 33:
• Found in 1 of 85 (1.2%) of genes in pham
• Manual Annotations of this start: 1 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: LilyPad_87 (DG1),

Start 34:
• Found in 39 of 85 (45.9%) of genes in pham
• Manual Annotations of this start: 17 of 74
• Called 56.4% of time when present
• Phage (with cluster) where this start called: Aflac_72 (DJ), Arataki_72 (DJ), ArtetaBall_72 (DJ), BetterYeti_73 (DJ), Blanky_71 (DJ), BluerMoon_71 (DJ), CWormy_71 (DJ), Citrus_72 (DJ), Demure_72 (DJ), Dialga_74 (DJ), Eddiemania_75 (DJ), Glintora_74 (DJ), Luthien_72 (DJ), Madvan_73 (DJ), Mossy_76 (DJ), Nadmeg_74 (DJ), PestoPenguin_75 (DJ), Phepper_74 (DJ), Runhaar_72 (DJ), ShaggyRogers_73 (DJ), TenaciousP_73 (DJ), Untouchable_75 (DJ),

Start 35:
• Found in 3 of 85 (3.5%) of genes in pham
• Manual Annotations of this start: 1 of 74
• Called 66.7% of time when present
• Phage (with cluster) where this start called: AmandaPanda_4 (H2), DrLupo_4 (H2),

Start 36:
• Found in 13 of 85 (15.3%) of genes in pham
• Manual Annotations of this start: 10 of 74
• Called 84.6% of time when present
• Phage (with cluster) where this start called: Antsirabe_66 (G5), Avocado_68 (G2), Cloudyecho_66 (G3), FlagStaff_65 (G2), Jolie2_62 (G4), Lemuria_65 (G4), Mercurio_64 (G4), P3MA_63 (singleton), Pinnie_66 (G3), Stargaze_66 (G5), YangYin_67 (G5),

Start 37:
• Found in 35 of 85 (41.2%) of genes in pham
• Manual Annotations of this start: 16 of 74
• Called 45.7% of time when present
• Phage (with cluster) where this start called: Burley_73 (DJ), Chikenjars_71 (DJ), Duffington_72 (DJ), EndAve_74 (DJ), Figliar_71 (DJ), Hydrus_75 (DJ), Jodelie19_71 (DJ), Kenosha_72 (DJ), MajinBuu_73 (DJ), Nithya_72 (DJ), OhMyWard_72 (DJ), OlgasClover_73 (DJ), Rickmore_70 (DJ), Tonaltzin_71 (DJ), Vardy_72 (DJ), Zeph_75 (DJ),

Start 39:
• Found in 2 of 85 (2.4%) of genes in pham
• Manual Annotations of this start: 2 of 74
• Called 100.0% of time when present
• Phage (with cluster) where this start called: ODay_111 (DN), Phistory_98 (DN1),

Start 40:
• Found in 8 of 85 (9.4%) of genes in pham
• Manual Annotations of this start: 1 of 74
• Called 25.0% of time when present
• Phage (with cluster) where this start called: Cambiare_67 (G2), Pace1224_69 (G2),

Summary by clusters:

There are 14 clusters represented in this pham: DN, F1, G5, G4, DJ, G2, H2, F4, DD, F2, DG1, DN1, G3, singleton,

Info for manual annotations of cluster DD:
•Start number 30 was manually annotated 3 times for cluster DD.

Info for manual annotations of cluster DG1:
•Start number 30 was manually annotated 6 times for cluster DG1.
•Start number 33 was manually annotated 1 time for cluster DG1.

Info for manual annotations of cluster DJ:
•Start number 27 was manually annotated 1 time for cluster DJ.
•Start number 29 was manually annotated 2 times for cluster DJ.
•Start number 31 was manually annotated 3 times for cluster DJ.

•Start number 34 was manually annotated 17 times for cluster DJ.
•Start number 37 was manually annotated 16 times for cluster DJ.

Info for manual annotations of cluster DN:
•Start number 39 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster DN1:
•Start number 39 was manually annotated 1 time for cluster DN1.

Info for manual annotations of cluster F1:
•Start number 29 was manually annotated 6 times for cluster F1.

Info for manual annotations of cluster F2:
•Start number 29 was manually annotated 2 times for cluster F2.

