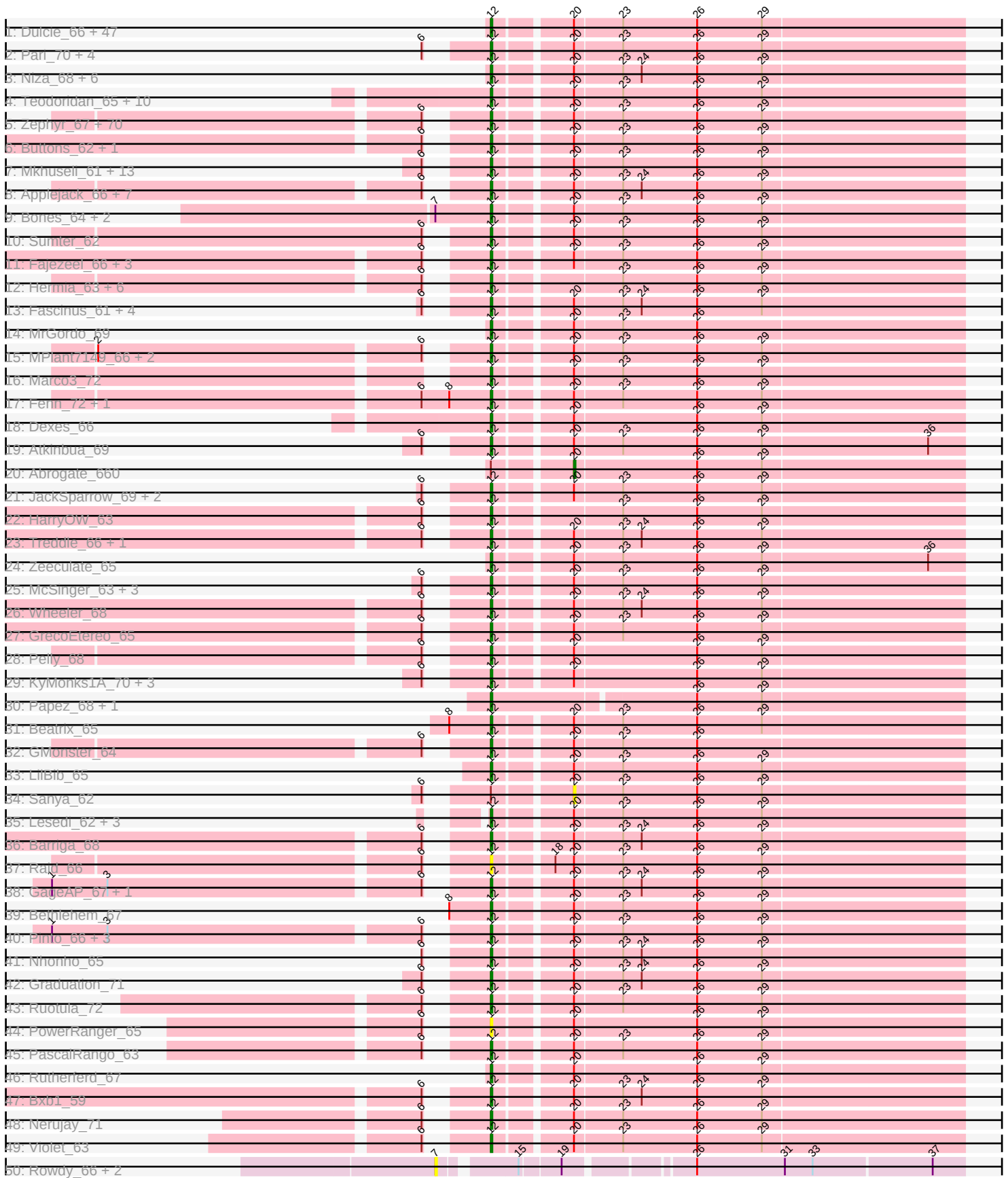
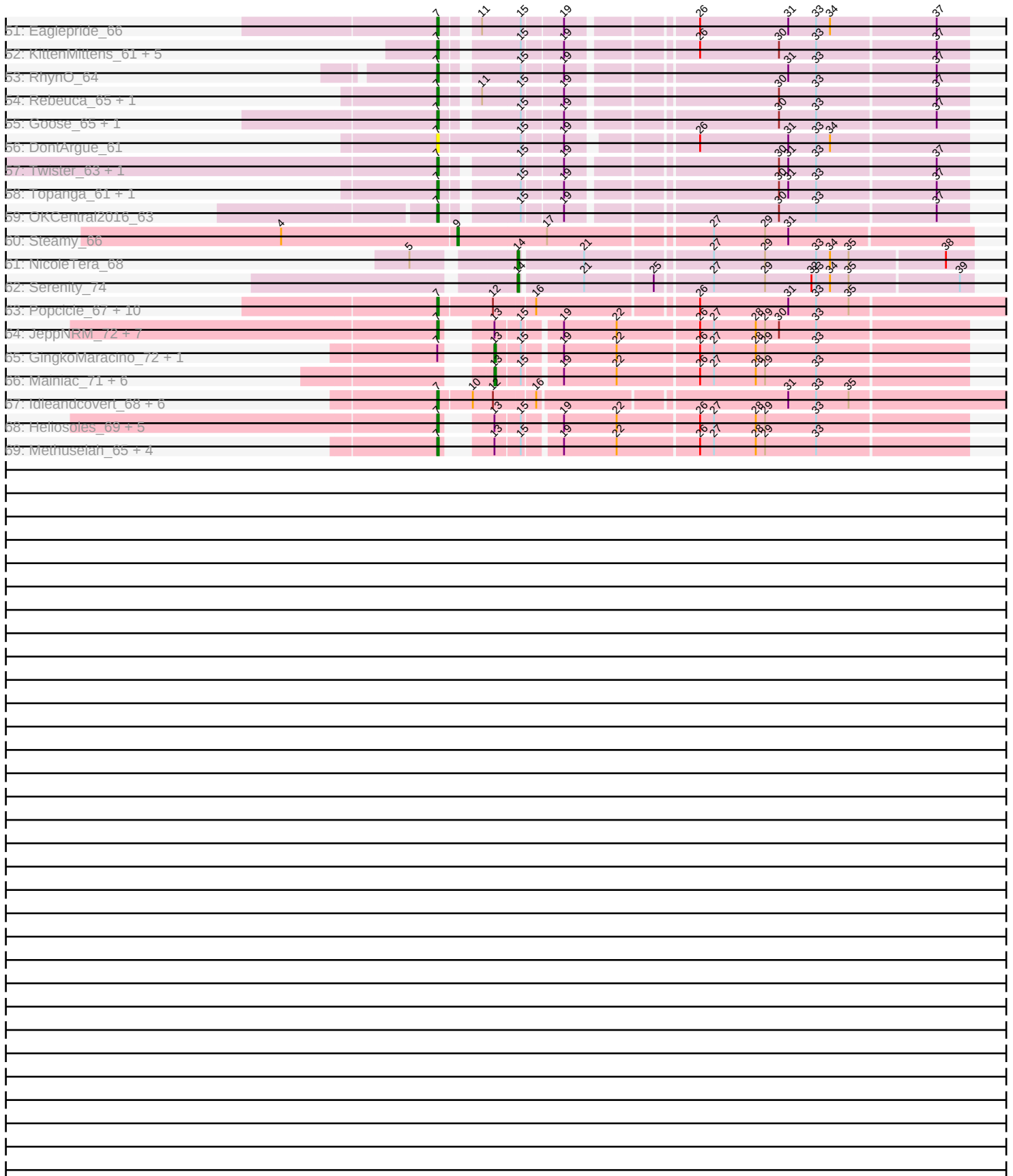




Pham 280019



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 280019 Report

This analysis was run 02/07/26 on database version 634.

Pham number 280019 has 312 members, 35 are drafts.

Phages represented in each track:

- Track 1 : Dulcie\_66, Gompeii16\_66, Alsfro\_72, Smeagol\_68, Peterson\_69, EnzoK\_66, Rhynn\_62, Carlyle\_67, Adahisdi\_65, PacerPaul\_66, Doom\_63, Smairt\_68, ChristmasHams\_60, Hami1\_61, Gachnar\_66, SkiPole\_74, Bircsak\_66, Squee\_69, BigPaolini\_62, BK1\_58, PhrostyMug\_66, Francis47\_65, BillKnuckles\_63, Sagefire\_67, Target\_69, Marsha\_66, Zeuska\_71, Agaliana\_61, Sunshine924\_71, Switzer\_67, Perseus\_64, Blessor\_62, STLscum\_75, Manatee\_66, Scowl\_67, Paraselene\_67, Paphu\_65, Pepe\_64, Tasp14\_69, Aeneas\_69, ILeeKay\_68, A6\_58, KBG\_67, Mule\_63, Makemake\_72, Traft412\_69, Lamina13\_69, Big3\_66
- Track 2 : Pari\_70, Dreamboat\_68, PherrisBueller\_67, Froghopper\_63, Jasper\_67
- Track 3 : Niza\_68, Cueyllyss\_65, Tripl3t\_70, Michley\_70, Espresso\_63, Parliament\_67, Gandalf20\_68
- Track 4 : Teodoridan\_65, PhineBark\_65, Kenmech\_70, Dussy\_67, Blackflame\_61, Ajay\_65, Levia\_63, Payneful\_63, Marchy\_59, Abbysshoes\_68, BarrowTuph\_67
- Track 5 : Zephyr\_67, Tote\_62, DrFeelGood\_64, DD5\_66, Homines\_57, Rohr\_67, JuliaChild\_67, Burton\_67, Ichabod\_70, DreamCatcher\_68, BeesKnees\_68, Hope4ever\_67, Euphoria\_65, Arlo\_64, IgnatiusPatJac\_66, Jerm2\_67, Lockley\_65, HanShotFirst\_67, Bob3\_67, Gwendoluna\_70, PSullivan\_64, Swole\_67, MilleFeuille\_62, Rufus\_68, Petp2012\_69, Museum\_68, Sibs6\_68, Slagathor\_68, U2\_62, NEHalo\_63, ConceptII\_70, Rajelicia\_66, Rubeus\_65, Marcell\_62, Chanagan\_59, Anglerfish\_66, Sandaddy\_63, StrongArm\_64, PinkPlastic\_65, Pita2\_67, Moose\_67, TwoPeat\_67, Briton15\_70, Blue\_66, Mryolo\_64, Kugel\_70, QTRlifeCrisis\_67, MaryBeth\_63, Bexan\_63, BluSpix\_64, Lopton\_66, SwissCheese\_69, TheloniousMonk\_70, Sorpresa\_64, Pippin\_65, CartmannCramer\_65, MetalQZJ\_62, Ciao\_63, Corvo\_66, RidgeCB\_66, Forsytheast\_67, ProMouse\_67, Ringer\_69, Magnito\_67, Killigrew\_64, McGuire\_66, Dynamix\_67, Molly\_67, PattyP\_68, BaconJack\_71, Arcanine\_68
- Track 6 : Buttons\_62, Licorice\_66
- Track 7 : Mkhusei\_61, Topgun\_63, Monet\_68, Iqorha\_61, Magnar\_65, Wilkins\_64, JC27\_70, Norz\_65, Edtherson\_64, Marge\_62, Inyanga\_61, LunarLander\_65, Fushigi\_61, Oogway\_64
- Track 8 : Applejack\_66, Ashballer\_69, BPBiebs31\_69, Ohno789\_67, Bruns\_68, Kanely\_67, Altman\_68, SpikeBT\_64
- Track 9 : Bones\_64, Puppet\_63, Eyeball\_67
- Track 10 : Sumter\_62
- Track 11 : Fajezeel\_66, Acme\_67, Watermelon\_65, Greg\_66
- Track 12 : Hermia\_63, KikiBouba\_63, CatBus\_61, Aldrich\_61, Turj99\_64, Noxious\_62, GroundGoblin\_62

- Track 13 : Fascinus\_61, Maroc7\_65, Phlippers\_61, Bigfoot\_59, Solon\_64
- Track 14 : MrGordo\_69
- Track 15 : MPlant7149\_66, HermioneGrange\_68, BigMau\_68
- Track 16 : Marco3\_72
- Track 17 : Fenn\_72, Naira\_71
- Track 18 : Dexes\_66
- Track 19 : Atkinbua\_69
- Track 20 : Abrogate\_660
- Track 21 : JackSparrow\_69, CactusRose\_67, Crispicous1\_63
- Track 22 : HarryOW\_63
- Track 23 : Treddle\_66, Jorgensen\_71
- Track 24 : Zeeculate\_65
- Track 25 : McSinger\_63, Bigchungu\_64, Snazzy\_63, ShortQueendom\_57
- Track 26 : Wheeler\_68
- Track 27 : GrecoEtereo\_65
- Track 28 : Pelly\_68
- Track 29 : KyMonks1A\_70, Gyzlar\_61, Thor\_65, SarFire\_65
- Track 30 : Papez\_68, Alvin\_65
- Track 31 : Beatrix\_65
- Track 32 : GMonster\_64
- Track 33 : LilBib\_65
- Track 34 : Sanya\_62
- Track 35 : Lesedi\_62, Trouble\_66, Whitspit\_61, KSSJEB\_65
- Track 36 : Barriga\_68
- Track 37 : Raid\_66
- Track 38 : GageAP\_67, AFIS\_62
- Track 39 : Bethlehem\_67
- Track 40 : Pinto\_66, Kykar\_67, StewieG\_60, Petruchio\_68
- Track 41 : Nhonho\_65
- Track 42 : Graduation\_71
- Track 43 : Ruotula\_72
- Track 44 : PowerRanger\_65
- Track 45 : PascalRango\_63
- Track 46 : Rutherferd\_67
- Track 47 : Bxb1\_59
- Track 48 : Nerujay\_71
- Track 49 : Violet\_63
- Track 50 : Rowdy\_66, DustyMartin\_66, Shapes\_66
- Track 51 : Eaglepride\_66
- Track 52 : KittenMittens\_61, Severus\_62, Poompha\_61, Drake94\_62, PeaceMeal1\_62, Trike\_61
- Track 53 : RhynO\_64
- Track 54 : Rebeuca\_65, Kristoff\_63
- Track 55 : Goose\_65, Chupacabra\_62
- Track 56 : DontArgue\_61
- Track 57 : Twister\_63, WalterMcMickey\_63
- Track 58 : Topanga\_61, Edison31\_61
- Track 59 : OKCentral2016\_63
- Track 60 : Steamy\_66
- Track 61 : NicoleTera\_68
- Track 62 : Serenity\_74
- Track 63 : Popcicle\_67, Panamaxus\_65, Pocahontas\_66, Veracruz\_64, ResDef\_65, QuinnKiro\_66, Todacoro\_67, Margo\_67, Hookmount\_67, Norbert\_63, EtoileNova\_65

- Track 64 : JeppNRM\_72, HaveUMetTed\_72, PhishRPhriends\_68, Kalb97\_72, Gemma\_69, OlanP\_70, Manu\_71, ACFishhook\_69
- Track 65 : GingkoMaracino\_72, Gwennie\_67
- Track 66 : Mainiac\_71, Daishi\_71, JHC117\_68, Sabia\_70, Dieselweasel\_72, MadMarie\_70, Tiffany\_71
- Track 67 : Idleandcovert\_68, BlueBird\_70, Bugatti\_67, Clammy\_67, SaturnRing\_67, Giroux\_70, Pistachio\_67
- Track 68 : Heliosoles\_69, Groupthink\_72, Kalnoky\_72, Marius\_72, PurpleHaze\_71, Zetzy\_69
- Track 69 : Methuselah\_65, AgronaGT15\_69, Farber\_72, Soshari\_74, Wooldri\_74

