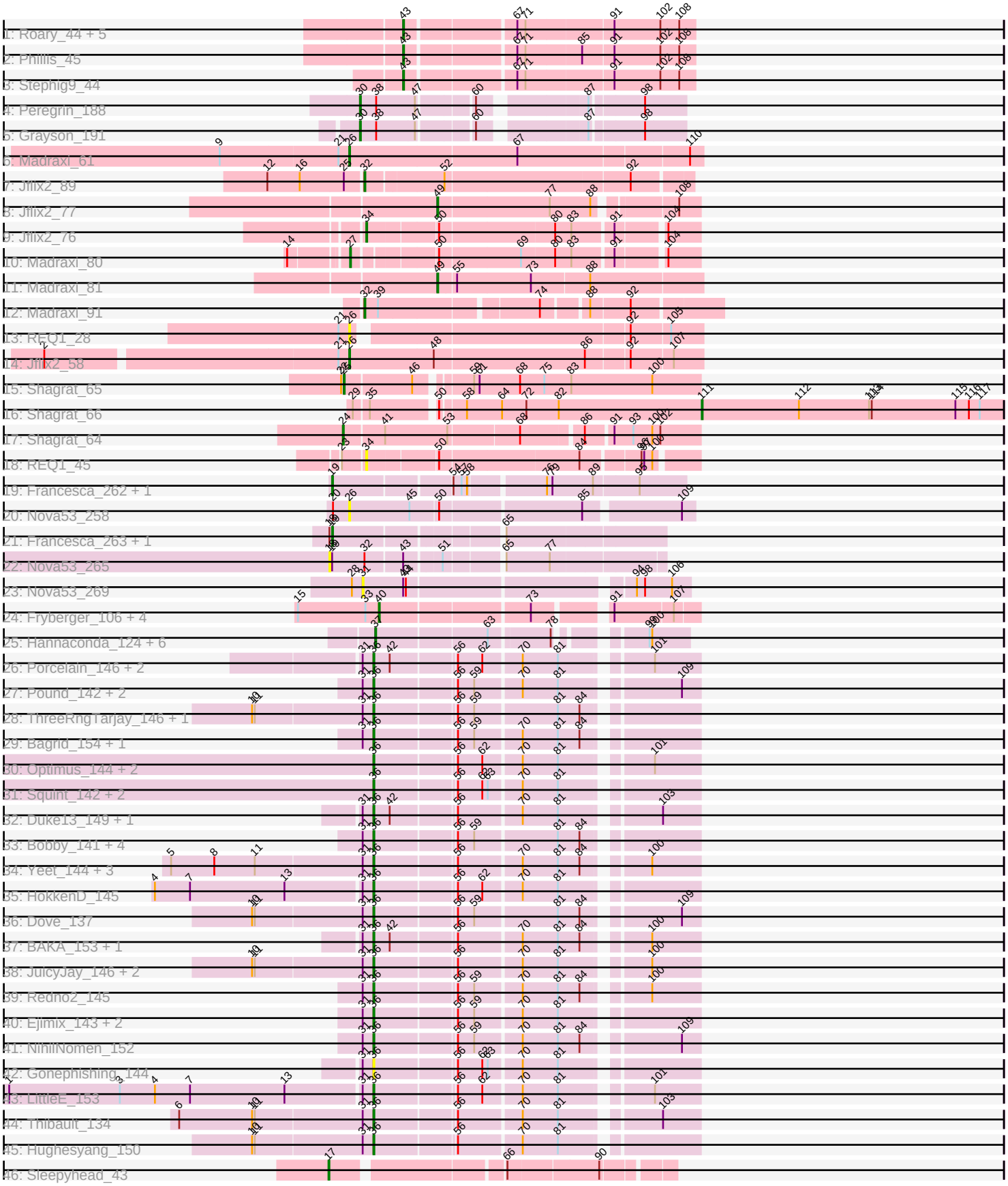
Pham 202861


1: Roary_44 + 5
2: Phillis_45
3: Stephig9_44
4: Peregrin_188
5: Grayson_191
6: Madraxi_61
7: Jflix2_89
8: Jflix2_77
9: Jflix2_76
10: Madraxi_80
11: Madraxi_81
12: Madraxi_91
13: REQ1_28
14: Jflix2_58
15: Shagrat_65
16: Shagrat_66
17: Shagrat_64
18: REQ1_45
19: Francesca_262 + 1
20: Nova53_258
21: Francesca_263 + 1
22: Nova53_265
23: Nova53_269
24: Fryberger_106 + 4
25: Hannaconda_124 + 6
26: Porcelain_146 + 2
27: Pound_142 + 2
28: ThreeRngTarjay_146 + 1
29: Bagrid_154 + 1
30: Optimus_144 + 2
31: Squint_142 + 2
32: Duke13_149 + 1
33: Bobby_141 + 4
34: Yeet_144 + 3
35: HokkenD_145
36: Dove_137
37: BAKA_153 + 1
38: JuicyJay_146 + 2
39: Redno2_145
40: Ejimix_143 + 2
41: NihilNomen_152
42: Gonephishing_144
43: LittleE_153
44: Thibault_134
45: Hughesyang_150
46: 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 202861 Report

This analysis was run 01/18/25 on database version 583.

