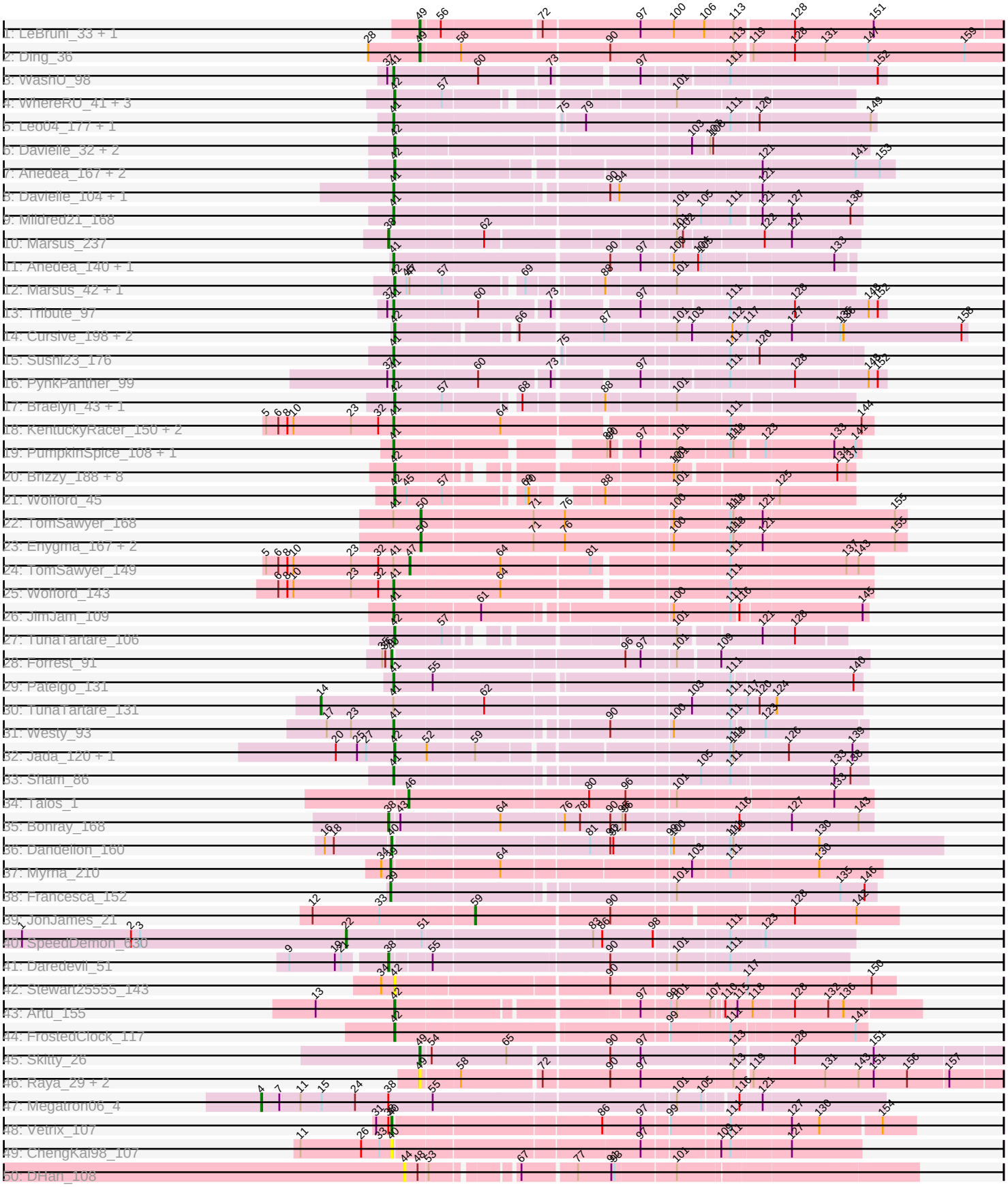
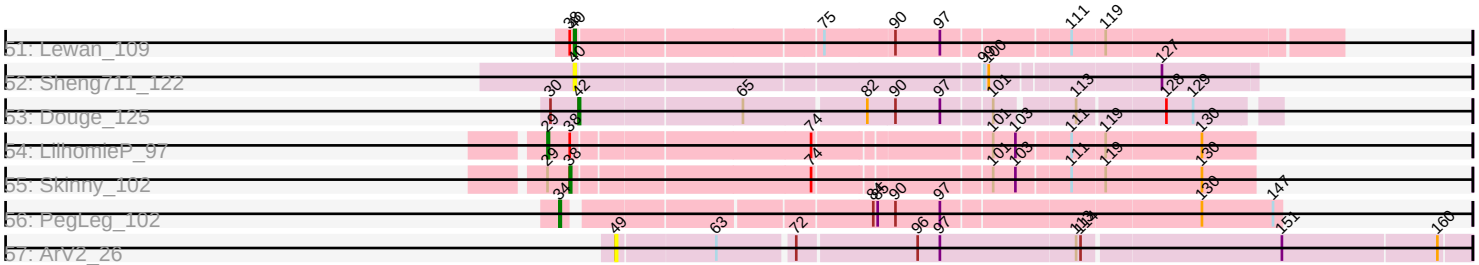
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1: LeBruni_33 + 1
2: Ding_36
3: WashO_98
4: WhereRU_41 + 3
5: Leo04_177 + 1
6: Davielle_32 + 2
7: Anedea_167 + 2
8: Davielle_104 + 1
9: Mildred21_168
10: Marsus_237
11: Anedea_140 + 1
12: Marsus_42 + 1
13: Tribute_97
14: Cursive_198 + 2
15: Sushi23_176
16: PinkPanther_99
17: Braelyn_43 + 1
18: KentuckyRacer_150 + 2
19: PumpkinSpice_108 + 1
20: Brizzy_188 + 8
21: Wofford_45
22: TomSawyer_168
23: Enygma_167 + 2
24: TomSawyer_149
25: Wofford_143
26: JimJam_109
27: TunaTartare_106
28: Forrest_91
29: Patelgo_131
30: TunaTartare_131
31: Westy_93
32: Jada_120 + 1
33: Sham_86
34: Talos_1
35: Bonray_168
36: Dandelion_160
37: Myrna_210
38: Francesca_152
39: JonJames_21
40: SpeedDemon_630
41: Daredevil_51
42: Stewart25555_143
43: Artu_155
44: FrostedClock_117
45: Skitty_26
46: Raya_29 + 2
47: Megatron06_4
48: Vetrix_107
49: ChengKai98_107
50: DHan_108

