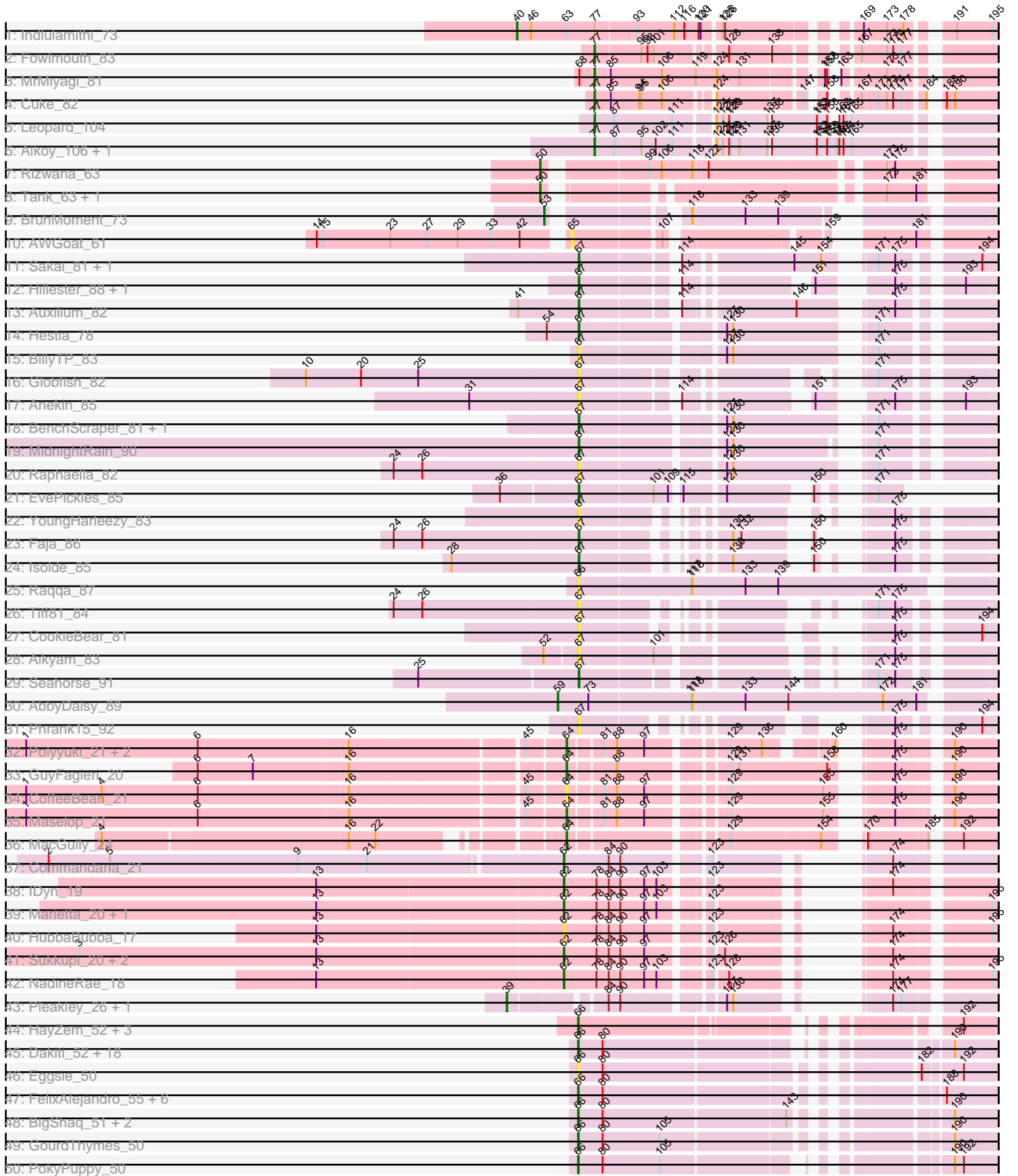
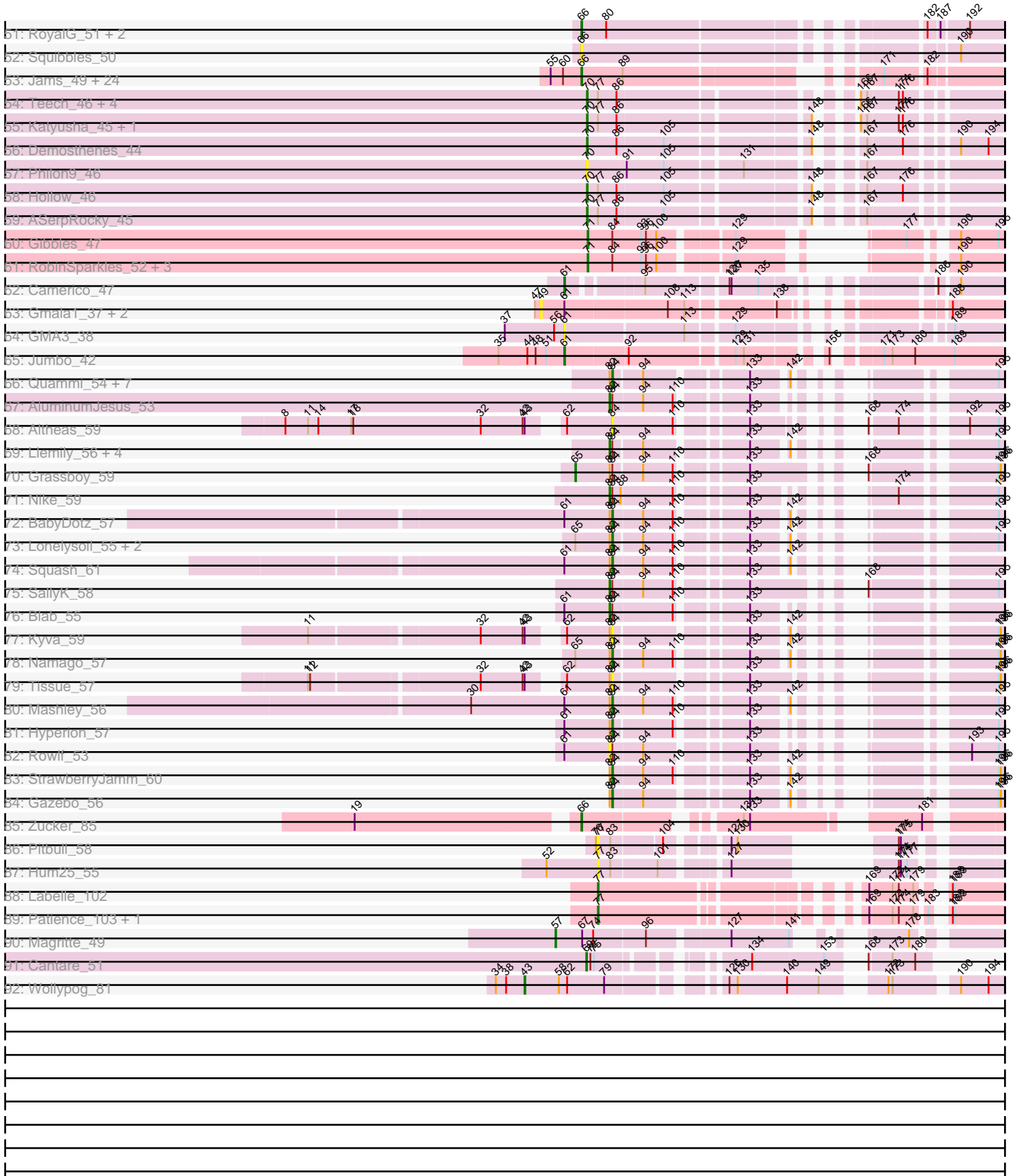


Pham 156146



Pham 156146



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 156146 Report

This analysis was run 04/12/24 on database version 558.

Pham number 156146 has 182 members, 46 are drafts.

Phages represented in each track:

- Track 1 : Indlulamithi_73
- Track 2 : Fowlmouth_83
- Track 3 : MrMiyagi_81
- Track 4 : Cuke_82
- Track 5 : Leopard_104
- Track 6 : Aikoy_106, Onyinye_105
- Track 7 : Rizwana_63
- Track 8 : Tank_63, Wilde_65
- Track 9 : BruhMoment_73
- Track 10 : AWGoat_61
- Track 11 : Sakai_81, Gorpy_82
- Track 12 : Hillester_88, RadFad_89
- Track 13 : Auxilium_82
- Track 14 : Hestia_78
- Track 15 : BillyTP_83
- Track 16 : Globfish_82
- Track 17 : Anekin_85
- Track 18 : BenchScraper_81, Richie_87
- Track 19 : MidnightRain_90
- Track 20 : Raphaella_82
- Track 21 : EvePickles_85
- Track 22 : YoungHarleezy_83
- Track 23 : Faja_86
- Track 24 : Isolde_85
- Track 25 : Raqqa_87
- Track 26 : Tiff81_84
- Track 27 : CookieBear_81
- Track 28 : Aikyam_83
- Track 29 : Seahorse_91
- Track 30 : AbbyDaisy_89
- Track 31 : Phrank15_92
- Track 32 : Polyuyuki_21, Braxoaddie_21, Apiary_21
- Track 33 : GuyFagieri_20
- Track 34 : CoffeeBean_21
- Track 35 : Maselop_21
- Track 36 : MacGully_24
- Track 37 : Commandaria_21

