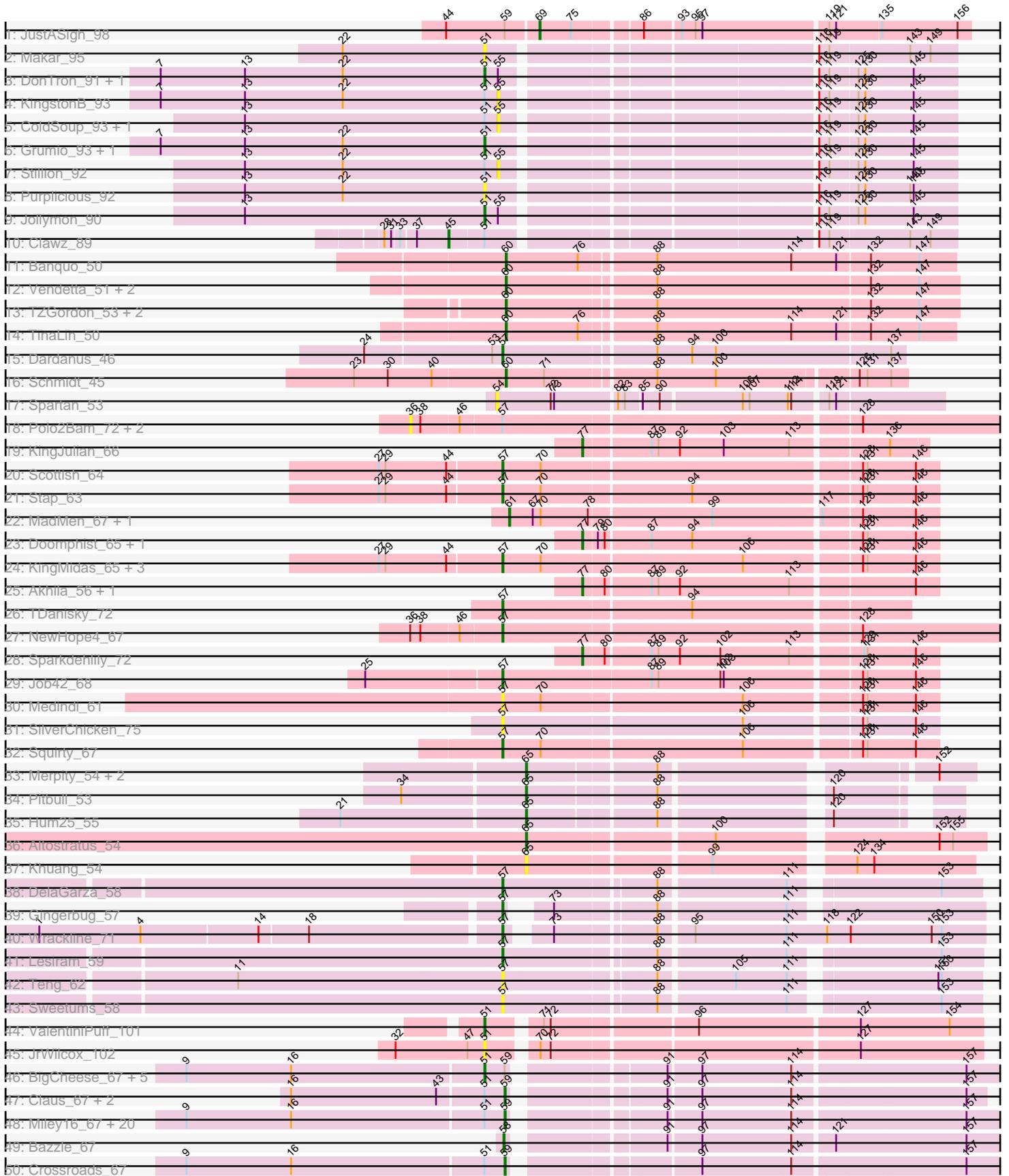
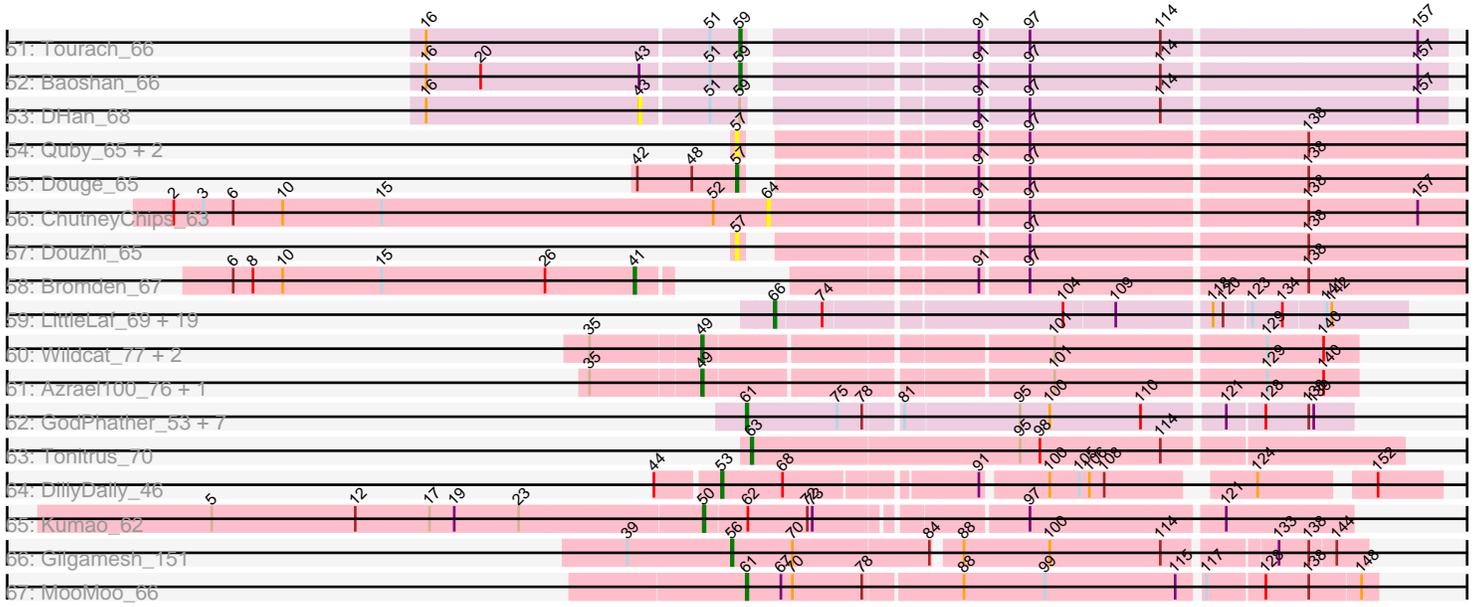


Pham 290931



Pham 290931



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 290931 Report

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

Pham number 290931 has 142 members, 33 are drafts.

Phages represented in each track:

- Track 1 : JustASigh_98
- Track 2 : Makar_95
- Track 3 : DonTron_91, Sting_90
- Track 4 : KingstonB_93
- Track 5 : ColdSoup_93, Amo99_93
- Track 6 : Grumio_93, Soos_87
- Track 7 : Stillion_92
- Track 8 : Purplicious_92
- Track 9 : Jollymon_90
- Track 10 : Clawz_89
- Track 11 : Banquo_50
- Track 12 : Vendetta_51, Goib_52, Splinter_51
- Track 13 : TZGordon_53, Huffy_52, DinoDaryn_52
- Track 14 : TinaLin_50
- Track 15 : Dardanus_46
- Track 16 : Schmidt_45
- Track 17 : Spartan_53
- Track 18 : Polo2Bam_72, SeaLumen_70, Enzomatic_73
- Track 19 : KingJulian_66
- Track 20 : Scottish_64
- Track 21 : Stap_63
- Track 22 : MadMen_67, Leozinho_66
- Track 23 : Doomphist_65, Poenanya_65
- Track 24 : KingMidas_65, Sassafras_64, RedBird_64, Dorothy_64
- Track 25 : Akhila_56, MilanaBonita_55
- Track 26 : TDanisky_72
- Track 27 : NewHope4_67
- Track 28 : Sparkdehlily_72
- Track 29 : Job42_68
- Track 30 : Medindi_61
- Track 31 : SilverChicken_75
- Track 32 : Squirty_67
- Track 33 : Merpity_54, Skitty_47, MrSmee_53
- Track 34 : Pitbull_53
- Track 35 : Hum25_55
- Track 36 : Altostratus_54
- Track 37 : Khuang_54