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51: Lewan_109
52: Sheng711_122
53: Douge_125
54: LilnomieP_97
55: Skinny_102
56: PegLeg_102
57: Arv2_26

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 345553 Report

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

Pham number 345553 has 88 members, 8 are drafts.

Phages represented in each track:
- Track 1 : LeBruni_33, Phrank15_33
- Track 2 : Ding_36
- Track 3 : WashU_98
- Track 4 : WhereRU_41, Persimmon_40, Davielle_41, Leo04_45
- Track 5 : Leo04_177, Paradiddles_170
- Track 6 : Davielle_32, WhereRU_32, PynkPanther_33
- Track 7 : Anedea_167, Riptide_160, Wofford_171
- Track 8 : Davielle_104, WhereRU_103
- Track 9 : Mildred21_168
- Track 10 : Marsus_237
- Track 11 : Anedea_140, Mildred21_142
- Track 12 : Marsus_42, Anedea_42
- Track 13 : Tribute_97
- Track 14 : Cursive_198, ArianaSWT_200, Cadmus_194
- Track 15 : Sushi23_176
- Track 16 : PynkPanther_99
- Track 17 : Braelyn_43, Navo_42
- Track 18 : KentuckyRacer_150, CeilingFan_148, JimJam_152
- Track 19 : PumpkinSpice_108, Daisy123_108
- Track 20 : Brizzy_188, JimJam_195, Amabiko_192, IchabodCrane_184, TomSawyer_193, Wipeout_181, Spilled_194, KentuckyRacer_193, Mugiwara_190
- Track 21 : Wofford_45
- Track 22 : TomSawyer_168
- Track 23 : Enygma_167, Quaran19_166, Brizzy_163
- Track 24 : TomSawyer_149
- Track 25 : Wofford_143
- Track 26 : JimJam_109
- Track 27 : TunaTartare_106
- Track 28 : Forrest_91
- Track 29 : Patelgo_131
- Track 30 : TunaTartare_131
- Track 31 : Westy_93
- Track 32 : Jada_120, Forrest_124
- Track 33 : Sham_86
- Track 34 : Talos_1
- Track 35 : Bonray_168
- Track 36 : Dandelion_160

• Track 37 : Myrna_210
• Track 38 : Francesca_152
• Track 39 : JonJames_21
• Track 40 : SpeedDemon_630
• Track 41 : Daredevil_51
• Track 42 : Stewart25555_143
• Track 43 : Artu_155
• Track 44 : FrostedClock_117
• Track 45 : Skitty_26
• Track 46 : Raya_29, Skyerus_29, Neroxid_29
• Track 47 : Megatron06_4
• Track 48 : Vetrix_107
• Track 49 : ChengKai98_107
• Track 50 : DHan_108
• Track 51 : Lewan_109
• Track 52 : Sheng711_122
• Track 53 : Douge_125
• Track 54 : LilhomieP_97
• Track 55 : Skinny_102
• Track 56 : PegLeg_102
• Track 57 : ArV2_26

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

The start number called the most often in the published annotations is 42, it was called in 33 of the 80 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Amabiko_192, Anedea_167, Anedea_42, ArianaSWT_200, Artu_155, Braelyn_43, Brizzy_188, Cadmus_194, Cursive_198, Davielle_32, Davielle_41, Douge_125, Forrest_124, FrostedClock_117, IchabodCrane_184, Jada_120, JimJam_195, KentuckyRacer_193, Leo04_45, Marsus_42, Mugiwara_190, Navo_42, Persimmon_40, PynkPanther_33, Riptide_160, Spilled_194, Stewart25555_143, TomSawyer_193, TunaTartare_106, WhereRU_32, WhereRU_41, Wipeout_181, Wofford_171, Wofford_45,

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

Genes that do not have the "Most Annotated" start:
• Anedea_140, ArV2_26, Bonray_168, Brizzy_163, CeilingFan_148, ChengKai98_107, DHan_108, Daisy123_108, Dandelion_160, Daredevil_51, Davielle_104, Ding_36, Enygma_167, Forrest_91, Francesca_152, JimJam_109, JimJam_152, JonJames_21, KentuckyRacer_150, LeBruni_33, Leo04_177, Lewan_109, LilhomieP_97, Marsus_237, Megatron06_4, Mildred21_142, Mildred21_168, Myrna_210, Neroxid_29, Paradiddles_170, Patelgo_131, PegLeg_102, Phrank15_33, PumpkinSpice_108, PynkPanther_99, Quaran19_166, Raya_29, Sham_86, Sheng711_122, Skinny_102, Skitty_26, Skyerus_29, SpeedDemon_630, Sushi23_176, Talos_1, TomSawyer_149, TomSawyer_168, Tribute_97, TunaTartare_131, Vetrix_107, WashU_98, Westy_93, WhereRU_103,

