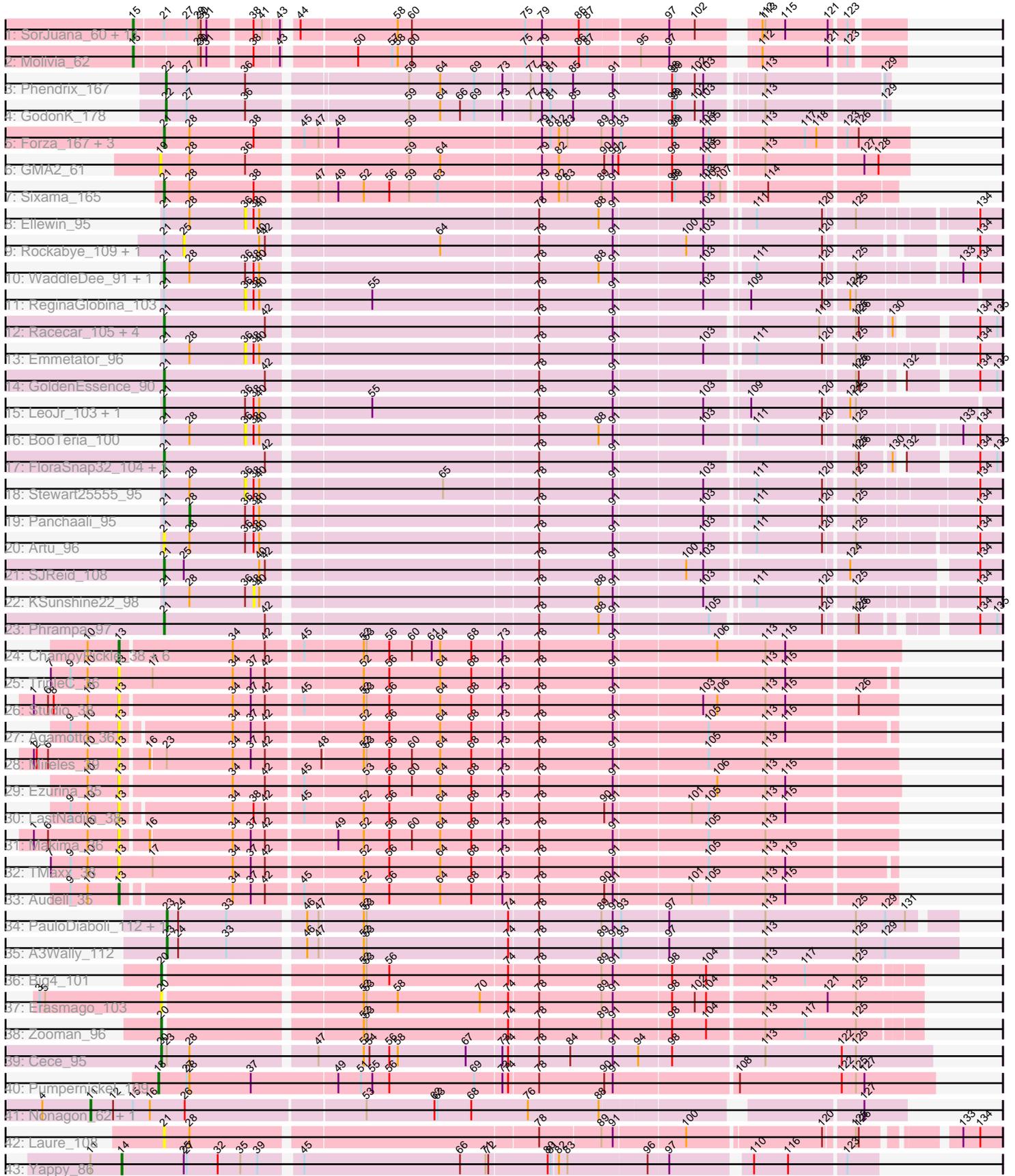# Pham 291118

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 291118 Report

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

Pham number 291118 has 73 members, 31 are drafts.

Phages represented in each track:
• Track 1 : SorJuana_60, Yeezus_60, Thunderclap_60, Boersma_63, Amavida_62, Amigo_61, Gorgeous_60, Rings_61, Heylee_63, Ichor_60, Anansi_60, Jaek_60
• Track 2 : Molivia_62
• Track 3 : Phendrix_167
• Track 4 : GodonK_178
• Track 5 : Forza_167, BlueNGold_163, Boopy_166, Mareelih_164
• Track 6 : GMA2_61
• Track 7 : Sixama_165
• Track 8 : Ellewin_95
• Track 9 : Rockabye_109, Chilliams_103
• Track 10 : WaddleDee_91, DunneganBoMo_93
• Track 11 : ReginaGlobina_103
• Track 12 : Racecar_105, FrostedClock_107, Talia1610_104, Mimi_104, Bloom_108
• Track 13 : Emmetator_96
• Track 14 : GoldenEssence_90
• Track 15 : LeoJr_103, Atuin_98
• Track 16 : BooTeria_100
• Track 17 : FloraSnap32_104, Patbob_103
• Track 18 : Stewart25555_95
• Track 19 : Panchaali_95
• Track 20 : Artu_96
• Track 21 : SJReid_108
• Track 22 : KSunshine22_98
• Track 23 : Phrampa_97
• Track 24 : ChamoyPickle_38, ChipsNGuac_37, Roberts_36, AnnabelLee_36, Gerri43_37, CardboardBox_37, Neuvillette_36
• Track 25 : TripleC_36
• Track 26 : Studio_38
• Track 27 : Agamotto_36
• Track 28 : Mireles_39
• Track 29 : Ezurina_35
• Track 30 : LastNadiia_38
• Track 31 : Makima_36
• Track 32 : TMaxx_38
• Track 33 : Audell_35
• Track 34 : PauloDiaboli_112, Dodo_112
• Track 35 : A3Wally_112