Pham number 202861 has 86 members, 10 are drafts.

Phages represented in each track:
• Track 1 : Roary_44, Smeadley_44, Astro_43, Danforth_43, Groundhog_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 : Jflix2_89
• Track 8 : Jflix2_77
• Track 9 : Jflix2_76
• Track 10 : Madraxi_80
• Track 11 : Madraxi_81
• Track 12 : Madraxi_91
• Track 13 : REQ1_28
• Track 14 : Jflix2_58
• Track 15 : Shagrat_65
• Track 16 : Shagrat_66
• Track 17 : Shagrat_64
• Track 18 : REQ1_45
• Track 19 : Francesca_262, Dorin_262
• Track 20 : Nova53_258
• Track 21 : Francesca_263, Dorin_263
• Track 22 : Nova53_265
• Track 23 : Nova53_269
• Track 24 : Fryberger_106, Ronaldo_108, Ziko_109, Guey18_111, Volt_110
• Track 25 : Hannaconda_124, Odette_135, Yeet_125, Gonephishing_125, Superphikiman_128, HokkenD_123, Courthouse_126
• Track 26 : Porcelain_146, MiaZeal_149, Lucky2013_142
• Track 27 : Pound_142, DmpstrDiver_151, Schatzie_146
• Track 28 : ThreeRngTarjay_146, Phoebus_151
• Track 29 : Bagrid_154, Constella_144
• Track 30 : Optimus_144, Omega_157, Odette_156
• Track 31 : Squint_142, Hannaconda_144, KashFlow_150
• Track 32 : Duke13_149, EricMillard_145
• Track 33 : Bobby_141, Wanda_150, Zelink_145, Minerva_150, Kalah2_142
• Track 34 : Yeet_144, Superphikiman_147, Courthouse_145, Ariel_149
• Track 35 : HokkenD_145

• Track 36 : Dove_137
• Track 37 : BAKA_153, Klein_150
• Track 38 : JuicyJay_146, Bombitas_138, Beem_153
• Track 39 : Redno2_145
• Track 40 : Ejimix_143, Halley_152, Dallas_151
• Track 41 : NihilNomen_152
• Track 42 : Gonephishing_144
• Track 43 : LittleE_153
• Track 44 : Thibault_134
• Track 45 : Hughesyang_150
• Track 46 : 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 36, it was called in 40 of the 76 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, Constella_144, Courthouse_145, Dallas_151, DmpstrDiver_151, Dove_137, Duke13_149, Ejimix_143, EricMillard_145, Gonephishing_144, Halley_152, Hannaconda_144, HokkenD_145, Hughesyang_150, JuicyJay_146, Kalah2_142, KashFlow_150, Klein_150, LittleE_153, Lucky2013_142, MiaZeal_149, Minerva_150, NihilNomen_152, Odette_156, Omega_157, Optimus_144, Phoebus_151, Porcelain_146, Pound_142, Redno2_145, Schatzie_146, 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:
•

Genes that do not have the "Most Annotated" start:
• Astro_43, Courthouse_126, 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_258, Nova53_265, Nova53_269, Odette_135, Peregrin_188, Phillis_45, REQ1_28, REQ1_45, Roary_44, Ronaldo_108, 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 17:
• Found in 1 of 86 (1.2%) of genes in pham
• Manual Annotations of this start: 1 of 76
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Sleepyhead_43 (singleton),

Start 18:

• Found in 3 of 86 (3.5%) of genes in pham
• No Manual Annotations of this start.
• Called 33.3% of time when present
• Phage (with cluster) where this start called: Nova53_265 (CG),

Start 19:
• Found in 5 of 86 (5.8%) of genes in pham
• Manual Annotations of this start: 4 of 76
• 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 24:
• Found in 1 of 86 (1.2%) of genes in pham
• Manual Annotations of this start: 1 of 76
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Shagrat_64 (CF),

Start 25:
• Found in 2 of 86 (2.3%) of genes in pham
• Manual Annotations of this start: 1 of 76
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Shagrat_65 (CF),

Start 26:
• Found in 4 of 86 (4.7%) of genes in pham
• Manual Annotations of this start: 2 of 76
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Jflix2_58 (CF), Madraxi_61 (CF), Nova53_258 (CG), REQ1_28 (CF),