Wofford_143,

Summary by start number:

Start 4:
• Found in 1 of 88 (1.1%) of genes in pham
• Manual Annotations of this start: 1 of 80
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Megatron06_4 (H1),

Start 14:
• Found in 1 of 88 (1.1%) of genes in pham
• Manual Annotations of this start: 1 of 80
• Called 100.0% of time when present
• Phage (with cluster) where this start called: TunaTartare_131 (BK1),

Start 22:
• Found in 1 of 88 (1.1%) of genes in pham
• Manual Annotations of this start: 1 of 80
• Called 100.0% of time when present
• Phage (with cluster) where this start called: SpeedDemon_630 (DL),

Start 29:
• Found in 2 of 88 (2.3%) of genes in pham
• Manual Annotations of this start: 1 of 80
• Called 50.0% of time when present
• Phage (with cluster) where this start called: LilhomieP_97 (M1),

Start 34:
• Found in 3 of 88 (3.4%) of genes in pham
• Manual Annotations of this start: 1 of 80
• Called 33.3% of time when present
• Phage (with cluster) where this start called: PegLeg_102 (M1),

Start 38:
• Found in 8 of 88 (9.1%) of genes in pham
• Manual Annotations of this start: 4 of 80
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Bonray_168 (C1), Daredevil_51 (DL), Marsus_237 (BE1), Skinny_102 (M1),

Start 39:
• Found in 2 of 88 (2.3%) of genes in pham
• Manual Annotations of this start: 2 of 80
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Francesca_152 (CG), Myrna_210 (C2),

Start 40:
• Found in 6 of 88 (6.8%) of genes in pham
• Manual Annotations of this start: 4 of 80
• Called 100.0% of time when present
• Phage (with cluster) where this start called: ChengKai98_107 (L2), Dandelion_160 (C1), Forrest_91 (BK1), Lewan_109 (L2), Sheng711_122 (L4), Vetrix_107 (L2),

Start 41:
• Found in 24 of 88 (27.3%) of genes in pham
• Manual Annotations of this start: 21 of 80
• Called 87.5% of time when present
• Phage (with cluster) where this start called: Anedea_140 (BE1), CeilingFan_148 (BE2), Daisy123_108 (BE2), Davielle_104 (BE1), JimJam_109 (BE2), JimJam_152 (BE2), KentuckyRacer_150 (BE2), Leo04_177 (BE1), Mildred21_142 (BE1), Mildred21_168 (BE1), Paradiddles_170 (BE1), Patelgo_131 (BK1), PumpkinSpice_108 (BE2), PynkPanther_99 (BE1), Sham_86 (BK1), Sushi23_176 (BE1), Tribute_97 (BE1), WashU_98 (BE1), Westy_93 (BK1), WhereRU_103 (BE1), Wofford_143 (BE2),

Start 42:
• Found in 34 of 88 (38.6%) of genes in pham
• Manual Annotations of this start: 33 of 80
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Amabiko_192 (BE2), Anedea_167 (BE1), Anedea_42 (BE1), ArianaSWT_200 (BE1), Artu_155 (FC), Braelyn_43 (BE1), Brizzy_188 (BE2), Cadmus_194 (BE1), Cursive_198 (BE1), Davielle_32 (BE1), Davielle_41 (BE1), Douge_125 (L4), Forrest_124 (BK1), FrostedClock_117 (FC), IchabodCrane_184 (BE2), Jada_120 (BK1), JimJam_195 (BE2), KentuckyRacer_193 (BE2), Leo04_45 (BE1), Marsus_42 (BE1), Mugiwara_190 (BE2), Navo_42 (BE1), Persimmon_40 (BE1), PynkPanther_33 (BE1), Riptide_160 (BE1), Spilled_194 (BE2), Stewart25555_143 (FC), TomSawyer_193 (BE2), TunaTartare_106 (BK1), WhereRU_32 (BE1), WhereRU_41 (BE1), Wipeout_181 (BE2), Wofford_171 (BE2), Wofford_45 (BE2),

Start 44:
• Found in 1 of 88 (1.1%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: DHan_108 (L2),

Start 46:
• Found in 1 of 88 (1.1%) of genes in pham
• Manual Annotations of this start: 1 of 80
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Talos_1 (BS),

Start 47:
• Found in 3 of 88 (3.4%) of genes in pham
• Manual Annotations of this start: 1 of 80
• Called 33.3% of time when present
• Phage (with cluster) where this start called: TomSawyer_149 (BE2),

Start 49:
• Found in 8 of 88 (9.1%) of genes in pham
• Manual Annotations of this start: 4 of 80
• Called 100.0% of time when present
• Phage (with cluster) where this start called: ArV2_26 (singleton), Ding_36 (AY), LeBruni_33 (AY), Neroxid_29 (FQ2), Phrank15_33 (AY), Raya_29 (FQ2), Skitty_26 (FQ1), Skyerus_29 (FQ2),

Start 50:
• Found in 4 of 88 (4.5%) of genes in pham
• Manual Annotations of this start: 4 of 80
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Brizzy_163 (BE2), Enygma_167 (BE2), Quaran19_166 (BE2), TomSawyer_168 (BE2),

Start 59:
• Found in 3 of 88 (3.4%) of genes in pham
• Manual Annotations of this start: 1 of 80
• Called 33.3% of time when present
• Phage (with cluster) where this start called: JonJames_21 (DD),

Summary by clusters:

There are 18 clusters represented in this pham: DL, FQ1, FQ2, DD, H1, CG, singleton, AY, L4, FC, L2, BK1, BS, BE2, C2, C1, BE1, M1,

Info for manual annotations of cluster AY:
•Start number 49 was manually annotated 3 times for cluster AY.

