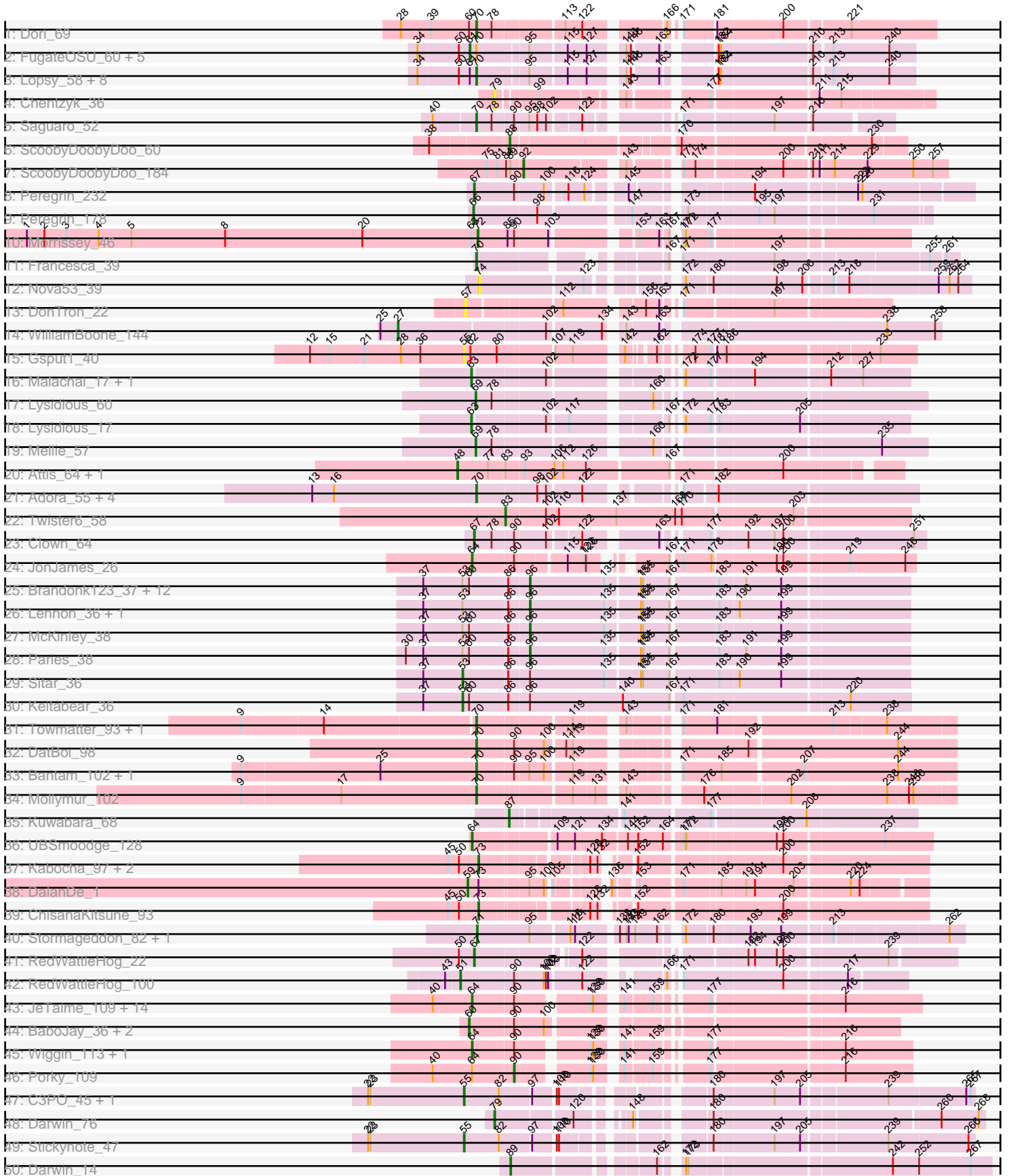
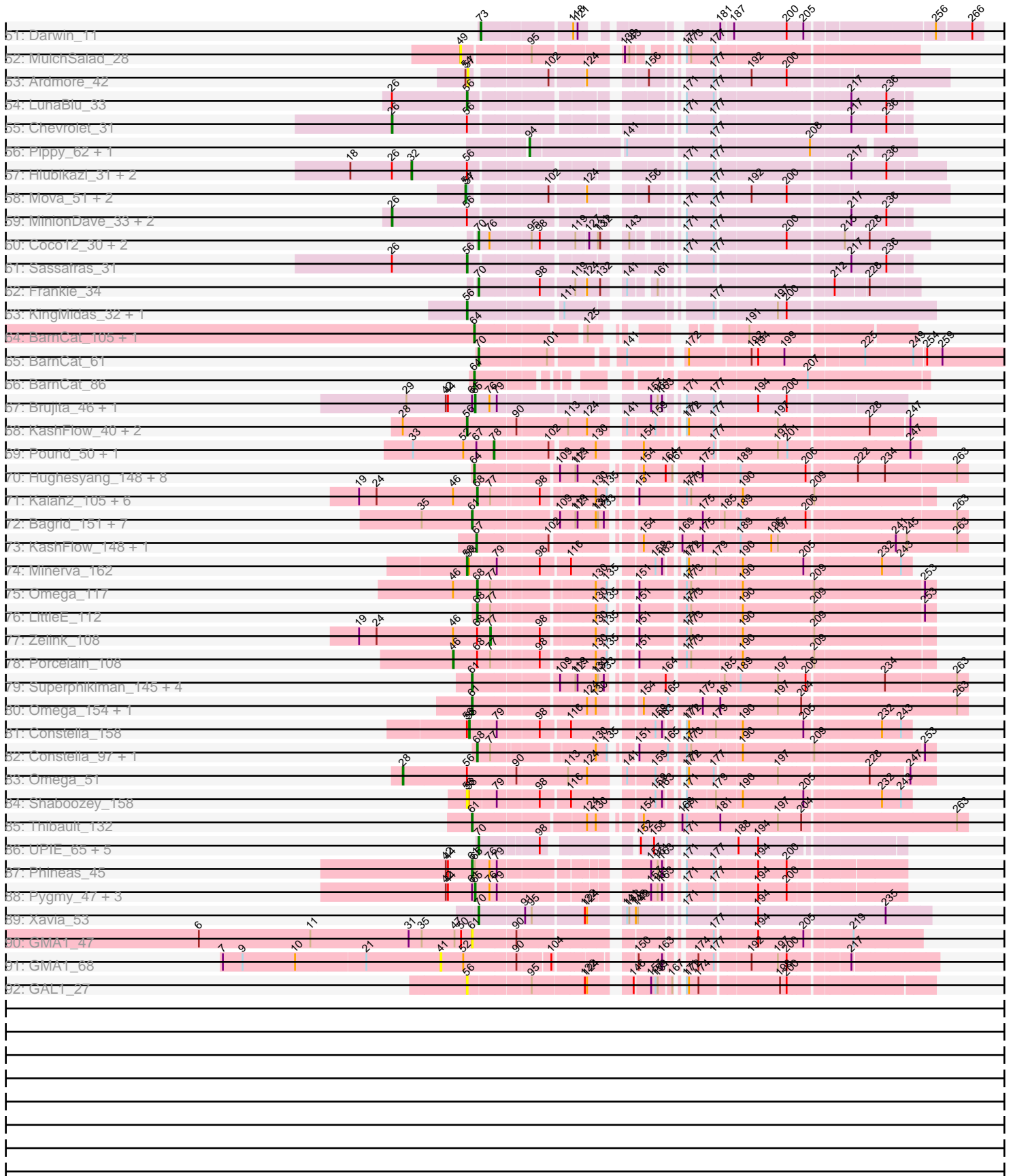


Pham 224306



Pham 224306



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 224306 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224306 has 198 members, 20 are drafts.

Phages represented in each track:

- Track 1 : Dori_69
- Track 2 : FugateOSU_60, Orfeu_58, Placalicious_60, Jesabah_60, LostAndPhound_60, Toni_59
- Track 3 : Lopsy_58, Buckeye_60, LeiMonet_62, Mesmerelda_61, Coletti_62, Podrick_58, Adriana_61, Matalotodo_59, KingTut_52
- Track 4 : Chentzyk_36
- Track 5 : Saguaro_52
- Track 6 : ScoobyDoobyDoo_60
- Track 7 : ScoobyDoobyDoo_184
- Track 8 : Peregrin_232
- Track 9 : Peregrin_178
- Track 10 : Morrissey_46
- Track 11 : Francesca_39
- Track 12 : Nova53_39
- Track 13 : DonTron_22
- Track 14 : WilliamBoone_144
- Track 15 : Gspu1_40
- Track 16 : Malachai_17, Begonia_17
- Track 17 : Lysidious_60
- Track 18 : Lysidious_17
- Track 19 : Mellie_57
- Track 20 : Attis_64, SoilAssassin_64
- Track 21 : Adora_55, Shlim410_56, Hortense_58, Howe_58, Twinkle_57
- Track 22 : Twister6_58
- Track 23 : Clown_64
- Track 24 : JonJames_26
- Track 25 : Brandonk123_37, Love_39, Fosterous_34, Nordenberg_30, Sedona_36, Galadriel_36, BobBob_33, Vivi2_38, Rofo_36, Charming_36, Angelicage_34, Tangent_36, Bibwit_35
- Track 26 : Lennon_36, Affeca_34
- Track 27 : McKinley_38
- Track 28 : Paries_38
- Track 29 : Sitar_36
- Track 30 : Keitabear_36
- Track 31 : Towmatter_93, Daredevil_91
- Track 32 : DatBoi_98
- Track 33 : Bantam_102, SpeedDemon_1040

- Track 34 : Mollymur_102
- Track 35 : Kuwabara_68
- Track 36 : UBSmoodge_128
- Track 37 : Kabocha_97, Chidiebere_96, Schomber_94
- Track 38 : DalanDe_1
- Track 39 : ChisanaKitsune_93
- Track 40 : Stormageddon_82, RedWattleHog_85
- Track 41 : RedWattleHog_22
- Track 42 : RedWattleHog_100
- Track 43 : JeTaime_109, Nimrod_111, Kimchi_115, Teaspoon_111, Goku_110, 244_112, Stank_113, Icee_112, BigBubba_112, Filch_113, BaboJay_110, TBrady12_114, Xandras_110, Goldilocks_114, Holt_116
- Track 44 : BaboJay_36, Goku_37, Eureka_37
- Track 45 : Wiggin_113, Marshmallow_109
- Track 46 : Porky_109
- Track 47 : C3PO_45, Cruella_45
- Track 48 : Darwin_76
- Track 49 : Stickynote_47
- Track 50 : Darwin_14
- Track 51 : Darwin_11
- Track 52 : MulchSalad_28
- Track 53 : Ardmore_42
- Track 54 : LunaBlu_33
- Track 55 : Chevrolet_31
- Track 56 : Pippy_62, Maravista_65
- Track 57 : Hlubikazi_31, Strokeseat_31, Mandlovu_31
- Track 58 : Mova_51, Bobi_53, Mutaforma13_54
- Track 59 : MinionDave_33, Galactic_32, Ramsey_33
- Track 60 : Coco12_30, Starcevich_34, JalFarm20_33
- Track 61 : Sassafras_31
- Track 62 : Frankie_34
- Track 63 : KingMidas_32, Leozinho_32
- Track 64 : BarnCat_105, LeeroyJenkins_114
- Track 65 : BarnCat_61
- Track 66 : BarnCat_86
- Track 67 : Brujita_46, Island3_46
- Track 68 : KashFlow_40, Hannaconda_43, Shaboozey_39
- Track 69 : Pound_50, Bombitas_45
- Track 70 : Hughesyang_148, Dove_135, Wanda_148, Zelink_143, Kalah2_140, Minerva_148, ThreeRngTarjay_144, Bobby_139, Phoebus_149
- Track 71 : Kalah2_105, Phoebus_113, Dallas_113, EricMillard_105, Hughesyang_111, ThreeRngTarjay_109, DmpstrDiver_113
- Track 72 : Bagrid_151, Optimus_141, Duke13_146, HokkenD_142, BAKA_150, Gonephishing_141, Klein_147, EricMillard_142
- Track 73 : KashFlow_148, Nekros_146
- Track 74 : Minerva_162
- Track 75 : Omega_117
- Track 76 : LittleE_112
- Track 77 : Zelink_108
- Track 78 : Porcelain_108
- Track 79 : Superphikiman_145, Ariel_147, Courthouse_143, Beem_151, Hannaconda_141
- Track 80 : Omega_154, LittleE_150

- Track 81 : Constella_158
- Track 82 : Constella_97, Thibault_95
- Track 83 : Omega_51
- Track 84 : Shaboozey_158
- Track 85 : Thibault_132
- Track 86 : UPIE_65, Enceladus_63, JoeDirt_64, Rose5_65, Poochiewood_65, Wamburgxpress_65
- Track 87 : Phineas_45
- Track 88 : Pygmy_47, Bogie_47, Shipwreck_47, HUHilltop_45
- Track 89 : Xavia_53
- Track 90 : GMA1_47
- Track 91 : GMA1_68
- Track 92 : GAL1_27

