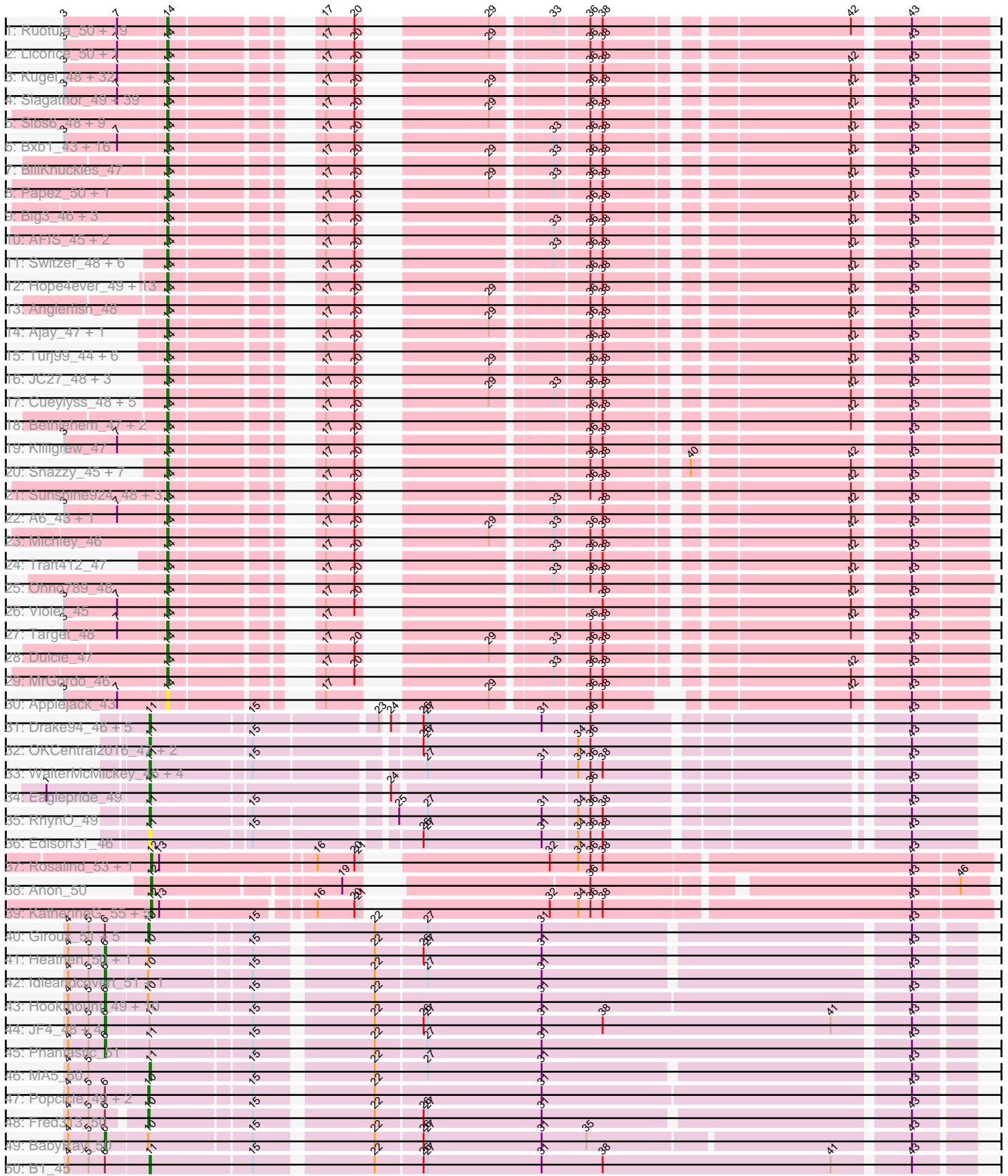
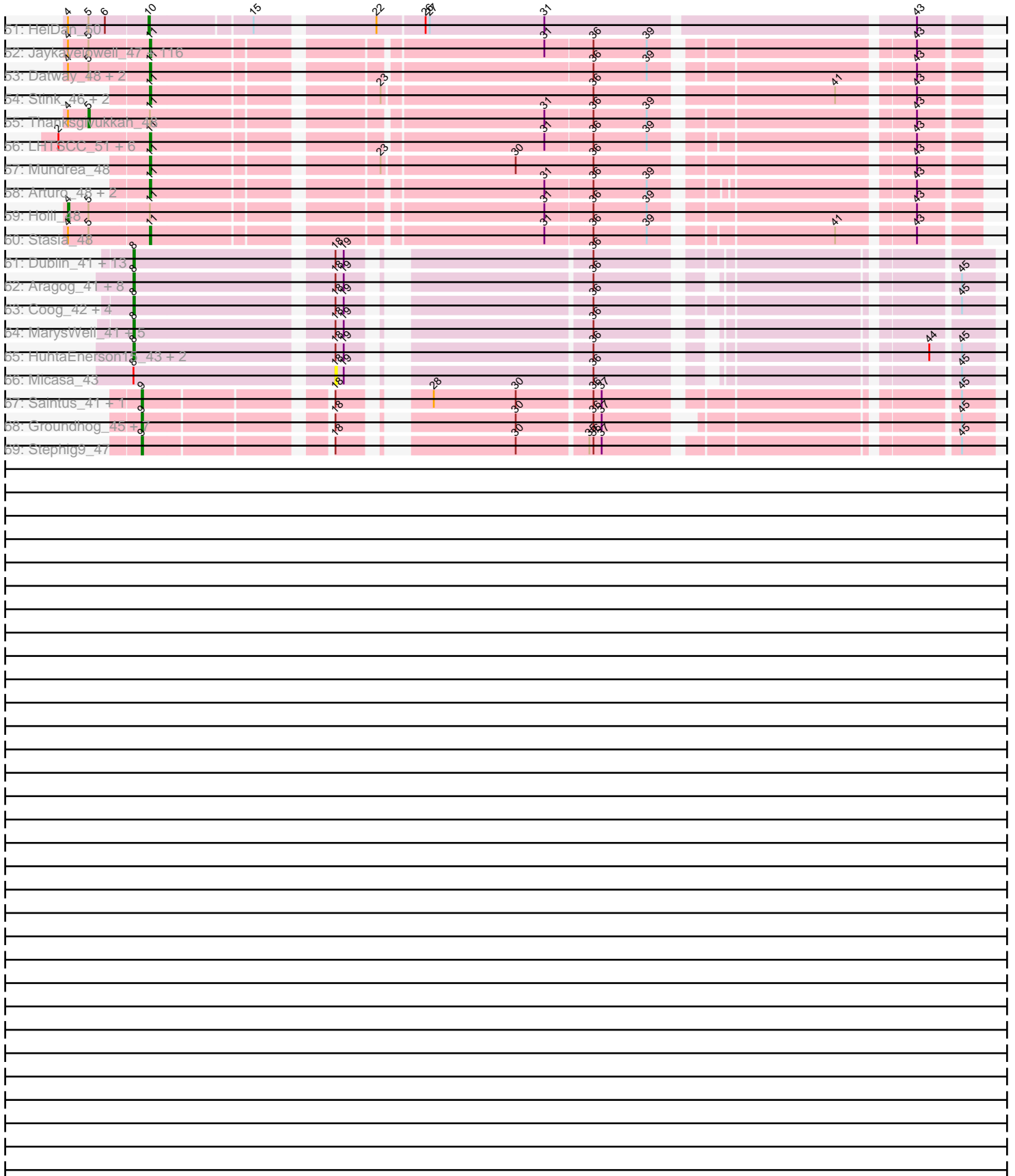


Pham 157483



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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 157483 Report

This analysis was run 04/13/24 on database version 558.

Pham number 157483 has 446 members, 24 are drafts.

Phages represented in each track:

- Track 1 : Ruotula\_50, Doom\_47, PacerPaul\_47, Agaliana\_43, ILeeKay\_51, Aeneas\_49, Rubeus\_47, Francis47\_46, Gompeii16\_46, PhrostyMug\_46, Bircsak\_46, Mule\_44, Smairt\_49, Marge\_47, Perseus\_47, Crispicous1\_45, Rufus\_48, JackSparrow\_48, Petruccio\_47, Marsha\_47
- Track 2 : Licorice\_50, BigPaolini\_47
- Track 3 : Kugel\_48, Forsytheast\_47, Seanderson\_49, Alvin\_47, Lesedi\_44, Pippin\_49, Froghopper\_45, Alsfro\_51, LilBib\_48, Monet\_50, Niza\_50, Thor\_45, Makemake\_47, Bexan\_46, Hermia\_47, KBG\_49, Fajezeel\_49, Beatrix\_47, Zeeculate\_45, StrongArm\_47, Corvo\_48, Sagefire\_50, Chanagan\_44, MPlant7149\_46, Moose\_47, Scowl\_48, Greg\_49, MaryBeth\_47, SarFire\_45, SwissCheese\_49, Bruns\_46, Ringer\_48, MetalQZJ\_46
- Track 4 : Slagathor\_49, Bigfoot\_43, PattyP\_48, BigMau\_48, Edtherson\_47, Kenmech\_51, RidgeCB\_47, Kykar\_47, Watermelon\_48, Rohr\_48, Bob3\_45, Arlo\_45, Treddle\_48, KyMonks1A\_49, Rajelicia\_48, Ciao\_47, Swole\_48, JuliaChild\_48, Lopton\_48, Paraselene\_45, TheloniousMonk\_48, Pepe\_44, Arcanine\_48, Abrogate\_460, TwoPeat\_47, Jerm2\_48, Zeuska\_46, HermioneGrange\_47, PSullivan\_47, Dussy\_49, Marcell\_45, Abbyshoes\_50, BPBiebs31\_48, Tote\_43, Tripl3t\_47, Rhynn\_46, Pita2\_50, Mryolo\_45, Acme\_49, StewieG\_46
- Track 5 : Sibs6\_48, Blue\_47, Burton\_47, Rutherferd\_49, Molly\_48, Carlyle\_46, Museum\_48, Paphu\_45, PascalRango\_48, Petp2012\_48
- Track 6 : Bxb1\_43, Zephyr\_47, Solon\_46, PherrisBueller\_47, GrecoEtereo\_48, Jasper\_49, HarryOW\_46, Pinto\_47, DrFeelGood\_45, DD5\_46, ConceptII\_49, NEHalo\_45, Sumter\_44, Dreamboat\_49, QTRlifeCrisis\_51, GageAP\_48, Lockley\_46
- Track 7 : BillKnuckles\_47
- Track 8 : Papez\_50, Euphoria\_45
- Track 9 : Big3\_46, Dexes\_47, Pelly\_46, Fushigi\_45
- Track 10 : AFIS\_45, BaconJack\_50, SpikeBT\_47
- Track 11 : Switzer\_48, U2\_46, BeesKnees\_48, Magnar\_46, Kanely\_48, Manatee\_48, Gandalf20\_49
- Track 12 : Hope4ever\_49, BluSpix\_46, Squee\_47, Ichabod\_49, McGuire\_48, Trouble\_49, Fenn\_49, Homines\_39, Eyeball\_48, Naira\_49, Nerujay\_49, IgnatiusPatJac\_47, Atkinbua\_49, Smeagol\_48
- Track 13 : Anglerfish\_48
- Track 14 : Ajay\_47, Peterson\_50
- Track 15 : Turj99\_44, Buttons\_45, Magnito\_44, SkiPole\_50, Adahisdi\_46, Oogway\_44, STLscum\_48
- Track 16 : JC27\_48, Briton15\_49, Ashballer\_48, Wheeler\_47

