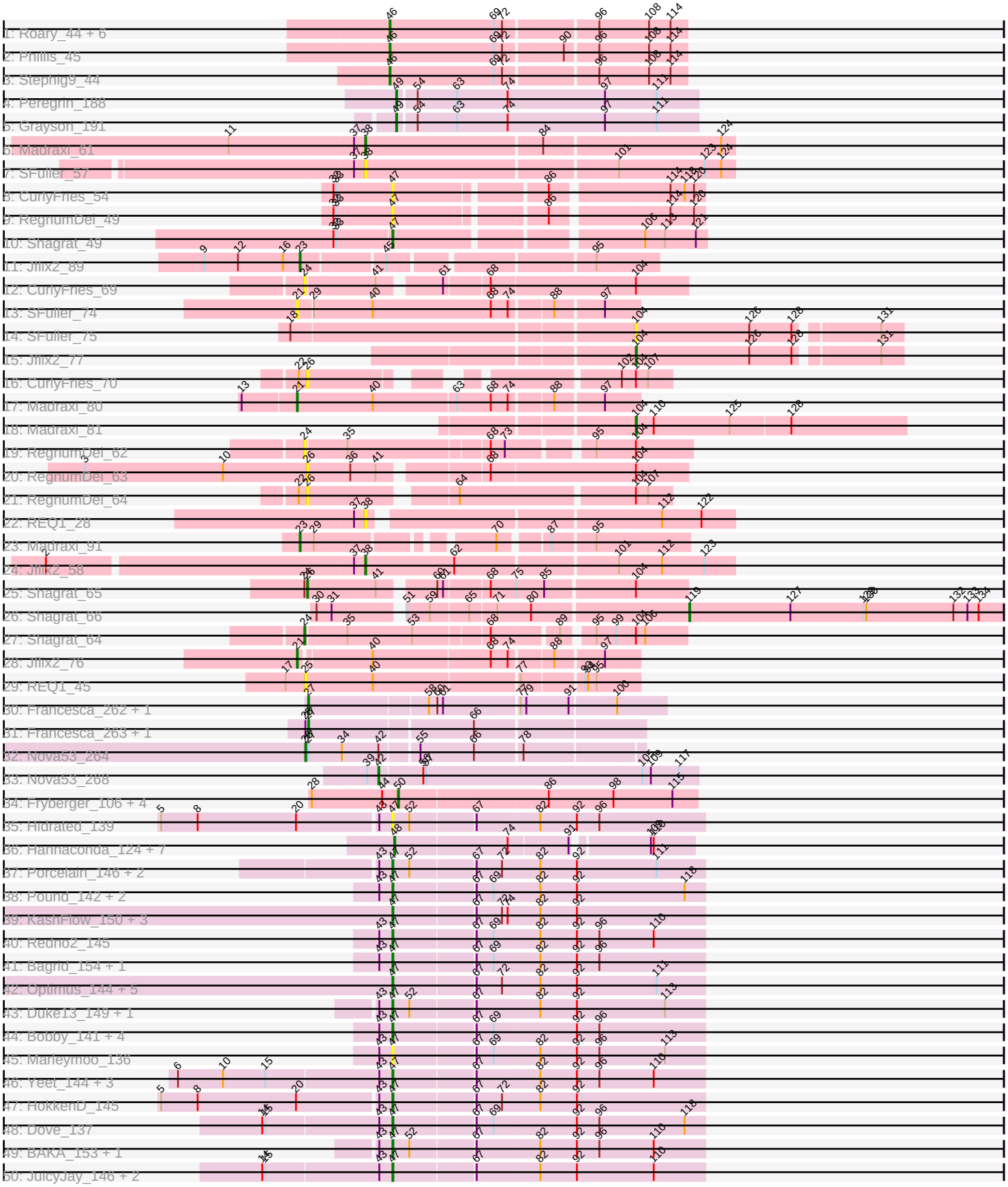
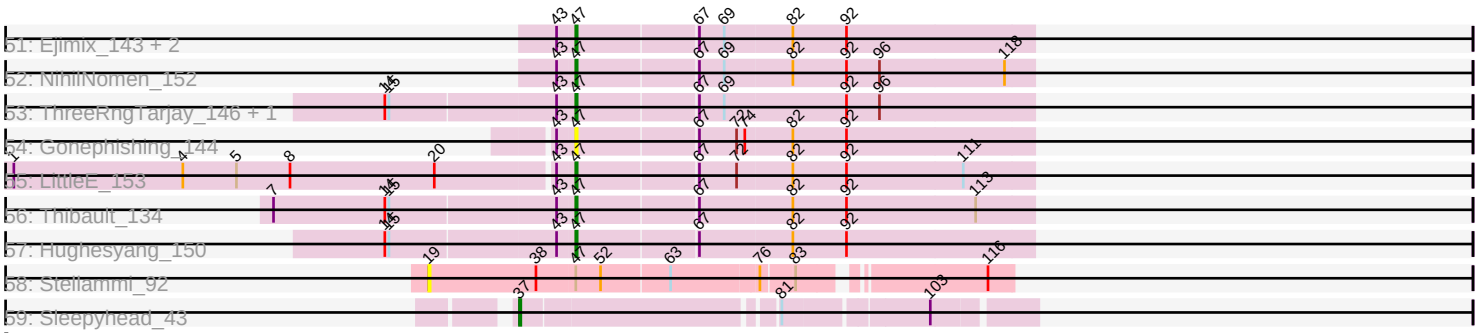
Pham 291011