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

The start number called the most often in the published annotations is 64, it was called in 31 of the 178 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 244_112, BaboJay_110, BarnCat_105, BarnCat_86, BigBubba_112, Bobby_139, Dove_135, Filch_113, Goku_110, Goldilocks_114, Holt_116, Hughesyang_148, Icee_112, JeTaime_109, JonJames_26, Kalah2_140, Kimchi_115, LeeroyJenkins_114, Marshmallow_109, Minerva_148, Nimrod_111, Phoebus_149, Stank_113, TBrady12_114, Teaspoon_111, ThreeRngTarjay_144, UBSmoodge_128, Wanda_148, Wiggin_113, Xandras_110, Zelink_143,

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

- Porky_109,

Genes that do not have the "Most Annotated" start:

- Adora_55, Adriana_61, Affeca_34, Angelicage_34, Ardmore_42, Ariel_147, Attis_64, BAKA_150, BaboJay_36, Bagrid_151, Bantam_102, BarnCat_61, Beem_151, Begonia_17, Bibwit_35, BobBob_33, Bobi_53, Bogie_47, Bombitas_45, Brandonk123_37, Brujita_46, Buckeye_60, C3PO_45, Charming_36, Chentzyk_36, Chevrolet_31, Chidiebere_96, ChisanaKitsune_93, Clown_64, Coco12_30, Coletti_62, Constella_158, Constella_97, Courthouse_143, Cruella_45, DalanDe_1, Dallas_113, Daredevil_91, Darwin_11, Darwin_14, Darwin_76, DatBoi_98, DmpstrDiver_113, DonTron_22, Dori_69, Duke13_146, Enceladus_63, EricMillard_105, EricMillard_142, Eureka_37, Fosterous_34, Francesca_39, Frankie_34, FugateOSU_60, GAL1_27, GMA1_47, GMA1_68, Galactic_32, Galadriel_36, Goku_37, Gonephishing_141, Gsput1_40, HUHilltop_45, Hannaconda_141, Hannaconda_43, Hlubikazi_31, HokkenD_142, Hortense_58, Howe_58, Hughesyang_111, Island3_46, JalFarm20_33, Jesabah_60, JoeDirt_64, Kabocha_97, Kalah2_105, KashFlow_148, KashFlow_40, Keitabear_36, KingMidas_32, KingTut_52, Klein_147, Kuwabara_68, LeiMonet_62, Lennon_36, Leozinho_32, LittleE_112, LittleE_150, Lopsy_58, LostAndPhound_60, Love_39, LunaBlu_33, Lysidious_17, Lysidious_60, Malachai_17, Mandlovu_31, Maravista_65, Matalotodo_59, McKinley_38, Mellie_57, Mesmerelda_61, Minerva_162, MinionDave_33, Mollymur_102, Morrissey_46, Mova_51, MulchSalad_28,

Mutaforma13_54, Nekros_146, Nordenberg_30, Nova53_39, Omega_117, Omega_154, Omega_51, Optimus_141, Orfeu_58, Paries_38, Peregrin_178, Peregrin_232, Phineas_45, Phoebus_113, Pippy_62, Placalicious_60, Podrick_58, Poochiewood_65, Porcelain_108, Pound_50, Pygmy_47, Ramsey_33, RedWattleHog_100, RedWattleHog_22, RedWattleHog_85, Rofo_36, Rose5_65, Saguaro_52, Sassafras_31, Schomber_94, ScoobyDoobyDoo_184, ScoobyDoobyDoo_60, Sedona_36, Shaboozey_158, Shaboozey_39, Shipwreck_47, Shlim410_56, Sitar_36, SoilAssassin_64, SpeedDemon_1040, Starcevich_34, Stickynote_47, Stormageddon_82, Strokeseat_31, Superphikiman_145, Tangent_36, Thibault_132, Thibault_95, ThreeRngTarjay_109, Toni_59, Towmatter_93, Twinkle_57, Twister6_58, UPIE_65, Vivi2_38, Wamburgxpress_65, WilliamBoone_144, Xavia_53, Zelink_108,

Summary by start number:

Start 26:

- Found in 9 of 198 (4.5%) of genes in pham
- Manual Annotations of this start: 4 of 178
- Called 44.4% of time when present
- Phage (with cluster) where this start called: Chevrolet_31 (F1), Galactic_32 (F1), MinionDave_33 (F1), Ramsey_33 (F1),

Start 27:

- Found in 1 of 198 (0.5%) of genes in pham
- Manual Annotations of this start: 1 of 178
- Called 100.0% of time when present
- Phage (with cluster) where this start called: WilliamBoone_144 (CQ1),

Start 28:

- Found in 6 of 198 (3.0%) of genes in pham
- Manual Annotations of this start: 1 of 178
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Omega_51 (J),

Start 32:

- Found in 3 of 198 (1.5%) of genes in pham
- Manual Annotations of this start: 3 of 178
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hlubikazi_31 (F1), Mandlovu_31 (F1), Strokeseat_31 (F1),

Start 41:

- Found in 1 of 198 (0.5%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA1_68 (singleton),

Start 46:

- Found in 10 of 198 (5.1%) of genes in pham
- Manual Annotations of this start: 1 of 178
- Called 10.0% of time when present
- Phage (with cluster) where this start called: Porcelain_108 (J),

Start 48:

- Found in 2 of 198 (1.0%) of genes in pham
- Manual Annotations of this start: 2 of 178
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Attis_64 (CZ2), SoilAssassin_64 (CZ2),

Start 49:

- Found in 1 of 198 (0.5%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MulchSalad_28 (F),

Start 51:

- Found in 1 of 198 (0.5%) of genes in pham
- Manual Annotations of this start: 1 of 178
- Called 100.0% of time when present
- Phage (with cluster) where this start called: RedWattleHog_100 (DX),

Start 53:

- Found in 19 of 198 (9.6%) of genes in pham
- Manual Annotations of this start: 2 of 178
- Called 10.5% of time when present
- Phage (with cluster) where this start called: Keitabear_36 (DE1), Sitar_36 (DE1),

Start 54:

- Found in 4 of 198 (2.0%) of genes in pham
- Manual Annotations of this start: 3 of 178
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Bobi_53 (F1), Mova_51 (F1), Mutaforma13_54 (F1),

Start 55:

- Found in 4 of 198 (2.0%) of genes in pham
- Manual Annotations of this start: 3 of 178
- Called 100.0% of time when present
- Phage (with cluster) where this start called: C3PO_45 (EN), Cruella_45 (EN), Gsput1_40 (CU2), Stickynote_47 (EN),

Start 56:

- Found in 19 of 198 (9.6%) of genes in pham
- Manual Annotations of this start: 7 of 178
- Called 52.6% of time when present
- Phage (with cluster) where this start called: GAL1_27 (singleton), Hannaconda_43 (J), KashFlow_40 (J), KingMidas_32 (F1), Leozinho_32 (F1), LunaBlu_33 (F1), Minerva_162 (J), Sassafras_31 (F1), Shaboozey_158 (J), Shaboozey_39 (J),

Start 57:

- Found in 5 of 198 (2.5%) of genes in pham
- No Manual Annotations of this start.
- Called 40.0% of time when present
- Phage (with cluster) where this start called: Ardmore_42 (F1), DonTron_22 (CP),

Start 58:

- Found in 3 of 198 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 178
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Constella_158 (J),

Start 59:

- Found in 1 of 198 (0.5%) of genes in pham
- Manual Annotations of this start: 1 of 178
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DalanDe_1 (DQ),

Start 60:

- Found in 20 of 198 (10.1%) of genes in pham
- Manual Annotations of this start: 3 of 178
- Called 15.0% of time when present
- Phage (with cluster) where this start called: BaboJay_36 (E), Eureka_37 (E), Goku_37 (E),

Start 61:

- Found in 39 of 198 (19.7%) of genes in pham
- Manual Annotations of this start: 20 of 178
- Called 61.5% of time when present
- Phage (with cluster) where this start called: Ariel_147 (J), BAKA_150 (J), Bagrid_151 (J), Beem_151 (J), Courthouse_143 (J), Duke13_146 (J), EricMillard_142 (J), FugateOSU_60 (B1), GMA1_47 (singleton), Gonephishing_141 (J), Hannaconda_141 (J), HokkenD_142 (J), Jesabah_60 (B1), Klein_147 (J), LittleE_150 (J), LostAndPhound_60 (B1), Omega_154 (J), Optimus_141 (J), Orfeu_58 (B1), Phineas_45 (P1), Placalicious_60 (B1), Superphikiman_145 (J), Thibault_132 (J), Toni_59 (B1),

Start 63:

- Found in 4 of 198 (2.0%) of genes in pham
- Manual Annotations of this start: 3 of 178
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Begonia_17 (CV), Lysidious_17 (CV), Malachai_17 (CV),

Start 64:

- Found in 32 of 198 (16.2%) of genes in pham
- Manual Annotations of this start: 31 of 178
- Called 96.9% of time when present
- Phage (with cluster) where this start called: 244_112 (E), BaboJay_110 (E), BarnCat_105 (GB), BarnCat_86 (GB), BigBubba_112 (E), Bobby_139 (J), Dove_135 (J), Filch_113 (E), Goku_110 (E), Goldilocks_114 (E), Holt_116 (E), Hughesyang_148 (J), Icee_112 (E), JeTaime_109 (E), JonJames_26 (DD), Kalah2_140 (J), Kimchi_115 (E), LeeroyJenkins_114 (GB), Marshmallow_109 (E), Minerva_148 (J), Nimrod_111 (E), Phoebus_149 (J), Stank_113 (E), TBrady12_114 (E), Teaspoon_111 (E), ThreeRngTarjay_144 (J), UBSmoodge_128 (DQ), Wanda_148 (J), Wiggin_113 (E), Xandras_110 (E), Zelink_143 (J),

Start 65:

- Found in 7 of 198 (3.5%) of genes in pham
- Manual Annotations of this start: 6 of 178

- Called 85.7% of time when present
- Phage (with cluster) where this start called: Bogie_47 (P1), Brujita_46 (I1), HUHilltop_45 (P1), Island3_46 (I1), Pygmy_47 (P1), Shipwreck_47 (P1),

Start 66:

- Found in 1 of 198 (0.5%) of genes in pham
- Manual Annotations of this start: 1 of 178
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Peregrin_178 (CB),

Start 67:

- Found in 7 of 198 (3.5%) of genes in pham
- Manual Annotations of this start: 4 of 178
- Called 71.4% of time when present
- Phage (with cluster) where this start called: Clown_64 (DC2), KashFlow_148 (J), Nekros_146 (J), Peregrin_232 (CB), RedWattleHog_22 (DX),

Start 68:

- Found in 13 of 198 (6.6%) of genes in pham
- Manual Annotations of this start: 11 of 178
- Called 84.6% of time when present
- Phage (with cluster) where this start called: Constella_97 (J), Dallas_113 (J), DmpstrDiver_113 (J), EricMillard_105 (J), Hughesyang_111 (J), Kalah2_105 (J), LittleE_112 (J), Omega_117 (J), Phoebus_113 (J), Thibault_95 (J), ThreeRngTarjay_109 (J),

Start 69:

- Found in 2 of 198 (1.0%) of genes in pham
- Manual Annotations of this start: 2 of 178
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lysidious_60 (CV), Mellie_57 (CV),

Start 70:

- Found in 41 of 198 (20.7%) of genes in pham
- Manual Annotations of this start: 30 of 178
- Called 85.4% of time when present
- Phage (with cluster) where this start called: Adora_55 (CZ4), Adriana_61 (B1), Bantam_102 (DL), BarnCat_61 (GB), Buckeye_60 (B1), Coco12_30 (F1), Coletti_62 (B1), Daredevil_91 (DL), DatBoi_98 (DL), Dori_69 (AD), Enceladus_63 (L1), Francesca_39 (CG), Frankie_34 (F1), Hortense_58 (CZ4), Howe_58 (CZ4), JalFarm20_33 (F1), JoeDirt_64 (L1), KingTut_52 (B1), LeiMonet_62 (B1), Lopsy_58 (B1), Matalotodo_59 (B1), Mesmerelda_61 (B1), Mollymur_102 (DL), Podrick_58 (B1), Poochiewood_65 (L1), Rose5_65 (L1), Saguaro_52 (B7), Shlim410_56 (CZ4), SpeedDemon_1040 (DL), Starceвич_34 (F1), Towmatter_93 (DL), Twinkle_57 (CZ4), UPIE_65 (L1), Wamburgxpress_65 (L1), Xavia_53 (P3),

Start 71:

- Found in 2 of 198 (1.0%) of genes in pham
- Manual Annotations of this start: 2 of 178
- Called 100.0% of time when present
- Phage (with cluster) where this start called: RedWattleHog_85 (DX), Stormageddon_82 (DX),

Start 72:

- Found in 1 of 198 (0.5%) of genes in pham
- Manual Annotations of this start: 1 of 178
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Morrissey_46 (CD),

Start 73:

- Found in 6 of 198 (3.0%) of genes in pham
- Manual Annotations of this start: 5 of 178
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Chidiebere_96 (DQ), ChisanaKitsune_93 (DQ), Darwin_11 (EN), Kabocha_97 (DQ), Schomber_94 (DQ),

Start 74:

- Found in 1 of 198 (0.5%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Nova53_39 (CG),