- Track 36 : Big4_101
- Track 37 : Erasmago_103
- Track 38 : Zooman_96
- Track 39 : Cece_95
- Track 40 : Pumpernickel_109
- Track 41 : Nonagon_62, Commonplace_63
- Track 42 : Laure_108
- Track 43 : Yappy_86

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

The start number called the most often in the published annotations is 21, it was called in 15 of the 42 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
- Artu_96, Atuin_98, Bloom_108, BlueNGold_163, Boopy_166, DunneganBoMo_93, FloraSnap32_104, Forza_167, FrostedClock_107, GoldenEssence_90, Laure_108, LeoJr_103, Mareelih_164, Mimi_104, Patbob_103, Phrampa_97, Racecar_105, SJReid_108, Sixama_165, Talia1610_104, WaddleDee_91,

Genes that have the "Most Annotated" start but do not call it:
- Amavida_62, Amigo_61, Anansi_60, Boersma_63, BooTeria_100, Chilliams_103, Ellewin_95, Emmetator_96, Gorgeous_60, Heylee_63, Ichor_60, Jaek_60, KSunshine22_98, Panchaali_95, ReginaGlobina_103, Rings_61, Rockabye_109, SorJuana_60, Stewart25555_95, Thunderclap_60, Yeezus_60,

Genes that do not have the "Most Annotated" start:
- A3Wally_112, Agamotto_36, AnnabelLee_36, Audell_35, Big4_101, CardboardBox_37, Cece_95, ChamoyPickle_38, ChipsNGuac_37, Commonplace_63, Dodo_112, Erasmago_103, Ezurina_35, GMA2_61, Gerri43_37, GodonK_178, LastNadiia_38, Makima_36, Mireles_39, Molivia_62, Neuvillette_36, Nonagon_62, PauloDiaboli_112, Phendrix_167, Pumpernickel_109, Roberts_36, Studio_38, TMaxx_38, TripleC_36, Yappy_86, Zooman_96,

Summary by start number:

Start 11:
- Found in 3 of 73 (4.1%) of genes in pham
- Manual Annotations of this start: 2 of 42
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Commonplace_63 (JD), Nonagon_62 (JD),

Start 13:
- Found in 16 of 73 (21.9%) of genes in pham
- Manual Annotations of this start: 2 of 42
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agamotto_36 (FR), AnnabelLee_36 (FR), Audell_35 (FR), CardboardBox_37 (FR), ChamoyPickle_38 (FR), ChipsNGuac_37 (FR), Ezurina_35 (FR), Gerri43_37 (FR), LastNadiia_38 (FR),

Makima_36 (FR), Mireles_39 (FR), Neuvillette_36 (FR), Roberts_36 (FR), Studio_38 (FR), TMaxx_38 (FR), TripleC_36 (FR),

Start 14:
• Found in 1 of 73 (1.4%) of genes in pham
• Manual Annotations of this start: 1 of 42
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Yappy_86 (singleton),

Start 15:
• Found in 15 of 73 (20.5%) of genes in pham
• Manual Annotations of this start: 13 of 42
• Called 86.7% of time when present
• Phage (with cluster) where this start called: Amavida_62 (AQ), Amigo_61 (AQ), Anansi_60 (AQ), Boersma_63 (AQ), Gorgeous_60 (AQ), Heylee_63 (AQ), Ichor_60 (AQ), Jaek_60 (AQ), Molivia_62 (AQ), Rings_61 (AQ), SorJuana_60 (AQ), Thunderclap_60 (AQ), Yeezus_60 (AQ),

Start 18:
• Found in 1 of 73 (1.4%) of genes in pham
• Manual Annotations of this start: 1 of 42
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Pumpernickel_109 (GD4),

Start 19:
• Found in 1 of 73 (1.4%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: GMA2_61 (DS),

Start 20:
• Found in 4 of 73 (5.5%) of genes in pham
• Manual Annotations of this start: 3 of 42
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Big4_101 (GD2), Cece_95 (GD3), Erasmago_103 (GD2), Zooman_96 (GD2),

Start 21:
• Found in 42 of 73 (57.5%) of genes in pham
• Manual Annotations of this start: 15 of 42
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Artu_96 (FC), Atuin_98 (FC), Bloom_108 (FC), BlueNGold_163 (DS), Boopy_166 (DS), DunneganBoMo_93 (FC), FloraSnap32_104 (FC), Forza_167 (DS), FrostedClock_107 (FC), GoldenEssence_90 (FC), Laure_108 (UNK), LeoJr_103 (FC), Mareelih_164 (DS), Mimi_104 (FC), Patbob_103 (FC), Phrampa_97 (FC), Racecar_105 (FC), SJReid_108 (FC), Sixama_165 (DS), Talia1610_104 (FC), WaddleDee_91 (FC),

Start 22:
• Found in 2 of 73 (2.7%) of genes in pham
• Manual Annotations of this start: 2 of 42
• Called 100.0% of time when present
• Phage (with cluster) where this start called: GodonK_178 (DK), Phendrix_167 (DK),

Start 23:
• Found in 5 of 73 (6.8%) of genes in pham
• Manual Annotations of this start: 2 of 42
• Called 60.0% of time when present
• Phage (with cluster) where this start called: A3Wally_112 (GD1), Dodo_112 (GD1), PauloDiaboli_112 (GD1),

Start 25:
• Found in 4 of 73 (5.5%) of genes in pham
• No Manual Annotations of this start.
• Called 50.0% of time when present
• Phage (with cluster) where this start called: Chilliams_103 (FC), Rockabye_109 (FC),

Start 28:
• Found in 18 of 73 (24.7%) of genes in pham
• Manual Annotations of this start: 1 of 42
• Called 5.6% of time when present
• Phage (with cluster) where this start called: Panchaali_95 (FC),

Start 36:
• Found in 15 of 73 (20.5%) of genes in pham
• No Manual Annotations of this start.
• Called 33.3% of time when present
• Phage (with cluster) where this start called: BooTeria_100 (FC), Ellewin_95 (FC), Emmetator_96 (FC), ReginaGlobina_103 (FC), Stewart25555_95 (FC),

Start 38:
• Found in 31 of 73 (42.5%) of genes in pham
• No Manual Annotations of this start.
• Called 3.2% of time when present
• Phage (with cluster) where this start called: KSunshine22_98 (FC),

Summary by clusters:

There are 12 clusters represented in this pham: GD1, FR, GD3, GD4, DK, GD2, AQ, FC, JD, singleton, UNK, DS,

Info for manual annotations of cluster AQ:
•Start number 15 was manually annotated 13 times for cluster AQ.

