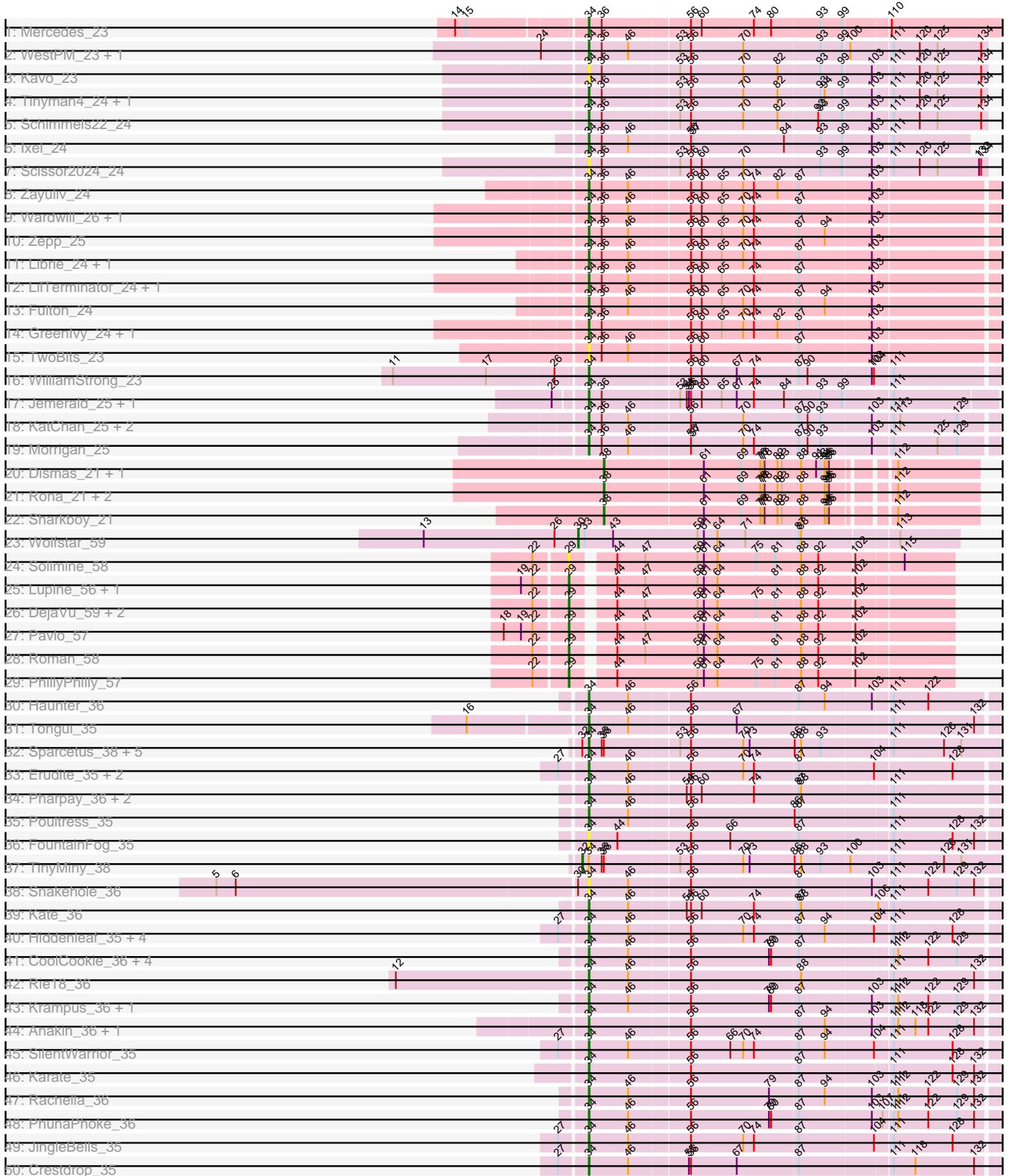
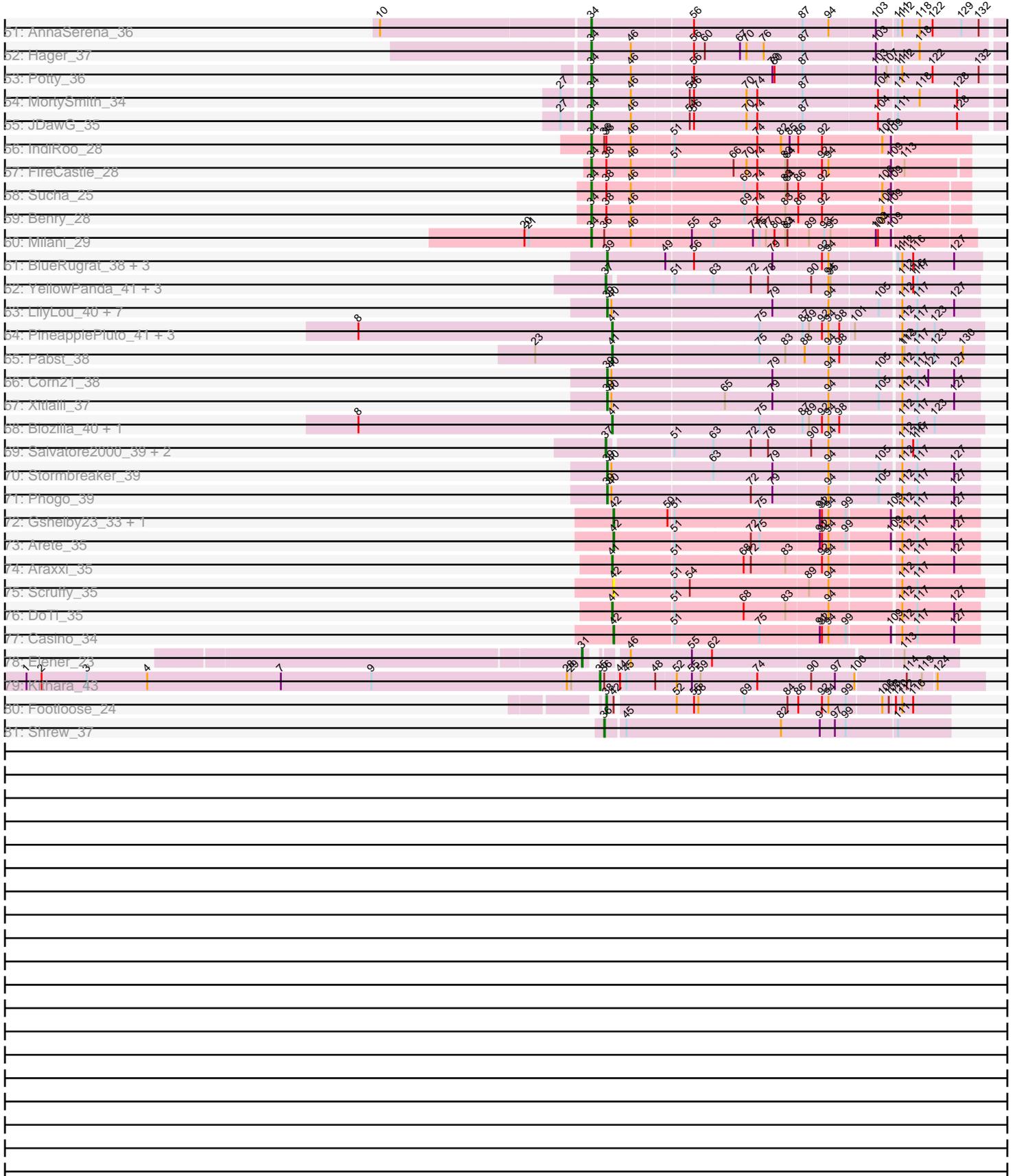


Pham 283590



Pham 283590



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 283590 Report

This analysis was run 02/23/26 on database version 636.

Pham number 283590 has 135 members, 20 are drafts.