Start 77:

- Found in 15 of 198 (7.6%) of genes in pham
- Manual Annotations of this start: 1 of 178
- Called 6.7% of time when present
- Phage (with cluster) where this start called: Zelink_108 (J),

Start 78:

- Found in 7 of 198 (3.5%) of genes in pham
- Manual Annotations of this start: 2 of 178
- Called 28.6% of time when present
- Phage (with cluster) where this start called: Bombitas_45 (J), Pound_50 (J),

Start 79:

- Found in 12 of 198 (6.1%) of genes in pham
- Manual Annotations of this start: 1 of 178
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Chentzyk_36 (B3), Darwin_76 (EN),

Start 83:

- Found in 3 of 198 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 178
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Twister6_58 (DC1),

Start 87:

- Found in 1 of 198 (0.5%) of genes in pham
- Manual Annotations of this start: 1 of 178
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kuwabara_68 (DN4),

Start 88:

- Found in 1 of 198 (0.5%) of genes in pham
- Manual Annotations of this start: 1 of 178
- Called 100.0% of time when present

- Phage (with cluster) where this start called: ScoobyDoobyDoo_60 (C2),

Start 89:

- Found in 2 of 198 (1.0%) of genes in pham
- Manual Annotations of this start: 1 of 178
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Darwin_14 (EN),

Start 90:

- Found in 36 of 198 (18.2%) of genes in pham
- Manual Annotations of this start: 1 of 178
- Called 2.8% of time when present
- Phage (with cluster) where this start called: Porky_109 (E),

Start 92:

- Found in 1 of 198 (0.5%) of genes in pham
- Manual Annotations of this start: 1 of 178
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ScoobyDoobyDoo_184 (C2),

Start 94:

- Found in 2 of 198 (1.0%) of genes in pham
- Manual Annotations of this start: 2 of 178
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Maravista_65 (F1), Pippy_62 (F1),

Start 96:

- Found in 19 of 198 (9.6%) of genes in pham
- Manual Annotations of this start: 17 of 178
- Called 89.5% of time when present
- Phage (with cluster) where this start called: Affeca_34 (DE1), Angelicage_34 (DE1), Bibwit_35 (DE1), BobBob_33 (DE1), Brandonk123_37 (DE1), Charming_36 (DE1), Fosterous_34 (DE1), Galadriel_36 (DE1), Lennon_36 (DE1), Love_39 (DE1), McKinley_38 (DE1), Nordenberg_30 (DE1), Paries_38 (DE1), Rofo_36 (DE1), Sedona_36 (DE1), Tangent_36 (DE1), Vivi2_38 (DE1),

Summary by clusters:

There are 33 clusters represented in this pham: DL, CZ2, DD, singleton, CZ4, EN, DX, DQ, CU2, I1, DN4, C2, CQ1, P3, P1, E, AD, F, CB, J, CG, CD, GB, L1, CP, DC2, CV, DC1, F1, DE1, B7, B1, B3,

Info for manual annotations of cluster AD:

- Start number 70 was manually annotated 1 time for cluster AD.

Info for manual annotations of cluster B1:

- Start number 61 was manually annotated 5 times for cluster B1.
- Start number 70 was manually annotated 6 times for cluster B1.

Info for manual annotations of cluster B7:

- Start number 70 was manually annotated 1 time for cluster B7.

Info for manual annotations of cluster C2:

- Start number 88 was manually annotated 1 time for cluster C2.
- Start number 92 was manually annotated 1 time for cluster C2.

Info for manual annotations of cluster CB:

- Start number 66 was manually annotated 1 time for cluster CB.
- Start number 67 was manually annotated 1 time for cluster CB.

Info for manual annotations of cluster CD:

- Start number 72 was manually annotated 1 time for cluster CD.

Info for manual annotations of cluster CG:

- Start number 70 was manually annotated 1 time for cluster CG.

Info for manual annotations of cluster CQ1:

- Start number 27 was manually annotated 1 time for cluster CQ1.

Info for manual annotations of cluster CV:

- Start number 63 was manually annotated 3 times for cluster CV.
- Start number 69 was manually annotated 2 times for cluster CV.

Info for manual annotations of cluster CZ2:

- Start number 48 was manually annotated 2 times for cluster CZ2.

Info for manual annotations of cluster CZ4:

- Start number 70 was manually annotated 5 times for cluster CZ4.

Info for manual annotations of cluster DC1:

- Start number 83 was manually annotated 1 time for cluster DC1.

Info for manual annotations of cluster DC2:

- Start number 67 was manually annotated 1 time for cluster DC2.

Info for manual annotations of cluster DD:

- Start number 64 was manually annotated 1 time for cluster DD.

Info for manual annotations of cluster DE1:

- Start number 53 was manually annotated 2 times for cluster DE1.
- Start number 96 was manually annotated 17 times for cluster DE1.

Info for manual annotations of cluster DL:

- Start number 70 was manually annotated 5 times for cluster DL.

Info for manual annotations of cluster DN4:

- Start number 87 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster DQ:

- Start number 59 was manually annotated 1 time for cluster DQ.
- Start number 64 was manually annotated 1 time for cluster DQ.
- Start number 73 was manually annotated 4 times for cluster DQ.

Info for manual annotations of cluster DX:

- Start number 51 was manually annotated 1 time for cluster DX.
- Start number 67 was manually annotated 1 time for cluster DX.
- Start number 71 was manually annotated 2 times for cluster DX.

Info for manual annotations of cluster E:

- Start number 60 was manually annotated 3 times for cluster E.
- Start number 64 was manually annotated 17 times for cluster E.
- Start number 90 was manually annotated 1 time for cluster E.

Info for manual annotations of cluster EN:

- Start number 55 was manually annotated 3 times for cluster EN.
- Start number 73 was manually annotated 1 time for cluster EN.
- Start number 79 was manually annotated 1 time for cluster EN.
- Start number 89 was manually annotated 1 time for cluster EN.

Info for manual annotations of cluster F1:

- Start number 26 was manually annotated 4 times for cluster F1.
- Start number 32 was manually annotated 3 times for cluster F1.
- Start number 54 was manually annotated 3 times for cluster F1.
- Start number 56 was manually annotated 4 times for cluster F1.
- Start number 70 was manually annotated 4 times for cluster F1.
- Start number 94 was manually annotated 2 times for cluster F1.

Info for manual annotations of cluster GB:

- Start number 64 was manually annotated 3 times for cluster GB.
- Start number 70 was manually annotated 1 time for cluster GB.

Info for manual annotations of cluster I1:

- Start number 65 was manually annotated 2 times for cluster I1.

Info for manual annotations of cluster J:

- Start number 28 was manually annotated 1 time for cluster J.
- Start number 46 was manually annotated 1 time for cluster J.
- Start number 56 was manually annotated 3 times for cluster J.
- Start number 58 was manually annotated 1 time for cluster J.
- Start number 61 was manually annotated 14 times for cluster J.
- Start number 64 was manually annotated 9 times for cluster J.
- Start number 67 was manually annotated 1 time for cluster J.
- Start number 68 was manually annotated 11 times for cluster J.
- Start number 77 was manually annotated 1 time for cluster J.
- Start number 78 was manually annotated 2 times for cluster J.

Info for manual annotations of cluster L1:

- Start number 70 was manually annotated 5 times for cluster L1.

Info for manual annotations of cluster P1:

- Start number 61 was manually annotated 1 time for cluster P1.
- Start number 65 was manually annotated 4 times for cluster P1.

Info for manual annotations of cluster P3:

- Start number 70 was manually annotated 1 time for cluster P3.

Gene Information:

Gene: 244_112 Start: 62827, Stop: 63327, Start Num: 64

Candidate Starts for 244_112:

(40, 62773), (Start: 64 @62827 has 31 MA's), (Start: 90 @62881 has 1 MA's), (129, 62962), (130, 62965), (141, 62989), (159, 63022), (177, 63079), (216, 63241),

Gene: Adora_55 Start: 40141, Stop: 40647, Start Num: 70

Candidate Starts for Adora_55:

(13, 39916), (16, 39946), (Start: 70 @40141 has 30 MA's), (98, 40216), (102, 40228), (122, 40270), (171, 40357), (182, 40396),

Gene: Adriana_61 Start: 53245, Stop: 52730, Start Num: 70

Candidate Starts for Adriana_61:

(34, 53323), (50, 53269), (Start: 61 @53254 has 20 MA's), (Start: 70 @53245 has 30 MA's), (95, 53179), (115, 53134), (127, 53110), (143, 53074), (146, 53068), (163, 53035), (182, 52981), (184, 52978), (210, 52861), (213, 52840), (240, 52765),

Gene: Affeca_34 Start: 32900, Stop: 32427, Start Num: 96

Candidate Starts for Affeca_34:

(37, 33038), (Start: 53 @32984 has 2 MA's), (86, 32927), (Start: 96 @32900 has 17 MA's), (135, 32801), (154, 32759), (155, 32756), (167, 32720), (183, 32663), (190, 32639), (199, 32582),

Gene: Angelicage_34 Start: 33318, Stop: 32845, Start Num: 96

Candidate Starts for Angelicage_34:

(37, 33456), (Start: 53 @33402 has 2 MA's), (Start: 60 @33393 has 3 MA's), (86, 33345), (Start: 96 @33318 has 17 MA's), (135, 33219), (154, 33177), (155, 33174), (167, 33138), (183, 33081), (191, 33048), (199, 33000),

Gene: Ardmore_42 Start: 34484, Stop: 35032, Start Num: 57

Candidate Starts for Ardmore_42:

(Start: 54 @34481 has 3 MA's), (57, 34484), (102, 34574), (124, 34616), (156, 34676), (177, 34742), (192, 34784), (200, 34832),

Gene: Ariel_147 Start: 75437, Stop: 76039, Start Num: 61

Candidate Starts for Ariel_147:

(Start: 61 @75437 has 20 MA's), (109, 75542), (119, 75563), (121, 75566), (130, 75590), (131, 75593), (133, 75599), (164, 75659), (185, 75728), (189, 75746), (197, 75797), (206, 75833), (234, 75929), (263, 76025),

Gene: Attis_64 Start: 43105, Stop: 43650, Start Num: 48

Candidate Starts for Attis_64:

(Start: 48 @43105 has 2 MA's), (Start: 77 @43147 has 1 MA's), (Start: 83 @43168 has 1 MA's), (93, 43192), (106, 43231), (112, 43243), (126, 43273), (167, 43378), (200, 43516),

Gene: BAKA_150 Start: 78761, Stop: 79363, Start Num: 61

Candidate Starts for BAKA_150:

(35, 78692), (Start: 61 @78761 has 20 MA's), (109, 78866), (119, 78887), (121, 78890), (130, 78914), (131, 78917), (133, 78923), (175, 79025), (185, 79052), (189, 79070), (206, 79157), (263, 79349),

Gene: BaboJay_36 Start: 33175, Stop: 32675, Start Num: 60
Candidate Starts for BaboJay_36:
(Start: 60 @33175 has 3 MA's), (Start: 90 @33118 has 1 MA's), (100, 33082),

Gene: BaboJay_110 Start: 64000, Stop: 64500, Start Num: 64
Candidate Starts for BaboJay_110:
(40, 63946), (Start: 64 @64000 has 31 MA's), (Start: 90 @64054 has 1 MA's), (129, 64135), (130, 64138), (141, 64162), (159, 64195), (177, 64252), (216, 64414),

Gene: Bagrid_151 Start: 79456, Stop: 80058, Start Num: 61
Candidate Starts for Bagrid_151:
(35, 79387), (Start: 61 @79456 has 20 MA's), (109, 79561), (119, 79582), (121, 79585), (130, 79609), (131, 79612), (133, 79618), (175, 79720), (185, 79747), (189, 79765), (206, 79852), (263, 80044),

Gene: Bantam_102 Start: 67594, Stop: 68172, Start Num: 70
Candidate Starts for Bantam_102:
(9, 67276), (25, 67462), (Start: 70 @67594 has 30 MA's), (Start: 90 @67642 has 1 MA's), (95, 67660), (100, 67678), (119, 67711), (171, 67813), (185, 67864), (207, 67966), (244, 68092),

Gene: BarnCat_105 Start: 54966, Stop: 54505, Start Num: 64
Candidate Starts for BarnCat_105:
(Start: 64 @54966 has 31 MA's), (125, 54837), (191, 54714),

Gene: BarnCat_61 Start: 35513, Stop: 34857, Start Num: 70
Candidate Starts for BarnCat_61:
(Start: 70 @35513 has 30 MA's), (101, 35426), (141, 35345), (172, 35288), (192, 35210), (194, 35201), (199, 35165), (225, 35069), (249, 35006), (254, 34991), (259, 34970),

Gene: BarnCat_86 Start: 49536, Stop: 49024, Start Num: 64
Candidate Starts for BarnCat_86:
(Start: 64 @49536 has 31 MA's), (207, 49179),

Gene: Beem_151 Start: 80198, Stop: 80800, Start Num: 61
Candidate Starts for Beem_151:
(Start: 61 @80198 has 20 MA's), (109, 80303), (119, 80324), (121, 80327), (130, 80351), (131, 80354), (133, 80360), (164, 80420), (185, 80489), (189, 80507), (197, 80558), (206, 80594), (234, 80690), (263, 80786),