Info for manual annotations of cluster F4:
•Start number 29 was manually annotated 1 time for cluster F4.

Info for manual annotations of cluster G2:
•Start number 30 was manually annotated 1 time for cluster G2.
•Start number 36 was manually annotated 2 times for cluster G2.
•Start number 40 was manually annotated 1 time for cluster G2.

Info for manual annotations of cluster G3:
•Start number 36 was manually annotated 2 times for cluster G3.

Info for manual annotations of cluster G4:
•Start number 36 was manually annotated 2 times for cluster G4.

Info for manual annotations of cluster G5:
•Start number 36 was manually annotated 3 times for cluster G5.

Info for manual annotations of cluster H2:
•Start number 13 was manually annotated 1 time for cluster H2.
•Start number 35 was manually annotated 1 time for cluster H2.

Gene Information:

Gene: Aflac_72 Start: 50484, Stop: 50768, Start Num: 34
Candidate Starts for Aflac_72:
(Start: 34 @50484 has 17 MA's), (Start: 37 @50493 has 16 MA's), (51, 50571), (56, 50604), (65, 50658), (68, 50682), (73, 50727),

Gene: AlainaMarie_72 Start: 50513, Stop: 50806, Start Num: 27
Candidate Starts for AlainaMarie_72:
(12, 50420), (22, 50474), (Start: 27 @50513 has 1 MA's), (Start: 34 @50525 has 17 MA's), (Start: 37 @50534 has 16 MA's), (41, 50564), (51, 50612), (59, 50660), (60, 50663), (65, 50699),

Gene: AmandaPanda_4 Start: 2032, Stop: 2307, Start Num: 35
Candidate Starts for AmandaPanda_4:
(Start: 35 @2032 has 1 MA's), (38, 2041), (54, 2134), (71, 2239), (78, 2278), (83, 2287),

Gene: Antsirabe_66 Start: 44402, Stop: 44704, Start Num: 36
Candidate Starts for Antsirabe_66:
(21, 44351), (Start: 36 @44402 has 10 MA's), (Start: 40 @44420 has 1 MA's), (47, 44456), (48, 44462), (59, 44525), (63, 44540), (66, 44573),

Gene: Arataki_72 Start: 49954, Stop: 50241, Start Num: 34
Candidate Starts for Arataki_72:
(9, 49834), (12, 49849), (17, 49882), (Start: 27 @49942 has 1 MA's), (Start: 34 @49954 has 17 MA's), (Start: 37 @49963 has 16 MA's), (51, 50041), (56, 50077), (59, 50092), (65, 50131),

Gene: ArtetaBall_72 Start: 50517, Stop: 50801, Start Num: 34
Candidate Starts for ArtetaBall_72:
(9, 50397), (12, 50412), (17, 50445), (Start: 27 @50505 has 1 MA's), (Start: 34 @50517 has 17 MA's), (Start: 37 @50526 has 16 MA's), (51, 50604), (56, 50637), (59, 50652), (60, 50655), (65, 50691),

Gene: Avocado_68 Start: 45054, Stop: 45353, Start Num: 36
Candidate Starts for Avocado_68:
(Start: 36 @45054 has 10 MA's), (Start: 40 @45072 has 1 MA's), (69, 45243), (72, 45273), (79, 45309), (83, 45318),

Gene: Barnyard_4 Start: 1956, Stop: 2339, Start Num: 13
Candidate Starts for Barnyard_4:
(Start: 13 @1956 has 1 MA's), (26, 2043), (Start: 35 @2061 has 1 MA's), (48, 2127), (62, 2196), (67, 2241), (71, 2268), (83, 2316),

Gene: BetterYeti_73 Start: 50326, Stop: 50610, Start Num: 34
Candidate Starts for BetterYeti_73:
(6, 50188), (7, 50191), (9, 50206), (25, 50299), (Start: 27 @50314 has 1 MA's), (Start: 34 @50326 has 17 MA's), (56, 50446), (59, 50461), (73, 50569),

Gene: Beyoncage_92 Start: 64575, Stop: 64862, Start Num: 30
Candidate Starts for Beyoncage_92:
(Start: 30 @64575 has 10 MA's), (43, 64629), (50, 64659), (64, 64731), (67, 64767), (80, 64842),