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

The start number called the most often in the published annotations is 12, it was called in 215 of the 277 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- A6\_58, AFIS\_62, Abbyshoes\_68, Acme\_67, Adahisdi\_65, Aeneas\_69, Agaliana\_61, Ajay\_65, Aldrich\_61, Alsfro\_72, Altman\_68, Alvin\_65, Anglerfish\_66, Applejack\_66, Arcanine\_68, Arlo\_64, Ashballer\_69, Atkinbua\_69, BK1\_58, BPBiebs31\_69, BaconJack\_71, Barriga\_68, BarrowTuph\_67, Beatrix\_65, BeesKnees\_68, Bethlehem\_67, Bexan\_63, Big3\_66, BigMau\_68, BigPaolini\_62, Bigchungu\_64, Bigfoot\_59, BillKnuckles\_63, Bircsak\_66, Blackflame\_61, Blessor\_62, BluSpix\_64, Blue\_66, Bob3\_67, Bones\_64, Briton15\_70, Bruns\_68, Burton\_67, Buttons\_62, Bxb1\_59, CactusRose\_67, Carlyle\_67, CartmannCramer\_65, CatBus\_61, Chanagan\_59, ChristmasHams\_60, Ciao\_63, ConceptII\_70, Corvo\_66, Crispicous1\_63, Cueylyss\_65, DD5\_66, Dexes\_66, Doom\_63, DrFeelGood\_64, DreamCatcher\_68, Dreamboat\_68, Dulcie\_66, Dussy\_67, Dynamix\_67, Edtherson\_64, EnzoK\_66, Espresso\_63, Euphoria\_65, Eyeball\_67, Fajezeel\_66, Fascinus\_61, Fenn\_72, Forsytheast\_67, Francis47\_65, Froghopper\_63, Fushigi\_61, GMonster\_64, Gachnar\_66, GageAP\_67, Gandalf20\_68, Gompeii16\_66, Graduation\_71, GrecoEtereo\_65, Greg\_66, GroundGoblin\_62, Gwendoluna\_70, Gyzlar\_61, Hami1\_61, HanShotFirst\_67, HarryOW\_63, Hermia\_63, HermioneGrange\_68, Homines\_57, Hope4ever\_67, ILeeKay\_68, Ichabod\_70, IgnatiusPatJac\_66, Inyanga\_61, Iqorha\_61, JC27\_70, JackSparrow\_69, Jasper\_67, Jerm2\_67, Jorgensen\_71, JuliaChild\_67, KBG\_67, KSSJEB\_65, Kanely\_67, Kenmech\_70, KikiBouba\_63, Killigrew\_64, Kugel\_70, KyMonks1A\_70, Kykar\_67, Lamina13\_69, Lesedi\_62, Levia\_63, Licorice\_66, LilBib\_65, Lockley\_65, Lopton\_66, LunarLander\_65, MPlant7149\_66, Magnar\_65, Magnito\_67, Makemake\_72, Manatee\_66, Marcell\_62, Marchy\_59, Marco3\_72, Marge\_62, Maroc7\_65, Marsha\_66, MaryBeth\_63, McGuire\_66, McSinger\_63, MetalQZJ\_62, Michley\_70, MilleFeuille\_62, Mkhuseli\_61, Molly\_67, Monet\_68, Moose\_67, MrGordo\_69, Mryolo\_64, Mule\_63, Museum\_68, NEHalo\_63, Naira\_71, Nerujay\_71, Nhonho\_65, Niza\_68, Norz\_65, Noxious\_62, Ohno789\_67, Oogway\_64, PSullivan\_64, PacerPaul\_66, Papez\_68, Paphu\_65, Paraselene\_67, Pari\_70, Parliament\_67, PascalRango\_63, PattyP\_68, Payneful\_63, Pelly\_68, Pepe\_64, Perseus\_64, Peterson\_69, Petp2012\_69, Petruchio\_68, PherrisBueller\_67, PhineBark\_65, Phlippers\_61, PhrostyMug\_66, PinkPlastic\_65, Pinto\_66, Pippin\_65, Pita2\_67, PowerRanger\_65, ProMouse\_67, Puppet\_63, QTRlifeCrisis\_67, Raid\_66, Rajelicia\_66, Rhynn\_62, RidgeCB\_66, Ringer\_69, Rohr\_67, Rubeus\_65, Rufus\_68,

Ruotula\_72, Rutherferd\_67, STLscum\_75, Sagefire\_67, Sandaddy\_63, SarFire\_65, Scowl\_67, ShortQueendom\_57, Sibs6\_68, SkiPole\_74, Slagathor\_68, Smairt\_68, Smeagol\_68, Snazzy\_63, Solon\_64, Sorpresa\_64, SpikeBT\_64, Squee\_69, StewieG\_60, StrongArm\_64, Sumter\_62, Sunshine924\_71, SwissCheese\_69, Switzer\_67, Swole\_67, Target\_69, Tasp14\_69, Teodoridan\_65, TheloniousMonk\_70, Thor\_65, Topgun\_63, Tote\_62, Traft412\_69, Treddle\_66, Tripl3t\_70, Trouble\_66, Turj99\_64, TwoPeat\_67, U2\_62, Violet\_63, Watermelon\_65, Wheeler\_68, Whitspit\_61, Wilkins\_64, Zeeculate\_65, Zephyr\_67, Zeuska\_71,

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

- Abrogate\_660, BlueBird\_70, Bugatti\_67, Clammy\_67, EtoileNova\_65, Giroux\_70, Hookmount\_67, Idleandcovert\_68, Margo\_67, Norbert\_63, Panamaxus\_65, Pistachio\_67, Pocahontas\_66, Popcicle\_67, QuinnKiro\_66, ResDef\_65, Sanya\_62, SaturnRing\_67, Todacoro\_67, Veracruz\_64,

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

- ACFishhook\_69, AgronaGT15\_69, Chupacabra\_62, Daishi\_71, Dieselweasel\_72, DontArgue\_61, Drake94\_62, DustyMartin\_66, Eaglepride\_66, Edison31\_61, Farber\_72, Gemma\_69, GingkoMaracino\_72, Goose\_65, Groupthink\_72, Gwennie\_67, HaveUMetTed\_72, Heliosoles\_69, JHC117\_68, JeppNRM\_72, Kalb97\_72, Kalnoky\_72, KittenMittens\_61, Kristoff\_63, MadMarie\_70, Mainiac\_71, Manu\_71, Marius\_72, Methuselah\_65, NicoleTera\_68, OKCentral2016\_63, OlanP\_70, PeaceMeal1\_62, PhishRPhriends\_68, Poompha\_61, PurpleHaze\_71, Rebeuca\_65, RhynO\_64, Rowdy\_66, Sabia\_70, Serenity\_74, Severus\_62, Shapes\_66, Soshari\_74, Steamy\_66, Tiffany\_71, Topanga\_61, Trike\_61, Twister\_63, WalterMcMickey\_63, Wooldri\_74, Zetzy\_69,

## Summary by start number:

Start 7:

- Found in 63 of 312 ( 20.2% ) of genes in pham
- Manual Annotations of this start: 50 of 277
- Called 92.1% of time when present
- Phage (with cluster) where this start called: ACFishhook\_69 (A3), AgronaGT15\_69 (A3), BlueBird\_70 (A3), Bugatti\_67 (A3), Chupacabra\_62 (A10), Clammy\_67 (A3), DontArgue\_61 (A10), Drake94\_62 (A10), DustyMartin\_66 (A10), Eaglepride\_66 (A10), Edison31\_61 (A10), EtoileNova\_65 (A3), Farber\_72 (A3), Gemma\_69 (A3), Giroux\_70 (A3), Goose\_65 (A10), Groupthink\_72 (A3), HaveUMetTed\_72 (A3), Heliosoles\_69 (A3), Hookmount\_67 (A3), Idleandcovert\_68 (A3), JeppNRM\_72 (A3), Kalb97\_72 (A3), Kalnoky\_72 (A3), KittenMittens\_61 (A10), Kristoff\_63 (A10), Manu\_71 (A3), Margo\_67 (A3), Marius\_72 (A3), Methuselah\_65 (A3), Norbert\_63 (A3), OKCentral2016\_63 (A10), OlanP\_70 (A3), Panamaxus\_65 (A3), PeaceMeal1\_62 (A10), PhishRPhriends\_68 (A3), Pistachio\_67 (A3), Pocahontas\_66 (A3), Poompha\_61 (A10), Popcicle\_67 (A3), PurpleHaze\_71 (A3), QuinnKiro\_66 (A3), Rebeuca\_65 (A10), ResDef\_65 (A3), RhynO\_64 (A10), Rowdy\_66 (A10), SaturnRing\_67 (A3), Severus\_62 (A10), Shapes\_66 (A10), Soshari\_74 (A3), Todacoro\_67 (A3), Topanga\_61 (A10), Trike\_61 (A10), Twister\_63 (A10), Veracruz\_64 (A3), WalterMcMickey\_63 (A10), Wooldri\_74 (A3), Zetzy\_69 (A3),

Start 9:

- Found in 1 of 312 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 277
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Steamy\_66 (A12),

Start 12:

- Found in 260 of 312 ( 83.3% ) of genes in pham
- Manual Annotations of this start: 215 of 277
- Called 92.3% of time when present
- Phage (with cluster) where this start called: A6\_58 (A1), AFIS\_62 (A1), Abbyshoes\_68 (A1), Acme\_67 (A1), Adahisdi\_65 (A1), Aeneas\_69 (A1), Agaliana\_61 (A1), Ajay\_65 (A1), Aldrich\_61 (A1), Alsfro\_72 (A1), Altman\_68 (A1), Alvin\_65 (A1), Anglerfish\_66 (A1), Applejack\_66 (A1), Arcanine\_68 (A1), Arlo\_64 (A1), Ashballer\_69 (A1), Atkinbua\_69 (A1), BK1\_58 (A1), BPBiebs31\_69 (A1), BaconJack\_71 (A1), Barriga\_68 (A1), BarrowTuph\_67 (A1), Beatrix\_65 (A1), BeesKnees\_68 (A1), Bethlehem\_67 (A1), Bexan\_63 (A1), Big3\_66 (A1), BigMau\_68 (A1), BigPaolini\_62 (A1), Bigchung\_64 (A1), Bigfoot\_59 (A1), BillKnuckles\_63 (A1), Bircsak\_66 (A1), Blackflame\_61 (A1), Blesser\_62 (A1), BluSpix\_64 (A1), Blue\_66 (A1), Bob3\_67 (A1), Bones\_64 (A1), Briton15\_70 (A1), Bruns\_68 (A1), Burton\_67 (A1), Buttons\_62 (A1), Bxb1\_59 (A1), CactusRose\_67 (A1), Carlyle\_67 (A1), CartmannCramer\_65 (A1), CatBus\_61 (A1), Chanagan\_59 (A1), ChristmasHams\_60 (A1), Ciao\_63 (A1), ConceptII\_70 (A1), Corvo\_66 (A1), Crispicous1\_63 (A1), Cueylyss\_65 (A1), DD5\_66 (A1), Dexes\_66 (A1), Doom\_63 (A1), DrFeelGood\_64 (A1), DreamCatcher\_68 (A1), Dreamboat\_68 (A1), Dulcie\_66 (A1), Dussy\_67 (A1), Dynamix\_67 (A1), Edtherson\_64 (A1), EnzoK\_66 (A1), Espresso\_63 (A1), Euphoria\_65 (A1), Eyeball\_67 (A1), Fajezeel\_66 (A1), Fascinus\_61 (A1), Fenn\_72 (A1), Forsytheast\_67 (A1), Francis47\_65 (A1), FrogHopper\_63 (A1), Fushigi\_61 (A1), GMonster\_64 (A1), Gachnar\_66 (A1), GageAP\_67 (A1), Gandalf20\_68 (A1), Gompeii16\_66 (A1), Graduation\_71 (A1), GrecoEtereo\_65 (A1), Greg\_66 (A1), GroundGoblin\_62 (A1), Gwendoluna\_70 (A1), Gyzlar\_61 (A1), Hami1\_61 (A1), HanShotFirst\_67 (A1), HarryOW\_63 (A1), Hermia\_63 (A1), HermioneGrange\_68 (A1), Homines\_57 (A1), Hope4ever\_67 (A1), ILeeKay\_68 (A1), Ichabod\_70 (A1), IgnatiusPatJac\_66 (A1), Inyanga\_61 (A1), Iqorha\_61 (A1), JC27\_70 (A1), JackSparrow\_69 (A1), Jasper\_67 (A1), Jerm2\_67 (A1), Jorgensen\_71 (A1), JuliaChild\_67 (A1), KBG\_67 (A1), KSSJEB\_65 (A1), Kanely\_67 (A1), Kenmech\_70 (A1), KikiBouba\_63 (A1), Killigrew\_64 (A1), Kugel\_70 (A1), KyMonks1A\_70 (A1), Kykar\_67 (A1), Lamina13\_69 (A1), Lesedi\_62 (A1), Levia\_63 (A1), Licorice\_66 (A1), LilBib\_65 (A1), Lockley\_65 (A1), Lopton\_66 (A1), LunarLander\_65 (A1), MPlant7149\_66 (A1), Magnar\_65 (A1), Magnito\_67 (A1), Makemake\_72 (A1), Manatee\_66 (A1), Marcell\_62 (A1), Marchy\_59 (A1), Marco3\_72 (A1), Marge\_62 (A1), Maroc7\_65 (A1), Marsha\_66 (A1), MaryBeth\_63 (A1), McGuire\_66 (A1), McSinger\_63 (A1), MetalQZJ\_62 (A1), Michley\_70 (A1), MilleFeuille\_62 (A1), Mkhuse1\_61 (A1), Molly\_67 (A1), Monet\_68 (A1), Moose\_67 (A1), MrGordo\_69 (A1), Mryolo\_64 (A1), Mule\_63 (A1), Museum\_68 (A1), NEHalo\_63 (A1), Naira\_71 (A1), Nerujay\_71 (A1), Nhonho\_65 (A1), Niza\_68 (A1), Norz\_65 (A1), Noxious\_62 (A1), Ohno789\_67 (A1), Oogway\_64 (A1), PSullivan\_64 (A1), PacerPaul\_66 (A1), Papez\_68 (A1), Paphu\_65 (A1), Paraselene\_67 (A1), Pari\_70 (A1), Parliament\_67 (A1), PascalRango\_63 (A1), PattyP\_68 (A1), Payneful\_63 (A1), Pelly\_68 (A1), Pepe\_64 (A1), Perseus\_64 (A1), Peterson\_69 (A1), Petp2012\_69 (A1), Petruchio\_68 (A1), PherrisBueller\_67 (A1), PhineBark\_65 (A1), Phlippers\_61 (A1), PhrostyMug\_66 (A1), PinkPlastic\_65 (A1), Pinto\_66 (A1), Pippin\_65 (A1), Pita2\_67 (A1), PowerRanger\_65 (A1), ProMouse\_67 (A1), Puppet\_63 (A1), QTRLifeCrisis\_67 (A1), Raid\_66 (A1), Rajelicia\_66 (A1), Rhynn\_62 (A1), RidgeCB\_66 (A1), Ringer\_69 (A1), Rohr\_67 (A1), Rubeus\_65 (A1), Rufus\_68 (A1), Ruotula\_72 (A1), Rutherford\_67 (A1), STLscum\_75 (A1), Sagefire\_67 (A1), Sandaddy\_63 (A1), SarFire\_65 (A1), Scowl\_67 (A1), ShortQueendom\_57 (A1), Sibs6\_68 (A1), SkiPole\_74 (A1), Slagathor\_68 (A1), Smairt\_68 (A1), Smeagol\_68

(A1), Snazzy\_63 (A1), Solon\_64 (A1), Sorpresa\_64 (A1), SpikeBT\_64 (A1), Squee\_69 (A1), StewieG\_60 (A1), StrongArm\_64 (A1), Sumter\_62 (A1), Sunshine924\_71 (A1), SwissCheese\_69 (A1), Switzer\_67 (A1), Swole\_67 (A1), Target\_69 (A1), Tasp14\_69 (A1), Teodoridan\_65 (A1), TheloniousMonk\_70 (A1), Thor\_65 (A1), Topgun\_63 (A1), Tote\_62 (A1), Traft412\_69 (A1), Treddle\_66 (A1), Tripl3t\_70 (A1), Trouble\_66 (A1), Turj99\_64 (A1), TwoPeat\_67 (A1), U2\_62 (A1), Violet\_63 (A1), Watermelon\_65 (A1), Wheeler\_68 (A1), Whitspit\_61 (A1), Wilkins\_64 (A1), Zeecculate\_65 (A1), Zephyr\_67 (A1), Zeuska\_71 (A1),

#### Start 13:

- Found in 28 of 312 ( 9.0% ) of genes in pham
- Manual Annotations of this start: 8 of 277
- Called 32.1% of time when present
- Phage (with cluster) where this start called: Daishi\_71 (A3), Dieselweasel\_72 (A3), GingkoMaracino\_72 (A3), Gwennie\_67 (A3), JHC117\_68 (A3), MadMarie\_70 (A3), Mainiac\_71 (A3), Sabia\_70 (A3), Tiffany\_71 (A3),

#### Start 14:

- Found in 2 of 312 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 2 of 277
- Called 100.0% of time when present
- Phage (with cluster) where this start called: NicoleTera\_68 (A2), Serenity\_74 (A2),

#### Start 20:

- Found in 232 of 312 ( 74.4% ) of genes in pham
- Manual Annotations of this start: 1 of 277
- Called 0.9% of time when present
- Phage (with cluster) where this start called: Abrogate\_660 (A1), Sanya\_62 (A1),

### Summary by clusters:

There are 5 clusters represented in this pham: A1, A3, A2, A10, A12,

Info for manual annotations of cluster A1:

- Start number 12 was manually annotated 215 times for cluster A1.
- Start number 20 was manually annotated 1 time for cluster A1.