Gene: Begonia_17 Start: 10279, Stop: 10785, Start Num: 63
Candidate Starts for Begonia_17:
(Start: 63 @10279 has 3 MA's), (102, 10369), (172, 10504), (177, 10537), (194, 10588), (212, 10681), (227, 10723),

Gene: Bibwit_35 Start: 32719, Stop: 32246, Start Num: 96
Candidate Starts for Bibwit_35:
(37, 32857), (Start: 53 @32803 has 2 MA's), (Start: 60 @32794 has 3 MA's), (86, 32746), (Start: 96 @32719 has 17 MA's), (135, 32620), (154, 32578), (155, 32575), (167, 32539), (183, 32482), (191, 32449), (199, 32401),

Gene: BigBubba_112 Start: 62473, Stop: 62973, Start Num: 64
Candidate Starts for BigBubba_112:
(40, 62419), (Start: 64 @62473 has 31 MA's), (Start: 90 @62527 has 1 MA's), (129, 62608), (130, 62611), (141, 62635), (159, 62668), (177, 62725), (216, 62887),

Gene: BobBob_33 Start: 31999, Stop: 31526, Start Num: 96

Candidate Starts for BobBob_33:

(37, 32137), (Start: 53 @32083 has 2 MA's), (Start: 60 @32074 has 3 MA's), (86, 32026), (Start: 96 @31999 has 17 MA's), (135, 31900), (154, 31858), (155, 31855), (167, 31819), (183, 31762), (191, 31729), (199, 31681),

Gene: Bobby_139 Start: 80254, Stop: 80853, Start Num: 64

Candidate Starts for Bobby_139:

(Start: 64 @80254 has 31 MA's), (109, 80356), (119, 80377), (121, 80380), (154, 80443), (164, 80473), (167, 80482), (175, 80515), (189, 80560), (206, 80647), (222, 80707), (234, 80743), (263, 80839),

Gene: Bobi_53 Start: 37484, Stop: 38035, Start Num: 54

Candidate Starts for Bobi_53:

(Start: 54 @37484 has 3 MA's), (57, 37487), (102, 37577), (124, 37619), (156, 37679), (177, 37745), (192, 37787), (200, 37835),

Gene: Bogie_47 Start: 33238, Stop: 33729, Start Num: 65

Candidate Starts for Bogie_47:

(42, 33199), (44, 33202), (Start: 61 @33235 has 20 MA's), (Start: 65 @33238 has 6 MA's), (76, 33256), (Start: 79 @33265 has 1 MA's), (157, 33430), (161, 33439), (163, 33445), (171, 33457), (177, 33493), (194, 33544), (200, 33583),

Gene: Bombitas_45 Start: 41655, Stop: 42164, Start Num: 78

Candidate Starts for Bombitas_45:

(33, 41544), (52, 41613), (Start: 67 @41631 has 4 MA's), (Start: 78 @41655 has 2 MA's), (102, 41721), (130, 41775), (154, 41820), (177, 41907), (197, 41985), (201, 41997), (247, 42150),

Gene: Brandonk123_37 Start: 33065, Stop: 32592, Start Num: 96

Candidate Starts for Brandonk123_37:

(37, 33203), (Start: 53 @33149 has 2 MA's), (Start: 60 @33140 has 3 MA's), (86, 33092), (Start: 96 @33065 has 17 MA's), (135, 32966), (154, 32924), (155, 32921), (167, 32885), (183, 32828), (191, 32795), (199, 32747),

Gene: Brujita_46 Start: 33137, Stop: 33628, Start Num: 65

Candidate Starts for Brujita_46:

(29, 33044), (42, 33098), (44, 33101), (Start: 61 @33134 has 20 MA's), (Start: 65 @33137 has 6 MA's), (76, 33155), (Start: 79 @33164 has 1 MA's), (157, 33329), (161, 33338), (163, 33344), (171, 33356), (177, 33392), (194, 33443), (200, 33482),

Gene: Buckeye_60 Start: 52975, Stop: 52460, Start Num: 70

Candidate Starts for Buckeye_60:

(34, 53053), (50, 52999), (Start: 61 @52984 has 20 MA's), (Start: 70 @52975 has 30 MA's), (95, 52909), (115, 52864), (127, 52840), (143, 52804), (146, 52798), (163, 52765), (182, 52711), (184, 52708), (210, 52591), (213, 52570), (240, 52495),

Gene: C3PO_45 Start: 42754, Stop: 42164, Start Num: 55

Candidate Starts for C3PO_45:

(22, 42886), (23, 42883), (Start: 55 @42754 has 3 MA's), (82, 42706), (97, 42667), (108, 42643), (110, 42640), (180, 42496), (197, 42418), (205, 42385), (239, 42277), (265, 42175), (267, 42169),

Gene: Charming_36 Start: 32566, Stop: 32093, Start Num: 96

Candidate Starts for Charming_36:

(37, 32704), (Start: 53 @32650 has 2 MA's), (Start: 60 @32641 has 3 MA's), (86, 32593), (Start: 96 @32566 has 17 MA's), (135, 32467), (154, 32425), (155, 32422), (167, 32386), (183, 32329), (191, 32296), (199, 32248),

Gene: Chentzyk_36 Start: 34824, Stop: 35315, Start Num: 79

Candidate Starts for Chentzyk_36:

(Start: 79 @34824 has 1 MA's), (99, 34869), (143, 34959), (177, 35046), (211, 35178), (215, 35202),

Gene: Chevrolet_31 Start: 27455, Stop: 28054, Start Num: 26

Candidate Starts for Chevrolet_31:

(Start: 26 @27455 has 4 MA's), (Start: 56 @27557 has 7 MA's), (171, 27779), (177, 27815), (217, 27980), (236, 28025),

Gene: Chidiebere_96 Start: 69963, Stop: 70481, Start Num: 73

Candidate Starts for Chidiebere_96:

(45, 69921), (50, 69936), (Start: 73 @69963 has 5 MA's), (128, 70086), (132, 70095), (152, 70119), (200, 70299),

Gene: ChisanaKitsune_93 Start: 68907, Stop: 69425, Start Num: 73

Candidate Starts for ChisanaKitsune_93:

(45, 68865), (50, 68880), (Start: 73 @68907 has 5 MA's), (128, 69030), (132, 69039), (152, 69063), (200, 69243),

Gene: Clown_64 Start: 45007, Stop: 45525, Start Num: 67

Candidate Starts for Clown_64:

(Start: 67 @45007 has 4 MA's), (Start: 78 @45031 has 2 MA's), (Start: 90 @45058 has 1 MA's), (102, 45097), (122, 45136), (163, 45214), (177, 45262), (192, 45304), (197, 45340), (200, 45352), (251, 45511),

Gene: Coco12_30 Start: 26826, Stop: 26320, Start Num: 70

Candidate Starts for Coco12_30:

(Start: 70 @26826 has 30 MA's), (76, 26811), (95, 26760), (98, 26751), (119, 26709), (127, 26694), (131, 26682), (132, 26679), (143, 26658), (171, 26619), (177, 26583), (200, 26493), (215, 26427), (228, 26397),

Gene: Coletti_62 Start: 53240, Stop: 52725, Start Num: 70

Candidate Starts for Coletti_62:

(34, 53318), (50, 53264), (Start: 61 @53249 has 20 MA's), (Start: 70 @53240 has 30 MA's), (95, 53174), (115, 53129), (127, 53105), (143, 53069), (146, 53063), (163, 53030), (182, 52976), (184, 52973), (210, 52856), (213, 52835), (240, 52760),

Gene: Constella_158 Start: 86054, Stop: 86563, Start Num: 58

Candidate Starts for Constella_158:

(Start: 56 @86051 has 7 MA's), (Start: 58 @86054 has 1 MA's), (Start: 79 @86087 has 1 MA's), (98, 86138), (116, 86174), (159, 86264), (163, 86273), (171, 86285), (172, 86288), (179, 86321), (190, 86351), (205, 86432), (232, 86525), (243, 86549),

Gene: Constella_97 Start: 58172, Stop: 58714, Start Num: 68

Candidate Starts for Constella_97:

(Start: 68 @58172 has 11 MA's), (Start: 77 @58190 has 1 MA's), (130, 58310), (135, 58325), (151, 58343), (165, 58382), (171, 58400), (173, 58406), (190, 58466), (209, 58559), (253, 58700),

Gene: Courthouse_143 Start: 75295, Stop: 75897, Start Num: 61

Candidate Starts for Courthouse_143:

(Start: 61 @75295 has 20 MA's), (109, 75400), (119, 75421), (121, 75424), (130, 75448), (131, 75451), (133, 75457), (164, 75517), (185, 75586), (189, 75604), (197, 75655), (206, 75691), (234, 75787), (263, 75883),

Gene: Cruella_45 Start: 42754, Stop: 42164, Start Num: 55

Candidate Starts for Cruella_45:

(22, 42886), (23, 42883), (Start: 55 @42754 has 3 MA's), (82, 42706), (97, 42667), (108, 42643), (110, 42640), (180, 42496), (197, 42418), (205, 42385), (239, 42277), (265, 42175), (267, 42169),

Gene: DalanDe_1 Start: 1, Stop: 522, Start Num: 59

Candidate Starts for DalanDe_1:

(Start: 59 @1 has 1 MA's), (Start: 73 @16 has 5 MA's), (95, 76), (100, 94), (105, 100), (136, 154), (153, 175), (171, 226), (185, 271), (191, 301), (194, 313), (203, 364), (220, 430), (224, 442),

Gene: Dallas_113 Start: 64402, Stop: 64944, Start Num: 68

Candidate Starts for Dallas_113:

(19, 64240), (24, 64264), (Start: 46 @64369 has 1 MA's), (Start: 68 @64402 has 11 MA's), (Start: 77 @64420 has 1 MA's), (98, 64477), (130, 64540), (135, 64555), (151, 64573), (171, 64630), (173, 64636), (190, 64696), (209, 64789),

Gene: Daredevil_91 Start: 63069, Stop: 63638, Start Num: 70

Candidate Starts for Daredevil_91:

(9, 62760), (14, 62871), (Start: 70 @63069 has 30 MA's), (119, 63186), (143, 63237), (171, 63291), (181, 63336), (213, 63480), (238, 63546),

Gene: Darwin_76 Start: 54919, Stop: 54362, Start Num: 79

Candidate Starts for Darwin_76:

(Start: 79 @54919 has 1 MA's), (120, 54829), (148, 54778), (180, 54700), (260, 54418), (268, 54370),

Gene: Darwin_14 Start: 7286, Stop: 7858, Start Num: 89

Candidate Starts for Darwin_14:

(Start: 89 @7286 has 1 MA's), (162, 7448), (172, 7466), (173, 7469), (242, 7727), (252, 7763), (267, 7832),

Gene: Darwin_11 Start: 6015, Stop: 6593, Start Num: 73

Candidate Starts for Darwin_11:

(Start: 73 @6015 has 5 MA's), (118, 6126), (121, 6132), (181, 6267), (187, 6282), (200, 6351), (205, 6372), (256, 6534), (266, 6579),

Gene: DatBoi_98 Start: 66730, Stop: 67308, Start Num: 70

Candidate Starts for DatBoi_98:

(Start: 70 @66730 has 30 MA's), (Start: 90 @66778 has 1 MA's), (100, 66814), (114, 66838), (119, 66847), (192, 67036), (244, 67228),

Gene: DmpstrDiver_113 Start: 63822, Stop: 64364, Start Num: 68

Candidate Starts for DmpstrDiver_113:

(19, 63660), (24, 63684), (Start: 46 @63789 has 1 MA's), (Start: 68 @63822 has 11 MA's), (Start: 77 @63840 has 1 MA's), (98, 63897), (130, 63960), (135, 63975), (151, 63993), (171, 64050), (173, 64056), (190, 64116), (209, 64209),

Gene: DonTron_22 Start: 10785, Stop: 11264, Start Num: 57

Candidate Starts for DonTron_22:

(57, 10785), (112, 10896), (156, 10980), (163, 10998), (171, 11010), (197, 11124),

Gene: Dori_69 Start: 53193, Stop: 53732, Start Num: 70

Candidate Starts for Dori_69:

(Start: 28 @53091 has 1 MA's), (39, 53133), (Start: 60 @53184 has 3 MA's), (Start: 70 @53193 has 30 MA's), (Start: 78 @53214 has 2 MA's), (113, 53301), (122, 53322), (166, 53409), (171, 53415), (181, 53454), (200, 53541), (221, 53619),

Gene: Dove_135 Start: 75231, Stop: 75830, Start Num: 64

Candidate Starts for Dove_135:

(Start: 64 @75231 has 31 MA's), (109, 75333), (119, 75354), (121, 75357), (154, 75420), (164, 75450), (167, 75459), (175, 75492), (189, 75537), (206, 75624), (222, 75684), (234, 75720), (263, 75816),

Gene: Duke13_146 Start: 77046, Stop: 77648, Start Num: 61

Candidate Starts for Duke13_146:

(35, 76977), (Start: 61 @77046 has 20 MA's), (109, 77151), (119, 77172), (121, 77175), (130, 77199), (131, 77202), (133, 77208), (175, 77310), (185, 77337), (189, 77355), (206, 77442), (263, 77634),