Info for manual annotations of cluster DK:
•Start number 22 was manually annotated 2 times for cluster DK.

Info for manual annotations of cluster DS:
•Start number 21 was manually annotated 5 times for cluster DS.

Info for manual annotations of cluster FC:
•Start number 21 was manually annotated 10 times for cluster FC.
•Start number 28 was manually annotated 1 time for cluster FC.

Info for manual annotations of cluster FR:

•Start number 13 was manually annotated 2 times for cluster FR.

Info for manual annotations of cluster GD1:
•Start number 23 was manually annotated 2 times for cluster GD1.

Info for manual annotations of cluster GD2:
•Start number 20 was manually annotated 2 times for cluster GD2.

Info for manual annotations of cluster GD3:
•Start number 20 was manually annotated 1 time for cluster GD3.

Info for manual annotations of cluster GD4:
•Start number 18 was manually annotated 1 time for cluster GD4.

Info for manual annotations of cluster JD:
•Start number 11 was manually annotated 2 times for cluster JD.

Gene Information:

Gene: A3Wally_112 Start: 76409, Stop: 75603, Start Num: 23
Candidate Starts for A3Wally_112:
(Start: 23 @76409 has 2 MA's), (24, 76397), (33, 76346), (46, 76274), (47, 76262), (52, 76217), (53, 76214), (74, 76067), (78, 76037), (89, 75971), (91, 75959), (93, 75950), (97, 75902), (113, 75806), (125, 75710), (129, 75680),

Gene: Agamotto_36 Start: 26402, Stop: 25623, Start Num: 13
Candidate Starts for Agamotto_36:
(9, 26453), (10, 26435), (Start: 13 @26402 has 2 MA's), (34, 26294), (37, 26276), (42, 26261), (52, 26165), (56, 26138), (64, 26084), (68, 26051), (73, 26021), (78, 25985), (91, 25907), (105, 25811), (113, 25751), (115, 25730),

Gene: Amavida_62 Start: 40997, Stop: 40257, Start Num: 15
Candidate Starts for Amavida_62:
(Start: 15 @40997 has 13 MA's), (Start: 21 @40967 has 15 MA's), (27, 40943), (29, 40931), (30, 40928), (31, 40922), (38, 40880), (41, 40871), (43, 40856), (44, 40847), (58, 40748), (60, 40733), (75, 40613), (79, 40595), (86, 40556), (87, 40547), (97, 40466), (102, 40439), (112, 40394), (113, 40391), (115, 40370), (121, 40325), (123, 40310),

Gene: Amigo_61 Start: 41212, Stop: 40472, Start Num: 15
Candidate Starts for Amigo_61:
(Start: 15 @41212 has 13 MA's), (Start: 21 @41182 has 15 MA's), (27, 41158), (29, 41146), (30, 41143), (31, 41137), (38, 41095), (41, 41086), (43, 41071), (44, 41062), (58, 40963), (60, 40948), (75, 40828), (79, 40810), (86, 40771), (87, 40762), (97, 40681), (102, 40654), (112, 40609), (113, 40606), (115, 40585), (121, 40540), (123, 40525),

Gene: Anansi_60 Start: 40819, Stop: 40079, Start Num: 15
Candidate Starts for Anansi_60:
(Start: 15 @40819 has 13 MA's), (Start: 21 @40789 has 15 MA's), (27, 40765), (29, 40753), (30, 40750), (31, 40744), (38, 40702), (41, 40693), (43, 40678), (44, 40669), (58, 40570), (60, 40555), (75, 40435), (79, 40417), (86, 40378), (87, 40369), (97, 40288), (102, 40261), (112, 40216), (113, 40213),

(115, 40192), (121, 40147), (123, 40132),

Gene: AnnabelLee_36 Start: 23600, Stop: 22806, Start Num: 13
Candidate Starts for AnnabelLee_36:
(10, 23633), (Start: 13 @23600 has 2 MA's), (34, 23486), (42, 23453), (45, 23417), (52, 23357), (53, 23354), (56, 23330), (60, 23306), (61, 23285), (64, 23276), (68, 23243), (73, 23213), (78, 23177), (91, 23099), (106, 22994), (113, 22943), (115, 22922),

Gene: Artu_96 Start: 80843, Stop: 81661, Start Num: 21
Candidate Starts for Artu_96:
(Start: 21 @80843 has 15 MA's), (Start: 28 @80870 has 1 MA's), (36, 80927), (38, 80936), (40, 80942), (78, 81218), (91, 81296), (103, 81386), (111, 81431), (120, 81500), (125, 81527), (134, 81638),

Gene: Atuin_98 Start: 84308, Stop: 85141, Start Num: 21
Candidate Starts for Atuin_98:
(Start: 21 @84308 has 15 MA's), (36, 84392), (38, 84401), (40, 84407), (55, 84512), (78, 84683), (91, 84761), (103, 84851), (109, 84893), (120, 84968), (124, 84989), (125, 84995),

Gene: Audell_35 Start: 25989, Stop: 25204, Start Num: 13
Candidate Starts for Audell_35:
(9, 26040), (10, 26022), (Start: 13 @25989 has 2 MA's), (34, 25881), (37, 25863), (42, 25848), (45, 25812), (52, 25752), (56, 25725), (64, 25671), (68, 25638), (73, 25608), (78, 25572), (90, 25503), (91, 25494), (101, 25416), (105, 25398), (113, 25338), (115, 25317),

