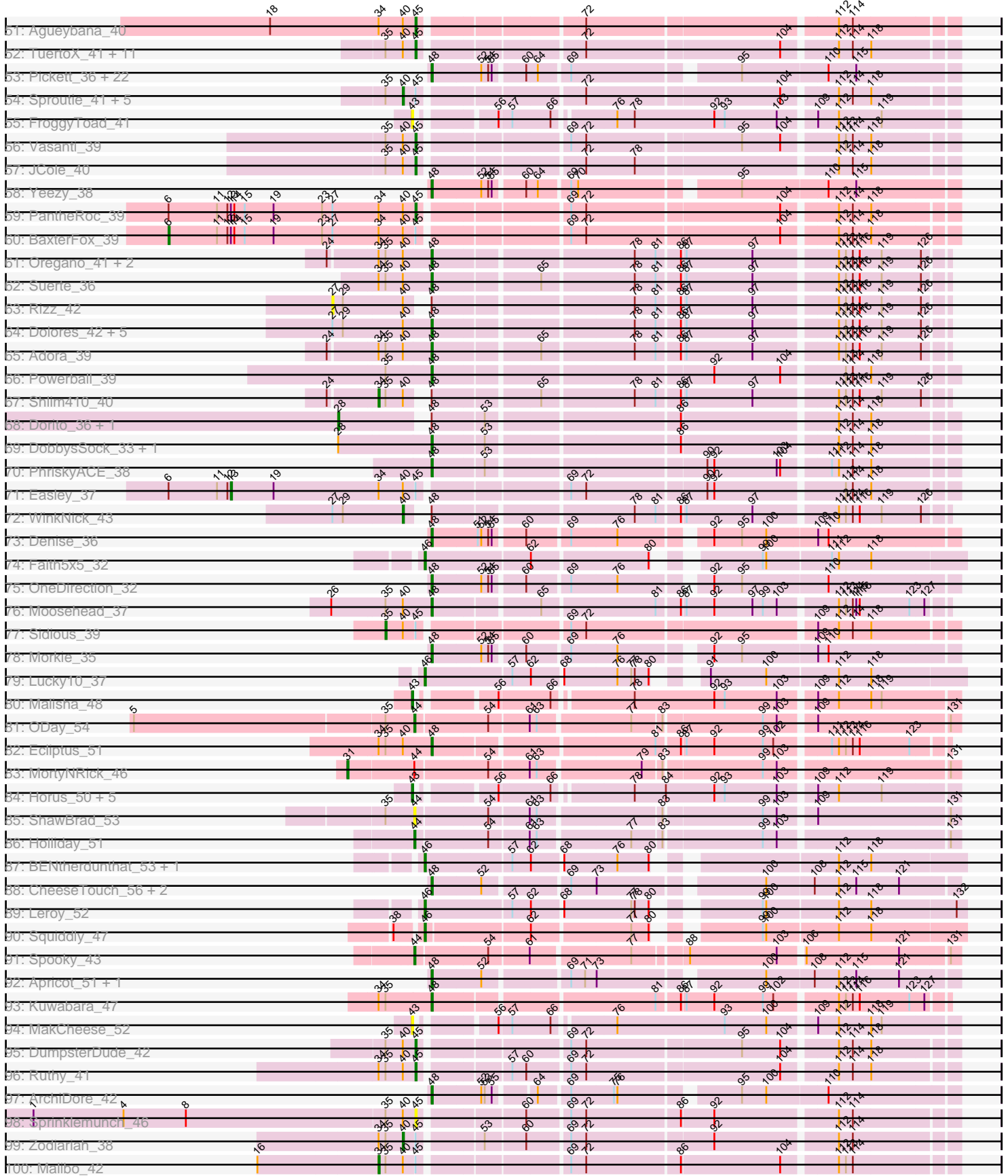


Pham 306163



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 306163 Report

This analysis was run 06/27/26 on database version 652.

Pham number 306163 has 194 members, 22 are drafts.

Phages represented in each track:

- Track 1 : Mao1_45
- Track 2 : Sejanus_44
- Track 3 : Dori_46
- Track 4 : Mask_47
- Track 5 : JohnLord_47, Xavia_36
- Track 6 : PCoral7_40
- Track 7 : JuJu_43
- Track 8 : Frokostdame_41
- Track 9 : Blino_43, CarolAnn_42, Soilmate_44
- Track 10 : Jalammah_44
- Track 11 : MissRona_40
- Track 12 : Fairfaxidum_41
- Track 13 : Wisp_37
- Track 14 : Murp_41
- Track 15 : KappaFarmDelta_42, Wocket_41
- Track 16 : Malachai_40, Begonia_40
- Track 17 : Lysidious_40
- Track 18 : Utz_35
- Track 19 : Mellie_39
- Track 20 : Samba_40
- Track 21 : ZiggyZoo_40
- Track 22 : Blueberry_39, Azula_40
- Track 23 : CheeseSpider_46
- Track 24 : Gambino_42
- Track 25 : PrincePatrick_40
- Track 26 : William_42
- Track 27 : Toast_40
- Track 28 : Floral_38, Pollux_40
- Track 29 : Marteena_38, EMSquaredA_39
- Track 30 : Angelique_41
- Track 31 : Confidence_41
- Track 32 : BritBrat_39
- Track 33 : Jablanski_41, Pytheas_41
- Track 34 : Posh_45
- Track 35 : Wrigley_45
- Track 36 : BeeGee_44
- Track 37 : Cashline_40

- Track 38 : LonelyBoi_42
- Track 39 : Lton_36
- Track 40 : Bunnybear_36, Maridalia_44
- Track 41 : Pepperoni_33, InLimbo_37
- Track 42 : SushiChef_38
- Track 43 : ThankyouJordi_40
- Track 44 : Hugley_38, Herod_41, Eviarto_41, Nymphadora_41, TimTam_41
- Track 45 : Madeline_38, Ohgeesy_41
- Track 46 : Hyzer_48
- Track 47 : Madavieve_39
- Track 48 : BatStarr_41
- Track 49 : Bosnia_43
- Track 50 : WelcomeAyanna_40
- Track 51 : Agueybana_40
- Track 52 : TuertoX_41, Ebert_43, Savage_41, Lamberg_37, Sahara_40, Whiteclaw_41, Clap_41, Haley23_41, Gizermo_41, Mocha12_41, Bjaner7_38, Cynthia_41
- Track 53 : Pickett_36, Manasvini_43, SoilAssassin_38, BoyNamedSue_43, Kita_44, Polly_40, EdnaMode_37, AlumE_43, LordFarquaad_40, Attis_38, Eudoria_43, Zirinka_40, Zameen_43, Trumpet_43, Lilas_40, Yeet412_38, Suscepit_43, Bialota_41, EnalisNailo_37, Tayonia_43, Bradissa_38, Neobush_43, Antonio_43
- Track 54 : Sproutie_41, Jalleen_40, GemG_41, Yinzer_40, Matteo_34, Nettuno_37
- Track 55 : FroggyToad_41
- Track 56 : Vasanti_39
- Track 57 : JCole_40
- Track 58 : Yeezy_38
- Track 59 : PantheRoc_39
- Track 60 : BaxterFox_39
- Track 61 : Oregano_41, Annalisa_38, Tuti_36
- Track 62 : Suerte_36
- Track 63 : Rizz_42
- Track 64 : Dolores_42, Invectra_43, Sekhmet_42, MichaelScott_42, Clark_41, Samman98_42
- Track 65 : Adora_39
- Track 66 : Powerball_39
- Track 67 : Shlim410_40
- Track 68 : Dorito_36, Mcklovin_38
- Track 69 : DobbysSock_33, Thimann_38
- Track 70 : PhriskyACE_38
- Track 71 : Easley_37
- Track 72 : WinkNick_43
- Track 73 : Denise_36
- Track 74 : Faith5x5_32
- Track 75 : OneDirection_32
- Track 76 : Moosehead_37
- Track 77 : Sidious_39
- Track 78 : Morkie_35
- Track 79 : Lucky10_37
- Track 80 : Malisha_48
- Track 81 : ODay_54
- Track 82 : Ecliptus_51
- Track 83 : MortyNRick_46

- Track 84 : Horus_50, Asapag_49, Birdsong_49, BotCity_51, Phabuloso_50, LitninMcQueen_45
- Track 85 : ShawBrad_53
- Track 86 : Holliday_51
- Track 87 : BENtherdunthat_53, Budski_51
- Track 88 : CheeseTouch_56, Crater_51, Phistory_53
- Track 89 : Leroy_52
- Track 90 : Squiddly_47
- Track 91 : Spooky_43
- Track 92 : Apricot_51, PhorbesPhlower_35
- Track 93 : Kuwabara_47
- Track 94 : MakCheese_52
- Track 95 : DumpsterDude_42
- Track 96 : Ruthy_41
- Track 97 : ArchiDore_42
- Track 98 : Sprinklemunch_46
- Track 99 : Zodiariah_38
- Track 100 : Malibo_42
- Track 101 : LastJedi_38, Zizzle_48, Donkeykong_43, Brocalys_40, Pippy_42, Squirty_37, Clifton_39, Jennelsea_41
- Track 102 : MulchSalad_39
- Track 103 : Altostratus_46
- Track 104 : Khuang_46
- Track 105 : Che9c_43
- Track 106 : Sbash_42
- Track 107 : Stuck_46
- Track 108 : Colossa_33
- Track 109 : VanLee_33
- Track 110 : Tortellini_34
- Track 111 : GMA1_31
- Track 112 : REQ2_39
- Track 113 : Finkle_47
- Track 114 : GMA4_31
- Track 115 : Mbo4_32

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

The start number called the most often in the published annotations is 48, it was called in 71 of the 172 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Adora_39, AlumE_43, Annalisa_38, Antonio_43, Apricot_51, ArchiDore_42, Attis_38, Begonia_40, Bialota_41, BoyNamedSue_43, Bradissa_38, Bunnybear_36, CheeseTouch_56, Clark_41, Crater_51, Denise_36, DobbysSock_33, Dolores_42, Ecliptus_51, EdnaMode_37, EnalisNailo_37, Eudoria_43, Eviarto_41, Frokostdame_41, Herod_41, Hugley_38, Hyzer_48, InLimbo_37, Invectra_43, Jalamah_44, Kita_44, Kuwabara_47, Lilas_40, LordFarquaad_40, Lton_36, Lysidious_40, Madavieve_39, Malachai_40, Manasvini_43, Maridalia_44, Mellie_39, MichaelScott_42, MissRona_40, Moosehead_37, Morkie_35, Neobush_43, Nymphadora_41, OneDirection_32, Oregano_41, Pepperoni_33, Phistory_53,

PhorbesPhlower_35, PhriskyACE_38, Pickett_36, Polly_40, Posh_45, Powerball_39, Samba_40, Samman98_42, Sekhmet_42, SoilAssassin_38, Suerte_36, Suscepit_43, Tayonia_43, Thimann_38, TimTam_41, Trumpet_43, Tuti_36, Utz_35, Yeet412_38, Yeezy_38, Zameen_43, ZiggyZoo_40, Zirinka_40,

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

- Azula_40, BatStarr_41, Blueberry_39, CheeseSpider_46, Dorito_36, Gambino_42, KappaFarmDelta_42, Mcklovin_38, Rizz_42, Shlim410_40, WinkNick_43, Wisp_37, Wocket_41,