Info for manual annotations of cluster A10:

- Start number 7 was manually annotated 17 times for cluster A10.

Info for manual annotations of cluster A12:

- Start number 9 was manually annotated 1 time for cluster A12.

Info for manual annotations of cluster A2:

- Start number 14 was manually annotated 2 times for cluster A2.

Info for manual annotations of cluster A3:

- Start number 7 was manually annotated 33 times for cluster A3.
- Start number 13 was manually annotated 8 times for cluster A3.

### Gene Information:

Gene: A6\_58 Start: 40313, Stop: 40020, Start Num: 12

Candidate Starts for A6\_58:

(Start: 12 @40313 has 215 MA's), (Start: 20 @40268 has 1 MA's), (23, 40238), (26, 40190), (29, 40148),

Gene: ACFishhook\_69 Start: 42330, Stop: 42022, Start Num: 7

Candidate Starts for ACFishhook\_69:

(Start: 7 @42330 has 50 MA's), (Start: 13 @42312 has 8 MA's), (15, 42297), (19, 42276), (22, 42243), (26, 42192), (27, 42183), (28, 42156), (29, 42150), (30, 42141), (33, 42117),

Gene: AFIS\_62 Start: 41768, Stop: 41475, Start Num: 12

Candidate Starts for AFIS\_62:

(1, 42026), (3, 41990), (6, 41795), (Start: 12 @41768 has 215 MA's), (Start: 20 @41723 has 1 MA's), (23, 41693), (24, 41681), (26, 41645), (29, 41603),

Gene: Abbysshoes\_68 Start: 43272, Stop: 42979, Start Num: 12

Candidate Starts for Abbysshoes\_68:

(Start: 12 @43272 has 215 MA's), (Start: 20 @43227 has 1 MA's), (23, 43197), (26, 43149), (29, 43107),

Gene: Abrogate\_660 Start: 44316, Stop: 44068, Start Num: 20

Candidate Starts for Abrogate\_660:

(Start: 12 @44361 has 215 MA's), (Start: 20 @44316 has 1 MA's), (26, 44238), (29, 44196),

Gene: Acme\_67 Start: 42824, Stop: 42531, Start Num: 12

Candidate Starts for Acme\_67:

(6, 42851), (Start: 12 @42824 has 215 MA's), (Start: 20 @42779 has 1 MA's), (23, 42749), (26, 42701), (29, 42659),

Gene: Adahisdi\_65 Start: 43768, Stop: 43475, Start Num: 12

Candidate Starts for Adahisdi\_65:

(Start: 12 @43768 has 215 MA's), (Start: 20 @43723 has 1 MA's), (23, 43693), (26, 43645), (29, 43603),

Gene: Aeneas\_69 Start: 44571, Stop: 44278, Start Num: 12

Candidate Starts for Aeneas\_69:

(Start: 12 @44571 has 215 MA's), (Start: 20 @44526 has 1 MA's), (23, 44496), (26, 44448), (29, 44406),

Gene: Agaliana\_61 Start: 39647, Stop: 39354, Start Num: 12

Candidate Starts for Agaliana\_61:

(Start: 12 @39647 has 215 MA's), (Start: 20 @39602 has 1 MA's), (23, 39572), (26, 39524), (29, 39482),

Gene: AgronaGT15\_69 Start: 42290, Stop: 41982, Start Num: 7

Candidate Starts for AgronaGT15\_69:

(Start: 7 @42290 has 50 MA's), (Start: 13 @42272 has 8 MA's), (15, 42257), (19, 42236), (22, 42203), (26, 42152), (27, 42143), (28, 42116), (29, 42110), (33, 42077),

Gene: Ajay\_65 Start: 42714, Stop: 42421, Start Num: 12

Candidate Starts for Ajay\_65:

(Start: 12 @42714 has 215 MA's), (Start: 20 @42669 has 1 MA's), (23, 42639), (26, 42591), (29, 42549),

Gene: Aldrich\_61 Start: 42001, Stop: 41708, Start Num: 12

Candidate Starts for Aldrich\_61:

(6, 42028), (Start: 12 @42001 has 215 MA's), (23, 41926), (26, 41878), (29, 41836),

Gene: Alsfro\_72 Start: 43165, Stop: 42872, Start Num: 12

Candidate Starts for Alsfro\_72:

(Start: 12 @43165 has 215 MA's), (Start: 20 @43120 has 1 MA's), (23, 43090), (26, 43042), (29, 43000),

Gene: Altman\_68 Start: 42803, Stop: 42510, Start Num: 12

Candidate Starts for Altman\_68:

(6, 42830), (Start: 12 @42803 has 215 MA's), (Start: 20 @42758 has 1 MA's), (23, 42728), (24, 42716), (26, 42680), (29, 42638),

Gene: Alvin\_65 Start: 42599, Stop: 42303, Start Num: 12

Candidate Starts for Alvin\_65:

(Start: 12 @42599 has 215 MA's), (26, 42473), (29, 42431),

Gene: Anglerfish\_66 Start: 42975, Stop: 42682, Start Num: 12

Candidate Starts for Anglerfish\_66:

(6, 43002), (Start: 12 @42975 has 215 MA's), (Start: 20 @42930 has 1 MA's), (23, 42900), (26, 42852), (29, 42810),

Gene: Applejack\_66 Start: 41373, Stop: 41080, Start Num: 12

Candidate Starts for Applejack\_66:

(6, 41400), (Start: 12 @41373 has 215 MA's), (Start: 20 @41328 has 1 MA's), (23, 41298), (24, 41286), (26, 41250), (29, 41208),

Gene: Arcanine\_68 Start: 43699, Stop: 43406, Start Num: 12

Candidate Starts for Arcanine\_68:

(6, 43726), (Start: 12 @43699 has 215 MA's), (Start: 20 @43654 has 1 MA's), (23, 43624), (26, 43576), (29, 43534),

Gene: Arlo\_64 Start: 42290, Stop: 41997, Start Num: 12

Candidate Starts for Arlo\_64:

(6, 42317), (Start: 12 @42290 has 215 MA's), (Start: 20 @42245 has 1 MA's), (23, 42215), (26, 42167), (29, 42125),

Gene: Ashballer\_69 Start: 43449, Stop: 43156, Start Num: 12

Candidate Starts for Ashballer\_69:

(6, 43476), (Start: 12 @43449 has 215 MA's), (Start: 20 @43404 has 1 MA's), (23, 43374), (24, 43362), (26, 43326), (29, 43284),

Gene: Atkinbua\_69 Start: 42674, Stop: 42381, Start Num: 12

Candidate Starts for Atkinbua\_69:

(6, 42701), (Start: 12 @42674 has 215 MA's), (Start: 20 @42629 has 1 MA's), (23, 42599), (26, 42551), (29, 42509), (36, 42404),

Gene: BK1\_58 Start: 40313, Stop: 40020, Start Num: 12

Candidate Starts for BK1\_58:

(Start: 12 @40313 has 215 MA's), (Start: 20 @40268 has 1 MA's), (23, 40238), (26, 40190), (29, 40148),

Gene: BPBiebs31\_69 Start: 43396, Stop: 43103, Start Num: 12

Candidate Starts for BPBiebs31\_69:

(6, 43423), (Start: 12 @43396 has 215 MA's), (Start: 20 @43351 has 1 MA's), (23, 43321), (24, 43309), (26, 43273), (29, 43231),

Gene: BaconJack\_71 Start: 45661, Stop: 45368, Start Num: 12

Candidate Starts for BaconJack\_71:

(6, 45688), (Start: 12 @45661 has 215 MA's), (Start: 20 @45616 has 1 MA's), (23, 45586), (26, 45538), (29, 45496),

Gene: Barriga\_68 Start: 41452, Stop: 41159, Start Num: 12

Candidate Starts for Barriga\_68:

(6, 41479), (Start: 12 @41452 has 215 MA's), (Start: 20 @41407 has 1 MA's), (23, 41377), (24, 41365), (26, 41329), (29, 41287),

Gene: BarrowTuph\_67 Start: 42484, Stop: 42191, Start Num: 12

Candidate Starts for BarrowTuph\_67:

(Start: 12 @42484 has 215 MA's), (Start: 20 @42439 has 1 MA's), (23, 42409), (26, 42361), (29, 42319),

Gene: Beatrix\_65 Start: 43536, Stop: 43243, Start Num: 12

Candidate Starts for Beatrix\_65:

(8, 43563), (Start: 12 @43536 has 215 MA's), (Start: 20 @43491 has 1 MA's), (23, 43461), (26, 43413), (29, 43371),

Gene: BeesKnees\_68 Start: 42003, Stop: 41710, Start Num: 12

Candidate Starts for BeesKnees\_68:

(6, 42030), (Start: 12 @42003 has 215 MA's), (Start: 20 @41958 has 1 MA's), (23, 41928), (26, 41880), (29, 41838),

Gene: Bethlehem\_67 Start: 44314, Stop: 44021, Start Num: 12

Candidate Starts for Bethlehem\_67:

(8, 44341), (Start: 12 @44314 has 215 MA's), (Start: 20 @44269 has 1 MA's), (23, 44239), (26, 44191), (29, 44149),

Gene: Bexan\_63 Start: 43315, Stop: 43022, Start Num: 12

Candidate Starts for Bexan\_63:

(6, 43342), (Start: 12 @43315 has 215 MA's), (Start: 20 @43270 has 1 MA's), (23, 43240), (26, 43192), (29, 43150),

Gene: Big3\_66 Start: 43783, Stop: 43490, Start Num: 12

Candidate Starts for Big3\_66:

(Start: 12 @43783 has 215 MA's), (Start: 20 @43738 has 1 MA's), (23, 43708), (26, 43660), (29, 43618),

Gene: BigMau\_68 Start: 43204, Stop: 42911, Start Num: 12

Candidate Starts for BigMau\_68:

(2, 43432), (6, 43231), (Start: 12 @43204 has 215 MA's), (Start: 20 @43159 has 1 MA's), (23, 43129), (26, 43081), (29, 43039),

Gene: BigPaolini\_62 Start: 40440, Stop: 40147, Start Num: 12

Candidate Starts for BigPaolini\_62:

(Start: 12 @40440 has 215 MA's), (Start: 20 @40395 has 1 MA's), (23, 40365), (26, 40317), (29, 40275),

Gene: Bigchungi\_64 Start: 42232, Stop: 41939, Start Num: 12

Candidate Starts for Bigchungi\_64:

(6, 42259), (Start: 12 @42232 has 215 MA's), (Start: 20 @42187 has 1 MA's), (23, 42157), (26, 42109), (29, 42067),

Gene: Bigfoot\_59 Start: 41835, Stop: 41542, Start Num: 12

Candidate Starts for Bigfoot\_59:

(6, 41862), (Start: 12 @41835 has 215 MA's), (Start: 20 @41790 has 1 MA's), (23, 41760), (24, 41748), (26, 41712), (29, 41670),

Gene: BillKnuckles\_63 Start: 43835, Stop: 43542, Start Num: 12

Candidate Starts for BillKnuckles\_63:

(Start: 12 @43835 has 215 MA's), (Start: 20 @43790 has 1 MA's), (23, 43760), (26, 43712), (29, 43670),

Gene: Bircsak\_66 Start: 44564, Stop: 44271, Start Num: 12

Candidate Starts for Bircsak\_66:

(Start: 12 @44564 has 215 MA's), (Start: 20 @44519 has 1 MA's), (23, 44489), (26, 44441), (29, 44399),

Gene: Blackflame\_61 Start: 41979, Stop: 41686, Start Num: 12

Candidate Starts for Blackflame\_61:

(Start: 12 @41979 has 215 MA's), (Start: 20 @41934 has 1 MA's), (23, 41904), (26, 41856), (29, 41814),

Gene: Blessor\_62 Start: 41585, Stop: 41292, Start Num: 12

Candidate Starts for Blessor\_62:

(Start: 12 @41585 has 215 MA's), (Start: 20 @41540 has 1 MA's), (23, 41510), (26, 41462), (29, 41420),

Gene: BluSpix\_64 Start: 38419, Stop: 38126, Start Num: 12

Candidate Starts for BluSpix\_64:

(6, 38446), (Start: 12 @38419 has 215 MA's), (Start: 20 @38374 has 1 MA's), (23, 38344), (26, 38296), (29, 38254),

Gene: Blue\_66 Start: 43535, Stop: 43242, Start Num: 12

Candidate Starts for Blue\_66:

(6, 43562), (Start: 12 @43535 has 215 MA's), (Start: 20 @43490 has 1 MA's), (23, 43460), (26, 43412), (29, 43370),

Gene: BlueBird\_70 Start: 42204, Stop: 41836, Start Num: 7

Candidate Starts for BlueBird\_70:

(Start: 7 @42204 has 50 MA's), (10, 42183), (Start: 12 @42171 has 215 MA's), (16, 42147), (31, 41997), (33, 41979), (35, 41958),

Gene: Bob3\_67 Start: 42474, Stop: 42181, Start Num: 12

Candidate Starts for Bob3\_67:

(6, 42501), (Start: 12 @42474 has 215 MA's), (Start: 20 @42429 has 1 MA's), (23, 42399), (26, 42351), (29, 42309),

Gene: Bones\_64 Start: 43490, Stop: 43197, Start Num: 12

Candidate Starts for Bones\_64:

(Start: 7 @43526 has 50 MA's), (Start: 12 @43490 has 215 MA's), (Start: 20 @43445 has 1 MA's), (23, 43415), (26, 43367), (29, 43325),

Gene: Briton15\_70 Start: 44278, Stop: 43985, Start Num: 12

Candidate Starts for Briton15\_70:

(6, 44305), (Start: 12 @44278 has 215 MA's), (Start: 20 @44233 has 1 MA's), (23, 44203), (26, 44155), (29, 44113),

Gene: Bruns\_68 Start: 42415, Stop: 42122, Start Num: 12

Candidate Starts for Bruns\_68:

(6, 42442), (Start: 12 @42415 has 215 MA's), (Start: 20 @42370 has 1 MA's), (23, 42340), (24, 42328), (26, 42292), (29, 42250),

Gene: Bugatti\_67 Start: 42204, Stop: 41836, Start Num: 7

Candidate Starts for Bugatti\_67:

(Start: 7 @42204 has 50 MA's), (10, 42183), (Start: 12 @42171 has 215 MA's), (16, 42147), (31, 41997), (33, 41979), (35, 41958),

Gene: Burton\_67 Start: 44237, Stop: 43944, Start Num: 12

Candidate Starts for Burton\_67:

(6, 44264), (Start: 12 @44237 has 215 MA's), (Start: 20 @44192 has 1 MA's), (23, 44162), (26, 44114), (29, 44072),

Gene: Buttons\_62 Start: 39954, Stop: 39661, Start Num: 12

Candidate Starts for Buttons\_62:

(6, 39981), (Start: 12 @39954 has 215 MA's), (Start: 20 @39909 has 1 MA's), (23, 39879), (26, 39831), (29, 39789),

Gene: Bxb1\_59 Start: 41067, Stop: 40774, Start Num: 12

Candidate Starts for Bxb1\_59:

(6, 41094), (Start: 12 @41067 has 215 MA's), (Start: 20 @41022 has 1 MA's), (23, 40992), (24, 40980), (26, 40944), (29, 40902),

Gene: CactusRose\_67 Start: 42855, Stop: 42562, Start Num: 12

Candidate Starts for CactusRose\_67:

(6, 42882), (Start: 12 @42855 has 215 MA's), (Start: 20 @42810 has 1 MA's), (23, 42780), (26, 42732), (29, 42690),

Gene: Carlyle\_67 Start: 41641, Stop: 41348, Start Num: 12

Candidate Starts for Carlyle\_67:

(Start: 12 @41641 has 215 MA's), (Start: 20 @41596 has 1 MA's), (23, 41566), (26, 41518), (29, 41476),

Gene: CartmannCramer\_65 Start: 44511, Stop: 44218, Start Num: 12

Candidate Starts for CartmannCramer\_65:

(6, 44538), (Start: 12 @44511 has 215 MA's), (Start: 20 @44466 has 1 MA's), (23, 44436), (26, 44388), (29, 44346),

Gene: CatBus\_61 Start: 42193, Stop: 41900, Start Num: 12

Candidate Starts for CatBus\_61:

(6, 42220), (Start: 12 @42193 has 215 MA's), (23, 42118), (26, 42070), (29, 42028),

Gene: Chanagan\_59 Start: 40048, Stop: 39755, Start Num: 12

Candidate Starts for Chanagan\_59:

(6, 40075), (Start: 12 @40048 has 215 MA's), (Start: 20 @40003 has 1 MA's), (23, 39973), (26, 39925), (29, 39883),

Gene: ChristmasHams\_60 Start: 40214, Stop: 39921, Start Num: 12

Candidate Starts for ChristmasHams\_60:

(Start: 12 @40214 has 215 MA's), (Start: 20 @40169 has 1 MA's), (23, 40139), (26, 40091), (29, 40049),

Gene: Chupacabra\_62 Start: 41312, Stop: 41004, Start Num: 7

Candidate Starts for Chupacabra\_62:

(Start: 7 @41312 has 50 MA's), (15, 41270), (19, 41246), (30, 41123), (33, 41099), (37, 41024),

Gene: Ciao\_63 Start: 41412, Stop: 41119, Start Num: 12

Candidate Starts for Ciao\_63:

(6, 41439), (Start: 12 @41412 has 215 MA's), (Start: 20 @41367 has 1 MA's), (23, 41337), (26, 41289), (29, 41247),

Gene: Clammy\_67 Start: 42204, Stop: 41836, Start Num: 7

Candidate Starts for Clammy\_67:

(Start: 7 @42204 has 50 MA's), (10, 42183), (Start: 12 @42171 has 215 MA's), (16, 42147), (31, 41997), (33, 41979), (35, 41958),

Gene: ConceptII\_70 Start: 44031, Stop: 43738, Start Num: 12

Candidate Starts for ConceptII\_70:

(6, 44058), (Start: 12 @44031 has 215 MA's), (Start: 20 @43986 has 1 MA's), (23, 43956), (26, 43908), (29, 43866),

Gene: Corvo\_66 Start: 43343, Stop: 43050, Start Num: 12

Candidate Starts for Corvo\_66:

(6, 43370), (Start: 12 @43343 has 215 MA's), (Start: 20 @43298 has 1 MA's), (23, 43268), (26, 43220), (29, 43178),

Gene: Crispicous1\_63 Start: 41754, Stop: 41461, Start Num: 12

Candidate Starts for Crispicous1\_63:

(6, 41781), (Start: 12 @41754 has 215 MA's), (Start: 20 @41709 has 1 MA's), (23, 41679), (26, 41631), (29, 41589),

Gene: Cueylyss\_65 Start: 43690, Stop: 43397, Start Num: 12

Candidate Starts for Cueylyss\_65:

(Start: 12 @43690 has 215 MA's), (Start: 20 @43645 has 1 MA's), (23, 43615), (24, 43603), (26, 43567), (29, 43525),

Gene: DD5\_66 Start: 43578, Stop: 43285, Start Num: 12

Candidate Starts for DD5\_66:

(6, 43605), (Start: 12 @43578 has 215 MA's), (Start: 20 @43533 has 1 MA's), (23, 43503), (26, 43455), (29, 43413),

Gene: Daishi\_71 Start: 41292, Stop: 41002, Start Num: 13

Candidate Starts for Daishi\_71:

(Start: 13 @41292 has 8 MA's), (15, 41277), (19, 41256), (22, 41223), (26, 41172), (27, 41163), (28, 41136), (29, 41130), (33, 41097),

Gene: Dexes\_66 Start: 43299, Stop: 43006, Start Num: 12

Candidate Starts for Dexes\_66:

(Start: 12 @43299 has 215 MA's), (Start: 20 @43254 has 1 MA's), (26, 43176), (29, 43134),

Gene: Dieselweasel\_72 Start: 42426, Stop: 42136, Start Num: 13

Candidate Starts for Dieselweasel\_72:

(Start: 13 @42426 has 8 MA's), (15, 42411), (19, 42390), (22, 42357), (26, 42306), (27, 42297), (28, 42270), (29, 42264), (33, 42231),

Gene: DontArgue\_61 Start: 40445, Stop: 40131, Start Num: 7

Candidate Starts for DontArgue\_61:

(Start: 7 @40445 has 50 MA's), (15, 40394), (19, 40370), (26, 40301), (31, 40244), (33, 40226), (34, 40217),

Gene: Doom\_63 Start: 42899, Stop: 42606, Start Num: 12

Candidate Starts for Doom\_63:

(Start: 12 @42899 has 215 MA's), (Start: 20 @42854 has 1 MA's), (23, 42824), (26, 42776), (29, 42734),

Gene: DrFeelGood\_64 Start: 41833, Stop: 41540, Start Num: 12

Candidate Starts for DrFeelGood\_64:

(6, 41860), (Start: 12 @41833 has 215 MA's), (Start: 20 @41788 has 1 MA's), (23, 41758), (26, 41710), (29, 41668),

Gene: Drake94\_62 Start: 40387, Stop: 40079, Start Num: 7

Candidate Starts for Drake94\_62:

(Start: 7 @40387 has 50 MA's), (15, 40345), (19, 40321), (26, 40249), (30, 40198), (33, 40174), (37, 40099),

Gene: DreamCatcher\_68 Start: 42983, Stop: 42690, Start Num: 12

Candidate Starts for DreamCatcher\_68:

(6, 43010), (Start: 12 @42983 has 215 MA's), (Start: 20 @42938 has 1 MA's), (23, 42908), (26, 42860), (29, 42818),

Gene: Dreamboat\_68 Start: 42073, Stop: 41780, Start Num: 12

Candidate Starts for Dreamboat\_68:

(6, 42100), (Start: 12 @42073 has 215 MA's), (Start: 20 @42028 has 1 MA's), (23, 41998), (26, 41950), (29, 41908),

Gene: Dulcie\_66 Start: 44308, Stop: 44015, Start Num: 12

Candidate Starts for Dulcie\_66:

(Start: 12 @44308 has 215 MA's), (Start: 20 @44263 has 1 MA's), (23, 44233), (26, 44185), (29, 44143),

Gene: Dussy\_67 Start: 43292, Stop: 42999, Start Num: 12

Candidate Starts for Dussy\_67:

(Start: 12 @43292 has 215 MA's), (Start: 20 @43247 has 1 MA's), (23, 43217), (26, 43169), (29, 43127),

Gene: DustyMartin\_66 Start: 41423, Stop: 41115, Start Num: 7

Candidate Starts for DustyMartin\_66:

(Start: 7 @41423 has 50 MA's), (15, 41381), (19, 41357), (26, 41285), (31, 41228), (33, 41210), (37, 41135),

Gene: Dynamix\_67 Start: 41907, Stop: 41614, Start Num: 12

Candidate Starts for Dynamix\_67:

(6, 41934), (Start: 12 @41907 has 215 MA's), (Start: 20 @41862 has 1 MA's), (23, 41832), (26, 41784), (29, 41742),

Gene: Eaglepride\_66 Start: 41419, Stop: 41111, Start Num: 7

Candidate Starts for Eaglepride\_66:

(Start: 7 @41419 has 50 MA's), (11, 41401), (15, 41377), (19, 41353), (26, 41281), (31, 41224), (33, 41206), (34, 41197), (37, 41131),

Gene: Edison31\_61 Start: 41187, Stop: 40879, Start Num: 7

Candidate Starts for Edison31\_61:

(Start: 7 @41187 has 50 MA's), (15, 41145), (19, 41121), (30, 40998), (31, 40992), (33, 40974), (37, 40899),

Gene: Edtherson\_64 Start: 42893, Stop: 42600, Start Num: 12

Candidate Starts for Edtherson\_64:

(6, 42920), (Start: 12 @42893 has 215 MA's), (Start: 20 @42848 has 1 MA's), (23, 42818), (26, 42770), (29, 42728),

Gene: EnzoK\_66 Start: 40168, Stop: 39875, Start Num: 12

Candidate Starts for EnzoK\_66:

(Start: 12 @40168 has 215 MA's), (Start: 20 @40123 has 1 MA's), (23, 40093), (26, 40045), (29, 40003),

Gene: Espresso\_63 Start: 42517, Stop: 42224, Start Num: 12

Candidate Starts for Espresso\_63:

(Start: 12 @42517 has 215 MA's), (Start: 20 @42472 has 1 MA's), (23, 42442), (24, 42430), (26, 42394), (29, 42352),

Gene: EtoileNova\_65 Start: 42164, Stop: 41793, Start Num: 7

Candidate Starts for EtoileNova\_65:

(Start: 7 @42164 has 50 MA's), (Start: 12 @42131 has 215 MA's), (16, 42107), (26, 42011), (31, 41954), (33, 41936), (35, 41915),

Gene: Euphoria\_65 Start: 42359, Stop: 42066, Start Num: 12

Candidate Starts for Euphoria\_65:

(6, 42386), (Start: 12 @42359 has 215 MA's), (Start: 20 @42314 has 1 MA's), (23, 42284), (26, 42236), (29, 42194),

Gene: Eyeball\_67 Start: 43398, Stop: 43105, Start Num: 12

Candidate Starts for Eyeball\_67:

(Start: 7 @43434 has 50 MA's), (Start: 12 @43398 has 215 MA's), (Start: 20 @43353 has 1 MA's), (23, 43323), (26, 43275), (29, 43233),

Gene: Fajezeel\_66 Start: 42114, Stop: 41821, Start Num: 12

Candidate Starts for Fajezeel\_66:

(6, 42141), (Start: 12 @42114 has 215 MA's), (Start: 20 @42069 has 1 MA's), (23, 42039), (26, 41991), (29, 41949),

Gene: Farber\_72 Start: 42431, Stop: 42123, Start Num: 7

Candidate Starts for Farber\_72:

(Start: 7 @42431 has 50 MA's), (Start: 13 @42413 has 8 MA's), (15, 42398), (19, 42377), (22, 42344), (26, 42293), (27, 42284), (28, 42257), (29, 42251), (33, 42218),

Gene: Fascinus\_61 Start: 42349, Stop: 42056, Start Num: 12

Candidate Starts for Fascinus\_61:

(6, 42376), (Start: 12 @42349 has 215 MA's), (Start: 20 @42304 has 1 MA's), (23, 42274), (24, 42262), (26, 42226), (29, 42184),

Gene: Fenn\_72 Start: 44750, Stop: 44457, Start Num: 12

Candidate Starts for Fenn\_72:

(6, 44795), (8, 44777), (Start: 12 @44750 has 215 MA's), (Start: 20 @44705 has 1 MA's), (23, 44675), (26, 44627), (29, 44585),

Gene: Forsytheast\_67 Start: 42412, Stop: 42119, Start Num: 12

Candidate Starts for Forsytheast\_67:

(6, 42439), (Start: 12 @42412 has 215 MA's), (Start: 20 @42367 has 1 MA's), (23, 42337), (26, 42289), (29, 42247),

Gene: Francis47\_65 Start: 43491, Stop: 43198, Start Num: 12

Candidate Starts for Francis47\_65:

(Start: 12 @43491 has 215 MA's), (Start: 20 @43446 has 1 MA's), (23, 43416), (26, 43368), (29, 43326),

Gene: Froghopper\_63 Start: 41471, Stop: 41178, Start Num: 12

Candidate Starts for Froghopper\_63:

(6, 41498), (Start: 12 @41471 has 215 MA's), (Start: 20 @41426 has 1 MA's), (23, 41396), (26, 41348), (29, 41306),

Gene: Fushigi\_61 Start: 40434, Stop: 40141, Start Num: 12

Candidate Starts for Fushigi\_61:

(6, 40461), (Start: 12 @40434 has 215 MA's), (Start: 20 @40389 has 1 MA's), (23, 40359), (26, 40311), (29, 40269),

Gene: GMonster\_64 Start: 42254, Stop: 41961, Start Num: 12

Candidate Starts for GMonster\_64:

(6, 42281), (Start: 12 @42254 has 215 MA's), (Start: 20 @42209 has 1 MA's), (23, 42179), (26, 42131),

Gene: Gachnar\_66 Start: 42948, Stop: 42655, Start Num: 12

Candidate Starts for Gachnar\_66:

(Start: 12 @42948 has 215 MA's), (Start: 20 @42903 has 1 MA's), (23, 42873), (26, 42825), (29, 42783),

Gene: GageAP\_67 Start: 43435, Stop: 43142, Start Num: 12

Candidate Starts for GageAP\_67:

(1, 43693), (3, 43657), (6, 43462), (Start: 12 @43435 has 215 MA's), (Start: 20 @43390 has 1 MA's), (23, 43360), (24, 43348), (26, 43312), (29, 43270),

Gene: Gandalf20\_68 Start: 43802, Stop: 43509, Start Num: 12

Candidate Starts for Gandalf20\_68:

(Start: 12 @43802 has 215 MA's), (Start: 20 @43757 has 1 MA's), (23, 43727), (24, 43715), (26, 43679), (29, 43637),

Gene: Gemma\_69 Start: 42254, Stop: 41946, Start Num: 7

Candidate Starts for Gemma\_69:

(Start: 7 @42254 has 50 MA's), (Start: 13 @42236 has 8 MA's), (15, 42221), (19, 42200), (22, 42167), (26, 42116), (27, 42107), (28, 42080), (29, 42074), (30, 42065), (33, 42041),

Gene: GingkoMaracino\_72 Start: 42309, Stop: 42019, Start Num: 13

Candidate Starts for GingkoMaracino\_72:

(Start: 7 @42327 has 50 MA's), (Start: 13 @42309 has 8 MA's), (15, 42294), (19, 42273), (22, 42240), (26, 42189), (27, 42180), (28, 42153), (29, 42147), (33, 42114),