Gene: Enceladus_63 Start: 44580, Stop: 45038, Start Num: 70

Candidate Starts for Enceladus_63:

(Start: 70 @44580 has 30 MA's), (98, 44652), (152, 44742), (158, 44754), (171, 44775), (188, 44838), (194, 44865),

Gene: EricMillard_105 Start: 63462, Stop: 64004, Start Num: 68

Candidate Starts for EricMillard_105:

(19, 63300), (24, 63324), (Start: 46 @63429 has 1 MA's), (Start: 68 @63462 has 11 MA's), (Start: 77 @63480 has 1 MA's), (98, 63537), (130, 63600), (135, 63615), (151, 63633), (171, 63690), (173, 63696), (190, 63756), (209, 63849),

Gene: EricMillard_142 Start: 78398, Stop: 79000, Start Num: 61

Candidate Starts for EricMillard_142:

(35, 78329), (Start: 61 @78398 has 20 MA's), (109, 78503), (119, 78524), (121, 78527), (130, 78551), (131, 78554), (133, 78560), (175, 78662), (185, 78689), (189, 78707), (206, 78794), (263, 78986),

Gene: Eureka_37 Start: 33608, Stop: 33108, Start Num: 60

Candidate Starts for Eureka_37:

(Start: 60 @33608 has 3 MA's), (Start: 90 @33551 has 1 MA's), (100, 33515),

Gene: Filch_113 Start: 63036, Stop: 63536, Start Num: 64

Candidate Starts for Filch_113:

(40, 62982), (Start: 64 @63036 has 31 MA's), (Start: 90 @63090 has 1 MA's), (129, 63171), (130, 63174), (141, 63198), (159, 63231), (177, 63288), (216, 63450),

Gene: Fosterous_34 Start: 32991, Stop: 32518, Start Num: 96

Candidate Starts for Fosterous_34:

(37, 33129), (Start: 53 @33075 has 2 MA's), (Start: 60 @33066 has 3 MA's), (86, 33018), (Start: 96 @32991 has 17 MA's), (135, 32892), (154, 32850), (155, 32847), (167, 32811), (183, 32754), (191, 32721), (199, 32673),

Gene: Francesca_39 Start: 21303, Stop: 21839, Start Num: 70

Candidate Starts for Francesca_39:

(Start: 70 @21303 has 30 MA's), (167, 21498), (171, 21501), (197, 21618), (255, 21804), (261, 21822),

Gene: Frankie_34 Start: 27904, Stop: 27416, Start Num: 70

Candidate Starts for Frankie_34:

(Start: 70 @27904 has 30 MA's), (98, 27829), (119, 27787), (124, 27775), (132, 27757), (141, 27739), (161, 27712), (212, 27517), (228, 27478),

Gene: FugateOSU_60 Start: 53224, Stop: 52700, Start Num: 61

Candidate Starts for FugateOSU_60:

(34, 53293), (50, 53239), (Start: 61 @53224 has 20 MA's), (Start: 70 @53215 has 30 MA's), (95, 53149), (115, 53104), (127, 53080), (143, 53044), (146, 53038), (163, 53005), (182, 52951), (184, 52948), (210, 52831), (213, 52810), (240, 52735),

Gene: GAL1_27 Start: 22156, Stop: 22695, Start Num: 56

Candidate Starts for GAL1_27:

(Start: 56 @22156 has 7 MA's), (95, 22234), (122, 22300), (124, 22303), (146, 22348), (157, 22366), (159, 22372), (161, 22375), (167, 22390), (171, 22393), (172, 22396), (174, 22408), (198, 22510), (200, 22519),

Gene: GMA1_47 Start: 30722, Stop: 31246, Start Num: 61

Candidate Starts for GMA1_47:

(6, 30347), (11, 30500), (31, 30635), (35, 30653), (47, 30698), (50, 30707), (Start: 61 @30722 has 20 MA's), (Start: 90 @30779 has 1 MA's), (177, 30986), (194, 31037), (205, 31097), (219, 31154),

Gene: GMA1_68 Start: 40382, Stop: 40945, Start Num: 41

Candidate Starts for GMA1_68:

(7, 40088), (9, 40115), (10, 40187), (21, 40280), (41, 40382), (52, 40412), (Start: 90 @40481 has 1 MA's), (104, 40520), (150, 40598), (163, 40628), (174, 40655), (177, 40676), (192, 40718), (197, 40754), (200, 40766), (217, 40838),

Gene: Galactic_32 Start: 27751, Stop: 28350, Start Num: 26

Candidate Starts for Galactic_32:

(Start: 26 @27751 has 4 MA's), (Start: 56 @27853 has 7 MA's), (171, 28075), (177, 28111), (217, 28276), (236, 28321),

Gene: Galadriel_36 Start: 33480, Stop: 33007, Start Num: 96

Candidate Starts for Galadriel_36:

(37, 33618), (Start: 53 @33564 has 2 MA's), (Start: 60 @33555 has 3 MA's), (86, 33507), (Start: 96 @33480 has 17 MA's), (135, 33381), (154, 33339), (155, 33336), (167, 33300), (183, 33243), (191, 33210), (199, 33162),

Gene: Goku_37 Start: 33337, Stop: 32837, Start Num: 60

Candidate Starts for Goku_37:

(Start: 60 @33337 has 3 MA's), (Start: 90 @33280 has 1 MA's), (100, 33244),

Gene: Goku_110 Start: 63579, Stop: 64079, Start Num: 64

Candidate Starts for Goku_110:

(40, 63525), (Start: 64 @63579 has 31 MA's), (Start: 90 @63633 has 1 MA's), (129, 63714), (130, 63717), (141, 63741), (159, 63774), (177, 63831), (216, 63993),

Gene: Goldilocks_114 Start: 63260, Stop: 63760, Start Num: 64

Candidate Starts for Goldilocks_114:

(40, 63206), (Start: 64 @63260 has 31 MA's), (Start: 90 @63314 has 1 MA's), (129, 63395), (130, 63398), (141, 63422), (159, 63455), (177, 63512), (216, 63674),

Gene: Gonephishing_141 Start: 75522, Stop: 76124, Start Num: 61

Candidate Starts for Gonephishing_141:

(35, 75453), (Start: 61 @75522 has 20 MA's), (109, 75627), (119, 75648), (121, 75651), (130, 75675), (131, 75678), (133, 75684), (175, 75786), (185, 75813), (189, 75831), (206, 75918), (263, 76110),

Gene: Gspu1_40 Start: 30337, Stop: 30849, Start Num: 55

Candidate Starts for Gspu1_40:

(12, 30127), (15, 30154), (21, 30202), (Start: 28 @30250 has 1 MA's), (36, 30277), (Start: 55 @30337 has 3 MA's), (62, 30346), (80, 30382), (107, 30451), (119, 30475), (142, 30523), (162, 30550), (174, 30580), (177, 30601), (181, 30604), (186, 30616), (233, 30802),

Gene: HUHilltop_45 Start: 31495, Stop: 31986, Start Num: 65

Candidate Starts for HUHilltop_45:

(42, 31456), (44, 31459), (Start: 61 @31492 has 20 MA's), (Start: 65 @31495 has 6 MA's), (76, 31513), (Start: 79 @31522 has 1 MA's), (157, 31687), (161, 31696), (163, 31702), (171, 31714), (177, 31750), (194, 31801), (200, 31840),

Gene: Hannaconda_43 Start: 36122, Stop: 36664, Start Num: 56

Candidate Starts for Hannaconda_43:

(Start: 28 @36035 has 1 MA's), (Start: 56 @36122 has 7 MA's), (Start: 90 @36185 has 1 MA's), (113, 36251), (124, 36275), (141, 36308), (159, 36341), (171, 36362), (172, 36365), (177, 36398), (197, 36476), (228, 36587), (247, 36635),

Gene: Hannaconda_141 Start: 76044, Stop: 76646, Start Num: 61

Candidate Starts for Hannaconda_141:

(Start: 61 @76044 has 20 MA's), (109, 76149), (119, 76170), (121, 76173), (130, 76197), (131, 76200), (133, 76206), (164, 76266), (185, 76335), (189, 76353), (197, 76404), (206, 76440), (234, 76536), (263, 76632),

Gene: Hlubikazi_31 Start: 27761, Stop: 28381, Start Num: 32

Candidate Starts for Hlubikazi_31:

(18, 27677), (Start: 26 @27734 has 4 MA's), (Start: 32 @27761 has 3 MA's), (Start: 56 @27836 has 7 MA's), (171, 28058), (177, 28094), (217, 28259), (236, 28304),

Gene: HokkenD_142 Start: 79202, Stop: 79804, Start Num: 61

Candidate Starts for HokkenD_142:

(35, 79133), (Start: 61 @79202 has 20 MA's), (109, 79307), (119, 79328), (121, 79331), (130, 79355), (131, 79358), (133, 79364), (175, 79466), (185, 79493), (189, 79511), (206, 79598), (263, 79790),

Gene: Holt_116 Start: 63658, Stop: 64158, Start Num: 64

Candidate Starts for Holt_116:

(40, 63604), (Start: 64 @63658 has 31 MA's), (Start: 90 @63712 has 1 MA's), (129, 63793), (130, 63796), (141, 63820), (159, 63853), (177, 63910), (216, 64072),

Gene: Hortense_58 Start: 41496, Stop: 42002, Start Num: 70

Candidate Starts for Hortense_58:

(13, 41271), (16, 41301), (Start: 70 @41496 has 30 MA's), (98, 41571), (102, 41583), (122, 41625), (171, 41712), (182, 41751),

Gene: Howe_58 Start: 41496, Stop: 42002, Start Num: 70

Candidate Starts for Howe_58:

(13, 41271), (16, 41301), (Start: 70 @41496 has 30 MA's), (98, 41571), (102, 41583), (122, 41625), (171, 41712), (182, 41751),

Gene: Hughesyang_148 Start: 79867, Stop: 80466, Start Num: 64

Candidate Starts for Hughesyang_148:

(Start: 64 @79867 has 31 MA's), (109, 79969), (119, 79990), (121, 79993), (154, 80056), (164, 80086), (167, 80095), (175, 80128), (189, 80173), (206, 80260), (222, 80320), (234, 80356), (263, 80452),

Gene: Hughesyang_111 Start: 64353, Stop: 64895, Start Num: 68

Candidate Starts for Hughesyang_111:

(19, 64191), (24, 64215), (Start: 46 @64320 has 1 MA's), (Start: 68 @64353 has 11 MA's), (Start: 77 @64371 has 1 MA's), (98, 64428), (130, 64491), (135, 64506), (151, 64524), (171, 64581), (173, 64587), (190, 64647), (209, 64740),

Gene: Icee_112 Start: 62768, Stop: 63268, Start Num: 64

Candidate Starts for Icee_112:

(40, 62714), (Start: 64 @62768 has 31 MA's), (Start: 90 @62822 has 1 MA's), (129, 62903), (130, 62906), (141, 62930), (159, 62963), (177, 63020), (216, 63182),

Gene: Island3_46 Start: 33137, Stop: 33628, Start Num: 65

Candidate Starts for Island3_46:

(29, 33044), (42, 33098), (44, 33101), (Start: 61 @33134 has 20 MA's), (Start: 65 @33137 has 6 MA's), (76, 33155), (Start: 79 @33164 has 1 MA's), (157, 33329), (161, 33338), (163, 33344), (171, 33356), (177, 33392), (194, 33443), (200, 33482),

Gene: JalFarm20_33 Start: 27847, Stop: 27341, Start Num: 70

Candidate Starts for JalFarm20_33:

(Start: 70 @27847 has 30 MA's), (76, 27832), (95, 27781), (98, 27772), (119, 27730), (127, 27715), (131, 27703), (132, 27700), (143, 27679), (171, 27640), (177, 27604), (200, 27514), (215, 27448), (228, 27418),

Gene: JeTaime_109 Start: 62868, Stop: 63383, Start Num: 64

Candidate Starts for JeTaime_109:

(40, 62814), (Start: 64 @62868 has 31 MA's), (Start: 90 @62922 has 1 MA's), (129, 63003), (130, 63006), (141, 63030), (159, 63063), (177, 63120), (216, 63282),

Gene: Jesabah_60 Start: 53289, Stop: 52765, Start Num: 61

Candidate Starts for Jesabah_60:

(34, 53358), (50, 53304), (Start: 61 @53289 has 20 MA's), (Start: 70 @53280 has 30 MA's), (95, 53214), (115, 53169), (127, 53145), (143, 53109), (146, 53103), (163, 53070), (182, 53016), (184, 53013), (210, 52896), (213, 52875), (240, 52800),

Gene: JoeDirt_64 Start: 45013, Stop: 45471, Start Num: 70

Candidate Starts for JoeDirt_64:

(Start: 70 @45013 has 30 MA's), (98, 45085), (152, 45175), (158, 45187), (171, 45208), (188, 45271), (194, 45298),

Gene: JonJames_26 Start: 9049, Stop: 9558, Start Num: 64

Candidate Starts for JonJames_26:

(Start: 64 @9049 has 31 MA's), (Start: 90 @9103 has 1 MA's), (115, 9160), (123, 9181), (126, 9184), (167, 9256), (171, 9268), (178, 9304), (198, 9385), (200, 9394), (219, 9472), (246, 9544),