Start 27:
• Found in 1 of 86 (1.2%) of genes in pham
• Manual Annotations of this start: 1 of 76
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Madraxi_80 (CF),

Start 30:
• Found in 2 of 86 (2.3%) of genes in pham
• Manual Annotations of this start: 2 of 76
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Grayson_191 (CB), Peregrin_188 (CB),

Start 31:
• Found in 38 of 86 (44.2%) of genes in pham
• No Manual Annotations of this start.
• Called 2.6% of time when present
• Phage (with cluster) where this start called: Nova53_269 (CG),

Start 32:
• Found in 3 of 86 (3.5%) of genes in pham
• Manual Annotations of this start: 2 of 76
• Called 66.7% of time when present

• Phage (with cluster) where this start called: Jflix2_89 (CF), Madraxi_91 (CF),

Start 34:
• Found in 2 of 86 (2.3%) of genes in pham
• Manual Annotations of this start: 1 of 76
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Jflix2_76 (CF), REQ1_45 (CF),

Start 36:
• Found in 43 of 86 (50.0%) of genes in pham
• Manual Annotations of this start: 40 of 76
• Called 100.0% 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), Constella_144 (J), Courthouse_145 (J), 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), HokkenD_145 (J), Hughesyang_150 (J), JuicyJay_146 (J), Kalah2_142 (J), KashFlow_150 (J), Klein_150 (J), LittleE_153 (J), Lucky2013_142 (J), MiaZeal_149 (J), Minerva_150 (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), Schatzie_146 (J), Squint_142 (J), Superphikiman_147 (J), Thibault_134 (J), ThreeRngTarjay_146 (J), Wanda_150 (J), Yeet_144 (J), Zelink_145 (J),

Start 37:
• Found in 7 of 86 (8.1%) of genes in pham
• Manual Annotations of this start: 5 of 76
• 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), Superphikiman_128 (J), Yeet_125 (J),

Start 40:
• Found in 5 of 86 (5.8%) of genes in pham
• Manual Annotations of this start: 5 of 76
• 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 43:
• Found in 10 of 86 (11.6%) of genes in pham
• Manual Annotations of this start: 8 of 76
• Called 80.0% of time when present
• Phage (with cluster) where this start called: Astro_43 (A8), Danforth_43 (A8), Expelliarmus_43 (A8), Groundhog_42 (A8), Phillis_45 (A8), Roary_44 (A8), Smeadley_44 (A8), Stephig9_44 (A8),

Start 49:
• Found in 2 of 86 (2.3%) of genes in pham
• Manual Annotations of this start: 2 of 76
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Jflix2_77 (CF), Madraxi_81 (CF),

Start 111:
• Found in 1 of 86 (1.2%) of genes in pham
• Manual Annotations of this start: 1 of 76
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Shagrat_66 (CF),

Summary by clusters:

There are 7 clusters represented in this pham: singleton, CB, J, CG, CF, A8, DP,

Info for manual annotations of cluster A8:
•Start number 43 was manually annotated 8 times for cluster A8.

Info for manual annotations of cluster CB:
•Start number 30 was manually annotated 2 times for cluster CB.

Info for manual annotations of cluster CF:
•Start number 24 was manually annotated 1 time for cluster CF.
•Start number 25 was manually annotated 1 time for cluster CF.
•Start number 26 was manually annotated 2 times for cluster CF.
•Start number 27 was manually annotated 1 time for cluster CF.
•Start number 32 was manually annotated 2 times for cluster CF.
•Start number 34 was manually annotated 1 time for cluster CF.
•Start number 49 was manually annotated 2 times for cluster CF.
•Start number 111 was manually annotated 1 time for cluster CF.

Info for manual annotations of cluster CG:
•Start number 19 was manually annotated 4 times for cluster CG.

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

Info for manual annotations of cluster J:
•Start number 36 was manually annotated 40 times for cluster J.
•Start number 37 was manually annotated 5 times for cluster J.