- Track 38 : IDyn_19
- Track 39 : Marietta_20, WhoseManz_20
- Track 40 : HubbaBubba_17
- Track 41 : Sukkupi_20, BiPauneto_21, Yndexa_20
- Track 42 : NadineRae_18
- Track 43 : Pleakley_26, Fury_26
- Track 44 : HayZem_52, GTE7_41, GMA7_42, Amore2_53
- Track 45 : Dakiti_52, CathyBurgh_50, Adgers_52, Barbochs_51, Chelms_51, Gorko_50, RemRem_51, Hotorobo_50, Flakey_50, Linetti_52, BirksAndSocks_55, Ekhein_51, Lizzo_50, Breezic_50, John316_54, Monty_49, Sam12_50, Beaver_54, Exiguo_50
- Track 46 : Eggsie_50
- Track 47 : FelixAlejandro_55, Jellybones_53, Poland_57, Msay19_55, Butterball_54, Boneham_54, Sombrero_51
- Track 48 : BigShaq_51, PierreThree_51, BenoitCattle_53
- Track 49 : GourdThymes_50
- Track 50 : PokyPuppy_50
- Track 51 : RoyalG_51, Diabla_54, SteveFrench_50
- Track 52 : Squibbles_50
- Track 53 : Jams_49, Anamika_49, Hail2Pitt_48, Charianelly_48, Jormungandr_49, Shelley_49, GalacticEye_49, MrWormie_49, Harambe_49, Luker_50, Kaseim_49, Newt_50, Sticker17_49, Nimi13_49, Teal_49, Hello_49, Berries_49, Damp_47, Lahirium_49, Neoevie_49, Woes_49, Minos_50, Lidong_49, Bianmat_49, Guillaume_49
- Track 54 : Teech_46, Tredge_46, Niagara_45, Kvothe_45, Teatealatte_46
- Track 55 : Katyusha_45, Benczkowski14_45
- Track 56 : Demosthenes_44
- Track 57 : Philon9_46
- Track 58 : Hollow_46
- Track 59 : ASerpRocky_45
- Track 60 : Gibbles_47
- Track 61 : RobinSparkles_52, Orchid_48, Kampe_49, PatrickStar_49
- Track 62 : Camerico_47
- Track 63 : Gmala1_37, GordDuk1_37, GordTnk2_37
- Track 64 : GMA3_38
- Track 65 : Jumbo_42
- Track 66 : Quammi_54, Wheelie_56, Sillytadpoles_57, DonaldDuck_56, Viceroy_55, Casend_57, Wayne3_58, Teehee_57
- Track 67 : AluminumJesus_53
- Track 68 : Altheas_59
- Track 69 : Llemily_56, Zhafia_59, Jehoshaphat_58, Rudy_54, Phabia_56
- Track 70 : Grassboy_59
- Track 71 : Nike_59
- Track 72 : BabyDotz_57
- Track 73 : Lonelysoil_55, Zagie_57, Judebell_59
- Track 74 : Squash_61
- Track 75 : SallyK_58
- Track 76 : Blab_55
- Track 77 : Kyva_59
- Track 78 : Namago_57
- Track 79 : Tissue_57
- Track 80 : Mashley_56
- Track 81 : Hyperion_57

- Track 82 : Rowlf_53
- Track 83 : StrawberryJamm_60
- Track 84 : Gazebo_56
- Track 85 : Zucker_85
- Track 86 : Pitbull_58
- Track 87 : Hum25_55
- Track 88 : Labelle_102
- Track 89 : Patience_103, Madrugua_101
- Track 90 : Magritte_49
- Track 91 : Cantare_51
- Track 92 : Wollypog_81

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

The start number called the most often in the published annotations is 66, it was called in 52 of the 136 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Adgers_52, Amore2_53, Anamika_49, Barbochs_51, Beaver_54, BenoitCattle_53, Berries_49, Bianmat_49, BigShaq_51, BirksAndSocks_55, Boneham_54, Breezic_50, Butterball_54, CathyBurgh_50, Charianelly_48, Chelms_51, Dakiti_52, Damp_47, Diabla_54, Eggsie_50, Ekhein_51, Exiguo_50, FelixAlejandro_55, Flakey_50, GMA7_42, GTE7_41, GalacticEye_49, Gorko_50, GourdThymes_50, Guillaume_49, Hail2Pitt_48, Harambe_49, HayZem_52, Hello_49, Hotorobo_50, Jams_49, Jellybones_53, John316_54, Jormungandr_49, Kaseim_49, Lahirium_49, Lidong_49, Linetti_52, Lizzo_50, Luker_50, Minos_50, Monty_49, MrWormie_49, Msay19_55, Neoevie_49, Newt_50, Nimi13_49, PierreThree_51, PokyPuppy_50, Poland_57, Raqqa_87, RemRem_51, RoyalG_51, Sam12_50, Shelley_49, Sombrero_51, Squibbles_50, SteveFrench_50, Sticker17_49, Teal_49, Woes_49, Zucker_85,

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

-

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

- ASerpRocky_45, AWGoat_61, AbbyDaisy_89, Aikoy_106, Aikyam_83, Altheas_59, AluminumJesus_53, Anekin_85, Apiary_21, Auxilium_82, BabyDotz_57, BenchScraper_81, Benczkowski14_45, BiPauneto_21, BillyTP_83, Blab_55, Braxoaddie_21, BruhMoment_73, Camerico_47, Cantare_51, Casend_57, CoffeeBean_21, Commandaria_21, CookieBear_81, Cuke_82, Demosthenes_44, DonaldDuck_56, EvePickles_85, Faja_86, Fowlmouth_83, Fury_26, GMA3_38, Gazebo_56, Gibbles_47, Globfish_82, Gmala1_37, GordDuk1_37, GordTnk2_37, Gorpy_82, Grassboy_59, GuyFagieri_20, Hestia_78, Hillester_88, Hollow_46, HubbaBubba_17, Hum25_55, Hyperion_57, IDyn_19, Indlulamithi_73, Isolde_85, Jehoshaphat_58, Judebell_59, Jumbo_42, Kampe_49, Katyusha_45, Kvothe_45, Kyva_59, Labelle_102, Leopard_104, Llemily_56, Lonelysoil_55, MacGully_24, Madrugua_101, Magritte_49, Marietta_20, Maselop_21, Mashley_56, MidnightRain_90, MrMiyagi_81, NadineRae_18, Namago_57, Niagara_45, Nike_59, Onyinye_105, Orchid_48, Patience_103, PatrickStar_49, Phabia_56, Philon9_46, Phrank15_92, Pitbull_58, Pleakley_26, Polyuyuki_21, Quammi_54, RadFad_89,

Raphaella_82, Richie_87, Rizwana_63, RobinSparkles_52, Rowlf_53, Rudy_54, Sakai_81, SallyK_58, Seahorse_91, Sillytadpoles_57, Squash_61, StrawberryJamm_60, Sukkupi_20, Tank_63, Teatealatte_46, Teech_46, Teehee_57, Tiff81_84, Tissue_57, Tredge_46, Viceroy_55, Wayne3_58, Wheelie_56, WhoseManz_20, Wilde_65, Wollypog_81, Yndexa_20, YoungHarleezy_83, Zagie_57, Zhafia_59,

Summary by start number:

Start 39:

- Found in 2 of 182 (1.1%) of genes in pham
- Manual Annotations of this start: 2 of 136
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fury_26 (CR5), Pleakley_26 (CR5),

Start 40:

- Found in 1 of 182 (0.5%) of genes in pham
- Manual Annotations of this start: 1 of 136
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Indlulamithi_73 (AC),

Start 43:

- Found in 4 of 182 (2.2%) of genes in pham
- Manual Annotations of this start: 1 of 136
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Wollypog_81 (singleton),

Start 49:

- Found in 3 of 182 (1.6%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gmala1_37 (DF1), GordDuk1_37 (DF1), GordTnk2_37 (DF1),

Start 50:

- Found in 3 of 182 (1.6%) of genes in pham
- Manual Annotations of this start: 3 of 136
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Rizwana_63 (AP1), Tank_63 (AP1), Wilde_65 (AP1),

Start 53:

- Found in 1 of 182 (0.5%) of genes in pham
- Manual Annotations of this start: 1 of 136
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BruhMoment_73 (AP3),

Start 57:

- Found in 1 of 182 (0.5%) of genes in pham
- Manual Annotations of this start: 1 of 136
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Magritte_49 (singleton),

Start 59:

- Found in 1 of 182 (0.5%) of genes in pham
- Manual Annotations of this start: 1 of 136
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AbbyDaisy_89 (AY),

Start 61:

- Found in 12 of 182 (6.6%) of genes in pham
- Manual Annotations of this start: 2 of 136
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Camerico_47 (DF), GMA3_38 (DF2), Jumbo_42 (DF3),

Start 62:

- Found in 13 of 182 (7.1%) of genes in pham
- Manual Annotations of this start: 8 of 136
- Called 69.2% of time when present
- Phage (with cluster) where this start called: BiPauneto_21 (CR4), Commandaria_21 (CR2), HubbaBubba_17 (CR4), IDyn_19 (CR4), Marietta_20 (CR4), NadineRae_18 (CR4), Sukkupi_20 (CR4), WhoseManz_20 (CR4), Yndexa_20 (CR4),

Start 64:

- Found in 7 of 182 (3.8%) of genes in pham
- Manual Annotations of this start: 6 of 136
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Apiary_21 (CR), Braxoaddie_21 (CR), CoffeeBean_21 (CR), GuyFagieri_20 (CR), MacGully_24 (CR), Maselop_21 (CR), Polyyuki_21 (CR),

Start 65:

- Found in 6 of 182 (3.3%) of genes in pham
- Manual Annotations of this start: 1 of 136
- Called 33.3% of time when present
- Phage (with cluster) where this start called: AWGoat_61 (AP4), Grassboy_59 (EG),

Start 66:

- Found in 67 of 182 (36.8%) of genes in pham
- Manual Annotations of this start: 52 of 136
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Adgers_52 (CS2), Amore2_53 (CS1), Anamika_49 (CS3), Barbochs_51 (CS2), Beaver_54 (CS2), BenoitCattle_53 (CS2), Berries_49 (CS3), Bianmat_49 (CS3), BigShaq_51 (CS2), BirksAndSocks_55 (CS2), Boneham_54 (CS2), Breezic_50 (CS2), Butterball_54 (CS2), CathyBurgh_50 (CS2), Charianelly_48 (CS3), Chelms_51 (CS2), Dakiti_52 (CS2), Damp_47 (CS3), Diabla_54 (CS2), Eggsie_50 (CS2), Ekhein_51 (CS2), Exiguo_50 (CS2), FelixAlejandro_55 (CS2), Flakey_50 (CS2), GMA7_42 (CS1), GTE7_41 (CS1), GalacticEye_49 (CS3), Gorko_50 (CS2), GourdThymes_50 (CS2), Guillaume_49 (CS3), Hail2Pitt_48 (CS3), Harambe_49 (CS3), HayZem_52 (CS1), Hello_49 (CS3), Hotorobo_50 (CS2), Jams_49 (CS3), Jellybones_53 (CS2), John316_54 (CS2), Jormungandr_49 (CS3), Kaseim_49 (CS3), Lahirium_49 (CS3), Lidong_49 (CS3), Linetti_52 (CS2), Lizzo_50 (CS2), Luker_50 (CS3), Minos_50 (CS3), Monty_49 (CS2), MrWormie_49 (CS3), Msay19_55 (CS2), Neoevie_49 (CS3), Newt_50 (CS3), Nimi13_49 (CS3), PierreThree_51 (CS2), PokyPuppy_50 (CS2), Poland_57 (CS2),

Raqqa_87 (AY), RemRem_51 (CS2), RoyalG_51 (CS2), Sam12_50 (CS2), Shelley_49 (CS3), Sombrero_51 (CS2), Squibbles_50 (CS2), SteveFrench_50 (CS2), Sticker17_49 (CS3), Teal_49 (CS3), Woes_49 (CS3), Zucker_85 (FN),

Start 67:

- Found in 23 of 182 (12.6%) of genes in pham
- Manual Annotations of this start: 11 of 136
- Called 95.7% of time when present
- Phage (with cluster) where this start called: Aikyam_83 (AY), Anekin_85 (AY), Auxilium_82 (AY), BenchScraper_81 (AY), BillyTP_83 (AY), CookieBear_81 (AY), EvePickles_85 (AY), Faja_86 (AY), Globfish_82 (AY), Gorpy_82 (AY), Hestia_78 (AY), Hillester_88 (AY), Isolde_85 (AY), MidnightRain_90 (AY), Phrank15_92 (AY), RadFad_89 (AY), Raphaella_82 (AY), Richie_87 (AY), Sakai_81 (AY), Seahorse_91 (AY), Tiff81_84 (AY), YoungHarleezy_83 (AY),

Start 69:

- Found in 1 of 182 (0.5%) of genes in pham
- Manual Annotations of this start: 1 of 136
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cantare_51 (singleton),

Start 70:

- Found in 11 of 182 (6.0%) of genes in pham
- Manual Annotations of this start: 9 of 136
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ASerpRocky_45 (CS4), Benczkowski14_45 (CS4), Demosthenes_44 (CS4), Hollow_46 (CS4), Katyusha_45 (CS4), Kvothe_45 (CS4), Niagara_45 (CS4), Philon9_46 (CS4), Teatealatte_46 (CS4), Teech_46 (CS4), Tredge_46 (CS4),

Start 71:

- Found in 5 of 182 (2.7%) of genes in pham
- Manual Annotations of this start: 5 of 136
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gibbles_47 (CX), Kampe_49 (CX), Orchid_48 (CX), PatrickStar_49 (CX), RobinSparkles_52 (CX),

Start 77:

- Found in 21 of 182 (11.5%) of genes in pham
- Manual Annotations of this start: 9 of 136
- Called 52.4% of time when present
- Phage (with cluster) where this start called: Aikoy_106 (AE), Cuke_82 (AC), Fowlmouth_83 (AC), Hum25_55 (FQ), Labelle_102 (U), Leopard_104 (AE), Madruga_101 (U), MrMiyagi_81 (AC), Onyinye_105 (AE), Patience_103 (U), Pitbull_58 (FQ),

Start 82:

- Found in 31 of 182 (17.0%) of genes in pham
- Manual Annotations of this start: 7 of 136
- Called 32.3% of time when present
- Phage (with cluster) where this start called: AluminumJesus_53 (EG), Blab_55 (EG), Jehoshaphat_58 (EG), Llemily_56 (EG), Nike_59 (EG), Phabia_56 (EG), Rowlf_53 (EG), Rudy_54 (EG), SallyK_58 (EG), Zhafia_59 (EG),

Start 84:

- Found in 48 of 182 (26.4%) of genes in pham
- Manual Annotations of this start: 15 of 136
- Called 43.8% of time when present
- Phage (with cluster) where this start called: Altheas_59 (EG), BabyDotz_57 (EG), Casend_57 (EG), DonaldDuck_56 (EG), Gazebo_56 (EG), Hyperion_57 (EG), Judebell_59 (EG), Kyva_59 (EG), Lonelysoil_55 (EG), Mashley_56 (EG), Namago_57 (EG), Quammi_54 (EG), Sillytadpoles_57 (EG), Squash_61 (EG), StrawberryJamm_60 (EG), Teehee_57 (EG), Tissue_57 (EG), Viceroy_55 (EG), Wayne3_58 (EG), Wheelie_56 (EG), Zagie_57 (EG),

Summary by clusters:

There are 24 clusters represented in this pham: FQ, singleton, DF, AP3, AP1, AP4, FN, DF1, DF3, DF2, CS4, CS1, CS3, CS2, AC, AE, EG, CX, U, AY, CR, CR2, CR4, CR5,

Info for manual annotations of cluster AC:

- Start number 40 was manually annotated 1 time for cluster AC.
- Start number 77 was manually annotated 3 times for cluster AC.

Info for manual annotations of cluster AE:

- Start number 77 was manually annotated 3 times for cluster AE.

Info for manual annotations of cluster AP1:

- Start number 50 was manually annotated 3 times for cluster AP1.

Info for manual annotations of cluster AP3:

- Start number 53 was manually annotated 1 time for cluster AP3.

Info for manual annotations of cluster AY:

- Start number 59 was manually annotated 1 time for cluster AY.
- Start number 67 was manually annotated 11 times for cluster AY.

Info for manual annotations of cluster CR:

- Start number 64 was manually annotated 6 times for cluster CR.

Info for manual annotations of cluster CR2:

- Start number 62 was manually annotated 1 time for cluster CR2.

Info for manual annotations of cluster CR4:

- Start number 62 was manually annotated 7 times for cluster CR4.

Info for manual annotations of cluster CR5:

- Start number 39 was manually annotated 2 times for cluster CR5.

Info for manual annotations of cluster CS1:

- Start number 66 was manually annotated 1 time for cluster CS1.

Info for manual annotations of cluster CS2:

- Start number 66 was manually annotated 29 times for cluster CS2.

Info for manual annotations of cluster CS3:

- Start number 66 was manually annotated 21 times for cluster CS3.

Info for manual annotations of cluster CS4:

- Start number 70 was manually annotated 9 times for cluster CS4.

Info for manual annotations of cluster CX:

- Start number 71 was manually annotated 5 times for cluster CX.

Info for manual annotations of cluster DF:

- Start number 61 was manually annotated 1 time for cluster DF.

Info for manual annotations of cluster DF3:

- Start number 61 was manually annotated 1 time for cluster DF3.

Info for manual annotations of cluster EG:

- Start number 65 was manually annotated 1 time for cluster EG.
- Start number 82 was manually annotated 7 times for cluster EG.
- Start number 84 was manually annotated 15 times for cluster EG.

Info for manual annotations of cluster FN:

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

Info for manual annotations of cluster U:

- Start number 77 was manually annotated 3 times for cluster U.

Gene Information:

Gene: ASerpRocky_45 Start: 46949, Stop: 46455, Start Num: 70

Candidate Starts for ASerpRocky_45:

(Start: 70 @46949 has 9 MA's), (Start: 77 @46934 has 9 MA's), (86, 46907), (105, 46841), (148, 46658), (167, 46619),

Gene: AWGoat_61 Start: 44078, Stop: 43587, Start Num: 65

Candidate Starts for AWGoat_61:

(14, 44426), (15, 44417), (23, 44318), (27, 44264), (29, 44219), (33, 44171), (42, 44129), (Start: 65 @44078 has 1 MA's), (107, 43961), (159, 43760), (181, 43682),

Gene: AbbyDaisy_89 Start: 50820, Stop: 51422, Start Num: 59

Candidate Starts for AbbyDaisy_89:

(Start: 59 @50820 has 1 MA's), (73, 50865), (117, 51009), (118, 51012), (133, 51087), (144, 51150), (172, 51285), (181, 51333),

Gene: Adgers_52 Start: 46769, Stop: 46248, Start Num: 66

Candidate Starts for Adgers_52:

(Start: 66 @46769 has 52 MA's), (80, 46733), (190, 46307),

Gene: Aikoy_106 Start: 67335, Stop: 67865, Start Num: 77

Candidate Starts for Aikoy_106:

(Start: 77 @67335 has 9 MA's), (87, 67362), (95, 67401), (102, 67422), (111, 67443), (124, 67494), (125, 67503), (128, 67512), (129, 67515), (131, 67527), (137, 67566), (138, 67569), (152, 67635), (153, 67638), (158, 67650), (159, 67653), (161, 67665), (162, 67668), (164, 67674), (165, 67686),

Gene: Aikyam_83 Start: 45953, Stop: 46399, Start Num: 67

Candidate Starts for Aikyam_83:

(52, 45908), (Start: 67 @45953 has 11 MA's), (101, 46055), (175, 46286),

Gene: Altheas_59 Start: 43024, Stop: 42620, Start Num: 84

Candidate Starts for Altheas_59:

(8, 43459), (11, 43426), (14, 43411), (17, 43366), (18, 43363), (32, 43180), (42, 43120), (Start: 43 @43117 has 1 MA's), (Start: 62 @43087 has 8 MA's), (Start: 84 @43024 has 15 MA's), (110, 42937), (133, 42856), (168, 42775), (174, 42739), (192, 42670), (195, 42628),