Gene: Giroux\_70 Start: 42203, Stop: 41835, Start Num: 7

Candidate Starts for Giroux\_70:

(Start: 7 @42203 has 50 MA's), (10, 42182), (Start: 12 @42170 has 215 MA's), (16, 42146), (31, 41996), (33, 41978), (35, 41957),

Gene: Gompeii16\_66 Start: 44565, Stop: 44272, Start Num: 12

Candidate Starts for Gompeii16\_66:

(Start: 12 @44565 has 215 MA's), (Start: 20 @44520 has 1 MA's), (23, 44490), (26, 44442), (29, 44400),

Gene: Goose\_65 Start: 41128, Stop: 40820, Start Num: 7

Candidate Starts for Goose\_65:

(Start: 7 @41128 has 50 MA's), (15, 41086), (19, 41062), (30, 40939), (33, 40915), (37, 40840),

Gene: Graduation\_71 Start: 44181, Stop: 43888, Start Num: 12

Candidate Starts for Graduation\_71:

(6, 44208), (Start: 12 @44181 has 215 MA's), (Start: 20 @44136 has 1 MA's), (23, 44106), (24, 44094), (26, 44058), (29, 44016),

Gene: GrecoEtereo\_65 Start: 41688, Stop: 41395, Start Num: 12

Candidate Starts for GrecoEtereo\_65:

(6, 41715), (Start: 12 @41688 has 215 MA's), (Start: 20 @41643 has 1 MA's), (23, 41613), (26, 41565), (29, 41523),

Gene: Greg\_66 Start: 42114, Stop: 41821, Start Num: 12

Candidate Starts for Greg\_66:

(6, 42141), (Start: 12 @42114 has 215 MA's), (Start: 20 @42069 has 1 MA's), (23, 42039), (26, 41991), (29, 41949),

Gene: GroundGoblin\_62 Start: 42143, Stop: 41850, Start Num: 12

Candidate Starts for GroundGoblin\_62:

(6, 42170), (Start: 12 @42143 has 215 MA's), (23, 42068), (26, 42020), (29, 41978),

Gene: Groupthink\_72 Start: 42258, Stop: 41950, Start Num: 7

Candidate Starts for Groupthink\_72:

(Start: 7 @42258 has 50 MA's), (Start: 13 @42240 has 8 MA's), (15, 42225), (19, 42204), (22, 42171), (26, 42120), (27, 42111), (28, 42084), (29, 42078), (33, 42045),

Gene: Gwendoluna\_70 Start: 44629, Stop: 44336, Start Num: 12

Candidate Starts for Gwendoluna\_70:

(6, 44656), (Start: 12 @44629 has 215 MA's), (Start: 20 @44584 has 1 MA's), (23, 44554), (26, 44506), (29, 44464),

Gene: Gwennie\_67 Start: 42427, Stop: 42137, Start Num: 13

Candidate Starts for Gwennie\_67:

(Start: 7 @42445 has 50 MA's), (Start: 13 @42427 has 8 MA's), (15, 42412), (19, 42391), (22, 42358), (26, 42307), (27, 42298), (28, 42271), (29, 42265), (33, 42232),

Gene: Gyzlar\_61 Start: 40384, Stop: 40091, Start Num: 12

Candidate Starts for Gyzlar\_61:

(6, 40411), (Start: 12 @40384 has 215 MA's), (Start: 20 @40339 has 1 MA's), (26, 40261), (29, 40219),

Gene: Hami1\_61 Start: 38461, Stop: 38168, Start Num: 12

Candidate Starts for Hami1\_61:

(Start: 12 @38461 has 215 MA's), (Start: 20 @38416 has 1 MA's), (23, 38386), (26, 38338), (29, 38296),

Gene: HanShotFirst\_67 Start: 44227, Stop: 43934, Start Num: 12

Candidate Starts for HanShotFirst\_67:

(6, 44254), (Start: 12 @44227 has 215 MA's), (Start: 20 @44182 has 1 MA's), (23, 44152), (26, 44104), (29, 44062),

Gene: HarryOW\_63 Start: 42195, Stop: 41902, Start Num: 12

Candidate Starts for HarryOW\_63:

(6, 42222), (Start: 12 @42195 has 215 MA's), (23, 42120), (26, 42072), (29, 42030),

Gene: HaveUMetTed\_72 Start: 42243, Stop: 41935, Start Num: 7

Candidate Starts for HaveUMetTed\_72:

(Start: 7 @42243 has 50 MA's), (Start: 13 @42225 has 8 MA's), (15, 42210), (19, 42189), (22, 42156), (26, 42105), (27, 42096), (28, 42069), (29, 42063), (30, 42054), (33, 42030),

Gene: Heliosoles\_69 Start: 42261, Stop: 41953, Start Num: 7

Candidate Starts for Heliosoles\_69:

(Start: 7 @42261 has 50 MA's), (Start: 13 @42243 has 8 MA's), (15, 42228), (19, 42207), (22, 42174), (26, 42123), (27, 42114), (28, 42087), (29, 42081), (33, 42048),

Gene: Hermia\_63 Start: 42193, Stop: 41900, Start Num: 12

Candidate Starts for Hermia\_63:

(6, 42220), (Start: 12 @42193 has 215 MA's), (23, 42118), (26, 42070), (29, 42028),

Gene: HermioneGrange\_68 Start: 43698, Stop: 43405, Start Num: 12

Candidate Starts for HermioneGrange\_68:

(2, 43926), (6, 43725), (Start: 12 @43698 has 215 MA's), (Start: 20 @43653 has 1 MA's), (23, 43623), (26, 43575), (29, 43533),

Gene: Homines\_57 Start: 38523, Stop: 38230, Start Num: 12

Candidate Starts for Homines\_57:

(6, 38550), (Start: 12 @38523 has 215 MA's), (Start: 20 @38478 has 1 MA's), (23, 38448), (26, 38400), (29, 38358),

Gene: Hookmount\_67 Start: 42161, Stop: 41790, Start Num: 7

Candidate Starts for Hookmount\_67:

(Start: 7 @42161 has 50 MA's), (Start: 12 @42128 has 215 MA's), (16, 42104), (26, 42008), (31, 41951), (33, 41933), (35, 41912),

Gene: Hope4ever\_67 Start: 42682, Stop: 42389, Start Num: 12

Candidate Starts for Hope4ever\_67:

(6, 42709), (Start: 12 @42682 has 215 MA's), (Start: 20 @42637 has 1 MA's), (23, 42607), (26, 42559), (29, 42517),

Gene: ILeeKay\_68 Start: 42579, Stop: 42286, Start Num: 12

Candidate Starts for ILeeKay\_68:

(Start: 12 @42579 has 215 MA's), (Start: 20 @42534 has 1 MA's), (23, 42504), (26, 42456), (29, 42414),

Gene: Ichabod\_70 Start: 43792, Stop: 43499, Start Num: 12

Candidate Starts for Ichabod\_70:

(6, 43819), (Start: 12 @43792 has 215 MA's), (Start: 20 @43747 has 1 MA's), (23, 43717), (26, 43669), (29, 43627),

Gene: Idleandcovert\_68 Start: 42204, Stop: 41836, Start Num: 7

Candidate Starts for Idleandcovert\_68:

(Start: 7 @42204 has 50 MA's), (10, 42183), (Start: 12 @42171 has 215 MA's), (16, 42147), (31, 41997), (33, 41979), (35, 41958),

Gene: IgnatiusPatJac\_66 Start: 42364, Stop: 42071, Start Num: 12

Candidate Starts for IgnatiusPatJac\_66:

(6, 42391), (Start: 12 @42364 has 215 MA's), (Start: 20 @42319 has 1 MA's), (23, 42289), (26, 42241), (29, 42199),

Gene: Inyanga\_61 Start: 42487, Stop: 42194, Start Num: 12

Candidate Starts for Inyanga\_61:

(6, 42514), (Start: 12 @42487 has 215 MA's), (Start: 20 @42442 has 1 MA's), (23, 42412), (26, 42364), (29, 42322),

Gene: Iqorha\_61 Start: 42486, Stop: 42193, Start Num: 12

Candidate Starts for Iqorha\_61:

(6, 42513), (Start: 12 @42486 has 215 MA's), (Start: 20 @42441 has 1 MA's), (23, 42411), (26, 42363), (29, 42321),

Gene: JC27\_70 Start: 43426, Stop: 43133, Start Num: 12

Candidate Starts for JC27\_70:

(6, 43453), (Start: 12 @43426 has 215 MA's), (Start: 20 @43381 has 1 MA's), (23, 43351), (26, 43303), (29, 43261),

Gene: JHC117\_68 Start: 42422, Stop: 42132, Start Num: 13

Candidate Starts for JHC117\_68:

(Start: 13 @42422 has 8 MA's), (15, 42407), (19, 42386), (22, 42353), (26, 42302), (27, 42293), (28, 42266), (29, 42260), (33, 42227),

Gene: JackSparrow\_69 Start: 42909, Stop: 42616, Start Num: 12

Candidate Starts for JackSparrow\_69:

(6, 42936), (Start: 12 @42909 has 215 MA's), (Start: 20 @42864 has 1 MA's), (23, 42834), (26, 42786), (29, 42744),

Gene: Jasper\_67 Start: 41959, Stop: 41666, Start Num: 12

Candidate Starts for Jasper\_67:

(6, 41986), (Start: 12 @41959 has 215 MA's), (Start: 20 @41914 has 1 MA's), (23, 41884), (26, 41836), (29, 41794),

Gene: JeppNRM\_72 Start: 42259, Stop: 41951, Start Num: 7

Candidate Starts for JeppNRM\_72:

(Start: 7 @42259 has 50 MA's), (Start: 13 @42241 has 8 MA's), (15, 42226), (19, 42205), (22, 42172), (26, 42121), (27, 42112), (28, 42085), (29, 42079), (30, 42070), (33, 42046),

Gene: Jerm2\_67 Start: 43768, Stop: 43475, Start Num: 12

Candidate Starts for Jerm2\_67:

(6, 43795), (Start: 12 @43768 has 215 MA's), (Start: 20 @43723 has 1 MA's), (23, 43693), (26, 43645), (29, 43603),

Gene: Jorgensen\_71 Start: 43337, Stop: 43044, Start Num: 12

Candidate Starts for Jorgensen\_71:

(6, 43364), (Start: 12 @43337 has 215 MA's), (Start: 20 @43292 has 1 MA's), (23, 43262), (24, 43250), (26, 43214), (29, 43172),

Gene: JuliaChild\_67 Start: 43013, Stop: 42720, Start Num: 12

Candidate Starts for JuliaChild\_67:

(6, 43040), (Start: 12 @43013 has 215 MA's), (Start: 20 @42968 has 1 MA's), (23, 42938), (26, 42890), (29, 42848),

Gene: KBG\_67 Start: 44545, Stop: 44252, Start Num: 12

Candidate Starts for KBG\_67:

(Start: 12 @44545 has 215 MA's), (Start: 20 @44500 has 1 MA's), (23, 44470), (26, 44422), (29, 44380),

Gene: KSSJEB\_65 Start: 41821, Stop: 41528, Start Num: 12

Candidate Starts for KSSJEB\_65:

(Start: 12 @41821 has 215 MA's), (Start: 20 @41776 has 1 MA's), (23, 41746), (26, 41698), (29, 41656),

Gene: Kalb97\_72 Start: 42257, Stop: 41949, Start Num: 7

Candidate Starts for Kalb97\_72:

(Start: 7 @42257 has 50 MA's), (Start: 13 @42239 has 8 MA's), (15, 42224), (19, 42203), (22, 42170), (26, 42119), (27, 42110), (28, 42083), (29, 42077), (30, 42068), (33, 42044),

Gene: Kalnoky\_72 Start: 42255, Stop: 41947, Start Num: 7

Candidate Starts for Kalnoky\_72:

(Start: 7 @42255 has 50 MA's), (Start: 13 @42237 has 8 MA's), (15, 42222), (19, 42201), (22, 42168), (26, 42117), (27, 42108), (28, 42081), (29, 42075), (33, 42042),

Gene: Kanely\_67 Start: 42580, Stop: 42287, Start Num: 12

Candidate Starts for Kanely\_67:

(6, 42607), (Start: 12 @42580 has 215 MA's), (Start: 20 @42535 has 1 MA's), (23, 42505), (24, 42493), (26, 42457), (29, 42415),

Gene: Kenmech\_70 Start: 44418, Stop: 44125, Start Num: 12

Candidate Starts for Kenmech\_70:

(Start: 12 @44418 has 215 MA's), (Start: 20 @44373 has 1 MA's), (23, 44343), (26, 44295), (29, 44253),

Gene: KikiBouba\_63 Start: 42002, Stop: 41709, Start Num: 12

Candidate Starts for KikiBouba\_63:

(6, 42029), (Start: 12 @42002 has 215 MA's), (23, 41927), (26, 41879), (29, 41837),

Gene: Killigrew\_64 Start: 42625, Stop: 42332, Start Num: 12

Candidate Starts for Killigrew\_64:

(6, 42652), (Start: 12 @42625 has 215 MA's), (Start: 20 @42580 has 1 MA's), (23, 42550), (26, 42502), (29, 42460),

Gene: KittenMittens\_61 Start: 40395, Stop: 40087, Start Num: 7

Candidate Starts for KittenMittens\_61:

(Start: 7 @40395 has 50 MA's), (15, 40353), (19, 40329), (26, 40257), (30, 40206), (33, 40182), (37, 40107),

Gene: Kristoff\_63 Start: 41709, Stop: 41401, Start Num: 7

Candidate Starts for Kristoff\_63:

(Start: 7 @41709 has 50 MA's), (11, 41691), (15, 41667), (19, 41643), (30, 41520), (33, 41496), (37, 41421),

Gene: Kugel\_70 Start: 44438, Stop: 44145, Start Num: 12

Candidate Starts for Kugel\_70:

(6, 44465), (Start: 12 @44438 has 215 MA's), (Start: 20 @44393 has 1 MA's), (23, 44363), (26, 44315), (29, 44273),

Gene: KyMonks1A\_70 Start: 42786, Stop: 42493, Start Num: 12

Candidate Starts for KyMonks1A\_70:

(6, 42813), (Start: 12 @42786 has 215 MA's), (Start: 20 @42741 has 1 MA's), (26, 42663), (29, 42621),

Gene: Kykar\_67 Start: 43161, Stop: 42868, Start Num: 12

Candidate Starts for Kykar\_67:

(1, 43419), (3, 43383), (6, 43188), (Start: 12 @43161 has 215 MA's), (Start: 20 @43116 has 1 MA's), (23, 43086), (26, 43038), (29, 42996),

Gene: Lamina13\_69 Start: 43778, Stop: 43485, Start Num: 12

Candidate Starts for Lamina13\_69:

(Start: 12 @43778 has 215 MA's), (Start: 20 @43733 has 1 MA's), (23, 43703), (26, 43655), (29, 43613),

Gene: Lesedi\_62 Start: 40853, Stop: 40560, Start Num: 12

Candidate Starts for Lesedi\_62:

(Start: 12 @40853 has 215 MA's), (Start: 20 @40808 has 1 MA's), (23, 40778), (26, 40730), (29, 40688),

Gene: Levia\_63 Start: 41770, Stop: 41477, Start Num: 12

Candidate Starts for Levia\_63:

(Start: 12 @41770 has 215 MA's), (Start: 20 @41725 has 1 MA's), (23, 41695), (26, 41647), (29, 41605),

Gene: Licorice\_66 Start: 43887, Stop: 43594, Start Num: 12

Candidate Starts for Licorice\_66:

(6, 43914), (Start: 12 @43887 has 215 MA's), (Start: 20 @43842 has 1 MA's), (23, 43812), (26, 43764), (29, 43722),