Gene Information:

Gene: Ariel_149 Start: 76661, Stop: 76984, Start Num: 36
Candidate Starts for Ariel_149:
(5, 76439), (8, 76487), (11, 76532), (31, 76649), (Start: 36 @76661 has 40 MA's), (56, 76745), (70, 76811), (81, 76850), (84, 76874), (100, 76931),

Gene: Astro_43 Start: 30852, Stop: 30550, Start Num: 43
Candidate Starts for Astro_43:
(Start: 43 @30852 has 8 MA's), (67, 30741), (71, 30732), (91, 30639), (102, 30588), (108, 30567),

Gene: BAKA_153 Start: 81330, Stop: 81653, Start Num: 36
Candidate Starts for BAKA_153:
(31, 81318), (Start: 36 @81330 has 40 MA's), (42, 81348), (56, 81414), (70, 81480), (81, 81519), (84, 81543), (100, 81600),

Gene: Bagrid_154 Start: 82037, Stop: 82360, Start Num: 36
Candidate Starts for Bagrid_154:
(31, 82025), (Start: 36 @82037 has 40 MA's), (56, 82121), (59, 82139), (70, 82187), (81, 82226), (84, 82250),

Gene: Beem_153 Start: 81458, Stop: 81781, Start Num: 36
Candidate Starts for Beem_153:
(10, 81326), (11, 81329), (31, 81446), (Start: 36 @81458 has 40 MA's), (56, 81542), (70, 81608), (81, 81647), (100, 81728),

Gene: Bobby_141 Start: 81455, Stop: 81778, Start Num: 36
Candidate Starts for Bobby_141:
(31, 81443), (Start: 36 @81455 has 40 MA's), (56, 81539), (59, 81557), (81, 81644), (84, 81668),

Gene: Bombitas_138 Start: 78311, Stop: 78634, Start Num: 36
Candidate Starts for Bombitas_138:
(10, 78179), (11, 78182), (31, 78299), (Start: 36 @78311 has 40 MA's), (56, 78395), (70, 78461), (81, 78500), (100, 78581),

Gene: Constella_144 Start: 79520, Stop: 79843, Start Num: 36
Candidate Starts for Constella_144:
(31, 79508), (Start: 36 @79520 has 40 MA's), (56, 79604), (59, 79622), (70, 79670), (81, 79709), (84, 79733),

Gene: Courthouse_145 Start: 76519, Stop: 76842, Start Num: 36
Candidate Starts for Courthouse_145:
(5, 76297), (8, 76345), (11, 76390), (31, 76507), (Start: 36 @76519 has 40 MA's), (56, 76603), (70, 76669), (81, 76708), (84, 76732), (100, 76789),

Gene: Courthouse_126 Start: 68736, Stop: 69029, Start Num: 37
Candidate Starts for Courthouse_126:
(Start: 37 @68736 has 5 MA's), (63, 68853), (78, 68913), (99, 68985), (100, 68988),

Gene: Dallas_151 Start: 80367, Stop: 80690, Start Num: 36
Candidate Starts for Dallas_151:
(31, 80355), (Start: 36 @80367 has 40 MA's), (56, 80451), (59, 80469), (70, 80517), (81, 80556),

Gene: Danforth_43 Start: 30881, Stop: 30579, Start Num: 43
Candidate Starts for Danforth_43:
(Start: 43 @30881 has 8 MA's), (67, 30770), (71, 30761), (91, 30668), (102, 30617), (108, 30596),

Gene: DmpstrDiver_151 Start: 80286, Stop: 80609, Start Num: 36
Candidate Starts for DmpstrDiver_151:
(31, 80274), (Start: 36 @80286 has 40 MA's), (56, 80370), (59, 80388), (70, 80436), (81, 80475), (109, 80589),

Gene: Dorin_262 Start: 128550, Stop: 128915, Start Num: 19
Candidate Starts for Dorin_262:
(Start: 19 @128550 has 4 MA's), (54, 128673), (57, 128682), (58, 128688), (76, 128766), (79, 128772), (89, 128817), (95, 128865),

Gene: Dorin_263 Start: 128893, Stop: 129231, Start Num: 19

Candidate Starts for Dorin_263:
(18, 128890), (Start: 19 @128893 has 4 MA's), (65, 129061),

Gene: Dove_137 Start: 76474, Stop: 76797, Start Num: 36
Candidate Starts for Dove_137:
(10, 76342), (11, 76345), (31, 76462), (Start: 36 @76474 has 40 MA's), (56, 76558), (59, 76576), (81, 76663), (84, 76687), (109, 76777),

Gene: Duke13_149 Start: 79615, Stop: 79938, Start Num: 36
Candidate Starts for Duke13_149:
(31, 79603), (Start: 36 @79615 has 40 MA's), (42, 79633), (56, 79699), (70, 79765), (81, 79804), (103, 79897),

Gene: Ejimix_143 Start: 80435, Stop: 80758, Start Num: 36
Candidate Starts for Ejimix_143:
(31, 80423), (Start: 36 @80435 has 40 MA's), (56, 80519), (59, 80537), (70, 80585), (81, 80624),

Gene: EricMillard_145 Start: 80967, Stop: 81290, Start Num: 36
Candidate Starts for EricMillard_145:
(31, 80955), (Start: 36 @80967 has 40 MA's), (42, 80985), (56, 81051), (70, 81117), (81, 81156), (103, 81249),