- Track 38 : DelaGarza_58
- Track 39 : Gingerbug_57
- Track 40 : Wrackline_71
- Track 41 : Lesiram_59
- Track 42 : Teng_62
- Track 43 : Sweetums_58
- Track 44 : ValentiniPuff_101
- Track 45 : JrWilcox_102
- Track 46 : BigCheese_67, Lewan_68, BobsGarage_67, Nicholasp3_67, Underpass_58, Vetric_67
- Track 47 : Claus_67, ZhongYanYuan_66, DanBing_68
- Track 48 : Miley16_67, Wigglewigggle_67, Gabriela_64, Zakai_68, Lynnae_69, Finemlucis_67, GuuelaD_66, Gardann_68, MkaliMitinis3_68, OverPar_69, LilDestine_67, Breezona_67, Sarshaun_68, Itos_66, Rumpelstiltskin_66, Wilder_68, Loadrie_66, Kahlid_67, Rossetti_69, Hafay_69, Winky_67
- Track 49 : Bazzle_67
- Track 50 : Crossroads_67
- Track 51 : Tourach_66
- Track 52 : Baoshan_66
- Track 53 : DHan_68
- Track 54 : Quby_65, PYPDinur_63, FarmResident_67
- Track 55 : Douge_65
- Track 56 : ChutneyChips_63
- Track 57 : Douzhi_65
- Track 58 : Bromden_67
- Track 59 : LittleLaf_69, Pringar_68, JoieB_70, GoongGoong_66, Corazon_67, Marvin_65, FeliMaine_71, Blackbeetle_69, MosMoris_66, Beelzebub_73, Caprice_64, VasuNzinga_68, Huphlepuuff_71, Clarkson_70, Poise_69, Lilbit_67, Gattaca_67, Raela_69, Tesla_66, RedRaider77_68
- Track 60 : Wildcat_77, EniyanLRS_168, MaryV_77
- Track 61 : Azrael100_76, Cosmo_77
- Track 62 : GodPhather_53, Jeon_52, Cepens_52, D12_51, Megabear_52, Taptic_52, PR_52, Argie_53
- Track 63 : Tonitrus_70
- Track 64 : DillyDally_46
- Track 65 : Kumao_62
- Track 66 : Gilgamesh_151
- Track 67 : MooMoo_66

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

The start number called the most often in the published annotations is 59, it was called in 20 of the 109 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Baoshan_66, Breezona_67, Claus_67, Crossroads_67, DanBing_68, Finemlucis_67, Gabriela_64, Gardann_68, GuuelaD_66, Hafay_69, Itos_66, Kahlid_67, LilDestine_67, Loadrie_66, Lynnae_69, Miley16_67, MkaliMitinis3_68, OverPar_69, Rossetti_69, Rumpelstiltskin_66, Sarshaun_68, Tourach_66, Wigglewigggle_67, Wilder_68, Winky_67, Zakai_68, ZhongYanYuan_66,

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

- BigCheese_67, BobsGarage_67, DHan_68, JustASigh_98, Lewan_68, Nicholasp3_67, Underpass_58, Vetric_67,

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

- Akhila_56, Altostratus_54, Amo99_93, Argie_53, Azrael100_76, Banquo_50, Bazzle_67, Beelzebub_73, Blackbeetle_69, Bromden_67, Caprice_64, Cepens_52, ChutneyChips_63, Clarkson_70, Clawz_89, ColdSoup_93, Corazon_67, Cosmo_77, D12_51, Dardanus_46, DelaGarza_58, DillyDally_46, DinoDaryn_52, DonTron_91, Doomphist_65, Dorothy_64, Douge_65, Douzhi_65, EniyanLRS_168, Enzomatic_73, FarmResident_67, FeliMaine_71, Gattaca_67, Gilgamesh_151, Gingerbug_57, GodPhather_53, Goib_52, GoongGoong_66, Grumio_93, Huffy_52, Hum25_55, Huphlepuuff_71, Jeon_52, Job42_68, JoieB_70, Jollymon_90, JrWilcox_102, Khuang_54, KingJulian_66, KingMidas_65, KingstonB_93, Kumao_62, Leozinho_66, Lesiram_59, Lilbit_67, LittleLaf_69, MadMen_67, Makar_95, Marvin_65, MaryV_77, Medindi_61, Megabear_52, Merpity_54, MilanaBonita_55, MooMoo_66, MosMoris_66, MrSmee_53, NewHope4_67, PR_52, PYPDinur_63, Pitbull_53, Poenanya_65, Poise_69, Polo2Bam_72, Pringar_68, Purplicious_92, Quby_65, Raela_69, RedBird_64, RedRaider77_68, Sassafras_64, Schmidt_45, Scottish_64, SeaLumen_70, SilverChicken_75, Skitty_47, Soos_87, Sparkdehlily_72, Spartan_53, Splinter_51, Squirty_67, Stap_63, Stillion_92, Sting_90, Sweetums_58, TDanisky_72, TZGordon_53, Taptic_52, Teng_62, Tesla_66, TinaLin_50, Tonitrus_70, ValentiniPuff_101, VasuNzinga_68, Vendetta_51, Wildcat_77, Wrackline_71,

Summary by start number:

Start 36:

- Found in 4 of 142 (2.8%) of genes in pham
- No Manual Annotations of this start.
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Enzomatic_73 (F1), Polo2Bam_72 (F1), SeaLumen_70 (F1),

Start 41:

- Found in 1 of 142 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bromden_67 (L4),

Start 43:

- Found in 5 of 142 (3.5%) of genes in pham
- No Manual Annotations of this start.
- Called 20.0% of time when present
- Phage (with cluster) where this start called: DHan_68 (L2),

Start 45:

- Found in 1 of 142 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Clawz_89 (CP),

Start 49:

- Found in 5 of 142 (3.5%) of genes in pham
- Manual Annotations of this start: 5 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Azrael100_76 (V), Cosmo_77 (V), EniyanLRS_168 (V), MaryV_77 (V), Wildcat_77 (V),

Start 50:

- Found in 1 of 142 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kumao_62 (singleton),

Start 51:

- Found in 48 of 142 (33.8%) of genes in pham
- Manual Annotations of this start: 11 of 109
- Called 31.2% of time when present
- Phage (with cluster) where this start called: BigCheese_67 (L2), BobsGarage_67 (L2), DonTron_91 (CP), Grumio_93 (CP), Jollymon_90 (CP), JrWilcox_102 (GL), Lewan_68 (L2), Makar_95 (CP), Nicholasp3_67 (L2), Purplicious_92 (CP), Soos_87 (CP), Sting_90 (CP), Underpass_58 (L2), ValentiniPuff_101 (GL), Vetrrix_67 (L2),

Start 53:

- Found in 2 of 142 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 109
- Called 50.0% of time when present
- Phage (with cluster) where this start called: DillyDally_46 (singleton),

Start 54:

- Found in 1 of 142 (0.7%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Spartan_53 (ES),

Start 55:

- Found in 7 of 142 (4.9%) of genes in pham
- No Manual Annotations of this start.
- Called 57.1% of time when present
- Phage (with cluster) where this start called: Amo99_93 (CP), ColdSoup_93 (CP), KingstonB_93 (CP), Stillion_92 (CP),

Start 56:

- Found in 1 of 142 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gilgamesh_151 (singleton),

Start 57:

- Found in 27 of 142 (19.0%) of genes in pham
- Manual Annotations of this start: 16 of 109
- Called 88.9% of time when present
- Phage (with cluster) where this start called: Dardanus_46 (CU3), DelaGarza_58 (GF), Dorothy_64 (F1), Douge_65 (L4), Douzhi_65 (L4), FarmResident_67 (L4), Gingerbug_57 (GF), Job42_68 (F1), KingMidas_65 (F1), Lesiram_59 (GF),