Phages represented in each track:

- Track 1 : Mercedes_23
- Track 2 : WestPM_23, Penta_23
- Track 3 : Kavo_23
- Track 4 : Tinyman4_24, HerculesXL_24
- Track 5 : Schimmels22_24
- Track 6 : Ixel_24
- Track 7 : Scissor2024_24
- Track 8 : Zayuliv_24
- Track 9 : Wardwill_26, Hasitha_24
- Track 10 : Zepp_25
- Track 11 : Librie_24, CaptainRex_24
- Track 12 : LilTerminator_24, QuadZero_24
- Track 13 : Fulton_24
- Track 14 : GreenIvy_24, BaronJohn_25
- Track 15 : TwoBits_23
- Track 16 : WilliamStrong_23
- Track 17 : Jemerald_25, Juicer_25
- Track 18 : KatChan_25, Luna18_25, Chepli_25
- Track 19 : Morigan_25
- Track 20 : Dismas_21, Kamdara_21
- Track 21 : Rona_21, Kieran_21, ChiliPepper_21
- Track 22 : Sharkboy_21
- Track 23 : Wolfstar_59
- Track 24 : Solimine_58
- Track 25 : Lupine_56, Uterion_60
- Track 26 : DejaVu_59, Hubbs_58, Saradis_58
- Track 27 : Pavlo_57
- Track 28 : Roman_58
- Track 29 : PhillyPhilly_57
- Track 30 : Haunter_36
- Track 31 : Tongui_35
- Track 32 : Sparcetus_38, LordBart_38, Ajin_38, Kors_38, Bramble_38, RikSengupta_38
- Track 33 : Erudite_35, Aesir_35, Dauntless_35
- Track 34 : Pharpay_36, Artiphact_36, OhDear_36
- Track 35 : Poultruss_35
- Track 36 : FountainFog_35

- Track 37 : TinyMiny_38
- Track 38 : Snakehole_36
- Track 39 : Kate_36
- Track 40 : Hiddenleaf_35, FreddieHg_35, Annapurna_35, DannyDe_35, Chivey_35
- Track 41 : CoolCookie_36, Tedro_36, Cybele_36, Gilda_36, Neptune_36
- Track 42 : Rie18_36
- Track 43 : Krampus_36, OverHedge_36
- Track 44 : Anakin_36, NarutoRun_36
- Track 45 : SilentWarrior_35
- Track 46 : Karate_35
- Track 47 : Rachella_36
- Track 48 : PhunaPhoke_36
- Track 49 : JingleBells_35
- Track 50 : Crestdrop_35
- Track 51 : AnnaSerena_36
- Track 52 : Hager_37
- Track 53 : Potty_36
- Track 54 : MortySmith_34
- Track 55 : JDawG_35
- Track 56 : IndiRoo_28
- Track 57 : FireCastle_28
- Track 58 : Sucha_25
- Track 59 : Benry_28
- Track 60 : Milani_29
- Track 61 : BlueRugrat_38, LesNorah_39, Conditioner_38, TownLake_37
- Track 62 : YellowPanda_41, JessellCookie_40, MiamiPanther_40, TinyTimothy_38
- Track 63 : LilyLou_40, Unphazed_39, Alex44_39, ArMaWen_38, DumpQuist_38, Birdfeeder_37, SwissCheezer_38, Dashyla_38
- Track 64 : PineapplePluto_41, CrunchyBoi_41, TicTac_40, Oatly_40
- Track 65 : Pabst_38
- Track 66 : Corn21_38
- Track 67 : Xitlalli_37
- Track 68 : Biozilla_40, HitchHiker_41
- Track 69 : Salvatore2000_39, Wesak_39, Sorvannah_39
- Track 70 : Stormbreaker_39
- Track 71 : Phogo_39
- Track 72 : Gshelby23_33, Hannabella_35
- Track 73 : Arete_35
- Track 74 : Araxxi_35
- Track 75 : Scruffy_35
- Track 76 : DoTi_35
- Track 77 : Casino_34
- Track 78 : Elener_23
- Track 79 : Kithara_43
- Track 80 : Footloose_24
- Track 81 : Shrew_37

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

The start number called the most often in the published annotations is 34, it was called in 67 of the 115 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aesir_35, Ajin_38, Anakin_36, AnnaSerena_36, Annapurna_35, Artiphact_36, BaronJohn_25, Benry_28, Bramble_38, CaptainRex_24, Chepli_25, Chivey_35, CoolCookie_36, Crestdrop_35, Cybele_36, DannyDe_35, Dauntless_35, Erudite_35, FireCastle_28, FountainFog_35, FreddieHg_35, Fulton_24, Gilda_36, GreenIvy_24, Hager_37, Hasitha_24, Haunter_36, HerculesXL_24, Hiddenleaf_35, IndiRoo_28, Ixel_24, JDawG_35, Jemerald_25, JingleBells_35, Juicer_25, Karate_35, KatChan_25, Kate_36, Kavo_23, Kors_38, Krampus_36, Librie_24, LilTerminator_24, LordBart_38, Luna18_25, Mercedes_23, Milani_29, Morrigan_25, MortySmith_34, NarutoRun_36, Neptune_36, OhDear_36, OverHedge_36, Penta_23, Pharpay_36, PhunaPhoke_36, Potty_36, Poultruss_35, QuadZero_24, Rachella_36, Rie18_36, RikSengupta_38, Schimmels22_24, Scissor2024_24, SilentWarrior_35, Snakehole_36, Sparcetus_38, Sucha_25, Tedro_36, Tinyman4_24, Tongui_35, TwoBits_23, Wardwill_26, WestPM_23, WilliamStrong_23, Zayuliv_24, Zepp_25,

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

- TinyMiny_38,

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

- Alex44_39, ArMaWen_38, Araxxi_35, Arete_35, Biozilla_40, Birdfeeder_37, BlueRugrat_38, Casino_34, ChiliPepper_21, Conditioner_38, Corn21_38, CrunchyBoi_41, Dashyla_38, DejaVu_59, Dismas_21, DoTi_35, DumpQuist_38, Elener_23, Footloose_24, Gshelby23_33, Hannabella_35, HitchHiker_41, Hubbs_58, JessellCookie_40, Kamdara_21, Kieran_21, Kithara_43, LesNorah_39, LilyLou_40, Lupine_56, MiamiPanther_40, Oatly_40, Pabst_38, Pavlo_57, PhillyPhilly_57, Phogo_39, PineapplePluto_41, Roman_58, Rona_21, Salvatore2000_39, Saradis_58, Scruffy_35, Sharkboy_21, Shrew_37, Solimine_58, Sorvannah_39, Stormbreaker_39, SwissCheezer_38, TicTac_40, TinyTimothy_38, TownLake_37, Unphazed_39, Uterion_60, Wesak_39, Wolfstar_59, Xitlalli_37, YellowPanda_41,

Summary by start number:

Start 29:

- Found in 10 of 135 (7.4%) of genes in pham
- Manual Annotations of this start: 6 of 115
- Called 90.0% of time when present
- Phage (with cluster) where this start called: DejaVu_59 (ED1), Hubbs_58 (ED1), Lupine_56 (ED1), Pavlo_57 (ED1), PhillyPhilly_57 (ED1), Roman_58 (ED1), Saradis_58 (ED1), Solimine_58 (ED1), Uterion_60 (ED1),

Start 30:

- Found in 2 of 135 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Wolfstar_59 (ED),

Start 31:

- Found in 1 of 135 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Elener_23 (singleton),

Start 32:

- Found in 7 of 135 (5.2%) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 14.3% of time when present
- Phage (with cluster) where this start called: TinyMiny_38 (EF),

Start 34:

- Found in 78 of 135 (57.8%) of genes in pham
- Manual Annotations of this start: 67 of 115
- Called 98.7% of time when present
- Phage (with cluster) where this start called: Aesir_35 (EF), Ajin_38 (EF), Anakin_36 (EF), AnnaSerena_36 (EF), Annapurna_35 (EF), Artiphact_36 (EF), BaronJohn_25 (EA5), Benry_28 (EJ), Bramble_38 (EF), CaptainRex_24 (EA5), Chepli_25 (EA6), Chivey_35 (EF), CoolCookie_36 (EF), Crestdrop_35 (EF), Cybele_36 (EF), DannyDe_35 (EF), Dauntless_35 (EF), Erudite_35 (EF), FireCastle_28 (EJ), FountainFog_35 (EF), FreddieHg_35 (EF), Fulton_24 (EA5), Gilda_36 (EF), Greenlvy_24 (EA5), Hager_37 (EF), Hasitha_24 (EA5), Haunter_36 (EF), HerculesXL_24 (EA11), Hiddenleaf_35 (EF), IndiRoo_28 (EJ), Ixel_24 (EA11), JDawG_35 (EF), Jemerald_25 (EA6), JingleBells_35 (EF), Juicer_25 (EA6), Karate_35 (EF), KatChan_25 (EA6), Kate_36 (EF), Kav0_23 (EA11), Kors_38 (EF), Krampus_36 (EF), Librie_24 (EA5), LilTerminator_24 (EA5), LordBart_38 (EF), Luna18_25 (EA6), Mercedes_23 (EA), Milani_29 (EJ), Morigan_25 (EA6), MortySmith_34 (EF), NarutoRun_36 (EF), Neptune_36 (EF), OhDear_36 (EF), OverHedge_36 (EF), Penta_23 (EA11), Pharpay_36 (EF), PhunaPhoke_36 (EF), Potty_36 (EF), Poultruss_35 (EF), QuadZero_24 (EA5), Rachella_36 (EF), Rie18_36 (EF), RikSengupta_38 (EF), Schimmels22_24 (EA11), Scissor2024_24 (EA11), SilentWarrior_35 (EF), Snakehole_36 (EF), Sparcet0s_38 (EF), Sucha_25 (EJ), Tedro_36 (EF), Tinyman4_24 (EA11), Tongui_35 (EF), TwoBits_23 (EA5), Wardwill_26 (EA5), WestPM_23 (EA11), WilliamStrong_23 (EA6), Zayuliv_24 (EA5), Zepp_25 (EA5),