Gene: LilBib\_65 Start: 43871, Stop: 43578, Start Num: 12

Candidate Starts for LilBib\_65:

(Start: 12 @43871 has 215 MA's), (Start: 20 @43826 has 1 MA's), (23, 43796), (26, 43748), (29, 43706),

Gene: Lockley\_65 Start: 42740, Stop: 42447, Start Num: 12

Candidate Starts for Lockley\_65:

(6, 42767), (Start: 12 @42740 has 215 MA's), (Start: 20 @42695 has 1 MA's), (23, 42665), (26, 42617), (29, 42575),

Gene: Lopton\_66 Start: 44440, Stop: 44147, Start Num: 12

Candidate Starts for Lopton\_66:

(6, 44467), (Start: 12 @44440 has 215 MA's), (Start: 20 @44395 has 1 MA's), (23, 44365), (26, 44317), (29, 44275),

Gene: LunarLander\_65 Start: 43066, Stop: 42773, Start Num: 12

Candidate Starts for LunarLander\_65:

(6, 43093), (Start: 12 @43066 has 215 MA's), (Start: 20 @43021 has 1 MA's), (23, 42991), (26, 42943), (29, 42901),

Gene: MPlant7149\_66 Start: 41586, Stop: 41293, Start Num: 12

Candidate Starts for MPlant7149\_66:

(2, 41814), (6, 41613), (Start: 12 @41586 has 215 MA's), (Start: 20 @41541 has 1 MA's), (23, 41511), (26, 41463), (29, 41421),

Gene: MadMarie\_70 Start: 42425, Stop: 42135, Start Num: 13

Candidate Starts for MadMarie\_70:

(Start: 13 @42425 has 8 MA's), (15, 42410), (19, 42389), (22, 42356), (26, 42305), (27, 42296), (28, 42269), (29, 42263), (33, 42230),

Gene: Magnar\_65 Start: 42659, Stop: 42366, Start Num: 12

Candidate Starts for Magnar\_65:

(6, 42686), (Start: 12 @42659 has 215 MA's), (Start: 20 @42614 has 1 MA's), (23, 42584), (26, 42536), (29, 42494),

Gene: Magnito\_67 Start: 42855, Stop: 42562, Start Num: 12

Candidate Starts for Magnito\_67:

(6, 42882), (Start: 12 @42855 has 215 MA's), (Start: 20 @42810 has 1 MA's), (23, 42780), (26, 42732), (29, 42690),

Gene: Mainiac\_71 Start: 42417, Stop: 42127, Start Num: 13

Candidate Starts for Mainiac\_71:

(Start: 13 @42417 has 8 MA's), (15, 42402), (19, 42381), (22, 42348), (26, 42297), (27, 42288), (28, 42261), (29, 42255), (33, 42222),

Gene: Makemake\_72 Start: 44876, Stop: 44583, Start Num: 12

Candidate Starts for Makemake\_72:

(Start: 12 @44876 has 215 MA's), (Start: 20 @44831 has 1 MA's), (23, 44801), (26, 44753), (29, 44711),

Gene: Manatee\_66 Start: 42327, Stop: 42034, Start Num: 12

Candidate Starts for Manatee\_66:

(Start: 12 @42327 has 215 MA's), (Start: 20 @42282 has 1 MA's), (23, 42252), (26, 42204), (29, 42162),

Gene: Manu\_71 Start: 42258, Stop: 41950, Start Num: 7

Candidate Starts for Manu\_71:

(Start: 7 @42258 has 50 MA's), (Start: 13 @42240 has 8 MA's), (15, 42225), (19, 42204), (22, 42171), (26, 42120), (27, 42111), (28, 42084), (29, 42078), (30, 42069), (33, 42045),

Gene: Marcell\_62 Start: 41366, Stop: 41073, Start Num: 12

Candidate Starts for Marcell\_62:

(6, 41393), (Start: 12 @41366 has 215 MA's), (Start: 20 @41321 has 1 MA's), (23, 41291), (26, 41243), (29, 41201),

Gene: Marchy\_59 Start: 39104, Stop: 38811, Start Num: 12

Candidate Starts for Marchy\_59:

(Start: 12 @39104 has 215 MA's), (Start: 20 @39059 has 1 MA's), (23, 39029), (26, 38981), (29, 38939),

Gene: Marco3\_72 Start: 45164, Stop: 44871, Start Num: 12

Candidate Starts for Marco3\_72:

(Start: 12 @45164 has 215 MA's), (Start: 20 @45119 has 1 MA's), (23, 45089), (26, 45041), (29, 44999),

Gene: Marge\_62 Start: 41896, Stop: 41603, Start Num: 12

Candidate Starts for Marge\_62:

(6, 41923), (Start: 12 @41896 has 215 MA's), (Start: 20 @41851 has 1 MA's), (23, 41821), (26, 41773), (29, 41731),

Gene: Margo\_67 Start: 42186, Stop: 41815, Start Num: 7

Candidate Starts for Margo\_67:

(Start: 7 @42186 has 50 MA's), (Start: 12 @42153 has 215 MA's), (16, 42129), (26, 42033), (31, 41976), (33, 41958), (35, 41937),

Gene: Marius\_72 Start: 42255, Stop: 41947, Start Num: 7

Candidate Starts for Marius\_72:

(Start: 7 @42255 has 50 MA's), (Start: 13 @42237 has 8 MA's), (15, 42222), (19, 42201), (22, 42168), (26, 42117), (27, 42108), (28, 42081), (29, 42075), (33, 42042),

Gene: Maroc7\_65 Start: 43339, Stop: 43046, Start Num: 12

Candidate Starts for Maroc7\_65:

(6, 43366), (Start: 12 @43339 has 215 MA's), (Start: 20 @43294 has 1 MA's), (23, 43264), (24, 43252), (26, 43216), (29, 43174),

Gene: Marsha\_66 Start: 43889, Stop: 43596, Start Num: 12

Candidate Starts for Marsha\_66:

(Start: 12 @43889 has 215 MA's), (Start: 20 @43844 has 1 MA's), (23, 43814), (26, 43766), (29, 43724),

Gene: MaryBeth\_63 Start: 42720, Stop: 42427, Start Num: 12

Candidate Starts for MaryBeth\_63:

(6, 42747), (Start: 12 @42720 has 215 MA's), (Start: 20 @42675 has 1 MA's), (23, 42645), (26, 42597), (29, 42555),

Gene: McGuire\_66 Start: 41690, Stop: 41397, Start Num: 12

Candidate Starts for McGuire\_66:

(6, 41717), (Start: 12 @41690 has 215 MA's), (Start: 20 @41645 has 1 MA's), (23, 41615), (26, 41567), (29, 41525),

Gene: McSinger\_63 Start: 41639, Stop: 41346, Start Num: 12

Candidate Starts for McSinger\_63:

(6, 41666), (Start: 12 @41639 has 215 MA's), (Start: 20 @41594 has 1 MA's), (23, 41564), (26, 41516), (29, 41474),

Gene: MetalQZJ\_62 Start: 42720, Stop: 42427, Start Num: 12

Candidate Starts for MetalQZJ\_62:

(6, 42747), (Start: 12 @42720 has 215 MA's), (Start: 20 @42675 has 1 MA's), (23, 42645), (26, 42597), (29, 42555),

Gene: Methuselah\_65 Start: 42465, Stop: 42157, Start Num: 7

Candidate Starts for Methuselah\_65:

(Start: 7 @42465 has 50 MA's), (Start: 13 @42447 has 8 MA's), (15, 42432), (19, 42411), (22, 42378), (26, 42327), (27, 42318), (28, 42291), (29, 42285), (33, 42252),

Gene: Michley\_70 Start: 43281, Stop: 42988, Start Num: 12

Candidate Starts for Michley\_70:

(Start: 12 @43281 has 215 MA's), (Start: 20 @43236 has 1 MA's), (23, 43206), (24, 43194), (26, 43158), (29, 43116),

Gene: MilleFeuille\_62 Start: 42452, Stop: 42159, Start Num: 12

Candidate Starts for MilleFeuille\_62:

(6, 42479), (Start: 12 @42452 has 215 MA's), (Start: 20 @42407 has 1 MA's), (23, 42377), (26, 42329), (29, 42287),

Gene: Mkhuseli\_61 Start: 40758, Stop: 40465, Start Num: 12

Candidate Starts for Mkhuseli\_61:

(6, 40785), (Start: 12 @40758 has 215 MA's), (Start: 20 @40713 has 1 MA's), (23, 40683), (26, 40635), (29, 40593),

Gene: Molly\_67 Start: 42963, Stop: 42670, Start Num: 12

Candidate Starts for Molly\_67:

(6, 42990), (Start: 12 @42963 has 215 MA's), (Start: 20 @42918 has 1 MA's), (23, 42888), (26, 42840), (29, 42798),

Gene: Monet\_68 Start: 44284, Stop: 43991, Start Num: 12

Candidate Starts for Monet\_68:

(6, 44311), (Start: 12 @44284 has 215 MA's), (Start: 20 @44239 has 1 MA's), (23, 44209), (26, 44161), (29, 44119),

Gene: Moose\_67 Start: 42412, Stop: 42119, Start Num: 12

Candidate Starts for Moose\_67:

(6, 42439), (Start: 12 @42412 has 215 MA's), (Start: 20 @42367 has 1 MA's), (23, 42337), (26, 42289), (29, 42247),

Gene: MrGordo\_69 Start: 43202, Stop: 42909, Start Num: 12

Candidate Starts for MrGordo\_69:

(Start: 12 @43202 has 215 MA's), (Start: 20 @43157 has 1 MA's), (23, 43127), (26, 43079),

Gene: Mryolo\_64 Start: 42236, Stop: 41943, Start Num: 12

Candidate Starts for Mryolo\_64:

(6, 42263), (Start: 12 @42236 has 215 MA's), (Start: 20 @42191 has 1 MA's), (23, 42161), (26, 42113), (29, 42071),

Gene: Mule\_63 Start: 41944, Stop: 41651, Start Num: 12

Candidate Starts for Mule\_63:

(Start: 12 @41944 has 215 MA's), (Start: 20 @41899 has 1 MA's), (23, 41869), (26, 41821), (29, 41779),

Gene: Museum\_68 Start: 44182, Stop: 43889, Start Num: 12

Candidate Starts for Museum\_68:

(6, 44209), (Start: 12 @44182 has 215 MA's), (Start: 20 @44137 has 1 MA's), (23, 44107), (26, 44059), (29, 44017),

Gene: NEHalo\_63 Start: 42836, Stop: 42543, Start Num: 12

Candidate Starts for NEHalo\_63:

(6, 42863), (Start: 12 @42836 has 215 MA's), (Start: 20 @42791 has 1 MA's), (23, 42761), (26, 42713), (29, 42671),

Gene: Naira\_71 Start: 44806, Stop: 44513, Start Num: 12

Candidate Starts for Naira\_71:

(6, 44851), (8, 44833), (Start: 12 @44806 has 215 MA's), (Start: 20 @44761 has 1 MA's), (23, 44731), (26, 44683), (29, 44641),

Gene: Nerujay\_71 Start: 44385, Stop: 44092, Start Num: 12

Candidate Starts for Nerujay\_71:

(6, 44412), (Start: 12 @44385 has 215 MA's), (Start: 20 @44340 has 1 MA's), (23, 44310), (26, 44262), (29, 44220),

Gene: Nhonho\_65 Start: 43327, Stop: 43034, Start Num: 12

Candidate Starts for Nhonho\_65:

(6, 43354), (Start: 12 @43327 has 215 MA's), (Start: 20 @43282 has 1 MA's), (23, 43252), (24, 43240), (26, 43204), (29, 43162),

Gene: NicoleTera\_68 Start: 43116, Stop: 42838, Start Num: 14

Candidate Starts for NicoleTera\_68:

(5, 43173), (Start: 14 @43116 has 2 MA's), (21, 43077), (27, 43002), (29, 42969), (33, 42936), (34, 42927), (35, 42915), (38, 42855),

Gene: Niza\_68 Start: 44472, Stop: 44179, Start Num: 12

Candidate Starts for Niza\_68:

(Start: 12 @44472 has 215 MA's), (Start: 20 @44427 has 1 MA's), (23, 44397), (24, 44385), (26, 44349), (29, 44307),

Gene: Norbert\_63 Start: 42160, Stop: 41789, Start Num: 7

Candidate Starts for Norbert\_63:

(Start: 7 @42160 has 50 MA's), (Start: 12 @42127 has 215 MA's), (16, 42103), (26, 42007), (31, 41950), (33, 41932), (35, 41911),

Gene: Norz\_65 Start: 44712, Stop: 44419, Start Num: 12

Candidate Starts for Norz\_65:

(6, 44739), (Start: 12 @44712 has 215 MA's), (Start: 20 @44667 has 1 MA's), (23, 44637), (26, 44589), (29, 44547),

Gene: Noxious\_62 Start: 42193, Stop: 41900, Start Num: 12

Candidate Starts for Noxious\_62:

(6, 42220), (Start: 12 @42193 has 215 MA's), (23, 42118), (26, 42070), (29, 42028),

Gene: OKCentral2016\_63 Start: 40871, Stop: 40563, Start Num: 7

Candidate Starts for OKCentral2016\_63:

(Start: 7 @40871 has 50 MA's), (15, 40829), (19, 40805), (30, 40682), (33, 40658), (37, 40583),

Gene: Ohno789\_67 Start: 43300, Stop: 43007, Start Num: 12

Candidate Starts for Ohno789\_67:

(6, 43327), (Start: 12 @43300 has 215 MA's), (Start: 20 @43255 has 1 MA's), (23, 43225), (24, 43213), (26, 43177), (29, 43135),

Gene: OlanP\_70 Start: 42431, Stop: 42123, Start Num: 7

Candidate Starts for OlanP\_70:

(Start: 7 @42431 has 50 MA's), (Start: 13 @42413 has 8 MA's), (15, 42398), (19, 42377), (22, 42344), (26, 42293), (27, 42284), (28, 42257), (29, 42251), (30, 42242), (33, 42218),

Gene: Oogway\_64 Start: 43355, Stop: 43062, Start Num: 12

Candidate Starts for Oogway\_64:

(6, 43382), (Start: 12 @43355 has 215 MA's), (Start: 20 @43310 has 1 MA's), (23, 43280), (26, 43232), (29, 43190),

Gene: PSullivan\_64 Start: 41080, Stop: 40787, Start Num: 12

Candidate Starts for PSullivan\_64:

(6, 41107), (Start: 12 @41080 has 215 MA's), (Start: 20 @41035 has 1 MA's), (23, 41005), (26, 40957), (29, 40915),

Gene: PacerPaul\_66 Start: 42858, Stop: 42565, Start Num: 12

Candidate Starts for PacerPaul\_66:

(Start: 12 @42858 has 215 MA's), (Start: 20 @42813 has 1 MA's), (23, 42783), (26, 42735), (29, 42693),

Gene: Panamaxus\_65 Start: 42160, Stop: 41789, Start Num: 7

Candidate Starts for Panamaxus\_65:

(Start: 7 @42160 has 50 MA's), (Start: 12 @42127 has 215 MA's), (16, 42103), (26, 42007), (31, 41950), (33, 41932), (35, 41911),

Gene: Papez\_68 Start: 44027, Stop: 43731, Start Num: 12

Candidate Starts for Papez\_68:

(Start: 12 @44027 has 215 MA's), (26, 43901), (29, 43859),

Gene: Paphu\_65 Start: 43166, Stop: 42873, Start Num: 12

Candidate Starts for Paphu\_65:

(Start: 12 @43166 has 215 MA's), (Start: 20 @43121 has 1 MA's), (23, 43091), (26, 43043), (29, 43001),

Gene: Paraselene\_67 Start: 43668, Stop: 43375, Start Num: 12

Candidate Starts for Paraselene\_67:

(Start: 12 @43668 has 215 MA's), (Start: 20 @43623 has 1 MA's), (23, 43593), (26, 43545), (29, 43503),