Info for manual annotations of cluster BE1:
•Start number 38 was manually annotated 1 time for cluster BE1.
•Start number 41 was manually annotated 11 times for cluster BE1.
•Start number 42 was manually annotated 16 times for cluster BE1.

Info for manual annotations of cluster BE2:
•Start number 41 was manually annotated 7 times for cluster BE2.
•Start number 42 was manually annotated 11 times for cluster BE2.
•Start number 47 was manually annotated 1 time for cluster BE2.
•Start number 50 was manually annotated 4 times for cluster BE2.

Info for manual annotations of cluster BK1:
•Start number 14 was manually annotated 1 time for cluster BK1.
•Start number 40 was manually annotated 1 time for cluster BK1.
•Start number 41 was manually annotated 3 times for cluster BK1.
•Start number 42 was manually annotated 3 times for cluster BK1.

Info for manual annotations of cluster BS:
•Start number 46 was manually annotated 1 time for cluster BS.

Info for manual annotations of cluster C1:
•Start number 38 was manually annotated 1 time for cluster C1.
•Start number 40 was manually annotated 1 time for cluster C1.

Info for manual annotations of cluster C2:
•Start number 39 was manually annotated 1 time for cluster C2.

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

Info for manual annotations of cluster DD:

•Start number 59 was manually annotated 1 time for cluster DD.

Info for manual annotations of cluster DL:
•Start number 22 was manually annotated 1 time for cluster DL.
•Start number 38 was manually annotated 1 time for cluster DL.

Info for manual annotations of cluster FC:
•Start number 42 was manually annotated 2 times for cluster FC.

Info for manual annotations of cluster FQ1:
•Start number 49 was manually annotated 1 time for cluster FQ1.

Info for manual annotations of cluster H1:
•Start number 4 was manually annotated 1 time for cluster H1.

Info for manual annotations of cluster L2:
•Start number 40 was manually annotated 2 times for cluster L2.

Info for manual annotations of cluster L4:
•Start number 42 was manually annotated 1 time for cluster L4.

Info for manual annotations of cluster M1:
•Start number 29 was manually annotated 1 time for cluster M1.
•Start number 34 was manually annotated 1 time for cluster M1.
•Start number 38 was manually annotated 1 time for cluster M1.

Gene Information:

Gene: Amabiko_192 Start: 96212, Stop: 96601, Start Num: 42
Candidate Starts for Amabiko_192:
(Start: 42 @96212 has 33 MA's), (100, 96437), (101, 96440), (134, 96584), (137, 96593),

Gene: Anedea_167 Start: 92344, Stop: 92802, Start Num: 42
Candidate Starts for Anedea_167:
(Start: 42 @92344 has 33 MA's), (121, 92674), (141, 92764), (153, 92788),

Gene: Anedea_140 Start: 84644, Stop: 85069, Start Num: 41
Candidate Starts for Anedea_140:
(Start: 41 @84644 has 21 MA's), (90, 84845), (97, 84875), (100, 84902), (104, 84926), (105, 84929), (133, 85052),

Gene: Anedea_42 Start: 21646, Stop: 22047, Start Num: 42
Candidate Starts for Anedea_42:
(Start: 42 @21646 has 33 MA's), (45, 21658), (Start: 47 @21661 has 1 MA's), (57, 21691), (69, 21757), (88, 21820), (101, 21883),

Gene: ArV2_26 Start: 20690, Stop: 21238, Start Num: 49
Candidate Starts for ArV2_26:
(Start: 49 @20690 has 4 MA's), (63, 20753), (72, 20801), (96, 20879), (97, 20894), (113, 20984), (114, 20987), (151, 21116), (160, 21218),

Gene: ArianaSWT_200 Start: 104549, Stop: 105070, Start Num: 42
Candidate Starts for ArianaSWT_200:
(Start: 42 @104549 has 33 MA's), (66, 104651), (87, 104726), (101, 104792), (103, 104807), (112, 104843), (117, 104858), (127, 104900), (135, 104945), (136, 104948), (158, 105065),

Gene: Artu_155 Start: 108175, Stop: 108654, Start Num: 42
Candidate Starts for Artu_155:
(13, 108097), (Start: 42 @108175 has 33 MA's), (97, 108391), (99, 108418), (101, 108424), (107, 108457), (110, 108466), (115, 108478), (118, 108493), (128, 108532), (132, 108565), (136, 108580),

Gene: Bonray_168 Start: 94840, Stop: 95289, Start Num: 38
Candidate Starts for Bonray_168:
(Start: 38 @94840 has 4 MA's), (43, 94849), (64, 94942), (76, 95002), (78, 95017), (90, 95044), (95, 95056), (96, 95059), (116, 95161), (127, 95209), (143, 95275),

Gene: Braelyn_43 Start: 22198, Stop: 22599, Start Num: 42
Candidate Starts for Braelyn_43:
(Start: 42 @22198 has 33 MA's), (57, 22243), (68, 22306), (88, 22372), (101, 22435),

Gene: Brizzy_188 Start: 96656, Stop: 97045, Start Num: 42
Candidate Starts for Brizzy_188:
(Start: 42 @96656 has 33 MA's), (100, 96881), (101, 96884), (134, 97028), (137, 97037),

Gene: Brizzy_163 Start: 90852, Stop: 91316, Start Num: 50
Candidate Starts for Brizzy_163:
(Start: 50 @90852 has 4 MA's), (71, 90960), (76, 90990), (100, 91092), (111, 91146), (113, 91149), (121, 91176), (155, 91305),