Gene: Big4_101 Start: 75498, Stop: 74737, Start Num: 20
Candidate Starts for Big4_101:
(Start: 20 @75498 has 3 MA's), (52, 75306), (53, 75303), (56, 75279), (74, 75156), (78, 75126), (89, 75060), (91, 75048), (98, 74988), (104, 74952), (113, 74895), (117, 74853), (125, 74799),

Gene: Bloom_108 Start: 84483, Stop: 85292, Start Num: 21
Candidate Starts for Bloom_108:
(Start: 21 @84483 has 15 MA's), (42, 84588), (78, 84858), (91, 84936), (119, 85137), (125, 85167), (126, 85170), (130, 85200), (134, 85269), (135, 85287),

Gene: BlueNGold_163 Start: 93500, Stop: 92757, Start Num: 21
Candidate Starts for BlueNGold_163:
(Start: 21 @93500 has 15 MA's), (Start: 28 @93473 has 1 MA's), (38, 93407), (45, 93365), (47, 93350), (49, 93332), (59, 93257), (79, 93122), (81, 93113), (82, 93104), (83, 93095), (89, 93059), (91, 93047), (93, 93038), (98, 92987), (99, 92984), (103, 92954), (105, 92948), (113, 92900), (117, 92858), (118, 92846), (123, 92819), (126, 92807),

Gene: Boersma_63 Start: 41212, Stop: 40472, Start Num: 15
Candidate Starts for Boersma_63:
(Start: 15 @41212 has 13 MA's), (Start: 21 @41182 has 15 MA's), (27, 41158), (29, 41146), (30, 41143), (31, 41137), (38, 41095), (41, 41086), (43, 41071), (44, 41062), (58, 40963), (60, 40948), (75, 40828), (79, 40810), (86, 40771), (87, 40762), (97, 40681), (102, 40654), (112, 40609), (113, 40606), (115, 40585), (121, 40540), (123, 40525),

Gene: BooTeria_100 Start: 81040, Stop: 81774, Start Num: 36
Candidate Starts for BooTeria_100:
(Start: 21 @80956 has 15 MA's), (Start: 28 @80983 has 1 MA's), (36, 81040), (38, 81049), (40, 81055), (78, 81331), (88, 81394), (91, 81409), (103, 81499), (111, 81544), (120, 81613), (125, 81640), (133, 81736), (134, 81751),

Gene: Boopy_166 Start: 93511, Stop: 92768, Start Num: 21
Candidate Starts for Boopy_166:
(Start: 21 @93511 has 15 MA's), (Start: 28 @93484 has 1 MA's), (38, 93418), (45, 93376), (47, 93361), (49, 93343), (59, 93268), (79, 93133), (81, 93124), (82, 93115), (83, 93106), (89, 93070), (91, 93058), (93, 93049), (98, 92998), (99, 92995), (103, 92965), (105, 92959), (113, 92911), (117, 92869), (118, 92857), (123, 92830), (126, 92818),

Gene: CardboardBox_37 Start: 23603, Stop: 22809, Start Num: 13
Candidate Starts for CardboardBox_37:
(10, 23636), (Start: 13 @23603 has 2 MA's), (34, 23489), (42, 23456), (45, 23420), (52, 23360), (53, 23357), (56, 23333), (60, 23309), (61, 23288), (64, 23279), (68, 23246), (73, 23216), (78, 23180), (91, 23102), (106, 22997), (113, 22946), (115, 22925),

Gene: Cece_95 Start: 78538, Stop: 77750, Start Num: 20
Candidate Starts for Cece_95:
(Start: 20 @78538 has 3 MA's), (Start: 23 @78532 has 2 MA's), (Start: 28 @78508 has 1 MA's), (47, 78385), (52, 78337), (54, 78331), (56, 78310), (58, 78301), (67, 78229), (73, 78193), (74, 78187), (78, 78157), (84, 78124), (91, 78079), (94, 78052), (98, 78019), (113, 77926), (122, 77845), (125, 77830),

Gene: ChamoyPickle_38 Start: 24143, Stop: 23349, Start Num: 13
Candidate Starts for ChamoyPickle_38:
(10, 24176), (Start: 13 @24143 has 2 MA's), (34, 24029), (42, 23996), (45, 23960), (52, 23900), (53, 23897), (56, 23873), (60, 23849), (61, 23828), (64, 23819), (68, 23786), (73, 23756), (78, 23720), (91, 23642), (106, 23537), (113, 23486), (115, 23465),

Gene: Chilliams_103 Start: 77303, Stop: 78091, Start Num: 25
Candidate Starts for Chilliams_103:
(Start: 21 @77282 has 15 MA's), (25, 77303), (40, 77381), (42, 77387), (64, 77558), (78, 77657), (91, 77735), (100, 77807), (103, 77825), (120, 77942), (134, 78068),

Gene: ChipsNGuac_37 Start: 23603, Stop: 22809, Start Num: 13
Candidate Starts for ChipsNGuac_37:
(10, 23636), (Start: 13 @23603 has 2 MA's), (34, 23489), (42, 23456), (45, 23420), (52, 23360), (53, 23357), (56, 23333), (60, 23309), (61, 23288), (64, 23279), (68, 23246), (73, 23216), (78, 23180), (91, 23102), (106, 22997), (113, 22946), (115, 22925),

Gene: Commonplace_63 Start: 41846, Stop: 41034, Start Num: 11
Candidate Starts for Commonplace_63:
(4, 41897), (Start: 11 @41846 has 2 MA's), (12, 41822), (Start: 15 @41801 has 13 MA's), (16, 41783), (26, 41747), (53, 41564), (62, 41492), (63, 41489), (68, 41456), (76, 41396), (88, 41321), (127, 41078),