Gene: BiteSize_92 Start: 64661, Stop: 64948, Start Num: 30
Candidate Starts for BiteSize_92:
(Start: 30 @64661 has 10 MA's), (43, 64715), (50, 64745), (64, 64817), (67, 64853), (80, 64928),

Gene: Blanky_71 Start: 51835, Stop: 52119, Start Num: 34
Candidate Starts for Blanky_71:
(Start: 34 @51835 has 17 MA's), (Start: 37 @51844 has 16 MA's), (56, 51955), (59, 51970), (60, 51973), (65, 52009),

Gene: BlueCrab_98 Start: 54257, Stop: 54562, Start Num: 29
Candidate Starts for BlueCrab_98:
(20, 54206), (Start: 29 @54257 has 11 MA's), (52, 54359), (56, 54380), (63, 54410), (75, 54509), (82, 54524), (83, 54527),

Gene: BluerMoon_71 Start: 50436, Stop: 50720, Start Num: 34
Candidate Starts for BluerMoon_71:
(9, 50316), (12, 50331), (17, 50364), (Start: 34 @50436 has 17 MA's), (Start: 37 @50445 has 16 MA's), (56, 50556), (65, 50610), (68, 50634), (73, 50679),

Gene: Burley_73 Start: 49982, Stop: 50257, Start Num: 37
Candidate Starts for Burley_73:
(9, 49853), (12, 49868), (22, 49922), (Start: 27 @49961 has 1 MA's), (Start: 34 @49973 has 17 MA's), (Start: 37 @49982 has 16 MA's), (51, 50060), (56, 50093), (59, 50108), (60, 50111), (65, 50147),

Gene: BuzzLyseyear_104 Start: 55865, Stop: 56170, Start Num: 29
Candidate Starts for BuzzLyseyear_104:
(20, 55814), (Start: 29 @55865 has 11 MA's), (52, 55967), (56, 55988), (63, 56018), (67, 56057), (75, 56117), (82, 56132), (83, 56135),

Gene: CWormy_71 Start: 49931, Stop: 50218, Start Num: 34
Candidate Starts for CWormy_71:
(9, 49811), (12, 49826), (17, 49859), (Start: 27 @49919 has 1 MA's), (Start: 34 @49931 has 17 MA's), (Start: 37 @49940 has 16 MA's), (51, 50018), (56, 50054), (59, 50069), (65, 50108),

Gene: Cambiare_67 Start: 44844, Stop: 45125, Start Num: 40
Candidate Starts for Cambiare_67:
(Start: 36 @44826 has 10 MA's), (Start: 40 @44844 has 1 MA's), (69, 45015), (72, 45045), (79, 45081), (83, 45090),

Gene: Cardigan_94 Start: 57586, Stop: 57858, Start Num: 30
Candidate Starts for Cardigan_94:
(Start: 30 @57586 has 10 MA's), (41, 57631), (42, 57640), (43, 57643), (53, 57688), (59, 57721), (64, 57739),

Gene: Chikenjars_71 Start: 50566, Stop: 50841, Start Num: 37
Candidate Starts for Chikenjars_71:
(9, 50437), (12, 50452), (22, 50506), (25, 50530), (Start: 27 @50545 has 1 MA's), (Start: 34 @50557 has 17 MA's), (Start: 37 @50566 has 16 MA's), (41, 50596), (51, 50644), (56, 50677), (59, 50692), (60, 50695), (65, 50731),

Gene: Citrus_72 Start: 50818, Stop: 51102, Start Num: 34
Candidate Starts for Citrus_72:
(12, 50713), (22, 50767), (Start: 27 @50806 has 1 MA's), (Start: 34 @50818 has 17 MA's), (Start: 37 @50827 has 16 MA's), (51, 50905), (59, 50953), (60, 50956), (65, 50992),

Gene: Cloudyecho_66 Start: 44858, Stop: 45163, Start Num: 36
Candidate Starts for Cloudyecho_66:
(11, 44756), (14, 44765), (Start: 36 @44858 has 10 MA's), (Start: 40 @44876 has 1 MA's), (47, 44912), (61, 44990), (66, 45032), (83, 45125),