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

- Agueybana_40, Altostratus_46, Angelique_41, Asapag_49, BENtherdunthat_53, BaxterFox_39, BeeGee_44, Birdsong_49, Bjanes7_38, Blino_43, Bosnia_43, BotCity_51, BritBrat_39, Brocalys_40, Budski_51, CarolAnn_42, Cashline_40, Che9c_43, Clap_41, Clifton_39, Colossa_33, Confidence_41, Cynthia_41, Donkeykong_43, Dori_46, DumpsterDude_42, EMsquaredA_39, Easley_37, Ebert_43, Fairfaxidum_41, Faith5x5_32, Finkle_47, Floral_38, FroggyToad_41, GMA1_31, GMA4_31, GemG_41, Gizermo_41, Haley23_41, Holliday_51, Horus_50, JCole_40, Jablanski_41, Jalleen_40, Jennelsea_41, JohnLord_47, JuJu_43, Khuang_46, Lamberg_37, LastJedi_38, Leroy_52, LitninMcQueen_45, LonelyBoi_42, Lucky10_37, Madeline_38, MakCheese_52, Malibo_42, Malisha_48, Mao1_45, Marteena_38, Mask_47, Matteo_34, Mbo4_32, Mocha12_41, MortyNRick_46, MulchSalad_39, Murp_41, Nettuno_37, ODay_54, Ohgeesy_41, PCoral7_40, PantheRoc_39, Phabuloso_50, Pippy_42, Pollux_40, PrincePatrick_40, Pytheas_41, REQ2_39, Ruthy_41, Sahara_40, Savage_41, Sbash_42, Sejanus_44, ShawBrad_53, Sidious_39, Soilmate_44, Spooky_43, Sprinklemunch_46, Sproutie_41, Squiddly_47, Squirty_37, Stuck_46, SushiChef_38, ThankyouJordi_40, Toast_40, Tortellini_34, TuertoX_41, VanLee_33, Vasanti_39, WelcomeAyanna_40, Whiteclaw_41, William_42, Wrigley_45, Xavia_36, Yinzer_40, Zizzle_48, Zodiariah_38,

Summary by start number:

Start 6:

- Found in 3 of 194 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 172
- Called 33.3% of time when present
- Phage (with cluster) where this start called: BaxterFox_39 (CZ3),

Start 13:

- Found in 3 of 194 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 172
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Easley_37 (CZ4),

Start 23:

- Found in 4 of 194 (2.1%) of genes in pham
- Manual Annotations of this start: 1 of 172
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Stuck_46 (I2),

Start 27:

- Found in 10 of 194 (5.2%) of genes in pham

- No Manual Annotations of this start.
- Called 10.0% of time when present
- Phage (with cluster) where this start called: Rizz_42 (CZ4),

Start 28:

- Found in 4 of 194 (2.1%) of genes in pham
- Manual Annotations of this start: 2 of 172
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Dorito_36 (CZ4), Mcklovin_38 (CZ4),

Start 29:

- Found in 14 of 194 (7.2%) of genes in pham
- Manual Annotations of this start: 1 of 172
- Called 7.1% of time when present
- Phage (with cluster) where this start called: BatStarr_41 (CZ1),

Start 31:

- Found in 2 of 194 (1.0%) of genes in pham
- Manual Annotations of this start: 1 of 172
- Called 50.0% of time when present
- Phage (with cluster) where this start called: MortyNRick_46 (DN),

Start 34:

- Found in 49 of 194 (25.3%) of genes in pham
- Manual Annotations of this start: 7 of 172
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Azula_40 (CV), Blueberry_39 (CV), KappaFarmDelta_42 (CV), Malibo_42 (DW), Shlim410_40 (CZ4), ThankyouJordi_40 (CZ1), Wocket_41 (CV),

Start 35:

- Found in 70 of 194 (36.1%) of genes in pham
- Manual Annotations of this start: 3 of 172
- Called 5.7% of time when present
- Phage (with cluster) where this start called: Confidence_41 (CY1), GMA1_31 (singleton), Gambino_42 (CV), Sidious_39 (CZ7),

Start 37:

- Found in 2 of 194 (1.0%) of genes in pham
- Manual Annotations of this start: 1 of 172
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Toast_40 (CV),

Start 40:

- Found in 85 of 194 (43.8%) of genes in pham
- Manual Annotations of this start: 7 of 172
- Called 11.8% of time when present
- Phage (with cluster) where this start called: BeeGee_44 (CY5), CheeseSpider_46 (CV), GemG_41 (CZ2), Jalleen_40 (CZ2), Matteo_34 (CZ2), Nettuno_37 (CZ2), Sproutie_41 (CZ2), WinkNick_43 (CZ4), Yinzer_40 (CZ2), Zodiariah_38 (DW),

Start 42:

- Found in 1 of 194 (0.5%) of genes in pham

- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mbo4_32 (singleton),

Start 43:

- Found in 10 of 194 (5.2%) of genes in pham
- Manual Annotations of this start: 8 of 172
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Asapag_49 (DN1), Birdsong_49 (DN), BotCity_51 (DN), FroggyToad_41 (CZ2), Horus_50 (DN1), LitninMcQueen_45 (DN1), MakCheese_52 (DW), Malisha_48 (DN), Phabuloso_50 (DN1), Wrigley_45 (CY4),

Start 44:

- Found in 26 of 194 (13.4%) of genes in pham
- Manual Annotations of this start: 19 of 172
- Called 88.5% of time when present
- Phage (with cluster) where this start called: Brocalys_40 (F1), Cashline_40 (CY6), Che9c_43 (I2), Clifton_39 (F1), Donkeykong_43 (F1), Dori_46 (AD), Holliday_51 (DN1), Jennelsea_41 (F1), JohnLord_47 (AD), LastJedi_38 (F1), Mao1_45 (AD), Mask_47 (AD), MulchSalad_39 (F7), ODay_54 (DN), Pippy_42 (F1), Sbash_42 (I2), Sejanus_44 (AD), ShawBrad_53 (DN1), Spooky_43 (DN2), Squirty_37 (F3), Tortellini_34 (P2), Xavia_36 (P3), Zizzle_48 (F1),

Start 45:

- Found in 57 of 194 (29.4%) of genes in pham
- Manual Annotations of this start: 37 of 172
- Called 73.7% of time when present
- Phage (with cluster) where this start called: Agueybana_40 (CZ1), Angelique_41 (CY1), Bjaner7_38 (CZ2), Blino_43 (CV), Bosnia_43 (CZ1), CarolAnn_42 (CV), Clap_41 (CZ2), Cynthia_41 (CZ2), DumpsterDude_42 (DW), EMSquaredA_39 (CY1), Ebert_43 (CZ2), Fairfaxidum_41 (CV), Floral_38 (CY1), Gizermo_41 (CZ2), Haley23_41 (CZ2), JCole_40 (CZ2), Jablanski_41 (CY3), JuJu_43 (CV), Lamberg_37 (CZ2), Madeline_38 (CZ1), Marteena_38 (CY1), Mocha12_41 (CZ2), Murp_41 (CV), Ohgeesy_41 (CZ), PCoral7_40 (CV), PantheRoc_39 (CZ3), Pollux_40 (CY1), PrincePatrick_40 (CV), Pytheas_41 (CY3), REQ2_39 (singleton), Ruthy_41 (DW), Sahara_40 (CZ2), Savage_41 (CZ2), Soilmate_44 (CV), Sprinklemunch_46 (DW), SushiChef_38 (CZ), TueritoX_41 (CZ2), Vasanti_39 (CZ2), WelcomeAyanna_40 (CZ1), Whiteclaw_41 (CZ2), William_42 (CV), Wisp_37 (CV),

Start 46:

- Found in 12 of 194 (6.2%) of genes in pham
- Manual Annotations of this start: 11 of 172
- Called 91.7% of time when present
- Phage (with cluster) where this start called: BENtherdunthat_53 (DN1), BritBrat_39 (CY2), Budski_51 (DN), Colossa_33 (KA), Faith5x5_32 (CZ6), Finkle_47 (singleton), Leroy_52 (DN1), LonelyBoi_42 (CY7), Lucky10_37 (DH), Squiddly_47 (DN2), VanLee_33 (KA),

Start 47:

- Found in 1 of 194 (0.5%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA4_31 (singleton),

Start 48:

- Found in 87 of 194 (44.8%) of genes in pham
- Manual Annotations of this start: 71 of 172
- Called 85.1% of time when present
- Phage (with cluster) where this start called: Adora_39 (CZ4), AlumE_43 (CZ1), Annalisa_38 (CZ4), Antonio_43 (CZ1), Apricot_51 (DN3), ArchiDore_42 (DW), Attis_38 (CZ2), Begonia_40 (CV), Bialota_41 (CZ1), BoyNamedSue_43 (CZ1), Bradissa_38 (CY1), Bunnybear_36 (CZ), CheeseTouch_56 (DN1), Clark_41 (CZ4), Crater_51 (DN3), Denise_36 (CZ5), DobbysSock_33 (CZ4), Dolores_42 (CZ4), Ecliptus_51 (DN), EdnaMode_37 (CZ2), EnalisNailo_37 (CY1), Eudoria_43 (CZ1), Eviarto_41 (CZ1), Frokostdame_41 (CV), Herod_41 (CZ1), Hugley_38 (CZ1), Hyzer_48 (CZ1), InLimbo_37 (DH), Investra_43 (CZ4), Jalammah_44 (CV), Kita_44 (CZ1), Kuwabara_47 (DN4), Lilas_40 (CY1), LordFarquaad_40 (CZ2), Lton_36 (CZ), Lysidious_40 (CV), Madavieve_39 (CZ1), Malachai_40 (CV), Manasvini_43 (CZ1), Maridalia_44 (CZ1), Mellie_39 (CV), MichaelScott_42 (CZ4), MissRona_40 (CV), Moosehead_37 (CZ6), Morkie_35 (DH), Neobush_43 (CZ1), Nymphadora_41 (CZ1), OneDirection_32 (CZ6), Oregano_41 (CZ4), Pepperoni_33 (CZ), Phistory_53 (DN1), PhorbesPhlower_35 (DH), PhriskyACE_38 (CZ4), Pickett_36 (CZ2), Polly_40 (CZ1), Posh_45 (CY4), Powerball_39 (CZ4), Samba_40 (CV), Samman98_42 (CZ4), Sekhmet_42 (CZ4), SoilAssassin_38 (CZ2), Suerte_36 (CZ4), Suscepit_43 (CZ1), Tayonia_43 (CZ1), Thimann_38 (CZ4), TimTam_41 (CZ1), Trumpet_43 (CZ1), Tuti_36 (CZ4), Utz_35 (CV), Yeet412_38 (CZ2), Yeezy_38 (CZ3), Zameen_43 (CZ1), ZiggyZoo_40 (CV), Zirinka_40 (CZ1),

Start 49:

- Found in 2 of 194 (1.0%) of genes in pham
- Manual Annotations of this start: 1 of 172
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Altostratus_46 (FS), Khuang_46 (FS),

Summary by clusters:

There are 33 clusters represented in this pham: DN, CY3, singleton, FS, DH, P3, CZ2, CZ3, CZ1, CZ6, CZ7, CZ4, CZ5, DW, CY6, I2, DN4, DN1, DN3, DN2, P2, CY2, CY1, CY7, AD, CY5, CY4, CZ, CV, F1, KA, F3, F7,

Info for manual annotations of cluster AD:

- Start number 44 was manually annotated 4 times for cluster AD.

Info for manual annotations of cluster CV:

- Start number 34 was manually annotated 4 times for cluster CV.
- Start number 35 was manually annotated 1 time for cluster CV.
- Start number 37 was manually annotated 1 time for cluster CV.
- Start number 45 was manually annotated 8 times for cluster CV.
- Start number 48 was manually annotated 10 times for cluster CV.

Info for manual annotations of cluster CY1:

- Start number 35 was manually annotated 1 time for cluster CY1.
- Start number 45 was manually annotated 5 times for cluster CY1.
- Start number 48 was manually annotated 3 times for cluster CY1.

Info for manual annotations of cluster CY2:

- Start number 46 was manually annotated 1 time for cluster CY2.

Info for manual annotations of cluster CY3:

- Start number 45 was manually annotated 2 times for cluster CY3.

Info for manual annotations of cluster CY4:

- Start number 43 was manually annotated 1 time for cluster CY4.
- Start number 48 was manually annotated 1 time for cluster CY4.

Info for manual annotations of cluster CY5:

- Start number 40 was manually annotated 1 time for cluster CY5.

Info for manual annotations of cluster CY6:

- Start number 44 was manually annotated 1 time for cluster CY6.

Info for manual annotations of cluster CY7:

- Start number 46 was manually annotated 1 time for cluster CY7.

Info for manual annotations of cluster CZ:

- Start number 45 was manually annotated 1 time for cluster CZ.
- Start number 48 was manually annotated 3 times for cluster CZ.

Info for manual annotations of cluster CZ1:

- Start number 29 was manually annotated 1 time for cluster CZ1.
- Start number 34 was manually annotated 1 time for cluster CZ1.
- Start number 45 was manually annotated 4 times for cluster CZ1.
- Start number 48 was manually annotated 20 times for cluster CZ1.

Info for manual annotations of cluster CZ2:

- Start number 40 was manually annotated 4 times for cluster CZ2.
- Start number 45 was manually annotated 14 times for cluster CZ2.
- Start number 48 was manually annotated 6 times for cluster CZ2.