1: Roary_44 + 6
2: Phillis_45
3: Stephig9_44
4: Peregrin_188
5: Grayson_191
6: Madraxi_61
7: SFuller_57
8: CurlyFries_54
9: RegnumDei_49
10: Shagrat_49
11: Jflix2_89
12: CurlyFries_69
13: SFuller_74
14: SFuller_75
15: Jflix2_77
16: CurlyFries_70
17: Madraxi_80
18: Madraxi_81
19: RegnumDei_62
20: RegnumDei_63
21: RegnumDei_64
22: REQ1_28
23: Madraxi_91
24: Jflix2_58
25: Shagrat_65
26: Shagrat_66
27: Shagrat_64
28: Jflix2_76
29: REQ1_45
30: Francesca_262 + 1
31: Francesca_263 + 1
32: Nova53_264
33: Nova53_268
34: Fryberger_106 + 4
35: Hidrated_139
36: Hannaconda_124 + 7
37: Porcelain_146 + 2
38: Pound_142 + 2
39: KashFlow_150 + 3
40: Redno2_145
41: Bagrid_154 + 1
42: Optimus_144 + 5
43: Duke13_149 + 1
44: Bobby_141 + 4
45: Marleymoo_136
46: Yeet_144 + 3
47: HokkenD_145
48: Dove_137
49: BAKA_153 + 1
50: JuicyJay_146 + 2

Pham 291011


51: Ejimix_143 + 2
52: NihilNomen_152
53: ThreeRingTarjay_146 + 1
54: Gonephishing_144
55: LittleE_153
56: Thibault_134
57: Hughesyang_150
58: Stellammi_92
59: Sleepyhead_43

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 291011 Report

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

Pham number 291011 has 105 members, 26 are drafts.

Phages represented in each track:
- Track 1 : Roary_44, Smeadley_44, Astro_43, Danforth_43, Groundhog_42, Caitlin_42, Expelliarmus_43
- Track 2 : Phillis_45
- Track 3 : Stephig9_44
- Track 4 : Peregrin_188
- Track 5 : Grayson_191
- Track 6 : Madraxi_61
- Track 7 : SFuller_57
- Track 8 : CurlyFries_54
- Track 9 : RegnumDei_49
- Track 10 : Shagrat_49
- Track 11 : Jflix2_89
- Track 12 : CurlyFries_69
- Track 13 : SFuller_74
- Track 14 : SFuller_75
- Track 15 : Jflix2_77
- Track 16 : CurlyFries_70
- Track 17 : Madraxi_80
- Track 18 : Madraxi_81
- Track 19 : RegnumDei_62
- Track 20 : RegnumDei_63
- Track 21 : RegnumDei_64
- Track 22 : REQ1_28
- Track 23 : Madraxi_91
- Track 24 : Jflix2_58
- Track 25 : Shagrat_65
- Track 26 : Shagrat_66
- Track 27 : Shagrat_64
- Track 28 : Jflix2_76
- Track 29 : REQ1_45
- Track 30 : Francesca_262, Dorin_262
- Track 31 : Francesca_263, Dorin_263
- Track 32 : Nova53_264
- Track 33 : Nova53_268
- Track 34 : Fryberger_106, Ronaldo_108, Ziko_109, Guey18_111, Volt_110
- Track 35 : Hidrated_139

• Track 36 : Hannaconda_124, Odette_135, Yeet_125, Gonephishing_125, Rearden_129, Superphikiman_128, HokkenD_123, Courthouse_126
• Track 37 : Porcelain_146, MiaZeal_149, Lucky2013_142
• Track 38 : Pound_142, DmpstrDiver_151, Schatzie_146
• Track 39 : KashFlow_150, Squint_142, Nekros_148, Hannaconda_144
• Track 40 : Redno2_145
• Track 41 : Bagrid_154, Constella_144
• Track 42 : Optimus_144, Omega_157, BronnyJames_145, Shaboozey_148, Odette_156, Nibley_144
• Track 43 : Duke13_149, EricMillard_145
• Track 44 : Bobby_141, Wanda_150, Minerva_150, Kalah2_142, Zelink_145
• Track 45 : Marleymoo_136
• Track 46 : Yeet_144, Superphikiman_147, Ariel_149, Courthouse_145
• Track 47 : HokkenD_145
• Track 48 : Dove_137
• Track 49 : BAKA_153, Klein_150
• Track 50 : JuicyJay_146, Beem_153, Bombitas_138
• Track 51 : Ejimix_143, Halley_152, Dallas_151
• Track 52 : NihilNomen_152
• Track 53 : ThreeRngTarjay_146, Phoebus_151
• Track 54 : Gonephishing_144
• Track 55 : LittleE_153
• Track 56 : Thibault_134
• Track 57 : Hughesyang_150
• Track 58 : Stellammi_92
• Track 59 : Sleepyhead_43

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

The start number called the most often in the published annotations is 47, it was called in 41 of the 79 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Ariel_149, BAKA_153, Bagrid_154, Beem_153, Bobby_141, Bombitas_138, BronnyJames_145, Constella_144, Courthouse_145, CurlyFries_54, Dallas_151, DmpstrDiver_151, Dove_137, Duke13_149, Ejimix_143, EricMillard_145, Gonephishing_144, Halley_152, Hannaconda_144, Hidrated_139, HokkenD_145, Hughesyang_150, JuicyJay_146, Kalah2_142, KashFlow_150, Klein_150, LittleE_153, Lucky2013_142, Marleymoo_136, MiaZeal_149, Minerva_150, Nekros_148, Nibley_144, NihilNomen_152, Odette_156, Omega_157, Optimus_144, Phoebus_151, Porcelain_146, Pound_142, Redno2_145, RegnumDei_49, Schatzie_146, Shaboozey_148, Shagrat_49, Squint_142, Superphikiman_147, Thibault_134, ThreeRngTarjay_146, Wanda_150, Yeet_144, Zelink_145,

Genes that have the "Most Annotated" start but do not call it:
• Stellammi_92,

Genes that do not have the "Most Annotated" start:
• Astro_43, Caitlin_42, Courthouse_126, CurlyFries_69, CurlyFries_70, Danforth_43, Dorin_262, Dorin_263, Expelliarmus_43, Francesca_262, Francesca_263,

Fryberger_106, Gonephishing_125, Grayson_191, Groundhog_42, Guey18_111, Hannaconda_124, HokkenD_123, Jflix2_58, Jflix2_76, Jflix2_77, Jflix2_89, Madraxi_61, Madraxi_80, Madraxi_81, Madraxi_91, Nova53_264, Nova53_268, Odette_135, Peregrin_188, Phillis_45, REQ1_28, REQ1_45, Rearden_129, RegnumDei_62, RegnumDei_63, RegnumDei_64, Roary_44, Ronaldo_108, SFuller_57, SFuller_74, SFuller_75, Shagrat_64, Shagrat_65, Shagrat_66, Sleepyhead_43, Smeadley_44, Stephig9_44, Superphikiman_128, Volt_110, Yeet_125, Ziko_109,