Gene: Demsculpinboyz_111 Start: 53565, Stop: 53870, Start Num: 29
Candidate Starts for Demsculpinboyz_111:
(20, 53514), (Start: 29 @53565 has 11 MA's), (52, 53667), (56, 53688), (63, 53718), (67, 53757), (75, 53817), (82, 53832), (83, 53835),

Gene: Demure_72 Start: 49954, Stop: 50241, Start Num: 34
Candidate Starts for Demure_72:
(9, 49834), (12, 49849), (17, 49882), (Start: 27 @49942 has 1 MA's), (Start: 34 @49954 has 17 MA's), (Start: 37 @49963 has 16 MA's), (51, 50041), (56, 50077), (59, 50092), (65, 50131),

Gene: Dialga_74 Start: 50536, Stop: 50820, Start Num: 34

Candidate Starts for Dialga_74:
(9, 50416), (12, 50431), (17, 50464), (Start: 27 @50524 has 1 MA's), (Start: 34 @50536 has 17 MA's), (Start: 37 @50545 has 16 MA's), (51, 50623), (56, 50656), (59, 50671), (60, 50674), (65, 50710),

Gene: Djokovic_92 Start: 64574, Stop: 64861, Start Num: 30
Candidate Starts for Djokovic_92:
(Start: 30 @64574 has 10 MA's), (43, 64628), (50, 64658), (64, 64730), (67, 64766), (80, 64841),

Gene: DrLupo_4 Start: 2032, Stop: 2307, Start Num: 35
Candidate Starts for DrLupo_4:
(Start: 35 @2032 has 1 MA's), (38, 2041), (54, 2134), (71, 2239), (78, 2278), (83, 2287),

Gene: Duffington_72 Start: 50499, Stop: 50774, Start Num: 37
Candidate Starts for Duffington_72:
(9, 50370), (12, 50385), (17, 50418), (22, 50439), (Start: 27 @50478 has 1 MA's), (Start: 34 @50490 has 17 MA's), (Start: 37 @50499 has 16 MA's), (51, 50577), (59, 50625), (60, 50628), (65, 50664),

Gene: Eddiemania_75 Start: 51191, Stop: 51475, Start Num: 34
Candidate Starts for Eddiemania_75:
(Start: 34 @51191 has 17 MA's), (51, 51278), (56, 51311), (59, 51326), (60, 51329), (65, 51365), (80, 51458),

Gene: EndAve_74 Start: 50721, Stop: 50996, Start Num: 37
Candidate Starts for EndAve_74:
(12, 50607), (18, 50646), (22, 50661), (25, 50685), (Start: 27 @50700 has 1 MA's), (Start: 34 @50712 has 17 MA's), (Start: 37 @50721 has 16 MA's), (51, 50799), (59, 50847), (60, 50850), (65, 50886),

Gene: Enzomatic_108 Start: 52418, Stop: 52723, Start Num: 29
Candidate Starts for Enzomatic_108:
(20, 52367), (Start: 29 @52418 has 11 MA's), (52, 52520), (56, 52541), (63, 52571), (67, 52610), (75, 52670), (82, 52685), (83, 52688),

Gene: Figliar_71 Start: 50562, Stop: 50837, Start Num: 37
Candidate Starts for Figliar_71:
(9, 50433), (12, 50448), (17, 50481), (Start: 34 @50553 has 17 MA's), (Start: 37 @50562 has 16 MA's), (51, 50640), (56, 50673), (65, 50727), (68, 50751), (73, 50796),

Gene: FlagStaff_65 Start: 44241, Stop: 44540, Start Num: 36
Candidate Starts for FlagStaff_65:
(Start: 36 @44241 has 10 MA's), (Start: 40 @44259 has 1 MA's), (69, 44430), (72, 44460), (83, 44505),

Gene: Galactic_99 Start: 52952, Stop: 53257, Start Num: 29
Candidate Starts for Galactic_99:
(20, 52901), (Start: 29 @52952 has 11 MA's), (52, 53054), (56, 53075), (63, 53105), (67, 53144), (75, 53204), (82, 53219), (83, 53222),