Info for manual annotations of cluster CZ3:

- Start number 6 was manually annotated 1 time for cluster CZ3.
- Start number 45 was manually annotated 1 time for cluster CZ3.
- Start number 48 was manually annotated 1 time for cluster CZ3.

Info for manual annotations of cluster CZ4:

- Start number 13 was manually annotated 1 time for cluster CZ4.
- Start number 28 was manually annotated 2 times for cluster CZ4.
- Start number 34 was manually annotated 1 time for cluster CZ4.
- Start number 40 was manually annotated 1 time for cluster CZ4.
- Start number 48 was manually annotated 15 times for cluster CZ4.

Info for manual annotations of cluster CZ5:

- Start number 48 was manually annotated 1 time for cluster CZ5.

Info for manual annotations of cluster CZ6:

- Start number 46 was manually annotated 1 time for cluster CZ6.
- Start number 48 was manually annotated 2 times for cluster CZ6.

Info for manual annotations of cluster CZ7:

- Start number 35 was manually annotated 1 time for cluster CZ7.

Info for manual annotations of cluster DH:

- Start number 46 was manually annotated 1 time for cluster DH.
- Start number 48 was manually annotated 2 times for cluster DH.

Info for manual annotations of cluster DN:

- Start number 31 was manually annotated 1 time for cluster DN.
- Start number 43 was manually annotated 3 times for cluster DN.
- Start number 44 was manually annotated 1 time for cluster DN.
- Start number 46 was manually annotated 1 time for cluster DN.
- Start number 48 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 43 was manually annotated 4 times for cluster DN1.
- Start number 44 was manually annotated 1 time for cluster DN1.
- Start number 46 was manually annotated 2 times for cluster DN1.
- Start number 48 was manually annotated 2 times for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 44 was manually annotated 1 time for cluster DN2.
- Start number 46 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster DN3:

- Start number 48 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DN4:

- Start number 48 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster DW:

- Start number 34 was manually annotated 1 time for cluster DW.
- Start number 40 was manually annotated 1 time for cluster DW.
- Start number 45 was manually annotated 2 times for cluster DW.
- Start number 48 was manually annotated 1 time for cluster DW.

Info for manual annotations of cluster F1:

- Start number 44 was manually annotated 6 times for cluster F1.

Info for manual annotations of cluster F3:

- Start number 44 was manually annotated 1 time for cluster F3.

Info for manual annotations of cluster FS:

- Start number 49 was manually annotated 1 time for cluster FS.

Info for manual annotations of cluster I2:

- Start number 23 was manually annotated 1 time for cluster I2.
- Start number 44 was manually annotated 2 times for cluster I2.

Info for manual annotations of cluster KA:

- Start number 46 was manually annotated 2 times for cluster KA.

Info for manual annotations of cluster P2:

- Start number 44 was manually annotated 1 time for cluster P2.

Info for manual annotations of cluster P3:

- Start number 44 was manually annotated 1 time for cluster P3.

Gene Information:

Gene: Adora_39 Start: 32929, Stop: 32522, Start Num: 48

Candidate Starts for Adora_39:

(24, 32998), (Start: 34 @32959 has 7 MA's), (Start: 35 @32953 has 3 MA's), (Start: 40 @32938 has 7 MA's), (Start: 48 @32929 has 71 MA's), (65, 32845), (78, 32770), (81, 32752), (86, 32734), (87, 32731), (97, 32674), (112, 32608), (113, 32602), (114, 32596), (116, 32590), (119, 32572), (126, 32539),

Gene: Agueybana_40 Start: 32094, Stop: 31669, Start Num: 45

Candidate Starts for Agueybana_40:

(18, 32217), (Start: 34 @32124 has 7 MA's), (Start: 40 @32103 has 7 MA's), (Start: 45 @32094 has 37 MA's), (72, 31968), (112, 31764), (114, 31752),

Gene: Altostratus_46 Start: 28789, Stop: 28385, Start Num: 49

Candidate Starts for Altostratus_46:

(Start: 31 @28873 has 1 MA's), (Start: 49 @28789 has 1 MA's), (60, 28741), (77, 28651), (78, 28648), (89, 28600), (92, 28582), (96, 28555), (103, 28528), (109, 28501), (114, 28471),

Gene: AlumE_43 Start: 33874, Stop: 33458, Start Num: 48

Candidate Starts for AlumE_43:

(Start: 48 @33874 has 71 MA's), (52, 33832), (54, 33826), (55, 33823), (60, 33799), (64, 33790), (69, 33766), (95, 33637), (110, 33565), (115, 33541),

Gene: Angelique_41 Start: 32667, Stop: 32242, Start Num: 45

Candidate Starts for Angelique_41:

(Start: 34 @32697 has 7 MA's), (Start: 40 @32676 has 7 MA's), (Start: 45 @32667 has 37 MA's), (69, 32553), (72, 32541), (100, 32391), (104, 32379), (112, 32337), (114, 32325),

Gene: Annalisa_38 Start: 30286, Stop: 29879, Start Num: 48

Candidate Starts for Annalisa_38:

(24, 30355), (Start: 34 @30316 has 7 MA's), (Start: 35 @30310 has 3 MA's), (Start: 40 @30295 has 7 MA's), (Start: 48 @30286 has 71 MA's), (78, 30127), (81, 30109), (86, 30091), (87, 30088), (97, 30031), (112, 29965), (113, 29959), (114, 29953), (116, 29947), (119, 29929), (126, 29896),

Gene: Antonio_43 Start: 33147, Stop: 32731, Start Num: 48

Candidate Starts for Antonio_43:

(Start: 48 @33147 has 71 MA's), (52, 33105), (54, 33099), (55, 33096), (60, 33072), (64, 33063), (69, 33039), (95, 32910), (110, 32838), (115, 32814),

Gene: Apricot_51 Start: 33861, Stop: 33445, Start Num: 48

Candidate Starts for Apricot_51:

(Start: 48 @33861 has 71 MA's), (52, 33819), (69, 33753), (71, 33741), (73, 33732), (100, 33603), (108, 33564), (112, 33543), (115, 33528), (121, 33492),

Gene: ArchiDore_42 Start: 35044, Stop: 34631, Start Num: 48

Candidate Starts for ArchiDore_42:

(Start: 48 @35044 has 71 MA's), (52, 35002), (53, 34999), (55, 34993), (64, 34963), (69, 34939), (75, 34903), (76, 34900), (95, 34810), (100, 34789), (110, 34738),

Gene: Asapag_49 Start: 34231, Stop: 33809, Start Num: 43

Candidate Starts for Asapag_49:

(Start: 43 @34231 has 8 MA's), (56, 34177), (66, 34135), (78, 34075), (84, 34048), (92, 34006), (93, 33997), (103, 33952), (109, 33925), (112, 33907), (119, 33871),

Gene: Attis_38 Start: 30280, Stop: 29864, Start Num: 48

Candidate Starts for Attis_38:

(Start: 48 @30280 has 71 MA's), (52, 30238), (54, 30232), (55, 30229), (60, 30205), (64, 30196), (69, 30172), (95, 30043), (110, 29971), (115, 29947),

Gene: Azula_40 Start: 32407, Stop: 31970, Start Num: 34

Candidate Starts for Azula_40:

(Start: 34 @32407 has 7 MA's), (Start: 35 @32401 has 3 MA's), (Start: 40 @32386 has 7 MA's), (Start: 48 @32377 has 71 MA's), (65, 32293), (81, 32200), (86, 32182), (92, 32155), (112, 32056), (113, 32050), (114, 32044), (123, 31996),

Gene: BENtherdunthat_53 Start: 34239, Stop: 33820, Start Num: 46

Candidate Starts for BENtherdunthat_53:

(Start: 46 @34239 has 11 MA's), (57, 34167), (62, 34152), (68, 34128), (76, 34083), (80, 34056), (112, 33927), (118, 33900),

Gene: BatStarr_41 Start: 33776, Stop: 33300, Start Num: 29

Candidate Starts for BatStarr_41:

(Start: 29 @33776 has 1 MA's), (Start: 34 @33746 has 7 MA's), (Start: 40 @33725 has 7 MA's), (Start: 48 @33716 has 71 MA's), (90, 33500), (92, 33494), (104, 33437), (114, 33383), (116, 33377),

Gene: BaxterFox_39 Start: 32252, Stop: 31617, Start Num: 6

Candidate Starts for BaxterFox_39:

(Start: 6 @32252 has 1 MA's), (11, 32210), (12, 32201), (Start: 13 @32198 has 1 MA's), (14, 32195), (15, 32186), (19, 32162), (Start: 23 @32120 has 1 MA's), (27, 32111), (Start: 34 @32072 has 7 MA's), (Start: 40 @32051 has 7 MA's), (Start: 45 @32042 has 37 MA's), (69, 31928), (72, 31916), (104, 31754), (112, 31712), (114, 31700), (118, 31685),

Gene: BeeGee_44 Start: 33574, Stop: 33140, Start Num: 40

Candidate Starts for BeeGee_44:

(Start: 34 @33595 has 7 MA's), (Start: 40 @33574 has 7 MA's), (Start: 45 @33565 has 37 MA's), (69, 33451), (72, 33439), (90, 33340), (104, 33277), (112, 33235), (113, 33229), (114, 33223), (118, 33208),

Gene: Begonia_40 Start: 33887, Stop: 33471, Start Num: 48

Candidate Starts for Begonia_40:

(Start: 34 @33917 has 7 MA's), (Start: 35 @33911 has 3 MA's), (Start: 40 @33896 has 7 MA's), (Start: 48 @33887 has 71 MA's), (57, 33827), (68, 33788), (77, 33731), (86, 33692), (104, 33608), (114, 33554), (116, 33548), (118, 33539),

Gene: Bialota_41 Start: 33899, Stop: 33483, Start Num: 48

Candidate Starts for Bialota_41:

(Start: 48 @33899 has 71 MA's), (52, 33857), (54, 33851), (55, 33848), (60, 33824), (64, 33815), (69, 33791), (95, 33662), (110, 33590), (115, 33566),

Gene: Birdsong_49 Start: 34452, Stop: 34030, Start Num: 43

Candidate Starts for Birdsong_49:

(Start: 43 @34452 has 8 MA's), (56, 34398), (66, 34356), (78, 34296), (84, 34269), (92, 34227), (93, 34218), (103, 34173), (109, 34146), (112, 34128), (119, 34092),

Gene: Bjaner7_38 Start: 30276, Stop: 29851, Start Num: 45

Candidate Starts for Bjaner7_38:

(Start: 35 @30300 has 3 MA's), (Start: 40 @30285 has 7 MA's), (Start: 45 @30276 has 37 MA's), (72, 30150), (104, 29988), (112, 29946), (114, 29934), (118, 29919),

Gene: Blino_43 Start: 35401, Stop: 34976, Start Num: 45

Candidate Starts for Blino_43:

(Start: 34 @35431 has 7 MA's), (Start: 35 @35425 has 3 MA's), (Start: 40 @35410 has 7 MA's), (Start: 45 @35401 has 37 MA's), (60, 35320), (69, 35287), (72, 35275), (86, 35197), (104, 35113), (114, 35059),

Gene: Blueberry_39 Start: 32407, Stop: 31970, Start Num: 34

Candidate Starts for Blueberry_39:

(Start: 34 @32407 has 7 MA's), (Start: 35 @32401 has 3 MA's), (Start: 40 @32386 has 7 MA's), (Start: 48 @32377 has 71 MA's), (65, 32293), (81, 32200), (86, 32182), (92, 32155), (112, 32056), (113, 32050), (114, 32044), (123, 31996),

Gene: Bosnia_43 Start: 35655, Stop: 35230, Start Num: 45

Candidate Starts for Bosnia_43:

(Start: 34 @35685 has 7 MA's), (Start: 35 @35679 has 3 MA's), (Start: 40 @35664 has 7 MA's), (Start: 45 @35655 has 37 MA's), (69, 35541), (72, 35529), (104, 35367), (112, 35325), (114, 35313),

Gene: BotCity_51 Start: 34255, Stop: 33833, Start Num: 43

Candidate Starts for BotCity_51:

(Start: 43 @34255 has 8 MA's), (56, 34201), (66, 34159), (78, 34099), (84, 34072), (92, 34030), (93, 34021), (103, 33976), (109, 33949), (112, 33931), (119, 33895),