Gene: AluminumJesus_53 Start: 41962, Stop: 41567, Start Num: 82

Candidate Starts for AluminumJesus_53:

(Start: 82 @41962 has 7 MA's), (Start: 84 @41959 has 15 MA's), (94, 41917), (110, 41875), (133, 41794),

Gene: Amore2_53 Start: 47169, Stop: 46684, Start Num: 66

Candidate Starts for Amore2_53:

(Start: 66 @47169 has 52 MA's), (192, 46731),

Gene: Anamika_49 Start: 47821, Stop: 47318, Start Num: 66

Candidate Starts for Anamika_49:

(55, 47866), (60, 47848), (Start: 66 @47821 has 52 MA's), (89, 47761), (171, 47470), (182, 47416),

Gene: Anekin_85 Start: 48188, Stop: 48622, Start Num: 67

Candidate Starts for Anekin_85:

(31, 48032), (Start: 67 @48188 has 11 MA's), (114, 48305), (151, 48443), (175, 48509), (193, 48578),

Gene: Apiary_21 Start: 10881, Stop: 11363, Start Num: 64

Candidate Starts for Apiary_21:

(1, 10119), (6, 10371), (16, 10587), (45, 10830), (Start: 64 @10881 has 6 MA's), (81, 10926), (88, 10944), (97, 10980), (129, 11076), (136, 11121), (160, 11196), (175, 11241), (190, 11301),

Gene: Auxilium_82 Start: 45357, Stop: 45833, Start Num: 67

Candidate Starts for Auxilium_82:

(41, 45273), (Start: 67 @45357 has 11 MA's), (114, 45474), (146, 45618), (175, 45720),

Gene: BabyDotz_57 Start: 43429, Stop: 43037, Start Num: 84

Candidate Starts for BabyDotz_57:

(Start: 61 @43498 has 2 MA's), (Start: 82 @43432 has 7 MA's), (Start: 84 @43429 has 15 MA's), (94, 43387), (110, 43345), (133, 43264), (142, 43219), (195, 43045),

Gene: Barbochs_51 Start: 46513, Stop: 45992, Start Num: 66

Candidate Starts for Barbochs_51:

(Start: 66 @46513 has 52 MA's), (80, 46477), (190, 46051),

Gene: Beaver_54 Start: 48283, Stop: 47762, Start Num: 66

Candidate Starts for Beaver_54:

(Start: 66 @48283 has 52 MA's), (80, 48247), (190, 47821),

Gene: BenchScraper_81 Start: 46314, Stop: 46808, Start Num: 67

Candidate Starts for BenchScraper_81:

(Start: 67 @46314 has 11 MA's), (127, 46491), (130, 46500), (171, 46671),

Gene: Benczkowski14_45 Start: 47238, Stop: 46744, Start Num: 70

Candidate Starts for Benczkowski14_45:

(Start: 70 @47238 has 9 MA's), (Start: 77 @47223 has 9 MA's), (86, 47196), (148, 46947), (166, 46917), (167, 46908), (174, 46866), (176, 46860),

Gene: BenoitCattle_53 Start: 47030, Stop: 46509, Start Num: 66

Candidate Starts for BenoitCattle_53:

(Start: 66 @47030 has 52 MA's), (80, 46994), (143, 46736), (190, 46568),

Gene: Berries_49 Start: 47793, Stop: 47290, Start Num: 66

Candidate Starts for Berries_49:

(55, 47838), (60, 47820), (Start: 66 @47793 has 52 MA's), (89, 47733), (171, 47442), (182, 47388),

Gene: BiPauneto_21 Start: 8586, Stop: 9044, Start Num: 62

Candidate Starts for BiPauneto_21:

(3, 7887), (13, 8232), (Start: 62 @8586 has 8 MA's), (78, 8634), (Start: 84 @8652 has 15 MA's), (90, 8667), (97, 8700), (123, 8775), (126, 8787), (174, 8916),

Gene: Bianmat_49 Start: 47833, Stop: 47330, Start Num: 66

Candidate Starts for Bianmat_49:

(55, 47878), (60, 47860), (Start: 66 @47833 has 52 MA's), (89, 47773), (171, 47482), (182, 47428),

Gene: BigShaq_51 Start: 47035, Stop: 46514, Start Num: 66

Candidate Starts for BigShaq_51:

(Start: 66 @47035 has 52 MA's), (80, 46999), (143, 46741), (190, 46573),

Gene: BillyTP_83 Start: 48420, Stop: 48914, Start Num: 67

Candidate Starts for BillyTP_83:

(Start: 67 @48420 has 11 MA's), (127, 48597), (130, 48606), (171, 48777),

Gene: BirksAndSocks_55 Start: 48633, Stop: 48112, Start Num: 66

Candidate Starts for BirksAndSocks_55:

(Start: 66 @48633 has 52 MA's), (80, 48597), (190, 48171),

Gene: Blab_55 Start: 42584, Stop: 42189, Start Num: 82

Candidate Starts for Blab_55:

(Start: 61 @42650 has 2 MA's), (Start: 82 @42584 has 7 MA's), (Start: 84 @42581 has 15 MA's), (110, 42497), (133, 42416),

Gene: Boneham_54 Start: 48534, Stop: 48013, Start Num: 66

Candidate Starts for Boneham_54:

(Start: 66 @48534 has 52 MA's), (80, 48498), (188, 48084),

Gene: Braxoaddie_21 Start: 10869, Stop: 11351, Start Num: 64

Candidate Starts for Braxoaddie_21:

(1, 10107), (6, 10359), (16, 10575), (45, 10818), (Start: 64 @10869 has 6 MA's), (81, 10914), (88, 10932), (97, 10968), (129, 11064), (136, 11109), (160, 11184), (175, 11229), (190, 11289),

Gene: Breezic_50 Start: 46526, Stop: 46005, Start Num: 66

Candidate Starts for Breezic_50:

(Start: 66 @46526 has 52 MA's), (80, 46490), (190, 46064),

Gene: BruhMoment_73 Start: 49223, Stop: 48708, Start Num: 53

Candidate Starts for BruhMoment_73:

(Start: 53 @49223 has 1 MA's), (118, 49073), (133, 48998), (139, 48950),

Gene: Butterball_54 Start: 48539, Stop: 48018, Start Num: 66

Candidate Starts for Butterball_54:

(Start: 66 @48539 has 52 MA's), (80, 48503), (188, 48089),

Gene: Camerico_47 Start: 46654, Stop: 46154, Start Num: 61

Candidate Starts for Camerico_47:

(Start: 61 @46654 has 2 MA's), (95, 46561), (126, 46453), (127, 46450), (135, 46411), (186, 46240), (190, 46216),

Gene: Cantare_51 Start: 46110, Stop: 46487, Start Num: 69

Candidate Starts for Cantare_51:

(Start: 69 @46110 has 1 MA's), (72, 46116), (75, 46119), (134, 46278), (153, 46380), (168, 46407), (173, 46437), (180, 46467),

Gene: Casend_57 Start: 42837, Stop: 42448, Start Num: 84

Candidate Starts for Casend_57:

(Start: 82 @42840 has 7 MA's), (Start: 84 @42837 has 15 MA's), (94, 42798), (133, 42675), (142, 42630), (195, 42456),

Gene: CathyBurgh_50 Start: 47103, Stop: 46582, Start Num: 66

Candidate Starts for CathyBurgh_50:

(Start: 66 @47103 has 52 MA's), (80, 47067), (190, 46641),

Gene: Charianelly_48 Start: 47543, Stop: 47040, Start Num: 66

Candidate Starts for Charianelly_48:

(55, 47588), (60, 47570), (Start: 66 @47543 has 52 MA's), (89, 47483), (171, 47192), (182, 47138),

Gene: Chelms_51 Start: 47023, Stop: 46514, Start Num: 66

Candidate Starts for Chelms_51:

(Start: 66 @47023 has 52 MA's), (80, 46987), (190, 46573),

Gene: CoffeeBean_21 Start: 10806, Stop: 11321, Start Num: 64

Candidate Starts for CoffeeBean_21:

(1, 10044), (4, 10155), (6, 10296), (16, 10512), (45, 10755), (Start: 64 @10806 has 6 MA's), (81, 10851), (88, 10869), (97, 10905), (129, 11001), (155, 11136), (175, 11199), (190, 11259),

Gene: Commandaria_21 Start: 9793, Stop: 10248, Start Num: 62

Candidate Starts for Commandaria_21:

(2, 9061), (5, 9148), (9, 9418), (21, 9520), (Start: 62 @9793 has 8 MA's), (Start: 84 @9856 has 15 MA's), (90, 9871), (123, 9979), (174, 10120),

Gene: CookieBear_81 Start: 46991, Stop: 47392, Start Num: 67

Candidate Starts for CookieBear_81:

(Start: 67 @46991 has 11 MA's), (175, 47279), (194, 47372),

Gene: Cuke_82 Start: 48535, Stop: 49002, Start Num: 77

Candidate Starts for Cuke_82:

(Start: 77 @48535 has 9 MA's), (85, 48553), (94, 48595), (95, 48598), (106, 48628), (124, 48685), (147, 48799), (158, 48817), (167, 48841), (171, 48862), (173, 48874), (174, 48883), (177, 48895), (184, 48922), (188, 48928), (190, 48940),

Gene: Dakiti_52 Start: 47891, Stop: 47382, Start Num: 66

Candidate Starts for Dakiti_52:

(Start: 66 @47891 has 52 MA's), (80, 47855), (190, 47441),

Gene: Damp_47 Start: 46707, Stop: 46204, Start Num: 66

Candidate Starts for Damp_47:

(55, 46752), (60, 46734), (Start: 66 @46707 has 52 MA's), (89, 46647), (171, 46356), (182, 46302),