Gene: Cadmus_194 Start: 103833, Stop: 104354, Start Num: 42
Candidate Starts for Cadmus_194:
(Start: 42 @103833 has 33 MA's), (66, 103935), (87, 104010), (101, 104076), (103, 104091), (112, 104127), (117, 104142), (127, 104184), (135, 104229), (136, 104232), (158, 104349),

Gene: CeilingFan_148 Start: 86515, Stop: 86958, Start Num: 41
Candidate Starts for CeilingFan_148:
(5, 86389), (6, 86401), (8, 86410), (10, 86416), (23, 86473), (32, 86500), (Start: 41 @86515 has 21 MA's), (64, 86614), (111, 86821), (144, 86947),

Gene: ChengKai98_107 Start: 62830, Stop: 63261, Start Num: 40
Candidate Starts for ChengKai98_107:
(11, 62740), (26, 62800), (33, 62818), (Start: 40 @62830 has 4 MA's), (97, 63058), (109, 63127), (111, 63136), (127, 63193),

Gene: Cursive_198 Start: 103181, Stop: 103702, Start Num: 42
Candidate Starts for Cursive_198:
(Start: 42 @103181 has 33 MA's), (66, 103283), (87, 103358), (101, 103424), (103, 103439), (112, 103475), (117, 103490), (127, 103532), (135, 103577), (136, 103580), (158, 103697),

Gene: DHan_108 Start: 63363, Stop: 63818, Start Num: 44
Candidate Starts for DHan_108:
(44, 63363), (48, 63375), (53, 63384), (67, 63453), (77, 63501), (91, 63534), (93, 63537), (101, 63594),

Gene: Daisy123_108 Start: 73536, Stop: 73943, Start Num: 41
Candidate Starts for Daisy123_108:
(Start: 41 @73536 has 21 MA's), (89, 73713), (90, 73716), (97, 73740), (101, 73773), (111, 73821), (113, 73824), (123, 73851), (133, 73917), (141, 73938),

Gene: Dandelion_160 Start: 94845, Stop: 95354, Start Num: 40
Candidate Starts for Dandelion_160:
(16, 94782), (18, 94791), (Start: 40 @94845 has 4 MA's), (81, 95025), (90, 95043), (92, 95046), (99, 95097), (100, 95100), (111, 95148), (113, 95151), (130, 95232),

Gene: Daredevil_51 Start: 40951, Stop: 41370, Start Num: 38
Candidate Starts for Daredevil_51:
(9, 40861), (19, 40906), (21, 40912), (Start: 38 @40951 has 4 MA's), (55, 40987), (90, 41149), (101, 41209), (111, 41257),

Gene: Davielle_32 Start: 14821, Stop: 14384, Start Num: 42
Candidate Starts for Davielle_32:
(Start: 42 @14821 has 33 MA's), (103, 14548), (107, 14533), (108, 14530),

Gene: Davielle_104 Start: 73218, Stop: 73643, Start Num: 41
Candidate Starts for Davielle_104:
(Start: 41 @73218 has 21 MA's), (90, 73410), (94, 73419), (121, 73548),

Gene: Davielle_41 Start: 21615, Stop: 22016, Start Num: 42
Candidate Starts for Davielle_41:
(Start: 42 @21615 has 33 MA's), (57, 21660), (101, 21852),

Gene: Ding_36 Start: 25387, Stop: 25947, Start Num: 49
Candidate Starts for Ding_36:
(28, 25336), (Start: 49 @25387 has 4 MA's), (58, 25423), (90, 25567), (113, 25687), (119, 25702), (128, 25741), (131, 25771), (147, 25813), (159, 25909),

Gene: Douge_125 Start: 66042, Stop: 66473, Start Num: 42
Candidate Starts for Douge_125:
(30, 66024), (Start: 42 @66042 has 33 MA's), (65, 66147), (82, 66225), (90, 66243), (97, 66273), (101, 66303), (113, 66351), (128, 66405), (129, 66423),

Gene: Enygma_167 Start: 93249, Stop: 93713, Start Num: 50
Candidate Starts for Enygma_167:
(Start: 50 @93249 has 4 MA's), (71, 93357), (76, 93387), (100, 93489), (111, 93543), (113, 93546), (121, 93573), (155, 93702),

Gene: Forrest_91 Start: 63801, Stop: 64238, Start Num: 40
Candidate Starts for Forrest_91:
(35, 63792), (36, 63795), (Start: 40 @63801 has 4 MA's), (96, 64017), (97, 64032), (101, 64062), (109, 64098),

Gene: Forrest_124 Start: 77019, Stop: 77447, Start Num: 42
Candidate Starts for Forrest_124:
(20, 76962), (25, 76983), (27, 76992), (Start: 42 @77019 has 33 MA's), (52, 77049), (Start: 59 @77094 has 1 MA's), (111, 77319), (113, 77322), (126, 77370), (139, 77433),

Gene: Francesca_152 Start: 89986, Stop: 90429, Start Num: 39

Candidate Starts for Francesca_152:
(Start: 39 @89986 has 2 MA's), (101, 90241), (135, 90394), (146, 90418),

Gene: FrostedClock_117 Start: 91909, Stop: 92343, Start Num: 42
Candidate Starts for FrostedClock_117:
(Start: 42 @91909 has 33 MA's), (99, 92161), (111, 92215), (141, 92332),

Gene: IchabodCrane_184 Start: 95913, Stop: 96302, Start Num: 42
Candidate Starts for IchabodCrane_184:
(Start: 42 @95913 has 33 MA's), (100, 96138), (101, 96141), (134, 96285), (137, 96294),