Gene: Pari\_70 Start: 42376, Stop: 42083, Start Num: 12

Candidate Starts for Pari\_70:

(6, 42403), (Start: 12 @42376 has 215 MA's), (Start: 20 @42331 has 1 MA's), (23, 42301), (26, 42253), (29, 42211),

Gene: Parliament\_67 Start: 44958, Stop: 44665, Start Num: 12

Candidate Starts for Parliament\_67:

(Start: 12 @44958 has 215 MA's), (Start: 20 @44913 has 1 MA's), (23, 44883), (24, 44871), (26, 44835), (29, 44793),

Gene: PascalRango\_63 Start: 42153, Stop: 41860, Start Num: 12

Candidate Starts for PascalRango\_63:

(6, 42180), (Start: 12 @42153 has 215 MA's), (Start: 20 @42108 has 1 MA's), (23, 42078), (26, 42030), (29, 41988),

Gene: PattyP\_68 Start: 43888, Stop: 43595, Start Num: 12

Candidate Starts for PattyP\_68:

(6, 43915), (Start: 12 @43888 has 215 MA's), (Start: 20 @43843 has 1 MA's), (23, 43813), (26, 43765), (29, 43723),

Gene: Payneful\_63 Start: 41821, Stop: 41528, Start Num: 12

Candidate Starts for Payneful\_63:

(Start: 12 @41821 has 215 MA's), (Start: 20 @41776 has 1 MA's), (23, 41746), (26, 41698), (29, 41656),

Gene: PeaceMeal1\_62 Start: 40396, Stop: 40088, Start Num: 7

Candidate Starts for PeaceMeal1\_62:

(Start: 7 @40396 has 50 MA's), (15, 40354), (19, 40330), (26, 40258), (30, 40207), (33, 40183), (37, 40108),

Gene: Pelly\_68 Start: 44825, Stop: 44532, Start Num: 12

Candidate Starts for Pelly\_68:

(6, 44852), (Start: 12 @44825 has 215 MA's), (Start: 20 @44780 has 1 MA's), (26, 44702), (29, 44660),

Gene: Pepe\_64 Start: 41654, Stop: 41361, Start Num: 12

Candidate Starts for Pepe\_64:

(Start: 12 @41654 has 215 MA's), (Start: 20 @41609 has 1 MA's), (23, 41579), (26, 41531), (29, 41489),

Gene: Perseus\_64 Start: 44104, Stop: 43811, Start Num: 12

Candidate Starts for Perseus\_64:

(Start: 12 @44104 has 215 MA's), (Start: 20 @44059 has 1 MA's), (23, 44029), (26, 43981), (29, 43939),

Gene: Peterson\_69 Start: 44970, Stop: 44677, Start Num: 12

Candidate Starts for Peterson\_69:

(Start: 12 @44970 has 215 MA's), (Start: 20 @44925 has 1 MA's), (23, 44895), (26, 44847), (29, 44805),

Gene: Petp2012\_69 Start: 44669, Stop: 44376, Start Num: 12

Candidate Starts for Petp2012\_69:

(6, 44696), (Start: 12 @44669 has 215 MA's), (Start: 20 @44624 has 1 MA's), (23, 44594), (26, 44546), (29, 44504),

Gene: Petruchio\_68 Start: 42490, Stop: 42197, Start Num: 12

Candidate Starts for Petruchio\_68:

(1, 42748), (3, 42712), (6, 42517), (Start: 12 @42490 has 215 MA's), (Start: 20 @42445 has 1 MA's), (23, 42415), (26, 42367), (29, 42325),

Gene: PherrisBueller\_67 Start: 41610, Stop: 41317, Start Num: 12

Candidate Starts for PherrisBueller\_67:

(6, 41637), (Start: 12 @41610 has 215 MA's), (Start: 20 @41565 has 1 MA's), (23, 41535), (26, 41487), (29, 41445),

Gene: PhineBark\_65 Start: 42788, Stop: 42495, Start Num: 12

Candidate Starts for PhineBark\_65:

(Start: 12 @42788 has 215 MA's), (Start: 20 @42743 has 1 MA's), (23, 42713), (26, 42665), (29, 42623),

Gene: PhishRPhriends\_68 Start: 41439, Stop: 41131, Start Num: 7

Candidate Starts for PhishRPhriends\_68:

(Start: 7 @41439 has 50 MA's), (Start: 13 @41421 has 8 MA's), (15, 41406), (19, 41385), (22, 41352), (26, 41301), (27, 41292), (28, 41265), (29, 41259), (30, 41250), (33, 41226),

Gene: Phlippers\_61 Start: 42632, Stop: 42339, Start Num: 12

Candidate Starts for Phlippers\_61:

(6, 42659), (Start: 12 @42632 has 215 MA's), (Start: 20 @42587 has 1 MA's), (23, 42557), (24, 42545), (26, 42509), (29, 42467),

Gene: PhrostyMug\_66 Start: 44118, Stop: 43825, Start Num: 12

Candidate Starts for PhrostyMug\_66:

(Start: 12 @44118 has 215 MA's), (Start: 20 @44073 has 1 MA's), (23, 44043), (26, 43995), (29, 43953),

Gene: PinkPlastic\_65 Start: 42426, Stop: 42133, Start Num: 12

Candidate Starts for PinkPlastic\_65:

(6, 42453), (Start: 12 @42426 has 215 MA's), (Start: 20 @42381 has 1 MA's), (23, 42351), (26, 42303), (29, 42261),

Gene: Pinto\_66 Start: 42379, Stop: 42086, Start Num: 12

Candidate Starts for Pinto\_66:

(1, 42637), (3, 42601), (6, 42406), (Start: 12 @42379 has 215 MA's), (Start: 20 @42334 has 1 MA's), (23, 42304), (26, 42256), (29, 42214),

Gene: Pippin\_65 Start: 41805, Stop: 41512, Start Num: 12

Candidate Starts for Pippin\_65:

(6, 41832), (Start: 12 @41805 has 215 MA's), (Start: 20 @41760 has 1 MA's), (23, 41730), (26, 41682), (29, 41640),

Gene: Pistachio\_67 Start: 41751, Stop: 41383, Start Num: 7

Candidate Starts for Pistachio\_67:

(Start: 7 @41751 has 50 MA's), (10, 41730), (Start: 12 @41718 has 215 MA's), (16, 41694), (31, 41544), (33, 41526), (35, 41505),

Gene: Pita2\_67 Start: 42577, Stop: 42284, Start Num: 12

Candidate Starts for Pita2\_67:

(6, 42604), (Start: 12 @42577 has 215 MA's), (Start: 20 @42532 has 1 MA's), (23, 42502), (26, 42454), (29, 42412),

Gene: Pocahontas\_66 Start: 42157, Stop: 41786, Start Num: 7

Candidate Starts for Pocahontas\_66:

(Start: 7 @42157 has 50 MA's), (Start: 12 @42124 has 215 MA's), (16, 42100), (26, 42004), (31, 41947), (33, 41929), (35, 41908),

Gene: Poompha\_61 Start: 40394, Stop: 40086, Start Num: 7

Candidate Starts for Poompha\_61:

(Start: 7 @40394 has 50 MA's), (15, 40352), (19, 40328), (26, 40256), (30, 40205), (33, 40181), (37, 40106),

Gene: Popcicle\_67 Start: 42157, Stop: 41786, Start Num: 7

Candidate Starts for Popcicle\_67:

(Start: 7 @42157 has 50 MA's), (Start: 12 @42124 has 215 MA's), (16, 42100), (26, 42004), (31, 41947), (33, 41929), (35, 41908),

Gene: PowerRanger\_65 Start: 43852, Stop: 43559, Start Num: 12

Candidate Starts for PowerRanger\_65:

(6, 43879), (Start: 12 @43852 has 215 MA's), (Start: 20 @43807 has 1 MA's), (26, 43729), (29, 43687),

Gene: ProMouse\_67 Start: 43095, Stop: 42802, Start Num: 12

Candidate Starts for ProMouse\_67:

(6, 43122), (Start: 12 @43095 has 215 MA's), (Start: 20 @43050 has 1 MA's), (23, 43020), (26, 42972), (29, 42930),

Gene: Puppet\_63 Start: 43810, Stop: 43517, Start Num: 12

Candidate Starts for Puppet\_63:

(Start: 7 @43846 has 50 MA's), (Start: 12 @43810 has 215 MA's), (Start: 20 @43765 has 1 MA's), (23, 43735), (26, 43687), (29, 43645),

Gene: PurpleHaze\_71 Start: 42257, Stop: 41949, Start Num: 7

Candidate Starts for PurpleHaze\_71:

(Start: 7 @42257 has 50 MA's), (Start: 13 @42239 has 8 MA's), (15, 42224), (19, 42203), (22, 42170), (26, 42119), (27, 42110), (28, 42083), (29, 42077), (33, 42044),

Gene: QTRLifeCrisis\_67 Start: 43106, Stop: 42813, Start Num: 12

Candidate Starts for QTRLifeCrisis\_67:

(6, 43133), (Start: 12 @43106 has 215 MA's), (Start: 20 @43061 has 1 MA's), (23, 43031), (26, 42983), (29, 42941),

Gene: QuinnKiro\_66 Start: 42160, Stop: 41789, Start Num: 7

Candidate Starts for QuinnKiro\_66:

(Start: 7 @42160 has 50 MA's), (Start: 12 @42127 has 215 MA's), (16, 42103), (26, 42007), (31, 41950), (33, 41932), (35, 41911),

Gene: Raid\_66 Start: 42932, Stop: 42639, Start Num: 12

Candidate Starts for Raid\_66:

(6, 42959), (Start: 12 @42932 has 215 MA's), (18, 42899), (Start: 20 @42887 has 1 MA's), (23, 42857), (26, 42809), (29, 42767),

Gene: Rajelicia\_66 Start: 44209, Stop: 43916, Start Num: 12

Candidate Starts for Rajelicia\_66:

(6, 44236), (Start: 12 @44209 has 215 MA's), (Start: 20 @44164 has 1 MA's), (23, 44134), (26, 44086), (29, 44044),

Gene: Rebeuca\_65 Start: 41710, Stop: 41402, Start Num: 7

Candidate Starts for Rebeuca\_65:

(Start: 7 @41710 has 50 MA's), (11, 41692), (15, 41668), (19, 41644), (30, 41521), (33, 41497), (37, 41422),

Gene: ResDef\_65 Start: 42160, Stop: 41789, Start Num: 7

Candidate Starts for ResDef\_65:

(Start: 7 @42160 has 50 MA's), (Start: 12 @42127 has 215 MA's), (16, 42103), (26, 42007), (31, 41950), (33, 41932), (35, 41911),

Gene: RhynO\_64 Start: 41351, Stop: 41043, Start Num: 7

Candidate Starts for RhynO\_64:

(Start: 7 @41351 has 50 MA's), (15, 41309), (19, 41285), (31, 41156), (33, 41138), (37, 41063),

Gene: Rhynn\_62 Start: 42109, Stop: 41816, Start Num: 12

Candidate Starts for Rhynn\_62:

(Start: 12 @42109 has 215 MA's), (Start: 20 @42064 has 1 MA's), (23, 42034), (26, 41986), (29, 41944),

Gene: RidgeCB\_66 Start: 42526, Stop: 42233, Start Num: 12

Candidate Starts for RidgeCB\_66:

(6, 42553), (Start: 12 @42526 has 215 MA's), (Start: 20 @42481 has 1 MA's), (23, 42451), (26, 42403), (29, 42361),

Gene: Ringer\_69 Start: 44632, Stop: 44339, Start Num: 12

Candidate Starts for Ringer\_69:

(6, 44659), (Start: 12 @44632 has 215 MA's), (Start: 20 @44587 has 1 MA's), (23, 44557), (26, 44509), (29, 44467),

Gene: Rohr\_67 Start: 43844, Stop: 43551, Start Num: 12

Candidate Starts for Rohr\_67:

(6, 43871), (Start: 12 @43844 has 215 MA's), (Start: 20 @43799 has 1 MA's), (23, 43769), (26, 43721), (29, 43679),

Gene: Rowdy\_66 Start: 41423, Stop: 41115, Start Num: 7

Candidate Starts for Rowdy\_66:

(Start: 7 @41423 has 50 MA's), (15, 41381), (19, 41357), (26, 41285), (31, 41228), (33, 41210), (37, 41135),

Gene: Rubeus\_65 Start: 40346, Stop: 40053, Start Num: 12

Candidate Starts for Rubeus\_65:

(6, 40373), (Start: 12 @40346 has 215 MA's), (Start: 20 @40301 has 1 MA's), (23, 40271), (26, 40223), (29, 40181),

Gene: Rufus\_68 Start: 43030, Stop: 42737, Start Num: 12

Candidate Starts for Rufus\_68:

(6, 43057), (Start: 12 @43030 has 215 MA's), (Start: 20 @42985 has 1 MA's), (23, 42955), (26, 42907), (29, 42865),

Gene: Ruotula\_72 Start: 45133, Stop: 44840, Start Num: 12

Candidate Starts for Ruotula\_72:

(6, 45160), (Start: 12 @45133 has 215 MA's), (Start: 20 @45088 has 1 MA's), (23, 45058), (26, 45010), (29, 44968),

Gene: Rutherferd\_67 Start: 43925, Stop: 43632, Start Num: 12

Candidate Starts for Rutherferd\_67:

(Start: 12 @43925 has 215 MA's), (Start: 20 @43880 has 1 MA's), (26, 43802), (29, 43760),

Gene: STLscum\_75 Start: 44847, Stop: 44554, Start Num: 12

Candidate Starts for STLscum\_75:

(Start: 12 @44847 has 215 MA's), (Start: 20 @44802 has 1 MA's), (23, 44772), (26, 44724), (29, 44682),

Gene: Sabia\_70 Start: 42432, Stop: 42142, Start Num: 13

Candidate Starts for Sabia\_70:

(Start: 13 @42432 has 8 MA's), (15, 42417), (19, 42396), (22, 42363), (26, 42312), (27, 42303), (28, 42276), (29, 42270), (33, 42237),

Gene: Sagefire\_67 Start: 44059, Stop: 43766, Start Num: 12

Candidate Starts for Sagefire\_67:

(Start: 12 @44059 has 215 MA's), (Start: 20 @44014 has 1 MA's), (23, 43984), (26, 43936), (29, 43894),

Gene: Sandaddy\_63 Start: 42327, Stop: 42034, Start Num: 12

Candidate Starts for Sandaddy\_63:

(6, 42354), (Start: 12 @42327 has 215 MA's), (Start: 20 @42282 has 1 MA's), (23, 42252), (26, 42204), (29, 42162),

Gene: Sanya\_62 Start: 43541, Stop: 43293, Start Num: 20

Candidate Starts for Sanya\_62:

(6, 43613), (Start: 12 @43586 has 215 MA's), (Start: 20 @43541 has 1 MA's), (23, 43511), (26, 43463), (29, 43421),

Gene: SarFire\_65 Start: 42573, Stop: 42280, Start Num: 12

Candidate Starts for SarFire\_65:

(6, 42600), (Start: 12 @42573 has 215 MA's), (Start: 20 @42528 has 1 MA's), (26, 42450), (29, 42408),

Gene: SaturnRing\_67 Start: 42204, Stop: 41836, Start Num: 7

Candidate Starts for SaturnRing\_67:

(Start: 7 @42204 has 50 MA's), (10, 42183), (Start: 12 @42171 has 215 MA's), (16, 42147), (31, 41997), (33, 41979), (35, 41958),

Gene: Scowl\_67 Start: 42499, Stop: 42206, Start Num: 12

Candidate Starts for Scowl\_67:

(Start: 12 @42499 has 215 MA's), (Start: 20 @42454 has 1 MA's), (23, 42424), (26, 42376), (29, 42334),