Start 35:

- Found in 1 of 135 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kithara_43 (singleton),

Start 36:

- Found in 38 of 135 (28.1%) of genes in pham
- Manual Annotations of this start: 1 of 115
- Called 2.6% of time when present
- Phage (with cluster) where this start called: Shrew_37 (singleton),

Start 37:

- Found in 7 of 135 (5.2%) of genes in pham
- Manual Annotations of this start: 5 of 115
- Called 100.0% of time when present
- Phage (with cluster) where this start called: JessellCookie_40 (EK1), MiamiPanther_40 (EK1), Salvatore2000_39 (EK1), Sorvannah_39 (EK1), TinyTimothy_38 (EK1), Wesak_39 (EK1), YellowPanda_41 (EK1),

Start 38:

- Found in 18 of 135 (13.3%) of genes in pham
- Manual Annotations of this start: 6 of 115
- Called 38.9% of time when present
- Phage (with cluster) where this start called: ChiliPepper_21 (EB), Dismas_21 (EB), Footloose_24 (singleton), Kamdara_21 (EB), Kieran_21 (EB), Rona_21 (EB), Sharkboy_21 (EB),

Start 39:

- Found in 16 of 135 (11.9%) of genes in pham
- Manual Annotations of this start: 15 of 115
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alex44_39 (EK1), ArMaWen_38 (EK1), Birdfeeder_37 (EK1), BlueRugrat_38 (EK1), Conditioner_38 (EK1), Corn21_38 (EK1), Dashyla_38 (EK1), DumpQuist_38 (EK1), LesNorah_39 (EK1), LilyLou_40 (EK1), Phogo_39 (EK1), Stormbreaker_39 (EK1), SwissCheezer_38 (EK1), TownLake_37 (EK1), Unphazed_39 (EK1), Xitlalli_37 (EK1),

Start 41:

- Found in 9 of 135 (6.7%) of genes in pham
- Manual Annotations of this start: 7 of 115
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Araxxi_35 (EM1), Biozilla_40 (EK1), CrunchyBoi_41 (EK1), DoTi_35 (EM1), HitchHiker_41 (EK1), Oatly_40 (EK1), Pabst_38 (EK1), PineapplePluto_41 (EK1), TicTac_40 (EK1),

Start 42:

- Found in 6 of 135 (4.4%) of genes in pham
- Manual Annotations of this start: 4 of 115
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Arete_35 (EM1), Casino_34 (EM1), Gshelby23_33 (EM1), Hannabella_35 (EM1), Scruffy_35 (EM1),

Summary by clusters:

There are 12 clusters represented in this pham: singleton, EA11, EJ, ED, EF, EA, EB, ED1, EM1, EA5, EK1, EA6,

Info for manual annotations of cluster EA:

- Start number 34 was manually annotated 1 time for cluster EA.

Info for manual annotations of cluster EA11:

- Start number 34 was manually annotated 5 times for cluster EA11.

Info for manual annotations of cluster EA5:

- Start number 34 was manually annotated 9 times for cluster EA5.

Info for manual annotations of cluster EA6:

- Start number 34 was manually annotated 7 times for cluster EA6.

Info for manual annotations of cluster EB:

- Start number 38 was manually annotated 5 times for cluster EB.

Info for manual annotations of cluster ED:

- Start number 30 was manually annotated 1 time for cluster ED.

Info for manual annotations of cluster ED1:

- Start number 29 was manually annotated 6 times for cluster ED1.

Info for manual annotations of cluster EF:

- Start number 32 was manually annotated 1 time for cluster EF.
- Start number 34 was manually annotated 40 times for cluster EF.

Info for manual annotations of cluster EJ:

- Start number 34 was manually annotated 5 times for cluster EJ.

Info for manual annotations of cluster EK1:

- Start number 37 was manually annotated 5 times for cluster EK1.
- Start number 39 was manually annotated 15 times for cluster EK1.
- Start number 41 was manually annotated 5 times for cluster EK1.

Info for manual annotations of cluster EM1:

- Start number 41 was manually annotated 2 times for cluster EM1.
- Start number 42 was manually annotated 4 times for cluster EM1.

Gene Information:

Gene: Aesir_35 Start: 23563, Stop: 24108, Start Num: 34

Candidate Starts for Aesir_35:

(27, 23527), (Start: 34 @23563 has 67 MA's), (46, 23617), (56, 23698), (70, 23770), (74, 23785), (87, 23845), (104, 23947), (128, 24049),

Gene: Ajin_38 Start: 24167, Stop: 24742, Start Num: 34

Candidate Starts for Ajin_38:

(Start: 32 @24158 has 1 MA's), (Start: 34 @24167 has 67 MA's), (Start: 36 @24185 has 1 MA's), (Start: 38 @24188 has 6 MA's), (53, 24287), (56, 24302), (70, 24374), (73, 24383), (86, 24443), (88, 24452), (93, 24479), (111, 24572), (126, 24641), (131, 24665),

Gene: Alex44_39 Start: 39220, Stop: 39714, Start Num: 39

Candidate Starts for Alex44_39:

(Start: 39 @39220 has 15 MA's), (40, 39226), (79, 39442), (94, 39517), (105, 39583), (112, 39607), (117, 39628), (127, 39679),

Gene: Anakin_36 Start: 23886, Stop: 24431, Start Num: 34

Candidate Starts for Anakin_36:

(Start: 34 @23886 has 67 MA's), (56, 24021), (87, 24168), (94, 24204), (103, 24267), (111, 24291), (112, 24297), (118, 24321), (122, 24339), (129, 24378), (132, 24402),

Gene: AnnaSerena_36 Start: 23921, Stop: 24466, Start Num: 34

Candidate Starts for AnnaSerena_36:

(10, 23639), (Start: 34 @23921 has 67 MA's), (56, 24056), (87, 24203), (94, 24239), (103, 24302), (111, 24326), (112, 24332), (118, 24356), (122, 24374), (129, 24413), (132, 24437),

Gene: Annapurna_35 Start: 23025, Stop: 23570, Start Num: 34

Candidate Starts for Annapurna_35:

(27, 22989), (Start: 34 @23025 has 67 MA's), (46, 23079), (56, 23160), (70, 23232), (74, 23247), (87, 23307), (94, 23343), (104, 23409), (111, 23430), (128, 23511),

Gene: ArMaWen_38 Start: 38763, Stop: 39257, Start Num: 39

Candidate Starts for ArMaWen_38:

(Start: 39 @38763 has 15 MA's), (40, 38769), (79, 38985), (94, 39060), (105, 39126), (112, 39150), (117, 39171), (127, 39222),

Gene: Araxxi_35 Start: 42091, Stop: 42576, Start Num: 41

Candidate Starts for Araxxi_35:

(Start: 41 @42091 has 7 MA's), (51, 42172), (68, 42265), (72, 42274), (83, 42322), (92, 42370), (94, 42379), (112, 42469), (117, 42490), (127, 42541),

Gene: Arete_35 Start: 41837, Stop: 42322, Start Num: 42

Candidate Starts for Arete_35:

(Start: 42 @41837 has 4 MA's), (51, 41918), (72, 42020), (75, 42032), (91, 42113), (92, 42116), (94, 42125), (99, 42149), (109, 42206), (112, 42215), (117, 42236), (127, 42287),

Gene: Artiphact_36 Start: 23910, Stop: 24455, Start Num: 34

Candidate Starts for Artiphact_36:

(Start: 34 @23910 has 67 MA's), (46, 23964), (54, 24039), (56, 24045), (60, 24060), (74, 24132), (87, 24192), (88, 24195), (111, 24315),

Gene: BaronJohn_25 Start: 18263, Stop: 18811, Start Num: 34

Candidate Starts for BaronJohn_25:

(Start: 34 @18263 has 67 MA's), (Start: 36 @18281 has 1 MA's), (56, 18398), (60, 18413), (65, 18440), (70, 18470), (74, 18485), (82, 18518), (87, 18545), (103, 18644),

Gene: Benry_28 Start: 20065, Stop: 20565, Start Num: 34

Candidate Starts for Benry_28:

(Start: 34 @20065 has 67 MA's), (Start: 38 @20086 has 6 MA's), (46, 20119), (69, 20269), (74, 20287), (83, 20326), (86, 20341), (92, 20374), (106, 20455), (109, 20467),

Gene: Biozilla_40 Start: 39149, Stop: 39640, Start Num: 41

Candidate Starts for Biozilla_40:

(8, 38798), (Start: 41 @39149 has 7 MA's), (75, 39344), (87, 39401), (89, 39410), (92, 39428), (94, 39437), (98, 39452), (112, 39527), (117, 39548), (123, 39572),

Gene: Birdfeeder_37 Start: 38976, Stop: 39470, Start Num: 39

Candidate Starts for Birdfeeder_37:

(Start: 39 @38976 has 15 MA's), (40, 38982), (79, 39198), (94, 39273), (105, 39339), (112, 39363), (117, 39384), (127, 39435),

Gene: BlueRugrat_38 Start: 39221, Stop: 39718, Start Num: 39

Candidate Starts for BlueRugrat_38:

(Start: 39 @39221 has 15 MA's), (49, 39302), (56, 39338), (79, 39443), (92, 39509), (94, 39518), (111, 39602), (112, 39608), (116, 39623), (127, 39680),

Gene: Bramble_38 Start: 24127, Stop: 24702, Start Num: 34

Candidate Starts for Bramble_38:

(Start: 32 @24118 has 1 MA's), (Start: 34 @24127 has 67 MA's), (Start: 36 @24145 has 1 MA's), (Start: 38 @24148 has 6 MA's), (53, 24247), (56, 24262), (70, 24334), (73, 24343), (86, 24403), (88,

24412), (93, 24439), (111, 24532), (126, 24601), (131, 24625),

Gene: CaptainRex_24 Start: 17697, Stop: 18245, Start Num: 34

Candidate Starts for CaptainRex_24:

(Start: 34 @17697 has 67 MA's), (Start: 36 @17715 has 1 MA's), (46, 17751), (56, 17832), (60, 17847), (65, 17874), (70, 17904), (74, 17919), (87, 17979), (103, 18078),

Gene: Casino_34 Start: 41809, Stop: 42294, Start Num: 42

Candidate Starts for Casino_34:

(Start: 42 @41809 has 4 MA's), (51, 41890), (75, 42004), (91, 42085), (92, 42088), (94, 42097), (99, 42121), (109, 42178), (112, 42187), (117, 42208), (127, 42259),

Gene: Chepli_25 Start: 18361, Stop: 18906, Start Num: 34

Candidate Starts for Chepli_25:

(Start: 34 @18361 has 67 MA's), (Start: 36 @18379 has 1 MA's), (46, 18415), (56, 18496), (70, 18568), (87, 18643), (90, 18655), (93, 18673), (103, 18742), (111, 18766), (113, 18775), (129, 18853),

Gene: ChiliPepper_21 Start: 19073, Stop: 19561, Start Num: 38

Candidate Starts for ChiliPepper_21:

(Start: 38 @19073 has 6 MA's), (61, 19208), (69, 19259), (76, 19286), (77, 19289), (78, 19292), (82, 19310), (83, 19316), (88, 19340), (94, 19373), (95, 19376), (96, 19379), (112, 19448),

Gene: Chivey_35 Start: 22974, Stop: 23519, Start Num: 34

Candidate Starts for Chivey_35:

(27, 22938), (Start: 34 @22974 has 67 MA's), (46, 23028), (56, 23109), (70, 23181), (74, 23196), (87, 23256), (94, 23292), (104, 23358), (111, 23379), (128, 23460),

Gene: Conditioner_38 Start: 39294, Stop: 39791, Start Num: 39

Candidate Starts for Conditioner_38:

(Start: 39 @39294 has 15 MA's), (49, 39375), (56, 39411), (79, 39516), (92, 39582), (94, 39591), (111, 39675), (112, 39681), (116, 39696), (127, 39753),

Gene: CoolCookie_36 Start: 23916, Stop: 24461, Start Num: 34

Candidate Starts for CoolCookie_36:

(Start: 34 @23916 has 67 MA's), (46, 23970), (56, 24051), (79, 24159), (80, 24162), (87, 24198), (111, 24321), (112, 24327), (122, 24369), (129, 24408),

Gene: Corn21_38 Start: 39299, Stop: 39793, Start Num: 39

Candidate Starts for Corn21_38:

(Start: 39 @39299 has 15 MA's), (40, 39305), (79, 39521), (94, 39596), (105, 39662), (112, 39686), (117, 39707), (121, 39722), (127, 39758),

Gene: Crestdrop_35 Start: 22888, Stop: 23433, Start Num: 34

Candidate Starts for Crestdrop_35:

(27, 22852), (Start: 34 @22888 has 67 MA's), (46, 22942), (55, 23020), (56, 23023), (67, 23086), (87, 23170), (111, 23293), (118, 23323), (132, 23404),

Gene: CrunchyBoi_41 Start: 39004, Stop: 39495, Start Num: 41

Candidate Starts for CrunchyBoi_41:

(8, 38653), (Start: 41 @39004 has 7 MA's), (75, 39199), (87, 39256), (89, 39265), (92, 39283), (94, 39292), (98, 39307), (101, 39325), (112, 39382), (117, 39403), (123, 39427),

Gene: Cybele_36 Start: 23886, Stop: 24431, Start Num: 34

Candidate Starts for Cybele_36:

(Start: 34 @23886 has 67 MA's), (46, 23940), (56, 24021), (79, 24129), (80, 24132), (87, 24168), (111, 24291), (112, 24297), (122, 24339), (129, 24378),

Gene: DannyDe_35 Start: 22980, Stop: 23525, Start Num: 34

Candidate Starts for DannyDe_35:

(27, 22944), (Start: 34 @22980 has 67 MA's), (46, 23034), (56, 23115), (70, 23187), (74, 23202), (87, 23262), (94, 23298), (104, 23364), (111, 23385), (128, 23466),

Gene: Dashyla_38 Start: 38894, Stop: 39388, Start Num: 39

Candidate Starts for Dashyla_38:

(Start: 39 @38894 has 15 MA's), (40, 38900), (79, 39116), (94, 39191), (105, 39257), (112, 39281), (117, 39302), (127, 39353),

Gene: Dauntless_35 Start: 23531, Stop: 24076, Start Num: 34

Candidate Starts for Dauntless_35:

(27, 23495), (Start: 34 @23531 has 67 MA's), (46, 23585), (56, 23666), (70, 23738), (74, 23753), (87, 23813), (104, 23915), (128, 24017),

Gene: DejaVu_59 Start: 34858, Stop: 35358, Start Num: 29

Candidate Starts for DejaVu_59:

(22, 34816), (Start: 29 @34858 has 6 MA's), (44, 34906), (47, 34945), (59, 35017), (61, 35026), (64, 35044), (75, 35098), (81, 35125), (88, 35158), (92, 35182), (102, 35230),

Gene: Dismas_21 Start: 19073, Stop: 19561, Start Num: 38

Candidate Starts for Dismas_21:

(Start: 38 @19073 has 6 MA's), (61, 19208), (69, 19259), (76, 19286), (77, 19289), (78, 19292), (82, 19310), (83, 19316), (88, 19340), (91, 19361), (93, 19367), (94, 19373), (95, 19376), (96, 19379), (112, 19448),

Gene: DoTi_35 Start: 42195, Stop: 42680, Start Num: 41

Candidate Starts for DoTi_35:

(Start: 41 @42195 has 7 MA's), (51, 42276), (68, 42369), (83, 42426), (94, 42483), (112, 42573), (117, 42594), (127, 42645),

Gene: DumpQuist_38 Start: 38748, Stop: 39242, Start Num: 39

Candidate Starts for DumpQuist_38:

(Start: 39 @38748 has 15 MA's), (40, 38754), (79, 38970), (94, 39045), (105, 39111), (112, 39135), (117, 39156), (127, 39207),

Gene: Elener_23 Start: 19989, Stop: 20459, Start Num: 31

Candidate Starts for Elener_23:

(Start: 31 @19989 has 1 MA's), (46, 20025), (55, 20109), (62, 20136), (113, 20385),

Gene: Erudite_35 Start: 23531, Stop: 24076, Start Num: 34

Candidate Starts for Erudite_35:

(27, 23495), (Start: 34 @23531 has 67 MA's), (46, 23585), (56, 23666), (70, 23738), (74, 23753), (87, 23813), (104, 23915), (128, 24017),

Gene: FireCastle_28 Start: 21644, Stop: 22144, Start Num: 34

Candidate Starts for FireCastle_28:

(Start: 34 @21644 has 67 MA's), (Start: 38 @21665 has 6 MA's), (46, 21698), (51, 21752), (66, 21833), (70, 21851), (74, 21866), (83, 21905), (84, 21908), (92, 21953), (94, 21962), (109, 22046), (113,

22061),

Gene: Footloose_24 Start: 17237, Stop: 17686, Start Num: 38

Candidate Starts for Footloose_24:

(Start: 38 @17237 has 6 MA's), (Start: 42 @17246 has 4 MA's), (52, 17324), (56, 17348), (58, 17354), (69, 17417), (84, 17477), (86, 17489), (92, 17522), (94, 17531), (99, 17555), (106, 17597), (108, 17606), (110, 17612), (112, 17621), (116, 17636),

Gene: FountainFog_35 Start: 23186, Stop: 23737, Start Num: 34

Candidate Starts for FountainFog_35:

(Start: 34 @23186 has 67 MA's), (44, 23225), (56, 23321), (66, 23375), (87, 23468), (111, 23591), (128, 23672), (132, 23702),