- Track 17 : Cueylyss\_48, Graduation\_50, HanShotFirst\_46, CactusRose\_44, Gwendoluna\_51, Bones\_47
- Track 18 : Bethlehem\_47, Pari\_48, Altman\_49
- Track 19 : Killigrew\_47
- Track 20 : Snazzy\_45, Lamina13\_47, Dynamix\_48, DreamCatcher\_50, KSSJEB\_46, Seabiscuit\_49, Tasp14\_48, PinkPlastic\_46
- Track 21 : Sunshine924\_48, Nhonho\_48, Espresso\_47, Barriga\_48
- Track 22 : A6\_43, BK1\_43
- Track 23 : Michley\_46
- Track 24 : Traft412\_47
- Track 25 : Ohno789\_48
- Track 26 : Violet\_45
- Track 27 : Target\_48
- Track 28 : Dulcie\_47
- Track 29 : MrGordo\_46
- Track 30 : Applejack\_43
- Track 31 : Drake94\_46, Trike\_46, Poompha\_47, Severus\_46, KittenMittens\_45, PeaceMeal1\_46
- Track 32 : OKCentral2016\_47, Chupacabra\_47, Goose\_48
- Track 33 : WalterMcMickey\_46, Rebeuca\_48, Twister\_46, Topanga\_46, Kristoff\_48
- Track 34 : Eaglepride\_49
- Track 35 : RhynO\_49
- Track 36 : Edison31\_46
- Track 37 : Rosalind\_53, ShayRa\_55
- Track 38 : Anon\_50
- Track 39 : KatherineG\_55, MinecraftSteve\_55, Soups\_55, DekHockey33\_54, Switzerland\_54, Battleship\_56
- Track 40 : Giroux\_51, SaturnRing\_51, Pistachio\_52, TNguyen7\_51, Bugatti\_51, BlueBird\_52
- Track 41 : Heathen\_50, Scout\_50
- Track 42 : Idleandcovert\_51, Puppy\_52
- Track 43 : Hookmount\_49, Pocahontas\_49, Noella\_49, Margo\_49, QuinnKiro\_48, Norbert\_48, Veracruz\_48, Lambert1\_49, Caviar\_49, Todacoro\_49, Texage\_48
- Track 44 : JF4\_48, JF2\_48, MK4\_50, Isca\_49, Rockstar\_50
- Track 45 : Phantastic\_51
- Track 46 : MA5\_50
- Track 47 : Popcicle\_49, ResDef\_50, Panamaxus\_47
- Track 48 : Fred313\_50
- Track 49 : BabyRay\_50
- Track 50 : B1\_45
- Track 51 : HelDan\_50
- Track 52 : Jaykayelowell\_47, Relief\_48, Morpher26\_48, Xena\_47, Cici\_48, HamSlice\_48, TroyPia\_50, Wander\_49, Blackmoor\_49, Clarenza\_48, Sparxx\_50, Eurydice\_50, Baby16\_49, Tinybot\_48, LappelDuVide\_48, Broseidon\_49, Cocoaberry\_49, Koreni\_48, Perplexer\_48, Gadost\_49, Avle17\_49, NotAPhaseMom\_49, CentreCat\_49, Cindaradix\_46, BellusTerra\_50, Lemur\_49, Bruiser\_48, JetBlade\_49, Houdini22\_49, DirtyDunning\_48, Iceman\_49, Ohfah\_50, Pumbaa\_49, Badger\_47, BubbleTrouble\_48, Kingmustik0402\_49, TinaFeyge\_49, Kremtemulon\_47, Florean\_49, LeoAvram\_49, Nemo27\_49, PeterPeter\_49, Roosevelt\_48, MeeZee\_49, Spino\_48, Pipcraft\_47, Dhanush\_49, Polymorphads\_50, Ruin\_49, NorthStar\_48, Nebs\_50, Alberto7\_50, Bumblebee11\_47, KFPoly\_48, Lunsford\_50, Connomayer\_49, Morrow\_50, Romney\_49, Camperdownii\_47, Scamp\_49, AbbysRanger\_48, Backyardigan\_47, Iracema64\_50, Druantia\_49,

Maxo\_50, Eros\_49, LittleGuy\_49, Eapen\_49, Deano\_48, Citius\_49, PetiteSangsue\_48, Phontbonne\_49, Palestino\_48, Shaka\_49, Kampy\_49, Kyee\_49, Funston\_48, Nyxis\_49, LochMonster\_50, OKaNui\_49, ICleared\_49, Melvin\_51, Wilbur\_49, Chaph\_49, Ulysses\_48, Mazhar510\_49, JoongJeon\_48, TygerBlood\_49, Millski\_48, Phelipe\_50, LittleB\_49, Caelakin\_49, Medusa\_49, Phacado\_49, Peaches\_49, Sabertooth\_49, Wizard007\_49, Annyong\_49, Skipitt\_48, Bartimeaus\_49, Burger\_47, Albee\_49, Wile\_48, Flux\_49, Cintron\_48, Abdiel\_49, Bombshell\_49, Eris\_48, Maverick\_49, Achebe\_47, Eagle\_49, Katalie136\_48, Commander\_49, Lorenzo\_49, TiroTheta9\_49, Taquarus\_49, YoSam321\_49

- Track 53 : Datway\_48, Noelle\_49, Shygu2\_48
- Track 54 : Stink\_46, AvatarAhPeg\_47, Miramae\_47
- Track 55 : Thanksgivukkah\_48
- Track 56 : LHTSCC\_51, BangNhom\_50, Obama12\_50, Cerulean\_50, Happiness\_48, ChampagnePapi\_51, SheldonCooper\_51
- Track 57 : Mundrea\_48
- Track 58 : Arturo\_48, Kratak\_49, Phighter1804\_49
- Track 59 : Holli\_48
- Track 60 : Stasia\_48
- Track 61 : Dublin\_41, Conspiracy\_42, Naca\_44, ElTiger69\_44, Airmid\_43, Tiger\_41, Lev2\_42, AgentM\_41, Jovo\_42, PetterN\_46, Scorpio\_46, Chadwick\_46, Benedict\_45, ForGetIt\_42
- Track 62 : Aragog\_41, Discoknowium\_41, Milcery\_43, Tarynearal\_41, George\_42, Phlorence\_41, Cuco\_42, Archetta\_42, Swirley\_45
- Track 63 : Coog\_42, Midas2\_42, PickleBack\_42, Jabiru\_43, UnionJack\_43
- Track 64 : MarysWell\_41, SydNat\_44, Bluefalcon\_41, Ghouboy\_44, Theia\_40, Zolita\_43
- Track 65 : HuhtaEnerson15\_43, LittleCherry\_43, Bonamassa\_43
- Track 66 : Micasa\_43
- Track 67 : Saintus\_41, NearlyHeadless\_46
- Track 68 : Groundhog\_45, Roary\_47, Astro\_46, Smeadley\_47, Dixon\_46, Expelliarmus\_46, Danforth\_46, Phillis\_48
- Track 69 : Stepig9\_47

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

The start number called the most often in the published annotations is 14, it was called in 185 of the 422 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- A6\_43, AFIS\_45, Abbyshoes\_50, Abrogate\_460, Acme\_49, Adahisdi\_46, Aeneas\_49, Agaliana\_43, Ajay\_47, Alsfro\_51, Altman\_49, Alvin\_47, Anglerfish\_48, Applejack\_43, Arcanine\_48, Arlo\_45, Ashballer\_48, Atkinbua\_49, BK1\_43, BPBiebs31\_48, BaconJack\_50, Barriga\_48, Beatrix\_47, BeesKnees\_48, Bethlehem\_47, Bexan\_46, Big3\_46, BigMau\_48, BigPaolini\_47, Bigfoot\_43, BillKnuckles\_47, Bircsak\_46, BluSpix\_46, Blue\_47, Bob3\_45, Bones\_47, Briton15\_49, Bruns\_46, Burton\_47, Buttons\_45, Bxb1\_43, CactusRose\_44, Carlyle\_46, Chanagan\_44, Ciao\_47, ConceptII\_49, Corvo\_48, Crispicous1\_45, Cueyllyss\_48, DD5\_46, Dexes\_47, Doom\_47, DrFeelGood\_45, DreamCatcher\_50, Dreamboat\_49, Dulcie\_47, Dussy\_49, Dynamix\_48, Edtherson\_47, Espresso\_47, Euphoria\_45, Eyeball\_48, Fajezeel\_49, Fenn\_49, Forsytheast\_47, Francis47\_46,

Froghopper\_45, Fushigi\_45, GageAP\_48, Gandalf20\_49, Gompeii16\_46, Graduation\_50, GrecoEtereo\_48, Greg\_49, Gwendoluna\_51, HanShotFirst\_46, HarryOW\_46, Hermia\_47, HermioneGrange\_47, Homines\_39, Hope4ever\_49, ILeeKay\_51, Ichabod\_49, IgnatiusPatJac\_47, JC27\_48, JackSparrow\_48, Jasper\_49, Jerm2\_48, JuliaChild\_48, KBG\_49, KSSJEB\_46, Kanely\_48, Kenmech\_51, Killigrew\_47, Kugel\_48, KyMonks1A\_49, Kykar\_47, Lamina13\_47, Lesedi\_44, Licorice\_50, LilBib\_48, Lockley\_46, Lopton\_48, MPlant7149\_46, Magnar\_46, Magnito\_44, Makemake\_47, Manatee\_48, Marcell\_45, Marge\_47, Marsha\_47, MaryBeth\_47, McGuire\_48, MetalQZJ\_46, Michley\_46, Molly\_48, Monet\_50, Moose\_47, MrGordo\_46, Mryolo\_45, Mule\_44, Museum\_48, NEHalo\_45, Naira\_49, Nerujay\_49, Nhonho\_48, Niza\_50, Ohno789\_48, Oogway\_44, PSullivan\_47, PacerPaul\_47, Papez\_50, Paphu\_45, Paraselene\_45, Pari\_48, PascalRango\_48, PattyP\_48, Pelly\_46, Pepe\_44, Perseus\_47, Peterson\_50, Petp2012\_48, Petruccio\_47, PherrisBueller\_47, PhrostyMug\_46, PinkPlastic\_46, Pinto\_47, Pippin\_49, Pita2\_50, QTRlifeCrisis\_51, Rajelicia\_48, Rhynn\_46, RidgeCB\_47, Ringer\_48, Rohr\_48, Rubeus\_47, Rufus\_48, Ruotula\_50, Rutherferd\_49, STLscum\_48, Sagefire\_50, SarFire\_45, Scowl\_48, Seabiscuit\_49, Seanderson\_49, Sibs6\_48, SkiPole\_50, Slagathor\_49, Smairt\_49, Smeagol\_48, Snazzy\_45, Solon\_46, SpikeBT\_47, Squee\_47, StewieG\_46, StrongArm\_47, Sumter\_44, Sunshine924\_48, SwissCheese\_49, Switzer\_48, Swole\_48, Target\_48, Tasp14\_48, TheloniousMonk\_48, Thor\_45, Tote\_43, Traft412\_47, Treddle\_48, Trip13t\_47, Trouble\_49, Turj99\_44, TwoPeat\_47, U2\_46, Violet\_45, Watermelon\_48, Wheeler\_47, Zeeculate\_45, Zephyr\_47, Zeuska\_46,

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

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

- AbbysRanger\_48, Abdiel\_49, Achebe\_47, AgentM\_41, Airmid\_43, Albee\_49, Alberto7\_50, Annyong\_49, Anon\_50, Aragog\_41, Archetta\_42, Arturo\_48, Astro\_46, AvatarAhPeg\_47, Avle17\_49, B1\_45, Baby16\_49, BabyRay\_50, Backyardigan\_47, Badger\_47, BangNhom\_50, Bartimeaus\_49, Battleship\_56, BellusTerra\_50, Benedict\_45, Blackmoor\_49, BlueBird\_52, Bluefalcon\_41, Bombshell\_49, Bonamassa\_43, Broseidon\_49, Bruiser\_48, BubbleTrouble\_48, Bugatti\_51, Bumblebee11\_47, Burger\_47, Caelakin\_49, Camperdownii\_47, Caviar\_49, CentreCat\_49, Cerulean\_50, Chadwick\_46, ChampagnePapi\_51, Chaph\_49, Chupacabra\_47, Cici\_48, Cindaradix\_46, Cintron\_48, Citius\_49, Clarenza\_48, Cocoaberry\_49, Commander\_49, Connomayer\_49, Conspiracy\_42, Coog\_42, Cuco\_42, Danforth\_46, Datway\_48, Deano\_48, DekHockey33\_54, Dhanush\_49, DirtyDunning\_48, Discoknowium\_41, Dixon\_46, Drake94\_46, Druantia\_49, Dublin\_41, Eagle\_49, Eaglepride\_49, Eapen\_49, Edison31\_46, EITiger69\_44, Eris\_48, Eros\_49, Eurydice\_50, Expelliarmus\_46, Florean\_49, Flux\_49, ForGetIt\_42, Fred313\_50, Funston\_48, Gadost\_49, George\_42, Ghoulyboy\_44, Giroux\_51, Goose\_48, Groundhog\_45, HamSlice\_48, Happiness\_48, Heathen\_50, HelDan\_50, Holli\_48, Hookmount\_49, Houdini22\_49, HuhtaEnerson15\_43, ICleared\_49, Iceman\_49, Idleandcovert\_51, Iracema64\_50, Isca\_49, JF2\_48, JF4\_48, Jabiru\_43, Jaykayelowell\_47, JetBlade\_49, JoongJeon\_48, Jovo\_42, KFPoly\_48, Kampy\_49, Katalie136\_48, KatherineG\_55, Kingmustik0402\_49, KittenMittens\_45, Koreni\_48, Kratak\_49, Kremtemulon\_47, Kristoff\_48, Kyee\_49, LHTSCC\_51, Lambert1\_49, LappelDuVide\_48, Lemur\_49, LeoAvram\_49, Lev2\_42, LittleB\_49, LittleCherry\_43, LittleGuy\_49, LochMonster\_50, Lorenzo\_49, Lunsford\_50, MA5\_50, MK4\_50, Margo\_49, MarysWell\_41, Maverick\_49, Maxo\_50, Mazhar510\_49, Medusa\_49, MeeZee\_49, Melvin\_51, Micasa\_43, Midas2\_42, Milcery\_43, Millski\_48,