Gene: Dodo_112 Start: 76719, Stop: 75925, Start Num: 23
Candidate Starts for Dodo_112:
(Start: 23 @76719 has 2 MA's), (24, 76707), (33, 76656), (46, 76584), (47, 76572), (52, 76527), (53, 76524), (74, 76377), (78, 76347), (89, 76281), (91, 76269), (93, 76260), (97, 76212), (113, 76116), (125, 76020), (129, 75990), (131, 75969),

Gene: DunneganBoMo_93 Start: 80225, Stop: 81043, Start Num: 21
Candidate Starts for DunneganBoMo_93:
(Start: 21 @80225 has 15 MA's), (Start: 28 @80252 has 1 MA's), (36, 80309), (38, 80318), (40, 80324), (78, 80600), (88, 80663), (91, 80678), (103, 80768), (111, 80813), (120, 80882), (125, 80909), (133, 81005), (134, 81020),

Gene: Ellewin_95 Start: 79720, Stop: 80454, Start Num: 36
Candidate Starts for Ellewin_95:
(Start: 21 @79636 has 15 MA's), (Start: 28 @79663 has 1 MA's), (36, 79720), (38, 79729), (40, 79735), (78, 80011), (88, 80074), (91, 80089), (103, 80179), (111, 80224), (120, 80293), (125, 80320), (134, 80431),

Gene: Emmetator_96 Start: 80264, Stop: 80998, Start Num: 36
Candidate Starts for Emmetator_96:
(Start: 21 @80180 has 15 MA's), (Start: 28 @80207 has 1 MA's), (36, 80264), (38, 80273), (40, 80279), (78, 80555), (91, 80633), (103, 80723), (111, 80768), (120, 80837), (125, 80864), (134, 80975),

Gene: Erasmago_103 Start: 73184, Stop: 72417, Start Num: 20
Candidate Starts for Erasmago_103:
(3, 73313), (5, 73307), (Start: 20 @73184 has 3 MA's), (52, 72992), (53, 72989), (58, 72956), (70, 72869), (74, 72842), (78, 72812), (89, 72746), (91, 72734), (98, 72674), (102, 72650), (104, 72638), (113, 72581), (121, 72515), (125, 72485),

Gene: Ezurina_35 Start: 24660, Stop: 23866, Start Num: 13
Candidate Starts for Ezurina_35:
(10, 24693), (Start: 13 @24660 has 2 MA's), (34, 24546), (42, 24513), (45, 24477), (53, 24414), (56, 24390), (60, 24366), (64, 24336), (68, 24303), (73, 24273), (78, 24237), (91, 24159), (106, 24054), (113, 24003), (115, 23982),

Gene: FloraSnap32_104 Start: 83380, Stop: 84189, Start Num: 21
Candidate Starts for FloraSnap32_104:
(Start: 21 @83380 has 15 MA's), (42, 83485), (78, 83755), (91, 83833), (125, 84064), (126, 84067), (130, 84097), (132, 84100), (134, 84166), (135, 84184),

Gene: Forza_167 Start: 93428, Stop: 92685, Start Num: 21
Candidate Starts for Forza_167:
(Start: 21 @93428 has 15 MA's), (Start: 28 @93401 has 1 MA's), (38, 93335), (45, 93293), (47, 93278), (49, 93260), (59, 93185), (79, 93050), (81, 93041), (82, 93032), (83, 93023), (89, 92987), (91, 92975), (93, 92966), (98, 92915), (99, 92912), (103, 92882), (105, 92876), (113, 92828), (117, 92786), (118, 92774), (123, 92747), (126, 92735),

Gene: FrostedClock_107 Start: 84680, Stop: 85489, Start Num: 21
Candidate Starts for FrostedClock_107:
(Start: 21 @84680 has 15 MA's), (42, 84785), (78, 85055), (91, 85133), (119, 85334), (125, 85364), (126, 85367), (130, 85397), (134, 85466), (135, 85484),

Gene: GMA2_61 Start: 64314, Stop: 63565, Start Num: 19
Candidate Starts for GMA2_61:
(19, 64314), (Start: 28 @64284 has 1 MA's), (36, 64227), (59, 64068), (64, 64035), (79, 63933), (82, 63915), (90, 63867), (91, 63858), (92, 63852), (98, 63798), (103, 63765), (105, 63759), (113, 63711), (127, 63612), (128, 63597),

Gene: Gerri43_37 Start: 23603, Stop: 22809, Start Num: 13
Candidate Starts for Gerri43_37:
(10, 23636), (Start: 13 @23603 has 2 MA's), (34, 23489), (42, 23456), (45, 23420), (52, 23360), (53, 23357), (56, 23333), (60, 23309), (61, 23288), (64, 23279), (68, 23246), (73, 23216), (78, 23180), (91, 23102), (106, 22997), (113, 22946), (115, 22925),

Gene: GodonK_178 Start: 89500, Stop: 88790, Start Num: 22
Candidate Starts for GodonK_178:
(Start: 22 @89500 has 2 MA's), (27, 89479), (36, 89419), (59, 89263), (64, 89230), (66, 89209), (69, 89194), (73, 89167), (77, 89140), (79, 89128), (81, 89119), (85, 89095), (91, 89053), (98, 88996), (99, 88993), (102, 88972), (103, 88963), (113, 88912), (129, 88795),

Gene: GoldenEssence_90 Start: 78275, Stop: 79084, Start Num: 21
Candidate Starts for GoldenEssence_90:
(Start: 21 @78275 has 15 MA's), (42, 78380), (78, 78650), (91, 78728), (125, 78959), (126, 78962), (132, 78995), (134, 79061), (135, 79079),

Gene: Gorgeous_60 Start: 40819, Stop: 40079, Start Num: 15
Candidate Starts for Gorgeous_60:
(Start: 15 @40819 has 13 MA's), (Start: 21 @40789 has 15 MA's), (27, 40765), (29, 40753), (30, 40750), (31, 40744), (38, 40702), (41, 40693), (43, 40678), (44, 40669), (58, 40570), (60, 40555), (75, 40435), (79, 40417), (86, 40378), (87, 40369), (97, 40288), (102, 40261), (112, 40216), (113, 40213), (115, 40192), (121, 40147), (123, 40132),