Gene: BoyNamedSue_43 Start: 33874, Stop: 33458, Start Num: 48

Candidate Starts for BoyNamedSue_43:

(Start: 48 @33874 has 71 MA's), (52, 33832), (54, 33826), (55, 33823), (60, 33799), (64, 33790), (69, 33766), (95, 33637), (110, 33565), (115, 33541),

Gene: Bradissa_38 Start: 33185, Stop: 32769, Start Num: 48

Candidate Starts for Bradissa_38:

(Start: 48 @33185 has 71 MA's), (52, 33143), (54, 33137), (55, 33134), (60, 33110), (64, 33101), (69, 33077), (95, 32948), (110, 32876), (115, 32852),

Gene: BritBrat_39 Start: 33527, Stop: 33108, Start Num: 46

Candidate Starts for BritBrat_39:

(Start: 46 @33527 has 11 MA's), (50, 33491), (62, 33440), (77, 33359), (80, 33344), (95, 33296), (100, 33275), (112, 33215), (118, 33188),

Gene: Brocalys_40 Start: 29944, Stop: 29501, Start Num: 44

Candidate Starts for Brocalys_40:

(Start: 44 @29944 has 19 MA's), (63, 29848), (73, 29797), (103, 29647), (123, 29542),

Gene: Budski_51 Start: 35130, Stop: 34711, Start Num: 46

Candidate Starts for Budski_51:

(Start: 46 @35130 has 11 MA's), (57, 35058), (62, 35043), (68, 35019), (76, 34974), (80, 34947), (112, 34818), (118, 34791),

Gene: Bunnybear_36 Start: 31549, Stop: 31133, Start Num: 48

Candidate Starts for Bunnybear_36:

(Start: 48 @31549 has 71 MA's), (52, 31507), (54, 31501), (55, 31498), (60, 31474), (64, 31465), (69, 31441), (95, 31312), (110, 31240),

Gene: CarolAnn_42 Start: 35400, Stop: 34975, Start Num: 45

Candidate Starts for CarolAnn_42:

(Start: 34 @35430 has 7 MA's), (Start: 35 @35424 has 3 MA's), (Start: 40 @35409 has 7 MA's), (Start: 45 @35400 has 37 MA's), (60, 35319), (69, 35286), (72, 35274), (86, 35196), (104, 35112), (114, 35058),

Gene: Cashline_40 Start: 33855, Stop: 33421, Start Num: 44

Candidate Starts for Cashline_40:

(2, 34128), (3, 34122), (9, 34044), (36, 33876), (Start: 44 @33855 has 19 MA's), (54, 33795), (61, 33762), (77, 33681), (83, 33657), (99, 33576), (103, 33564), (111, 33525), (115, 33504), (117, 33498), (118, 33492), (131, 33429),

Gene: Che9c_43 Start: 34201, Stop: 33758, Start Num: 44

Candidate Starts for Che9c_43:

(Start: 44 @34201 has 19 MA's), (54, 34138), (61, 34105), (69, 34075), (82, 34000), (91, 33961), (118, 33832), (121, 33808),

Gene: CheeseSpider_46 Start: 32174, Stop: 31758, Start Num: 40

Candidate Starts for CheeseSpider_46:

(Start: 34 @32195 has 7 MA's), (Start: 35 @32189 has 3 MA's), (Start: 40 @32174 has 7 MA's), (Start: 48 @32165 has 71 MA's), (65, 32081), (78, 32006), (92, 31943), (95, 31919), (99, 31901), (103, 31889), (112, 31844), (113, 31838), (114, 31832), (123, 31784),

Gene: CheeseTouch_56 Start: 32599, Stop: 32183, Start Num: 48

Candidate Starts for CheeseTouch_56:

(Start: 48 @32599 has 71 MA's), (52, 32557), (69, 32491), (73, 32470), (100, 32341), (108, 32302), (112, 32281), (115, 32266), (121, 32230),

Gene: Clap_41 Start: 30455, Stop: 30030, Start Num: 45

Candidate Starts for Clap_41:

(Start: 35 @30479 has 3 MA's), (Start: 40 @30464 has 7 MA's), (Start: 45 @30455 has 37 MA's), (72, 30329), (104, 30167), (112, 30125), (114, 30113), (118, 30098),

Gene: Clark_41 Start: 30731, Stop: 30324, Start Num: 48

Candidate Starts for Clark_41:

(27, 30800), (Start: 29 @30791 has 1 MA's), (Start: 40 @30740 has 7 MA's), (Start: 48 @30731 has 71 MA's), (78, 30572), (81, 30554), (86, 30536), (87, 30533), (97, 30476), (112, 30410), (113, 30404), (114, 30398), (116, 30392), (119, 30374), (126, 30341),

Gene: Clifton_39 Start: 30295, Stop: 29852, Start Num: 44

Candidate Starts for Clifton_39:

(Start: 44 @30295 has 19 MA's), (63, 30199), (73, 30148), (103, 29998), (123, 29893),

Gene: Colossa_33 Start: 28340, Stop: 27897, Start Num: 46

Candidate Starts for Colossa_33:

(21, 28463), (32, 28391), (Start: 46 @28340 has 11 MA's), (68, 28232), (101, 28088), (102, 28085), (105, 28070), (107, 28058), (109, 28049), (124, 27971), (125, 27968), (133, 27905),

Gene: Confidence_41 Start: 31704, Stop: 31246, Start Num: 35

Candidate Starts for Confidence_41:

(Start: 35 @31704 has 3 MA's), (Start: 44 @31680 has 19 MA's), (54, 31620), (61, 31587), (77, 31506), (88, 31464), (99, 31401), (103, 31389), (117, 31323), (131, 31254),

Gene: Crater_51 Start: 34256, Stop: 33840, Start Num: 48

Candidate Starts for Crater_51:

(Start: 48 @34256 has 71 MA's), (52, 34214), (69, 34148), (73, 34127), (100, 33998), (108, 33959), (112, 33938), (115, 33923), (121, 33887),

Gene: Cynthia_41 Start: 30455, Stop: 30030, Start Num: 45

Candidate Starts for Cynthia_41:

(Start: 35 @30479 has 3 MA's), (Start: 40 @30464 has 7 MA's), (Start: 45 @30455 has 37 MA's), (72, 30329), (104, 30167), (112, 30125), (114, 30113), (118, 30098),

Gene: Denise_36 Start: 28917, Stop: 28501, Start Num: 48

Candidate Starts for Denise_36:

(Start: 48 @28917 has 71 MA's), (51, 28878), (52, 28875), (54, 28869), (55, 28866), (60, 28842), (69, 28809), (76, 28770), (92, 28704), (95, 28680), (100, 28659), (109, 28617), (110, 28608),

Gene: DobbysSock_33 Start: 29249, Stop: 28833, Start Num: 48

Candidate Starts for DobbysSock_33:

(Start: 28 @29312 has 2 MA's), (Start: 48 @29249 has 71 MA's), (53, 29207), (86, 29054), (112, 28928), (114, 28916), (118, 28901),

Gene: Dolores_42 Start: 31603, Stop: 31196, Start Num: 48

Candidate Starts for Dolores_42:

(27, 31672), (Start: 29 @31663 has 1 MA's), (Start: 40 @31612 has 7 MA's), (Start: 48 @31603 has 71 MA's), (78, 31444), (81, 31426), (86, 31408), (87, 31405), (97, 31348), (112, 31282), (113, 31276), (114, 31270), (116, 31264), (119, 31246), (126, 31213),

Gene: Donkeykong_43 Start: 34315, Stop: 33872, Start Num: 44

Candidate Starts for Donkeykong_43:

(Start: 44 @34315 has 19 MA's), (63, 34219), (73, 34168), (103, 34018), (123, 33913),

Gene: Dori_46 Start: 42481, Stop: 42059, Start Num: 44

Candidate Starts for Dori_46:

(33, 42517), (Start: 44 @42481 has 19 MA's), (55, 42430), (60, 42403), (117, 42139),

Gene: Dorito_36 Start: 28956, Stop: 28477, Start Num: 28

Candidate Starts for Dorito_36:

(Start: 28 @28956 has 2 MA's), (Start: 48 @28893 has 71 MA's), (53, 28851), (86, 28698), (112, 28572), (114, 28560), (118, 28545),

Gene: DumpsterDude_42 Start: 35820, Stop: 35395, Start Num: 45

Candidate Starts for DumpsterDude_42:

(Start: 35 @35844 has 3 MA's), (Start: 40 @35829 has 7 MA's), (Start: 45 @35820 has 37 MA's), (69, 35706), (72, 35694), (95, 35565), (104, 35532), (112, 35490), (114, 35478), (118, 35463),

Gene: EMSquaredA_39 Start: 31766, Stop: 31341, Start Num: 45
Candidate Starts for EMSquaredA_39:
(Start: 45 @31766 has 37 MA's), (72, 31640), (111, 31442), (112, 31436), (114, 31424),

Gene: Easley_37 Start: 29189, Stop: 28608, Start Num: 13
Candidate Starts for Easley_37:
(Start: 6 @29243 has 1 MA's), (11, 29201), (12, 29192), (Start: 13 @29189 has 1 MA's), (19, 29153),
(Start: 34 @29063 has 7 MA's), (Start: 40 @29042 has 7 MA's), (Start: 45 @29033 has 37 MA's), (69, 28919), (72, 28907), (90, 28808), (92, 28802), (113, 28697), (114, 28691), (118, 28676),

Gene: Ebert_43 Start: 30379, Stop: 29954, Start Num: 45
Candidate Starts for Ebert_43:
(Start: 35 @30403 has 3 MA's), (Start: 40 @30388 has 7 MA's), (Start: 45 @30379 has 37 MA's), (72, 30253), (104, 30091), (112, 30049), (114, 30037), (118, 30022),

Gene: Ecliptus_51 Start: 35343, Stop: 34936, Start Num: 48
Candidate Starts for Ecliptus_51:
(Start: 34 @35373 has 7 MA's), (Start: 35 @35367 has 3 MA's), (Start: 40 @35352 has 7 MA's), (Start: 48 @35343 has 71 MA's), (81, 35166), (86, 35148), (87, 35145), (92, 35121), (99, 35079), (102, 35070), (111, 35028), (112, 35022), (113, 35016), (114, 35010), (116, 35004), (123, 34962),

Gene: EdnaMode_37 Start: 28968, Stop: 28552, Start Num: 48
Candidate Starts for EdnaMode_37:
(Start: 48 @28968 has 71 MA's), (52, 28926), (54, 28920), (55, 28917), (60, 28893), (64, 28884), (69, 28860), (95, 28731), (110, 28659), (115, 28635),

Gene: EnalisNailo_37 Start: 32719, Stop: 32303, Start Num: 48
Candidate Starts for EnalisNailo_37:
(Start: 48 @32719 has 71 MA's), (52, 32677), (54, 32671), (55, 32668), (60, 32644), (64, 32635), (69, 32611), (95, 32482), (110, 32410), (115, 32386),

Gene: Eudoria_43 Start: 33147, Stop: 32731, Start Num: 48
Candidate Starts for Eudoria_43:
(Start: 48 @33147 has 71 MA's), (52, 33105), (54, 33099), (55, 33096), (60, 33072), (64, 33063), (69, 33039), (95, 32910), (110, 32838), (115, 32814),

Gene: Eviarto_41 Start: 33692, Stop: 33276, Start Num: 48
Candidate Starts for Eviarto_41:
(Start: 29 @33752 has 1 MA's), (Start: 34 @33722 has 7 MA's), (Start: 40 @33701 has 7 MA's), (Start: 48 @33692 has 71 MA's), (90, 33476), (92, 33470), (104, 33413), (114, 33359), (116, 33353),

Gene: Fairfaxidum_41 Start: 32795, Stop: 32370, Start Num: 45
Candidate Starts for Fairfaxidum_41:
(Start: 34 @32825 has 7 MA's), (Start: 40 @32804 has 7 MA's), (Start: 45 @32795 has 37 MA's), (72, 32669), (86, 32591), (104, 32507), (112, 32465), (114, 32453), (118, 32438),

Gene: Faith5x5_32 Start: 26770, Stop: 26351, Start Num: 46
Candidate Starts for Faith5x5_32:
(Start: 46 @26770 has 11 MA's), (62, 26683), (80, 26587), (99, 26521), (100, 26518), (111, 26464), (112, 26458), (118, 26431),