Gene: Glintora_74 Start: 51145, Stop: 51429, Start Num: 34
Candidate Starts for Glintora_74:
(9, 51025), (12, 51040), (Start: 27 @51133 has 1 MA's), (Start: 34 @51145 has 17 MA's), (Start: 37 @51154 has 16 MA's), (51, 51232), (56, 51265), (59, 51280), (65, 51319),

Gene: GodSpeed_62 Start: 43746, Stop: 44045, Start Num: 30
Candidate Starts for GodSpeed_62:

(Start: 30 @43746 has 10 MA's), (57, 43863), (59, 43872), (83, 44010), (84, 44013), (87, 44025),

Gene: Hortihabitatio_78 Start: 51747, Stop: 52031, Start Num: 31
Candidate Starts for Hortihabitatio_78:
(28, 51744), (Start: 31 @51747 has 3 MA's), (43, 51801), (64, 51897),

Gene: Hydrus_75 Start: 51147, Stop: 51422, Start Num: 37
Candidate Starts for Hydrus_75:
(9, 51018), (12, 51033), (17, 51066), (Start: 27 @51126 has 1 MA's), (Start: 34 @51138 has 17 MA's), (Start: 37 @51147 has 16 MA's), (51, 51225), (56, 51258), (59, 51273), (60, 51276), (65, 51312),

Gene: Jodelie19_71 Start: 51729, Stop: 52004, Start Num: 37
Candidate Starts for Jodelie19_71:
(9, 51600), (12, 51615), (17, 51648), (Start: 34 @51720 has 17 MA's), (Start: 37 @51729 has 16 MA's), (51, 51807), (56, 51840), (65, 51894), (68, 51918), (73, 51963),

Gene: Jolie2_62 Start: 43752, Stop: 44042, Start Num: 36
Candidate Starts for Jolie2_62:
(10, 43638), (Start: 36 @43752 has 10 MA's), (56, 43851), (62, 43875), (63, 43881),

Gene: JonJames_95 Start: 57779, Stop: 58051, Start Num: 30
Candidate Starts for JonJames_95:
(Start: 30 @57779 has 10 MA's), (42, 57833), (43, 57836), (53, 57881), (59, 57914), (64, 57932), (77, 58028),

Gene: Kenosha_72 Start: 50573, Stop: 50848, Start Num: 37
Candidate Starts for Kenosha_72:
(9, 50444), (12, 50459), (22, 50513), (Start: 27 @50552 has 1 MA's), (Start: 34 @50564 has 17 MA's), (Start: 37 @50573 has 16 MA's), (51, 50651), (56, 50684), (59, 50699), (65, 50738),

Gene: Lemuria_65 Start: 44438, Stop: 44734, Start Num: 36
Candidate Starts for Lemuria_65:
(10, 44327), (Start: 36 @44438 has 10 MA's), (Start: 40 @44456 has 1 MA's), (47, 44492), (59, 44564), (63, 44579), (66, 44612), (73, 44672), (79, 44696), (83, 44705),

Gene: LilyPad_87 Start: 62474, Stop: 62752, Start Num: 33
Candidate Starts for LilyPad_87:
(Start: 33 @62474 has 1 MA's), (41, 62516), (44, 62531), (55, 62582), (58, 62600), (71, 62684), (76, 62720),

Gene: LunaBlu_102 Start: 54438, Stop: 54743, Start Num: 29
Candidate Starts for LunaBlu_102:
(20, 54387), (Start: 29 @54438 has 11 MA's), (52, 54540), (56, 54561), (63, 54591), (67, 54630), (75, 54690), (82, 54705), (83, 54708),

Gene: Luthien_72 Start: 50707, Stop: 50991, Start Num: 34
Candidate Starts for Luthien_72:
(12, 50602), (22, 50656), (Start: 27 @50695 has 1 MA's), (Start: 34 @50707 has 17 MA's), (Start: 37 @50716 has 16 MA's), (51, 50794), (59, 50842), (60, 50845), (65, 50881),

Gene: Madi_91 Start: 64405, Stop: 64692, Start Num: 30
Candidate Starts for Madi_91:
(Start: 30 @64405 has 10 MA's), (43, 64459), (50, 64489), (64, 64561), (67, 64597), (80, 64672),