Gene: Heylee_63 Start: 40997, Stop: 40257, Start Num: 15
Candidate Starts for Heylee_63:
(Start: 15 @40997 has 13 MA's), (Start: 21 @40967 has 15 MA's), (27, 40943), (29, 40931), (30, 40928), (31, 40922), (38, 40880), (41, 40871), (43, 40856), (44, 40847), (58, 40748), (60, 40733), (75, 40613), (79, 40595), (86, 40556), (87, 40547), (97, 40466), (102, 40439), (112, 40394), (113, 40391), (115, 40370), (121, 40325), (123, 40310),

Gene: Ichor_60 Start: 41212, Stop: 40472, Start Num: 15
Candidate Starts for Ichor_60:
(Start: 15 @41212 has 13 MA's), (Start: 21 @41182 has 15 MA's), (27, 41158), (29, 41146), (30, 41143), (31, 41137), (38, 41095), (41, 41086), (43, 41071), (44, 41062), (58, 40963), (60, 40948), (75, 40828), (79, 40810), (86, 40771), (87, 40762), (97, 40681), (102, 40654), (112, 40609), (113, 40606), (115, 40585), (121, 40540), (123, 40525),

Gene: Jaek_60 Start: 41212, Stop: 40472, Start Num: 15
Candidate Starts for Jaek_60:
(Start: 15 @41212 has 13 MA's), (Start: 21 @41182 has 15 MA's), (27, 41158), (29, 41146), (30, 41143), (31, 41137), (38, 41095), (41, 41086), (43, 41071), (44, 41062), (58, 40963), (60, 40948), (75, 40828), (79, 40810), (86, 40771), (87, 40762), (97, 40681), (102, 40654), (112, 40609), (113, 40606), (115, 40585), (121, 40540), (123, 40525),

Gene: KSunshine22_98 Start: 81330, Stop: 82055, Start Num: 38
Candidate Starts for KSunshine22_98:
(Start: 21 @81237 has 15 MA's), (Start: 28 @81264 has 1 MA's), (36, 81321), (38, 81330), (40, 81336), (78, 81612), (88, 81675), (91, 81690), (103, 81780), (111, 81825), (120, 81894), (125, 81921), (134, 82032),

Gene: LastNadiia_38 Start: 25948, Stop: 25163, Start Num: 13
Candidate Starts for LastNadiia_38:
(9, 25999), (10, 25981), (Start: 13 @25948 has 2 MA's), (34, 25840), (38, 25819), (42, 25807), (45, 25771), (52, 25711), (56, 25684), (64, 25630), (68, 25597), (73, 25567), (78, 25531), (90, 25462), (91, 25453), (101, 25375), (105, 25357), (113, 25297), (115, 25276),

Gene: Laure_108 Start: 77202, Stop: 78011, Start Num: 21
Candidate Starts for Laure_108:

(Start: 21 @77202 has 15 MA's), (Start: 28 @77229 has 1 MA's), (78, 77577), (89, 77640), (91, 77652), (100, 77724), (120, 77859), (125, 77886), (126, 77889), (133, 77970), (134, 77988),

Gene: LeoJr_103 Start: 84544, Stop: 85377, Start Num: 21
Candidate Starts for LeoJr_103:
(Start: 21 @84544 has 15 MA's), (36, 84628), (38, 84637), (40, 84643), (55, 84748), (78, 84919), (91, 84997), (103, 85087), (109, 85129), (120, 85204), (124, 85225), (125, 85231),

Gene: Makima_36 Start: 25073, Stop: 24285, Start Num: 13
Candidate Starts for Makima_36:
(1, 25163), (6, 25148), (10, 25106), (Start: 13 @25073 has 2 MA's), (16, 25046), (34, 24962), (37, 24944), (42, 24929), (49, 24860), (52, 24833), (56, 24806), (60, 24782), (64, 24752), (68, 24719), (73, 24689), (78, 24653), (91, 24575), (105, 24479), (113, 24419),

Gene: Mareelih_164 Start: 92946, Stop: 92203, Start Num: 21
Candidate Starts for Mareelih_164:
(Start: 21 @92946 has 15 MA's), (Start: 28 @92919 has 1 MA's), (38, 92853), (45, 92811), (47, 92796), (49, 92778), (59, 92703), (79, 92568), (81, 92559), (82, 92550), (83, 92541), (89, 92505), (91, 92493), (93, 92484), (98, 92433), (99, 92430), (103, 92400), (105, 92394), (113, 92346), (117, 92304), (118, 92292), (123, 92265), (126, 92253),

Gene: Mimi_104 Start: 83830, Stop: 84639, Start Num: 21
Candidate Starts for Mimi_104:
(Start: 21 @83830 has 15 MA's), (42, 83935), (78, 84205), (91, 84283), (119, 84484), (125, 84514), (126, 84517), (130, 84547), (134, 84616), (135, 84634),

Gene: Mireles_39 Start: 24631, Stop: 23843, Start Num: 13
Candidate Starts for Mireles_39:
(1, 24721), (2, 24718), (6, 24706), (10, 24664), (Start: 13 @24631 has 2 MA's), (16, 24604), (Start: 23 @24589 has 2 MA's), (34, 24520), (37, 24502), (42, 24487), (48, 24433), (52, 24391), (53, 24388), (56, 24364), (60, 24340), (64, 24310), (68, 24277), (73, 24247), (78, 24211), (91, 24133), (105, 24037), (113, 23977),

Gene: Molivia_62 Start: 39615, Stop: 38878, Start Num: 15
Candidate Starts for Molivia_62:
(Start: 15 @39615 has 13 MA's), (29, 39552), (30, 39549), (31, 39543), (38, 39501), (43, 39477), (50, 39411), (57, 39375), (58, 39369), (60, 39354), (75, 39234), (79, 39216), (86, 39177), (87, 39168), (95, 39117), (97, 39087), (112, 39015), (121, 38946), (123, 38931),