Gene: Finkle_47 Start: 33372, Stop: 32953, Start Num: 46
Candidate Starts for Finkle_47:

(Start: 46 @33372 has 11 MA's), (52, 33324), (54, 33318), (55, 33315), (59, 33294), (69, 33258), (71, 33246), (92, 33153), (120, 33009), (128, 32976),

Gene: Floral_38 Start: 33839, Stop: 33414, Start Num: 45

Candidate Starts for Floral_38:

(Start: 35 @33863 has 3 MA's), (Start: 40 @33848 has 7 MA's), (Start: 45 @33839 has 37 MA's), (60, 33758), (72, 33713), (104, 33551), (112, 33509), (114, 33497), (118, 33482),

Gene: FroggyToad_41 Start: 30890, Stop: 30468, Start Num: 43

Candidate Starts for FroggyToad_41:

(Start: 43 @30890 has 8 MA's), (56, 30836), (57, 30827), (66, 30794), (76, 30749), (78, 30734), (92, 30665), (93, 30656), (103, 30611), (109, 30584), (112, 30566), (119, 30530),

Gene: Frokostdame_41 Start: 32700, Stop: 32293, Start Num: 48

Candidate Starts for Frokostdame_41:

(Start: 34 @32730 has 7 MA's), (Start: 35 @32724 has 3 MA's), (Start: 40 @32709 has 7 MA's), (Start: 48 @32700 has 71 MA's), (86, 32505), (92, 32478), (112, 32379), (113, 32373), (114, 32367),

Gene: GMA1_31 Start: 24915, Stop: 24478, Start Num: 35

Candidate Starts for GMA1_31:

(Start: 34 @24921 has 7 MA's), (Start: 35 @24915 has 3 MA's), (41, 24900), (Start: 46 @24891 has 11 MA's), (62, 24804), (118, 24552),

Gene: GMA4_31 Start: 27079, Stop: 26645, Start Num: 47

Candidate Starts for GMA4_31:

(47, 27079), (87, 26872), (88, 26869), (98, 26809), (111, 26749), (117, 26722),

Gene: Gambino_42 Start: 32401, Stop: 31970, Start Num: 35

Candidate Starts for Gambino_42:

(Start: 34 @32407 has 7 MA's), (Start: 35 @32401 has 3 MA's), (Start: 40 @32386 has 7 MA's), (Start: 48 @32377 has 71 MA's), (65, 32293), (81, 32200), (86, 32182), (92, 32155), (112, 32056), (113, 32050), (114, 32044), (123, 31996),

Gene: GemG_41 Start: 30464, Stop: 30030, Start Num: 40

Candidate Starts for GemG_41:

(Start: 35 @30479 has 3 MA's), (Start: 40 @30464 has 7 MA's), (Start: 45 @30455 has 37 MA's), (72, 30329), (104, 30167), (112, 30125), (114, 30113), (118, 30098),

Gene: Gizermo_41 Start: 30455, Stop: 30030, Start Num: 45

Candidate Starts for Gizermo_41:

(Start: 35 @30479 has 3 MA's), (Start: 40 @30464 has 7 MA's), (Start: 45 @30455 has 37 MA's), (72, 30329), (104, 30167), (112, 30125), (114, 30113), (118, 30098),

Gene: Haley23_41 Start: 30455, Stop: 30030, Start Num: 45

Candidate Starts for Haley23_41:

(Start: 35 @30479 has 3 MA's), (Start: 40 @30464 has 7 MA's), (Start: 45 @30455 has 37 MA's), (72, 30329), (104, 30167), (112, 30125), (114, 30113), (118, 30098),

Gene: Herod_41 Start: 33716, Stop: 33300, Start Num: 48

Candidate Starts for Herod_41:

(Start: 29 @33776 has 1 MA's), (Start: 34 @33746 has 7 MA's), (Start: 40 @33725 has 7 MA's), (Start: 48 @33716 has 71 MA's), (90, 33500), (92, 33494), (104, 33437), (114, 33383), (116, 33377),

Gene: Holliday_51 Start: 34485, Stop: 34051, Start Num: 44

Candidate Starts for Holliday_51:

(Start: 44 @34485 has 19 MA's), (54, 34425), (61, 34392), (63, 34386), (77, 34311), (83, 34287), (99, 34206), (103, 34194), (131, 34059),

Gene: Horus_50 Start: 34860, Stop: 34438, Start Num: 43

Candidate Starts for Horus_50:

(Start: 43 @34860 has 8 MA's), (56, 34806), (66, 34764), (78, 34704), (84, 34677), (92, 34635), (93, 34626), (103, 34581), (109, 34554), (112, 34536), (119, 34500),

Gene: Hugley_38 Start: 33715, Stop: 33299, Start Num: 48

Candidate Starts for Hugley_38:

(Start: 29 @33775 has 1 MA's), (Start: 34 @33745 has 7 MA's), (Start: 40 @33724 has 7 MA's), (Start: 48 @33715 has 71 MA's), (90, 33499), (92, 33493), (104, 33436), (114, 33382), (116, 33376),

Gene: Hyzer_48 Start: 36153, Stop: 35734, Start Num: 48

Candidate Starts for Hyzer_48:

(Start: 48 @36153 has 71 MA's), (52, 36111), (54, 36105), (55, 36102), (57, 36090), (64, 36069), (67, 36051), (69, 36042), (74, 36009), (95, 35913), (110, 35841),

Gene: InLimbo_37 Start: 28324, Stop: 27908, Start Num: 48

Candidate Starts for InLimbo_37:

(Start: 48 @28324 has 71 MA's), (51, 28285), (52, 28282), (54, 28276), (55, 28273), (60, 28249), (69, 28216), (76, 28177), (92, 28111), (95, 28087), (110, 28015),

Gene: Invectra_43 Start: 32305, Stop: 31898, Start Num: 48

Candidate Starts for Invectra_43:

(27, 32374), (Start: 29 @32365 has 1 MA's), (Start: 40 @32314 has 7 MA's), (Start: 48 @32305 has 71 MA's), (78, 32146), (81, 32128), (86, 32110), (87, 32107), (97, 32050), (112, 31984), (113, 31978), (114, 31972), (116, 31966), (119, 31948), (126, 31915),

Gene: JCole_40 Start: 29723, Stop: 29298, Start Num: 45

Candidate Starts for JCole_40:

(Start: 35 @29747 has 3 MA's), (Start: 40 @29732 has 7 MA's), (Start: 45 @29723 has 37 MA's), (72, 29597), (78, 29555), (112, 29393), (114, 29381), (118, 29366),

Gene: Jablanski_41 Start: 33024, Stop: 32599, Start Num: 45

Candidate Starts for Jablanski_41:

(Start: 34 @33054 has 7 MA's), (Start: 35 @33048 has 3 MA's), (Start: 40 @33033 has 7 MA's), (Start: 45 @33024 has 37 MA's), (72, 32898), (104, 32736), (111, 32700), (112, 32694), (114, 32682), (118, 32667),

Gene: Jalammah_44 Start: 34077, Stop: 33670, Start Num: 48

Candidate Starts for Jalammah_44:

(30, 34134), (Start: 34 @34107 has 7 MA's), (Start: 35 @34101 has 3 MA's), (Start: 40 @34086 has 7 MA's), (Start: 48 @34077 has 71 MA's), (52, 34038), (65, 33993), (81, 33900), (86, 33882), (92, 33855), (112, 33756), (113, 33750), (114, 33744), (123, 33696),

Gene: Jalleen_40 Start: 30103, Stop: 29669, Start Num: 40

Candidate Starts for Jalleen_40:

(Start: 35 @30118 has 3 MA's), (Start: 40 @30103 has 7 MA's), (Start: 45 @30094 has 37 MA's), (72, 29968), (104, 29806), (112, 29764), (114, 29752), (118, 29737),

Gene: Jennelsea_41 Start: 31598, Stop: 31155, Start Num: 44

Candidate Starts for Jennelsea_41:

(Start: 44 @31598 has 19 MA's), (63, 31502), (73, 31451), (103, 31301), (123, 31196),

Gene: JohnLord_47 Start: 41712, Stop: 41290, Start Num: 44

Candidate Starts for JohnLord_47:

(Start: 44 @41712 has 19 MA's), (55, 41661), (60, 41634), (89, 41505), (115, 41376), (117, 41370),

Gene: JuJu_43 Start: 33227, Stop: 32802, Start Num: 45

Candidate Starts for JuJu_43:

(Start: 45 @33227 has 37 MA's), (72, 33101), (78, 33059), (86, 33023), (90, 33002), (104, 32939), (112, 32897), (114, 32885), (118, 32870),

Gene: KappaFarmDelta_42 Start: 31734, Stop: 31297, Start Num: 34

Candidate Starts for KappaFarmDelta_42:

(Start: 34 @31734 has 7 MA's), (Start: 35 @31728 has 3 MA's), (Start: 40 @31713 has 7 MA's), (Start: 48 @31704 has 71 MA's), (65, 31620), (78, 31545), (92, 31482), (99, 31440), (112, 31383), (114, 31371), (123, 31323),

Gene: Khuang_46 Start: 28987, Stop: 28583, Start Num: 49

Candidate Starts for Khuang_46:

(Start: 49 @28987 has 1 MA's), (60, 28939), (77, 28849), (78, 28846), (92, 28780), (96, 28753), (103, 28726), (109, 28699), (114, 28669), (129, 28600),

Gene: Kita_44 Start: 33156, Stop: 32740, Start Num: 48

Candidate Starts for Kita_44:

(Start: 48 @33156 has 71 MA's), (52, 33114), (54, 33108), (55, 33105), (60, 33081), (64, 33072), (69, 33048), (95, 32919), (110, 32847), (115, 32823),

Gene: Kuwabara_47 Start: 33695, Stop: 33288, Start Num: 48

Candidate Starts for Kuwabara_47:

(Start: 34 @33725 has 7 MA's), (Start: 35 @33719 has 3 MA's), (Start: 48 @33695 has 71 MA's), (81, 33518), (86, 33500), (87, 33497), (92, 33473), (99, 33431), (102, 33422), (112, 33374), (113, 33368), (114, 33362), (116, 33356), (123, 33314), (127, 33302),

Gene: Lamberg_37 Start: 28964, Stop: 28539, Start Num: 45

Candidate Starts for Lamberg_37:

(Start: 35 @28988 has 3 MA's), (Start: 40 @28973 has 7 MA's), (Start: 45 @28964 has 37 MA's), (72, 28838), (104, 28676), (112, 28634), (114, 28622), (118, 28607),

Gene: LastJedi_38 Start: 30338, Stop: 29895, Start Num: 44

Candidate Starts for LastJedi_38:

(Start: 44 @30338 has 19 MA's), (63, 30242), (73, 30191), (103, 30041), (123, 29936),

Gene: Leroy_52 Start: 35141, Stop: 34722, Start Num: 46

Candidate Starts for Leroy_52:

(Start: 46 @35141 has 11 MA's), (57, 35069), (62, 35054), (68, 35030), (77, 34973), (78, 34970), (80, 34958), (99, 34892), (100, 34889), (112, 34829), (118, 34802), (132, 34730),

Gene: Lilas_40 Start: 34430, Stop: 34014, Start Num: 48

Candidate Starts for Lilas_40:

(Start: 48 @34430 has 71 MA's), (52, 34388), (54, 34382), (55, 34379), (60, 34355), (64, 34346), (69, 34322), (95, 34193), (110, 34121), (115, 34097),

Gene: LitninMcQueen_45 Start: 33001, Stop: 32579, Start Num: 43

Candidate Starts for LitninMcQueen_45:

(Start: 43 @33001 has 8 MA's), (56, 32947), (66, 32905), (78, 32845), (84, 32818), (92, 32776), (93, 32767), (103, 32722), (109, 32695), (112, 32677), (119, 32641),

Gene: LonelyBoi_42 Start: 35097, Stop: 34678, Start Num: 46

Candidate Starts for LonelyBoi_42:

(Start: 46 @35097 has 11 MA's), (57, 35025), (62, 35010), (68, 34986), (78, 34926), (80, 34914), (112, 34785), (118, 34758),

Gene: LordFarquaad_40 Start: 30261, Stop: 29845, Start Num: 48

Candidate Starts for LordFarquaad_40:

(Start: 48 @30261 has 71 MA's), (52, 30219), (54, 30213), (55, 30210), (60, 30186), (64, 30177), (69, 30153), (95, 30024), (110, 29952), (115, 29928),

Gene: Lton_36 Start: 26921, Stop: 26505, Start Num: 48

Candidate Starts for Lton_36:

(Start: 48 @26921 has 71 MA's), (54, 26873), (55, 26870), (60, 26846), (69, 26813), (92, 26708), (95, 26684), (100, 26663), (109, 26621), (110, 26612),

Gene: Lucky10_37 Start: 29939, Stop: 29520, Start Num: 46

Candidate Starts for Lucky10_37:

(Start: 46 @29939 has 11 MA's), (57, 29867), (62, 29852), (68, 29828), (76, 29783), (77, 29771), (78, 29768), (80, 29756), (91, 29735), (100, 29687), (112, 29627), (118, 29600),

Gene: Lysidious_40 Start: 32794, Stop: 32387, Start Num: 48

Candidate Starts for Lysidious_40:

(Start: 34 @32824 has 7 MA's), (Start: 35 @32818 has 3 MA's), (Start: 40 @32803 has 7 MA's), (Start: 48 @32794 has 71 MA's), (65, 32710), (78, 32635), (99, 32530), (112, 32473), (114, 32461), (123, 32413),

Gene: Madavieve_39 Start: 32963, Stop: 32547, Start Num: 48

Candidate Starts for Madavieve_39:

(Start: 48 @32963 has 71 MA's), (52, 32921), (54, 32915), (55, 32912), (60, 32888), (64, 32879), (69, 32855), (94, 32732), (95, 32726), (110, 32654),

Gene: Madeline_38 Start: 32781, Stop: 32359, Start Num: 45

Candidate Starts for Madeline_38:

(Start: 35 @32805 has 3 MA's), (Start: 40 @32790 has 7 MA's), (Start: 45 @32781 has 37 MA's), (60, 32700), (69, 32667), (72, 32655), (92, 32550), (104, 32493), (112, 32451), (114, 32439), (118, 32424), (131, 32364),

Gene: MakCheese_52 Start: 37112, Stop: 36690, Start Num: 43

Candidate Starts for MakCheese_52:

(Start: 43 @37112 has 8 MA's), (56, 37058), (57, 37049), (66, 37016), (76, 36971), (93, 36878), (100, 36842), (109, 36806), (112, 36788), (118, 36761), (119, 36752),

Gene: Malachai_40 Start: 33887, Stop: 33471, Start Num: 48

Candidate Starts for Malachai_40:

(Start: 34 @33917 has 7 MA's), (Start: 35 @33911 has 3 MA's), (Start: 40 @33896 has 7 MA's), (Start: 48 @33887 has 71 MA's), (57, 33827), (68, 33788), (77, 33731), (86, 33692), (104, 33608), (114, 33554), (116, 33548), (118, 33539),

Gene: Malibo_42 Start: 33467, Stop: 33012, Start Num: 34

Candidate Starts for Malibo_42:

(16, 33569), (Start: 34 @33467 has 7 MA's), (Start: 35 @33461 has 3 MA's), (Start: 40 @33446 has 7 MA's), (Start: 45 @33437 has 37 MA's), (69, 33323), (72, 33311), (86, 33233), (104, 33149), (112, 33107), (113, 33101), (114, 33095),

Gene: Malisha_48 Start: 33889, Stop: 33467, Start Num: 43

Candidate Starts for Malisha_48:

(Start: 43 @33889 has 8 MA's), (56, 33835), (66, 33793), (78, 33733), (92, 33664), (93, 33655), (103, 33610), (109, 33583), (112, 33565), (118, 33538), (119, 33529),

Gene: Manasvini_43 Start: 33148, Stop: 32732, Start Num: 48

Candidate Starts for Manasvini_43:

(Start: 48 @33148 has 71 MA's), (52, 33106), (54, 33100), (55, 33097), (60, 33073), (64, 33064), (69, 33040), (95, 32911), (110, 32839), (115, 32815),

Gene: Mao1_45 Start: 40715, Stop: 40293, Start Num: 44

Candidate Starts for Mao1_45:

(Start: 44 @40715 has 19 MA's), (55, 40664), (60, 40637), (89, 40508), (115, 40379), (117, 40373), (118, 40367),

Gene: Maridalia_44 Start: 33295, Stop: 32879, Start Num: 48

Candidate Starts for Maridalia_44:

(Start: 48 @33295 has 71 MA's), (52, 33253), (54, 33247), (55, 33244), (60, 33220), (64, 33211), (69, 33187), (95, 33058), (110, 32986),

Gene: Marteena_38 Start: 31766, Stop: 31341, Start Num: 45

Candidate Starts for Marteena_38:

(Start: 45 @31766 has 37 MA's), (72, 31640), (111, 31442), (112, 31436), (114, 31424),

Gene: Mask_47 Start: 43714, Stop: 43292, Start Num: 44

Candidate Starts for Mask_47:

(Start: 44 @43714 has 19 MA's), (55, 43663), (60, 43636), (78, 43549), (85, 43519), (89, 43507), (117, 43372),

Gene: Matteo_34 Start: 28015, Stop: 27581, Start Num: 40

Candidate Starts for Matteo_34:

(Start: 35 @28030 has 3 MA's), (Start: 40 @28015 has 7 MA's), (Start: 45 @28006 has 37 MA's), (72, 27880), (104, 27718), (112, 27676), (114, 27664), (118, 27649),

Gene: Mbo4_32 Start: 30257, Stop: 29826, Start Num: 42

Candidate Starts for Mbo4_32:

(25, 30326), (39, 30269), (42, 30257), (78, 30083), (104, 29963), (111, 29921), (113, 29909), (115, 29900),

Gene: Mcklovin_38 Start: 35728, Stop: 35249, Start Num: 28

Candidate Starts for Mcklovin_38:

(Start: 28 @35728 has 2 MA's), (Start: 48 @35665 has 71 MA's), (53, 35623), (86, 35470), (112, 35344), (114, 35332), (118, 35317),

Gene: Mellie_39 Start: 31603, Stop: 31187, Start Num: 48

Candidate Starts for Mellie_39:

(Start: 35 @31627 has 3 MA's), (Start: 40 @31612 has 7 MA's), (Start: 48 @31603 has 71 MA's), (57, 31543), (68, 31504), (77, 31447), (90, 31387), (104, 31324), (114, 31270), (118, 31255),

Gene: MichaelScott_42 Start: 32207, Stop: 31800, Start Num: 48

Candidate Starts for MichaelScott_42:

(27, 32276), (Start: 29 @32267 has 1 MA's), (Start: 40 @32216 has 7 MA's), (Start: 48 @32207 has 71 MA's), (78, 32048), (81, 32030), (86, 32012), (87, 32009), (97, 31952), (112, 31886), (113, 31880), (114, 31874), (116, 31868), (119, 31850), (126, 31817),

Gene: MissRona_40 Start: 32378, Stop: 31971, Start Num: 48

Candidate Starts for MissRona_40:

(Start: 34 @32408 has 7 MA's), (Start: 35 @32402 has 3 MA's), (Start: 40 @32387 has 7 MA's), (Start: 48 @32378 has 71 MA's), (65, 32294), (81, 32201), (86, 32183), (92, 32156), (112, 32057), (113, 32051), (114, 32045), (123, 31997),

Gene: Mocha12_41 Start: 30455, Stop: 30030, Start Num: 45

Candidate Starts for Mocha12_41:

(Start: 35 @30479 has 3 MA's), (Start: 40 @30464 has 7 MA's), (Start: 45 @30455 has 37 MA's), (72, 30329), (104, 30167), (112, 30125), (114, 30113), (118, 30098),

Gene: Moosehead_37 Start: 27045, Stop: 26638, Start Num: 48

Candidate Starts for Moosehead_37:

(26, 27114), (Start: 35 @27069 has 3 MA's), (Start: 40 @27054 has 7 MA's), (Start: 48 @27045 has 71 MA's), (65, 26961), (81, 26868), (86, 26850), (87, 26847), (92, 26823), (97, 26790), (99, 26781), (103, 26769), (112, 26724), (113, 26718), (114, 26712), (115, 26709), (116, 26706), (123, 26664), (127, 26652),

Gene: Morkie_35 Start: 27876, Stop: 27460, Start Num: 48

Candidate Starts for Morkie_35:

(Start: 48 @27876 has 71 MA's), (52, 27834), (54, 27828), (55, 27825), (60, 27801), (69, 27768), (76, 27729), (92, 27663), (95, 27639), (109, 27576), (110, 27567),

Gene: MortyNRick_46 Start: 35208, Stop: 34720, Start Num: 31

Candidate Starts for MortyNRick_46:

(Start: 31 @35208 has 1 MA's), (Start: 44 @35154 has 19 MA's), (54, 35094), (61, 35061), (63, 35055), (79, 34971), (83, 34956), (99, 34875), (103, 34863), (131, 34728),

Gene: MulchSalad_39 Start: 30079, Stop: 29636, Start Num: 44

Candidate Starts for MulchSalad_39:

(Start: 44 @30079 has 19 MA's), (103, 29782),

Gene: Murp_41 Start: 34198, Stop: 33773, Start Num: 45

Candidate Starts for Murp_41:

(Start: 34 @34228 has 7 MA's), (Start: 45 @34198 has 37 MA's), (60, 34117), (69, 34084), (72, 34072), (86, 33994), (95, 33943), (104, 33910), (114, 33856), (118, 33841),

Gene: Neobush_43 Start: 33141, Stop: 32725, Start Num: 48

Candidate Starts for Neobush_43:

(Start: 48 @33141 has 71 MA's), (52, 33099), (54, 33093), (55, 33090), (60, 33066), (64, 33057), (69, 33033), (95, 32904), (110, 32832), (115, 32808),

Gene: Nettuno_37 Start: 28973, Stop: 28539, Start Num: 40

Candidate Starts for Nettuno_37:

(Start: 35 @28988 has 3 MA's), (Start: 40 @28973 has 7 MA's), (Start: 45 @28964 has 37 MA's), (72, 28838), (104, 28676), (112, 28634), (114, 28622), (118, 28607),

Gene: Nymphadora_41 Start: 33716, Stop: 33300, Start Num: 48

Candidate Starts for Nymphadora_41:

(Start: 29 @33776 has 1 MA's), (Start: 34 @33746 has 7 MA's), (Start: 40 @33725 has 7 MA's), (Start: 48 @33716 has 71 MA's), (90, 33500), (92, 33494), (104, 33437), (114, 33383), (116, 33377),

Gene: ODay_54 Start: 35640, Stop: 35206, Start Num: 44

Candidate Starts for ODay_54:

(5, 35877), (Start: 35 @35664 has 3 MA's), (Start: 44 @35640 has 19 MA's), (54, 35580), (61, 35547), (63, 35541), (77, 35466), (83, 35442), (99, 35361), (103, 35349), (109, 35322), (131, 35214),

Gene: Ohgeesy_41 Start: 33576, Stop: 33154, Start Num: 45

Candidate Starts for Ohgeesy_41:

(Start: 35 @33600 has 3 MA's), (Start: 40 @33585 has 7 MA's), (Start: 45 @33576 has 37 MA's), (60, 33495), (69, 33462), (72, 33450), (92, 33345), (104, 33288), (112, 33246), (114, 33234), (118, 33219), (131, 33159),

Gene: OneDirection_32 Start: 26498, Stop: 26082, Start Num: 48

Candidate Starts for OneDirection_32:

(Start: 48 @26498 has 71 MA's), (52, 26456), (54, 26450), (55, 26447), (60, 26423), (69, 26390), (76, 26351), (92, 26285), (95, 26261), (110, 26189),

Gene: Oregano_41 Start: 30919, Stop: 30512, Start Num: 48

Candidate Starts for Oregano_41:

(24, 30988), (Start: 34 @30949 has 7 MA's), (Start: 35 @30943 has 3 MA's), (Start: 40 @30928 has 7 MA's), (Start: 48 @30919 has 71 MA's), (78, 30760), (81, 30742), (86, 30724), (87, 30721), (97, 30664), (112, 30598), (113, 30592), (114, 30586), (116, 30580), (119, 30562), (126, 30529),

Gene: PCoral7_40 Start: 32596, Stop: 32171, Start Num: 45

Candidate Starts for PCoral7_40:

(7, 32800), (Start: 37 @32617 has 1 MA's), (Start: 45 @32596 has 37 MA's), (69, 32482), (72, 32470), (111, 32272), (112, 32266), (114, 32254),

Gene: PantheRoc_39 Start: 31017, Stop: 30592, Start Num: 45

Candidate Starts for PantheRoc_39:

(Start: 6 @31227 has 1 MA's), (11, 31185), (12, 31176), (Start: 13 @31173 has 1 MA's), (14, 31170), (15, 31161), (19, 31137), (Start: 23 @31095 has 1 MA's), (27, 31086), (Start: 34 @31047 has 7 MA's), (Start: 40 @31026 has 7 MA's), (Start: 45 @31017 has 37 MA's), (69, 30903), (72, 30891), (104, 30729), (112, 30687), (114, 30675), (118, 30660),

Gene: Pepperoni_33 Start: 27643, Stop: 27227, Start Num: 48

Candidate Starts for Pepperoni_33:

(Start: 48 @27643 has 71 MA's), (51, 27604), (52, 27601), (54, 27595), (55, 27592), (60, 27568), (69, 27535), (76, 27496), (92, 27430), (95, 27406), (110, 27334),

Gene: Phabuloso_50 Start: 34086, Stop: 33664, Start Num: 43

Candidate Starts for Phabuloso_50:

(Start: 43 @34086 has 8 MA's), (56, 34032), (66, 33990), (78, 33930), (84, 33903), (92, 33861), (93, 33852), (103, 33807), (109, 33780), (112, 33762), (119, 33726),

Gene: Phistory_53 Start: 34808, Stop: 34392, Start Num: 48

Candidate Starts for Phistory_53:

(Start: 48 @34808 has 71 MA's), (52, 34766), (69, 34700), (73, 34679), (100, 34550), (108, 34511), (112, 34490), (115, 34475), (121, 34439),

Gene: PhorbesPhlower_35 Start: 27304, Stop: 26888, Start Num: 48

Candidate Starts for PhorbesPhlower_35:

(Start: 48 @27304 has 71 MA's), (52, 27262), (69, 27196), (71, 27184), (73, 27175), (100, 27046), (108, 27007), (112, 26986), (115, 26971), (121, 26935),

Gene: PhriskyACE_38 Start: 31628, Stop: 31212, Start Num: 48

Candidate Starts for PhriskyACE_38:

(Start: 48 @31628 has 71 MA's), (53, 31586), (90, 31412), (92, 31406), (103, 31352), (104, 31349), (111, 31313), (112, 31307), (114, 31295), (118, 31280),

Gene: Pickett_36 Start: 27444, Stop: 27028, Start Num: 48

Candidate Starts for Pickett_36:

(Start: 48 @27444 has 71 MA's), (52, 27402), (54, 27396), (55, 27393), (60, 27369), (64, 27360), (69, 27336), (95, 27207), (110, 27135), (115, 27111),

Gene: Pippy_42 Start: 31901, Stop: 31458, Start Num: 44

Candidate Starts for Pippy_42:

(Start: 44 @31901 has 19 MA's), (63, 31805), (73, 31754), (103, 31604), (123, 31499),

Gene: Pollux_40 Start: 33839, Stop: 33414, Start Num: 45

Candidate Starts for Pollux_40:

(Start: 35 @33863 has 3 MA's), (Start: 40 @33848 has 7 MA's), (Start: 45 @33839 has 37 MA's), (60, 33758), (72, 33713), (104, 33551), (112, 33509), (114, 33497), (118, 33482),

Gene: Polly_40 Start: 32590, Stop: 32174, Start Num: 48

Candidate Starts for Polly_40:

(Start: 48 @32590 has 71 MA's), (52, 32548), (54, 32542), (55, 32539), (60, 32515), (64, 32506), (69, 32482), (95, 32353), (110, 32281), (115, 32257),

Gene: Posh_45 Start: 34831, Stop: 34415, Start Num: 48

Candidate Starts for Posh_45:

(Start: 48 @34831 has 71 MA's), (52, 34789), (54, 34783), (55, 34780), (60, 34756), (64, 34747), (69, 34723), (94, 34600), (95, 34594), (110, 34522), (115, 34498),

Gene: Powerball_39 Start: 31217, Stop: 30801, Start Num: 48

Candidate Starts for Powerball_39:

(Start: 35 @31241 has 3 MA's), (Start: 48 @31217 has 71 MA's), (92, 30995), (104, 30938), (113, 30890), (114, 30884), (118, 30869),

Gene: PrincePatrick_40 Start: 31419, Stop: 30994, Start Num: 45

Candidate Starts for PrincePatrick_40:

(Start: 34 @31449 has 7 MA's), (Start: 35 @31443 has 3 MA's), (Start: 40 @31428 has 7 MA's), (Start: 45 @31419 has 37 MA's), (69, 31305), (72, 31293), (90, 31194), (104, 31131), (112, 31089), (114, 31077),

Gene: Pytheas_41 Start: 33023, Stop: 32598, Start Num: 45

Candidate Starts for Pytheas_41:

(Start: 34 @33053 has 7 MA's), (Start: 35 @33047 has 3 MA's), (Start: 40 @33032 has 7 MA's), (Start: 45 @33023 has 37 MA's), (72, 32897), (104, 32735), (111, 32699), (112, 32693), (114, 32681), (118,

32666),

Gene: REQ2_39 Start: 31992, Stop: 31546, Start Num: 45

Candidate Starts for REQ2_39:

(10, 32175), (17, 32127), (Start: 45 @31992 has 37 MA's), (86, 31776), (111, 31650), (115, 31629),

Gene: Rizz_42 Start: 31586, Stop: 31110, Start Num: 27

Candidate Starts for Rizz_42:

(27, 31586), (Start: 29 @31577 has 1 MA's), (Start: 40 @31526 has 7 MA's), (Start: 48 @31517 has 71 MA's), (78, 31358), (81, 31340), (86, 31322), (87, 31319), (97, 31262), (112, 31196), (113, 31190), (114, 31184), (116, 31178), (119, 31160), (126, 31127),

Gene: Ruthy_41 Start: 33805, Stop: 33380, Start Num: 45

Candidate Starts for Ruthy_41:

(Start: 34 @33835 has 7 MA's), (Start: 35 @33829 has 3 MA's), (Start: 40 @33814 has 7 MA's), (Start: 45 @33805 has 37 MA's), (57, 33736), (60, 33724), (69, 33691), (72, 33679), (104, 33517), (112, 33475), (114, 33463), (118, 33448),

Gene: Sahara_40 Start: 30202, Stop: 29777, Start Num: 45

Candidate Starts for Sahara_40:

(Start: 35 @30226 has 3 MA's), (Start: 40 @30211 has 7 MA's), (Start: 45 @30202 has 37 MA's), (72, 30076), (104, 29914), (112, 29872), (114, 29860), (118, 29845),

Gene: Samba_40 Start: 33996, Stop: 33580, Start Num: 48

Candidate Starts for Samba_40:

(Start: 35 @34020 has 3 MA's), (Start: 40 @34005 has 7 MA's), (Start: 48 @33996 has 71 MA's), (57, 33936), (68, 33897), (86, 33801), (87, 33798), (92, 33774), (104, 33717), (112, 33675), (114, 33663), (118, 33648),

Gene: Samman98_42 Start: 30834, Stop: 30427, Start Num: 48

Candidate Starts for Samman98_42:

(27, 30903), (Start: 29 @30894 has 1 MA's), (Start: 40 @30843 has 7 MA's), (Start: 48 @30834 has 71 MA's), (78, 30675), (81, 30657), (86, 30639), (87, 30636), (97, 30579), (112, 30513), (113, 30507), (114, 30501), (116, 30495), (119, 30477), (126, 30444),

Gene: Savage_41 Start: 30455, Stop: 30030, Start Num: 45

Candidate Starts for Savage_41:

(Start: 35 @30479 has 3 MA's), (Start: 40 @30464 has 7 MA's), (Start: 45 @30455 has 37 MA's), (72, 30329), (104, 30167), (112, 30125), (114, 30113), (118, 30098),

Gene: Sbash_42 Start: 35113, Stop: 34670, Start Num: 44

Candidate Starts for Sbash_42:

(22, 35215), (Start: 23 @35191 has 1 MA's), (Start: 44 @35113 has 19 MA's), (60, 35026), (63, 35017), (86, 34897), (97, 34837), (113, 34765), (118, 34744), (123, 34711),

Gene: Sejanus_44 Start: 41143, Stop: 40700, Start Num: 44

Candidate Starts for Sejanus_44:

(22, 41245), (Start: 44 @41143 has 19 MA's), (61, 41047), (63, 41041), (78, 40963), (82, 40942), (118, 40774), (121, 40750), (130, 40714),

Gene: Sekhmet_42 Start: 31734, Stop: 31327, Start Num: 48

Candidate Starts for Sekhmet_42:

(27, 31803), (Start: 29 @31794 has 1 MA's), (Start: 40 @31743 has 7 MA's), (Start: 48 @31734 has 71 MA's), (78, 31575), (81, 31557), (86, 31539), (87, 31536), (97, 31479), (112, 31413), (113, 31407), (114, 31401), (116, 31395), (119, 31377), (126, 31344),

Gene: ShawBrad_53 Start: 34025, Stop: 33591, Start Num: 44

Candidate Starts for ShawBrad_53:

(Start: 35 @34049 has 3 MA's), (Start: 44 @34025 has 19 MA's), (54, 33965), (61, 33932), (63, 33926), (83, 33827), (99, 33746), (103, 33734), (109, 33707), (131, 33599),

Gene: Shlim410_40 Start: 34314, Stop: 33877, Start Num: 34

Candidate Starts for Shlim410_40:

(24, 34353), (Start: 34 @34314 has 7 MA's), (Start: 35 @34308 has 3 MA's), (Start: 40 @34293 has 7 MA's), (Start: 48 @34284 has 71 MA's), (65, 34200), (78, 34125), (81, 34107), (86, 34089), (87, 34086), (97, 34029), (112, 33963), (113, 33957), (114, 33951), (116, 33945), (119, 33927), (126, 33894),

Gene: Sidious_39 Start: 32458, Stop: 32009, Start Num: 35

Candidate Starts for Sidious_39:

(Start: 35 @32458 has 3 MA's), (Start: 40 @32443 has 7 MA's), (Start: 45 @32434 has 37 MA's), (69, 32320), (72, 32308), (109, 32122), (112, 32104), (114, 32092), (118, 32077),

Gene: SoilAssassin_38 Start: 30279, Stop: 29863, Start Num: 48

Candidate Starts for SoilAssassin_38:

(Start: 48 @30279 has 71 MA's), (52, 30237), (54, 30231), (55, 30228), (60, 30204), (64, 30195), (69, 30171), (95, 30042), (110, 29970), (115, 29946),

Gene: Soilmate_44 Start: 35400, Stop: 34975, Start Num: 45

Candidate Starts for Soilmate_44:

(Start: 34 @35430 has 7 MA's), (Start: 35 @35424 has 3 MA's), (Start: 40 @35409 has 7 MA's), (Start: 45 @35400 has 37 MA's), (60, 35319), (69, 35286), (72, 35274), (86, 35196), (104, 35112), (114, 35058),

Gene: Spooky_43 Start: 32309, Stop: 31875, Start Num: 44

Candidate Starts for Spooky_43:

(Start: 44 @32309 has 19 MA's), (54, 32249), (61, 32216), (77, 32135), (88, 32093), (103, 32018), (106, 32000), (121, 31922), (131, 31883),

Gene: Sprinklemunch_46 Start: 34645, Stop: 34220, Start Num: 45

Candidate Starts for Sprinklemunch_46:

(1, 34972), (4, 34894), (8, 34840), (Start: 35 @34669 has 3 MA's), (Start: 40 @34654 has 7 MA's), (Start: 45 @34645 has 37 MA's), (60, 34564), (69, 34531), (72, 34519), (86, 34441), (92, 34414), (112, 34315), (114, 34303),

Gene: Sproutie_41 Start: 30464, Stop: 30030, Start Num: 40

Candidate Starts for Sproutie_41:

(Start: 35 @30479 has 3 MA's), (Start: 40 @30464 has 7 MA's), (Start: 45 @30455 has 37 MA's), (72, 30329), (104, 30167), (112, 30125), (114, 30113), (118, 30098),