Medindi_61 (F1), NewHope4_67 (F1), PYPDinur_63 (L4), Quby_65 (L4), RedBird_64 (F1), Sassafras_64 (F1), Scottish_64 (F1), SilverChicken_75 (F2), Squirty_67 (F3), Stap_63 (F1), Sweetums_58 (GF), TDanisky_72 (F1), Teng_62 (GF), Wrackline_71 (GF),

Start 58:

- Found in 1 of 142 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bazzle_67 (L2),

Start 59:

- Found in 35 of 142 (24.6%) of genes in pham
- Manual Annotations of this start: 20 of 109
- Called 77.1% of time when present
- Phage (with cluster) where this start called: Baoshan_66 (L2), Breezona_67 (L2), Claus_67 (L2), Crossroads_67 (L2), DanBing_68 (L2), Finemlucis_67 (L2), Gabriela_64 (L2), Gardann_68 (L2), GuuelaD_66 (L2), Hafay_69 (L2), Itos_66 (L2), Kahlid_67 (L2), LilDestine_67 (L2), Loadrie_66 (L2), Lynnae_69 (L2), Miley16_67 (L2), MkaliMitinis3_68 (L2), OverPar_69 (L2), Rossetti_69 (L2), Rumpelstiltskin_66 (L2), Sarshaun_68 (L2), Tourach_66 (L2), Wigglewiggles_67 (L2), Wilder_68 (L2), Winky_67 (L2), Zakai_68 (L2), ZhongYanYuan_66 (L2),

Start 60:

- Found in 9 of 142 (6.3%) of genes in pham
- Manual Annotations of this start: 9 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Banquo_50 (CU1), DinoDaryn_52 (CU1), Goib_52 (CU1), Huffy_52 (CU1), Schmidt_45 (CU4), Splinter_51 (CU1), TZGordon_53 (CU1), TinaLin_50 (CU1), Vendetta_51 (CU1),

Start 61:

- Found in 11 of 142 (7.7%) of genes in pham
- Manual Annotations of this start: 11 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Argie_53 (W), Cepens_52 (W), D12_51 (W), GodPhather_53 (W), Jeon_52 (W), Leozinho_66 (F1), MadMen_67 (F1), Megabear_52 (W), MooMoo_66 (singleton), PR_52 (W), Taptic_52 (W),

Start 63:

- Found in 1 of 142 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Tonitrus_70 (singleton),

Start 64:

- Found in 1 of 142 (0.7%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ChutneyChips_63 (L4),

Start 65:

- Found in 7 of 142 (4.9%) of genes in pham

- Manual Annotations of this start: 5 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Altostratus_54 (FS), Hum25_55 (FQ), Khuang_54 (FS), Merpity_54 (FQ), MrSmee_53 (FQ), Pitbull_53 (FQ), Skitty_47 (FQ),

Start 66:

- Found in 20 of 142 (14.1%) of genes in pham
- Manual Annotations of this start: 18 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beelzebub_73 (S), Blackbeetle_69 (S), Caprice_64 (S), Clarkson_70 (S), Corazon_67 (S), FeliMaine_71 (S), Gattaca_67 (S), GoongGoong_66 (S), Huphlepuuff_71 (S), JoieB_70 (S), Lilbit_67 (S), LittleLaf_69 (S), Marvin_65 (S), MosMoris_66 (S), Poise_69 (S), Pringar_68 (S), Raela_69 (S), RedRaider77_68 (S), Tesla_66 (S), VasuNzinga_68 (S),

Start 69:

- Found in 1 of 142 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: JustASigh_98 (AH),

Start 77:

- Found in 6 of 142 (4.2%) of genes in pham
- Manual Annotations of this start: 6 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Akhila_56 (F1), Doomphist_65 (F1), KingJulian_66 (F1), MilanaBonita_55 (F1), Poenanya_65 (F1), Sparkdehlily_72 (F1),

Summary by clusters:

There are 19 clusters represented in this pham: F1, F2, FS, CU3, GL, CU1, FQ, AH, singleton, L4, GF, S, F3, L2, W, V, CU4, CP, ES,

Info for manual annotations of cluster AH:

- Start number 69 was manually annotated 1 time for cluster AH.

Info for manual annotations of cluster CP:

- Start number 45 was manually annotated 1 time for cluster CP.
- Start number 51 was manually annotated 4 times for cluster CP.

Info for manual annotations of cluster CU1:

- Start number 60 was manually annotated 8 times for cluster CU1.

Info for manual annotations of cluster CU3:

- Start number 57 was manually annotated 1 time for cluster CU3.

Info for manual annotations of cluster CU4:

- Start number 60 was manually annotated 1 time for cluster CU4.

Info for manual annotations of cluster F1:

- Start number 57 was manually annotated 9 times for cluster F1.
- Start number 61 was manually annotated 2 times for cluster F1.

- Start number 77 was manually annotated 6 times for cluster F1.

Info for manual annotations of cluster F3:

- Start number 57 was manually annotated 1 time for cluster F3.

Info for manual annotations of cluster FQ:

- Start number 65 was manually annotated 4 times for cluster FQ.

Info for manual annotations of cluster FS:

- Start number 65 was manually annotated 1 time for cluster FS.

Info for manual annotations of cluster GF:

- Start number 57 was manually annotated 4 times for cluster GF.

Info for manual annotations of cluster GL:

- Start number 51 was manually annotated 1 time for cluster GL.

Info for manual annotations of cluster L2:

- Start number 51 was manually annotated 6 times for cluster L2.
- Start number 58 was manually annotated 1 time for cluster L2.
- Start number 59 was manually annotated 20 times for cluster L2.

Info for manual annotations of cluster L4:

- Start number 41 was manually annotated 1 time for cluster L4.
- Start number 57 was manually annotated 1 time for cluster L4.

Info for manual annotations of cluster S:

- Start number 66 was manually annotated 18 times for cluster S.

Info for manual annotations of cluster V:

- Start number 49 was manually annotated 5 times for cluster V.

Info for manual annotations of cluster W:

- Start number 61 was manually annotated 8 times for cluster W.

Gene Information:

Gene: Akhila_56 Start: 38018, Stop: 38311, Start Num: 77

Candidate Starts for Akhila_56:

(Start: 77 @38018 has 6 MA's), (80, 38036), (87, 38072), (89, 38078), (92, 38096), (113, 38192), (146, 38294),

Gene: Altostratus_54 Start: 31416, Stop: 31790, Start Num: 65

Candidate Starts for Altostratus_54:

(Start: 65 @31416 has 5 MA's), (100, 31569), (152, 31749), (155, 31761),

Gene: Amo99_93 Start: 57523, Stop: 57891, Start Num: 55

Candidate Starts for Amo99_93:

(13, 57298), (Start: 51 @57511 has 11 MA's), (55, 57523), (116, 57772), (119, 57781), (125, 57805), (130, 57811), (145, 57853),

Gene: Argie_53 Start: 44207, Stop: 44548, Start Num: 61

Candidate Starts for Argie_53:

(Start: 61 @44207 has 11 MA's), (75, 44261), (78, 44276), (81, 44294), (95, 44360), (100, 44378), (110, 44432), (121, 44477), (128, 44498), (138, 44522), (139, 44525),

Gene: Azrael100_76 Start: 48787, Stop: 49152, Start Num: 49

Candidate Starts for Azrael100_76:

(35, 48724), (Start: 49 @48787 has 5 MA's), (101, 48979), (129, 49099), (140, 49132),

Gene: Banquo_50 Start: 32516, Stop: 32896, Start Num: 60

Candidate Starts for Banquo_50:

(Start: 60 @32516 has 9 MA's), (76, 32579), (88, 32639), (114, 32756), (121, 32795), (132, 32822), (147, 32864),

Gene: Baoshan_66 Start: 46306, Stop: 46692, Start Num: 59

Candidate Starts for Baoshan_66:

(16, 46120), (20, 46153), (43, 46249), (Start: 51 @46288 has 11 MA's), (Start: 59 @46306 has 20 MA's), (91, 46423), (97, 46450), (114, 46528), (157, 46675),

Gene: Bazzle_67 Start: 46701, Stop: 47099, Start Num: 58

Candidate Starts for Bazzle_67:

(Start: 58 @46701 has 1 MA's), (91, 46818), (97, 46845), (114, 46923), (121, 46956), (157, 47070),

Gene: Beelzebub_73 Start: 40109, Stop: 40462, Start Num: 66

Candidate Starts for Beelzebub_73:

(Start: 66 @40109 has 18 MA's), (74, 40136), (104, 40271), (109, 40301), (118, 40352), (120, 40358), (123, 40373), (134, 40391), (141, 40415), (142, 40418),

Gene: BigCheese_67 Start: 46345, Stop: 46764, Start Num: 51

Candidate Starts for BigCheese_67:

(9, 46084), (16, 46177), (Start: 51 @46345 has 11 MA's), (Start: 59 @46363 has 20 MA's), (91, 46480), (97, 46507), (114, 46585), (157, 46732),

Gene: Blackbeetle_69 Start: 39121, Stop: 39474, Start Num: 66

Candidate Starts for Blackbeetle_69:

(Start: 66 @39121 has 18 MA's), (74, 39148), (104, 39283), (109, 39313), (118, 39364), (120, 39370), (123, 39385), (134, 39403), (141, 39427), (142, 39430),

Gene: BobsGarage_67 Start: 46345, Stop: 46764, Start Num: 51

Candidate Starts for BobsGarage_67:

(9, 46084), (16, 46177), (Start: 51 @46345 has 11 MA's), (Start: 59 @46363 has 20 MA's), (91, 46480), (97, 46507), (114, 46585), (157, 46732),

Gene: Breezona_67 Start: 46363, Stop: 46764, Start Num: 59

Candidate Starts for Breezona_67:

(9, 46084), (16, 46177), (Start: 51 @46345 has 11 MA's), (Start: 59 @46363 has 20 MA's), (91, 46480), (97, 46507), (114, 46585), (157, 46732),

Gene: Bromden_67 Start: 46292, Stop: 46696, Start Num: 41

Candidate Starts for Bromden_67:

(6, 46049), (8, 46061), (10, 46079), (15, 46139), (26, 46238), (Start: 41 @46292 has 1 MA's), (91, 46415), (97, 46442), (138, 46601),

Gene: Caprice_64 Start: 39435, Stop: 39788, Start Num: 66

Candidate Starts for Caprice_64:

(Start: 66 @39435 has 18 MA's), (74, 39462), (104, 39597), (109, 39627), (118, 39678), (120, 39684), (123, 39699), (134, 39717), (141, 39741), (142, 39744),

Gene: Cepens_52 Start: 43922, Stop: 44263, Start Num: 61

Candidate Starts for Cepens_52:

(Start: 61 @43922 has 11 MA's), (75, 43976), (78, 43991), (81, 44009), (95, 44075), (100, 44093), (110, 44147), (121, 44192), (128, 44213), (138, 44237), (139, 44240),

Gene: ChutneyChips_63 Start: 45296, Stop: 45694, Start Num: 64

Candidate Starts for ChutneyChips_63:

(2, 44936), (3, 44954), (6, 44972), (10, 45002), (15, 45062), (52, 45263), (64, 45296), (91, 45413), (97, 45440), (138, 45599), (157, 45665),

Gene: Clarkson_70 Start: 39837, Stop: 40190, Start Num: 66

Candidate Starts for Clarkson_70:

(Start: 66 @39837 has 18 MA's), (74, 39864), (104, 39999), (109, 40029), (118, 40080), (120, 40086), (123, 40101), (134, 40119), (141, 40143), (142, 40146),

Gene: Claus_67 Start: 46444, Stop: 46830, Start Num: 59

Candidate Starts for Claus_67:

(16, 46258), (43, 46387), (Start: 51 @46426 has 11 MA's), (Start: 59 @46444 has 20 MA's), (91, 46561), (97, 46588), (114, 46666), (157, 46813),

Gene: Clawz_89 Start: 57153, Stop: 57563, Start Num: 45

Candidate Starts for Clawz_89:

(28, 57102), (31, 57108), (33, 57114), (37, 57126), (Start: 45 @57153 has 1 MA's), (Start: 51 @57183 has 11 MA's), (116, 57444), (119, 57453), (143, 57522), (149, 57540),

Gene: ColdSoup_93 Start: 57604, Stop: 57972, Start Num: 55

Candidate Starts for ColdSoup_93:

(13, 57379), (Start: 51 @57592 has 11 MA's), (55, 57604), (116, 57853), (119, 57862), (125, 57886), (130, 57892), (145, 57934),

Gene: Corazon_67 Start: 40031, Stop: 40384, Start Num: 66

Candidate Starts for Corazon_67:

(Start: 66 @40031 has 18 MA's), (74, 40058), (104, 40193), (109, 40223), (118, 40274), (120, 40280), (123, 40295), (134, 40313), (141, 40337), (142, 40340),

Gene: Cosmo_77 Start: 48788, Stop: 49153, Start Num: 49

Candidate Starts for Cosmo_77:

(35, 48725), (Start: 49 @48788 has 5 MA's), (101, 48980), (129, 49100), (140, 49133),

Gene: Crossroads_67 Start: 46441, Stop: 46839, Start Num: 59

Candidate Starts for Crossroads_67:

(9, 46162), (16, 46255), (Start: 51 @46423 has 11 MA's), (Start: 59 @46441 has 20 MA's), (97, 46585), (114, 46663), (157, 46810),

Gene: D12_51 Start: 44470, Stop: 44811, Start Num: 61

Candidate Starts for D12_51:

(Start: 61 @44470 has 11 MA's), (75, 44524), (78, 44539), (81, 44557), (95, 44623), (100, 44641), (110, 44695), (121, 44740), (128, 44761), (138, 44785), (139, 44788),

Gene: DHan_68 Start: 46287, Stop: 46730, Start Num: 43

Candidate Starts for DHan_68:

(16, 46158), (43, 46287), (Start: 51 @46326 has 11 MA's), (Start: 59 @46344 has 20 MA's), (91, 46461), (97, 46488), (114, 46566), (157, 46713),

Gene: DanBing_68 Start: 46313, Stop: 46699, Start Num: 59

Candidate Starts for DanBing_68:

(16, 46127), (43, 46256), (Start: 51 @46295 has 11 MA's), (Start: 59 @46313 has 20 MA's), (91, 46430), (97, 46457), (114, 46535), (157, 46682),

Gene: Dardanus_46 Start: 31283, Stop: 31621, Start Num: 57

Candidate Starts for Dardanus_46:

(24, 31163), (Start: 53 @31274 has 1 MA's), (Start: 57 @31283 has 16 MA's), (88, 31409), (94, 31439), (100, 31460), (137, 31610),

Gene: DelaGarza_58 Start: 33298, Stop: 33687, Start Num: 57

Candidate Starts for DelaGarza_58:

(Start: 57 @33298 has 16 MA's), (88, 33424), (111, 33532), (153, 33652),

Gene: DillyDally_46 Start: 29839, Stop: 30222, Start Num: 53

Candidate Starts for DillyDally_46:

(44, 29803), (Start: 53 @29839 has 1 MA's), (68, 29875), (91, 29980), (100, 30016), (105, 30034), (106, 30040), (108, 30049), (124, 30124), (152, 30184),

Gene: DinoDaryn_52 Start: 33048, Stop: 33431, Start Num: 60

Candidate Starts for DinoDaryn_52:

(Start: 60 @33048 has 9 MA's), (88, 33171), (132, 33354), (147, 33396),

Gene: DonTron_91 Start: 57708, Stop: 58088, Start Num: 51

Candidate Starts for DonTron_91:

(7, 57420), (13, 57495), (22, 57582), (Start: 51 @57708 has 11 MA's), (55, 57720), (116, 57969), (119, 57978), (125, 58002), (130, 58008), (145, 58050),

Gene: Doomphist_65 Start: 43033, Stop: 43326, Start Num: 77

Candidate Starts for Doomphist_65:

(Start: 77 @43033 has 6 MA's), (79, 43045), (80, 43051), (87, 43087), (94, 43123), (128, 43264), (131, 43267), (146, 43309),