MinecraftSteve\_55, Miramae\_47, Morpher26\_48, Morrow\_50, Mundrea\_48, Naca\_44, NearlyHeadless\_46, Nebs\_50, Nemo27\_49, Noella\_49, Noelle\_49, Norbert\_48, NorthStar\_48, NotAPhaseMom\_49, Nyxis\_49, OKCentral2016\_47, OKaNui\_49, Obama12\_50, Ohfah\_50, Palestino\_48, Panamaxus\_47, PeaceMeal1\_46, Peaches\_49, Perplexer\_48, PeterPeter\_49, PetiteSangsue\_48, PetterN\_46, Phacado\_49, Phantastic\_51, Phelipe\_50, Phighter1804\_49, Phillis\_48, Phlorence\_41, Phontbonne\_49, PickleBack\_42, Pipcraft\_47, Pistachio\_52, Pocahontas\_49, Polymorphads\_50, Poompha\_47, Popcicle\_49, Pumbaa\_49, Puppy\_52, QuinnKiro\_48, Rebeuca\_48, Relief\_48, ResDef\_50, RhynO\_49, Roary\_47, Rockstar\_50, Romney\_49, Roosevelt\_48, Rosalind\_53, Ruin\_49, Sabertooth\_49, Saintus\_41, SaturnRing\_51, Scamp\_49, Scorpia\_46, Scout\_50, Severus\_46, Shaka\_49, ShayRa\_55, SheldonCooper\_51, Shygu2\_48, Skipitt\_48, Smeadley\_47, Soups\_55, Sparxx\_50, Spino\_48, Stasia\_48, Stephig9\_47, Stink\_46, Swirley\_45, Switzerland\_54, SydNat\_44, TNguyen7\_51, Taquarus\_49, Tarynearal\_41, Texage\_48, Thanksgivukkah\_48, Theia\_40, Tiger\_41, TinaFeyge\_49, Tinybot\_48, TiroTheta9\_49, Todacoro\_49, Topanga\_46, Trike\_46, TroyPia\_50, Twister\_46, TygerBlood\_49, Ulysses\_48, UnionJack\_43, Veracruz\_48, WalterMcMickey\_46, Wander\_49, Wilbur\_49, Wile\_48, Wizard007\_49, Xena\_47, YoSam321\_49, Zolita\_43,

### Summary by start number:

#### Start 4:

- Found in 158 of 446 ( 35.4% ) of genes in pham
- Manual Annotations of this start: 1 of 422
- Called 0.6% of time when present
- Phage (with cluster) where this start called: Holli\_48 (A4),

#### Start 5:

- Found in 158 of 446 ( 35.4% ) of genes in pham
- Manual Annotations of this start: 1 of 422
- Called 0.6% of time when present
- Phage (with cluster) where this start called: Thanksgivukkah\_48 (A4),

#### Start 6:

- Found in 34 of 446 ( 7.6% ) of genes in pham
- Manual Annotations of this start: 22 of 422
- Called 64.7% of time when present
- Phage (with cluster) where this start called: BabyRay\_50 (A3), Caviar\_49 (A3), Heathen\_50 (A3), Hookmount\_49 (A3), Idleandcovert\_51 (A3), Isca\_49 (A3), JF2\_48 (A3), JF4\_48 (A3), Lambert1\_49 (A3), MK4\_50 (A3), Margo\_49 (A3), Noella\_49 (A3), Norbert\_48 (A3), Phantastic\_51 (A3), Pocahontas\_49 (A3), Puppy\_52 (A3), QuinnKiro\_48 (A3), Rockstar\_50 (A3), Scout\_50 (A3), Texage\_48 (A3), Todacoro\_49 (A3), Veracruz\_48 (A3),

#### Start 8:

- Found in 38 of 446 ( 8.5% ) of genes in pham
- Manual Annotations of this start: 37 of 422
- Called 97.4% of time when present
- Phage (with cluster) where this start called: AgentM\_41 (A5), Airmid\_43 (A5), Aragog\_41 (A5), Archetta\_42 (A5), Benedict\_45 (A5), Bluefalcon\_41 (A5), Bonamassa\_43 (A5), Chadwick\_46 (A5), Conspiracy\_42 (A5), Coog\_42 (A5), Cuco\_42 (A5), Discoknowium\_41 (A5), Dublin\_41 (A5), EITiger69\_44 (A5),

ForGetIt\_42 (A5), George\_42 (A5), Ghouboy\_44 (A5), HuhtaEnerson15\_43 (A5), Jabiru\_43 (A5), Jovo\_42 (A5), Lev2\_42 (A5), LittleCherry\_43 (A5), MarysWell\_41 (A5), Midas2\_42 (A5), Milcery\_43 (A5), Naca\_44 (A5), PetterN\_46 (A5), Phlorence\_41 (A5), PickleBack\_42 (A5), Scorpia\_46 (A5), Swirley\_45 (A5), SydNat\_44 (A5), Tarynearal\_41 (A5), Theia\_40 (A5), Tiger\_41 (A5), UnionJack\_43 (A5), Zolita\_43 (A5),

Start 9:

- Found in 11 of 446 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 11 of 422
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Astro\_46 (A8), Danforth\_46 (A8), Dixon\_46 (A8), Expelliarmus\_46 (A8), Groundhog\_45 (A8), NearlyHeadless\_46 (A8), Phillis\_48 (A8), Roary\_47 (A8), Saintus\_41 (A8), Smeadley\_47 (A8), StepHig9\_47 (A8),

Start 10:

- Found in 27 of 446 ( 6.1% ) of genes in pham
- Manual Annotations of this start: 7 of 422
- Called 40.7% of time when present
- Phage (with cluster) where this start called: BlueBird\_52 (A3), Bugatti\_51 (A3), Fred313\_50 (A3), Giroux\_51 (A3), HelDan\_50 (A3), Panamaxus\_47 (A3), Pistachio\_52 (A3), Popcicle\_49 (A3), ResDef\_50 (A3), SaturnRing\_51 (A3), TNguyen7\_51 (A3),

Start 11:

- Found in 162 of 446 ( 36.3% ) of genes in pham
- Manual Annotations of this start: 149 of 422
- Called 95.1% of time when present
- Phage (with cluster) where this start called: AbbysRanger\_48 (A4), Abdiel\_49 (A4), Achebe\_47 (A4), Albee\_49 (A4), Alberto7\_50 (A4), Annyong\_49 (A4), Arturo\_48 (A4), AvatarAhPeg\_47 (A4), Avle17\_49 (A4), B1\_45 (A3), Baby16\_49 (A4), Backyardigan\_47 (A4), Badger\_47 (A4), BangNhom\_50 (A4), Bartimeaus\_49 (A4), BellusTerra\_50 (A4), Blackmoor\_49 (A4), Bombshell\_49 (A4), Broseidon\_49 (A4), Bruiser\_48 (A4), BubbleTrouble\_48 (A4), Bumblebee11\_47 (A4), Burger\_47 (A4), Caelakin\_49 (A4), Camperdownii\_47 (A4), CentreCat\_49 (A4), Cerulean\_50 (A4), ChampagnePapi\_51 (A4), Chaph\_49 (A4), Chupacabra\_47 (A10), Cici\_48 (A4), Cindaradix\_46 (A4), Cintron\_48 (A4), Citius\_49 (A4), Clarenza\_48 (A4), Cocoaberry\_49 (A4), Commander\_49 (A4), Connomayer\_49 (A4), Datway\_48 (A4), Deano\_48 (A4), Dhanush\_49 (A4), DirtyDunning\_48 (A4), Drake94\_46 (A10), Druantia\_49 (A4), Eagle\_49 (A4), Eaglepride\_49 (A10), Eapen\_49 (A4), Edison31\_46 (A10), Eris\_48 (A4), Eros\_49 (A4), Eurydice\_50 (A4), Florean\_49 (A4), Flux\_49 (A4), Funston\_48 (A4), Gadost\_49 (A4), Goose\_48 (A10), HamSlice\_48 (A4), Happiness\_48 (A4), Houdini22\_49 (A4), ICleared\_49 (A4), Iceman\_49 (A4), Iracema64\_50 (A4), Jaykayelowell\_47 (A4), JetBlade\_49 (A4), JoongJeon\_48 (A4), KFPoly\_48 (A4), Kamy\_49 (A4), Katalie136\_48 (A4), Kingmustik0402\_49 (A4), KittenMittens\_45 (A10), Koreni\_48 (A4), Kratark\_49 (A4), Kremtemulon\_47 (A4), Kristoff\_48 (A10), Kyee\_49 (A4), LHTSCC\_51 (A4), LappelDuVide\_48 (A4), Lemur\_49 (A4), LeoAvram\_49 (A4), LittleB\_49 (A4), LittleGuy\_49 (A4), LochMonster\_50 (A4), Lorenzo\_49 (A4), Lunsford\_50 (A4), MA5\_50 (A3), Maverick\_49 (A4), Maxo\_50 (A4), Mazhar510\_49 (A4), Medusa\_49 (A4), MeeZee\_49 (A4), Melvin\_51 (A4), Millski\_48 (A4), Miramae\_47 (A4), Morpher26\_48 (A4), Morrow\_50 (A4), Mundrea\_48 (A4), Nebs\_50 (A4), Nemo27\_49 (A4), Noelle\_49 (A4),



NorthStar\_48 (A4), NotAPhaseMom\_49 (A4), Nyxis\_49 (A4), OKCentral2016\_47 (A10), OKaNui\_49 (A4), Obama12\_50 (A4), Ohfah\_50 (A4), Palestino\_48 (A4), PeaceMeal1\_46 (A10), Peaches\_49 (A4), Perplexer\_48 (A4), PeterPeter\_49 (A4), PetiteSangsue\_48 (A4), Phacado\_49 (A4), Phelipe\_50 (A4), Phighter1804\_49 (A4), Phontbonne\_49 (A4), Pipcraft\_47 (A4), Polymorphads\_50 (A4), Poompha\_47 (A10), Pumbaa\_49 (A4), Rebeuca\_48 (A10), Relief\_48 (A4), RhynO\_49 (A10), Romney\_49 (A4), Roosevelt\_48 (A4), Ruin\_49 (A4), Sabertooth\_49 (A4), Scamp\_49 (A4), Severus\_46 (A10), Shaka\_49 (A4), SheldonCooper\_51 (A4), Shygu2\_48 (A4), Skipitt\_48 (A4), Sparxx\_50 (A4), Spino\_48 (A4), Stasia\_48 (A4), Stink\_46 (A4), Taquarus\_49 (A4), TinaFeyge\_49 (A4), Tinybot\_48 (A4), TiroTheta9\_49 (A4), Topanga\_46 (A10), Trike\_46 (A10), TroyPia\_50 (A4), Twister\_46 (A10), TygerBlood\_49 (A4), Ulysses\_48 (A4), WalterMcMickey\_46 (A10), Wander\_49 (A4), Wilbur\_49 (A4), Wile\_48 (A4), Wizard007\_49 (A4), Xena\_47 (A4), YoSam321\_49 (A4),

#### Start 12:

- Found in 9 of 446 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 9 of 422
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anon\_50 (A15), Battleship\_56 (A15), DekHockey33\_54 (A15), KatherineG\_55 (A15), MinecraftSteve\_55 (A15), Rosalind\_53 (A15), ShayRa\_55 (A15), Soups\_55 (A15), Switzerland\_54 (A15),