Gene: Madvan_73 Start: 50026, Stop: 50313, Start Num: 34
Candidate Starts for Madvan_73:
(9, 49906), (12, 49921), (17, 49954), (22, 49975), (Start: 27 @50014 has 1 MA's), (Start: 34 @50026 has 17 MA's), (Start: 37 @50035 has 16 MA's), (51, 50113), (56, 50149), (59, 50164), (65, 50203),

Gene: MajinBuu_73 Start: 50944, Stop: 51219, Start Num: 37
Candidate Starts for MajinBuu_73:
(9, 50815), (12, 50830), (17, 50863), (Start: 34 @50935 has 17 MA's), (Start: 37 @50944 has 16 MA's), (51, 51022), (56, 51055), (65, 51109), (68, 51133), (73, 51178),

Gene: Mercurio_64 Start: 44317, Stop: 44613, Start Num: 36
Candidate Starts for Mercurio_64:
(5, 44125), (10, 44206), (Start: 36 @44317 has 10 MA's), (Start: 40 @44335 has 1 MA's), (47, 44371), (59, 44443), (61, 44449), (63, 44458), (69, 44509),

Gene: Mossy_76 Start: 52047, Stop: 52331, Start Num: 34
Candidate Starts for Mossy_76:
(Start: 34 @52047 has 17 MA's), (Start: 37 @52056 has 16 MA's), (56, 52167), (59, 52182), (60, 52185), (65, 52221),

Gene: Mysticmoon_76 Start: 51736, Stop: 52026, Start Num: 31
Candidate Starts for Mysticmoon_76:
(28, 51733), (Start: 31 @51736 has 3 MA's), (41, 51778), (46, 51799), (55, 51850), (64, 51889), (70, 51952), (85, 52018), (86, 52021),

Gene: Nadmeg_74 Start: 51255, Stop: 51542, Start Num: 34
Candidate Starts for Nadmeg_74:
(9, 51135), (12, 51150), (17, 51183), (22, 51204), (Start: 27 @51243 has 1 MA's), (Start: 34 @51255 has 17 MA's), (Start: 37 @51264 has 16 MA's), (51, 51342), (56, 51378), (59, 51393), (65, 51432),

Gene: NewHope4_103 Start: 52564, Stop: 52869, Start Num: 29
Candidate Starts for NewHope4_103:
(20, 52513), (Start: 29 @52564 has 11 MA's), (52, 52666), (56, 52687), (63, 52717), (67, 52756), (75, 52816), (82, 52831), (83, 52834),

Gene: Nithya_72 Start: 50422, Stop: 50694, Start Num: 37
Candidate Starts for Nithya_72:
(12, 50308), (22, 50362), (Start: 27 @50401 has 1 MA's), (Start: 34 @50413 has 17 MA's), (Start: 37 @50422 has 16 MA's), (41, 50452), (51, 50500), (60, 50551), (65, 50587),

Gene: ODay_111 Start: 56224, Stop: 56478, Start Num: 39
Candidate Starts for ODay_111:
(Start: 39 @56224 has 2 MA's), (73, 56437), (80, 56461),

Gene: OhMyWard_72 Start: 51815, Stop: 52090, Start Num: 37
Candidate Starts for OhMyWard_72:
(Start: 34 @51806 has 17 MA's), (Start: 37 @51815 has 16 MA's), (56, 51926), (59, 51941), (60, 51944), (65, 51980),

Gene: OlgasClover_73 Start: 51071, Stop: 51346, Start Num: 37
Candidate Starts for OlgasClover_73:

(9, 50942), (17, 50990), (Start: 34 @51062 has 17 MA's), (Start: 37 @51071 has 16 MA's), (51, 51149), (56, 51182), (58, 51194), (65, 51236), (68, 51260), (73, 51305),

Gene: P3MA_63 Start: 40816, Stop: 41085, Start Num: 36
Candidate Starts for P3MA_63:
(Start: 36 @40816 has 10 MA's), (45, 40858), (59, 40933),

Gene: Pacc40_93 Start: 54213, Stop: 54518, Start Num: 29
Candidate Starts for Pacc40_93:
(20, 54162), (Start: 29 @54213 has 11 MA's), (52, 54315), (56, 54336), (63, 54366), (75, 54465), (82, 54480), (83, 54483),