Gene: Serenity\_74 Start: 42637, Stop: 42359, Start Num: 14

Candidate Starts for Serenity\_74:

(Start: 14 @42637 has 2 MA's), (21, 42598), (25, 42556), (27, 42523), (29, 42490), (32, 42460), (33, 42457), (34, 42448), (35, 42436), (39, 42367),

Gene: Severus\_62 Start: 40394, Stop: 40086, Start Num: 7

Candidate Starts for Severus\_62:

(Start: 7 @40394 has 50 MA's), (15, 40352), (19, 40328), (26, 40256), (30, 40205), (33, 40181), (37, 40106),

Gene: Shapes\_66 Start: 41423, Stop: 41115, Start Num: 7

Candidate Starts for Shapes\_66:

(Start: 7 @41423 has 50 MA's), (15, 41381), (19, 41357), (26, 41285), (31, 41228), (33, 41210), (37, 41135),

Gene: ShortQueendom\_57 Start: 40038, Stop: 39745, Start Num: 12

Candidate Starts for ShortQueendom\_57:

(6, 40065), (Start: 12 @40038 has 215 MA's), (Start: 20 @39993 has 1 MA's), (23, 39963), (26, 39915), (29, 39873),

Gene: Sibs6\_68 Start: 41229, Stop: 40936, Start Num: 12

Candidate Starts for Sibs6\_68:

(6, 41256), (Start: 12 @41229 has 215 MA's), (Start: 20 @41184 has 1 MA's), (23, 41154), (26, 41106), (29, 41064),

Gene: SkiPole\_74 Start: 44120, Stop: 43827, Start Num: 12

Candidate Starts for SkiPole\_74:

(Start: 12 @44120 has 215 MA's), (Start: 20 @44075 has 1 MA's), (23, 44045), (26, 43997), (29, 43955),

Gene: Slagathor\_68 Start: 44595, Stop: 44302, Start Num: 12

Candidate Starts for Slagathor\_68:

(6, 44622), (Start: 12 @44595 has 215 MA's), (Start: 20 @44550 has 1 MA's), (23, 44520), (26, 44472), (29, 44430),

Gene: Smairt\_68 Start: 45112, Stop: 44819, Start Num: 12

Candidate Starts for Smairt\_68:

(Start: 12 @45112 has 215 MA's), (Start: 20 @45067 has 1 MA's), (23, 45037), (26, 44989), (29, 44947),

Gene: Smeagol\_68 Start: 44353, Stop: 44060, Start Num: 12

Candidate Starts for Smeagol\_68:

(Start: 12 @44353 has 215 MA's), (Start: 20 @44308 has 1 MA's), (23, 44278), (26, 44230), (29, 44188),

Gene: Snazzy\_63 Start: 41494, Stop: 41201, Start Num: 12

Candidate Starts for Snazzy\_63:

(6, 41521), (Start: 12 @41494 has 215 MA's), (Start: 20 @41449 has 1 MA's), (23, 41419), (26, 41371), (29, 41329),

Gene: Solon\_64 Start: 42070, Stop: 41777, Start Num: 12

Candidate Starts for Solon\_64:

(6, 42097), (Start: 12 @42070 has 215 MA's), (Start: 20 @42025 has 1 MA's), (23, 41995), (24, 41983), (26, 41947), (29, 41905),

Gene: Sorpresa\_64 Start: 42329, Stop: 42036, Start Num: 12

Candidate Starts for Sorpresa\_64:

(6, 42356), (Start: 12 @42329 has 215 MA's), (Start: 20 @42284 has 1 MA's), (23, 42254), (26, 42206), (29, 42164),

Gene: Soshari\_74 Start: 42465, Stop: 42157, Start Num: 7

Candidate Starts for Soshari\_74:

(Start: 7 @42465 has 50 MA's), (Start: 13 @42447 has 8 MA's), (15, 42432), (19, 42411), (22, 42378), (26, 42327), (27, 42318), (28, 42291), (29, 42285), (33, 42252),

Gene: SpikeBT\_64 Start: 42693, Stop: 42400, Start Num: 12

Candidate Starts for SpikeBT\_64:

(6, 42720), (Start: 12 @42693 has 215 MA's), (Start: 20 @42648 has 1 MA's), (23, 42618), (24, 42606), (26, 42570), (29, 42528),

Gene: Squee\_69 Start: 42726, Stop: 42433, Start Num: 12

Candidate Starts for Squee\_69:

(Start: 12 @42726 has 215 MA's), (Start: 20 @42681 has 1 MA's), (23, 42651), (26, 42603), (29, 42561),

Gene: Steamy\_66 Start: 42070, Stop: 41750, Start Num: 9

Candidate Starts for Steamy\_66:

(4, 42181), (Start: 9 @42070 has 1 MA's), (17, 42013), (27, 41914), (29, 41881), (31, 41866),

Gene: StewieG\_60 Start: 38877, Stop: 38584, Start Num: 12

Candidate Starts for StewieG\_60:

(1, 39135), (3, 39099), (6, 38904), (Start: 12 @38877 has 215 MA's), (Start: 20 @38832 has 1 MA's), (23, 38802), (26, 38754), (29, 38712),

Gene: StrongArm\_64 Start: 43443, Stop: 43150, Start Num: 12

Candidate Starts for StrongArm\_64:

(6, 43470), (Start: 12 @43443 has 215 MA's), (Start: 20 @43398 has 1 MA's), (23, 43368), (26, 43320), (29, 43278),

Gene: Sumter\_62 Start: 42684, Stop: 42391, Start Num: 12

Candidate Starts for Sumter\_62:

(6, 42711), (Start: 12 @42684 has 215 MA's), (Start: 20 @42639 has 1 MA's), (23, 42609), (26, 42561), (29, 42519),

Gene: Sunshine924\_71 Start: 43388, Stop: 43095, Start Num: 12

Candidate Starts for Sunshine924\_71:

(Start: 12 @43388 has 215 MA's), (Start: 20 @43343 has 1 MA's), (23, 43313), (26, 43265), (29, 43223),

Gene: SwissCheese\_69 Start: 42912, Stop: 42619, Start Num: 12

Candidate Starts for SwissCheese\_69:

(6, 42939), (Start: 12 @42912 has 215 MA's), (Start: 20 @42867 has 1 MA's), (23, 42837), (26, 42789), (29, 42747),

Gene: Switzer\_67 Start: 44218, Stop: 43925, Start Num: 12

Candidate Starts for Switzer\_67:

(Start: 12 @44218 has 215 MA's), (Start: 20 @44173 has 1 MA's), (23, 44143), (26, 44095), (29, 44053),

Gene: Swole\_67 Start: 42487, Stop: 42194, Start Num: 12

Candidate Starts for Swole\_67:

(6, 42514), (Start: 12 @42487 has 215 MA's), (Start: 20 @42442 has 1 MA's), (23, 42412), (26, 42364), (29, 42322),

Gene: Target\_69 Start: 42804, Stop: 42511, Start Num: 12

Candidate Starts for Target\_69:

(Start: 12 @42804 has 215 MA's), (Start: 20 @42759 has 1 MA's), (23, 42729), (26, 42681), (29, 42639),

Gene: Tasp14\_69 Start: 44447, Stop: 44154, Start Num: 12

Candidate Starts for Tasp14\_69:

(Start: 12 @44447 has 215 MA's), (Start: 20 @44402 has 1 MA's), (23, 44372), (26, 44324), (29, 44282),

Gene: Teodoridan\_65 Start: 41810, Stop: 41517, Start Num: 12

Candidate Starts for Teodoridan\_65:

(Start: 12 @41810 has 215 MA's), (Start: 20 @41765 has 1 MA's), (23, 41735), (26, 41687), (29, 41645),

Gene: TheloniousMonk\_70 Start: 45181, Stop: 44888, Start Num: 12

Candidate Starts for TheloniousMonk\_70:

(6, 45208), (Start: 12 @45181 has 215 MA's), (Start: 20 @45136 has 1 MA's), (23, 45106), (26, 45058), (29, 45016),

Gene: Thor\_65 Start: 41931, Stop: 41638, Start Num: 12

Candidate Starts for Thor\_65:

(6, 41958), (Start: 12 @41931 has 215 MA's), (Start: 20 @41886 has 1 MA's), (26, 41808), (29, 41766),

Gene: Tiffany\_71 Start: 42309, Stop: 42019, Start Num: 13

Candidate Starts for Tiffany\_71:

(Start: 13 @42309 has 8 MA's), (15, 42294), (19, 42273), (22, 42240), (26, 42189), (27, 42180), (28, 42153), (29, 42147), (33, 42114),

Gene: Todacoro\_67 Start: 42160, Stop: 41789, Start Num: 7

Candidate Starts for Todacoro\_67:

(Start: 7 @42160 has 50 MA's), (Start: 12 @42127 has 215 MA's), (16, 42103), (26, 42007), (31, 41950), (33, 41932), (35, 41911),

Gene: Topanga\_61 Start: 41190, Stop: 40882, Start Num: 7

Candidate Starts for Topanga\_61:

(Start: 7 @41190 has 50 MA's), (15, 41148), (19, 41124), (30, 41001), (31, 40995), (33, 40977), (37, 40902),

Gene: Topgun\_63 Start: 41557, Stop: 41264, Start Num: 12

Candidate Starts for Topgun\_63:

(6, 41584), (Start: 12 @41557 has 215 MA's), (Start: 20 @41512 has 1 MA's), (23, 41482), (26, 41434), (29, 41392),

Gene: Tote\_62 Start: 39754, Stop: 39461, Start Num: 12

Candidate Starts for Tote\_62:

(6, 39781), (Start: 12 @39754 has 215 MA's), (Start: 20 @39709 has 1 MA's), (23, 39679), (26, 39631), (29, 39589),

Gene: Traft412\_69 Start: 43542, Stop: 43249, Start Num: 12

Candidate Starts for Traft412\_69:

(Start: 12 @43542 has 215 MA's), (Start: 20 @43497 has 1 MA's), (23, 43467), (26, 43419), (29, 43377),

Gene: Treddle\_66 Start: 43796, Stop: 43503, Start Num: 12

Candidate Starts for Treddle\_66:

(6, 43823), (Start: 12 @43796 has 215 MA's), (Start: 20 @43751 has 1 MA's), (23, 43721), (24, 43709), (26, 43673), (29, 43631),

Gene: Trike\_61 Start: 40401, Stop: 40093, Start Num: 7

Candidate Starts for Trike\_61:

(Start: 7 @40401 has 50 MA's), (15, 40359), (19, 40335), (26, 40263), (30, 40212), (33, 40188), (37, 40113),

Gene: Tripl3t\_70 Start: 45279, Stop: 44986, Start Num: 12

Candidate Starts for Tripl3t\_70:

(Start: 12 @45279 has 215 MA's), (Start: 20 @45234 has 1 MA's), (23, 45204), (24, 45192), (26, 45156), (29, 45114),

Gene: Trouble\_66 Start: 42897, Stop: 42604, Start Num: 12

Candidate Starts for Trouble\_66:

(Start: 12 @42897 has 215 MA's), (Start: 20 @42852 has 1 MA's), (23, 42822), (26, 42774), (29, 42732),

Gene: Turj99\_64 Start: 43466, Stop: 43173, Start Num: 12

Candidate Starts for Turj99\_64:

(6, 43493), (Start: 12 @43466 has 215 MA's), (23, 43391), (26, 43343), (29, 43301),

Gene: Twister\_63 Start: 41311, Stop: 41003, Start Num: 7

Candidate Starts for Twister\_63:

(Start: 7 @41311 has 50 MA's), (15, 41269), (19, 41245), (30, 41122), (31, 41116), (33, 41098), (37, 41023),

Gene: TwoPeat\_67 Start: 43318, Stop: 43025, Start Num: 12

Candidate Starts for TwoPeat\_67:

(6, 43345), (Start: 12 @43318 has 215 MA's), (Start: 20 @43273 has 1 MA's), (23, 43243), (26, 43195), (29, 43153),

Gene: U2\_62 Start: 43288, Stop: 42995, Start Num: 12

Candidate Starts for U2\_62:

(6, 43315), (Start: 12 @43288 has 215 MA's), (Start: 20 @43243 has 1 MA's), (23, 43213), (26, 43165), (29, 43123),

Gene: Veracruz\_64 Start: 42160, Stop: 41789, Start Num: 7

Candidate Starts for Veracruz\_64:

(Start: 7 @42160 has 50 MA's), (Start: 12 @42127 has 215 MA's), (16, 42103), (26, 42007), (31, 41950), (33, 41932), (35, 41911),

Gene: Violet\_63 Start: 44154, Stop: 43861, Start Num: 12

Candidate Starts for Violet\_63:

(6, 44181), (Start: 12 @44154 has 215 MA's), (Start: 20 @44109 has 1 MA's), (23, 44079), (26, 44031), (29, 43989),

Gene: WalterMcMickey\_63 Start: 41311, Stop: 41003, Start Num: 7

Candidate Starts for WalterMcMickey\_63:

(Start: 7 @41311 has 50 MA's), (15, 41269), (19, 41245), (30, 41122), (31, 41116), (33, 41098), (37, 41023),

Gene: Watermelon\_65 Start: 41890, Stop: 41597, Start Num: 12

Candidate Starts for Watermelon\_65:

(6, 41917), (Start: 12 @41890 has 215 MA's), (Start: 20 @41845 has 1 MA's), (23, 41815), (26, 41767), (29, 41725),

Gene: Wheeler\_68 Start: 43157, Stop: 42864, Start Num: 12

Candidate Starts for Wheeler\_68:

(6, 43184), (Start: 12 @43157 has 215 MA's), (Start: 20 @43112 has 1 MA's), (23, 43082), (24, 43070), (26, 43034), (29, 42992),

Gene: Whitspit\_61 Start: 40235, Stop: 39942, Start Num: 12

Candidate Starts for Whitspit\_61:

(Start: 12 @40235 has 215 MA's), (Start: 20 @40190 has 1 MA's), (23, 40160), (26, 40112), (29, 40070),

Gene: Wilkins\_64 Start: 41487, Stop: 41194, Start Num: 12

Candidate Starts for Wilkins\_64:

(6, 41514), (Start: 12 @41487 has 215 MA's), (Start: 20 @41442 has 1 MA's), (23, 41412), (26, 41364), (29, 41322),

Gene: Wooldri\_74 Start: 42353, Stop: 42045, Start Num: 7

Candidate Starts for Wooldri\_74:

(Start: 7 @42353 has 50 MA's), (Start: 13 @42335 has 8 MA's), (15, 42320), (19, 42299), (22, 42266), (26, 42215), (27, 42206), (28, 42179), (29, 42173), (33, 42140),

Gene: Zeeculate\_65 Start: 43127, Stop: 42834, Start Num: 12

Candidate Starts for Zeeculate\_65:

(Start: 12 @43127 has 215 MA's), (Start: 20 @43082 has 1 MA's), (23, 43052), (26, 43004), (29, 42962), (36, 42857),

Gene: Zephyr\_67 Start: 42228, Stop: 41935, Start Num: 12

Candidate Starts for Zephyr\_67:

(6, 42255), (Start: 12 @42228 has 215 MA's), (Start: 20 @42183 has 1 MA's), (23, 42153), (26, 42105), (29, 42063),

Gene: Zetzy\_69 Start: 42004, Stop: 41696, Start Num: 7

Candidate Starts for Zetzy\_69:

(Start: 7 @42004 has 50 MA's), (Start: 13 @41986 has 8 MA's), (15, 41971), (19, 41950), (22, 41917), (26, 41866), (27, 41857), (28, 41830), (29, 41824), (33, 41791),

Gene: Zeuska\_71 Start: 45391, Stop: 45098, Start Num: 12

Candidate Starts for Zeuska\_71:

(Start: 12 @45391 has 215 MA's), (Start: 20 @45346 has 1 MA's), (23, 45316), (26, 45268), (29, 45226),