#### Start 14:

- Found in 199 of 446 ( 44.6% ) of genes in pham
- Manual Annotations of this start: 185 of 422
- Called 100.0% of time when present
- Phage (with cluster) where this start called: A6\_43 (A1), AFIS\_45 (A1), Abbysshoes\_50 (A1), Abrogate\_460 (A1), Acme\_49 (A1), Adahisdi\_46 (A1), Aeneas\_49 (A1), Agaliana\_43 (A1), Ajay\_47 (A1), Alsfro\_51 (A1), Altman\_49 (A1), Alvin\_47 (A1), Anglerfish\_48 (A1), Applejack\_43 (A1), Arcanine\_48 (A1), Arlo\_45 (A1), Ashballer\_48 (A1), Atkinbua\_49 (A1), BK1\_43 (A1), BPBiebs31\_48 (A1), BaconJack\_50 (A1), Barriga\_48 (A1), Beatrix\_47 (A1), BeesKnees\_48 (A1), Bethlehem\_47 (A1), Bexan\_46 (A1), Big3\_46 (A1), BigMau\_48 (A1), BigPaolini\_47 (A1), Bigfoot\_43 (A1), BillKnuckles\_47 (A1), Bircsak\_46 (A1), BluSpix\_46 (A1), Blue\_47 (A1), Bob3\_45 (A1), Bones\_47 (A1), Briton15\_49 (A1), Bruns\_46 (A1), Burton\_47 (A1), Buttons\_45 (A1), Bxb1\_43 (A1), CactusRose\_44 (A1), Carlyle\_46 (A1), Chanagan\_44 (A1), Ciao\_47 (A1), Conceptll\_49 (A1), Corvo\_48 (A1), Crispicious1\_45 (A1), Cueyllyss\_48 (A1), DD5\_46 (A1), Dexes\_47 (A1), Doom\_47 (A1), DrFeelGood\_45 (A1), DreamCatcher\_50 (A1), Dreamboat\_49 (A1), Dulcie\_47 (A1), Dussy\_49 (A1), Dynamix\_48 (A1), Edtherson\_47 (A1), Espresso\_47 (A1), Euphoria\_45 (A1), Eyeball\_48 (A1), Fajezeel\_49 (A1), Fenn\_49 (A1), Forsytheast\_47 (A1), Francis47\_46 (A1), Froghopper\_45 (A1), Fushigi\_45 (A1), GageAP\_48 (A1), Gandalf20\_49 (A1), Gompeii16\_46 (A1), Graduation\_50 (A1), GrecoEtereo\_48 (A1), Greg\_49 (A1), Gwendoluna\_51 (A1), HanShotFirst\_46 (A1), HarryOW\_46 (A1), Hermia\_47 (A1), HermioneGrange\_47 (A1), Homines\_39 (A1), Hope4ever\_49 (A1), ILeeKay\_51 (A1), Ichabod\_49 (A1), IgnatiusPatJac\_47 (A1), JC27\_48 (A1), JackSparrow\_48 (A1), Jasper\_49 (A1), Jerm2\_48 (A1), JuliaChild\_48 (A1), KBG\_49 (A1), KSSJEB\_46 (A1), Kanely\_48 (A1), Kenmech\_51 (A1), Killigrew\_47 (A1), Kugel\_48 (A1), KyMonks1A\_49 (A1), Kykar\_47 (A1), Lamina13\_47 (A1), Lesedi\_44 (A1), Licorice\_50 (A1), LilBib\_48 (A1), Lockley\_46 (A1), Lopton\_48 (A1), MPlant7149\_46 (A1), Magnar\_46 (A1), Magnito\_44 (A1), Makemake\_47 (A1), Manatee\_48 (A1), Marcell\_45 (A1), Marge\_47 (A1), Marsha\_47 (A1), MaryBeth\_47

(A1), McGuire\_48 (A1), MetalQZJ\_46 (A1), Michley\_46 (A1), Molly\_48 (A1), Monet\_50 (A1), Moose\_47 (A1), MrGordo\_46 (A1), Mryolo\_45 (A1), Mule\_44 (A1), Museum\_48 (A1), NEHalo\_45 (A1), Naira\_49 (A1), Nerujay\_49 (A1), Nhonho\_48 (A1), Niza\_50 (A1), Ohno789\_48 (A1), Oogway\_44 (A1), PSullivan\_47 (A1), PacerPaul\_47 (A1), Papez\_50 (A1), Paphu\_45 (A1), Paraselene\_45 (A1), Pari\_48 (A1), PascalRango\_48 (A1), PattyP\_48 (A1), Pelly\_46 (A1), Pepe\_44 (A1), Perseus\_47 (A1), Peterson\_50 (A1), Petp2012\_48 (A1), Petruccio\_47 (A1), PherrisBueller\_47 (A1), PhrostyMug\_46 (A1), PinkPlastic\_46 (A1), Pinto\_47 (A1), Pippin\_49 (A1), Pita2\_50 (A1), QTRlifeCrisis\_51 (A1), Rajelicia\_48 (A1), Rhynn\_46 (A1), RidgeCB\_47 (A1), Ringer\_48 (A1), Rohr\_48 (A1), Rubeus\_47 (A1), Rufus\_48 (A1), Ruotula\_50 (A1), Rutherford\_49 (A1), STLscum\_48 (A1), Sagefire\_50 (A1), SarFire\_45 (A1), Scowl\_48 (A1), Seabiscuit\_49 (A1), Seanderson\_49 (A1), Sibs6\_48 (A1), SkiPole\_50 (A1), Slagathor\_49 (A1), Smairt\_49 (A1), Smeagol\_48 (A1), Snazzy\_45 (A1), Solon\_46 (A1), SpikeBT\_47 (A1), Squee\_47 (A1), StewieG\_46 (A1), StrongArm\_47 (A1), Sumter\_44 (A1), Sunshine924\_48 (A1), SwissCheese\_49 (A1), Switzer\_48 (A1), Swole\_48 (A1), Target\_48 (A1), Tasp14\_48 (A1), TheloniousMonk\_48 (A1), Thor\_45 (A1), Tote\_43 (A1), Traft412\_47 (A1), Treddle\_48 (A1), Tripl3t\_47 (A1), Trouble\_49 (A1), Turj99\_44 (A1), TwoPeat\_47 (A1), U2\_46 (A1), Violet\_45 (A1), Watermelon\_48 (A1), Wheeler\_47 (A1), Zeeculate\_45 (A1), Zephyr\_47 (A1), Zeuska\_46 (A1),

Start 18:

- Found in 49 of 446 ( 11.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 2.0% of time when present
- Phage (with cluster) where this start called: Micasa\_43 (A5),

### **Summary by clusters:**

There are 7 clusters represented in this pham: A15, A10, A1, A3, A5, A4, A8,

Info for manual annotations of cluster A1:

- Start number 14 was manually annotated 185 times for cluster A1.

Info for manual annotations of cluster A10:

- Start number 11 was manually annotated 16 times for cluster A10.

Info for manual annotations of cluster A15:

- Start number 12 was manually annotated 9 times for cluster A15.

Info for manual annotations of cluster A3:

- Start number 6 was manually annotated 22 times for cluster A3.
- Start number 10 was manually annotated 7 times for cluster A3.
- Start number 11 was manually annotated 2 times for cluster A3.

Info for manual annotations of cluster A4:

- Start number 4 was manually annotated 1 time for cluster A4.
- Start number 5 was manually annotated 1 time for cluster A4.
- Start number 11 was manually annotated 131 times for cluster A4.

Info for manual annotations of cluster A5:

- Start number 8 was manually annotated 37 times for cluster A5.

Info for manual annotations of cluster A8:

•Start number 9 was manually annotated 11 times for cluster A8.

**Gene Information:**

Gene: A6\_43 Start: 34340, Stop: 33849, Start Num: 14

Candidate Starts for A6\_43:

(3, 34412), (7, 34373), (Start: 14 @34340 has 185 MA's), (17, 34259), (20, 34238), (33, 34130), (38, 34097), (42, 33938), (43, 33902),

Gene: AFIS\_45 Start: 35135, Stop: 34641, Start Num: 14

Candidate Starts for AFIS\_45:

(Start: 14 @35135 has 185 MA's), (17, 35054), (20, 35033), (33, 34925), (36, 34901), (38, 34892), (42, 34733), (43, 34697),

Gene: AbbysRanger\_48 Start: 33378, Stop: 32839, Start Num: 11

Candidate Starts for AbbysRanger\_48:

(Start: 4 @33435 has 1 MA's), (Start: 5 @33420 has 1 MA's), (Start: 11 @33378 has 149 MA's), (31, 33120), (36, 33087), (39, 33048), (43, 32880),

Gene: Abbysshoes\_50 Start: 35780, Stop: 35289, Start Num: 14

Candidate Starts for Abbysshoes\_50:

(3, 35852), (7, 35813), (Start: 14 @35780 has 185 MA's), (17, 35699), (20, 35678), (29, 35609), (36, 35546), (38, 35537), (42, 35378), (43, 35342),

Gene: Abdiel\_49 Start: 33389, Stop: 32850, Start Num: 11

Candidate Starts for Abdiel\_49:

(Start: 4 @33446 has 1 MA's), (Start: 5 @33431 has 1 MA's), (Start: 11 @33389 has 149 MA's), (31, 33131), (36, 33098), (39, 33059), (43, 32891),

Gene: Abrogate\_460 Start: 35795, Stop: 35316, Start Num: 14

Candidate Starts for Abrogate\_460:

(3, 35867), (7, 35828), (Start: 14 @35795 has 185 MA's), (17, 35714), (20, 35693), (29, 35624), (36, 35561), (38, 35552), (42, 35405), (43, 35369),

Gene: Achebe\_47 Start: 33361, Stop: 32822, Start Num: 11

Candidate Starts for Achebe\_47:

(Start: 4 @33418 has 1 MA's), (Start: 5 @33403 has 1 MA's), (Start: 11 @33361 has 149 MA's), (31, 33103), (36, 33070), (39, 33031), (43, 32863),

Gene: Acme\_49 Start: 35657, Stop: 35166, Start Num: 14

Candidate Starts for Acme\_49:

(3, 35729), (7, 35690), (Start: 14 @35657 has 185 MA's), (17, 35576), (20, 35555), (29, 35486), (36, 35423), (38, 35414), (42, 35255), (43, 35219),

Gene: Adahisdi\_46 Start: 35135, Stop: 34644, Start Num: 14

Candidate Starts for Adahisdi\_46:

(Start: 14 @35135 has 185 MA's), (17, 35054), (20, 35033), (36, 34901), (38, 34892), (42, 34733), (43, 34697),

Gene: Aeneas\_49 Start: 35748, Stop: 35269, Start Num: 14

Candidate Starts for Aeneas\_49:

(3, 35820), (7, 35781), (Start: 14 @35748 has 185 MA's), (17, 35667), (20, 35646), (29, 35577), (33, 35538), (36, 35514), (38, 35505), (42, 35358), (43, 35322),

Gene: Agaliana\_43 Start: 32395, Stop: 31904, Start Num: 14

Candidate Starts for Agaliana\_43:

(3, 32467), (7, 32428), (Start: 14 @32395 has 185 MA's), (17, 32314), (20, 32293), (29, 32224), (33, 32185), (36, 32161), (38, 32152), (42, 31993), (43, 31957),

Gene: AgentM\_41 Start: 32065, Stop: 31532, Start Num: 8

Candidate Starts for AgentM\_41:

(Start: 8 @32065 has 37 MA's), (18, 31933), (19, 31927), (36, 31783),

Gene: Airmid\_43 Start: 32100, Stop: 31576, Start Num: 8

Candidate Starts for Airmid\_43:

(Start: 8 @32100 has 37 MA's), (18, 31968), (19, 31962), (36, 31818),

Gene: Ajay\_47 Start: 35453, Stop: 34962, Start Num: 14

Candidate Starts for Ajay\_47:

(Start: 14 @35453 has 185 MA's), (17, 35372), (20, 35351), (29, 35282), (36, 35219), (38, 35210), (42, 35051), (43, 35015),

Gene: Albee\_49 Start: 33388, Stop: 32849, Start Num: 11

Candidate Starts for Albee\_49:

(Start: 4 @33445 has 1 MA's), (Start: 5 @33430 has 1 MA's), (Start: 11 @33388 has 149 MA's), (31, 33130), (36, 33097), (39, 33058), (43, 32890),

Gene: Alberto7\_50 Start: 33725, Stop: 33186, Start Num: 11

Candidate Starts for Alberto7\_50:

(Start: 4 @33782 has 1 MA's), (Start: 5 @33767 has 1 MA's), (Start: 11 @33725 has 149 MA's), (31, 33467), (36, 33434), (39, 33395), (43, 33227),