Gene: Squiddly_47 Start: 34769, Stop: 34353, Start Num: 46

Candidate Starts for Squiddly_47:

(38, 34790), (Start: 46 @34769 has 11 MA's), (62, 34685), (77, 34604), (80, 34589), (99, 34523), (100, 34520), (112, 34460), (118, 34433),

Gene: Squirty_37 Start: 31074, Stop: 30631, Start Num: 44

Candidate Starts for Squirty_37:

(Start: 44 @31074 has 19 MA's), (63, 30978), (73, 30927), (103, 30777), (123, 30672),

Gene: Stuck_46 Start: 37460, Stop: 36939, Start Num: 23

Candidate Starts for Stuck_46:

(Start: 23 @37460 has 1 MA's), (Start: 44 @37382 has 19 MA's), (52, 37331), (63, 37286), (86, 37166), (97, 37106), (113, 37034), (118, 37013),

Gene: Suerte_36 Start: 30205, Stop: 29798, Start Num: 48

Candidate Starts for Suerte_36:

(Start: 34 @30235 has 7 MA's), (Start: 35 @30229 has 3 MA's), (Start: 40 @30214 has 7 MA's), (Start: 48 @30205 has 71 MA's), (65, 30121), (78, 30046), (81, 30028), (86, 30010), (87, 30007), (97, 29950), (112, 29884), (113, 29878), (114, 29872), (116, 29866), (119, 29848), (126, 29815),

Gene: Susceptit_43 Start: 33148, Stop: 32732, Start Num: 48

Candidate Starts for Susceptit_43:

(Start: 48 @33148 has 71 MA's), (52, 33106), (54, 33100), (55, 33097), (60, 33073), (64, 33064), (69, 33040), (95, 32911), (110, 32839), (115, 32815),

Gene: SushiChef_38 Start: 31924, Stop: 31499, Start Num: 45

Candidate Starts for SushiChef_38:

(Start: 34 @31954 has 7 MA's), (Start: 35 @31948 has 3 MA's), (Start: 40 @31933 has 7 MA's), (Start: 45 @31924 has 37 MA's), (69, 31810), (72, 31798), (90, 31699), (92, 31693), (104, 31636), (112, 31594), (113, 31588), (114, 31582), (118, 31567),

Gene: Tayonia_43 Start: 33147, Stop: 32731, Start Num: 48

Candidate Starts for Tayonia_43:

(Start: 48 @33147 has 71 MA's), (52, 33105), (54, 33099), (55, 33096), (60, 33072), (64, 33063), (69, 33039), (95, 32910), (110, 32838), (115, 32814),

Gene: ThankyouJordi_40 Start: 33282, Stop: 32827, Start Num: 34

Candidate Starts for ThankyouJordi_40:

(Start: 34 @33282 has 7 MA's), (Start: 35 @33276 has 3 MA's), (Start: 40 @33261 has 7 MA's), (Start: 45 @33252 has 37 MA's), (72, 33126), (104, 32964), (112, 32922), (114, 32910), (118, 32895),

Gene: Thimann_38 Start: 29775, Stop: 29359, Start Num: 48

Candidate Starts for Thimann_38:

(Start: 28 @29838 has 2 MA's), (Start: 48 @29775 has 71 MA's), (53, 29733), (86, 29580), (112, 29454), (114, 29442), (118, 29427),

Gene: TimTam_41 Start: 33716, Stop: 33300, Start Num: 48

Candidate Starts for TimTam_41:

(Start: 29 @33776 has 1 MA's), (Start: 34 @33746 has 7 MA's), (Start: 40 @33725 has 7 MA's), (Start: 48 @33716 has 71 MA's), (90, 33500), (92, 33494), (104, 33437), (114, 33383), (116, 33377),

Gene: Toast_40 Start: 32617, Stop: 32171, Start Num: 37

Candidate Starts for Toast_40:

(7, 32800), (Start: 37 @32617 has 1 MA's), (Start: 45 @32596 has 37 MA's), (69, 32482), (72, 32470), (111, 32272), (112, 32266), (114, 32254),

Gene: Tortellini_34 Start: 31506, Stop: 31084, Start Num: 44

Candidate Starts for Tortellini_34:

(Start: 44 @31506 has 19 MA's), (55, 31455), (85, 31311), (89, 31299), (115, 31170), (117, 31164),

Gene: Trumpet_43 Start: 33148, Stop: 32732, Start Num: 48

Candidate Starts for Trumpet_43:

(Start: 48 @33148 has 71 MA's), (52, 33106), (54, 33100), (55, 33097), (60, 33073), (64, 33064), (69, 33040), (95, 32911), (110, 32839), (115, 32815),

Gene: TuertoX_41 Start: 30455, Stop: 30030, Start Num: 45

Candidate Starts for TuertoX_41:

(Start: 35 @30479 has 3 MA's), (Start: 40 @30464 has 7 MA's), (Start: 45 @30455 has 37 MA's), (72, 30329), (104, 30167), (112, 30125), (114, 30113), (118, 30098),

Gene: Tuti_36 Start: 31311, Stop: 30904, Start Num: 48

Candidate Starts for Tuti_36:

(24, 31380), (Start: 34 @31341 has 7 MA's), (Start: 35 @31335 has 3 MA's), (Start: 40 @31320 has 7 MA's), (Start: 48 @31311 has 71 MA's), (78, 31152), (81, 31134), (86, 31116), (87, 31113), (97, 31056), (112, 30990), (113, 30984), (114, 30978), (116, 30972), (119, 30954), (126, 30921),

Gene: Utz_35 Start: 32686, Stop: 32270, Start Num: 48

Candidate Starts for Utz_35:

(Start: 34 @32716 has 7 MA's), (Start: 35 @32710 has 3 MA's), (Start: 40 @32695 has 7 MA's), (Start: 48 @32686 has 71 MA's), (57, 32626), (68, 32587), (86, 32491), (87, 32488), (90, 32470), (92, 32464), (104, 32407), (112, 32365), (114, 32353), (118, 32338),

Gene: VanLee_33 Start: 28369, Stop: 27926, Start Num: 46

Candidate Starts for VanLee_33:

(32, 28414), (Start: 46 @28369 has 11 MA's), (55, 28315), (68, 28261), (85, 28180), (102, 28114), (105, 28099), (107, 28087), (109, 28078), (122, 28009), (124, 28000), (125, 27997), (133, 27934),

Gene: Vasanti_39 Start: 29720, Stop: 29295, Start Num: 45

Candidate Starts for Vasanti_39:

(Start: 35 @29744 has 3 MA's), (Start: 40 @29729 has 7 MA's), (Start: 45 @29720 has 37 MA's), (69, 29606), (72, 29594), (95, 29465), (104, 29432), (112, 29390), (113, 29384), (114, 29378), (118, 29363),

Gene: WelcomeAyanna_40 Start: 33399, Stop: 32974, Start Num: 45

Candidate Starts for WelcomeAyanna_40:

(Start: 34 @33429 has 7 MA's), (Start: 35 @33423 has 3 MA's), (Start: 40 @33408 has 7 MA's), (Start: 45 @33399 has 37 MA's), (72, 33273), (104, 33111), (112, 33069), (114, 33057), (118, 33042),

Gene: Whiteclaw_41 Start: 30455, Stop: 30030, Start Num: 45

Candidate Starts for Whiteclaw_41:

(Start: 35 @30479 has 3 MA's), (Start: 40 @30464 has 7 MA's), (Start: 45 @30455 has 37 MA's), (72, 30329), (104, 30167), (112, 30125), (114, 30113), (118, 30098),

Gene: William_42 Start: 33105, Stop: 32680, Start Num: 45

Candidate Starts for William_42:

(20, 33222), (Start: 35 @33129 has 3 MA's), (Start: 40 @33114 has 7 MA's), (Start: 45 @33105 has 37 MA's), (69, 32991), (72, 32979), (95, 32850), (104, 32817), (112, 32775), (114, 32763), (118, 32748),

Gene: WinkNick_43 Start: 31535, Stop: 31119, Start Num: 40

Candidate Starts for WinkNick_43:

(27, 31595), (Start: 29 @31586 has 1 MA's), (Start: 40 @31535 has 7 MA's), (Start: 48 @31526 has 71 MA's), (78, 31367), (81, 31349), (86, 31331), (87, 31328), (97, 31271), (112, 31205), (113, 31199), (114, 31193), (116, 31187), (119, 31169), (126, 31136),

Gene: Wisp_37 Start: 31135, Stop: 30710, Start Num: 45

Candidate Starts for Wisp_37:

(Start: 45 @31135 has 37 MA's), (Start: 48 @31129 has 71 MA's), (58, 31060), (69, 31021), (72, 31009), (92, 30904), (104, 30847), (114, 30793), (118, 30778),

Gene: Wocket_41 Start: 31899, Stop: 31462, Start Num: 34

Candidate Starts for Wocket_41:

(Start: 34 @31899 has 7 MA's), (Start: 35 @31893 has 3 MA's), (Start: 40 @31878 has 7 MA's), (Start: 48 @31869 has 71 MA's), (65, 31785), (78, 31710), (92, 31647), (99, 31605), (112, 31548), (114, 31536), (123, 31488),

Gene: Wrigley_45 Start: 33632, Stop: 33210, Start Num: 43

Candidate Starts for Wrigley_45:

(Start: 43 @33632 has 8 MA's), (56, 33578), (66, 33536), (78, 33476), (93, 33398), (103, 33353), (109, 33326), (112, 33308), (119, 33272),

Gene: Xavia_36 Start: 32193, Stop: 31771, Start Num: 44

Candidate Starts for Xavia_36:

(Start: 44 @32193 has 19 MA's), (55, 32142), (60, 32115), (89, 31986), (115, 31857), (117, 31851),

Gene: Yeet412_38 Start: 30280, Stop: 29864, Start Num: 48

Candidate Starts for Yeet412_38:

(Start: 48 @30280 has 71 MA's), (52, 30238), (54, 30232), (55, 30229), (60, 30205), (64, 30196), (69, 30172), (95, 30043), (110, 29971), (115, 29947),

Gene: Yeezy_38 Start: 30822, Stop: 30406, Start Num: 48

Candidate Starts for Yeezy_38:

(Start: 48 @30822 has 71 MA's), (52, 30780), (54, 30774), (55, 30771), (60, 30747), (64, 30738), (69, 30714), (70, 30708), (95, 30585), (110, 30513), (115, 30489),

Gene: Yinzer_40 Start: 30464, Stop: 30030, Start Num: 40

Candidate Starts for Yinzer_40:

(Start: 35 @30479 has 3 MA's), (Start: 40 @30464 has 7 MA's), (Start: 45 @30455 has 37 MA's), (72, 30329), (104, 30167), (112, 30125), (114, 30113), (118, 30098),

Gene: Zameen_43 Start: 33147, Stop: 32731, Start Num: 48

Candidate Starts for Zameen_43:

(Start: 48 @33147 has 71 MA's), (52, 33105), (54, 33099), (55, 33096), (60, 33072), (64, 33063), (69, 33039), (95, 32910), (110, 32838), (115, 32814),

Gene: ZiggyZoo_40 Start: 32348, Stop: 31929, Start Num: 48

Candidate Starts for ZiggyZoo_40:

(Start: 45 @32354 has 37 MA's), (Start: 48 @32348 has 71 MA's), (69, 32240), (72, 32228), (86, 32150), (104, 32066), (114, 32012),

Gene: Zirinka_40 Start: 33887, Stop: 33471, Start Num: 48

Candidate Starts for Zirinka_40:

(Start: 48 @33887 has 71 MA's), (52, 33845), (54, 33839), (55, 33836), (60, 33812), (64, 33803), (69, 33779), (95, 33650), (110, 33578), (115, 33554),

Gene: Zizzle_48 Start: 34743, Stop: 34300, Start Num: 44

Candidate Starts for Zizzle_48:

(Start: 44 @34743 has 19 MA's), (63, 34647), (73, 34596), (103, 34446), (123, 34341),

Gene: Zodiariah_38 Start: 33465, Stop: 33031, Start Num: 40

Candidate Starts for Zodiariah_38:

(Start: 34 @33486 has 7 MA's), (Start: 35 @33480 has 3 MA's), (Start: 40 @33465 has 7 MA's), (Start: 45 @33456 has 37 MA's), (53, 33408), (60, 33375), (69, 33342), (72, 33330), (92, 33225), (112, 33126), (114, 33114),