Gene: Pace1224_69 Start: 44505, Stop: 44786, Start Num: 40
Candidate Starts for Pace1224_69:
(Start: 36 @44487 has 10 MA's), (Start: 40 @44505 has 1 MA's), (69, 44676), (79, 44742), (83, 44751),

Gene: PestoPenguin_75 Start: 50327, Stop: 50611, Start Num: 34
Candidate Starts for PestoPenguin_75:
(6, 50189), (7, 50192), (9, 50207), (25, 50300), (Start: 27 @50315 has 1 MA's), (Start: 34 @50327 has 17 MA's), (56, 50447), (59, 50462), (73, 50570),

Gene: Phepper_74 Start: 50268, Stop: 50555, Start Num: 34
Candidate Starts for Phepper_74:
(9, 50148), (12, 50163), (17, 50196), (22, 50217), (Start: 27 @50256 has 1 MA's), (Start: 34 @50268 has 17 MA's), (Start: 37 @50277 has 16 MA's), (51, 50355), (56, 50391), (59, 50406), (65, 50445),

Gene: Pherobrine_76 Start: 51791, Stop: 52081, Start Num: 31
Candidate Starts for Pherobrine_76:
(28, 51788), (Start: 31 @51791 has 3 MA's), (41, 51833), (46, 51854), (55, 51905), (64, 51944), (70, 52007), (74, 52037), (85, 52073), (86, 52076),

Gene: Phistory_98 Start: 50737, Stop: 50991, Start Num: 39
Candidate Starts for Phistory_98:
(28, 50704), (Start: 39 @50737 has 2 MA's), (49, 50788), (73, 50950), (80, 50974), (81, 50977),

Gene: Pinnie_66 Start: 44520, Stop: 44807, Start Num: 36
Candidate Starts for Pinnie_66:
(Start: 13 @44418 has 1 MA's), (15, 44427), (23, 44475), (24, 44487), (Start: 36 @44520 has 10 MA's), (41, 44547), (56, 44628), (61, 44649), (63, 44658),

Gene: Polo2Bam_107 Start: 52418, Stop: 52723, Start Num: 29
Candidate Starts for Polo2Bam_107:
(20, 52367), (Start: 29 @52418 has 11 MA's), (52, 52520), (56, 52541), (63, 52571), (67, 52610), (75, 52670), (82, 52685), (83, 52688),

Gene: Renaud18_106 Start: 54206, Stop: 54502, Start Num: 29
Candidate Starts for Renaud18_106:
(20, 54158), (Start: 29 @54206 has 11 MA's), (56, 54320), (63, 54350), (75, 54449), (82, 54464), (83, 54467),

Gene: Rickmore_70 Start: 48938, Stop: 49213, Start Num: 37
Candidate Starts for Rickmore_70:

(9, 48809), (12, 48824), (17, 48857), (Start: 27 @48917 has 1 MA's), (Start: 34 @48929 has 17 MA's), (Start: 37 @48938 has 16 MA's), (41, 48968), (51, 49016), (59, 49064), (60, 49067), (65, 49103),

Gene: Runhaar_72 Start: 50077, Stop: 50364, Start Num: 34
Candidate Starts for Runhaar_72:
(9, 49957), (12, 49972), (17, 50005), (22, 50026), (Start: 27 @50065 has 1 MA's), (Start: 34 @50077 has 17 MA's), (Start: 37 @50086 has 16 MA's), (51, 50164), (56, 50200), (59, 50215), (65, 50254),

Gene: Schwartz33_75 Start: 50629, Stop: 50919, Start Num: 29
Candidate Starts for Schwartz33_75:
(Start: 29 @50629 has 11 MA's), (56, 50755), (65, 50809), (73, 50878),

Gene: SeaLumen_104 Start: 52418, Stop: 52723, Start Num: 29
Candidate Starts for SeaLumen_104:
(20, 52367), (Start: 29 @52418 has 11 MA's), (52, 52520), (56, 52541), (63, 52571), (67, 52610), (75, 52670), (82, 52685), (83, 52688),

Gene: Secretariat_74 Start: 49976, Stop: 50269, Start Num: 29
Candidate Starts for Secretariat_74:
(Start: 29 @49976 has 11 MA's), (43, 50033), (64, 50135), (67, 50174), (68, 50180), (77, 50240), (80, 50249),