Gene: Alsfro\_51 Start: 35855, Stop: 35364, Start Num: 14

Candidate Starts for Alsfro\_51:

(3, 35927), (7, 35888), (Start: 14 @35855 has 185 MA's), (17, 35774), (20, 35753), (36, 35621), (38, 35612), (42, 35453), (43, 35417),

Gene: Altman\_49 Start: 36087, Stop: 35596, Start Num: 14

Candidate Starts for Altman\_49:

(Start: 14 @36087 has 185 MA's), (17, 36006), (20, 35985), (36, 35853), (38, 35844), (42, 35685), (43, 35649),

Gene: Alvin\_47 Start: 36107, Stop: 35616, Start Num: 14

Candidate Starts for Alvin\_47:

(3, 36179), (7, 36140), (Start: 14 @36107 has 185 MA's), (17, 36026), (20, 36005), (36, 35873), (38, 35864), (42, 35705), (43, 35669),

Gene: Anglerfish\_48 Start: 35637, Stop: 35146, Start Num: 14

Candidate Starts for Anglerfish\_48:

(Start: 14 @35637 has 185 MA's), (17, 35556), (20, 35535), (29, 35466), (36, 35403), (38, 35394), (42, 35235), (43, 35199),

Gene: Annyong\_49 Start: 33433, Stop: 32894, Start Num: 11

Candidate Starts for Annyong\_49:

(Start: 4 @33490 has 1 MA's), (Start: 5 @33475 has 1 MA's), (Start: 11 @33433 has 149 MA's), (31, 33175), (36, 33142), (39, 33103), (43, 32935),

Gene: Anon\_50 Start: 32020, Stop: 31481, Start Num: 12

Candidate Starts for Anon\_50:

(Start: 12 @32020 has 9 MA's), (19, 31894), (36, 31747), (43, 31534), (46, 31501),

Gene: Applejack\_43 Start: 32017, Stop: 31538, Start Num: 14

Candidate Starts for Applejack\_43:

(3, 32089), (7, 32050), (Start: 14 @32017 has 185 MA's), (17, 31936), (29, 31846), (36, 31783), (38, 31774), (42, 31627), (43, 31591),

Gene: Aragog\_41 Start: 32083, Stop: 31556, Start Num: 8

Candidate Starts for Aragog\_41:

(Start: 8 @32083 has 37 MA's), (18, 31948), (19, 31942), (36, 31798), (45, 31579),

Gene: Arcanine\_48 Start: 35327, Stop: 34836, Start Num: 14

Candidate Starts for Arcanine\_48:

(3, 35399), (7, 35360), (Start: 14 @35327 has 185 MA's), (17, 35246), (20, 35225), (29, 35156), (36, 35093), (38, 35084), (42, 34925), (43, 34889),

Gene: Archetta\_42 Start: 32613, Stop: 32086, Start Num: 8

Candidate Starts for Archetta\_42:

(Start: 8 @32613 has 37 MA's), (18, 32478), (19, 32472), (36, 32328), (45, 32109),

Gene: Arlo\_45 Start: 34984, Stop: 34493, Start Num: 14

Candidate Starts for Arlo\_45:

(3, 35056), (7, 35017), (Start: 14 @34984 has 185 MA's), (17, 34903), (20, 34882), (29, 34813), (36, 34750), (38, 34741), (42, 34582), (43, 34546),

Gene: Arturo\_48 Start: 33662, Stop: 33129, Start Num: 11

Candidate Starts for Arturo\_48:

(Start: 11 @33662 has 149 MA's), (31, 33404), (36, 33371), (39, 33332), (43, 33170),

Gene: Ashballer\_48 Start: 36113, Stop: 35622, Start Num: 14

Candidate Starts for Ashballer\_48:

(Start: 14 @36113 has 185 MA's), (17, 36032), (20, 36011), (29, 35942), (36, 35879), (38, 35870), (42, 35711), (43, 35675),

Gene: Astro\_46 Start: 31898, Stop: 31377, Start Num: 9

Candidate Starts for Astro\_46:

(Start: 9 @31898 has 11 MA's), (18, 31781), (30, 31682), (36, 31631), (37, 31625), (45, 31400),

Gene: Atkinbua\_49 Start: 35740, Stop: 35249, Start Num: 14

Candidate Starts for Atkinbua\_49:

(Start: 14 @35740 has 185 MA's), (17, 35659), (20, 35638), (36, 35506), (38, 35497), (42, 35338), (43, 35302),

Gene: AvatarAhPeg\_47 Start: 33169, Stop: 32621, Start Num: 11

Candidate Starts for AvatarAhPeg\_47:

(Start: 11 @33169 has 149 MA's), (23, 33022), (36, 32872), (41, 32710), (43, 32662),

Gene: Avle17\_49 Start: 33385, Stop: 32846, Start Num: 11

Candidate Starts for Avle17\_49:

(Start: 4 @33442 has 1 MA's), (Start: 5 @33427 has 1 MA's), (Start: 11 @33385 has 149 MA's), (31, 33127), (36, 33094), (39, 33055), (43, 32887),

Gene: B1\_45 Start: 31865, Stop: 31290, Start Num: 11

Candidate Starts for B1\_45:

(Start: 4 @31922 has 1 MA's), (Start: 5 @31907 has 1 MA's), (Start: 6 @31895 has 22 MA's), (Start: 11 @31865 has 149 MA's), (15, 31793), (22, 31715), (26, 31682), (27, 31679), (31, 31595), (38, 31550), (41, 31382), (43, 31331),

Gene: BK1\_43 Start: 34340, Stop: 33849, Start Num: 14

Candidate Starts for BK1\_43:

(3, 34412), (7, 34373), (Start: 14 @34340 has 185 MA's), (17, 34259), (20, 34238), (33, 34130), (38, 34097), (42, 33938), (43, 33902),

Gene: BPBiebs31\_48 Start: 35699, Stop: 35208, Start Num: 14

Candidate Starts for BPBiebs31\_48:

(3, 35771), (7, 35732), (Start: 14 @35699 has 185 MA's), (17, 35618), (20, 35597), (29, 35528), (36, 35465), (38, 35456), (42, 35297), (43, 35261),

Gene: Baby16\_49 Start: 33399, Stop: 32860, Start Num: 11

Candidate Starts for Baby16\_49:

(Start: 4 @33456 has 1 MA's), (Start: 5 @33441 has 1 MA's), (Start: 11 @33399 has 149 MA's), (31, 33141), (36, 33108), (39, 33069), (43, 32901),

Gene: BabyRay\_50 Start: 33653, Stop: 33060, Start Num: 6

Candidate Starts for BabyRay\_50:

(Start: 4 @33680 has 1 MA's), (Start: 5 @33665 has 1 MA's), (Start: 6 @33653 has 22 MA's), (Start: 10 @33623 has 7 MA's), (15, 33554), (22, 33476), (26, 33443), (27, 33440), (31, 33356), (35, 33323), (43, 33101),

Gene: Backyardigan\_47 Start: 33394, Stop: 32855, Start Num: 11

Candidate Starts for Backyardigan\_47:

(Start: 4 @33451 has 1 MA's), (Start: 5 @33436 has 1 MA's), (Start: 11 @33394 has 149 MA's), (31, 33136), (36, 33103), (39, 33064), (43, 32896),

Gene: BaconJack\_50 Start: 36404, Stop: 35910, Start Num: 14

Candidate Starts for BaconJack\_50:

(Start: 14 @36404 has 185 MA's), (17, 36323), (20, 36302), (33, 36194), (36, 36170), (38, 36161), (42, 35999), (43, 35963),

Gene: Badger\_47 Start: 33362, Stop: 32823, Start Num: 11

Candidate Starts for Badger\_47:

(Start: 4 @33419 has 1 MA's), (Start: 5 @33404 has 1 MA's), (Start: 11 @33362 has 149 MA's), (31, 33104), (36, 33071), (39, 33032), (43, 32864),

Gene: BangNhom\_50 Start: 33807, Stop: 33271, Start Num: 11

Candidate Starts for BangNhom\_50:

(2, 33870), (Start: 11 @33807 has 149 MA's), (31, 33549), (36, 33516), (39, 33477), (43, 33312),

Gene: Barriga\_48 Start: 35242, Stop: 34751, Start Num: 14

Candidate Starts for Barriga\_48:

(Start: 14 @35242 has 185 MA's), (17, 35161), (20, 35140), (36, 35008), (38, 34999), (42, 34840), (43, 34804),

Gene: Bartimeaus\_49 Start: 33390, Stop: 32851, Start Num: 11

Candidate Starts for Bartimeaus\_49:

(Start: 4 @33447 has 1 MA's), (Start: 5 @33432 has 1 MA's), (Start: 11 @33390 has 149 MA's), (31, 33132), (36, 33099), (39, 33060), (43, 32892),

Gene: Battleship\_56 Start: 33029, Stop: 32463, Start Num: 12

Candidate Starts for Battleship\_56:

(Start: 12 @33029 has 9 MA's), (13, 33023), (16, 32918), (20, 32891), (21, 32888), (32, 32777), (34, 32756), (36, 32747), (38, 32738), (43, 32519),

Gene: Beatrix\_47 Start: 36955, Stop: 36464, Start Num: 14

Candidate Starts for Beatrix\_47:

(3, 37027), (7, 36988), (Start: 14 @36955 has 185 MA's), (17, 36874), (20, 36853), (36, 36721), (38, 36712), (42, 36553), (43, 36517),

Gene: BeesKnees\_48 Start: 35448, Stop: 34954, Start Num: 14

Candidate Starts for BeesKnees\_48:

(Start: 14 @35448 has 185 MA's), (17, 35367), (20, 35346), (33, 35238), (36, 35214), (38, 35205), (42, 35046), (43, 35010),

Gene: BellusTerra\_50 Start: 33389, Stop: 32850, Start Num: 11

Candidate Starts for BellusTerra\_50:

(Start: 4 @33446 has 1 MA's), (Start: 5 @33431 has 1 MA's), (Start: 11 @33389 has 149 MA's), (31, 33131), (36, 33098), (39, 33059), (43, 32891),

Gene: Benedict\_45 Start: 32275, Stop: 31751, Start Num: 8

Candidate Starts for Benedict\_45:

(Start: 8 @32275 has 37 MA's), (18, 32143), (19, 32137), (36, 31993),

Gene: Bethlehem\_47 Start: 36106, Stop: 35615, Start Num: 14

Candidate Starts for Bethlehem\_47:

(Start: 14 @36106 has 185 MA's), (17, 36025), (20, 36004), (36, 35872), (38, 35863), (42, 35704), (43, 35668),

Gene: Bexan\_46 Start: 36633, Stop: 36142, Start Num: 14

Candidate Starts for Bexan\_46:

(3, 36705), (7, 36666), (Start: 14 @36633 has 185 MA's), (17, 36552), (20, 36531), (36, 36399), (38, 36390), (42, 36231), (43, 36195),

Gene: Big3\_46 Start: 35559, Stop: 35068, Start Num: 14

Candidate Starts for Big3\_46:

(Start: 14 @35559 has 185 MA's), (17, 35478), (20, 35457), (36, 35325), (38, 35316), (42, 35157), (43, 35121),

Gene: BigMau\_48 Start: 35214, Stop: 34723, Start Num: 14

Candidate Starts for BigMau\_48:

(3, 35286), (7, 35247), (Start: 14 @35214 has 185 MA's), (17, 35133), (20, 35112), (29, 35043), (36, 34980), (38, 34971), (42, 34812), (43, 34776),

Gene: BigPaolini\_47 Start: 34397, Stop: 33906, Start Num: 14

Candidate Starts for BigPaolini\_47:

(3, 34469), (7, 34430), (Start: 14 @34397 has 185 MA's), (17, 34316), (20, 34295), (29, 34226), (36, 34163), (38, 34154), (43, 33959),

Gene: Bigfoot\_43 Start: 34618, Stop: 34127, Start Num: 14

Candidate Starts for Bigfoot\_43:

(3, 34690), (7, 34651), (Start: 14 @34618 has 185 MA's), (17, 34537), (20, 34516), (29, 34447), (36, 34384), (38, 34375), (42, 34216), (43, 34180),

Gene: BillKnuckles\_47 Start: 36158, Stop: 35667, Start Num: 14

Candidate Starts for BillKnuckles\_47:

(Start: 14 @36158 has 185 MA's), (17, 36077), (20, 36056), (29, 35987), (33, 35948), (36, 35924), (38, 35915), (42, 35756), (43, 35720),

Gene: Bircsak\_46 Start: 35971, Stop: 35480, Start Num: 14

Candidate Starts for Bircsak\_46:

(3, 36043), (7, 36004), (Start: 14 @35971 has 185 MA's), (17, 35890), (20, 35869), (29, 35800), (33, 35761), (36, 35737), (38, 35728), (42, 35569), (43, 35533),

Gene: Blackmoor\_49 Start: 33390, Stop: 32851, Start Num: 11

Candidate Starts for Blackmoor\_49:

(Start: 4 @33447 has 1 MA's), (Start: 5 @33432 has 1 MA's), (Start: 11 @33390 has 149 MA's), (31, 33132), (36, 33099), (39, 33060), (43, 32892),

Gene: BluSpix\_46 Start: 31820, Stop: 31326, Start Num: 14

Candidate Starts for BluSpix\_46:

(Start: 14 @31820 has 185 MA's), (17, 31739), (20, 31718), (36, 31586), (38, 31577), (42, 31418), (43, 31382),

Gene: Blue\_47 Start: 35881, Stop: 35390, Start Num: 14

Candidate Starts for Blue\_47:

(Start: 14 @35881 has 185 MA's), (17, 35800), (20, 35779), (29, 35710), (36, 35647), (38, 35638), (42, 35479), (43, 35443),

Gene: BlueBird\_52 Start: 33721, Stop: 33158, Start Num: 10

Candidate Starts for BlueBird\_52:

(Start: 4 @33778 has 1 MA's), (Start: 5 @33763 has 1 MA's), (Start: 6 @33751 has 22 MA's), (Start: 10 @33721 has 7 MA's), (15, 33652), (22, 33574), (27, 33538), (31, 33454), (43, 33199),

Gene: Bluefalcon\_41 Start: 32577, Stop: 32050, Start Num: 8

Candidate Starts for Bluefalcon\_41:

(Start: 8 @32577 has 37 MA's), (18, 32442), (19, 32436), (36, 32292),

Gene: Bob3\_45 Start: 34564, Stop: 34073, Start Num: 14

Candidate Starts for Bob3\_45:

(3, 34636), (7, 34597), (Start: 14 @34564 has 185 MA's), (17, 34483), (20, 34462), (29, 34393), (36, 34330), (38, 34321), (42, 34162), (43, 34126),

Gene: Bombshell\_49 Start: 33385, Stop: 32846, Start Num: 11

Candidate Starts for Bombshell\_49:

(Start: 4 @33442 has 1 MA's), (Start: 5 @33427 has 1 MA's), (Start: 11 @33385 has 149 MA's), (31, 33127), (36, 33094), (39, 33055), (43, 32887),



Gene: Bonamassa\_43 Start: 32602, Stop: 32075, Start Num: 8  
Candidate Starts for Bonamassa\_43:  
(Start: 8 @32602 has 37 MA's), (18, 32467), (19, 32461), (36, 32317), (44, 32116), (45, 32098),

Gene: Bones\_47 Start: 35893, Stop: 35402, Start Num: 14  
Candidate Starts for Bones\_47:  
(Start: 14 @35893 has 185 MA's), (17, 35812), (20, 35791), (29, 35722), (33, 35683), (36, 35659), (38, 35650), (42, 35491), (43, 35455),

Gene: Briton15\_49 Start: 35674, Stop: 35183, Start Num: 14  
Candidate Starts for Briton15\_49:  
(Start: 14 @35674 has 185 MA's), (17, 35593), (20, 35572), (29, 35503), (36, 35440), (38, 35431), (42, 35272), (43, 35236),

Gene: Broseidon\_49 Start: 33390, Stop: 32851, Start Num: 11  
Candidate Starts for Broseidon\_49:  
(Start: 4 @33447 has 1 MA's), (Start: 5 @33432 has 1 MA's), (Start: 11 @33390 has 149 MA's), (31, 33132), (36, 33099), (39, 33060), (43, 32892),

Gene: Bruiser\_48 Start: 33388, Stop: 32849, Start Num: 11  
Candidate Starts for Bruiser\_48:  
(Start: 4 @33445 has 1 MA's), (Start: 5 @33430 has 1 MA's), (Start: 11 @33388 has 149 MA's), (31, 33130), (36, 33097), (39, 33058), (43, 32890),

Gene: Bruns\_46 Start: 35176, Stop: 34685, Start Num: 14  
Candidate Starts for Bruns\_46:  
(3, 35248), (7, 35209), (Start: 14 @35176 has 185 MA's), (17, 35095), (20, 35074), (36, 34942), (38, 34933), (42, 34774), (43, 34738),

Gene: BubbleTrouble\_48 Start: 33388, Stop: 32849, Start Num: 11  
Candidate Starts for BubbleTrouble\_48:  
(Start: 4 @33445 has 1 MA's), (Start: 5 @33430 has 1 MA's), (Start: 11 @33388 has 149 MA's), (31, 33130), (36, 33097), (39, 33058), (43, 32890),

Gene: Bugatti\_51 Start: 33721, Stop: 33158, Start Num: 10  
Candidate Starts for Bugatti\_51:  
(Start: 4 @33778 has 1 MA's), (Start: 5 @33763 has 1 MA's), (Start: 6 @33751 has 22 MA's), (Start: 10 @33721 has 7 MA's), (15, 33652), (22, 33574), (27, 33538), (31, 33454), (43, 33199),

Gene: Bumblebee11\_47 Start: 33364, Stop: 32825, Start Num: 11  
Candidate Starts for Bumblebee11\_47:  
(Start: 4 @33421 has 1 MA's), (Start: 5 @33406 has 1 MA's), (Start: 11 @33364 has 149 MA's), (31, 33106), (36, 33073), (39, 33034), (43, 32866),

Gene: Burger\_47 Start: 33388, Stop: 32849, Start Num: 11  
Candidate Starts for Burger\_47:  
(Start: 4 @33445 has 1 MA's), (Start: 5 @33430 has 1 MA's), (Start: 11 @33388 has 149 MA's), (31, 33130), (36, 33097), (39, 33058), (43, 32890),

Gene: Burton\_47 Start: 35109, Stop: 34618, Start Num: 14  
Candidate Starts for Burton\_47:  
(Start: 14 @35109 has 185 MA's), (17, 35028), (20, 35007), (29, 34938), (36, 34875), (38, 34866), (42, 34707), (43, 34671),

Gene: Buttons\_45 Start: 33856, Stop: 33365, Start Num: 14

Candidate Starts for Buttons\_45:

(Start: 14 @33856 has 185 MA's), (17, 33775), (20, 33754), (36, 33622), (38, 33613), (42, 33454), (43, 33418),

Gene: Bxb1\_43 Start: 34921, Stop: 34430, Start Num: 14

Candidate Starts for Bxb1\_43:

(3, 34993), (7, 34954), (Start: 14 @34921 has 185 MA's), (17, 34840), (20, 34819), (33, 34711), (36, 34687), (38, 34678), (42, 34519), (43, 34483),

Gene: CactusRose\_44 Start: 34746, Stop: 34255, Start Num: 14

Candidate Starts for CactusRose\_44:

(Start: 14 @34746 has 185 MA's), (17, 34665), (20, 34644), (29, 34575), (33, 34536), (36, 34512), (38, 34503), (42, 34344), (43, 34308),

Gene: Caelakin\_49 Start: 33388, Stop: 32849, Start Num: 11

Candidate Starts for Caelakin\_49:

(Start: 4 @33445 has 1 MA's), (Start: 5 @33430 has 1 MA's), (Start: 11 @33388 has 149 MA's), (31, 33130), (36, 33097), (39, 33058), (43, 32890),

Gene: Camperdownii\_47 Start: 33062, Stop: 32523, Start Num: 11

Candidate Starts for Camperdownii\_47:

(Start: 4 @33119 has 1 MA's), (Start: 5 @33104 has 1 MA's), (Start: 11 @33062 has 149 MA's), (31, 32804), (36, 32771), (39, 32732), (43, 32564),

Gene: Carlyle\_46 Start: 33607, Stop: 33113, Start Num: 14

Candidate Starts for Carlyle\_46:

(Start: 14 @33607 has 185 MA's), (17, 33526), (20, 33505), (29, 33436), (36, 33373), (38, 33364), (42, 33205), (43, 33169),

Gene: Caviar\_49 Start: 33695, Stop: 33096, Start Num: 6

Candidate Starts for Caviar\_49:

(Start: 4 @33722 has 1 MA's), (Start: 5 @33707 has 1 MA's), (Start: 6 @33695 has 22 MA's), (Start: 10 @33665 has 7 MA's), (15, 33596), (22, 33518), (31, 33398), (43, 33137),

Gene: CentreCat\_49 Start: 33391, Stop: 32852, Start Num: 11

Candidate Starts for CentreCat\_49:

(Start: 4 @33448 has 1 MA's), (Start: 5 @33433 has 1 MA's), (Start: 11 @33391 has 149 MA's), (31, 33133), (36, 33100), (39, 33061), (43, 32893),

Gene: Cerulean\_50 Start: 33808, Stop: 33272, Start Num: 11

Candidate Starts for Cerulean\_50:

(2, 33871), (Start: 11 @33808 has 149 MA's), (31, 33550), (36, 33517), (39, 33478), (43, 33313),

Gene: Chadwick\_46 Start: 32252, Stop: 31728, Start Num: 8

Candidate Starts for Chadwick\_46:

(Start: 8 @32252 has 37 MA's), (18, 32120), (19, 32114), (36, 31970),

Gene: ChampagnePapi\_51 Start: 33807, Stop: 33271, Start Num: 11

Candidate Starts for ChampagnePapi\_51:

(2, 33870), (Start: 11 @33807 has 149 MA's), (31, 33549), (36, 33516), (39, 33477), (43, 33312),

Gene: Chanagan\_44 Start: 34413, Stop: 33922, Start Num: 14

Candidate Starts for Chanagan\_44:

(3, 34485), (7, 34446), (Start: 14 @34413 has 185 MA's), (17, 34332), (20, 34311), (36, 34179), (38, 34170), (42, 34011), (43, 33975),

Gene: Chaph\_49 Start: 33399, Stop: 32860, Start Num: 11

Candidate Starts for Chaph\_49:

(Start: 4 @33456 has 1 MA's), (Start: 5 @33441 has 1 MA's), (Start: 11 @33399 has 149 MA's), (31, 33141), (36, 33108), (39, 33069), (43, 32901),

Gene: Chupacabra\_47 Start: 33046, Stop: 32486, Start Num: 11

Candidate Starts for Chupacabra\_47:

(Start: 11 @33046 has 149 MA's), (15, 32974), (26, 32860), (27, 32857), (34, 32749), (36, 32740), (43, 32533),

Gene: Ciao\_47 Start: 35564, Stop: 35061, Start Num: 14

Candidate Starts for Ciao\_47:

(3, 35636), (7, 35597), (Start: 14 @35564 has 185 MA's), (17, 35483), (20, 35462), (29, 35393), (36, 35330), (38, 35321), (42, 35153), (43, 35117),

Gene: Cici\_48 Start: 33379, Stop: 32840, Start Num: 11

Candidate Starts for Cici\_48:

(Start: 4 @33436 has 1 MA's), (Start: 5 @33421 has 1 MA's), (Start: 11 @33379 has 149 MA's), (31, 33121), (36, 33088), (39, 33049), (43, 32881),

Gene: Cindaradix\_46 Start: 33000, Stop: 32467, Start Num: 11

Candidate Starts for Cindaradix\_46:

(Start: 4 @33057 has 1 MA's), (Start: 5 @33042 has 1 MA's), (Start: 11 @33000 has 149 MA's), (31, 32742), (36, 32709), (39, 32670), (43, 32508),

Gene: Cintron\_48 Start: 33365, Stop: 32829, Start Num: 11

Candidate Starts for Cintron\_48:

(Start: 4 @33422 has 1 MA's), (Start: 5 @33407 has 1 MA's), (Start: 11 @33365 has 149 MA's), (31, 33107), (36, 33074), (39, 33035), (43, 32870),

Gene: Citius\_49 Start: 33409, Stop: 32870, Start Num: 11

Candidate Starts for Citius\_49:

(Start: 4 @33466 has 1 MA's), (Start: 5 @33451 has 1 MA's), (Start: 11 @33409 has 149 MA's), (31, 33151), (36, 33118), (39, 33079), (43, 32911),

Gene: Clarenza\_48 Start: 33385, Stop: 32846, Start Num: 11

Candidate Starts for Clarenza\_48:

(Start: 4 @33442 has 1 MA's), (Start: 5 @33427 has 1 MA's), (Start: 11 @33385 has 149 MA's), (31, 33127), (36, 33094), (39, 33055), (43, 32887),