Summary by start number:

Start 19:
• Found in 1 of 105 (1.0%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Stellammi_92 (UNK),

Start 21:
• Found in 3 of 105 (2.9%) of genes in pham
• Manual Annotations of this start: 2 of 79
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Jflix2_76 (CF), Madraxi_80 (CF), SFuller_74 (CF),

Start 23:
• Found in 2 of 105 (1.9%) of genes in pham
• Manual Annotations of this start: 2 of 79
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Jflix2_89 (CF), Madraxi_91 (CF),

Start 24:
• Found in 4 of 105 (3.8%) of genes in pham
• Manual Annotations of this start: 1 of 79
• Called 75.0% of time when present
• Phage (with cluster) where this start called: CurlyFries_69 (CF), RegnumDei_62 (CF), Shagrat_64 (CF),

Start 25:
• Found in 4 of 105 (3.8%) of genes in pham
• Manual Annotations of this start: 1 of 79
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Nova53_264 (CG), REQ1_45 (CF),

Start 26:
• Found in 4 of 105 (3.8%) of genes in pham
• Manual Annotations of this start: 1 of 79
• Called 100.0% of time when present
• Phage (with cluster) where this start called: CurlyFries_70 (CF), RegnumDei_63 (CF), RegnumDei_64 (CF), Shagrat_65 (CF),

Start 27:
• Found in 5 of 105 (4.8%) of genes in pham
• Manual Annotations of this start: 4 of 79

• Called 80.0% of time when present
• Phage (with cluster) where this start called: Dorin_262 (CG), Dorin_263 (CG), Francesca_262 (CG), Francesca_263 (CG),

Start 37:
• Found in 5 of 105 (4.8%) of genes in pham
• Manual Annotations of this start: 1 of 79
• Called 20.0% of time when present
• Phage (with cluster) where this start called: Sleepyhead_43 (singleton),

Start 38:
• Found in 5 of 105 (4.8%) of genes in pham
• Manual Annotations of this start: 2 of 79
• Called 80.0% of time when present
• Phage (with cluster) where this start called: Jflix2_58 (CF), Madraxi_61 (CF), REQ1_28 (CF), SFuller_57 (CF),

Start 42:
• Found in 2 of 105 (1.9%) of genes in pham
• Manual Annotations of this start: 1 of 79
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Nova53_268 (CG),

Start 46:
• Found in 9 of 105 (8.6%) of genes in pham
• Manual Annotations of this start: 8 of 79
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Astro_43 (A8), Caitlin_42 (A8), Danforth_43 (A8), Expelliarmus_43 (A8), Groundhog_42 (A8), Phillis_45 (A8), Roary_44 (A8), Smeadley_44 (A8), Stephig9_44 (A8),

Start 47:
• Found in 53 of 105 (50.5%) of genes in pham
• Manual Annotations of this start: 41 of 79
• Called 98.1% of time when present
• Phage (with cluster) where this start called: Ariel_149 (J), BAKA_153 (J), Bagrid_154 (J), Beem_153 (J), Bobby_141 (J), Bombitas_138 (J), BronnyJames_145 (J), Constella_144 (J), Courthouse_145 (J), CurlyFries_54 (CF), Dallas_151 (J), DmpstrDiver_151 (J), Dove_137 (J), Duke13_149 (J), Ejimix_143 (J), EricMillard_145 (J), Gonephishing_144 (J), Halley_152 (J), Hannaconda_144 (J), Hidrated_139 (J), HokkenD_145 (J), Hughesyang_150 (J), JuicyJay_146 (J), Kalah2_142 (J), KashFlow_150 (J), Klein_150 (J), LittleE_153 (J), Lucky2013_142 (J), Marleymoo_136 (J), MiaZeal_149 (J), Minerva_150 (J), Nekros_148 (J), Nibley_144 (J), NihilNomen_152 (J), Odette_156 (J), Omega_157 (J), Optimus_144 (J), Phoebus_151 (J), Porcelain_146 (J), Pound_142 (J), Redno2_145 (J), RegnumDei_49 (CF), Schatzie_146 (J), Shaboozey_148 (J), Shagrat_49 (CF), Squint_142 (J), Superphikiman_147 (J), Thibault_134 (J), ThreeRngTarjay_146 (J), Wanda_150 (J), Yeet_144 (J), Zelink_145 (J),

Start 48:
• Found in 8 of 105 (7.6%) of genes in pham
• Manual Annotations of this start: 5 of 79
• Called 100.0% of time when present

• Phage (with cluster) where this start called: Courthouse_126 (J), Gonephishing_125 (J), Hannaconda_124 (J), HokkenD_123 (J), Odette_135 (J), Rearden_129 (J), Superphikiman_128 (J), Yeet_125 (J),

Start 49:
• Found in 2 of 105 (1.9%) of genes in pham
• Manual Annotations of this start: 2 of 79
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Grayson_191 (CB), Peregrin_188 (CB),

Start 50:
• Found in 5 of 105 (4.8%) of genes in pham
• Manual Annotations of this start: 5 of 79
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Fryberger_106 (DP), Guey18_111 (DP), Ronaldo_108 (DP), Volt_110 (DP), Ziko_109 (DP),

Start 104:
• Found in 10 of 105 (9.5%) of genes in pham
• Manual Annotations of this start: 2 of 79
• Called 30.0% of time when present
• Phage (with cluster) where this start called: Jflix2_77 (CF), Madraxi_81 (CF), SFuller_75 (CF),

Start 119:
• Found in 1 of 105 (1.0%) of genes in pham
• Manual Annotations of this start: 1 of 79
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Shagrat_66 (CF),

Summary by clusters:

There are 8 clusters represented in this pham: singleton, CB, J, CG, CF, A8, UNK, DP,

Info for manual annotations of cluster A8:
•Start number 46 was manually annotated 8 times for cluster A8.

Info for manual annotations of cluster CB:
•Start number 49 was manually annotated 2 times for cluster CB.