Gene: Neuvillette_36 Start: 23603, Stop: 22809, Start Num: 13
Candidate Starts for Neuvillette_36:
(10, 23636), (Start: 13 @23603 has 2 MA's), (34, 23489), (42, 23456), (45, 23420), (52, 23360), (53, 23357), (56, 23333), (60, 23309), (61, 23288), (64, 23279), (68, 23246), (73, 23216), (78, 23180), (91, 23102), (106, 22997), (113, 22946), (115, 22925),

Gene: Nonagon_62 Start: 41552, Stop: 40740, Start Num: 11
Candidate Starts for Nonagon_62:
(4, 41603), (Start: 11 @41552 has 2 MA's), (12, 41528), (Start: 15 @41507 has 13 MA's), (16, 41489), (26, 41453), (53, 41270), (62, 41198), (63, 41195), (68, 41162), (76, 41102), (88, 41027), (127, 40784),

Gene: Panchaali_95 Start: 81223, Stop: 82020, Start Num: 28
Candidate Starts for Panchaali_95:

(Start: 21 @81196 has 15 MA's), (Start: 28 @81223 has 1 MA's), (36, 81280), (38, 81289), (40, 81295), (78, 81571), (91, 81649), (103, 81739), (111, 81784), (120, 81853), (125, 81880), (134, 81997),

Gene: Patbob_103 Start: 84565, Stop: 85374, Start Num: 21
Candidate Starts for Patbob_103:
(Start: 21 @84565 has 15 MA's), (42, 84670), (78, 84940), (91, 85018), (125, 85249), (126, 85252), (130, 85282), (132, 85285), (134, 85351), (135, 85369),

Gene: PauloDiaboli_112 Start: 75754, Stop: 74960, Start Num: 23
Candidate Starts for PauloDiaboli_112:
(Start: 23 @75754 has 2 MA's), (24, 75742), (33, 75691), (46, 75619), (47, 75607), (52, 75562), (53, 75559), (74, 75412), (78, 75382), (89, 75316), (91, 75304), (93, 75295), (97, 75247), (113, 75151), (125, 75055), (129, 75025), (131, 75004),

Gene: Phendrix_167 Start: 88597, Stop: 87887, Start Num: 22
Candidate Starts for Phendrix_167:
(Start: 22 @88597 has 2 MA's), (27, 88576), (36, 88516), (59, 88360), (64, 88327), (69, 88291), (73, 88264), (77, 88237), (79, 88225), (81, 88216), (85, 88192), (91, 88150), (98, 88093), (99, 88090), (102, 88069), (103, 88060), (113, 88009), (129, 87892),

Gene: Phrampa_97 Start: 85968, Stop: 86774, Start Num: 21
Candidate Starts for Phrampa_97:
(Start: 21 @85968 has 15 MA's), (42, 86073), (78, 86343), (88, 86406), (91, 86421), (105, 86517), (120, 86625), (125, 86652), (126, 86655), (134, 86751), (135, 86769),

Gene: Pumpernickel_109 Start: 77313, Stop: 76510, Start Num: 18
Candidate Starts for Pumpernickel_109:
(Start: 18 @77313 has 1 MA's), (27, 77283), (Start: 28 @77280 has 1 MA's), (37, 77217), (49, 77127), (51, 77103), (55, 77091), (56, 77073), (69, 76983), (73, 76956), (74, 76950), (78, 76920), (90, 76851), (91, 76842), (108, 76716), (122, 76608), (125, 76593), (127, 76584),

Gene: Racecar_105 Start: 84483, Stop: 85292, Start Num: 21
Candidate Starts for Racecar_105:
(Start: 21 @84483 has 15 MA's), (42, 84588), (78, 84858), (91, 84936), (119, 85137), (125, 85167), (126, 85170), (130, 85200), (134, 85269), (135, 85287),

Gene: ReginaGlobina_103 Start: 84193, Stop: 84942, Start Num: 36
Candidate Starts for ReginaGlobina_103:
(Start: 21 @84109 has 15 MA's), (36, 84193), (38, 84202), (40, 84208), (55, 84313), (78, 84484), (91, 84562), (103, 84652), (109, 84694), (120, 84769), (124, 84790), (125, 84796),

Gene: Rings_61 Start: 41260, Stop: 40520, Start Num: 15
Candidate Starts for Rings_61:
(Start: 15 @41260 has 13 MA's), (Start: 21 @41230 has 15 MA's), (27, 41206), (29, 41194), (30, 41191), (31, 41185), (38, 41143), (41, 41134), (43, 41119), (44, 41110), (58, 41011), (60, 40996), (75, 40876), (79, 40858), (86, 40819), (87, 40810), (97, 40729), (102, 40702), (112, 40657), (113, 40654), (115, 40633), (121, 40588), (123, 40573),

Gene: Roberts_36 Start: 23603, Stop: 22809, Start Num: 13
Candidate Starts for Roberts_36:
(10, 23636), (Start: 13 @23603 has 2 MA's), (34, 23489), (42, 23456), (45, 23420), (52, 23360), (53, 23357), (56, 23333), (60, 23309), (61, 23288), (64, 23279), (68, 23246), (73, 23216), (78, 23180), (91, 23102), (106, 22997), (113, 22946), (115, 22925),

Gene: Rockabye_109 Start: 77741, Stop: 78529, Start Num: 25
Candidate Starts for Rockabye_109:
(Start: 21 @77720 has 15 MA's), (25, 77741), (40, 77819), (42, 77825), (64, 77996), (78, 78095), (91, 78173), (100, 78245), (103, 78263), (120, 78380), (134, 78506),

Gene: SJReid_108 Start: 76738, Stop: 77565, Start Num: 21
Candidate Starts for SJReid_108:
(Start: 21 @76738 has 15 MA's), (25, 76759), (40, 76837), (42, 76843), (78, 77113), (91, 77191), (100, 77263), (103, 77281), (124, 77419), (134, 77542),