Gene: Cocoaberry\_49 Start: 33392, Stop: 32853, Start Num: 11

Candidate Starts for Cocoaberry\_49:

(Start: 4 @33449 has 1 MA's), (Start: 5 @33434 has 1 MA's), (Start: 11 @33392 has 149 MA's), (31, 33134), (36, 33101), (39, 33062), (43, 32894),

Gene: Commander\_49 Start: 33387, Stop: 32848, Start Num: 11

Candidate Starts for Commander\_49:

(Start: 4 @33444 has 1 MA's), (Start: 5 @33429 has 1 MA's), (Start: 11 @33387 has 149 MA's), (31, 33129), (36, 33096), (39, 33057), (43, 32889),

Gene: ConceptII\_49 Start: 36256, Stop: 35765, Start Num: 14

Candidate Starts for ConceptII\_49:

(3, 36328), (7, 36289), (Start: 14 @36256 has 185 MA's), (17, 36175), (20, 36154), (33, 36046), (36, 36022), (38, 36013), (42, 35854), (43, 35818),

Gene: Connomayer\_49 Start: 33388, Stop: 32849, Start Num: 11

Candidate Starts for Connomayer\_49:

(Start: 4 @33445 has 1 MA's), (Start: 5 @33430 has 1 MA's), (Start: 11 @33388 has 149 MA's), (31, 33130), (36, 33097), (39, 33058), (43, 32890),

Gene: Conspiracy\_42 Start: 32307, Stop: 31774, Start Num: 8

Candidate Starts for Conspiracy\_42:

(Start: 8 @32307 has 37 MA's), (18, 32175), (19, 32169), (36, 32025),

Gene: Coog\_42 Start: 32408, Stop: 31872, Start Num: 8

Candidate Starts for Coog\_42:

(Start: 8 @32408 has 37 MA's), (18, 32273), (19, 32267), (36, 32123), (45, 31895),

Gene: Corvo\_48 Start: 36116, Stop: 35625, Start Num: 14

Candidate Starts for Corvo\_48:

(3, 36188), (7, 36149), (Start: 14 @36116 has 185 MA's), (17, 36035), (20, 36014), (36, 35882), (38, 35873), (42, 35714), (43, 35678),

Gene: Crispicous1\_45 Start: 34739, Stop: 34248, Start Num: 14

Candidate Starts for Crispicous1\_45:

(3, 34811), (7, 34772), (Start: 14 @34739 has 185 MA's), (17, 34658), (20, 34637), (29, 34568), (33, 34529), (36, 34505), (38, 34496), (42, 34337), (43, 34301),

Gene: Cuco\_42 Start: 32356, Stop: 31829, Start Num: 8

Candidate Starts for Cuco\_42:

(Start: 8 @32356 has 37 MA's), (18, 32221), (19, 32215), (36, 32071), (45, 31852),

Gene: Cueyllyss\_48 Start: 37026, Stop: 36535, Start Num: 14

Candidate Starts for Cueyllyss\_48:

(Start: 14 @37026 has 185 MA's), (17, 36945), (20, 36924), (29, 36855), (33, 36816), (36, 36792), (38, 36783), (42, 36624), (43, 36588),

Gene: DD5\_46 Start: 36122, Stop: 35631, Start Num: 14

Candidate Starts for DD5\_46:

(3, 36194), (7, 36155), (Start: 14 @36122 has 185 MA's), (17, 36041), (20, 36020), (33, 35912), (36, 35888), (38, 35879), (42, 35720), (43, 35684),

Gene: Danforth\_46 Start: 31927, Stop: 31406, Start Num: 9

Candidate Starts for Danforth\_46:

(Start: 9 @31927 has 11 MA's), (18, 31810), (30, 31711), (36, 31660), (37, 31654), (45, 31429),

Gene: Datway\_48 Start: 33350, Stop: 32811, Start Num: 11

Candidate Starts for Datway\_48:

(Start: 4 @33407 has 1 MA's), (Start: 5 @33392 has 1 MA's), (Start: 11 @33350 has 149 MA's), (36, 33059), (39, 33020), (43, 32852),

Gene: Deano\_48 Start: 33396, Stop: 32857, Start Num: 11

Candidate Starts for Deano\_48:

(Start: 4 @33453 has 1 MA's), (Start: 5 @33438 has 1 MA's), (Start: 11 @33396 has 149 MA's), (31, 33138), (36, 33105), (39, 33066), (43, 32898),

Gene: DekHockey33\_54 Start: 33050, Stop: 32484, Start Num: 12

Candidate Starts for DekHockey33\_54:

(Start: 12 @33050 has 9 MA's), (13, 33044), (16, 32939), (20, 32912), (21, 32909), (32, 32798), (34, 32777), (36, 32768), (38, 32759), (43, 32540),

Gene: Dexes\_47 Start: 36156, Stop: 35665, Start Num: 14

Candidate Starts for Dexes\_47:

(Start: 14 @36156 has 185 MA's), (17, 36075), (20, 36054), (36, 35922), (38, 35913), (42, 35754), (43, 35718),

Gene: Dhanush\_49 Start: 33391, Stop: 32852, Start Num: 11

Candidate Starts for Dhanush\_49:

(Start: 4 @33448 has 1 MA's), (Start: 5 @33433 has 1 MA's), (Start: 11 @33391 has 149 MA's), (31, 33133), (36, 33100), (39, 33061), (43, 32893),

Gene: DirtyDunning\_48 Start: 33403, Stop: 32870, Start Num: 11

Candidate Starts for DirtyDunning\_48:

(Start: 4 @33460 has 1 MA's), (Start: 5 @33445 has 1 MA's), (Start: 11 @33403 has 149 MA's), (31, 33145), (36, 33112), (39, 33073), (43, 32911),

Gene: Discoknowium\_41 Start: 32092, Stop: 31565, Start Num: 8

Candidate Starts for Discoknowium\_41:

(Start: 8 @32092 has 37 MA's), (18, 31957), (19, 31951), (36, 31807), (45, 31588),

Gene: Dixon\_46 Start: 31800, Stop: 31279, Start Num: 9

Candidate Starts for Dixon\_46:

(Start: 9 @31800 has 11 MA's), (18, 31683), (30, 31584), (36, 31533), (37, 31527), (45, 31302),

Gene: Doom\_47 Start: 35900, Stop: 35409, Start Num: 14

Candidate Starts for Doom\_47:

(3, 35972), (7, 35933), (Start: 14 @35900 has 185 MA's), (17, 35819), (20, 35798), (29, 35729), (33, 35690), (36, 35666), (38, 35657), (42, 35498), (43, 35462),

Gene: DrFeelGood\_45 Start: 35584, Stop: 35093, Start Num: 14

Candidate Starts for DrFeelGood\_45:

(3, 35656), (7, 35617), (Start: 14 @35584 has 185 MA's), (17, 35503), (20, 35482), (33, 35374), (36, 35350), (38, 35341), (42, 35182), (43, 35146),

Gene: Drake94\_46 Start: 32305, Stop: 31757, Start Num: 11

Candidate Starts for Drake94\_46:

(Start: 11 @32305 has 149 MA's), (15, 32236), (23, 32152), (24, 32149), (26, 32131), (27, 32128), (31, 32044), (36, 32011), (43, 31804),

Gene: DreamCatcher\_50 Start: 36623, Stop: 36132, Start Num: 14

Candidate Starts for DreamCatcher\_50:

(Start: 14 @36623 has 185 MA's), (17, 36542), (20, 36521), (36, 36389), (38, 36380), (40, 36329), (42, 36221), (43, 36185),

Gene: Dreamboat\_49 Start: 35340, Stop: 34837, Start Num: 14

Candidate Starts for Dreamboat\_49:

(3, 35412), (7, 35373), (Start: 14 @35340 has 185 MA's), (17, 35259), (20, 35238), (33, 35130), (36, 35106), (38, 35097), (42, 34929), (43, 34893),

Gene: Druantia\_49 Start: 33391, Stop: 32852, Start Num: 11

Candidate Starts for Druantia\_49:

(Start: 4 @33448 has 1 MA's), (Start: 5 @33433 has 1 MA's), (Start: 11 @33391 has 149 MA's), (31, 33133), (36, 33100), (39, 33061), (43, 32893),

Gene: Dublin\_41 Start: 32129, Stop: 31593, Start Num: 8

Candidate Starts for Dublin\_41:

(Start: 8 @32129 has 37 MA's), (18, 31994), (19, 31988), (36, 31844),

Gene: Dulcie\_47 Start: 35420, Stop: 34929, Start Num: 14

Candidate Starts for Dulcie\_47:

(Start: 14 @35420 has 185 MA's), (17, 35339), (20, 35318), (29, 35249), (33, 35210), (36, 35186), (38, 35177), (43, 34982),

Gene: Dussy\_49 Start: 35800, Stop: 35309, Start Num: 14

Candidate Starts for Dussy\_49:

(3, 35872), (7, 35833), (Start: 14 @35800 has 185 MA's), (17, 35719), (20, 35698), (29, 35629), (36, 35566), (38, 35557), (42, 35398), (43, 35362),

Gene: Dynamix\_48 Start: 35419, Stop: 34928, Start Num: 14

Candidate Starts for Dynamix\_48:

(Start: 14 @35419 has 185 MA's), (17, 35338), (20, 35317), (36, 35185), (38, 35176), (40, 35125), (42, 35017), (43, 34981),

Gene: Eagle\_49 Start: 33413, Stop: 32874, Start Num: 11

Candidate Starts for Eagle\_49:

(Start: 4 @33470 has 1 MA's), (Start: 5 @33455 has 1 MA's), (Start: 11 @33413 has 149 MA's), (31, 33155), (36, 33122), (39, 33083), (43, 32915),

Gene: Eaglepride\_49 Start: 33105, Stop: 32554, Start Num: 11

Candidate Starts for Eaglepride\_49:

(1, 33174), (Start: 11 @33105 has 149 MA's), (24, 32946), (36, 32808), (43, 32601),

Gene: Eapen\_49 Start: 33383, Stop: 32844, Start Num: 11

Candidate Starts for Eapen\_49:

(Start: 4 @33440 has 1 MA's), (Start: 5 @33425 has 1 MA's), (Start: 11 @33383 has 149 MA's), (31, 33125), (36, 33092), (39, 33053), (43, 32885),

Gene: Edison31\_46 Start: 33061, Stop: 32510, Start Num: 11

Candidate Starts for Edison31\_46:

(Start: 11 @33061 has 149 MA's), (15, 32992), (26, 32884), (27, 32881), (31, 32797), (34, 32773), (36, 32764), (38, 32755), (43, 32557),

Gene: Edtherson\_47 Start: 36064, Stop: 35573, Start Num: 14

Candidate Starts for Edtherson\_47:

(3, 36136), (7, 36097), (Start: 14 @36064 has 185 MA's), (17, 35983), (20, 35962), (29, 35893), (36, 35830), (38, 35821), (42, 35662), (43, 35626),

Gene: EITiger69\_44 Start: 32269, Stop: 31745, Start Num: 8  
Candidate Starts for EITiger69\_44:  
(Start: 8 @32269 has 37 MA's), (18, 32137), (19, 32131), (36, 31987),

Gene: Eris\_48 Start: 33388, Stop: 32849, Start Num: 11  
Candidate Starts for Eris\_48:  
(Start: 4 @33445 has 1 MA's), (Start: 5 @33430 has 1 MA's), (Start: 11 @33388 has 149 MA's), (31, 33130), (36, 33097), (39, 33058), (43, 32890),

Gene: Eros\_49 Start: 33390, Stop: 32851, Start Num: 11  
Candidate Starts for Eros\_49:  
(Start: 4 @33447 has 1 MA's), (Start: 5 @33432 has 1 MA's), (Start: 11 @33390 has 149 MA's), (31, 33132), (36, 33099), (39, 33060), (43, 32892),

Gene: Espresso\_47 Start: 35666, Stop: 35175, Start Num: 14  
Candidate Starts for Espresso\_47:  
(Start: 14 @35666 has 185 MA's), (17, 35585), (20, 35564), (36, 35432), (38, 35423), (42, 35264), (43, 35228),

Gene: Euphoria\_45 Start: 34917, Stop: 34426, Start Num: 14  
Candidate Starts for Euphoria\_45:  
(Start: 14 @34917 has 185 MA's), (17, 34836), (20, 34815), (29, 34746), (33, 34707), (36, 34683), (38, 34674), (42, 34515), (43, 34479),