Gene: Jada_120 Start: 75949, Stop: 76377, Start Num: 42
Candidate Starts for Jada_120:
(20, 75892), (25, 75913), (27, 75922), (Start: 42 @75949 has 33 MA's), (52, 75979), (Start: 59 @76024 has 1 MA's), (111, 76249), (113, 76252), (126, 76300), (139, 76363),

Gene: JimJam_195 Start: 97834, Stop: 98223, Start Num: 42
Candidate Starts for JimJam_195:
(Start: 42 @97834 has 33 MA's), (100, 98059), (101, 98062), (134, 98206), (137, 98215),

Gene: JimJam_152 Start: 87443, Stop: 87886, Start Num: 41
Candidate Starts for JimJam_152:
(5, 87317), (6, 87329), (8, 87338), (10, 87344), (23, 87401), (32, 87428), (Start: 41 @87443 has 21 MA's), (64, 87542), (111, 87749), (144, 87875),

Gene: JimJam_109 Start: 73736, Stop: 74164, Start Num: 41
Candidate Starts for JimJam_109:
(Start: 41 @73736 has 21 MA's), (61, 73817), (100, 73985), (111, 74039), (116, 74045), (145, 74159),

Gene: JonJames_21 Start: 7188, Stop: 7577, Start Num: 59
Candidate Starts for JonJames_21:
(12, 7032), (33, 7098), (Start: 59 @7188 has 1 MA's), (90, 7314), (128, 7476), (142, 7536),

Gene: KentuckyRacer_150 Start: 87011, Stop: 87454, Start Num: 41
Candidate Starts for KentuckyRacer_150:
(5, 86885), (6, 86897), (8, 86906), (10, 86912), (23, 86969), (32, 86996), (Start: 41 @87011 has 21 MA's), (64, 87110), (111, 87317), (144, 87443),

Gene: KentuckyRacer_193 Start: 97580, Stop: 97969, Start Num: 42
Candidate Starts for KentuckyRacer_193:
(Start: 42 @97580 has 33 MA's), (100, 97805), (101, 97808), (134, 97952), (137, 97961),

Gene: LeBruni_33 Start: 24490, Stop: 25041, Start Num: 49
Candidate Starts for LeBruni_33:
(Start: 49 @24490 has 4 MA's), (56, 24508), (72, 24601), (97, 24694), (100, 24727), (106, 24757), (113, 24784), (128, 24838), (151, 24916),

Gene: Leo04_177 Start: 96224, Stop: 96667, Start Num: 41
Candidate Starts for Leo04_177:
(Start: 41 @96224 has 21 MA's), (75, 96377), (79, 96398), (111, 96530), (120, 96554), (149, 96662),

Gene: Leo04_45 Start: 23281, Stop: 23682, Start Num: 42
Candidate Starts for Leo04_45:

(Start: 42 @23281 has 33 MA's), (57, 23326), (101, 23518),

Gene: Lewan_109 Start: 63302, Stop: 63781, Start Num: 40
Candidate Starts for Lewan_109:
(Start: 38 @63299 has 4 MA's), (Start: 40 @63302 has 4 MA's), (75, 63455), (90, 63500), (97, 63530), (111, 63608), (119, 63629),

Gene: LilhomieP_97 Start: 57511, Stop: 57948, Start Num: 29
Candidate Starts for LilhomieP_97:
(Start: 29 @57511 has 1 MA's), (Start: 38 @57526 has 4 MA's), (74, 57676), (101, 57781), (103, 57796), (111, 57829), (119, 57850), (130, 57913),

Gene: Marsus_237 Start: 116691, Stop: 117125, Start Num: 38
Candidate Starts for Marsus_237:
(Start: 38 @116691 has 4 MA's), (62, 116781), (101, 116952), (102, 116958), (122, 117033), (127, 117060),

Gene: Marsus_42 Start: 21346, Stop: 21747, Start Num: 42
Candidate Starts for Marsus_42:
(Start: 42 @21346 has 33 MA's), (45, 21358), (Start: 47 @21361 has 1 MA's), (57, 21391), (69, 21457), (88, 21520), (101, 21583),

Gene: Megatron06_4 Start: 2094, Stop: 2681, Start Num: 4
Candidate Starts for Megatron06_4:
(Start: 4 @2094 has 1 MA's), (7, 2112), (11, 2133), (15, 2154), (24, 2187), (Start: 38 @2220 has 4 MA's), (55, 2262), (101, 2490), (105, 2514), (116, 2541), (121, 2562),

Gene: Mildred21_168 Start: 90931, Stop: 91365, Start Num: 41
Candidate Starts for Mildred21_168:
(Start: 41 @90931 has 21 MA's), (101, 91192), (105, 91216), (111, 91243), (121, 91270), (127, 91297), (138, 91354),

Gene: Mildred21_142 Start: 85401, Stop: 85826, Start Num: 41
Candidate Starts for Mildred21_142:
(Start: 41 @85401 has 21 MA's), (90, 85602), (97, 85632), (100, 85659), (104, 85683), (105, 85686), (133, 85809),

Gene: Mugiwara_190 Start: 97213, Stop: 97602, Start Num: 42
Candidate Starts for Mugiwara_190:
(Start: 42 @97213 has 33 MA's), (100, 97438), (101, 97441), (134, 97585), (137, 97594),

Gene: Myrna_210 Start: 122711, Stop: 123163, Start Num: 39
Candidate Starts for Myrna_210:
(Start: 34 @122702 has 1 MA's), (Start: 39 @122711 has 2 MA's), (64, 122810), (103, 122984), (111, 123017), (130, 123101),