Gene: Expelliarmus_43 Start: 30910, Stop: 30608, Start Num: 43
Candidate Starts for Expelliarmus_43:
(Start: 43 @30910 has 8 MA's), (67, 30799), (71, 30790), (91, 30697), (102, 30646), (108, 30625),

Gene: Francesca_262 Start: 129192, Stop: 129557, Start Num: 19
Candidate Starts for Francesca_262:
(Start: 19 @129192 has 4 MA's), (54, 129315), (57, 129324), (58, 129330), (76, 129408), (79, 129414), (89, 129459), (95, 129507),

Gene: Francesca_263 Start: 129535, Stop: 129873, Start Num: 19
Candidate Starts for Francesca_263:
(18, 129532), (Start: 19 @129535 has 4 MA's), (65, 129703),

Gene: Fryberger_106 Start: 52384, Stop: 52698, Start Num: 40
Candidate Starts for Fryberger_106:
(15, 52294), (33, 52369), (Start: 40 @52384 has 5 MA's), (73, 52540), (91, 52609), (107, 52672),

Gene: Gonephishing_125 Start: 68379, Stop: 68672, Start Num: 37
Candidate Starts for Gonephishing_125:
(Start: 37 @68379 has 5 MA's), (63, 68496), (78, 68556), (99, 68628), (100, 68631),

Gene: Gonephishing_144 Start: 78607, Stop: 78930, Start Num: 36
Candidate Starts for Gonephishing_144:
(31, 78595), (Start: 36 @78607 has 40 MA's), (56, 78691), (62, 78718), (63, 78724), (70, 78757), (81, 78796),

Gene: Grayson_191 Start: 99709, Stop: 100023, Start Num: 30
Candidate Starts for Grayson_191:
(Start: 30 @99709 has 2 MA's), (38, 99727), (47, 99769), (60, 99823), (87, 99925), (98, 99979),

Gene: Groundhog_42 Start: 30817, Stop: 30515, Start Num: 43

Candidate Starts for Groundhog_42:
(Start: 43 @30817 has 8 MA's), (67, 30706), (71, 30697), (91, 30604), (102, 30553), (108, 30532),

Gene: Guey18_111 Start: 53707, Stop: 54021, Start Num: 40
Candidate Starts for Guey18_111:
(15, 53617), (33, 53692), (Start: 40 @53707 has 5 MA's), (73, 53863), (91, 53932), (107, 53995),

Gene: Halley_152 Start: 80751, Stop: 81074, Start Num: 36
Candidate Starts for Halley_152:
(31, 80739), (Start: 36 @80751 has 40 MA's), (56, 80835), (59, 80853), (70, 80901), (81, 80940),

Gene: Hannaconda_124 Start: 69032, Stop: 69325, Start Num: 37
Candidate Starts for Hannaconda_124:
(Start: 37 @69032 has 5 MA's), (63, 69149), (78, 69209), (99, 69281), (100, 69284),

Gene: Hannaconda_144 Start: 79540, Stop: 79863, Start Num: 36
Candidate Starts for Hannaconda_144:
(Start: 36 @79540 has 40 MA's), (56, 79624), (62, 79651), (63, 79657), (70, 79690), (81, 79729),

Gene: HokkenD_145 Start: 81876, Stop: 82199, Start Num: 36
Candidate Starts for HokkenD_145:
(4, 81639), (7, 81678), (13, 81783), (31, 81864), (Start: 36 @81876 has 40 MA's), (56, 81960), (62, 81987), (70, 82026), (81, 82065),

Gene: HokkenD_123 Start: 71913, Stop: 72206, Start Num: 37
Candidate Starts for HokkenD_123:
(Start: 37 @71913 has 5 MA's), (63, 72030), (78, 72090), (99, 72162), (100, 72165),

Gene: Hughesyang_150 Start: 81110, Stop: 81433, Start Num: 36
Candidate Starts for Hughesyang_150:
(10, 80978), (11, 80981), (31, 81098), (Start: 36 @81110 has 40 MA's), (56, 81194), (70, 81260), (81, 81299),

Gene: Jflix2_89 Start: 50660, Stop: 51001, Start Num: 32
Candidate Starts for Jflix2_89:
(12, 50558), (16, 50594), (Start: 25 @50642 has 1 MA's), (Start: 32 @50660 has 2 MA's), (52, 50741), (92, 50939),

Gene: Jflix2_77 Start: 46906, Stop: 47172, Start Num: 49
Candidate Starts for Jflix2_77:
(Start: 49 @46906 has 2 MA's), (77, 47026), (88, 47071), (108, 47149),