Gene: Sixama_165 Start: 92948, Stop: 92217, Start Num: 21
Candidate Starts for Sixama_165:
(Start: 21 @92948 has 15 MA's), (Start: 28 @92921 has 1 MA's), (38, 92855), (47, 92798), (49, 92780), (52, 92753), (56, 92726), (59, 92705), (63, 92675), (79, 92570), (82, 92552), (83, 92543), (89, 92507), (91, 92495), (98, 92435), (99, 92432), (103, 92402), (105, 92396), (107, 92384), (114, 92345),

Gene: SorJuana_60 Start: 40819, Stop: 40079, Start Num: 15
Candidate Starts for SorJuana_60:
(Start: 15 @40819 has 13 MA's), (Start: 21 @40789 has 15 MA's), (27, 40765), (29, 40753), (30, 40750), (31, 40744), (38, 40702), (41, 40693), (43, 40678), (44, 40669), (58, 40570), (60, 40555), (75, 40435), (79, 40417), (86, 40378), (87, 40369), (97, 40288), (102, 40261), (112, 40216), (113, 40213), (115, 40192), (121, 40147), (123, 40132),

Gene: Stewart25555_95 Start: 81038, Stop: 81781, Start Num: 36
Candidate Starts for Stewart25555_95:
(Start: 21 @80954 has 15 MA's), (Start: 28 @80981 has 1 MA's), (36, 81038), (38, 81047), (40, 81053), (65, 81233), (78, 81329), (91, 81407), (103, 81497), (111, 81545), (120, 81614), (125, 81641), (134, 81758),

Gene: Studio_38 Start: 24966, Stop: 24175, Start Num: 13
Candidate Starts for Studio_38:
(1, 25056), (6, 25041), (8, 25035), (10, 24999), (Start: 13 @24966 has 2 MA's), (34, 24852), (37, 24834), (42, 24819), (45, 24783), (52, 24723), (53, 24720), (56, 24696), (64, 24642), (68, 24609), (73, 24579), (78, 24543), (91, 24465), (103, 24375), (106, 24360), (113, 24309), (115, 24288), (126, 24216),

Gene: TMaxx_38 Start: 24246, Stop: 23455, Start Num: 13
Candidate Starts for TMaxx_38:
(7, 24318), (9, 24297), (10, 24279), (Start: 13 @24246 has 2 MA's), (17, 24210), (34, 24126), (37, 24108), (42, 24093), (52, 23997), (56, 23970), (64, 23916), (68, 23883), (73, 23853), (78, 23817), (91, 23739), (105, 23643), (113, 23583), (115, 23562),

Gene: Talia1610_104 Start: 83848, Stop: 84657, Start Num: 21
Candidate Starts for Talia1610_104:
(Start: 21 @83848 has 15 MA's), (42, 83953), (78, 84223), (91, 84301), (119, 84502), (125, 84532), (126, 84535), (130, 84565), (134, 84634), (135, 84652),

Gene: Thunderclap_60 Start: 41241, Stop: 40501, Start Num: 15
Candidate Starts for Thunderclap_60:
(Start: 15 @41241 has 13 MA's), (Start: 21 @41211 has 15 MA's), (27, 41187), (29, 41175), (30, 41172), (31, 41166), (38, 41124), (41, 41115), (43, 41100), (44, 41091), (58, 40992), (60, 40977), (75, 40857), (79, 40839), (86, 40800), (87, 40791), (97, 40710), (102, 40683), (112, 40638), (113, 40635),

(115, 40614), (121, 40569), (123, 40554),

Gene: TripleC_36 Start: 26597, Stop: 25806, Start Num: 13
Candidate Starts for TripleC_36:
(7, 26669), (9, 26648), (10, 26630), (Start: 13 @26597 has 2 MA's), (17, 26561), (34, 26477), (37, 26459), (42, 26444), (52, 26348), (56, 26321), (64, 26267), (68, 26234), (73, 26204), (78, 26168), (91, 26090), (113, 25934), (115, 25913),

Gene: WaddleDee_91 Start: 79411, Stop: 80229, Start Num: 21
Candidate Starts for WaddleDee_91:
(Start: 21 @79411 has 15 MA's), (Start: 28 @79438 has 1 MA's), (36, 79495), (38, 79504), (40, 79510), (78, 79786), (88, 79849), (91, 79864), (103, 79954), (111, 79999), (120, 80068), (125, 80095), (133, 80191), (134, 80206),

Gene: Yappy_86 Start: 44513, Stop: 43758, Start Num: 14
Candidate Starts for Yappy_86:
(Start: 11 @44546 has 2 MA's), (Start: 14 @44513 has 1 MA's), (25, 44447), (27, 44444), (32, 44411), (35, 44387), (39, 44369), (45, 44333), (66, 44168), (71, 44141), (72, 44138), (80, 44078), (81, 44075), (82, 44069), (83, 44060), (96, 43979), (97, 43958), (110, 43883), (116, 43847), (123, 43790),

Gene: Yeezus_60 Start: 41211, Stop: 40471, Start Num: 15
Candidate Starts for Yeezus_60:
(Start: 15 @41211 has 13 MA's), (Start: 21 @41181 has 15 MA's), (27, 41157), (29, 41145), (30, 41142), (31, 41136), (38, 41094), (41, 41085), (43, 41070), (44, 41061), (58, 40962), (60, 40947), (75, 40827), (79, 40809), (86, 40770), (87, 40761), (97, 40680), (102, 40653), (112, 40608), (113, 40605), (115, 40584), (121, 40539), (123, 40524),

Gene: Zooman_96 Start: 73343, Stop: 72582, Start Num: 20
Candidate Starts for Zooman_96:
(Start: 20 @73343 has 3 MA's), (52, 73151), (53, 73148), (74, 73001), (78, 72971), (89, 72905), (91, 72893), (98, 72833), (104, 72797), (113, 72740), (117, 72698), (125, 72644),