Gene: Navo_42 Start: 22093, Stop: 22494, Start Num: 42
Candidate Starts for Navo_42:
(Start: 42 @22093 has 33 MA's), (57, 22138), (68, 22201), (88, 22267), (101, 22330),

Gene: Neroxid_29 Start: 21456, Stop: 22004, Start Num: 49
Candidate Starts for Neroxid_29:

(Start: 49 @21456 has 4 MA's), (58, 21492), (72, 21567), (90, 21630), (97, 21660), (113, 21750), (119, 21765), (131, 21834), (143, 21867), (151, 21882), (156, 21915), (157, 21954),

Gene: Paradiddles_170 Start: 96596, Stop: 97039, Start Num: 41
Candidate Starts for Paradiddles_170:
(Start: 41 @96596 has 21 MA's), (75, 96749), (79, 96770), (111, 96902), (120, 96926), (149, 97034),

Gene: Patelgo_131 Start: 78593, Stop: 79012, Start Num: 41
Candidate Starts for Patelgo_131:
(Start: 41 @78593 has 21 MA's), (55, 78629), (111, 78893), (140, 79004),

Gene: PegLeg_102 Start: 57809, Stop: 58258, Start Num: 34
Candidate Starts for PegLeg_102:
(Start: 34 @57809 has 1 MA's), (84, 57995), (85, 57998), (90, 58010), (97, 58040), (130, 58205), (147, 58253),

Gene: Persimmon_40 Start: 21025, Stop: 21426, Start Num: 42
Candidate Starts for Persimmon_40:
(Start: 42 @21025 has 33 MA's), (57, 21070), (101, 21262),

Gene: Phrank15_33 Start: 23639, Stop: 24190, Start Num: 49
Candidate Starts for Phrank15_33:
(Start: 49 @23639 has 4 MA's), (56, 23657), (72, 23750), (97, 23843), (100, 23876), (106, 23906), (113, 23933), (128, 23987), (151, 24065),

Gene: PumpkinSpice_108 Start: 73788, Stop: 74195, Start Num: 41
Candidate Starts for PumpkinSpice_108:
(Start: 41 @73788 has 21 MA's), (89, 73965), (90, 73968), (97, 73992), (101, 74025), (111, 74073), (113, 74076), (123, 74103), (133, 74169), (141, 74190),

Gene: PynkPanther_99 Start: 72565, Stop: 73005, Start Num: 41
Candidate Starts for PynkPanther_99:
(37, 72559), (Start: 41 @72565 has 21 MA's), (60, 72643), (73, 72709), (97, 72784), (111, 72859), (128, 72919), (148, 72988), (152, 72997),

Gene: PynkPanther_33 Start: 15348, Stop: 14911, Start Num: 42
Candidate Starts for PynkPanther_33:
(Start: 42 @15348 has 33 MA's), (103, 15075), (107, 15060), (108, 15057),

Gene: Quaran19_166 Start: 91061, Stop: 91525, Start Num: 50
Candidate Starts for Quaran19_166:
(Start: 50 @91061 has 4 MA's), (71, 91169), (76, 91199), (100, 91301), (111, 91355), (113, 91358), (121, 91385), (155, 91514),

Gene: Raya_29 Start: 21456, Stop: 22004, Start Num: 49
Candidate Starts for Raya_29:
(Start: 49 @21456 has 4 MA's), (58, 21492), (72, 21567), (90, 21630), (97, 21660), (113, 21750), (119, 21765), (131, 21834), (143, 21867), (151, 21882), (156, 21915), (157, 21954),

Gene: Riptide_160 Start: 90983, Stop: 91441, Start Num: 42
Candidate Starts for Riptide_160:
(Start: 42 @90983 has 33 MA's), (121, 91313), (141, 91403), (153, 91427),

Gene: Sham_86 Start: 65422, Stop: 65853, Start Num: 41
Candidate Starts for Sham_86:
(Start: 41 @65422 has 21 MA's), (105, 65698), (111, 65725), (133, 65821), (138, 65836),

Gene: Sheng711_122 Start: 64965, Stop: 65390, Start Num: 40
Candidate Starts for Sheng711_122:
(Start: 40 @64965 has 4 MA's), (99, 65220), (100, 65223), (127, 65328),

Gene: Skinny_102 Start: 57955, Stop: 58377, Start Num: 38
Candidate Starts for Skinny_102:
(Start: 29 @57940 has 1 MA's), (Start: 38 @57955 has 4 MA's), (74, 58105), (101, 58210), (103, 58225), (111, 58258), (119, 58279), (130, 58342),

Gene: Skitty_26 Start: 20961, Stop: 21509, Start Num: 49
Candidate Starts for Skitty_26:
(Start: 49 @20961 has 4 MA's), (54, 20970), (65, 21042), (90, 21135), (97, 21165), (113, 21255), (128, 21309), (151, 21387),

Gene: Skyerus_29 Start: 21456, Stop: 22004, Start Num: 49
Candidate Starts for Skyerus_29:
(Start: 49 @21456 has 4 MA's), (58, 21492), (72, 21567), (90, 21630), (97, 21660), (113, 21750), (119, 21765), (131, 21834), (143, 21867), (151, 21882), (156, 21915), (157, 21954),

Gene: SpeedDemon_630 Start: 48321, Stop: 48788, Start Num: 22
Candidate Starts for SpeedDemon_630:
(1, 48000), (2, 48108), (3, 48117), (Start: 22 @48321 has 1 MA's), (51, 48393), (83, 48549), (86, 48558), (98, 48606), (111, 48672), (123, 48702),