Gene: Jflix2_76 Start: 46571, Stop: 46909, Start Num: 34
Candidate Starts for Jflix2_76:
(Start: 34 @46571 has 1 MA's), (50, 46643), (80, 46766), (83, 46784), (91, 46826), (104, 46874),

Gene: Jflix2_58 Start: 39721, Stop: 40101, Start Num: 26
Candidate Starts for Jflix2_58:
(2, 39397), (21, 39709), (Start: 26 @39721 has 2 MA's), (48, 39814), (86, 39979), (92, 40024), (107, 40069),

Gene: JuicyJay_146 Start: 82036, Stop: 82359, Start Num: 36
Candidate Starts for JuicyJay_146:

(10, 81904), (11, 81907), (31, 82024), (Start: 36 @82036 has 40 MA's), (56, 82120), (70, 82186), (81, 82225), (100, 82306),

Gene: Kalah2_142 Start: 80240, Stop: 80563, Start Num: 36
Candidate Starts for Kalah2_142:
(31, 80228), (Start: 36 @80240 has 40 MA's), (56, 80324), (59, 80342), (81, 80429), (84, 80453),

Gene: KashFlow_150 Start: 79539, Stop: 79862, Start Num: 36
Candidate Starts for KashFlow_150:
(Start: 36 @79539 has 40 MA's), (56, 79623), (62, 79650), (63, 79656), (70, 79689), (81, 79728),

Gene: Klein_150 Start: 80105, Stop: 80428, Start Num: 36
Candidate Starts for Klein_150:
(31, 80093), (Start: 36 @80105 has 40 MA's), (42, 80123), (56, 80189), (70, 80255), (81, 80294), (84, 80318), (100, 80375),

Gene: LittleE_153 Start: 80985, Stop: 81308, Start Num: 36
Candidate Starts for LittleE_153:
(1, 80586), (3, 80709), (4, 80748), (7, 80787), (13, 80892), (31, 80973), (Start: 36 @80985 has 40 MA's), (56, 81069), (62, 81096), (70, 81135), (81, 81174), (101, 81258),

Gene: Lucky2013_142 Start: 75897, Stop: 76220, Start Num: 36
Candidate Starts for Lucky2013_142:
(31, 75885), (Start: 36 @75897 has 40 MA's), (42, 75915), (56, 75981), (62, 76008), (70, 76047), (81, 76086), (101, 76170),

Gene: Madraxi_61 Start: 42224, Stop: 42604, Start Num: 26
Candidate Starts for Madraxi_61:
(9, 42083), (21, 42212), (Start: 26 @42224 has 2 MA's), (67, 42407), (110, 42590),

Gene: Madraxi_80 Start: 49350, Stop: 49697, Start Num: 27
Candidate Starts for Madraxi_80:
(14, 49296), (Start: 27 @49350 has 1 MA's), (50, 49431), (69, 49518), (80, 49554), (83, 49572), (91, 49614), (104, 49662),

Gene: Madraxi_81 Start: 49694, Stop: 49978, Start Num: 49
Candidate Starts for Madraxi_81:
(Start: 49 @49694 has 2 MA's), (55, 49712), (73, 49793), (88, 49856),

Gene: Madraxi_91 Start: 52811, Stop: 53170, Start Num: 32
Candidate Starts for Madraxi_91:
(Start: 32 @52811 has 2 MA's), (39, 52826), (74, 52988), (88, 53033), (92, 53075),

Gene: MiaZeal_149 Start: 77044, Stop: 77367, Start Num: 36
Candidate Starts for MiaZeal_149:
(31, 77032), (Start: 36 @77044 has 40 MA's), (42, 77062), (56, 77128), (62, 77155), (70, 77194), (81, 77233), (101, 77317),

Gene: Minerva_150 Start: 80059, Stop: 80382, Start Num: 36
Candidate Starts for Minerva_150:
(31, 80047), (Start: 36 @80059 has 40 MA's), (56, 80143), (59, 80161), (81, 80248), (84, 80272),

Gene: NihilNomen_152 Start: 79960, Stop: 80283, Start Num: 36

Candidate Starts for NihilNomen_152:
(31, 79948), (Start: 36 @79960 has 40 MA's), (56, 80044), (59, 80062), (70, 80110), (81, 80149), (84, 80173), (109, 80263),

Gene: Nova53_258 Start: 128188, Stop: 128547, Start Num: 26
Candidate Starts for Nova53_258:
(20, 128170), (Start: 26 @128188 has 2 MA's), (45, 128254), (50, 128284), (85, 128434), (109, 128533),

Gene: Nova53_265 Start: 130197, Stop: 130535, Start Num: 18
Candidate Starts for Nova53_265:
(18, 130197), (Start: 19 @130200 has 4 MA's), (Start: 32 @130236 has 2 MA's), (Start: 43 @130275 has 8 MA's), (51, 130311), (65, 130368), (77, 130416),