Gene: Kabocha_97 Start: 70776, Stop: 71294, Start Num: 73

Candidate Starts for Kabocha_97:

(45, 70734), (50, 70749), (Start: 73 @70776 has 5 MA's), (128, 70899), (132, 70908), (152, 70932), (200, 71112),

Gene: Kalah2_105 Start: 63688, Stop: 64230, Start Num: 68

Candidate Starts for Kalah2_105:

(19, 63526), (24, 63550), (Start: 46 @63655 has 1 MA's), (Start: 68 @63688 has 11 MA's), (Start: 77 @63706 has 1 MA's), (98, 63763), (130, 63826), (135, 63841), (151, 63859), (171, 63916), (173, 63922), (190, 63982), (209, 64075),

Gene: Kalah2_140 Start: 78988, Stop: 79587, Start Num: 64

Candidate Starts for Kalah2_140:

(Start: 64 @78988 has 31 MA's), (109, 79090), (119, 79111), (121, 79114), (154, 79177), (164, 79207), (167, 79216), (175, 79249), (189, 79294), (206, 79381), (222, 79441), (234, 79477), (263, 79573),

Gene: KashFlow_40 Start: 35743, Stop: 36285, Start Num: 56

Candidate Starts for KashFlow_40:

(Start: 28 @35656 has 1 MA's), (Start: 56 @35743 has 7 MA's), (Start: 90 @35806 has 1 MA's), (113, 35872), (124, 35896), (141, 35929), (159, 35962), (171, 35983), (172, 35986), (177, 36019), (197, 36097), (228, 36208), (247, 36256),

Gene: KashFlow_148 Start: 78305, Stop: 78904, Start Num: 67

Candidate Starts for KashFlow_148:

(Start: 67 @78305 has 4 MA's), (102, 78395), (154, 78491), (169, 78536), (175, 78563), (189, 78608), (196, 78650), (197, 78659), (241, 78806), (245, 78821), (263, 78890),

Gene: Keitabear_36 Start: 34510, Stop: 33947, Start Num: 53

Candidate Starts for Keitabear_36:

(37, 34564), (Start: 53 @34510 has 2 MA's), (Start: 60 @34501 has 3 MA's), (86, 34453), (Start: 96 @34426 has 17 MA's), (140, 34306), (167, 34243), (171, 34231), (220, 34024),

Gene: Kimchi_115 Start: 63385, Stop: 63885, Start Num: 64

Candidate Starts for Kimchi_115:

(40, 63331), (Start: 64 @63385 has 31 MA's), (Start: 90 @63439 has 1 MA's), (129, 63520), (130, 63523), (141, 63547), (159, 63580), (177, 63637), (216, 63799),

Gene: KingMidas_32 Start: 28828, Stop: 29370, Start Num: 56

Candidate Starts for KingMidas_32:

(Start: 56 @28828 has 7 MA's), (111, 28942), (177, 29095), (197, 29173), (200, 29185),

Gene: KingTut_52 Start: 48894, Stop: 48379, Start Num: 70

Candidate Starts for KingTut_52:

(34, 48972), (50, 48918), (Start: 61 @48903 has 20 MA's), (Start: 70 @48894 has 30 MA's), (95, 48828), (115, 48783), (127, 48759), (143, 48723), (146, 48717), (163, 48684), (182, 48630), (184, 48627), (210, 48510), (213, 48489), (240, 48414),

Gene: Klein_147 Start: 77536, Stop: 78138, Start Num: 61

Candidate Starts for Klein_147:

(35, 77467), (Start: 61 @77536 has 20 MA's), (109, 77641), (119, 77662), (121, 77665), (130, 77689), (131, 77692), (133, 77698), (175, 77800), (185, 77827), (189, 77845), (206, 77932), (263, 78124),

Gene: Kuwabara_68 Start: 41993, Stop: 42493, Start Num: 87

Candidate Starts for Kuwabara_68:

(Start: 87 @41993 has 1 MA's), (141, 42122), (177, 42230), (208, 42350),

Gene: LeeroyJenkins_114 Start: 56842, Stop: 56381, Start Num: 64

Candidate Starts for LeeroyJenkins_114:

(Start: 64 @56842 has 31 MA's), (125, 56713), (191, 56590),

Gene: LeiMonet_62 Start: 52626, Stop: 52111, Start Num: 70

Candidate Starts for LeiMonet_62:

(34, 52704), (50, 52650), (Start: 61 @52635 has 20 MA's), (Start: 70 @52626 has 30 MA's), (95, 52560), (115, 52515), (127, 52491), (143, 52455), (146, 52449), (163, 52416), (182, 52362), (184, 52359), (210, 52242), (213, 52221), (240, 52146),

Gene: Lennon_36 Start: 34213, Stop: 33740, Start Num: 96

Candidate Starts for Lennon_36:

(37, 34351), (Start: 53 @34297 has 2 MA's), (86, 34240), (Start: 96 @34213 has 17 MA's), (135, 34114), (154, 34072), (155, 34069), (167, 34033), (183, 33976), (190, 33952), (199, 33895),

Gene: Leozinho_32 Start: 27392, Stop: 27934, Start Num: 56

Candidate Starts for Leozinho_32:

(Start: 56 @27392 has 7 MA's), (111, 27506), (177, 27659), (197, 27737), (200, 27749),

Gene: LittleE_112 Start: 62894, Stop: 63436, Start Num: 68

Candidate Starts for LittleE_112:

(Start: 68 @62894 has 11 MA's), (Start: 77 @62912 has 1 MA's), (130, 63032), (135, 63047), (151, 63065), (171, 63122), (173, 63128), (190, 63188), (209, 63281), (253, 63422),

Gene: LittleE_150 Start: 78544, Stop: 79146, Start Num: 61

Candidate Starts for LittleE_150:

(Start: 61 @78544 has 20 MA's), (124, 78682), (130, 78694), (154, 78736), (165, 78769), (175, 78808), (181, 78829), (197, 78904), (204, 78934), (263, 79132),

Gene: Lopsy_58 Start: 51828, Stop: 51313, Start Num: 70

Candidate Starts for Lopsy_58:

(34, 51906), (50, 51852), (Start: 61 @51837 has 20 MA's), (Start: 70 @51828 has 30 MA's), (95, 51762), (115, 51717), (127, 51693), (143, 51657), (146, 51651), (163, 51618), (182, 51564), (184, 51561), (210, 51444), (213, 51423), (240, 51348),

Gene: LostAndPhound_60 Start: 52723, Stop: 52199, Start Num: 61

Candidate Starts for LostAndPhound_60:

(34, 52792), (50, 52738), (Start: 61 @52723 has 20 MA's), (Start: 70 @52714 has 30 MA's), (95, 52648), (115, 52603), (127, 52579), (143, 52543), (146, 52537), (163, 52504), (182, 52450), (184, 52447), (210, 52330), (213, 52309), (240, 52234),

Gene: Love_39 Start: 33996, Stop: 33523, Start Num: 96

Candidate Starts for Love_39:

(37, 34134), (Start: 53 @34080 has 2 MA's), (Start: 60 @34071 has 3 MA's), (86, 34023), (Start: 96 @33996 has 17 MA's), (135, 33897), (154, 33855), (155, 33852), (167, 33816), (183, 33759), (191, 33726), (199, 33678),

Gene: LunaBlu_33 Start: 28027, Stop: 28524, Start Num: 56

Candidate Starts for LunaBlu_33:

(Start: 26 @27925 has 4 MA's), (Start: 56 @28027 has 7 MA's), (171, 28249), (177, 28285), (217, 28450), (236, 28495),

Gene: Lysidious_60 Start: 40309, Stop: 40836, Start Num: 69
Candidate Starts for Lysidious_60:
(Start: 69 @40309 has 2 MA's), (Start: 78 @40330 has 2 MA's), (160, 40510),

Gene: Lysidious_17 Start: 10274, Stop: 10777, Start Num: 63
Candidate Starts for Lysidious_17:
(Start: 63 @10274 has 3 MA's), (102, 10364), (117, 10388), (167, 10493), (172, 10499), (177, 10532),
(183, 10538), (205, 10643),

Gene: Malachai_17 Start: 10279, Stop: 10785, Start Num: 63
Candidate Starts for Malachai_17:
(Start: 63 @10279 has 3 MA's), (102, 10369), (172, 10504), (177, 10537), (194, 10588), (212, 10681),
(227, 10723),

Gene: Mandlovu_31 Start: 27703, Stop: 28323, Start Num: 32
Candidate Starts for Mandlovu_31:
(18, 27619), (Start: 26 @27676 has 4 MA's), (Start: 32 @27703 has 3 MA's), (Start: 56 @27778 has 7
MA's), (171, 28000), (177, 28036), (217, 28201), (236, 28246),

Gene: Maravista_65 Start: 42918, Stop: 43388, Start Num: 94
Candidate Starts for Maravista_65:
(Start: 94 @42918 has 2 MA's), (141, 43035), (177, 43143), (208, 43263),

Gene: Marshmallow_109 Start: 63582, Stop: 64082, Start Num: 64
Candidate Starts for Marshmallow_109:
(Start: 64 @63582 has 31 MA's), (Start: 90 @63636 has 1 MA's), (129, 63717), (130, 63720), (141,
63744), (159, 63777), (177, 63834), (216, 63996),

Gene: Matalotodo_59 Start: 52707, Stop: 52192, Start Num: 70
Candidate Starts for Matalotodo_59:
(34, 52785), (50, 52731), (Start: 61 @52716 has 20 MA's), (Start: 70 @52707 has 30 MA's), (95,
52641), (115, 52596), (127, 52572), (143, 52536), (146, 52530), (163, 52497), (182, 52443), (184,
52440), (210, 52323), (213, 52302), (240, 52227),

Gene: McKinley_38 Start: 34022, Stop: 33549, Start Num: 96
Candidate Starts for McKinley_38:
(37, 34160), (Start: 53 @34106 has 2 MA's), (Start: 60 @34097 has 3 MA's), (86, 34049), (Start: 96
@34022 has 17 MA's), (135, 33923), (154, 33881), (155, 33878), (167, 33842), (183, 33785), (199,
33704),

Gene: Mellie_57 Start: 38319, Stop: 38846, Start Num: 69
Candidate Starts for Mellie_57:
(Start: 69 @38319 has 2 MA's), (Start: 78 @38340 has 2 MA's), (160, 38520), (235, 38784),

Gene: Mesmerelda_61 Start: 52711, Stop: 52196, Start Num: 70
Candidate Starts for Mesmerelda_61:
(34, 52789), (50, 52735), (Start: 61 @52720 has 20 MA's), (Start: 70 @52711 has 30 MA's), (95,
52645), (115, 52600), (127, 52576), (143, 52540), (146, 52534), (163, 52501), (182, 52447), (184,
52444), (210, 52327), (213, 52306), (240, 52231),

Gene: Minerva_162 Start: 85665, Stop: 86177, Start Num: 56
Candidate Starts for Minerva_162:

(Start: 56 @85665 has 7 MA's), (Start: 58 @85668 has 1 MA's), (Start: 79 @85701 has 1 MA's), (98, 85752), (116, 85788), (159, 85878), (163, 85887), (171, 85899), (172, 85902), (179, 85935), (190, 85965), (205, 86046), (232, 86139), (243, 86163),

Gene: Minerva_148 Start: 78849, Stop: 79448, Start Num: 64

Candidate Starts for Minerva_148:

(Start: 64 @78849 has 31 MA's), (109, 78951), (119, 78972), (121, 78975), (154, 79038), (164, 79068), (167, 79077), (175, 79110), (189, 79155), (206, 79242), (222, 79302), (234, 79338), (263, 79434),

Gene: MinionDave_33 Start: 28083, Stop: 28682, Start Num: 26

Candidate Starts for MinionDave_33:

(Start: 26 @28083 has 4 MA's), (Start: 56 @28185 has 7 MA's), (171, 28407), (177, 28443), (217, 28608), (236, 28653),

Gene: Mollymur_102 Start: 68397, Stop: 68978, Start Num: 70

Candidate Starts for Mollymur_102:

(9, 68076), (17, 68211), (Start: 70 @68397 has 30 MA's), (119, 68514), (131, 68541), (143, 68565), (176, 68646), (202, 68757), (238, 68886), (248, 68916), (250, 68922),

Gene: Morrissey_46 Start: 35134, Stop: 34631, Start Num: 72

Candidate Starts for Morrissey_46:

(1, 35755), (2, 35731), (3, 35701), (4, 35656), (5, 35611), (8, 35482), (20, 35293), (Start: 63 @35143 has 3 MA's), (Start: 72 @35134 has 1 MA's), (85, 35095), (Start: 90 @35086 has 1 MA's), (103, 35047), (153, 34954), (163, 34927), (167, 34918), (171, 34915), (172, 34912), (177, 34879),

Gene: Mova_51 Start: 35948, Stop: 36499, Start Num: 54

Candidate Starts for Mova_51:

(Start: 54 @35948 has 3 MA's), (57, 35951), (102, 36041), (124, 36083), (156, 36143), (177, 36209), (192, 36251), (200, 36299),