Gene: Demosthenes_44 Start: 46925, Stop: 46431, Start Num: 70

Candidate Starts for Demosthenes_44:

(Start: 70 @46925 has 9 MA's), (86, 46883), (105, 46817), (148, 46634), (167, 46595), (176, 46547), (190, 46490), (194, 46451),

Gene: Diabla_54 Start: 48464, Stop: 47943, Start Num: 66

Candidate Starts for Diabla_54:

(Start: 66 @48464 has 52 MA's), (80, 48428), (182, 48041), (187, 48026), (192, 47990),

Gene: DonaldDuck_56 Start: 42186, Stop: 41797, Start Num: 84

Candidate Starts for DonaldDuck_56:

(Start: 82 @42189 has 7 MA's), (Start: 84 @42186 has 15 MA's), (94, 42147), (133, 42024), (142, 41979), (195, 41805),

Gene: Eggsie_50 Start: 46426, Stop: 45905, Start Num: 66

Candidate Starts for Eggsie_50:

(Start: 66 @46426 has 52 MA's), (80, 46390), (182, 46003), (192, 45952),

Gene: Ekhein_51 Start: 46231, Stop: 45710, Start Num: 66

Candidate Starts for Ekhein_51:

(Start: 66 @46231 has 52 MA's), (80, 46195), (190, 45769),

Gene: EvePickles_85 Start: 48837, Stop: 49178, Start Num: 67

Candidate Starts for EvePickles_85:

(36, 48729), (Start: 67 @48837 has 11 MA's), (101, 48939), (109, 48957), (115, 48966), (127, 49014), (150, 49107), (171, 49143),

Gene: Exiguo_50 Start: 46243, Stop: 45722, Start Num: 66

Candidate Starts for Exiguo_50:

(Start: 66 @46243 has 52 MA's), (80, 46207), (190, 45781),

Gene: Faja_86 Start: 48359, Stop: 48745, Start Num: 67

Candidate Starts for Faja_86:

(24, 48092), (26, 48134), (Start: 67 @48359 has 11 MA's), (130, 48506), (132, 48518), (150, 48587), (175, 48632),

Gene: FelixAlejandro_55 Start: 48737, Stop: 48216, Start Num: 66

Candidate Starts for FelixAlejandro_55:

(Start: 66 @48737 has 52 MA's), (80, 48701), (188, 48287),

Gene: Flakey_50 Start: 47107, Stop: 46586, Start Num: 66

Candidate Starts for Flakey_50:

(Start: 66 @47107 has 52 MA's), (80, 47071), (190, 46645),

Gene: Fowlmouth_83 Start: 51110, Stop: 51577, Start Num: 77

Candidate Starts for Fowlmouth_83:

(Start: 77 @51110 has 9 MA's), (95, 51173), (98, 51182), (101, 51191), (128, 51278), (138, 51335), (167, 51416), (173, 51449), (174, 51458), (177, 51470),

Gene: Fury_26 Start: 10463, Stop: 10972, Start Num: 39

Candidate Starts for Fury_26:

(Start: 39 @10463 has 2 MA's), (Start: 84 @10580 has 15 MA's), (90, 10595), (127, 10718), (130, 10727), (174, 10844), (177, 10856),

Gene: GMA3_38 Start: 40837, Stop: 40325, Start Num: 61

Candidate Starts for GMA3_38:

(37, 40918), (56, 40849), (Start: 61 @40837 has 2 MA's), (113, 40669), (129, 40609), (189, 40390),

Gene: GMA7_42 Start: 41383, Stop: 40898, Start Num: 66

Candidate Starts for GMA7_42:

(Start: 66 @41383 has 52 MA's), (192, 40945),

Gene: GTE7_41 Start: 41414, Stop: 40929, Start Num: 66

Candidate Starts for GTE7_41:

(Start: 66 @41414 has 52 MA's), (192, 40976),

Gene: GalacticEye_49 Start: 47504, Stop: 47001, Start Num: 66

Candidate Starts for GalacticEye_49:

(55, 47549), (60, 47531), (Start: 66 @47504 has 52 MA's), (89, 47444), (171, 47153), (182, 47099),

Gene: Gazebo_56 Start: 42670, Stop: 42278, Start Num: 84

Candidate Starts for Gazebo_56:

(Start: 82 @42673 has 7 MA's), (Start: 84 @42670 has 15 MA's), (94, 42628), (133, 42505), (142, 42460), (195, 42286), (196, 42283),

Gene: Gibbles_47 Start: 45170, Stop: 44748, Start Num: 71

Candidate Starts for Gibbles_47:

(Start: 71 @45170 has 5 MA's), (Start: 84 @45134 has 15 MA's), (93, 45095), (96, 45089), (100, 45074), (129, 44984), (177, 44855), (190, 44810), (195, 44756),

Gene: Globfish_82 Start: 46114, Stop: 46545, Start Num: 67

Candidate Starts for Globfish_82:

(10, 45718), (20, 45799), (25, 45883), (Start: 67 @46114 has 11 MA's), (171, 46408),

Gene: Gmala1_37 Start: 39458, Stop: 38919, Start Num: 49

Candidate Starts for Gmala1_37:

(47, 39467), (49, 39458), (Start: 61 @39425 has 2 MA's), (108, 39281), (113, 39257), (138, 39143), (188, 38987),

Gene: GordDuk1_37 Start: 39399, Stop: 38860, Start Num: 49

Candidate Starts for GordDuk1_37:

(47, 39408), (49, 39399), (Start: 61 @39366 has 2 MA's), (108, 39222), (113, 39198), (138, 39084), (188, 38928),

Gene: GordTnk2_37 Start: 39365, Stop: 38826, Start Num: 49

Candidate Starts for GordTnk2_37:

(47, 39374), (49, 39365), (Start: 61 @39332 has 2 MA's), (108, 39188), (113, 39164), (138, 39050), (188, 38894),

Gene: Gorko_50 Start: 46235, Stop: 45714, Start Num: 66

Candidate Starts for Gorko_50:

(Start: 66 @46235 has 52 MA's), (80, 46199), (190, 45773),

Gene: Gorpy_82 Start: 48333, Stop: 48809, Start Num: 67

Candidate Starts for Gorpy_82:

(Start: 67 @48333 has 11 MA's), (114, 48450), (145, 48591), (154, 48630), (171, 48672), (175, 48696), (194, 48789),

Gene: GourdThymes_50 Start: 47109, Stop: 46588, Start Num: 66

Candidate Starts for GourdThymes_50:

(Start: 66 @47109 has 52 MA's), (80, 47073), (105, 46989), (190, 46647),

Gene: Grassboy_59 Start: 43110, Stop: 42643, Start Num: 65

Candidate Starts for Grassboy_59:

(Start: 65 @43110 has 1 MA's), (Start: 82 @43062 has 7 MA's), (Start: 84 @43059 has 15 MA's), (94, 43020), (110, 42978), (133, 42897), (168, 42801), (195, 42651), (196, 42648),

Gene: Guillaume_49 Start: 47554, Stop: 47051, Start Num: 66

Candidate Starts for Guillaume_49:

(55, 47599), (60, 47581), (Start: 66 @47554 has 52 MA's), (89, 47494), (171, 47203), (182, 47149),

Gene: GuyFagieri_20 Start: 10423, Stop: 10938, Start Num: 64

Candidate Starts for GuyFagieri_20:

(6, 9913), (7, 9994), (16, 10129), (Start: 64 @10423 has 6 MA's), (88, 10486), (129, 10618), (131, 10630), (158, 10759), (175, 10816), (190, 10876),

Gene: Hail2Pitt_48 Start: 48030, Stop: 47527, Start Num: 66

Candidate Starts for Hail2Pitt_48:

(55, 48075), (60, 48057), (Start: 66 @48030 has 52 MA's), (89, 47970), (171, 47679), (182, 47625),

Gene: Harambe_49 Start: 47821, Stop: 47318, Start Num: 66

Candidate Starts for Harambe_49:

(55, 47866), (60, 47848), (Start: 66 @47821 has 52 MA's), (89, 47761), (171, 47470), (182, 47416),

Gene: HayZem_52 Start: 47166, Stop: 46681, Start Num: 66

Candidate Starts for HayZem_52:

(Start: 66 @47166 has 52 MA's), (192, 46728),

Gene: Hello_49 Start: 47783, Stop: 47280, Start Num: 66

Candidate Starts for Hello_49:

(55, 47828), (60, 47810), (Start: 66 @47783 has 52 MA's), (89, 47723), (171, 47432), (182, 47378),

Gene: Hestia_78 Start: 45289, Stop: 45783, Start Num: 67

Candidate Starts for Hestia_78:

(54, 45244), (Start: 67 @45289 has 11 MA's), (127, 45466), (130, 45475), (171, 45646),

Gene: Hillester_88 Start: 48096, Stop: 48530, Start Num: 67

Candidate Starts for Hillester_88:

(Start: 67 @48096 has 11 MA's), (114, 48213), (151, 48351), (175, 48417), (193, 48486),

Gene: Hollow_46 Start: 47574, Stop: 47080, Start Num: 70

Candidate Starts for Hollow_46:

(Start: 70 @47574 has 9 MA's), (Start: 77 @47559 has 9 MA's), (86, 47532), (105, 47466), (148, 47283), (167, 47244), (176, 47196),

Gene: Hotorobo_50 Start: 47114, Stop: 46593, Start Num: 66

Candidate Starts for Hotorobo_50:

(Start: 66 @47114 has 52 MA's), (80, 47078), (190, 46652),

Gene: HubbaBubba_17 Start: 7112, Stop: 7570, Start Num: 62

Candidate Starts for HubbaBubba_17:

(13, 6758), (Start: 62 @7112 has 8 MA's), (78, 7160), (Start: 84 @7178 has 15 MA's), (90, 7193), (97, 7226), (123, 7301), (174, 7442), (195, 7562),

Gene: Hum25_55 Start: 34774, Stop: 35166, Start Num: 77

Candidate Starts for Hum25_55:

(52, 34702), (Start: 77 @34774 has 9 MA's), (83, 34792), (101, 34855), (127, 34930), (174, 35050), (175, 35053), (177, 35062),

Gene: Hyperion_57 Start: 42845, Stop: 42456, Start Num: 84

Candidate Starts for Hyperion_57:

(Start: 61 @42914 has 2 MA's), (Start: 82 @42848 has 7 MA's), (Start: 84 @42845 has 15 MA's), (110, 42764), (133, 42683), (195, 42464),

Gene: IDyn_19 Start: 8503, Stop: 8961, Start Num: 62

Candidate Starts for IDyn_19:

(13, 8149), (Start: 62 @8503 has 8 MA's), (78, 8551), (Start: 84 @8569 has 15 MA's), (90, 8584), (97, 8617), (103, 8635), (123, 8692), (174, 8833),

Gene: Indlulamithi_73 Start: 51686, Stop: 52294, Start Num: 40

Candidate Starts for Indlulamithi_73:

(Start: 40 @51686 has 1 MA's), (46, 51707), (63, 51758), (Start: 77 @51800 has 9 MA's), (93, 51857), (112, 51911), (116, 51926), (120, 51947), (121, 51950), (125, 51974), (126, 51977), (169, 52136), (173, 52166), (178, 52190), (191, 52235), (195, 52286),

Gene: Isolde_85 Start: 48621, Stop: 49019, Start Num: 67

Candidate Starts for Isolde_85:

(28, 48438), (Start: 67 @48621 has 11 MA's), (130, 48768), (150, 48849), (175, 48906),

Gene: Jams_49 Start: 46993, Stop: 46490, Start Num: 66

Candidate Starts for Jams_49:

(55, 47038), (60, 47020), (Start: 66 @46993 has 52 MA's), (89, 46933), (171, 46642), (182, 46588),

Gene: Jehoshaphat_58 Start: 43108, Stop: 42716, Start Num: 82

Candidate Starts for Jehoshaphat_58:

(Start: 82 @43108 has 7 MA's), (Start: 84 @43105 has 15 MA's), (94, 43066), (133, 42943), (142, 42898), (195, 42724),

Gene: Jellybones_53 Start: 48215, Stop: 47694, Start Num: 66

Candidate Starts for Jellybones_53:

(Start: 66 @48215 has 52 MA's), (80, 48179), (188, 47765),

Gene: John316_54 Start: 48272, Stop: 47751, Start Num: 66

Candidate Starts for John316_54:

(Start: 66 @48272 has 52 MA's), (80, 48236), (190, 47810),

Gene: Jormungandr_49 Start: 47536, Stop: 47033, Start Num: 66

Candidate Starts for Jormungandr_49:

(55, 47581), (60, 47563), (Start: 66 @47536 has 52 MA's), (89, 47476), (171, 47185), (182, 47131),

Gene: Judebell_59 Start: 42554, Stop: 42165, Start Num: 84

Candidate Starts for Judebell_59:

(Start: 65 @42605 has 1 MA's), (Start: 82 @42557 has 7 MA's), (Start: 84 @42554 has 15 MA's), (94, 42515), (110, 42473), (133, 42392), (142, 42347), (195, 42173),

Gene: Jumbo_42 Start: 45467, Stop: 44925, Start Num: 61

Candidate Starts for Jumbo_42:

(35, 45563), (44, 45521), (48, 45509), (51, 45494), (Start: 61 @45467 has 2 MA's), (92, 45380), (129, 45239), (131, 45227), (156, 45140), (171, 45095), (173, 45083), (180, 45050), (189, 44993),

Gene: Kampe_49 Start: 45153, Stop: 44731, Start Num: 71

Candidate Starts for Kampe_49:

(Start: 71 @45153 has 5 MA's), (Start: 84 @45117 has 15 MA's), (93, 45078), (96, 45072), (100, 45057), (129, 44967), (190, 44793),

Gene: Kaseim_49 Start: 46978, Stop: 46475, Start Num: 66

Candidate Starts for Kaseim_49:

(55, 47023), (60, 47005), (Start: 66 @46978 has 52 MA's), (89, 46918), (171, 46627), (182, 46573),

Gene: Katyusha_45 Start: 47238, Stop: 46744, Start Num: 70

Candidate Starts for Katyusha_45:

(Start: 70 @47238 has 9 MA's), (Start: 77 @47223 has 9 MA's), (86, 47196), (148, 46947), (166, 46917), (167, 46908), (174, 46866), (176, 46860),

Gene: Kvothe_45 Start: 47137, Stop: 46643, Start Num: 70

Candidate Starts for Kvothe_45:

(Start: 70 @47137 has 9 MA's), (Start: 77 @47122 has 9 MA's), (86, 47095), (166, 46816), (167, 46807), (174, 46765), (176, 46759),

Gene: Kyva_59 Start: 43089, Stop: 42700, Start Num: 84

Candidate Starts for Kyva_59:

(11, 43476), (32, 43245), (42, 43185), (Start: 43 @43182 has 1 MA's), (Start: 62 @43152 has 8 MA's), (Start: 82 @43092 has 7 MA's), (Start: 84 @43089 has 15 MA's), (133, 42927), (142, 42882), (195, 42708), (196, 42705),

Gene: Labelle_102 Start: 64800, Stop: 65264, Start Num: 77

Candidate Starts for Labelle_102:

(Start: 77 @64800 has 9 MA's), (169, 65106), (173, 65136), (174, 65145), (179, 65166), (188, 65190), (189, 65193),

Gene: Lahirium_49 Start: 48058, Stop: 47555, Start Num: 66
Candidate Starts for Lahirium_49:
(55, 48103), (60, 48085), (Start: 66 @48058 has 52 MA's), (89, 47998), (171, 47707), (182, 47653),

Gene: Leopard_104 Start: 67266, Stop: 67778, Start Num: 77
Candidate Starts for Leopard_104:
(Start: 77 @67266 has 9 MA's), (87, 67293), (111, 67374), (124, 67425), (125, 67434), (128, 67443),
(129, 67446), (137, 67497), (138, 67500), (152, 67566), (153, 67569), (158, 67581), (162, 67584),
(164, 67590), (165, 67599),

Gene: Lidong_49 Start: 47793, Stop: 47290, Start Num: 66
Candidate Starts for Lidong_49:
(55, 47838), (60, 47820), (Start: 66 @47793 has 52 MA's), (89, 47733), (171, 47442), (182, 47388),

Gene: Linetti_52 Start: 48032, Stop: 47523, Start Num: 66
Candidate Starts for Linetti_52:
(Start: 66 @48032 has 52 MA's), (80, 47996), (190, 47582),

Gene: Lizzo_50 Start: 47103, Stop: 46582, Start Num: 66
Candidate Starts for Lizzo_50:
(Start: 66 @47103 has 52 MA's), (80, 47067), (190, 46641),

Gene: Llemily_56 Start: 41884, Stop: 41492, Start Num: 82
Candidate Starts for Llemily_56:
(Start: 82 @41884 has 7 MA's), (Start: 84 @41881 has 15 MA's), (94, 41842), (133, 41719), (142,
41674), (195, 41500),

Gene: Lonelysoil_55 Start: 42037, Stop: 41648, Start Num: 84
Candidate Starts for Lonelysoil_55:
(Start: 65 @42088 has 1 MA's), (Start: 82 @42040 has 7 MA's), (Start: 84 @42037 has 15 MA's), (94,
41998), (110, 41956), (133, 41875), (142, 41830), (195, 41656),

Gene: Luker_50 Start: 48011, Stop: 47508, Start Num: 66
Candidate Starts for Luker_50:
(55, 48056), (60, 48038), (Start: 66 @48011 has 52 MA's), (89, 47951), (171, 47660), (182, 47606),

Gene: MacGully_24 Start: 10356, Stop: 10865, Start Num: 64
Candidate Starts for MacGully_24:
(4, 9750), (16, 10098), (22, 10137), (Start: 64 @10356 has 6 MA's), (129, 10551), (154, 10677), (170,
10704), (185, 10785), (192, 10815),

Gene: Madruga_101 Start: 64424, Stop: 64888, Start Num: 77
Candidate Starts for Madruga_101:
(Start: 77 @64424 has 9 MA's), (169, 64730), (173, 64760), (174, 64769), (179, 64790), (183, 64802),
(188, 64814), (189, 64817),

Gene: Magritte_49 Start: 48175, Stop: 48675, Start Num: 57
Candidate Starts for Magritte_49:
(Start: 57 @48175 has 1 MA's), (Start: 67 @48214 has 11 MA's), (74, 48229), (96, 48301), (127,
48409), (141, 48493), (178, 48571),

Gene: Marietta_20 Start: 8429, Stop: 8887, Start Num: 62
Candidate Starts for Marietta_20:

(13, 8075), (Start: 62 @8429 has 8 MA's), (78, 8477), (Start: 84 @8495 has 15 MA's), (90, 8510), (97, 8543), (103, 8561), (123, 8618), (195, 8879),

Gene: Maselop_21 Start: 10882, Stop: 11397, Start Num: 64

Candidate Starts for Maselop_21:

(1, 10120), (6, 10372), (16, 10588), (45, 10831), (Start: 64 @10882 has 6 MA's), (81, 10927), (88, 10945), (97, 10981), (129, 11077), (155, 11212), (175, 11275), (190, 11335),

Gene: Mashley_56 Start: 42624, Stop: 42232, Start Num: 84

Candidate Starts for Mashley_56:

(30, 42828), (Start: 61 @42693 has 2 MA's), (Start: 82 @42627 has 7 MA's), (Start: 84 @42624 has 15 MA's), (94, 42582), (110, 42540), (133, 42459), (142, 42414), (195, 42240),

Gene: MidnightRain_90 Start: 48881, Stop: 49366, Start Num: 67

Candidate Starts for MidnightRain_90:

(Start: 67 @48881 has 11 MA's), (127, 49058), (130, 49067), (171, 49229),

Gene: Minos_50 Start: 47535, Stop: 47032, Start Num: 66

Candidate Starts for Minos_50:

(55, 47580), (60, 47562), (Start: 66 @47535 has 52 MA's), (89, 47475), (171, 47184), (182, 47130),

Gene: Monty_49 Start: 46253, Stop: 45732, Start Num: 66

Candidate Starts for Monty_49:

(Start: 66 @46253 has 52 MA's), (80, 46217), (190, 45791),

Gene: MrMiyagi_81 Start: 51354, Stop: 51842, Start Num: 77

Candidate Starts for MrMiyagi_81:

(68, 51333), (Start: 77 @51354 has 9 MA's), (85, 51372), (106, 51447), (119, 51495), (124, 51525), (131, 51558), (157, 51654), (158, 51657), (163, 51660), (173, 51714), (177, 51735),

Gene: MrWormie_49 Start: 46696, Stop: 46193, Start Num: 66

Candidate Starts for MrWormie_49:

(55, 46741), (60, 46723), (Start: 66 @46696 has 52 MA's), (89, 46636), (171, 46345), (182, 46291),

Gene: Msay19_55 Start: 48726, Stop: 48205, Start Num: 66

Candidate Starts for Msay19_55:

(Start: 66 @48726 has 52 MA's), (80, 48690), (188, 48276),

Gene: NadineRae_18 Start: 7679, Stop: 8137, Start Num: 62

Candidate Starts for NadineRae_18:

(13, 7325), (Start: 62 @7679 has 8 MA's), (78, 7727), (Start: 84 @7745 has 15 MA's), (90, 7760), (97, 7793), (103, 7811), (123, 7868), (128, 7886), (174, 8009), (195, 8129),

Gene: Namago_57 Start: 42027, Stop: 41638, Start Num: 84

Candidate Starts for Namago_57:

(Start: 65 @42078 has 1 MA's), (Start: 82 @42030 has 7 MA's), (Start: 84 @42027 has 15 MA's), (94, 41988), (110, 41946), (133, 41865), (142, 41820), (195, 41646), (196, 41643),

Gene: Neoevie_49 Start: 47797, Stop: 47294, Start Num: 66

Candidate Starts for Neoevie_49:

(55, 47842), (60, 47824), (Start: 66 @47797 has 52 MA's), (89, 47737), (171, 47446), (182, 47392),

Gene: Newt_50 Start: 48025, Stop: 47522, Start Num: 66

Candidate Starts for Newt_50:

(55, 48070), (60, 48052), (Start: 66 @48025 has 52 MA's), (89, 47965), (171, 47674), (182, 47620),

Gene: Niagara_45 Start: 47216, Stop: 46722, Start Num: 70

Candidate Starts for Niagara_45:

(Start: 70 @47216 has 9 MA's), (Start: 77 @47201 has 9 MA's), (86, 47174), (166, 46895), (167, 46886), (174, 46844), (176, 46838),

Gene: Nike_59 Start: 43351, Stop: 42950, Start Num: 82

Candidate Starts for Nike_59:

(Start: 82 @43351 has 7 MA's), (Start: 84 @43348 has 15 MA's), (88, 43336), (110, 43264), (133, 43183), (174, 43069), (195, 42958),

Gene: Nimi13_49 Start: 47544, Stop: 47041, Start Num: 66

Candidate Starts for Nimi13_49:

(55, 47589), (60, 47571), (Start: 66 @47544 has 52 MA's), (89, 47484), (171, 47193), (182, 47139),

Gene: Onyinye_105 Start: 67128, Stop: 67658, Start Num: 77

Candidate Starts for Onyinye_105:

(Start: 77 @67128 has 9 MA's), (87, 67155), (95, 67194), (102, 67215), (111, 67236), (124, 67287), (125, 67296), (128, 67305), (129, 67308), (131, 67320), (137, 67359), (138, 67362), (152, 67428), (153, 67431), (158, 67443), (159, 67446), (161, 67458), (162, 67461), (164, 67467), (165, 67479),

Gene: Orchid_48 Start: 45154, Stop: 44732, Start Num: 71

Candidate Starts for Orchid_48:

(Start: 71 @45154 has 5 MA's), (Start: 84 @45118 has 15 MA's), (93, 45079), (96, 45073), (100, 45058), (129, 44968), (190, 44794),

Gene: Patience_103 Start: 65328, Stop: 65792, Start Num: 77

Candidate Starts for Patience_103:

(Start: 77 @65328 has 9 MA's), (169, 65634), (173, 65664), (174, 65673), (179, 65694), (183, 65706), (188, 65718), (189, 65721),

Gene: PatrickStar_49 Start: 45153, Stop: 44731, Start Num: 71

Candidate Starts for PatrickStar_49:

(Start: 71 @45153 has 5 MA's), (Start: 84 @45117 has 15 MA's), (93, 45078), (96, 45072), (100, 45057), (129, 44967), (190, 44793),

Gene: Phabia_56 Start: 42299, Stop: 41907, Start Num: 82

Candidate Starts for Phabia_56:

(Start: 82 @42299 has 7 MA's), (Start: 84 @42296 has 15 MA's), (94, 42257), (133, 42134), (142, 42089), (195, 41915),

Gene: Philon9_46 Start: 48247, Stop: 47753, Start Num: 70

Candidate Starts for Philon9_46:

(Start: 70 @48247 has 9 MA's), (91, 48193), (105, 48139), (131, 48037), (167, 47917),

Gene: Phrank15_92 Start: 48788, Stop: 49189, Start Num: 67

Candidate Starts for Phrank15_92:

(Start: 67 @48788 has 11 MA's), (175, 49076), (194, 49169),

Gene: PierreThree_51 Start: 47781, Stop: 47260, Start Num: 66

Candidate Starts for PierreThree_51:

(Start: 66 @47781 has 52 MA's), (80, 47745), (143, 47487), (190, 47319),

Gene: Pitbull_58 Start: 33633, Stop: 34013, Start Num: 77

Candidate Starts for Pitbull_58:

(76, 33630), (Start: 77 @33633 has 9 MA's), (83, 33651), (104, 33717), (127, 33777), (130, 33786), (174, 33897), (175, 33900),

Gene: Pleakley_26 Start: 10464, Stop: 10973, Start Num: 39

Candidate Starts for Pleakley_26:

(Start: 39 @10464 has 2 MA's), (Start: 84 @10581 has 15 MA's), (90, 10596), (127, 10719), (130, 10728), (174, 10845), (177, 10857),

Gene: PokyPuppy_50 Start: 47715, Stop: 47209, Start Num: 66

Candidate Starts for PokyPuppy_50:

(Start: 66 @47715 has 52 MA's), (80, 47679), (105, 47595), (190, 47268), (192, 47256),

Gene: Poland_57 Start: 48705, Stop: 48184, Start Num: 66

Candidate Starts for Poland_57:

(Start: 66 @48705 has 52 MA's), (80, 48669), (188, 48255),

Gene: Polyzuki_21 Start: 10892, Stop: 11374, Start Num: 64

Candidate Starts for Polyzuki_21:

(1, 10130), (6, 10382), (16, 10598), (45, 10841), (Start: 64 @10892 has 6 MA's), (81, 10937), (88, 10955), (97, 10991), (129, 11087), (136, 11132), (160, 11207), (175, 11252), (190, 11312),

Gene: Quammi_54 Start: 41996, Stop: 41607, Start Num: 84

Candidate Starts for Quammi_54:

(Start: 82 @41999 has 7 MA's), (Start: 84 @41996 has 15 MA's), (94, 41957), (133, 41834), (142, 41789), (195, 41615),

Gene: RadFad_89 Start: 48096, Stop: 48530, Start Num: 67

Candidate Starts for RadFad_89:

(Start: 67 @48096 has 11 MA's), (114, 48213), (151, 48351), (175, 48417), (193, 48486),

Gene: Raphaella_82 Start: 46653, Stop: 47147, Start Num: 67

Candidate Starts for Raphaella_82:

(24, 46386), (26, 46428), (Start: 67 @46653 has 11 MA's), (127, 46830), (130, 46839), (171, 47010),

Gene: Raqqa_87 Start: 48508, Stop: 49080, Start Num: 66

Candidate Starts for Raqqa_87:

(Start: 66 @48508 has 52 MA's), (117, 48667), (118, 48670), (133, 48745), (139, 48793),

Gene: RemRem_51 Start: 46243, Stop: 45722, Start Num: 66

Candidate Starts for RemRem_51:

(Start: 66 @46243 has 52 MA's), (80, 46207), (190, 45781),

Gene: Richie_87 Start: 48886, Stop: 49380, Start Num: 67

Candidate Starts for Richie_87:

(Start: 67 @48886 has 11 MA's), (127, 49063), (130, 49072), (171, 49243),

Gene: Rizwana_63 Start: 46128, Stop: 45559, Start Num: 50

Candidate Starts for Rizwana_63:

(Start: 50 @46128 has 3 MA's), (99, 46002), (106, 45984), (118, 45939), (122, 45918), (173, 45690), (175, 45678),

Gene: RobinSparkles_52 Start: 45706, Stop: 45284, Start Num: 71

Candidate Starts for RobinSparkles_52:

(Start: 71 @45706 has 5 MA's), (Start: 84 @45670 has 15 MA's), (93, 45631), (96, 45625), (100, 45610), (129, 45520), (190, 45346),

Gene: Rowlf_53 Start: 41903, Stop: 41508, Start Num: 82

Candidate Starts for Rowlf_53:

(Start: 61 @41969 has 2 MA's), (Start: 82 @41903 has 7 MA's), (Start: 84 @41900 has 15 MA's), (94, 41858), (133, 41735), (193, 41555), (195, 41516),

Gene: RoyalG_51 Start: 47075, Stop: 46554, Start Num: 66

Candidate Starts for RoyalG_51:

(Start: 66 @47075 has 52 MA's), (80, 47039), (182, 46652), (187, 46637), (192, 46601),

Gene: Rudy_54 Start: 42035, Stop: 41643, Start Num: 82

Candidate Starts for Rudy_54:

(Start: 82 @42035 has 7 MA's), (Start: 84 @42032 has 15 MA's), (94, 41993), (133, 41870), (142, 41825), (195, 41651),

Gene: Sakai_81 Start: 47044, Stop: 47520, Start Num: 67

Candidate Starts for Sakai_81:

(Start: 67 @47044 has 11 MA's), (114, 47161), (145, 47302), (154, 47341), (171, 47383), (175, 47407), (194, 47500),

Gene: SallyK_58 Start: 43182, Stop: 42760, Start Num: 82

Candidate Starts for SallyK_58:

(Start: 82 @43182 has 7 MA's), (Start: 84 @43179 has 15 MA's), (94, 43137), (110, 43095), (133, 43014), (168, 42918), (195, 42768),

Gene: Sam12_50 Start: 46243, Stop: 45722, Start Num: 66

Candidate Starts for Sam12_50:

(Start: 66 @46243 has 52 MA's), (80, 46207), (190, 45781),

Gene: Seahorse_91 Start: 52291, Stop: 52725, Start Num: 67

Candidate Starts for Seahorse_91:

(25, 52063), (Start: 67 @52291 has 11 MA's), (171, 52588), (175, 52612),

Gene: Shelley_49 Start: 47020, Stop: 46517, Start Num: 66

Candidate Starts for Shelley_49:

(55, 47065), (60, 47047), (Start: 66 @47020 has 52 MA's), (89, 46960), (171, 46669), (182, 46615),

Gene: Sillytadpoles_57 Start: 41869, Stop: 41480, Start Num: 84

Candidate Starts for Sillytadpoles_57:

(Start: 82 @41872 has 7 MA's), (Start: 84 @41869 has 15 MA's), (94, 41830), (133, 41707), (142, 41662), (195, 41488),

Gene: Sombrero_51 Start: 46616, Stop: 46095, Start Num: 66

Candidate Starts for Sombrero_51:

(Start: 66 @46616 has 52 MA's), (80, 46580), (188, 46166),

Gene: Squash_61 Start: 43540, Stop: 43148, Start Num: 84
Candidate Starts for Squash_61:
(Start: 61 @43609 has 2 MA's), (Start: 82 @43543 has 7 MA's), (Start: 84 @43540 has 15 MA's), (94, 43498), (110, 43456), (133, 43375), (142, 43330),

Gene: Squibbles_50 Start: 47106, Stop: 46585, Start Num: 66
Candidate Starts for Squibbles_50:
(Start: 66 @47106 has 52 MA's), (190, 46644),

Gene: SteveFrench_50 Start: 47315, Stop: 46794, Start Num: 66
Candidate Starts for SteveFrench_50:
(Start: 66 @47315 has 52 MA's), (80, 47279), (182, 46892), (187, 46877), (192, 46841),

Gene: Sticker17_49 Start: 47535, Stop: 47032, Start Num: 66
Candidate Starts for Sticker17_49:
(55, 47580), (60, 47562), (Start: 66 @47535 has 52 MA's), (89, 47475), (171, 47184), (182, 47130),

Gene: StrawberryJamm_60 Start: 42333, Stop: 41941, Start Num: 84
Candidate Starts for StrawberryJamm_60:
(Start: 82 @42336 has 7 MA's), (Start: 84 @42333 has 15 MA's), (94, 42291), (110, 42249), (133, 42168), (142, 42123), (195, 41949), (196, 41946),

Gene: Sukkupi_20 Start: 8477, Stop: 8935, Start Num: 62
Candidate Starts for Sukkupi_20:
(3, 7778), (13, 8123), (Start: 62 @8477 has 8 MA's), (78, 8525), (Start: 84 @8543 has 15 MA's), (90, 8558), (97, 8591), (123, 8666), (126, 8678), (174, 8807),

Gene: Tank_63 Start: 46124, Stop: 45591, Start Num: 50
Candidate Starts for Tank_63:
(Start: 50 @46124 has 3 MA's), (173, 45722), (181, 45680),

Gene: Teal_49 Start: 48002, Stop: 47499, Start Num: 66
Candidate Starts for Teal_49:
(55, 48047), (60, 48029), (Start: 66 @48002 has 52 MA's), (89, 47942), (171, 47651), (182, 47597),

Gene: Teatealatte_46 Start: 47140, Stop: 46646, Start Num: 70
Candidate Starts for Teatealatte_46:
(Start: 70 @47140 has 9 MA's), (Start: 77 @47125 has 9 MA's), (86, 47098), (166, 46819), (167, 46810), (174, 46768), (176, 46762),

Gene: Teech_46 Start: 46941, Stop: 46447, Start Num: 70
Candidate Starts for Teech_46:
(Start: 70 @46941 has 9 MA's), (Start: 77 @46926 has 9 MA's), (86, 46899), (166, 46620), (167, 46611), (174, 46569), (176, 46563),

Gene: Teehee_57 Start: 43102, Stop: 42713, Start Num: 84
Candidate Starts for Teehee_57:
(Start: 82 @43105 has 7 MA's), (Start: 84 @43102 has 15 MA's), (94, 43063), (133, 42940), (142, 42895), (195, 42721),

Gene: Tiff81_84 Start: 45794, Stop: 46192, Start Num: 67
Candidate Starts for Tiff81_84:
(24, 45527), (26, 45569), (Start: 67 @45794 has 11 MA's), (171, 46055), (175, 46079),

Gene: Tissue_57 Start: 42946, Stop: 42539, Start Num: 84

Candidate Starts for Tissue_57:

(11, 43333), (12, 43330), (32, 43102), (42, 43042), (Start: 43 @43039 has 1 MA's), (Start: 62 @43009 has 8 MA's), (Start: 82 @42949 has 7 MA's), (Start: 84 @42946 has 15 MA's), (133, 42784), (195, 42547), (196, 42544),

Gene: Tredge_46 Start: 47140, Stop: 46646, Start Num: 70

Candidate Starts for Tredge_46:

(Start: 70 @47140 has 9 MA's), (Start: 77 @47125 has 9 MA's), (86, 47098), (166, 46819), (167, 46810), (174, 46768), (176, 46762),

Gene: Viceroy_55 Start: 42002, Stop: 41613, Start Num: 84

Candidate Starts for Viceroy_55:

(Start: 82 @42005 has 7 MA's), (Start: 84 @42002 has 15 MA's), (94, 41963), (133, 41840), (142, 41795), (195, 41621),

Gene: Wayne3_58 Start: 42865, Stop: 42476, Start Num: 84

Candidate Starts for Wayne3_58:

(Start: 82 @42868 has 7 MA's), (Start: 84 @42865 has 15 MA's), (94, 42826), (133, 42703), (142, 42658), (195, 42484),

Gene: Wheelie_56 Start: 42186, Stop: 41797, Start Num: 84

Candidate Starts for Wheelie_56:

(Start: 82 @42189 has 7 MA's), (Start: 84 @42186 has 15 MA's), (94, 42147), (133, 42024), (142, 41979), (195, 41805),

Gene: WhoseManz_20 Start: 8040, Stop: 8498, Start Num: 62

Candidate Starts for WhoseManz_20:

(13, 7686), (Start: 62 @8040 has 8 MA's), (78, 8088), (Start: 84 @8106 has 15 MA's), (90, 8121), (97, 8154), (103, 8172), (123, 8229), (195, 8490),

Gene: Wilde_65 Start: 46423, Stop: 45890, Start Num: 50

Candidate Starts for Wilde_65:

(Start: 50 @46423 has 3 MA's), (173, 46021), (181, 45979),

Gene: Woes_49 Start: 48053, Stop: 47550, Start Num: 66

Candidate Starts for Woes_49:

(55, 48098), (60, 48080), (Start: 66 @48053 has 52 MA's), (89, 47993), (171, 47702), (182, 47648),

Gene: Wollypog_81 Start: 56236, Stop: 56814, Start Num: 43

Candidate Starts for Wollypog_81:

(34, 56194), (38, 56209), (Start: 43 @56236 has 1 MA's), (58, 56284), (Start: 62 @56296 has 8 MA's), (79, 56350), (126, 56476), (130, 56488), (140, 56560), (149, 56605), (172, 56668), (173, 56674), (190, 56752), (194, 56791),

Gene: Yndexa_20 Start: 8477, Stop: 8935, Start Num: 62

Candidate Starts for Yndexa_20:

(3, 7778), (13, 8123), (Start: 62 @8477 has 8 MA's), (78, 8525), (Start: 84 @8543 has 15 MA's), (90, 8558), (97, 8591), (123, 8666), (126, 8678), (174, 8807),

Gene: YoungHarleezy_83 Start: 48259, Stop: 48660, Start Num: 67

Candidate Starts for YoungHarleezy_83:

(Start: 67 @48259 has 11 MA's), (175, 48547),

Gene: Zagie_57 Start: 42527, Stop: 42138, Start Num: 84

Candidate Starts for Zagie_57:

(Start: 65 @42578 has 1 MA's), (Start: 82 @42530 has 7 MA's), (Start: 84 @42527 has 15 MA's), (94, 42488), (110, 42446), (133, 42365), (142, 42320), (195, 42146),

Gene: Zhafia_59 Start: 42669, Stop: 42277, Start Num: 82

Candidate Starts for Zhafia_59:

(Start: 82 @42669 has 7 MA's), (Start: 84 @42666 has 15 MA's), (94, 42627), (133, 42504), (142, 42459), (195, 42285),

Gene: Zucker_85 Start: 49487, Stop: 49963, Start Num: 66

Candidate Starts for Zucker_85:

(19, 49187), (Start: 66 @49487 has 52 MA's), (131, 49670), (133, 49679), (181, 49874),