Gene: Nova53_269 Start: 131044, Stop: 131379, Start Num: 31
Candidate Starts for Nova53_269:
(28, 131032), (31, 131044), (Start: 43 @131089 has 8 MA's), (44, 131092), (94, 131320), (98, 131329), (106, 131359),

Gene: Odette_135 Start: 73830, Stop: 74123, Start Num: 37
Candidate Starts for Odette_135:
(Start: 37 @73830 has 5 MA's), (63, 73947), (78, 74007), (99, 74079), (100, 74082),

Gene: Odette_156 Start: 82653, Stop: 82976, Start Num: 36
Candidate Starts for Odette_156:
(Start: 36 @82653 has 40 MA's), (56, 82737), (62, 82764), (70, 82803), (81, 82842), (101, 82926),

Gene: Omega_157 Start: 82149, Stop: 82472, Start Num: 36
Candidate Starts for Omega_157:
(Start: 36 @82149 has 40 MA's), (56, 82233), (62, 82260), (70, 82299), (81, 82338), (101, 82422),

Gene: Optimus_144 Start: 79658, Stop: 79981, Start Num: 36
Candidate Starts for Optimus_144:
(Start: 36 @79658 has 40 MA's), (56, 79742), (62, 79769), (70, 79808), (81, 79847), (101, 79931),

Gene: Peregrin_188 Start: 100106, Stop: 100420, Start Num: 30
Candidate Starts for Peregrin_188:
(Start: 30 @100106 has 2 MA's), (38, 100124), (47, 100166), (60, 100220), (87, 100322), (98, 100376),

Gene: Phillis_45 Start: 31235, Stop: 30933, Start Num: 43
Candidate Starts for Phillis_45:
(Start: 43 @31235 has 8 MA's), (67, 31124), (71, 31115), (85, 31055), (91, 31022), (102, 30971), (108, 30950),

Gene: Phoebus_151 Start: 82464, Stop: 82787, Start Num: 36
Candidate Starts for Phoebus_151:
(10, 82332), (11, 82335), (31, 82452), (Start: 36 @82464 has 40 MA's), (56, 82548), (59, 82566), (81, 82653), (84, 82677),

Gene: Porcelain_146 Start: 76843, Stop: 77166, Start Num: 36
Candidate Starts for Porcelain_146:
(31, 76831), (Start: 36 @76843 has 40 MA's), (42, 76861), (56, 76927), (62, 76954), (70, 76993), (81, 77032), (101, 77116),

Gene: Pound_142 Start: 79694, Stop: 80017, Start Num: 36
Candidate Starts for Pound_142:
(31, 79682), (Start: 36 @79694 has 40 MA's), (56, 79778), (59, 79796), (70, 79844), (81, 79883), (109, 79997),

Gene: REQ1_28 Start: 11269, Stop: 11631, Start Num: 26
Candidate Starts for REQ1_28:
(21, 11257), (Start: 26 @11269 has 2 MA's), (92, 11554), (105, 11596),

Gene: REQ1_45 Start: 18020, Stop: 18358, Start Num: 34
Candidate Starts for REQ1_45:
(23, 17999), (Start: 34 @18020 has 1 MA's), (50, 18092), (84, 18242), (96, 18302), (97, 18305), (100, 18314),

Gene: Redno2_145 Start: 77962, Stop: 78285, Start Num: 36
Candidate Starts for Redno2_145:
(31, 77950), (Start: 36 @77962 has 40 MA's), (56, 78046), (59, 78064), (70, 78112), (81, 78151), (84, 78175), (100, 78232),

Gene: Roary_44 Start: 30866, Stop: 30564, Start Num: 43
Candidate Starts for Roary_44:
(Start: 43 @30866 has 8 MA's), (67, 30755), (71, 30746), (91, 30653), (102, 30602), (108, 30581),

Gene: Ronaldo_108 Start: 53289, Stop: 53603, Start Num: 40
Candidate Starts for Ronaldo_108:
(15, 53199), (33, 53274), (Start: 40 @53289 has 5 MA's), (73, 53445), (91, 53514), (107, 53577),

Gene: Schatzie_146 Start: 80543, Stop: 80866, Start Num: 36
Candidate Starts for Schatzie_146:
(31, 80531), (Start: 36 @80543 has 40 MA's), (56, 80627), (59, 80645), (70, 80693), (81, 80732), (109, 80846),

Gene: Shagrat_65 Start: 40539, Stop: 40913, Start Num: 25
Candidate Starts for Shagrat_65:
(22, 40536), (Start: 25 @40539 has 1 MA's), (46, 40611), (59, 40662), (61, 40668), (68, 40713), (75, 40740), (83, 40770), (100, 40860),