Gene: FreddieHg_35 Start: 22990, Stop: 23535, Start Num: 34

Candidate Starts for FreddieHg_35:

(27, 22954), (Start: 34 @22990 has 67 MA's), (46, 23044), (56, 23125), (70, 23197), (74, 23212), (87, 23272), (94, 23308), (104, 23374), (111, 23395), (128, 23476),

Gene: Fulton_24 Start: 17679, Stop: 18227, Start Num: 34

Candidate Starts for Fulton_24:

(Start: 34 @17679 has 67 MA's), (Start: 36 @17697 has 1 MA's), (46, 17733), (56, 17814), (60, 17829), (65, 17856), (70, 17886), (74, 17901), (87, 17961), (94, 17997), (103, 18060),

Gene: Gilda_36 Start: 23910, Stop: 24455, Start Num: 34

Candidate Starts for Gilda_36:

(Start: 34 @23910 has 67 MA's), (46, 23964), (56, 24045), (79, 24153), (80, 24156), (87, 24192), (111, 24315), (112, 24321), (122, 24363), (129, 24402),

Gene: Greenlvy_24 Start: 18265, Stop: 18813, Start Num: 34

Candidate Starts for Greenlvy_24:

(Start: 34 @18265 has 67 MA's), (Start: 36 @18283 has 1 MA's), (56, 18400), (60, 18415), (65, 18442), (70, 18472), (74, 18487), (82, 18520), (87, 18547), (103, 18646),

Gene: Gshelby23_33 Start: 41744, Stop: 42229, Start Num: 42

Candidate Starts for Gshelby23_33:

(Start: 42 @41744 has 4 MA's), (50, 41819), (51, 41825), (75, 41939), (91, 42020), (92, 42023), (94, 42032), (99, 42056), (109, 42113), (112, 42122), (117, 42143), (127, 42194),

Gene: Hager_37 Start: 23453, Stop: 24001, Start Num: 34

Candidate Starts for Hager_37:

(Start: 34 @23453 has 67 MA's), (46, 23507), (56, 23588), (60, 23603), (67, 23651), (70, 23660), (76, 23684), (87, 23735), (103, 23834), (118, 23888),

Gene: Hannabella_35 Start: 41785, Stop: 42270, Start Num: 42

Candidate Starts for Hannabella_35:

(Start: 42 @41785 has 4 MA's), (50, 41860), (51, 41866), (75, 41980), (91, 42061), (92, 42064), (94, 42073), (99, 42097), (109, 42154), (112, 42163), (117, 42184), (127, 42235),

Gene: Hasitha_24 Start: 17691, Stop: 18239, Start Num: 34

Candidate Starts for Hasitha_24:

(Start: 34 @17691 has 67 MA's), (Start: 36 @17709 has 1 MA's), (46, 17745), (56, 17826), (60, 17841), (65, 17868), (70, 17898), (74, 17913), (87, 17973), (103, 18072),

Gene: Haunter_36 Start: 23302, Stop: 23847, Start Num: 34

Candidate Starts for Haunter_36:

(Start: 34 @23302 has 67 MA's), (46, 23356), (56, 23437), (87, 23584), (94, 23620), (103, 23683), (111, 23707), (122, 23755),

Gene: HerculesXL_24 Start: 17785, Stop: 18318, Start Num: 34

Candidate Starts for HerculesXL_24:

(Start: 34 @17785 has 67 MA's), (Start: 36 @17803 has 1 MA's), (53, 17905), (56, 17920), (70, 17992), (82, 18040), (93, 18097), (94, 18103), (99, 18127), (103, 18166), (111, 18190), (120, 18226), (125, 18250), (134, 18310),

Gene: Hiddenleaf_35 Start: 22974, Stop: 23519, Start Num: 34

Candidate Starts for Hiddenleaf_35:

(27, 22938), (Start: 34 @22974 has 67 MA's), (46, 23028), (56, 23109), (70, 23181), (74, 23196), (87, 23256), (94, 23292), (104, 23358), (111, 23379), (128, 23460),

Gene: HitchHiker_41 Start: 39149, Stop: 39640, Start Num: 41

Candidate Starts for HitchHiker_41:

(8, 38798), (Start: 41 @39149 has 7 MA's), (75, 39344), (87, 39401), (89, 39410), (92, 39428), (94, 39437), (98, 39452), (112, 39527), (117, 39548), (123, 39572),

Gene: Hubbs_58 Start: 35070, Stop: 35570, Start Num: 29

Candidate Starts for Hubbs_58:

(22, 35028), (Start: 29 @35070 has 6 MA's), (44, 35118), (47, 35157), (59, 35229), (61, 35238), (64, 35256), (75, 35310), (81, 35337), (88, 35370), (92, 35394), (102, 35442),

Gene: IndiRoo_28 Start: 20092, Stop: 20598, Start Num: 34

Candidate Starts for IndiRoo_28:

(Start: 34 @20092 has 67 MA's), (Start: 36 @20110 has 1 MA's), (Start: 38 @20113 has 6 MA's), (46, 20146), (51, 20200), (74, 20314), (82, 20347), (85, 20359), (86, 20368), (92, 20401), (106, 20482), (109, 20494),

Gene: Ixel_24 Start: 17641, Stop: 18147, Start Num: 34

Candidate Starts for Ixel_24:

(Start: 34 @17641 has 67 MA's), (Start: 36 @17659 has 1 MA's), (46, 17695), (56, 17776), (57, 17779), (84, 17905), (93, 17953), (99, 17983), (103, 18022), (111, 18046),

Gene: JDawG_35 Start: 23558, Stop: 24103, Start Num: 34

Candidate Starts for JDawG_35:

(27, 23522), (Start: 34 @23558 has 67 MA's), (46, 23612), (54, 23687), (56, 23693), (70, 23765), (74, 23780), (87, 23840), (104, 23942), (111, 23963), (128, 24044),

Gene: Jemerald_25 Start: 19299, Stop: 19844, Start Num: 34

Candidate Starts for Jemerald_25:

(25, 19260), (Start: 34 @19299 has 67 MA's), (Start: 36 @19317 has 1 MA's), (53, 19419), (54, 19428), (55, 19431), (56, 19434), (60, 19449), (65, 19476), (67, 19497), (74, 19521), (84, 19563), (93, 19611), (99, 19641), (111, 19704),

Gene: JessellCookie_40 Start: 40626, Stop: 41111, Start Num: 37

Candidate Starts for JessellCookie_40:

(Start: 37 @40626 has 5 MA's), (51, 40707), (63, 40761), (72, 40809), (78, 40833), (90, 40890), (94, 40914), (95, 40917), (112, 41004), (116, 41019), (117, 41025),

Gene: JingleBells_35 Start: 23095, Stop: 23640, Start Num: 34

Candidate Starts for JingleBells_35:

(27, 23059), (Start: 34 @23095 has 67 MA's), (46, 23149), (56, 23230), (70, 23302), (74, 23317), (87, 23377), (104, 23479), (111, 23500), (128, 23581),

Gene: Juicer_25 Start: 19299, Stop: 19844, Start Num: 34

Candidate Starts for Juicer_25:

(25, 19260), (Start: 34 @19299 has 67 MA's), (Start: 36 @19317 has 1 MA's), (53, 19419), (54, 19428), (55, 19431), (56, 19434), (60, 19449), (65, 19476), (67, 19497), (74, 19521), (84, 19563), (93, 19611), (99, 19641), (111, 19704),

Gene: Kamdara_21 Start: 19072, Stop: 19560, Start Num: 38

Candidate Starts for Kamdara_21:

(Start: 38 @19072 has 6 MA's), (61, 19207), (69, 19258), (76, 19285), (77, 19288), (78, 19291), (82, 19309), (83, 19315), (88, 19339), (91, 19360), (93, 19366), (94, 19372), (95, 19375), (96, 19378), (112, 19447),

Gene: Karate_35 Start: 23905, Stop: 24456, Start Num: 34

Candidate Starts for Karate_35:

(Start: 34 @23905 has 67 MA's), (56, 24040), (87, 24187), (111, 24310), (128, 24391), (132, 24421),

Gene: KatChan_25 Start: 18367, Stop: 18912, Start Num: 34

Candidate Starts for KatChan_25:

(Start: 34 @18367 has 67 MA's), (Start: 36 @18385 has 1 MA's), (46, 18421), (56, 18502), (70, 18574), (87, 18649), (90, 18661), (93, 18679), (103, 18748), (111, 18772), (113, 18781), (129, 18859),

Gene: Kate_36 Start: 23918, Stop: 24463, Start Num: 34

Candidate Starts for Kate_36:

(Start: 34 @23918 has 67 MA's), (46, 23972), (54, 24047), (56, 24053), (60, 24068), (74, 24140), (87, 24200), (88, 24203), (106, 24305), (111, 24323),

Gene: Kavo_23 Start: 17621, Stop: 18154, Start Num: 34

Candidate Starts for Kavo_23:

(Start: 34 @17621 has 67 MA's), (Start: 36 @17639 has 1 MA's), (53, 17741), (56, 17756), (70, 17828), (82, 17876), (93, 17933), (99, 17963), (103, 18002), (111, 18026), (120, 18062), (125, 18086), (134, 18146),

Gene: Kieran_21 Start: 19076, Stop: 19564, Start Num: 38

Candidate Starts for Kieran_21:

(Start: 38 @19076 has 6 MA's), (61, 19211), (69, 19262), (76, 19289), (77, 19292), (78, 19295), (82, 19313), (83, 19319), (88, 19343), (94, 19376), (95, 19379), (96, 19382), (112, 19451),

Gene: Kithara_43 Start: 36544, Stop: 37053, Start Num: 35

Candidate Starts for Kithara_43:

(1, 35764), (2, 35785), (3, 35848), (4, 35932), (7, 36118), (9, 36244), (28, 36514), (Start: 29 @36520 has 6 MA's), (Start: 35 @36544 has 1 MA's), (Start: 36 @36550 has 1 MA's), (44, 36568), (45, 36577), (48, 36616), (52, 36643), (55, 36664), (59, 36676), (74, 36754), (90, 36826), (97, 36859), (100, 36886), (114, 36952), (119, 36970), (124, 36988),

Gene: Kors_38 Start: 24207, Stop: 24782, Start Num: 34

Candidate Starts for Kors_38:

(Start: 32 @24198 has 1 MA's), (Start: 34 @24207 has 67 MA's), (Start: 36 @24225 has 1 MA's), (Start: 38 @24228 has 6 MA's), (53, 24327), (56, 24342), (70, 24414), (73, 24423), (86, 24483), (88,

24492), (93, 24519), (111, 24612), (126, 24681), (131, 24705),

Gene: Krampus_36 Start: 23918, Stop: 24463, Start Num: 34

Candidate Starts for Krampus_36:

(Start: 34 @23918 has 67 MA's), (46, 23972), (56, 24053), (79, 24161), (80, 24164), (87, 24200), (103, 24299), (111, 24323), (112, 24329), (122, 24371), (129, 24410),

Gene: LesNorah_39 Start: 39618, Stop: 40115, Start Num: 39

Candidate Starts for LesNorah_39:

(Start: 39 @39618 has 15 MA's), (49, 39699), (56, 39735), (79, 39840), (92, 39906), (94, 39915), (111, 39999), (112, 40005), (116, 40020), (127, 40077),

Gene: Librie_24 Start: 17697, Stop: 18245, Start Num: 34

Candidate Starts for Librie_24:

(Start: 34 @17697 has 67 MA's), (Start: 36 @17715 has 1 MA's), (46, 17751), (56, 17832), (60, 17847), (65, 17874), (70, 17904), (74, 17919), (87, 17979), (103, 18078),

Gene: LilTerminator_24 Start: 17697, Stop: 18245, Start Num: 34

Candidate Starts for LilTerminator_24:

(Start: 34 @17697 has 67 MA's), (Start: 36 @17715 has 1 MA's), (46, 17751), (56, 17832), (60, 17847), (65, 17874), (74, 17919), (87, 17979), (103, 18078),

Gene: LilyLou_40 Start: 39212, Stop: 39706, Start Num: 39

Candidate Starts for LilyLou_40:

(Start: 39 @39212 has 15 MA's), (40, 39218), (79, 39434), (94, 39509), (105, 39575), (112, 39599), (117, 39620), (127, 39671),

Gene: LordBart_38 Start: 24123, Stop: 24698, Start Num: 34

Candidate Starts for LordBart_38:

(Start: 32 @24114 has 1 MA's), (Start: 34 @24123 has 67 MA's), (Start: 36 @24141 has 1 MA's), (Start: 38 @24144 has 6 MA's), (53, 24243), (56, 24258), (70, 24330), (73, 24339), (86, 24399), (88, 24408), (93, 24435), (111, 24528), (126, 24597), (131, 24621),

Gene: Luna18_25 Start: 18367, Stop: 18912, Start Num: 34

Candidate Starts for Luna18_25:

(Start: 34 @18367 has 67 MA's), (Start: 36 @18385 has 1 MA's), (46, 18421), (56, 18502), (70, 18574), (87, 18649), (90, 18661), (93, 18679), (103, 18748), (111, 18772), (113, 18781), (129, 18859),

Gene: Lupine_56 Start: 34272, Stop: 34772, Start Num: 29

Candidate Starts for Lupine_56:

(19, 34215), (22, 34230), (Start: 29 @34272 has 6 MA's), (44, 34320), (47, 34359), (59, 34431), (61, 34440), (64, 34458), (81, 34539), (88, 34572), (92, 34596), (102, 34644),

Gene: Mercedes_23 Start: 17482, Stop: 18048, Start Num: 34

Candidate Starts for Mercedes_23:

(14, 17320), (15, 17335), (Start: 34 @17482 has 67 MA's), (Start: 36 @17500 has 1 MA's), (56, 17617), (60, 17632), (74, 17704), (80, 17728), (93, 17794), (99, 17824), (110, 17884),

Gene: MiamiPanther_40 Start: 40626, Stop: 41111, Start Num: 37

Candidate Starts for MiamiPanther_40:

(Start: 37 @40626 has 5 MA's), (51, 40707), (63, 40761), (72, 40809), (78, 40833), (90, 40890), (94, 40914), (95, 40917), (112, 41004), (116, 41019), (117, 41025),

Gene: Milani_29 Start: 20700, Stop: 21209, Start Num: 34

Candidate Starts for Milani_29:

(20, 20607), (21, 20613), (Start: 34 @20700 has 67 MA's), (Start: 36 @20718 has 1 MA's), (46, 20754), (55, 20832), (63, 20862), (73, 20916), (75, 20925), (77, 20934), (80, 20946), (83, 20961), (84, 20964), (89, 20991), (93, 21012), (95, 21021), (103, 21081), (104, 21084), (109, 21099),

Gene: Morrigan_25 Start: 19253, Stop: 19798, Start Num: 34

Candidate Starts for Morrigan_25:

(Start: 34 @19253 has 67 MA's), (Start: 36 @19271 has 1 MA's), (46, 19307), (56, 19388), (57, 19391), (70, 19460), (74, 19475), (87, 19535), (90, 19547), (93, 19565), (103, 19634), (111, 19658), (125, 19718), (129, 19745),

Gene: MortySmith_34 Start: 22946, Stop: 23491, Start Num: 34

Candidate Starts for MortySmith_34:

(27, 22910), (Start: 34 @22946 has 67 MA's), (46, 23000), (54, 23075), (56, 23081), (70, 23153), (74, 23168), (87, 23228), (104, 23330), (111, 23351), (118, 23381), (128, 23432),

Gene: NarutoRun_36 Start: 23886, Stop: 24431, Start Num: 34

Candidate Starts for NarutoRun_36:

(Start: 34 @23886 has 67 MA's), (56, 24021), (87, 24168), (94, 24204), (103, 24267), (111, 24291), (112, 24297), (118, 24321), (122, 24339), (129, 24378), (132, 24402),

Gene: Neptune_36 Start: 23886, Stop: 24431, Start Num: 34

Candidate Starts for Neptune_36:

(Start: 34 @23886 has 67 MA's), (46, 23940), (56, 24021), (79, 24129), (80, 24132), (87, 24168), (111, 24291), (112, 24297), (122, 24339), (129, 24378),

Gene: Oatly_40 Start: 38709, Stop: 39200, Start Num: 41

Candidate Starts for Oatly_40:

(8, 38358), (Start: 41 @38709 has 7 MA's), (75, 38904), (87, 38961), (89, 38970), (92, 38988), (94, 38997), (98, 39012), (101, 39030), (112, 39087), (117, 39108), (123, 39132),

Gene: OhDear_36 Start: 23884, Stop: 24429, Start Num: 34

Candidate Starts for OhDear_36:

(Start: 34 @23884 has 67 MA's), (46, 23938), (54, 24013), (56, 24019), (60, 24034), (74, 24106), (87, 24166), (88, 24169), (111, 24289),

Gene: OverHedge_36 Start: 23876, Stop: 24421, Start Num: 34

Candidate Starts for OverHedge_36:

(Start: 34 @23876 has 67 MA's), (46, 23930), (56, 24011), (79, 24119), (80, 24122), (87, 24158), (103, 24257), (111, 24281), (112, 24287), (122, 24329), (129, 24368),

Gene: Pabst_38 Start: 38773, Stop: 39264, Start Num: 41

Candidate Starts for Pabst_38:

(23, 38668), (Start: 41 @38773 has 7 MA's), (75, 38968), (83, 39004), (88, 39028), (94, 39061), (98, 39076), (112, 39151), (113, 39154), (117, 39172), (123, 39196), (130, 39235),