Gene: Dorothy_64 Start: 42261, Stop: 42623, Start Num: 57

Candidate Starts for Dorothy_64:

(27, 42156), (29, 42162), (44, 42216), (Start: 57 @42261 has 16 MA's), (70, 42294), (106, 42465), (128, 42561), (131, 42564), (146, 42606),

Gene: Douge_65 Start: 45034, Stop: 45432, Start Num: 57

Candidate Starts for Douge_65:

(42, 44974), (48, 45007), (Start: 57 @45034 has 16 MA's), (91, 45151), (97, 45178), (138, 45337),

Gene: Douzhi_65 Start: 45087, Stop: 45485, Start Num: 57

Candidate Starts for Douzhi_65:

(Start: 57 @45087 has 16 MA's), (97, 45231), (138, 45390),

Gene: EniyanLRS_168 Start: 48527, Stop: 48892, Start Num: 49
Candidate Starts for EniyanLRS_168:
(35, 48464), (Start: 49 @48527 has 5 MA's), (101, 48719), (129, 48839), (140, 48872),

Gene: Enzomatic_73 Start: 42241, Stop: 42768, Start Num: 36
Candidate Starts for Enzomatic_73:
(36, 42241), (38, 42250), (46, 42283), (Start: 57 @42319 has 16 MA's), (128, 42619),

Gene: FarmResident_67 Start: 45043, Stop: 45441, Start Num: 57
Candidate Starts for FarmResident_67:
(Start: 57 @45043 has 16 MA's), (91, 45160), (97, 45187), (138, 45346),

Gene: FeliMaine_71 Start: 40079, Stop: 40432, Start Num: 66
Candidate Starts for FeliMaine_71:
(Start: 66 @40079 has 18 MA's), (74, 40106), (104, 40241), (109, 40271), (118, 40322), (120, 40328),
(123, 40343), (134, 40361), (141, 40385), (142, 40388),

Gene: Finemlucis_67 Start: 46684, Stop: 47085, Start Num: 59
Candidate Starts for Finemlucis_67:
(9, 46405), (16, 46498), (Start: 51 @46666 has 11 MA's), (Start: 59 @46684 has 20 MA's), (91, 46801),
(97, 46828), (114, 46906), (157, 47053),

Gene: Gabriela_64 Start: 44813, Stop: 45211, Start Num: 59
Candidate Starts for Gabriela_64:
(9, 44534), (16, 44627), (Start: 51 @44795 has 11 MA's), (Start: 59 @44813 has 20 MA's), (91, 44930),
(97, 44957), (114, 45035), (157, 45182),

Gene: Gardann_68 Start: 46399, Stop: 46797, Start Num: 59
Candidate Starts for Gardann_68:
(9, 46120), (16, 46213), (Start: 51 @46381 has 11 MA's), (Start: 59 @46399 has 20 MA's), (91, 46516),
(97, 46543), (114, 46621), (157, 46768),

Gene: Gattaca_67 Start: 39225, Stop: 39578, Start Num: 66
Candidate Starts for Gattaca_67:
(Start: 66 @39225 has 18 MA's), (74, 39252), (104, 39387), (109, 39417), (118, 39468), (120, 39474),
(123, 39489), (134, 39507), (141, 39531), (142, 39534),

Gene: Gilgamesh_151 Start: 125936, Stop: 126292, Start Num: 56
Candidate Starts for Gilgamesh_151:
(39, 125873), (Start: 56 @125936 has 1 MA's), (70, 125972), (84, 126053), (88, 126065), (100,
126116), (114, 126182), (133, 126242), (138, 126260), (144, 126275),

Gene: Gingerbug_57 Start: 33770, Stop: 34138, Start Num: 57
Candidate Starts for Gingerbug_57:
(Start: 57 @33770 has 16 MA's), (73, 33791), (88, 33872), (111, 33980),

Gene: GodPhather_53 Start: 44710, Stop: 45051, Start Num: 61
Candidate Starts for GodPhather_53:
(Start: 61 @44710 has 11 MA's), (75, 44764), (78, 44779), (81, 44797), (95, 44863), (100, 44881),
(110, 44935), (121, 44980), (128, 45001), (138, 45025), (139, 45028),

Gene: Goib_52 Start: 33585, Stop: 33968, Start Num: 60

Candidate Starts for Goib_52:

(Start: 60 @33585 has 9 MA's), (88, 33708), (132, 33891), (147, 33933),

Gene: GoongGoong_66 Start: 39024, Stop: 39377, Start Num: 66

Candidate Starts for GoongGoong_66:

(Start: 66 @39024 has 18 MA's), (74, 39051), (104, 39186), (109, 39216), (118, 39267), (120, 39273), (123, 39288), (134, 39306), (141, 39330), (142, 39333),

Gene: Grumio_93 Start: 57321, Stop: 57701, Start Num: 51

Candidate Starts for Grumio_93:

(7, 57033), (13, 57108), (22, 57195), (Start: 51 @57321 has 11 MA's), (116, 57582), (119, 57591), (125, 57615), (130, 57621), (145, 57663),

Gene: GuuelaD_66 Start: 46478, Stop: 46879, Start Num: 59

Candidate Starts for GuuelaD_66:

(9, 46199), (16, 46292), (Start: 51 @46460 has 11 MA's), (Start: 59 @46478 has 20 MA's), (91, 46595), (97, 46622), (114, 46700), (157, 46847),

Gene: Hafay_69 Start: 46467, Stop: 46868, Start Num: 59

Candidate Starts for Hafay_69:

(9, 46188), (16, 46281), (Start: 51 @46449 has 11 MA's), (Start: 59 @46467 has 20 MA's), (91, 46584), (97, 46611), (114, 46689), (157, 46836),

Gene: Huffy_52 Start: 33048, Stop: 33431, Start Num: 60

Candidate Starts for Huffy_52:

(Start: 60 @33048 has 9 MA's), (88, 33171), (132, 33354), (147, 33396),

Gene: Hum25_55 Start: 30658, Stop: 30984, Start Num: 65

Candidate Starts for Hum25_55:

(21, 30499), (Start: 65 @30658 has 5 MA's), (88, 30763), (120, 30895),

Gene: Huphlebuff_71 Start: 39642, Stop: 39995, Start Num: 66

Candidate Starts for Huphlebuff_71:

(Start: 66 @39642 has 18 MA's), (74, 39669), (104, 39804), (109, 39834), (118, 39885), (120, 39891), (123, 39906), (134, 39924), (141, 39948), (142, 39951),

Gene: Itos_66 Start: 45269, Stop: 45670, Start Num: 59

Candidate Starts for Itos_66:

(9, 44990), (16, 45083), (Start: 51 @45251 has 11 MA's), (Start: 59 @45269 has 20 MA's), (91, 45386), (97, 45413), (114, 45491), (157, 45638),

Gene: Jeon_52 Start: 44452, Stop: 44793, Start Num: 61

Candidate Starts for Jeon_52:

(Start: 61 @44452 has 11 MA's), (75, 44506), (78, 44521), (81, 44539), (95, 44605), (100, 44623), (110, 44677), (121, 44722), (128, 44743), (138, 44767), (139, 44770),

Gene: Job42_68 Start: 44715, Stop: 45080, Start Num: 57

Candidate Starts for Job42_68:

(25, 44598), (Start: 57 @44715 has 16 MA's), (87, 44841), (89, 44847), (102, 44901), (103, 44904), (128, 45018), (131, 45021), (146, 45063),

Gene: JoieB_70 Start: 40075, Stop: 40428, Start Num: 66

Candidate Starts for JoieB_70:

(Start: 66 @40075 has 18 MA's), (74, 40102), (104, 40237), (109, 40267), (118, 40318), (120, 40324), (123, 40339), (134, 40357), (141, 40381), (142, 40384),

Gene: Jollymon_90 Start: 57592, Stop: 57972, Start Num: 51

Candidate Starts for Jollymon_90:

(13, 57379), (Start: 51 @57592 has 11 MA's), (55, 57604), (116, 57853), (119, 57862), (125, 57886), (130, 57892), (145, 57934),

Gene: JrWilcox_102 Start: 57042, Stop: 57449, Start Num: 51

Candidate Starts for JrWilcox_102:

(32, 56964), (47, 57027), (Start: 51 @57042 has 11 MA's), (70, 57078), (72, 57087), (127, 57342),

Gene: JustASigh_98 Start: 55410, Stop: 55766, Start Num: 69

Candidate Starts for JustASigh_98:

(44, 55332), (Start: 59 @55383 has 20 MA's), (Start: 69 @55410 has 1 MA's), (75, 55437), (86, 55491), (93, 55521), (95, 55533), (97, 55539), (119, 55644), (121, 55650), (135, 55689), (156, 55755),

Gene: Kahlid_67 Start: 46369, Stop: 46770, Start Num: 59

Candidate Starts for Kahlid_67:

(9, 46090), (16, 46183), (Start: 51 @46351 has 11 MA's), (Start: 59 @46369 has 20 MA's), (91, 46486), (97, 46513), (114, 46591), (157, 46738),

Gene: Khuang_54 Start: 31611, Stop: 31976, Start Num: 65

Candidate Starts for Khuang_54:

(Start: 65 @31611 has 5 MA's), (99, 31761), (124, 31872), (134, 31887),

Gene: KingJulian_66 Start: 41550, Stop: 41834, Start Num: 77

Candidate Starts for KingJulian_66:

(Start: 77 @41550 has 6 MA's), (87, 41604), (89, 41610), (92, 41628), (103, 41667), (113, 41724), (136, 41802),

Gene: KingMidas_65 Start: 43159, Stop: 43521, Start Num: 57

Candidate Starts for KingMidas_65:

(27, 43054), (29, 43060), (44, 43114), (Start: 57 @43159 has 16 MA's), (70, 43192), (106, 43363), (128, 43459), (131, 43462), (146, 43504),

Gene: KingstonB_93 Start: 57137, Stop: 57505, Start Num: 55

Candidate Starts for KingstonB_93:

(7, 56837), (13, 56912), (22, 56999), (Start: 51 @57125 has 11 MA's), (55, 57137), (116, 57386), (119, 57395), (125, 57419), (130, 57425), (145, 57467),

Gene: Kumao_62 Start: 44058, Stop: 44420, Start Num: 50

Candidate Starts for Kumao_62:

(5, 43764), (12, 43851), (17, 43896), (19, 43911), (23, 43950), (Start: 50 @44058 has 1 MA's), (62, 44082), (72, 44118), (73, 44121), (97, 44235), (121, 44346),

Gene: Leozinho_66 Start: 42196, Stop: 42552, Start Num: 61

Candidate Starts for Leozinho_66:

(Start: 61 @42196 has 11 MA's), (67, 42217), (70, 42223), (78, 42265), (99, 42367), (117, 42457), (128, 42490), (146, 42535),

Gene: Lesiram_59 Start: 33428, Stop: 33817, Start Num: 57

Candidate Starts for Lesiram_59:

(Start: 57 @33428 has 16 MA's), (88, 33554), (111, 33662), (153, 33782),

Gene: Lewan_68 Start: 46405, Stop: 46821, Start Num: 51

Candidate Starts for Lewan_68:

(9, 46144), (16, 46237), (Start: 51 @46405 has 11 MA's), (Start: 59 @46423 has 20 MA's), (91, 46540), (97, 46567), (114, 46645), (157, 46792),

Gene: LilDestine_67 Start: 46396, Stop: 46797, Start Num: 59

Candidate Starts for LilDestine_67:

(9, 46117), (16, 46210), (Start: 51 @46378 has 11 MA's), (Start: 59 @46396 has 20 MA's), (91, 46513), (97, 46540), (114, 46618), (157, 46765),

Gene: Lilbit_67 Start: 39805, Stop: 40158, Start Num: 66

Candidate Starts for Lilbit_67:

(Start: 66 @39805 has 18 MA's), (74, 39832), (104, 39967), (109, 39997), (118, 40048), (120, 40054), (123, 40069), (134, 40087), (141, 40111), (142, 40114),

Gene: LittleLaf_69 Start: 39534, Stop: 39887, Start Num: 66

Candidate Starts for LittleLaf_69:

(Start: 66 @39534 has 18 MA's), (74, 39561), (104, 39696), (109, 39726), (118, 39777), (120, 39783), (123, 39798), (134, 39816), (141, 39840), (142, 39843),

Gene: Loadrie_66 Start: 46451, Stop: 46849, Start Num: 59

Candidate Starts for Loadrie_66:

(9, 46172), (16, 46265), (Start: 51 @46433 has 11 MA's), (Start: 59 @46451 has 20 MA's), (91, 46568), (97, 46595), (114, 46673), (157, 46820),

Gene: Lynnae_69 Start: 46394, Stop: 46795, Start Num: 59

Candidate Starts for Lynnae_69:

(9, 46115), (16, 46208), (Start: 51 @46376 has 11 MA's), (Start: 59 @46394 has 20 MA's), (91, 46511), (97, 46538), (114, 46616), (157, 46763),

Gene: MadMen_67 Start: 43664, Stop: 44020, Start Num: 61

Candidate Starts for MadMen_67:

(Start: 61 @43664 has 11 MA's), (67, 43685), (70, 43691), (78, 43733), (99, 43835), (117, 43925), (128, 43958), (146, 44003),

Gene: Makar_95 Start: 57425, Stop: 57805, Start Num: 51

Candidate Starts for Makar_95:

(22, 57299), (Start: 51 @57425 has 11 MA's), (116, 57686), (119, 57695), (143, 57764), (149, 57782),

Gene: Marvin_65 Start: 39295, Stop: 39648, Start Num: 66

Candidate Starts for Marvin_65:

(Start: 66 @39295 has 18 MA's), (74, 39322), (104, 39457), (109, 39487), (118, 39538), (120, 39544), (123, 39559), (134, 39577), (141, 39601), (142, 39604),

Gene: MaryV_77 Start: 48609, Stop: 48974, Start Num: 49

Candidate Starts for MaryV_77:

(35, 48546), (Start: 49 @48609 has 5 MA's), (101, 48801), (129, 48921), (140, 48954),

Gene: Medindi_61 Start: 39515, Stop: 39877, Start Num: 57

Candidate Starts for Medindi_61:

(Start: 57 @39515 has 16 MA's), (70, 39548), (106, 39719), (128, 39815), (131, 39818), (146, 39860),

Gene: Megabear_52 Start: 43843, Stop: 44184, Start Num: 61

Candidate Starts for Megabear_52:

(Start: 61 @43843 has 11 MA's), (75, 43897), (78, 43912), (81, 43930), (95, 43996), (100, 44014), (110, 44068), (121, 44113), (128, 44134), (138, 44158), (139, 44161),

Gene: Merpity_54 Start: 31317, Stop: 31670, Start Num: 65

Candidate Starts for Merpity_54:

(Start: 65 @31317 has 5 MA's), (88, 31422), (152, 31638),

Gene: MilanaBonita_55 Start: 38018, Stop: 38311, Start Num: 77

Candidate Starts for MilanaBonita_55:

(Start: 77 @38018 has 6 MA's), (80, 38036), (87, 38072), (89, 38078), (92, 38096), (113, 38192), (146, 38294),

Gene: Miley16_67 Start: 46363, Stop: 46764, Start Num: 59

Candidate Starts for Miley16_67:

(9, 46084), (16, 46177), (Start: 51 @46345 has 11 MA's), (Start: 59 @46363 has 20 MA's), (91, 46480), (97, 46507), (114, 46585), (157, 46732),

Gene: MkaliMitinis3_68 Start: 46435, Stop: 46833, Start Num: 59

Candidate Starts for MkaliMitinis3_68:

(9, 46156), (16, 46249), (Start: 51 @46417 has 11 MA's), (Start: 59 @46435 has 20 MA's), (91, 46552), (97, 46579), (114, 46657), (157, 46804),

Gene: MooMoo_66 Start: 43589, Stop: 43945, Start Num: 61

Candidate Starts for MooMoo_66:

(Start: 61 @43589 has 11 MA's), (67, 43610), (70, 43616), (78, 43658), (88, 43712), (99, 43760), (115, 43838), (117, 43850), (128, 43883), (138, 43907), (148, 43937),