Info for manual annotations of cluster CF:
•Start number 21 was manually annotated 2 times for cluster CF.
•Start number 23 was manually annotated 2 times for cluster CF.
•Start number 24 was manually annotated 1 time for cluster CF.
•Start number 26 was manually annotated 1 time for cluster CF.
•Start number 38 was manually annotated 2 times for cluster CF.
•Start number 47 was manually annotated 1 time for cluster CF.
•Start number 104 was manually annotated 2 times for cluster CF.
•Start number 119 was manually annotated 1 time for cluster CF.

Info for manual annotations of cluster CG:
•Start number 25 was manually annotated 1 time for cluster CG.

•Start number 27 was manually annotated 4 times for cluster CG.
•Start number 42 was manually annotated 1 time for cluster CG.

Info for manual annotations of cluster DP:
•Start number 50 was manually annotated 5 times for cluster DP.

Info for manual annotations of cluster J:
•Start number 47 was manually annotated 40 times for cluster J.
•Start number 48 was manually annotated 5 times for cluster J.

Gene Information:

Gene: Ariel_149 Start: 76661, Stop: 76984, Start Num: 47
Candidate Starts for Ariel_149:
(6, 76439), (10, 76487), (15, 76532), (43, 76649), (Start: 47 @76661 has 41 MA's), (67, 76745), (82, 76811), (92, 76850), (96, 76874), (110, 76931),

Gene: Astro_43 Start: 30852, Stop: 30550, Start Num: 46
Candidate Starts for Astro_43:
(Start: 46 @30852 has 8 MA's), (69, 30741), (72, 30732), (96, 30639), (108, 30588), (114, 30567),

Gene: BAKA_153 Start: 81330, Stop: 81653, Start Num: 47
Candidate Starts for BAKA_153:
(43, 81318), (Start: 47 @81330 has 41 MA's), (52, 81348), (67, 81414), (82, 81480), (92, 81519), (96, 81543), (110, 81600),

Gene: Bagrid_154 Start: 82037, Stop: 82360, Start Num: 47
Candidate Starts for Bagrid_154:
(43, 82025), (Start: 47 @82037 has 41 MA's), (67, 82121), (69, 82139), (82, 82187), (92, 82226), (96, 82250),

Gene: Beem_153 Start: 81458, Stop: 81781, Start Num: 47
Candidate Starts for Beem_153:
(14, 81326), (15, 81329), (43, 81446), (Start: 47 @81458 has 41 MA's), (67, 81542), (82, 81608), (92, 81647), (110, 81728),

Gene: Bobby_141 Start: 81455, Stop: 81778, Start Num: 47
Candidate Starts for Bobby_141:
(43, 81443), (Start: 47 @81455 has 41 MA's), (67, 81539), (69, 81557), (92, 81644), (96, 81668),

Gene: Bombitas_138 Start: 78311, Stop: 78634, Start Num: 47
Candidate Starts for Bombitas_138:
(14, 78179), (15, 78182), (43, 78299), (Start: 47 @78311 has 41 MA's), (67, 78395), (82, 78461), (92, 78500), (110, 78581),

Gene: BronnyJames_145 Start: 77611, Stop: 77934, Start Num: 47
Candidate Starts for BronnyJames_145:
(Start: 47 @77611 has 41 MA's), (67, 77695), (72, 77722), (82, 77761), (92, 77800), (111, 77884),

Gene: Caitlin_42 Start: 30845, Stop: 30543, Start Num: 46

Candidate Starts for Caitlin_42:
(Start: 46 @30845 has 8 MA's), (69, 30734), (72, 30725), (96, 30632), (108, 30581), (114, 30560),

Gene: Constella_144 Start: 79520, Stop: 79843, Start Num: 47
Candidate Starts for Constella_144:
(43, 79508), (Start: 47 @79520 has 41 MA's), (67, 79604), (69, 79622), (82, 79670), (92, 79709), (96, 79733),

Gene: Courthouse_145 Start: 76519, Stop: 76842, Start Num: 47
Candidate Starts for Courthouse_145:
(6, 76297), (10, 76345), (15, 76390), (43, 76507), (Start: 47 @76519 has 41 MA's), (67, 76603), (82, 76669), (92, 76708), (96, 76732), (110, 76789),

Gene: Courthouse_126 Start: 68736, Stop: 69029, Start Num: 48
Candidate Starts for Courthouse_126:
(Start: 48 @68736 has 5 MA's), (74, 68853), (91, 68913), (109, 68985), (110, 68988),

Gene: CurlyFries_54 Start: 35699, Stop: 35998, Start Num: 47
Candidate Starts for CurlyFries_54:
(32, 35636), (33, 35639), (Start: 47 @35699 has 41 MA's), (86, 35846), (114, 35963), (118, 35978), (120, 35987),

Gene: CurlyFries_69 Start: 39422, Stop: 39799, Start Num: 24
Candidate Starts for CurlyFries_69:
(Start: 24 @39422 has 1 MA's), (41, 39494), (61, 39551), (68, 39596), (Start: 104 @39746 has 2 MA's),

Gene: CurlyFries_70 Start: 39801, Stop: 40115, Start Num: 26
Candidate Starts for CurlyFries_70:
(22, 39792), (Start: 26 @39801 has 1 MA's), (102, 40065), (Start: 104 @40080 has 2 MA's), (107, 40092),

Gene: Dallas_151 Start: 80367, Stop: 80690, Start Num: 47
Candidate Starts for Dallas_151:
(43, 80355), (Start: 47 @80367 has 41 MA's), (67, 80451), (69, 80469), (82, 80517), (92, 80556),

Gene: Danforth_43 Start: 30881, Stop: 30579, Start Num: 46
Candidate Starts for Danforth_43:
(Start: 46 @30881 has 8 MA's), (69, 30770), (72, 30761), (96, 30668), (108, 30617), (114, 30596),

Gene: DmpstrDiver_151 Start: 80286, Stop: 80609, Start Num: 47
Candidate Starts for DmpstrDiver_151:
(43, 80274), (Start: 47 @80286 has 41 MA's), (67, 80370), (69, 80388), (82, 80436), (92, 80475), (118, 80589),