Gene: Shagrat_66 Start: 40915, Stop: 41250, Start Num: 111
Candidate Starts for Shagrat_66:
(29, 40549), (35, 40564), (50, 40630), (58, 40654), (64, 40693), (72, 40720), (82, 40756), (Start: 111 @40915 has 1 MA's), (112, 41023), (113, 41101), (114, 41104), (115, 41197), (116, 41212), (117, 41224),

Gene: Shagrat_64 Start: 40165, Stop: 40536, Start Num: 24
Candidate Starts for Shagrat_64:
(Start: 24 @40165 has 1 MA's), (41, 40207), (53, 40276), (68, 40351), (86, 40414), (91, 40441), (93, 40462), (100, 40483), (102, 40492),

Gene: Sleepyhead_43 Start: 31028, Stop: 31363, Start Num: 17
Candidate Starts for Sleepyhead_43:
(Start: 17 @31028 has 1 MA's), (66, 31199), (90, 31295),

Gene: Smeadley_44 Start: 31032, Stop: 30730, Start Num: 43
Candidate Starts for Smeadley_44:
(Start: 43 @31032 has 8 MA's), (67, 30921), (71, 30912), (91, 30819), (102, 30768), (108, 30747),

Gene: Squint_142 Start: 76328, Stop: 76651, Start Num: 36
Candidate Starts for Squint_142:
(Start: 36 @76328 has 40 MA's), (56, 76412), (62, 76439), (63, 76445), (70, 76478), (81, 76517),

Gene: Stephig9_44 Start: 30891, Stop: 30589, Start Num: 43
Candidate Starts for Stephig9_44:
(Start: 43 @30891 has 8 MA's), (67, 30780), (71, 30771), (91, 30678), (102, 30627), (108, 30606),

Gene: Superphikiman_147 Start: 76801, Stop: 77124, Start Num: 36
Candidate Starts for Superphikiman_147:
(5, 76579), (8, 76627), (11, 76672), (31, 76789), (Start: 36 @76801 has 40 MA's), (56, 76885), (70, 76951), (81, 76990), (84, 77014), (100, 77071),

Gene: Superphikiman_128 Start: 69018, Stop: 69311, Start Num: 37
Candidate Starts for Superphikiman_128:
(Start: 37 @69018 has 5 MA's), (63, 69135), (78, 69195), (99, 69267), (100, 69270),

Gene: Thibault_134 Start: 77417, Stop: 77740, Start Num: 36
Candidate Starts for Thibault_134:
(6, 77204), (10, 77285), (11, 77288), (31, 77405), (Start: 36 @77417 has 40 MA's), (56, 77501), (70, 77567), (81, 77606), (103, 77699),

Gene: ThreeRngTarjay_146 Start: 81055, Stop: 81378, Start Num: 36
Candidate Starts for ThreeRngTarjay_146:
(10, 80923), (11, 80926), (31, 81043), (Start: 36 @81055 has 40 MA's), (56, 81139), (59, 81157), (81, 81244), (84, 81268),

Gene: Volt_110 Start: 53453, Stop: 53767, Start Num: 40
Candidate Starts for Volt_110:
(15, 53363), (33, 53438), (Start: 40 @53453 has 5 MA's), (73, 53609), (91, 53678), (107, 53741),

Gene: Wanda_150 Start: 78530, Stop: 78853, Start Num: 36
Candidate Starts for Wanda_150:
(31, 78518), (Start: 36 @78530 has 40 MA's), (56, 78614), (59, 78632), (81, 78719), (84, 78743),

Gene: Yeet_125 Start: 71942, Stop: 72235, Start Num: 37
Candidate Starts for Yeet_125:
(Start: 37 @71942 has 5 MA's), (63, 72059), (78, 72119), (99, 72191), (100, 72194),

Gene: Yeet_144 Start: 79906, Stop: 80229, Start Num: 36
Candidate Starts for Yeet_144:
(5, 79684), (8, 79732), (11, 79777), (31, 79894), (Start: 36 @79906 has 40 MA's), (56, 79990), (70, 80056), (81, 80095), (84, 80119), (100, 80176),

Gene: Zelink_145 Start: 81372, Stop: 81695, Start Num: 36
Candidate Starts for Zelink_145:
(31, 81360), (Start: 36 @81372 has 40 MA's), (56, 81456), (59, 81474), (81, 81561), (84, 81585),

Gene: Ziko_109 Start: 53295, Stop: 53609, Start Num: 40

Candidate Starts for Ziko_109:
(15, 53205), (33, 53280), (Start: 40 @53295 has 5 MA's), (73, 53451), (91, 53520), (107, 53583),