Gene: MosMoris_66 Start: 39225, Stop: 39578, Start Num: 66

Candidate Starts for MosMoris_66:

(Start: 66 @39225 has 18 MA's), (74, 39252), (104, 39387), (109, 39417), (118, 39468), (120, 39474), (123, 39489), (134, 39507), (141, 39531), (142, 39534),

Gene: MrSmee_53 Start: 31291, Stop: 31644, Start Num: 65

Candidate Starts for MrSmee_53:

(Start: 65 @31291 has 5 MA's), (88, 31396), (152, 31612),

Gene: NewHope4_67 Start: 42465, Stop: 42914, Start Num: 57

Candidate Starts for NewHope4_67:

(36, 42387), (38, 42396), (46, 42429), (Start: 57 @42465 has 16 MA's), (128, 42765),

Gene: Nicholasp3_67 Start: 46381, Stop: 46797, Start Num: 51

Candidate Starts for Nicholasp3_67:

(9, 46120), (16, 46213), (Start: 51 @46381 has 11 MA's), (Start: 59 @46399 has 20 MA's), (91, 46516), (97, 46543), (114, 46621), (157, 46768),

Gene: OverPar_69 Start: 46451, Stop: 46849, Start Num: 59

Candidate Starts for OverPar_69:

(9, 46172), (16, 46265), (Start: 51 @46433 has 11 MA's), (Start: 59 @46451 has 20 MA's), (91, 46568), (97, 46595), (114, 46673), (157, 46820),

Gene: PR_52 Start: 44447, Stop: 44788, Start Num: 61

Candidate Starts for PR_52:

(Start: 61 @44447 has 11 MA's), (75, 44501), (78, 44516), (81, 44534), (95, 44600), (100, 44618), (110, 44672), (121, 44717), (128, 44738), (138, 44762), (139, 44765),

Gene: PYPDinur_63 Start: 45117, Stop: 45515, Start Num: 57

Candidate Starts for PYPDinur_63:

(Start: 57 @45117 has 16 MA's), (91, 45234), (97, 45261), (138, 45420),

Gene: Pitbull_53 Start: 29779, Stop: 30105, Start Num: 65

Candidate Starts for Pitbull_53:

(34, 29674), (Start: 65 @29779 has 5 MA's), (88, 29884), (120, 30016),

Gene: Poenanya_65 Start: 43033, Stop: 43326, Start Num: 77

Candidate Starts for Poenanya_65:

(Start: 77 @43033 has 6 MA's), (79, 43045), (80, 43051), (87, 43087), (94, 43123), (128, 43264), (131, 43267), (146, 43309),

Gene: Poise_69 Start: 39121, Stop: 39474, Start Num: 66

Candidate Starts for Poise_69:

(Start: 66 @39121 has 18 MA's), (74, 39148), (104, 39283), (109, 39313), (118, 39364), (120, 39370), (123, 39385), (134, 39403), (141, 39427), (142, 39430),

Gene: Polo2Bam_72 Start: 42241, Stop: 42768, Start Num: 36

Candidate Starts for Polo2Bam_72:

(36, 42241), (38, 42250), (46, 42283), (Start: 57 @42319 has 16 MA's), (128, 42619),

Gene: Pringar_68 Start: 39443, Stop: 39796, Start Num: 66

Candidate Starts for Pringar_68:

(Start: 66 @39443 has 18 MA's), (74, 39470), (104, 39605), (109, 39635), (118, 39686), (120, 39692), (123, 39707), (134, 39725), (141, 39749), (142, 39752),

Gene: Purplicious_92 Start: 57086, Stop: 57466, Start Num: 51

Candidate Starts for Purplicious_92:

(13, 56873), (22, 56960), (Start: 51 @57086 has 11 MA's), (116, 57347), (125, 57380), (130, 57386), (143, 57425), (145, 57428),

Gene: Quby_65 Start: 45009, Stop: 45407, Start Num: 57

Candidate Starts for Quby_65:

(Start: 57 @45009 has 16 MA's), (91, 45126), (97, 45153), (138, 45312),

Gene: Raela_69 Start: 39678, Stop: 40031, Start Num: 66

Candidate Starts for Raela_69:

(Start: 66 @39678 has 18 MA's), (74, 39705), (104, 39840), (109, 39870), (118, 39921), (120, 39927), (123, 39942), (134, 39960), (141, 39984), (142, 39987),

Gene: RedBird_64 Start: 42140, Stop: 42502, Start Num: 57

Candidate Starts for RedBird_64:

(27, 42035), (29, 42041), (44, 42095), (Start: 57 @42140 has 16 MA's), (70, 42173), (106, 42344), (128, 42440), (131, 42443), (146, 42485),

Gene: RedRaider77_68 Start: 39066, Stop: 39419, Start Num: 66

Candidate Starts for RedRaider77_68:

(Start: 66 @39066 has 18 MA's), (74, 39093), (104, 39228), (109, 39258), (118, 39309), (120, 39315), (123, 39330), (134, 39348), (141, 39372), (142, 39375),

Gene: Rossetti_69 Start: 46945, Stop: 47343, Start Num: 59

Candidate Starts for Rossetti_69:

(9, 46666), (16, 46759), (Start: 51 @46927 has 11 MA's), (Start: 59 @46945 has 20 MA's), (91, 47062), (97, 47089), (114, 47167), (157, 47314),

Gene: Rumpelstiltskin_66 Start: 45792, Stop: 46190, Start Num: 59

Candidate Starts for Rumpelstiltskin_66:

(9, 45513), (16, 45606), (Start: 51 @45774 has 11 MA's), (Start: 59 @45792 has 20 MA's), (91, 45909), (97, 45936), (114, 46014), (157, 46161),

Gene: Sarshaun_68 Start: 46459, Stop: 46857, Start Num: 59

Candidate Starts for Sarshaun_68:

(9, 46180), (16, 46273), (Start: 51 @46441 has 11 MA's), (Start: 59 @46459 has 20 MA's), (91, 46576), (97, 46603), (114, 46681), (157, 46828),

Gene: Sassafras_64 Start: 42458, Stop: 42820, Start Num: 57

Candidate Starts for Sassafras_64:

(27, 42353), (29, 42359), (44, 42413), (Start: 57 @42458 has 16 MA's), (70, 42491), (106, 42662), (128, 42758), (131, 42761), (146, 42803),

Gene: Schmidt_45 Start: 30353, Stop: 30685, Start Num: 60

Candidate Starts for Schmidt_45:

(23, 30221), (30, 30251), (40, 30290), (Start: 60 @30353 has 9 MA's), (71, 30386), (88, 30476), (100, 30527), (126, 30644), (131, 30650), (137, 30671),

Gene: Scottish_64 Start: 42414, Stop: 42776, Start Num: 57

Candidate Starts for Scottish_64:

(27, 42309), (29, 42315), (44, 42369), (Start: 57 @42414 has 16 MA's), (70, 42447), (128, 42714), (131, 42717), (146, 42759),

Gene: SeaLumen_70 Start: 42241, Stop: 42768, Start Num: 36

Candidate Starts for SeaLumen_70:

(36, 42241), (38, 42250), (46, 42283), (Start: 57 @42319 has 16 MA's), (128, 42619),

Gene: SilverChicken_75 Start: 42112, Stop: 42474, Start Num: 57

Candidate Starts for SilverChicken_75:

(Start: 57 @42112 has 16 MA's), (106, 42316), (128, 42412), (131, 42415), (146, 42457),

Gene: Skitty_47 Start: 29133, Stop: 29486, Start Num: 65

Candidate Starts for Skitty_47:

(Start: 65 @29133 has 5 MA's), (88, 29238), (152, 29454),

Gene: Soos_87 Start: 57034, Stop: 57414, Start Num: 51

Candidate Starts for Soos_87:

(7, 56746), (13, 56821), (22, 56908), (Start: 51 @57034 has 11 MA's), (116, 57295), (119, 57304), (125, 57328), (130, 57334), (145, 57376),

Gene: Sparkdehlily_72 Start: 43335, Stop: 43628, Start Num: 77

Candidate Starts for Sparkdehlily_72:

(Start: 77 @43335 has 6 MA's), (80, 43353), (87, 43389), (89, 43395), (92, 43413), (102, 43449), (113, 43509), (129, 43566), (131, 43569), (146, 43611),

Gene: Spartan_53 Start: 40162, Stop: 40533, Start Num: 54

Candidate Starts for Spartan_53:

(54, 40162), (72, 40210), (73, 40213), (82, 40264), (83, 40270), (85, 40282), (90, 40297), (106, 40366), (107, 40372), (112, 40405), (114, 40408), (119, 40435), (121, 40441),

Gene: Splinter_51 Start: 33608, Stop: 33991, Start Num: 60

Candidate Starts for Splinter_51:

(Start: 60 @33608 has 9 MA's), (88, 33731), (132, 33914), (147, 33956),

Gene: Squirty_67 Start: 43396, Stop: 43758, Start Num: 57

Candidate Starts for Squirty_67:

(Start: 57 @43396 has 16 MA's), (70, 43429), (106, 43600), (128, 43696), (131, 43699), (146, 43741),

Gene: Stap_63 Start: 42347, Stop: 42709, Start Num: 57

Candidate Starts for Stap_63:

(27, 42242), (29, 42248), (44, 42302), (Start: 57 @42347 has 16 MA's), (70, 42380), (94, 42506), (128, 42647), (131, 42650), (146, 42692),

Gene: Stillion_92 Start: 57704, Stop: 58072, Start Num: 55

Candidate Starts for Stillion_92:

(13, 57479), (22, 57566), (Start: 51 @57692 has 11 MA's), (55, 57704), (116, 57953), (119, 57962), (125, 57986), (130, 57992), (145, 58034),

Gene: Sting_90 Start: 57473, Stop: 57853, Start Num: 51

Candidate Starts for Sting_90:

(7, 57185), (13, 57260), (22, 57347), (Start: 51 @57473 has 11 MA's), (55, 57485), (116, 57734), (119, 57743), (125, 57767), (130, 57773), (145, 57815),

Gene: Sweetums_58 Start: 33367, Stop: 33756, Start Num: 57

Candidate Starts for Sweetums_58:

(Start: 57 @33367 has 16 MA's), (88, 33493), (111, 33601), (153, 33721),

Gene: TDanisky_72 Start: 43265, Stop: 43606, Start Num: 57

Candidate Starts for TDanisky_72:

(Start: 57 @43265 has 16 MA's), (94, 43424),

Gene: TZGordon_53 Start: 32954, Stop: 33337, Start Num: 60

Candidate Starts for TZGordon_53:

(Start: 60 @32954 has 9 MA's), (88, 33077), (132, 33260), (147, 33302),

Gene: Taptic_52 Start: 43843, Stop: 44184, Start Num: 61

Candidate Starts for Taptic_52:

(Start: 61 @43843 has 11 MA's), (75, 43897), (78, 43912), (81, 43930), (95, 43996), (100, 44014), (110, 44068), (121, 44113), (128, 44134), (138, 44158), (139, 44161),

Gene: Teng_62 Start: 33271, Stop: 33660, Start Num: 57

Candidate Starts for Teng_62:

(11, 33037), (Start: 57 @33271 has 16 MA's), (88, 33397), (105, 33460), (111, 33505), (151, 33622), (153, 33625),

Gene: Tesla_66 Start: 38915, Stop: 39268, Start Num: 66

Candidate Starts for Tesla_66:

(Start: 66 @38915 has 18 MA's), (74, 38942), (104, 39077), (109, 39107), (118, 39158), (120, 39164), (123, 39179), (134, 39197), (141, 39221), (142, 39224),

Gene: TinaLin_50 Start: 32410, Stop: 32790, Start Num: 60

Candidate Starts for TinaLin_50:

(Start: 60 @32410 has 9 MA's), (76, 32473), (88, 32533), (114, 32650), (121, 32689), (132, 32716), (147, 32758),

Gene: Tonitrus_70 Start: 51892, Stop: 52272, Start Num: 63

Candidate Starts for Tonitrus_70:

(Start: 63 @51892 has 1 MA's), (95, 52051), (98, 52063), (114, 52135),

Gene: Tourach_66 Start: 46445, Stop: 46831, Start Num: 59

Candidate Starts for Tourach_66:

(16, 46259), (Start: 51 @46427 has 11 MA's), (Start: 59 @46445 has 20 MA's), (91, 46562), (97, 46589), (114, 46667), (157, 46814),

Gene: Underpass_58 Start: 41417, Stop: 41833, Start Num: 51

Candidate Starts for Underpass_58:

(9, 41156), (16, 41249), (Start: 51 @41417 has 11 MA's), (Start: 59 @41435 has 20 MA's), (91, 41552), (97, 41579), (114, 41657), (157, 41804),

Gene: ValentiniPuff_101 Start: 57583, Stop: 57990, Start Num: 51

Candidate Starts for ValentiniPuff_101:

(Start: 51 @57583 has 11 MA's), (71, 57622), (72, 57628), (96, 57748), (127, 57883), (154, 57961),

Gene: VasuNzinga_68 Start: 39017, Stop: 39370, Start Num: 66

Candidate Starts for VasuNzinga_68:

(Start: 66 @39017 has 18 MA's), (74, 39044), (104, 39179), (109, 39209), (118, 39260), (120, 39266), (123, 39281), (134, 39299), (141, 39323), (142, 39326),

Gene: Vendetta_51 Start: 33608, Stop: 33991, Start Num: 60

Candidate Starts for Vendetta_51:

(Start: 60 @33608 has 9 MA's), (88, 33731), (132, 33914), (147, 33956),

Gene: Vetric_67 Start: 46385, Stop: 46804, Start Num: 51

Candidate Starts for Vetric_67:

(9, 46124), (16, 46217), (Start: 51 @46385 has 11 MA's), (Start: 59 @46403 has 20 MA's), (91, 46520), (97, 46547), (114, 46625), (157, 46772),

Gene: Wigglewigg_67 Start: 46423, Stop: 46821, Start Num: 59

Candidate Starts for Wigglewigg_67:

(9, 46144), (16, 46237), (Start: 51 @46405 has 11 MA's), (Start: 59 @46423 has 20 MA's), (91, 46540), (97, 46567), (114, 46645), (157, 46792),

Gene: Wildcat_77 Start: 48619, Stop: 48984, Start Num: 49

Candidate Starts for Wildcat_77:

(35, 48556), (Start: 49 @48619 has 5 MA's), (101, 48811), (129, 48931), (140, 48964),

Gene: Wilder_68 Start: 46369, Stop: 46770, Start Num: 59

Candidate Starts for Wilder_68:

(9, 46090), (16, 46183), (Start: 51 @46351 has 11 MA's), (Start: 59 @46369 has 20 MA's), (91, 46486), (97, 46513), (114, 46591), (157, 46738),

Gene: Winky_67 Start: 46363, Stop: 46764, Start Num: 59

Candidate Starts for Winky_67:

(9, 46084), (16, 46177), (Start: 51 @46345 has 11 MA's), (Start: 59 @46363 has 20 MA's), (91, 46480), (97, 46507), (114, 46585), (157, 46732),

Gene: Wrackline_71 Start: 37367, Stop: 37759, Start Num: 57

Candidate Starts for Wrackline_71:

(1, 36971), (4, 37061), (14, 37163), (18, 37205), (Start: 57 @37367 has 16 MA's), (73, 37394), (88, 37475), (95, 37502), (111, 37583), (118, 37619), (122, 37640), (150, 37712), (153, 37721),

Gene: Zakai_68 Start: 46689, Stop: 47090, Start Num: 59

Candidate Starts for Zakai_68:

(9, 46410), (16, 46503), (Start: 51 @46671 has 11 MA's), (Start: 59 @46689 has 20 MA's), (91, 46806), (97, 46833), (114, 46911), (157, 47058),

Gene: ZhongYanYuan_66 Start: 46258, Stop: 46644, Start Num: 59

Candidate Starts for ZhongYanYuan_66:

(16, 46072), (43, 46201), (Start: 51 @46240 has 11 MA's), (Start: 59 @46258 has 20 MA's), (91, 46375), (97, 46402), (114, 46480), (157, 46627),