Gene: Dorin_262 Start: 128550, Stop: 128915, Start Num: 27
Candidate Starts for Dorin_262:
(Start: 27 @128550 has 4 MA's), (58, 128673), (60, 128682), (61, 128688), (77, 128766), (79, 128772), (91, 128817), (100, 128865),

Gene: Dorin_263 Start: 128893, Stop: 129231, Start Num: 27
Candidate Starts for Dorin_263:
(Start: 25 @128890 has 1 MA's), (Start: 27 @128893 has 4 MA's), (66, 129061),

Gene: Dove_137 Start: 76474, Stop: 76797, Start Num: 47
Candidate Starts for Dove_137:
(14, 76342), (15, 76345), (43, 76462), (Start: 47 @76474 has 41 MA's), (67, 76558), (69, 76576), (92, 76663), (96, 76687), (118, 76777),

Gene: Duke13_149 Start: 79615, Stop: 79938, Start Num: 47
Candidate Starts for Duke13_149:
(43, 79603), (Start: 47 @79615 has 41 MA's), (52, 79633), (67, 79699), (82, 79765), (92, 79804), (113, 79897),

Gene: Ejimix_143 Start: 80435, Stop: 80758, Start Num: 47
Candidate Starts for Ejimix_143:
(43, 80423), (Start: 47 @80435 has 41 MA's), (67, 80519), (69, 80537), (82, 80585), (92, 80624),

Gene: EricMillard_145 Start: 80967, Stop: 81290, Start Num: 47
Candidate Starts for EricMillard_145:
(43, 80955), (Start: 47 @80967 has 41 MA's), (52, 80985), (67, 81051), (82, 81117), (92, 81156), (113, 81249),

Gene: Expelliarmus_43 Start: 30910, Stop: 30608, Start Num: 46
Candidate Starts for Expelliarmus_43:
(Start: 46 @30910 has 8 MA's), (69, 30799), (72, 30790), (96, 30697), (108, 30646), (114, 30625),

Gene: Francesca_262 Start: 129192, Stop: 129557, Start Num: 27
Candidate Starts for Francesca_262:
(Start: 27 @129192 has 4 MA's), (58, 129315), (60, 129324), (61, 129330), (77, 129408), (79, 129414), (91, 129459), (100, 129507),

Gene: Francesca_263 Start: 129535, Stop: 129873, Start Num: 27
Candidate Starts for Francesca_263:
(Start: 25 @129532 has 1 MA's), (Start: 27 @129535 has 4 MA's), (66, 129703),

Gene: Fryberger_106 Start: 52384, Stop: 52698, Start Num: 50
Candidate Starts for Fryberger_106:
(28, 52294), (44, 52369), (Start: 50 @52384 has 5 MA's), (86, 52540), (98, 52609), (115, 52672),

Gene: Gonephishing_125 Start: 68379, Stop: 68672, Start Num: 48
Candidate Starts for Gonephishing_125:
(Start: 48 @68379 has 5 MA's), (74, 68496), (91, 68556), (109, 68628), (110, 68631),

Gene: Gonephishing_144 Start: 78607, Stop: 78930, Start Num: 47
Candidate Starts for Gonephishing_144:
(43, 78595), (Start: 47 @78607 has 41 MA's), (67, 78691), (72, 78718), (74, 78724), (82, 78757), (92, 78796),

Gene: Grayson_191 Start: 99709, Stop: 100023, Start Num: 49
Candidate Starts for Grayson_191:
(Start: 49 @99709 has 2 MA's), (54, 99727), (63, 99769), (74, 99823), (97, 99925), (111, 99979),

Gene: Groundhog_42 Start: 30817, Stop: 30515, Start Num: 46
Candidate Starts for Groundhog_42:
(Start: 46 @30817 has 8 MA's), (69, 30706), (72, 30697), (96, 30604), (108, 30553), (114, 30532),

Gene: Guey18_111 Start: 53707, Stop: 54021, Start Num: 50
Candidate Starts for Guey18_111:
(28, 53617), (44, 53692), (Start: 50 @53707 has 5 MA's), (86, 53863), (98, 53932), (115, 53995),

Gene: Halley_152 Start: 80751, Stop: 81074, Start Num: 47
Candidate Starts for Halley_152:
(43, 80739), (Start: 47 @80751 has 41 MA's), (67, 80835), (69, 80853), (82, 80901), (92, 80940),

Gene: Hannaconda_124 Start: 69032, Stop: 69325, Start Num: 48
Candidate Starts for Hannaconda_124:
(Start: 48 @69032 has 5 MA's), (74, 69149), (91, 69209), (109, 69281), (110, 69284),

Gene: Hannaconda_144 Start: 79540, Stop: 79863, Start Num: 47
Candidate Starts for Hannaconda_144:
(Start: 47 @79540 has 41 MA's), (67, 79624), (72, 79651), (74, 79657), (82, 79690), (92, 79729),

Gene: Hidrated_139 Start: 79925, Stop: 80248, Start Num: 47
Candidate Starts for Hidrated_139:
(5, 79688), (8, 79727), (20, 79832), (43, 79913), (Start: 47 @79925 has 41 MA's), (52, 79943), (67, 80009), (82, 80075), (92, 80114), (96, 80138),

Gene: HokkenD_145 Start: 81876, Stop: 82199, Start Num: 47
Candidate Starts for HokkenD_145:
(5, 81639), (8, 81678), (20, 81783), (43, 81864), (Start: 47 @81876 has 41 MA's), (67, 81960), (72, 81987), (82, 82026), (92, 82065),

Gene: HokkenD_123 Start: 71913, Stop: 72206, Start Num: 48
Candidate Starts for HokkenD_123:
(Start: 48 @71913 has 5 MA's), (74, 72030), (91, 72090), (109, 72162), (110, 72165),

Gene: Hughesyang_150 Start: 81110, Stop: 81433, Start Num: 47
Candidate Starts for Hughesyang_150:
(14, 80978), (15, 80981), (43, 81098), (Start: 47 @81110 has 41 MA's), (67, 81194), (82, 81260), (92, 81299),