Gene: ShaggyRogers_73 Start: 50061, Stop: 50345, Start Num: 34
Candidate Starts for ShaggyRogers_73:
(7, 49926), (9, 49941), (12, 49956), (19, 49998), (25, 50034), (Start: 27 @50049 has 1 MA's), (Start: 34 @50061 has 17 MA's), (56, 50181), (59, 50196), (73, 50304), (77, 50319),

Gene: Stargaze_66 Start: 44854, Stop: 45147, Start Num: 36
Candidate Starts for Stargaze_66:
(Start: 36 @44854 has 10 MA's), (49, 44920), (56, 44968),

Gene: Suzy_92 Start: 65322, Stop: 65609, Start Num: 30
Candidate Starts for Suzy_92:
(2, 65052), (3, 65112), (8, 65199), (16, 65244), (Start: 30 @65322 has 10 MA's), (43, 65376), (50, 65406), (64, 65478), (67, 65514), (80, 65589),

Gene: TenaciousP_73 Start: 51682, Stop: 51966, Start Num: 34
Candidate Starts for TenaciousP_73:
(9, 51562), (12, 51577), (17, 51610), (Start: 34 @51682 has 17 MA's), (Start: 37 @51691 has 16 MA's), (51, 51769), (56, 51802), (65, 51856), (68, 51880), (73, 51925),

Gene: Terapin_93 Start: 64576, Stop: 64863, Start Num: 30
Candidate Starts for Terapin_93:
(Start: 30 @64576 has 10 MA's), (43, 64630), (50, 64660), (64, 64732), (67, 64768), (80, 64843),

Gene: Tonaltzin_71 Start: 50261, Stop: 50524, Start Num: 37
Candidate Starts for Tonaltzin_71:
(9, 50132), (12, 50147), (17, 50180), (Start: 34 @50252 has 17 MA's), (Start: 37 @50261 has 16 MA's), (51, 50339), (56, 50372), (65, 50426), (68, 50450), (73, 50495),

Gene: Untouchable_75 Start: 51265, Stop: 51552, Start Num: 34
Candidate Starts for Untouchable_75:

(9, 51145), (12, 51160), (17, 51193), (22, 51214), (Start: 27 @51253 has 1 MA's), (Start: 34 @51265 has 17 MA's), (Start: 37 @51274 has 16 MA's), (51, 51352), (56, 51388), (59, 51403), (65, 51442),

Gene: Vardy_72 Start: 49976, Stop: 50251, Start Num: 37
Candidate Starts for Vardy_72:
(9, 49847), (12, 49862), (22, 49916), (Start: 27 @49955 has 1 MA's), (Start: 34 @49967 has 17 MA's), (Start: 37 @49976 has 16 MA's), (51, 50054), (56, 50087), (59, 50102), (65, 50141),

Gene: YangYin_67 Start: 44595, Stop: 44888, Start Num: 36
Candidate Starts for YangYin_67:
(1, 44310), (4, 44382), (32, 44586), (Start: 36 @44595 has 10 MA's), (49, 44661), (56, 44709),

Gene: Yoshi_110 Start: 54848, Stop: 55144, Start Num: 29
Candidate Starts for Yoshi_110:
(20, 54800), (Start: 29 @54848 has 11 MA's), (52, 54941), (56, 54962), (63, 54992), (67, 55031), (75, 55091), (82, 55106), (83, 55109),

Gene: Yvonnetastic_93 Start: 55321, Stop: 55593, Start Num: 30
Candidate Starts for Yvonnetastic_93:
(Start: 30 @55321 has 10 MA's), (42, 55375), (43, 55378), (53, 55423), (59, 55456), (64, 55474), (77, 55570),

Gene: Zeph_75 Start: 51114, Stop: 51389, Start Num: 37
Candidate Starts for Zeph_75:
(9, 50985), (12, 51000), (17, 51033), (22, 51054), (Start: 27 @51093 has 1 MA's), (Start: 34 @51105 has 17 MA's), (Start: 37 @51114 has 16 MA's), (51, 51192), (59, 51240), (60, 51243), (65, 51279),