Gene: Pavlo_57 Start: 34917, Stop: 35417, Start Num: 29

Candidate Starts for Pavlo_57:

(18, 34839), (19, 34860), (22, 34875), (Start: 29 @34917 has 6 MA's), (44, 34965), (47, 35004), (59, 35076), (61, 35085), (64, 35103), (81, 35184), (88, 35217), (92, 35241), (102, 35289),

Gene: Penta_23 Start: 17619, Stop: 18152, Start Num: 34

Candidate Starts for Penta_23:

(24, 17559), (Start: 34 @17619 has 67 MA's), (Start: 36 @17637 has 1 MA's), (46, 17673), (53, 17739), (56, 17754), (70, 17826), (93, 17931), (99, 17961), (100, 17970), (111, 18024), (120, 18060), (125, 18084), (134, 18144),

Gene: Pharpay_36 Start: 23931, Stop: 24476, Start Num: 34

Candidate Starts for Pharpay_36:

(Start: 34 @23931 has 67 MA's), (46, 23985), (54, 24060), (56, 24066), (60, 24081), (74, 24153), (87, 24213), (88, 24216), (111, 24336),

Gene: PhillyPhilly_57 Start: 34451, Stop: 34951, Start Num: 29

Candidate Starts for PhillyPhilly_57:

(22, 34409), (Start: 29 @34451 has 6 MA's), (44, 34499), (59, 34610), (61, 34619), (64, 34637), (75, 34691), (81, 34718), (88, 34751), (92, 34775), (102, 34823),

Gene: Phogo_39 Start: 39040, Stop: 39534, Start Num: 39

Candidate Starts for Phogo_39:

(Start: 39 @39040 has 15 MA's), (40, 39046), (72, 39232), (79, 39262), (94, 39337), (105, 39403), (112, 39427), (117, 39448), (127, 39499),

Gene: PhunaPhoke_36 Start: 23904, Stop: 24449, Start Num: 34

Candidate Starts for PhunaPhoke_36:

(Start: 34 @23904 has 67 MA's), (46, 23958), (56, 24039), (79, 24147), (80, 24150), (87, 24186), (103, 24285), (107, 24297), (111, 24309), (112, 24315), (122, 24357), (129, 24396), (132, 24420),

Gene: PineapplePluto_41 Start: 39071, Stop: 39562, Start Num: 41

Candidate Starts for PineapplePluto_41:

(8, 38720), (Start: 41 @39071 has 7 MA's), (75, 39266), (87, 39323), (89, 39332), (92, 39350), (94, 39359), (98, 39374), (101, 39392), (112, 39449), (117, 39470), (123, 39494),

Gene: Potty_36 Start: 23909, Stop: 24454, Start Num: 34

Candidate Starts for Potty_36:

(Start: 34 @23909 has 67 MA's), (46, 23963), (56, 24044), (79, 24152), (80, 24155), (87, 24191), (103, 24290), (107, 24302), (111, 24314), (112, 24320), (122, 24362), (132, 24425),

Gene: Poultruss_35 Start: 24255, Stop: 24800, Start Num: 34

Candidate Starts for Poultruss_35:

(Start: 34 @24255 has 67 MA's), (46, 24309), (56, 24390), (86, 24531), (87, 24537), (111, 24660),

Gene: QuadZero_24 Start: 17701, Stop: 18249, Start Num: 34

Candidate Starts for QuadZero_24:

(Start: 34 @17701 has 67 MA's), (Start: 36 @17719 has 1 MA's), (46, 17755), (56, 17836), (60, 17851), (65, 17878), (74, 17923), (87, 17983), (103, 18082),

Gene: Rachella_36 Start: 23912, Stop: 24457, Start Num: 34

Candidate Starts for Rachella_36:

(Start: 34 @23912 has 67 MA's), (46, 23966), (56, 24047), (79, 24155), (87, 24194), (94, 24230), (103, 24293), (111, 24317), (112, 24323), (122, 24365), (129, 24404), (132, 24428),

Gene: Rie18_36 Start: 23400, Stop: 23948, Start Num: 34

Candidate Starts for Rie18_36:

(12, 23139), (Start: 34 @23400 has 67 MA's), (46, 23454), (56, 23535), (88, 23685), (111, 23805), (132, 23916),

Gene: RikSengupta_38 Start: 24244, Stop: 24819, Start Num: 34

Candidate Starts for RikSengupta_38:

(Start: 32 @24235 has 1 MA's), (Start: 34 @24244 has 67 MA's), (Start: 36 @24262 has 1 MA's), (Start: 38 @24265 has 6 MA's), (53, 24364), (56, 24379), (70, 24451), (73, 24460), (86, 24520), (88, 24529), (93, 24556), (111, 24649), (126, 24718), (131, 24742),

Gene: Roman_58 Start: 34918, Stop: 35418, Start Num: 29

Candidate Starts for Roman_58:

(22, 34876), (Start: 29 @34918 has 6 MA's), (44, 34966), (47, 35005), (59, 35077), (61, 35086), (64, 35104), (81, 35185), (88, 35218), (92, 35242), (102, 35290),

Gene: Rona_21 Start: 19073, Stop: 19561, Start Num: 38

Candidate Starts for Rona_21:

(Start: 38 @19073 has 6 MA's), (61, 19208), (69, 19259), (76, 19286), (77, 19289), (78, 19292), (82, 19310), (83, 19316), (88, 19340), (94, 19373), (95, 19376), (96, 19379), (112, 19448),

Gene: Salvatore2000_39 Start: 40626, Stop: 41111, Start Num: 37

Candidate Starts for Salvatore2000_39:

(Start: 37 @40626 has 5 MA's), (51, 40707), (63, 40761), (72, 40809), (78, 40833), (90, 40890), (94, 40914), (112, 41004), (116, 41019), (117, 41025),

Gene: Saradis_58 Start: 34510, Stop: 35010, Start Num: 29

Candidate Starts for Saradis_58:

(22, 34468), (Start: 29 @34510 has 6 MA's), (44, 34558), (47, 34597), (59, 34669), (61, 34678), (64, 34696), (75, 34750), (81, 34777), (88, 34810), (92, 34834), (102, 34882),

Gene: Schimmels22_24 Start: 18148, Stop: 18681, Start Num: 34

Candidate Starts for Schimmels22_24:

(Start: 34 @18148 has 67 MA's), (Start: 36 @18166 has 1 MA's), (53, 18268), (56, 18283), (70, 18355), (82, 18403), (92, 18457), (93, 18460), (99, 18490), (103, 18529), (111, 18553), (120, 18589), (125, 18613), (134, 18673),

Gene: Scissor2024_24 Start: 17784, Stop: 18317, Start Num: 34

Candidate Starts for Scissor2024_24:

(Start: 34 @17784 has 67 MA's), (Start: 36 @17802 has 1 MA's), (53, 17904), (56, 17919), (60, 17934), (70, 17991), (93, 18096), (99, 18126), (103, 18165), (111, 18189), (120, 18225), (125, 18249), (133, 18306), (134, 18309),

Gene: Scruffy_35 Start: 42070, Stop: 42561, Start Num: 42

Candidate Starts for Scruffy_35:

(Start: 42 @42070 has 4 MA's), (51, 42151), (54, 42172), (89, 42331), (94, 42358), (112, 42448), (117, 42469),

Gene: Sharkboy_21 Start: 19060, Stop: 19548, Start Num: 38

Candidate Starts for Sharkboy_21:

(Start: 38 @19060 has 6 MA's), (61, 19195), (69, 19246), (76, 19273), (77, 19276), (78, 19279), (82, 19297), (83, 19303), (88, 19327), (94, 19360), (95, 19363), (96, 19366), (112, 19435),

Gene: Shrew_37 Start: 13878, Stop: 14339, Start Num: 36

Candidate Starts for Shrew_37:

(Start: 36 @13878 has 1 MA's), (45, 13902), (82, 14112), (91, 14166), (97, 14187), (99, 14202), (111, 14271),

Gene: SilentWarrior_35 Start: 22987, Stop: 23532, Start Num: 34

Candidate Starts for SilentWarrior_35:

(27, 22951), (Start: 34 @22987 has 67 MA's), (46, 23041), (56, 23122), (66, 23176), (70, 23194), (74, 23209), (87, 23269), (94, 23305), (104, 23371), (111, 23392), (128, 23473),

Gene: Snakehole_36 Start: 23089, Stop: 23634, Start Num: 34

Candidate Starts for Snakehole_36:

(5, 22579), (6, 22606), (Start: 30 @23074 has 1 MA's), (Start: 34 @23089 has 67 MA's), (46, 23143), (56, 23224), (87, 23371), (103, 23470), (111, 23494), (122, 23542), (129, 23581), (132, 23605),

Gene: Solimine_58 Start: 34924, Stop: 35424, Start Num: 29

Candidate Starts for Solimine_58:

(22, 34882), (Start: 29 @34924 has 6 MA's), (44, 34972), (47, 35011), (59, 35083), (61, 35092), (64, 35110), (75, 35164), (81, 35191), (88, 35224), (92, 35248), (102, 35296), (115, 35356),

Gene: Sorvannah_39 Start: 40626, Stop: 41111, Start Num: 37

Candidate Starts for Sorvannah_39:

(Start: 37 @40626 has 5 MA's), (51, 40707), (63, 40761), (72, 40809), (78, 40833), (90, 40890), (94, 40914), (112, 41004), (116, 41019), (117, 41025),

Gene: Sparcetus_38 Start: 24123, Stop: 24698, Start Num: 34

Candidate Starts for Sparcetus_38:

(Start: 32 @24114 has 1 MA's), (Start: 34 @24123 has 67 MA's), (Start: 36 @24141 has 1 MA's), (Start: 38 @24144 has 6 MA's), (53, 24243), (56, 24258), (70, 24330), (73, 24339), (86, 24399), (88, 24408), (93, 24435), (111, 24528), (126, 24597), (131, 24621),

Gene: Stormbreaker_39 Start: 39128, Stop: 39622, Start Num: 39

Candidate Starts for Stormbreaker_39:

(Start: 39 @39128 has 15 MA's), (40, 39134), (63, 39272), (79, 39350), (94, 39425), (105, 39491), (112, 39515), (117, 39536), (127, 39587),

Gene: Sucha_25 Start: 19062, Stop: 19562, Start Num: 34

Candidate Starts for Sucha_25:

(Start: 34 @19062 has 67 MA's), (Start: 38 @19083 has 6 MA's), (46, 19116), (69, 19266), (74, 19284), (83, 19323), (84, 19326), (86, 19338), (92, 19371), (106, 19452), (109, 19464),

Gene: SwissCheezer_38 Start: 38780, Stop: 39274, Start Num: 39

Candidate Starts for SwissCheezer_38:

(Start: 39 @38780 has 15 MA's), (40, 38786), (79, 39002), (94, 39077), (105, 39143), (112, 39167), (117, 39188), (127, 39239),

Gene: Tedro_36 Start: 23382, Stop: 23927, Start Num: 34

Candidate Starts for Tedro_36:

(Start: 34 @23382 has 67 MA's), (46, 23436), (56, 23517), (79, 23625), (80, 23628), (87, 23664), (111, 23787), (112, 23793), (122, 23835), (129, 23874),

Gene: TicTac_40 Start: 39070, Stop: 39561, Start Num: 41

Candidate Starts for TicTac_40:

(8, 38719), (Start: 41 @39070 has 7 MA's), (75, 39265), (87, 39322), (89, 39331), (92, 39349), (94, 39358), (98, 39373), (101, 39391), (112, 39448), (117, 39469), (123, 39493),

Gene: TinyMiny_38 Start: 24133, Stop: 24717, Start Num: 32

Candidate Starts for TinyMiny_38:

(Start: 32 @24133 has 1 MA's), (Start: 34 @24142 has 67 MA's), (Start: 36 @24160 has 1 MA's),
(Start: 38 @24163 has 6 MA's), (53, 24262), (56, 24277), (70, 24349), (73, 24358), (86, 24418), (88,
24427), (93, 24454), (100, 24493), (111, 24547), (126, 24616), (131, 24640),

Gene: TinyTimothy_38 Start: 40626, Stop: 41111, Start Num: 37

Candidate Starts for TinyTimothy_38:

(Start: 37 @40626 has 5 MA's), (51, 40707), (63, 40761), (72, 40809), (78, 40833), (90, 40890), (94,
40914), (95, 40917), (112, 41004), (116, 41019), (117, 41025),

Gene: Tinyman4_24 Start: 17785, Stop: 18318, Start Num: 34

Candidate Starts for Tinyman4_24:

(Start: 34 @17785 has 67 MA's), (Start: 36 @17803 has 1 MA's), (53, 17905), (56, 17920), (70, 17992),
(82, 18040), (93, 18097), (94, 18103), (99, 18127), (103, 18166), (111, 18190), (120, 18226), (125,
18250), (134, 18310),

Gene: Tongui_35 Start: 23339, Stop: 23887, Start Num: 34

Candidate Starts for Tongui_35:

(16, 23183), (Start: 34 @23339 has 67 MA's), (46, 23393), (56, 23474), (67, 23537), (111, 23744),
(132, 23855),

Gene: TownLake_37 Start: 38908, Stop: 39405, Start Num: 39

Candidate Starts for TownLake_37:

(Start: 39 @38908 has 15 MA's), (49, 38989), (56, 39025), (79, 39130), (92, 39196), (94, 39205), (111,
39289), (112, 39295), (116, 39310), (127, 39367),

Gene: TwoBits_23 Start: 18079, Stop: 18627, Start Num: 34

Candidate Starts for TwoBits_23:

(Start: 34 @18079 has 67 MA's), (Start: 36 @18097 has 1 MA's), (46, 18133), (56, 18214), (60, 18229),
(87, 18361), (103, 18460),

Gene: Unphazed_39 Start: 39004, Stop: 39498, Start Num: 39

Candidate Starts for Unphazed_39:

(Start: 39 @39004 has 15 MA's), (40, 39010), (79, 39226), (94, 39301), (105, 39367), (112, 39391),
(117, 39412), (127, 39463),

Gene: Uterion_60 Start: 35019, Stop: 35519, Start Num: 29

Candidate Starts for Uterion_60:

(19, 34962), (22, 34977), (Start: 29 @35019 has 6 MA's), (44, 35067), (47, 35106), (59, 35178), (61,
35187), (64, 35205), (81, 35286), (88, 35319), (92, 35343), (102, 35391),

Gene: Wardwill_26 Start: 17859, Stop: 18407, Start Num: 34

Candidate Starts for Wardwill_26:

(Start: 34 @17859 has 67 MA's), (Start: 36 @17877 has 1 MA's), (46, 17913), (56, 17994), (60, 18009),
(65, 18036), (70, 18066), (74, 18081), (87, 18141), (103, 18240),

Gene: Wesak_39 Start: 40468, Stop: 40953, Start Num: 37

Candidate Starts for Wesak_39:

(Start: 37 @40468 has 5 MA's), (51, 40549), (63, 40603), (72, 40651), (78, 40675), (90, 40732), (94,
40756), (112, 40846), (116, 40861), (117, 40867),

Gene: WestPM_23 Start: 17628, Stop: 18161, Start Num: 34

Candidate Starts for WestPM_23:

(24, 17568), (Start: 34 @17628 has 67 MA's), (Start: 36 @17646 has 1 MA's), (46, 17682), (53, 17748), (56, 17763), (70, 17835), (93, 17940), (99, 17970), (100, 17979), (111, 18033), (120, 18069), (125, 18093), (134, 18153),

Gene: WilliamStrong_23 Start: 19363, Stop: 19908, Start Num: 34

Candidate Starts for WilliamStrong_23:

(11, 19108), (17, 19237), (26, 19327), (Start: 34 @19363 has 67 MA's), (56, 19498), (60, 19513), (67, 19561), (74, 19585), (87, 19645), (90, 19657), (103, 19744), (104, 19747), (111, 19768),

Gene: Wolfstar_59 Start: 35948, Stop: 36460, Start Num: 30

Candidate Starts for Wolfstar_59:

(13, 35735), (26, 35915), (Start: 30 @35948 has 1 MA's), (33, 35957), (43, 35996), (59, 36113), (61, 36122), (64, 36140), (71, 36179), (87, 36251), (88, 36254), (113, 36380),

Gene: Xitlalli_37 Start: 39005, Stop: 39499, Start Num: 39

Candidate Starts for Xitlalli_37:

(Start: 39 @39005 has 15 MA's), (40, 39011), (65, 39164), (79, 39227), (94, 39302), (105, 39368), (112, 39392), (117, 39413), (127, 39464),

Gene: YellowPanda_41 Start: 40349, Stop: 40834, Start Num: 37

Candidate Starts for YellowPanda_41:

(Start: 37 @40349 has 5 MA's), (51, 40430), (63, 40484), (72, 40532), (78, 40556), (90, 40613), (94, 40637), (95, 40640), (112, 40727), (116, 40742), (117, 40748),

Gene: Zayuliv_24 Start: 18287, Stop: 18835, Start Num: 34

Candidate Starts for Zayuliv_24:

(Start: 34 @18287 has 67 MA's), (Start: 36 @18305 has 1 MA's), (46, 18341), (56, 18422), (60, 18437), (65, 18464), (70, 18494), (74, 18509), (82, 18542), (87, 18569), (103, 18668),

Gene: Zepp_25 Start: 17685, Stop: 18233, Start Num: 34

Candidate Starts for Zepp_25:

(Start: 34 @17685 has 67 MA's), (Start: 36 @17703 has 1 MA's), (46, 17739), (56, 17820), (60, 17835), (65, 17862), (70, 17892), (74, 17907), (87, 17967), (94, 18003), (103, 18066),