Gene: Jflix2_89 Start: 50660, Stop: 51001, Start Num: 23
Candidate Starts for Jflix2_89:
(9, 50558), (12, 50594), (16, 50642), (Start: 23 @50660 has 2 MA's), (45, 50741), (95, 50939),

Gene: Jflix2_77 Start: 46906, Stop: 47172, Start Num: 104
Candidate Starts for Jflix2_77:
(Start: 104 @46906 has 2 MA's), (126, 47026), (128, 47071), (131, 47149),

Gene: Jflix2_58 Start: 39721, Stop: 40101, Start Num: 38
Candidate Starts for Jflix2_58:
(2, 39397), (Start: 37 @39709 has 1 MA's), (Start: 38 @39721 has 2 MA's), (62, 39814), (101, 39979), (112, 40024), (123, 40069),

Gene: Jflix2_76 Start: 46571, Stop: 46909, Start Num: 21
Candidate Starts for Jflix2_76:
(Start: 21 @46571 has 2 MA's), (40, 46643), (68, 46766), (74, 46784), (88, 46826), (97, 46874),

Gene: JuicyJay_146 Start: 82036, Stop: 82359, Start Num: 47

Candidate Starts for JuicyJay_146:
(14, 81904), (15, 81907), (43, 82024), (Start: 47 @82036 has 41 MA's), (67, 82120), (82, 82186), (92, 82225), (110, 82306),

Gene: Kalah2_142 Start: 80240, Stop: 80563, Start Num: 47
Candidate Starts for Kalah2_142:
(43, 80228), (Start: 47 @80240 has 41 MA's), (67, 80324), (69, 80342), (92, 80429), (96, 80453),

Gene: KashFlow_150 Start: 79539, Stop: 79862, Start Num: 47
Candidate Starts for KashFlow_150:
(Start: 47 @79539 has 41 MA's), (67, 79623), (72, 79650), (74, 79656), (82, 79689), (92, 79728),

Gene: Klein_150 Start: 80105, Stop: 80428, Start Num: 47
Candidate Starts for Klein_150:
(43, 80093), (Start: 47 @80105 has 41 MA's), (52, 80123), (67, 80189), (82, 80255), (92, 80294), (96, 80318), (110, 80375),

Gene: LittleE_153 Start: 80985, Stop: 81308, Start Num: 47
Candidate Starts for LittleE_153:
(1, 80586), (4, 80709), (5, 80748), (8, 80787), (20, 80892), (43, 80973), (Start: 47 @80985 has 41 MA's), (67, 81069), (72, 81096), (82, 81135), (92, 81174), (111, 81258),

Gene: Lucky2013_142 Start: 75897, Stop: 76220, Start Num: 47
Candidate Starts for Lucky2013_142:
(43, 75885), (Start: 47 @75897 has 41 MA's), (52, 75915), (67, 75981), (72, 76008), (82, 76047), (92, 76086), (111, 76170),

Gene: Madraxi_61 Start: 42224, Stop: 42604, Start Num: 38
Candidate Starts for Madraxi_61:
(11, 42083), (Start: 37 @42212 has 1 MA's), (Start: 38 @42224 has 2 MA's), (84, 42407), (124, 42590),

Gene: Madraxi_80 Start: 49350, Stop: 49697, Start Num: 21
Candidate Starts for Madraxi_80:
(13, 49296), (Start: 21 @49350 has 2 MA's), (40, 49431), (63, 49518), (68, 49554), (74, 49572), (88, 49614), (97, 49662),

Gene: Madraxi_81 Start: 49694, Stop: 49978, Start Num: 104
Candidate Starts for Madraxi_81:
(Start: 104 @49694 has 2 MA's), (110, 49712), (125, 49793), (128, 49856),

Gene: Madraxi_91 Start: 52811, Stop: 53170, Start Num: 23
Candidate Starts for Madraxi_91:
(Start: 23 @52811 has 2 MA's), (29, 52826), (70, 52988), (87, 53033), (95, 53075),

Gene: Marleymoo_136 Start: 77201, Stop: 77524, Start Num: 47
Candidate Starts for Marleymoo_136:
(43, 77189), (Start: 47 @77201 has 41 MA's), (67, 77285), (69, 77303), (82, 77351), (92, 77390), (96, 77414), (113, 77483),

Gene: MiaZeal_149 Start: 77044, Stop: 77367, Start Num: 47
Candidate Starts for MiaZeal_149:
(43, 77032), (Start: 47 @77044 has 41 MA's), (52, 77062), (67, 77128), (72, 77155), (82, 77194), (92, 77233), (111, 77317),

Gene: Minerva_150 Start: 80059, Stop: 80382, Start Num: 47
Candidate Starts for Minerva_150:
(43, 80047), (Start: 47 @80059 has 41 MA's), (67, 80143), (69, 80161), (92, 80248), (96, 80272),

Gene: Nekros_148 Start: 79933, Stop: 80256, Start Num: 47
Candidate Starts for Nekros_148:
(Start: 47 @79933 has 41 MA's), (67, 80017), (72, 80044), (74, 80050), (82, 80083), (92, 80122),

Gene: Nibley_144 Start: 77188, Stop: 77511, Start Num: 47
Candidate Starts for Nibley_144:
(Start: 47 @77188 has 41 MA's), (67, 77272), (72, 77299), (82, 77338), (92, 77377), (111, 77461),

Gene: NihilNomen_152 Start: 79960, Stop: 80283, Start Num: 47
Candidate Starts for NihilNomen_152:
(43, 79948), (Start: 47 @79960 has 41 MA's), (67, 80044), (69, 80062), (82, 80110), (92, 80149), (96, 80173), (118, 80263),

Gene: Nova53_264 Start: 130197, Stop: 130535, Start Num: 25
Candidate Starts for Nova53_264:
(Start: 25 @130197 has 1 MA's), (Start: 27 @130200 has 4 MA's), (34, 130236), (Start: 42 @130275 has 1 MA's), (55, 130311), (66, 130368), (78, 130416),

Gene: Nova53_268 Start: 131044, Stop: 131379, Start Num: 42
Candidate Starts for Nova53_268:
(39, 131032), (Start: 42 @131044 has 1 MA's), (56, 131089), (57, 131092), (105, 131320), (109, 131329), (117, 131359),