Gene: MulchSalad_28 Start: 23891, Stop: 24409, Start Num: 49

Candidate Starts for MulchSalad_28:

(49, 23891), (95, 23975), (139, 24071), (143, 24077), (171, 24119), (173, 24125), (177, 24155),

Gene: Mutaforma13_54 Start: 38739, Stop: 39290, Start Num: 54

Candidate Starts for Mutaforma13_54:

(Start: 54 @38739 has 3 MA's), (57, 38742), (102, 38832), (124, 38874), (156, 38934), (177, 39000), (192, 39042), (200, 39090),

Gene: Nekros_146 Start: 78699, Stop: 79298, Start Num: 67

Candidate Starts for Nekros_146:

(Start: 67 @78699 has 4 MA's), (102, 78789), (154, 78885), (169, 78930), (175, 78957), (189, 79002), (196, 79044), (197, 79053), (241, 79200), (245, 79215), (263, 79284),

Gene: Nimrod_111 Start: 63730, Stop: 64230, Start Num: 64

Candidate Starts for Nimrod_111:

(40, 63676), (Start: 64 @63730 has 31 MA's), (Start: 90 @63784 has 1 MA's), (129, 63865), (130, 63868), (141, 63892), (159, 63925), (177, 63982), (216, 64144),

Gene: Nordenberg_30 Start: 32192, Stop: 31719, Start Num: 96

Candidate Starts for Nordenberg_30:

(37, 32330), (Start: 53 @32276 has 2 MA's), (Start: 60 @32267 has 3 MA's), (86, 32219), (Start: 96 @32192 has 17 MA's), (135, 32093), (154, 32051), (155, 32048), (167, 32012), (183, 31955), (191,

31922), (199, 31874),

Gene: Nova53_39 Start: 21310, Stop: 21888, Start Num: 74

Candidate Starts for Nova53_39:

(74, 21310), (123, 21442), (172, 21532), (180, 21565), (198, 21646), (206, 21679), (213, 21712), (218, 21730), (259, 21844), (262, 21859), (264, 21871),

Gene: Omega_117 Start: 63909, Stop: 64451, Start Num: 68

Candidate Starts for Omega_117:

(Start: 46 @63876 has 1 MA's), (Start: 68 @63909 has 11 MA's), (Start: 77 @63927 has 1 MA's), (130, 64047), (135, 64062), (151, 64080), (171, 64137), (173, 64143), (190, 64203), (209, 64296), (253, 64437),

Gene: Omega_154 Start: 79628, Stop: 80230, Start Num: 61

Candidate Starts for Omega_154:

(Start: 61 @79628 has 20 MA's), (124, 79766), (130, 79778), (154, 79820), (165, 79853), (175, 79892), (181, 79913), (197, 79988), (204, 80018), (263, 80216),

Gene: Omega_51 Start: 42659, Stop: 43288, Start Num: 28

Candidate Starts for Omega_51:

(Start: 28 @42659 has 1 MA's), (Start: 56 @42746 has 7 MA's), (Start: 90 @42809 has 1 MA's), (113, 42875), (124, 42899), (141, 42932), (159, 42965), (171, 42986), (172, 42989), (177, 43022), (197, 43100), (228, 43211), (247, 43259),

Gene: Optimus_141 Start: 76720, Stop: 77322, Start Num: 61

Candidate Starts for Optimus_141:

(35, 76651), (Start: 61 @76720 has 20 MA's), (109, 76825), (119, 76846), (121, 76849), (130, 76873), (131, 76876), (133, 76882), (175, 76984), (185, 77011), (189, 77029), (206, 77116), (263, 77308),

Gene: Orfeu_58 Start: 52711, Stop: 52187, Start Num: 61

Candidate Starts for Orfeu_58:

(34, 52780), (50, 52726), (Start: 61 @52711 has 20 MA's), (Start: 70 @52702 has 30 MA's), (95, 52636), (115, 52591), (127, 52567), (143, 52531), (146, 52525), (163, 52492), (182, 52438), (184, 52435), (210, 52318), (213, 52297), (240, 52222),

Gene: Paries_38 Start: 33658, Stop: 33185, Start Num: 96

Candidate Starts for Paries_38:

(30, 33820), (37, 33796), (Start: 53 @33742 has 2 MA's), (Start: 60 @33733 has 3 MA's), (86, 33685), (Start: 96 @33658 has 17 MA's), (135, 33559), (154, 33517), (155, 33514), (167, 33478), (183, 33421), (191, 33388), (199, 33340),

Gene: Peregrin_232 Start: 114891, Stop: 115472, Start Num: 67

Candidate Starts for Peregrin_232:

(Start: 67 @114891 has 4 MA's), (Start: 90 @114942 has 1 MA's), (100, 114978), (116, 115002), (124, 115023), (145, 115062), (194, 115197), (223, 115323), (226, 115329),

Gene: Peregrin_178 Start: 94313, Stop: 94846, Start Num: 66

Candidate Starts for Peregrin_178:

(Start: 66 @94313 has 1 MA's), (98, 94391), (147, 94499), (173, 94553), (195, 94640), (197, 94661), (231, 94781),

Gene: Phineas_45 Start: 31827, Stop: 32321, Start Num: 61

Candidate Starts for Phineas_45:

(42, 31791), (44, 31794), (Start: 61 @31827 has 20 MA's), (Start: 65 @31830 has 6 MA's), (76, 31848), (Start: 79 @31857 has 1 MA's), (157, 32022), (161, 32031), (163, 32037), (171, 32049), (177, 32085), (194, 32136), (200, 32175),

Gene: Phoebus_113 Start: 65664, Stop: 66206, Start Num: 68

Candidate Starts for Phoebus_113:

(19, 65502), (24, 65526), (Start: 46 @65631 has 1 MA's), (Start: 68 @65664 has 11 MA's), (Start: 77 @65682 has 1 MA's), (98, 65739), (130, 65802), (135, 65817), (151, 65835), (171, 65892), (173, 65898), (190, 65958), (209, 66051),

Gene: Phoebus_149 Start: 81221, Stop: 81820, Start Num: 64

Candidate Starts for Phoebus_149:

(Start: 64 @81221 has 31 MA's), (109, 81323), (119, 81344), (121, 81347), (154, 81410), (164, 81440), (167, 81449), (175, 81482), (189, 81527), (206, 81614), (222, 81674), (234, 81710), (263, 81806),

Gene: Pippy_62 Start: 40280, Stop: 40750, Start Num: 94

Candidate Starts for Pippy_62:

(Start: 94 @40280 has 2 MA's), (141, 40397), (177, 40505), (208, 40625),

Gene: Placalicious_60 Start: 53221, Stop: 52697, Start Num: 61

Candidate Starts for Placalicious_60:

(34, 53290), (50, 53236), (Start: 61 @53221 has 20 MA's), (Start: 70 @53212 has 30 MA's), (95, 53146), (115, 53101), (127, 53077), (143, 53041), (146, 53035), (163, 53002), (182, 52948), (184, 52945), (210, 52828), (213, 52807), (240, 52732),

Gene: Podrick_58 Start: 51964, Stop: 51449, Start Num: 70

Candidate Starts for Podrick_58:

(34, 52042), (50, 51988), (Start: 61 @51973 has 20 MA's), (Start: 70 @51964 has 30 MA's), (95, 51898), (115, 51853), (127, 51829), (143, 51793), (146, 51787), (163, 51754), (182, 51700), (184, 51697), (210, 51580), (213, 51559), (240, 51484),

Gene: Pochiewood_65 Start: 45021, Stop: 45479, Start Num: 70

Candidate Starts for Pochiewood_65:

(Start: 70 @45021 has 30 MA's), (98, 45093), (152, 45183), (158, 45195), (171, 45216), (188, 45279), (194, 45306),

Gene: Porcelain_108 Start: 60257, Stop: 60832, Start Num: 46

Candidate Starts for Porcelain_108:

(Start: 46 @60257 has 1 MA's), (Start: 68 @60290 has 11 MA's), (Start: 77 @60308 has 1 MA's), (98, 60365), (130, 60428), (135, 60443), (151, 60461), (171, 60518), (173, 60524), (190, 60584), (209, 60677),

Gene: Porky_109 Start: 62562, Stop: 63008, Start Num: 90

Candidate Starts for Porky_109:

(40, 62454), (Start: 64 @62508 has 31 MA's), (Start: 90 @62562 has 1 MA's), (129, 62643), (130, 62646), (141, 62670), (159, 62703), (177, 62760), (216, 62922),

Gene: Pound_50 Start: 43906, Stop: 44415, Start Num: 78

Candidate Starts for Pound_50:

(33, 43795), (52, 43864), (Start: 67 @43882 has 4 MA's), (Start: 78 @43906 has 2 MA's), (102, 43972), (130, 44026), (154, 44071), (177, 44158), (197, 44236), (201, 44248), (247, 44401),

Gene: Pygmy_47 Start: 33294, Stop: 33785, Start Num: 65

Candidate Starts for Pygmy_47:

(42, 33255), (44, 33258), (Start: 61 @33291 has 20 MA's), (Start: 65 @33294 has 6 MA's), (76, 33312), (Start: 79 @33321 has 1 MA's), (157, 33486), (161, 33495), (163, 33501), (171, 33513), (177, 33549), (194, 33600), (200, 33639),

Gene: Ramsey_33 Start: 27746, Stop: 28345, Start Num: 26

Candidate Starts for Ramsey_33:

(Start: 26 @27746 has 4 MA's), (Start: 56 @27848 has 7 MA's), (171, 28070), (177, 28106), (217, 28271), (236, 28316),

Gene: RedWattleHog_22 Start: 25760, Stop: 26308, Start Num: 67

Candidate Starts for RedWattleHog_22:

(50, 25739), (Start: 67 @25760 has 4 MA's), (122, 25880), (192, 26048), (194, 26057), (198, 26087), (200, 26096), (239, 26222),

Gene: RedWattleHog_85 Start: 77917, Stop: 78504, Start Num: 71

Candidate Starts for RedWattleHog_85:

(Start: 71 @77917 has 2 MA's), (95, 77989), (118, 78037), (121, 78043), (138, 78091), (143, 78100), (145, 78103), (149, 78112), (162, 78142), (172, 78160), (180, 78193), (193, 78238), (199, 78280), (213, 78340), (262, 78484),

Gene: RedWattleHog_100 Start: 85618, Stop: 86124, Start Num: 51

Candidate Starts for RedWattleHog_100:

(43, 85600), (Start: 51 @85618 has 1 MA's), (Start: 90 @85687 has 1 MA's), (100, 85723), (102, 85726), (103, 85729), (122, 85768), (166, 85846), (171, 85852), (200, 85981), (217, 86056),

Gene: Rofo_36 Start: 33056, Stop: 32583, Start Num: 96

Candidate Starts for Rofo_36:

(37, 33194), (Start: 53 @33140 has 2 MA's), (Start: 60 @33131 has 3 MA's), (86, 33083), (Start: 96 @33056 has 17 MA's), (135, 32957), (154, 32915), (155, 32912), (167, 32876), (183, 32819), (191, 32786), (199, 32738),

Gene: Rose5_65 Start: 45033, Stop: 45491, Start Num: 70

Candidate Starts for Rose5_65:

(Start: 70 @45033 has 30 MA's), (98, 45105), (152, 45195), (158, 45207), (171, 45228), (188, 45291), (194, 45318),

Gene: Saguaro_52 Start: 46118, Stop: 45648, Start Num: 70

Candidate Starts for Saguaro_52:

(40, 46169), (Start: 70 @46118 has 30 MA's), (Start: 78 @46097 has 2 MA's), (Start: 90 @46070 has 1 MA's), (95, 46052), (98, 46043), (102, 46031), (122, 45992), (171, 45905), (197, 45791), (210, 45746),

Gene: Sassafras_31 Start: 27690, Stop: 28187, Start Num: 56

Candidate Starts for Sassafras_31:

(Start: 26 @27588 has 4 MA's), (Start: 56 @27690 has 7 MA's), (171, 27912), (177, 27948), (217, 28113), (236, 28158),

Gene: Schomber_94 Start: 69164, Stop: 69682, Start Num: 73

Candidate Starts for Schomber_94:

(45, 69122), (50, 69137), (Start: 73 @69164 has 5 MA's), (128, 69287), (132, 69296), (152, 69320), (200, 69500),

Gene: ScoobyDoobyDoo_60 Start: 22027, Stop: 22503, Start Num: 88

Candidate Starts for ScoobyDoobyDoo_60:

(38, 21928), (Start: 88 @22027 has 1 MA's), (170, 22225), (230, 22462),

Gene: ScoobyDoobyDoo_184 Start: 103006, Stop: 103509, Start Num: 92

Candidate Starts for ScoobyDoobyDoo_184:

(75, 102958), (81, 102973), (84, 102985), (Start: 89 @102991 has 1 MA's), (Start: 92 @103006 has 1 MA's), (143, 103123), (171, 103174), (174, 103189), (200, 103300), (210, 103333), (211, 103342), (214, 103357), (229, 103399), (250, 103462), (257, 103489),

Gene: Sedona_36 Start: 34162, Stop: 33689, Start Num: 96

Candidate Starts for Sedona_36:

(37, 34300), (Start: 53 @34246 has 2 MA's), (Start: 60 @34237 has 3 MA's), (86, 34189), (Start: 96 @34162 has 17 MA's), (135, 34063), (154, 34021), (155, 34018), (167, 33982), (183, 33925), (191, 33892), (199, 33844),

Gene: Shaboozey_39 Start: 35483, Stop: 36025, Start Num: 56

Candidate Starts for Shaboozey_39:

(Start: 28 @35396 has 1 MA's), (Start: 56 @35483 has 7 MA's), (Start: 90 @35546 has 1 MA's), (113, 35612), (124, 35636), (141, 35669), (159, 35702), (171, 35723), (172, 35726), (177, 35759), (197, 35837), (228, 35948), (247, 35996),

Gene: Shaboozey_158 Start: 83054, Stop: 83566, Start Num: 56

Candidate Starts for Shaboozey_158:

(Start: 56 @83054 has 7 MA's), (Start: 58 @83057 has 1 MA's), (Start: 79 @83090 has 1 MA's), (98, 83141), (116, 83177), (159, 83267), (163, 83276), (171, 83288), (179, 83324), (190, 83354), (205, 83435), (232, 83528), (243, 83552),

Gene: Shipwreck_47 Start: 33269, Stop: 33760, Start Num: 65

Candidate Starts for Shipwreck_47:

(42, 33230), (44, 33233), (Start: 61 @33266 has 20 MA's), (Start: 65 @33269 has 6 MA's), (76, 33287), (Start: 79 @33296 has 1 MA's), (157, 33461), (161, 33470), (163, 33476), (171, 33488), (177, 33524), (194, 33575), (200, 33614),

Gene: Shlim410_56 Start: 41496, Stop: 42002, Start Num: 70

Candidate Starts for Shlim410_56:

(13, 41271), (16, 41301), (Start: 70 @41496 has 30 MA's), (98, 41571), (102, 41583), (122, 41625), (171, 41712), (182, 41751),

Gene: Sitar_36 Start: 34297, Stop: 33740, Start Num: 53

Candidate Starts for Sitar_36:

(37, 34351), (Start: 53 @34297 has 2 MA's), (86, 34240), (Start: 96 @34213 has 17 MA's), (135, 34114), (154, 34072), (155, 34069), (167, 34033), (183, 33976), (190, 33952), (199, 33895),

Gene: SoilAssassin_64 Start: 43104, Stop: 43649, Start Num: 48

Candidate Starts for SoilAssassin_64:

(Start: 48 @43104 has 2 MA's), (Start: 77 @43146 has 1 MA's), (Start: 83 @43167 has 1 MA's), (93, 43191), (106, 43230), (112, 43242), (126, 43272), (167, 43377), (200, 43515),

Gene: SpeedDemon_1040 Start: 70108, Stop: 70686, Start Num: 70

Candidate Starts for SpeedDemon_1040:

(9, 69790), (25, 69976), (Start: 70 @70108 has 30 MA's), (Start: 90 @70156 has 1 MA's), (95, 70174), (100, 70192), (119, 70225), (171, 70327), (185, 70378), (207, 70480), (244, 70606),

Gene: Stank_113 Start: 63457, Stop: 63957, Start Num: 64

Candidate Starts for Stank_113:

(40, 63403), (Start: 64 @63457 has 31 MA's), (Start: 90 @63511 has 1 MA's), (129, 63592), (130, 63595), (141, 63619), (159, 63652), (177, 63709), (216, 63871),

Gene: Starcevich_34 Start: 27605, Stop: 27099, Start Num: 70

Candidate Starts for Starcevich_34:

(Start: 70 @27605 has 30 MA's), (76, 27590), (95, 27539), (98, 27530), (119, 27488), (127, 27473), (131, 27461), (132, 27458), (143, 27437), (171, 27398), (177, 27362), (200, 27272), (215, 27206), (228, 27176),

Gene: Stickynote_47 Start: 43021, Stop: 42431, Start Num: 55

Candidate Starts for Stickynote_47:

(22, 43153), (23, 43150), (Start: 55 @43021 has 3 MA's), (82, 42973), (97, 42934), (108, 42910), (110, 42907), (180, 42763), (197, 42685), (205, 42652), (239, 42544), (266, 42439),

Gene: Stormageddon_82 Start: 77898, Stop: 78485, Start Num: 71

Candidate Starts for Stormageddon_82:

(Start: 71 @77898 has 2 MA's), (95, 77970), (118, 78018), (121, 78024), (138, 78072), (143, 78081), (145, 78084), (149, 78093), (162, 78123), (172, 78141), (180, 78174), (193, 78219), (199, 78261), (213, 78321), (262, 78465),

Gene: Strokeseat_31 Start: 27760, Stop: 28380, Start Num: 32

Candidate Starts for Strokeseat_31:

(18, 27676), (Start: 26 @27733 has 4 MA's), (Start: 32 @27760 has 3 MA's), (Start: 56 @27835 has 7 MA's), (171, 28057), (177, 28093), (217, 28258), (236, 28303),

Gene: Superphikiman_145 Start: 75577, Stop: 76179, Start Num: 61

Candidate Starts for Superphikiman_145:

(Start: 61 @75577 has 20 MA's), (109, 75682), (119, 75703), (121, 75706), (130, 75730), (131, 75733), (133, 75739), (164, 75799), (185, 75868), (189, 75886), (197, 75937), (206, 75973), (234, 76069), (263, 76165),

Gene: TBrady12_114 Start: 62894, Stop: 63394, Start Num: 64

Candidate Starts for TBrady12_114:

(40, 62840), (Start: 64 @62894 has 31 MA's), (Start: 90 @62948 has 1 MA's), (129, 63029), (130, 63032), (141, 63056), (159, 63089), (177, 63146), (216, 63308),

Gene: Tangent_36 Start: 32578, Stop: 32105, Start Num: 96

Candidate Starts for Tangent_36:

(37, 32716), (Start: 53 @32662 has 2 MA's), (Start: 60 @32653 has 3 MA's), (86, 32605), (Start: 96 @32578 has 17 MA's), (135, 32479), (154, 32437), (155, 32434), (167, 32398), (183, 32341), (191, 32308), (199, 32260),

Gene: Teaspoon_111 Start: 63442, Stop: 63942, Start Num: 64

Candidate Starts for Teaspoon_111:

(40, 63388), (Start: 64 @63442 has 31 MA's), (Start: 90 @63496 has 1 MA's), (129, 63577), (130, 63580), (141, 63604), (159, 63637), (177, 63694), (216, 63856),

Gene: Thibault_95 Start: 58448, Stop: 58990, Start Num: 68

Candidate Starts for Thibault_95:

(Start: 68 @58448 has 11 MA's), (Start: 77 @58466 has 1 MA's), (130, 58586), (135, 58601), (151, 58619), (165, 58658), (171, 58676), (173, 58682), (190, 58742), (209, 58835), (253, 58976),

Gene: Thibault_132 Start: 76186, Stop: 76788, Start Num: 61

Candidate Starts for Thibault_132:

(Start: 61 @76186 has 20 MA's), (124, 76324), (130, 76336), (154, 76378), (169, 76423), (171, 76429), (181, 76471), (197, 76546), (204, 76576), (263, 76774),

Gene: ThreeRngTarjay_109 Start: 64920, Stop: 65462, Start Num: 68

Candidate Starts for ThreeRngTarjay_109:

(19, 64758), (24, 64782), (Start: 46 @64887 has 1 MA's), (Start: 68 @64920 has 11 MA's), (Start: 77 @64938 has 1 MA's), (98, 64995), (130, 65058), (135, 65073), (151, 65091), (171, 65148), (173, 65154), (190, 65214), (209, 65307),

Gene: ThreeRngTarjay_144 Start: 79812, Stop: 80411, Start Num: 64

Candidate Starts for ThreeRngTarjay_144:

(Start: 64 @79812 has 31 MA's), (109, 79914), (119, 79935), (121, 79938), (154, 80001), (164, 80031), (167, 80040), (175, 80073), (189, 80118), (206, 80205), (222, 80265), (234, 80301), (263, 80397),

Gene: Toni_59 Start: 52612, Stop: 52088, Start Num: 61

Candidate Starts for Toni_59:

(34, 52681), (50, 52627), (Start: 61 @52612 has 20 MA's), (Start: 70 @52603 has 30 MA's), (95, 52537), (115, 52492), (127, 52468), (143, 52432), (146, 52426), (163, 52393), (182, 52339), (184, 52336), (210, 52219), (213, 52198), (240, 52123),

Gene: Towmatter_93 Start: 63151, Stop: 63720, Start Num: 70

Candidate Starts for Towmatter_93:

(9, 62842), (14, 62953), (Start: 70 @63151 has 30 MA's), (119, 63268), (143, 63319), (171, 63373), (181, 63418), (213, 63562), (238, 63628),

Gene: Twinkle_57 Start: 42555, Stop: 43061, Start Num: 70

Candidate Starts for Twinkle_57:

(13, 42330), (16, 42360), (Start: 70 @42555 has 30 MA's), (98, 42630), (102, 42642), (122, 42684), (171, 42771), (182, 42810),

Gene: Twister6_58 Start: 42736, Stop: 43260, Start Num: 83

Candidate Starts for Twister6_58:

(Start: 83 @42736 has 1 MA's), (102, 42787), (110, 42805), (137, 42883), (168, 42964), (170, 42973), (203, 43114),

Gene: UBSmoodge_128 Start: 91385, Stop: 91951, Start Num: 64

Candidate Starts for UBSmoodge_128:

(Start: 64 @91385 has 31 MA's), (109, 91484), (121, 91508), (134, 91541), (144, 91571), (152, 91583), (164, 91616), (171, 91637), (172, 91640), (198, 91754), (200, 91763), (237, 91889),

Gene: UPIE_65 Start: 44559, Stop: 45017, Start Num: 70

Candidate Starts for UPIE_65:

(Start: 70 @44559 has 30 MA's), (98, 44631), (152, 44721), (158, 44733), (171, 44754), (188, 44817), (194, 44844),

Gene: Vivi2_38 Start: 33736, Stop: 33263, Start Num: 96

Candidate Starts for Vivi2_38:

(37, 33874), (Start: 53 @33820 has 2 MA's), (Start: 60 @33811 has 3 MA's), (86, 33763), (Start: 96 @33736 has 17 MA's), (135, 33637), (154, 33595), (155, 33592), (167, 33556), (183, 33499), (191, 33466), (199, 33418),

Gene: Wamburgxpress_65 Start: 44589, Stop: 45047, Start Num: 70

Candidate Starts for Wamburgxpress_65:

(Start: 70 @44589 has 30 MA's), (98, 44661), (152, 44751), (158, 44763), (171, 44784), (188, 44847), (194, 44874),

Gene: Wanda_148 Start: 77329, Stop: 77928, Start Num: 64

Candidate Starts for Wanda_148:

(Start: 64 @77329 has 31 MA's), (109, 77431), (119, 77452), (121, 77455), (154, 77518), (164, 77548), (167, 77557), (175, 77590), (189, 77635), (206, 77722), (222, 77782), (234, 77818), (263, 77914),

Gene: Wiggin_113 Start: 62887, Stop: 63387, Start Num: 64

Candidate Starts for Wiggin_113:

(Start: 64 @62887 has 31 MA's), (Start: 90 @62941 has 1 MA's), (129, 63022), (130, 63025), (141, 63049), (159, 63082), (177, 63139), (216, 63301),

Gene: WilliamBoone_144 Start: 75606, Stop: 76268, Start Num: 27

Candidate Starts for WilliamBoone_144:

(25, 75582), (Start: 27 @75606 has 1 MA's), (102, 75792), (134, 75861), (143, 75876), (163, 75918), (238, 76194), (258, 76260),

Gene: Xandras_110 Start: 62710, Stop: 63210, Start Num: 64

Candidate Starts for Xandras_110:

(40, 62656), (Start: 64 @62710 has 31 MA's), (Start: 90 @62764 has 1 MA's), (129, 62845), (130, 62848), (141, 62872), (159, 62905), (177, 62962), (216, 63124),

Gene: Xavia_53 Start: 39307, Stop: 39837, Start Num: 70

Candidate Starts for Xavia_53:

(Start: 70 @39307 has 30 MA's), (91, 39364), (95, 39373), (122, 39436), (124, 39439), (141, 39475), (143, 39478), (148, 39487), (149, 39490), (171, 39532), (194, 39619), (235, 39781),

Gene: Zelink_108 Start: 64885, Stop: 65409, Start Num: 77

Candidate Starts for Zelink_108:

(19, 64705), (24, 64729), (Start: 46 @64834 has 1 MA's), (Start: 68 @64867 has 11 MA's), (Start: 77 @64885 has 1 MA's), (98, 64942), (130, 65005), (135, 65020), (151, 65038), (171, 65095), (173, 65101), (190, 65161), (209, 65254),

Gene: Zelink_143 Start: 80141, Stop: 80740, Start Num: 64

Candidate Starts for Zelink_143:

(Start: 64 @80141 has 31 MA's), (109, 80243), (119, 80264), (121, 80267), (154, 80330), (164, 80360), (167, 80369), (175, 80402), (189, 80447), (206, 80534), (222, 80594), (234, 80630), (263, 80726),