Gene: Spilled_194 Start: 96766, Stop: 97155, Start Num: 42
Candidate Starts for Spilled_194:
(Start: 42 @96766 has 33 MA's), (100, 96991), (101, 96994), (134, 97138), (137, 97147),

Gene: Stewart25555_143 Start: 101011, Stop: 101472, Start Num: 42
Candidate Starts for Stewart25555_143:
(Start: 34 @100999 has 1 MA's), (Start: 42 @101011 has 33 MA's), (90, 101209), (117, 101332), (150, 101449),

Gene: Sushi23_176 Start: 96586, Stop: 97014, Start Num: 41
Candidate Starts for Sushi23_176:
(Start: 41 @96586 has 21 MA's), (75, 96739), (111, 96892), (120, 96916),

Gene: Talos_1 Start: 667, Stop: 230, Start Num: 46
Candidate Starts for Talos_1:
(Start: 46 @667 has 1 MA's), (80, 496), (96, 460), (101, 415), (133, 268),

Gene: TomSawyer_168 Start: 92075, Stop: 92539, Start Num: 50
Candidate Starts for TomSawyer_168:
(Start: 41 @92048 has 21 MA's), (Start: 50 @92075 has 4 MA's), (71, 92183), (76, 92213), (100, 92315), (111, 92369), (113, 92372), (121, 92399), (155, 92528),

Gene: TomSawyer_193 Start: 97685, Stop: 98074, Start Num: 42
Candidate Starts for TomSawyer_193:
(Start: 42 @97685 has 33 MA's), (100, 97910), (101, 97913), (134, 98057), (137, 98066),

Gene: TomSawyer_149 Start: 86660, Stop: 87088, Start Num: 47
Candidate Starts for TomSawyer_149:
(5, 86519), (6, 86531), (8, 86540), (10, 86546), (23, 86603), (32, 86630), (Start: 41 @86645 has 21 MA's), (Start: 47 @86660 has 1 MA's), (64, 86744), (81, 86828), (111, 86951), (137, 87062), (143, 87074),

Gene: Tribute_97 Start: 71749, Stop: 72189, Start Num: 41
Candidate Starts for Tribute_97:
(37, 71743), (Start: 41 @71749 has 21 MA's), (60, 71827), (73, 71893), (97, 71968), (111, 72043), (128, 72103), (148, 72172), (152, 72181),

Gene: TunaTartare_106 Start: 73259, Stop: 73636, Start Num: 42
Candidate Starts for TunaTartare_106:
(Start: 42 @73259 has 33 MA's), (57, 73304), (101, 73487), (121, 73559), (128, 73589),

Gene: TunaTartare_131 Start: 79206, Stop: 79715, Start Num: 14
Candidate Starts for TunaTartare_131:
(Start: 14 @79206 has 1 MA's), (Start: 41 @79278 has 21 MA's), (62, 79362), (103, 79554), (111, 79590), (117, 79605), (120, 79617), (124, 79632),

Gene: Vetrix_107 Start: 63521, Stop: 64000, Start Num: 40
Candidate Starts for Vetrix_107:
(31, 63506), (Start: 38 @63518 has 4 MA's), (Start: 40 @63521 has 4 MA's), (86, 63713), (97, 63749), (99, 63773), (111, 63827), (127, 63884), (130, 63911), (154, 63968),

Gene: WashU_98 Start: 72058, Stop: 72498, Start Num: 41
Candidate Starts for WashU_98:
(37, 72052), (Start: 41 @72058 has 21 MA's), (60, 72136), (73, 72202), (97, 72277), (111, 72352), (152, 72490),

Gene: Westy_93 Start: 66532, Stop: 66957, Start Num: 41
Candidate Starts for Westy_93:
(17, 66466), (23, 66490), (Start: 41 @66532 has 21 MA's), (90, 66724), (100, 66781), (111, 66835), (123, 66862),

Gene: WhereRU_41 Start: 21615, Stop: 22016, Start Num: 42
Candidate Starts for WhereRU_41:
(Start: 42 @21615 has 33 MA's), (57, 21660), (101, 21852),

Gene: WhereRU_32 Start: 14821, Stop: 14384, Start Num: 42
Candidate Starts for WhereRU_32:
(Start: 42 @14821 has 33 MA's), (103, 14548), (107, 14533), (108, 14530),

Gene: WhereRU_103 Start: 73218, Stop: 73643, Start Num: 41
Candidate Starts for WhereRU_103:
(Start: 41 @73218 has 21 MA's), (90, 73410), (94, 73419), (121, 73548),

Gene: Wipeout_181 Start: 97029, Stop: 97418, Start Num: 42
Candidate Starts for Wipeout_181:
(Start: 42 @97029 has 33 MA's), (100, 97254), (101, 97257), (134, 97401), (137, 97410),

Gene: Wofford_45 Start: 23131, Stop: 23520, Start Num: 42

Candidate Starts for Wofford_45:
(Start: 42 @23131 has 33 MA's), (45, 23143), (57, 23176), (69, 23242), (70, 23245), (88, 23293), (101, 23356), (125, 23446),

Gene: Wofford_171 Start: 96384, Stop: 96842, Start Num: 42
Candidate Starts for Wofford_171:
(Start: 42 @96384 has 33 MA's), (121, 96714), (141, 96804), (153, 96828),

Gene: Wofford_143 Start: 88534, Stop: 88977, Start Num: 41
Candidate Starts for Wofford_143:
(6, 88420), (8, 88429), (10, 88435), (23, 88492), (32, 88519), (Start: 41 @88534 has 21 MA's), (64, 88633), (111, 88840),