Gene: Odette_135 Start: 73830, Stop: 74123, Start Num: 48
Candidate Starts for Odette_135:
(Start: 48 @73830 has 5 MA's), (74, 73947), (91, 74007), (109, 74079), (110, 74082),

Gene: Odette_156 Start: 82653, Stop: 82976, Start Num: 47
Candidate Starts for Odette_156:
(Start: 47 @82653 has 41 MA's), (67, 82737), (72, 82764), (82, 82803), (92, 82842), (111, 82926),

Gene: Omega_157 Start: 82149, Stop: 82472, Start Num: 47
Candidate Starts for Omega_157:
(Start: 47 @82149 has 41 MA's), (67, 82233), (72, 82260), (82, 82299), (92, 82338), (111, 82422),

Gene: Optimus_144 Start: 79658, Stop: 79981, Start Num: 47
Candidate Starts for Optimus_144:
(Start: 47 @79658 has 41 MA's), (67, 79742), (72, 79769), (82, 79808), (92, 79847), (111, 79931),

Gene: Peregrin_188 Start: 100106, Stop: 100420, Start Num: 49
Candidate Starts for Peregrin_188:
(Start: 49 @100106 has 2 MA's), (54, 100124), (63, 100166), (74, 100220), (97, 100322), (111, 100376),

Gene: Phillis_45 Start: 31235, Stop: 30933, Start Num: 46
Candidate Starts for Phillis_45:
(Start: 46 @31235 has 8 MA's), (69, 31124), (72, 31115), (90, 31055), (96, 31022), (108, 30971), (114, 30950),

Gene: Phoebus_151 Start: 82464, Stop: 82787, Start Num: 47
Candidate Starts for Phoebus_151:
(14, 82332), (15, 82335), (43, 82452), (Start: 47 @82464 has 41 MA's), (67, 82548), (69, 82566), (92, 82653), (96, 82677),

Gene: Porcelain_146 Start: 76843, Stop: 77166, Start Num: 47
Candidate Starts for Porcelain_146:
(43, 76831), (Start: 47 @76843 has 41 MA's), (52, 76861), (67, 76927), (72, 76954), (82, 76993), (92, 77032), (111, 77116),

Gene: Pound_142 Start: 79694, Stop: 80017, Start Num: 47
Candidate Starts for Pound_142:
(43, 79682), (Start: 47 @79694 has 41 MA's), (67, 79778), (69, 79796), (82, 79844), (92, 79883), (118, 79997),

Gene: REQ1_28 Start: 11269, Stop: 11631, Start Num: 38
Candidate Starts for REQ1_28:
(Start: 37 @11257 has 1 MA's), (Start: 38 @11269 has 2 MA's), (112, 11554), (122, 11596),

Gene: REQ1_45 Start: 18020, Stop: 18358, Start Num: 25
Candidate Starts for REQ1_45:
(17, 17999), (Start: 25 @18020 has 1 MA's), (40, 18092), (77, 18242), (93, 18302), (94, 18305), (95, 18314),

Gene: Rearden_129 Start: 69937, Stop: 70230, Start Num: 48
Candidate Starts for Rearden_129:
(Start: 48 @69937 has 5 MA's), (74, 70054), (91, 70114), (109, 70186), (110, 70189),

Gene: Redno2_145 Start: 77962, Stop: 78285, Start Num: 47
Candidate Starts for Redno2_145:
(43, 77950), (Start: 47 @77962 has 41 MA's), (67, 78046), (69, 78064), (82, 78112), (92, 78151), (96, 78175), (110, 78232),

Gene: RegnumDei_49 Start: 35958, Stop: 36257, Start Num: 47
Candidate Starts for RegnumDei_49:
(32, 35895), (33, 35898), (Start: 47 @35958 has 41 MA's), (86, 36105), (114, 36222), (120, 36246),

Gene: RegnumDei_62 Start: 39892, Stop: 40269, Start Num: 24
Candidate Starts for RegnumDei_62:
(Start: 24 @39892 has 1 MA's), (35, 39934), (68, 40078), (73, 40093), (95, 40168), (Start: 104 @40210 has 2 MA's),

Gene: RegnumDei_63 Start: 40266, Stop: 40643, Start Num: 26
Candidate Starts for RegnumDei_63:
(3, 40029), (10, 40176), (Start: 26 @40266 has 1 MA's), (36, 40311), (41, 40338), (68, 40440), (Start: 104 @40590 has 2 MA's),

Gene: RegnumDei_64 Start: 40645, Stop: 40995, Start Num: 26
Candidate Starts for RegnumDei_64:
(22, 40636), (Start: 26 @40645 has 1 MA's), (64, 40783), (Start: 104 @40960 has 2 MA's), (107, 40972),

Gene: Roary_44 Start: 30866, Stop: 30564, Start Num: 46
Candidate Starts for Roary_44:
(Start: 46 @30866 has 8 MA's), (69, 30755), (72, 30746), (96, 30653), (108, 30602), (114, 30581),

Gene: Ronaldo_108 Start: 53289, Stop: 53603, Start Num: 50
Candidate Starts for Ronaldo_108:
(28, 53199), (44, 53274), (Start: 50 @53289 has 5 MA's), (86, 53445), (98, 53514), (115, 53577),

Gene: SFuller_57 Start: 39913, Stop: 40293, Start Num: 38
Candidate Starts for SFuller_57:
(Start: 37 @39901 has 1 MA's), (Start: 38 @39913 has 2 MA's), (101, 40171), (123, 40261), (124, 40279),

Gene: SFuller_74 Start: 46761, Stop: 47108, Start Num: 21
Candidate Starts for SFuller_74:
(Start: 21 @46761 has 2 MA's), (29, 46776), (40, 46839), (68, 46965), (74, 46983), (88, 47025), (97, 47073),

Gene: SFuller_75 Start: 47105, Stop: 47371, Start Num: 104
Candidate Starts for SFuller_75:
(18, 46754), (Start: 104 @47105 has 2 MA's), (126, 47225), (128, 47270), (131, 47348),

Gene: Schatzie_146 Start: 80543, Stop: 80866, Start Num: 47
Candidate Starts for Schatzie_146:
(43, 80531), (Start: 47 @80543 has 41 MA's), (67, 80627), (69, 80645), (82, 80693), (92, 80732), (118, 80846),

Gene: Shaboozey_148 Start: 77632, Stop: 77955, Start Num: 47
Candidate Starts for Shaboozey_148:
(Start: 47 @77632 has 41 MA's), (67, 77716), (72, 77743), (82, 77782), (92, 77821), (111, 77905),

Gene: Shagrat_49 Start: 36435, Stop: 36740, Start Num: 47
Candidate Starts for Shagrat_49:
(32, 36375), (33, 36378), (Start: 47 @36435 has 41 MA's), (106, 36675), (113, 36696), (121, 36729),

Gene: Shagrat_65 Start: 40539, Stop: 40913, Start Num: 26
Candidate Starts for Shagrat_65:
(Start: 24 @40536 has 1 MA's), (Start: 26 @40539 has 1 MA's), (41, 40611), (60, 40662), (61, 40668), (68, 40713), (75, 40740), (85, 40770), (Start: 104 @40860 has 2 MA's),

Gene: Shagrat_66 Start: 40915, Stop: 41250, Start Num: 119
Candidate Starts for Shagrat_66:
(30, 40549), (31, 40564), (51, 40630), (59, 40654), (65, 40693), (71, 40720), (80, 40756), (Start: 119 @40915 has 1 MA's), (127, 41023), (129, 41101), (130, 41104), (132, 41197), (133, 41212), (134, 41224),

Gene: Shagrat_64 Start: 40165, Stop: 40536, Start Num: 24
Candidate Starts for Shagrat_64:
(Start: 24 @40165 has 1 MA's), (35, 40207), (53, 40276), (68, 40351), (89, 40414), (95, 40441), (99, 40462), (Start: 104 @40483 has 2 MA's), (106, 40492),

Gene: Sleepyhead_43 Start: 31028, Stop: 31363, Start Num: 37
Candidate Starts for Sleepyhead_43:

(Start: 37 @31028 has 1 MA's), (81, 31199), (103, 31295),

Gene: Smeadley_44 Start: 31032, Stop: 30730, Start Num: 46
Candidate Starts for Smeadley_44:
(Start: 46 @31032 has 8 MA's), (69, 30921), (72, 30912), (96, 30819), (108, 30768), (114, 30747),

Gene: Squint_142 Start: 76328, Stop: 76651, Start Num: 47
Candidate Starts for Squint_142:
(Start: 47 @76328 has 41 MA's), (67, 76412), (72, 76439), (74, 76445), (82, 76478), (92, 76517),

Gene: Stellammi_92 Start: 44459, Stop: 44845, Start Num: 19
Candidate Starts for Stellammi_92:
(19, 44459), (Start: 38 @44537 has 2 MA's), (Start: 47 @44564 has 41 MA's), (52, 44582), (63, 44630), (76, 44690), (83, 44711), (116, 44828),

Gene: Stephig9_44 Start: 30891, Stop: 30589, Start Num: 46
Candidate Starts for Stephig9_44:
(Start: 46 @30891 has 8 MA's), (69, 30780), (72, 30771), (96, 30678), (108, 30627), (114, 30606),

Gene: Superphikiman_147 Start: 76801, Stop: 77124, Start Num: 47
Candidate Starts for Superphikiman_147:
(6, 76579), (10, 76627), (15, 76672), (43, 76789), (Start: 47 @76801 has 41 MA's), (67, 76885), (82, 76951), (92, 76990), (96, 77014), (110, 77071),

Gene: Superphikiman_128 Start: 69018, Stop: 69311, Start Num: 48
Candidate Starts for Superphikiman_128:
(Start: 48 @69018 has 5 MA's), (74, 69135), (91, 69195), (109, 69267), (110, 69270),

Gene: Thibault_134 Start: 77417, Stop: 77740, Start Num: 47
Candidate Starts for Thibault_134:
(7, 77204), (14, 77285), (15, 77288), (43, 77405), (Start: 47 @77417 has 41 MA's), (67, 77501), (82, 77567), (92, 77606), (113, 77699),

Gene: ThreeRngTarjay_146 Start: 81055, Stop: 81378, Start Num: 47
Candidate Starts for ThreeRngTarjay_146:
(14, 80923), (15, 80926), (43, 81043), (Start: 47 @81055 has 41 MA's), (67, 81139), (69, 81157), (92, 81244), (96, 81268),

Gene: Volt_110 Start: 53453, Stop: 53767, Start Num: 50
Candidate Starts for Volt_110:
(28, 53363), (44, 53438), (Start: 50 @53453 has 5 MA's), (86, 53609), (98, 53678), (115, 53741),

Gene: Wanda_150 Start: 78530, Stop: 78853, Start Num: 47
Candidate Starts for Wanda_150:
(43, 78518), (Start: 47 @78530 has 41 MA's), (67, 78614), (69, 78632), (92, 78719), (96, 78743),

Gene: Yeet_125 Start: 71942, Stop: 72235, Start Num: 48
Candidate Starts for Yeet_125:
(Start: 48 @71942 has 5 MA's), (74, 72059), (91, 72119), (109, 72191), (110, 72194),

Gene: Yeet_144 Start: 79906, Stop: 80229, Start Num: 47
Candidate Starts for Yeet_144:

(6, 79684), (10, 79732), (15, 79777), (43, 79894), (Start: 47 @79906 has 41 MA's), (67, 79990), (82, 80056), (92, 80095), (96, 80119), (110, 80176),

Gene: Zelink_145 Start: 81372, Stop: 81695, Start Num: 47
Candidate Starts for Zelink_145:
(43, 81360), (Start: 47 @81372 has 41 MA's), (67, 81456), (69, 81474), (92, 81561), (96, 81585),

Gene: Ziko_109 Start: 53295, Stop: 53609, Start Num: 50
Candidate Starts for Ziko_109:
(28, 53205), (44, 53280), (Start: 50 @53295 has 5 MA's), (86, 53451), (98, 53520), (115, 53583),