Gene: Eurydice\_50 Start: 33385, Stop: 32846, Start Num: 11  
Candidate Starts for Eurydice\_50:  
(Start: 4 @33442 has 1 MA's), (Start: 5 @33427 has 1 MA's), (Start: 11 @33385 has 149 MA's), (31, 33127), (36, 33094), (39, 33055), (43, 32887),

Gene: Expelliarmus\_46 Start: 31956, Stop: 31435, Start Num: 9  
Candidate Starts for Expelliarmus\_46:  
(Start: 9 @31956 has 11 MA's), (18, 31839), (30, 31740), (36, 31689), (37, 31683), (45, 31458),

Gene: Eyeball\_48 Start: 35803, Stop: 35312, Start Num: 14  
Candidate Starts for Eyeball\_48:  
(Start: 14 @35803 has 185 MA's), (17, 35722), (20, 35701), (36, 35569), (38, 35560), (42, 35401), (43, 35365),

Gene: Fajezeel\_49 Start: 35913, Stop: 35422, Start Num: 14  
Candidate Starts for Fajezeel\_49:  
(3, 35985), (7, 35946), (Start: 14 @35913 has 185 MA's), (17, 35832), (20, 35811), (36, 35679), (38, 35670), (42, 35511), (43, 35475),

Gene: Fenn\_49 Start: 37378, Stop: 36884, Start Num: 14  
Candidate Starts for Fenn\_49:  
(Start: 14 @37378 has 185 MA's), (17, 37297), (20, 37276), (36, 37144), (38, 37135), (42, 36976), (43, 36940),

Gene: Florean\_49 Start: 33387, Stop: 32848, Start Num: 11  
Candidate Starts for Florean\_49:  
(Start: 4 @33444 has 1 MA's), (Start: 5 @33429 has 1 MA's), (Start: 11 @33387 has 149 MA's), (31, 33129), (36, 33096), (39, 33057), (43, 32889),

Gene: Flux\_49 Start: 33387, Stop: 32848, Start Num: 11

Candidate Starts for Flux\_49:

(Start: 4 @33444 has 1 MA's), (Start: 5 @33429 has 1 MA's), (Start: 11 @33387 has 149 MA's), (31, 33129), (36, 33096), (39, 33057), (43, 32889),

Gene: ForGetIt\_42 Start: 32332, Stop: 31799, Start Num: 8

Candidate Starts for ForGetIt\_42:

(Start: 8 @32332 has 37 MA's), (18, 32200), (19, 32194), (36, 32050),

Gene: Forsytheast\_47 Start: 35394, Stop: 34903, Start Num: 14

Candidate Starts for Forsytheast\_47:

(3, 35466), (7, 35427), (Start: 14 @35394 has 185 MA's), (17, 35313), (20, 35292), (36, 35160), (38, 35151), (42, 34992), (43, 34956),

Gene: Francis47\_46 Start: 36239, Stop: 35748, Start Num: 14

Candidate Starts for Francis47\_46:

(3, 36311), (7, 36272), (Start: 14 @36239 has 185 MA's), (17, 36158), (20, 36137), (29, 36068), (33, 36029), (36, 36005), (38, 35996), (42, 35837), (43, 35801),

Gene: Fred313\_50 Start: 33287, Stop: 32724, Start Num: 10

Candidate Starts for Fred313\_50:

(Start: 4 @33338 has 1 MA's), (Start: 5 @33323 has 1 MA's), (Start: 6 @33311 has 22 MA's), (Start: 10 @33287 has 7 MA's), (15, 33218), (22, 33140), (26, 33107), (27, 33104), (31, 33020), (43, 32765),

Gene: Froghopper\_45 Start: 34909, Stop: 34418, Start Num: 14

Candidate Starts for Froghopper\_45:

(3, 34981), (7, 34942), (Start: 14 @34909 has 185 MA's), (17, 34828), (20, 34807), (36, 34675), (38, 34666), (42, 34507), (43, 34471),

Gene: Funston\_48 Start: 33388, Stop: 32849, Start Num: 11

Candidate Starts for Funston\_48:

(Start: 4 @33445 has 1 MA's), (Start: 5 @33430 has 1 MA's), (Start: 11 @33388 has 149 MA's), (31, 33130), (36, 33097), (39, 33058), (43, 32890),

Gene: Fushigi\_45 Start: 33557, Stop: 33066, Start Num: 14

Candidate Starts for Fushigi\_45:

(Start: 14 @33557 has 185 MA's), (17, 33476), (20, 33455), (36, 33323), (38, 33314), (42, 33155), (43, 33119),

Gene: Gadost\_49 Start: 33392, Stop: 32853, Start Num: 11

Candidate Starts for Gadost\_49:

(Start: 4 @33449 has 1 MA's), (Start: 5 @33434 has 1 MA's), (Start: 11 @33392 has 149 MA's), (31, 33134), (36, 33101), (39, 33062), (43, 32894),

Gene: GageAP\_48 Start: 35709, Stop: 35215, Start Num: 14

Candidate Starts for GageAP\_48:

(3, 35781), (7, 35742), (Start: 14 @35709 has 185 MA's), (17, 35628), (20, 35607), (33, 35499), (36, 35475), (38, 35466), (42, 35307), (43, 35271),

Gene: Gandalf20\_49 Start: 36393, Stop: 35902, Start Num: 14

Candidate Starts for Gandalf20\_49:



(Start: 14 @36393 has 185 MA's), (17, 36312), (20, 36291), (33, 36183), (36, 36159), (38, 36150), (42, 35991), (43, 35955),

Gene: George\_42 Start: 32544, Stop: 32017, Start Num: 8

Candidate Starts for George\_42:

(Start: 8 @32544 has 37 MA's), (18, 32409), (19, 32403), (36, 32259), (45, 32040),

Gene: Ghouboy\_44 Start: 33072, Stop: 32536, Start Num: 8

Candidate Starts for Ghouboy\_44:

(Start: 8 @33072 has 37 MA's), (18, 32937), (19, 32931), (36, 32787),

Gene: Giroux\_51 Start: 33720, Stop: 33157, Start Num: 10

Candidate Starts for Giroux\_51:

(Start: 4 @33777 has 1 MA's), (Start: 5 @33762 has 1 MA's), (Start: 6 @33750 has 22 MA's), (Start: 10 @33720 has 7 MA's), (15, 33651), (22, 33573), (27, 33537), (31, 33453), (43, 33198),

Gene: Gompeii16\_46 Start: 35972, Stop: 35481, Start Num: 14

Candidate Starts for Gompeii16\_46:

(3, 36044), (7, 36005), (Start: 14 @35972 has 185 MA's), (17, 35891), (20, 35870), (29, 35801), (33, 35762), (36, 35738), (38, 35729), (42, 35570), (43, 35534),

Gene: Goose\_48 Start: 32859, Stop: 32299, Start Num: 11

Candidate Starts for Goose\_48:

(Start: 11 @32859 has 149 MA's), (15, 32787), (26, 32673), (27, 32670), (34, 32562), (36, 32553), (43, 32346),

Gene: Graduation\_50 Start: 37122, Stop: 36631, Start Num: 14

Candidate Starts for Graduation\_50:

(Start: 14 @37122 has 185 MA's), (17, 37041), (20, 37020), (29, 36951), (33, 36912), (36, 36888), (38, 36879), (42, 36720), (43, 36684),

Gene: GrecoEtereo\_48 Start: 35721, Stop: 35230, Start Num: 14

Candidate Starts for GrecoEtereo\_48:

(3, 35793), (7, 35754), (Start: 14 @35721 has 185 MA's), (17, 35640), (20, 35619), (33, 35511), (36, 35487), (38, 35478), (42, 35319), (43, 35283),

Gene: Greg\_49 Start: 35913, Stop: 35422, Start Num: 14

Candidate Starts for Greg\_49:

(3, 35985), (7, 35946), (Start: 14 @35913 has 185 MA's), (17, 35832), (20, 35811), (36, 35679), (38, 35670), (42, 35511), (43, 35475),

Gene: Groundhog\_45 Start: 31854, Stop: 31342, Start Num: 9

Candidate Starts for Groundhog\_45:

(Start: 9 @31854 has 11 MA's), (18, 31737), (30, 31638), (36, 31587), (37, 31581), (45, 31365),

Gene: Gwendoluna\_51 Start: 37558, Stop: 37067, Start Num: 14

Candidate Starts for Gwendoluna\_51:

(Start: 14 @37558 has 185 MA's), (17, 37477), (20, 37456), (29, 37387), (33, 37348), (36, 37324), (38, 37315), (42, 37156), (43, 37120),

Gene: HamSlice\_48 Start: 33386, Stop: 32847, Start Num: 11

Candidate Starts for HamSlice\_48:

(Start: 4 @33443 has 1 MA's), (Start: 5 @33428 has 1 MA's), (Start: 11 @33386 has 149 MA's), (31, 33128), (36, 33095), (39, 33056), (43, 32888),

Gene: HanShotFirst\_46 Start: 34746, Stop: 34255, Start Num: 14

Candidate Starts for HanShotFirst\_46:

(Start: 14 @34746 has 185 MA's), (17, 34665), (20, 34644), (29, 34575), (33, 34536), (36, 34512), (38, 34503), (42, 34344), (43, 34308),

Gene: Happiness\_48 Start: 33390, Stop: 32854, Start Num: 11

Candidate Starts for Happiness\_48:

(2, 33453), (Start: 11 @33390 has 149 MA's), (31, 33132), (36, 33099), (39, 33060), (43, 32895),

Gene: HarryOW\_46 Start: 34893, Stop: 34402, Start Num: 14

Candidate Starts for HarryOW\_46:

(3, 34965), (7, 34926), (Start: 14 @34893 has 185 MA's), (17, 34812), (20, 34791), (33, 34683), (36, 34659), (38, 34650), (42, 34491), (43, 34455),

Gene: Heathen\_50 Start: 33373, Stop: 32780, Start Num: 6

Candidate Starts for Heathen\_50:

(Start: 4 @33400 has 1 MA's), (Start: 5 @33385 has 1 MA's), (Start: 6 @33373 has 22 MA's), (Start: 10 @33343 has 7 MA's), (15, 33274), (22, 33196), (26, 33163), (27, 33160), (31, 33076), (43, 32821),

Gene: HelDan\_50 Start: 33595, Stop: 33032, Start Num: 10

Candidate Starts for HelDan\_50:

(Start: 4 @33652 has 1 MA's), (Start: 5 @33637 has 1 MA's), (Start: 6 @33625 has 22 MA's), (Start: 10 @33595 has 7 MA's), (15, 33526), (22, 33448), (26, 33415), (27, 33412), (31, 33328), (43, 33073),

Gene: Hermia\_47 Start: 36340, Stop: 35849, Start Num: 14

Candidate Starts for Hermia\_47:

(3, 36412), (7, 36373), (Start: 14 @36340 has 185 MA's), (17, 36259), (20, 36238), (36, 36106), (38, 36097), (42, 35938), (43, 35902),

Gene: HermioneGrange\_47 Start: 35708, Stop: 35217, Start Num: 14

Candidate Starts for HermioneGrange\_47:

(3, 35780), (7, 35741), (Start: 14 @35708 has 185 MA's), (17, 35627), (20, 35606), (29, 35537), (36, 35474), (38, 35465), (42, 35306), (43, 35270),

Gene: Holli\_48 Start: 33235, Stop: 32639, Start Num: 4

Candidate Starts for Holli\_48:

(Start: 4 @33235 has 1 MA's), (Start: 5 @33220 has 1 MA's), (Start: 11 @33178 has 149 MA's), (31, 32920), (36, 32887), (39, 32848), (43, 32680),

Gene: Homines\_39 Start: 31549, Stop: 31058, Start Num: 14

Candidate Starts for Homines\_39:

(Start: 14 @31549 has 185 MA's), (17, 31468), (20, 31447), (36, 31315), (38, 31306), (42, 31147), (43, 31111),

Gene: Hookmount\_49 Start: 33696, Stop: 33097, Start Num: 6

Candidate Starts for Hookmount\_49:

(Start: 4 @33723 has 1 MA's), (Start: 5 @33708 has 1 MA's), (Start: 6 @33696 has 22 MA's), (Start: 10 @33666 has 7 MA's), (15, 33597), (22, 33519), (31, 33399), (43, 33138),

Gene: Hope4ever\_49 Start: 36165, Stop: 35674, Start Num: 14

Candidate Starts for Hope4ever\_49:

(Start: 14 @36165 has 185 MA's), (17, 36084), (20, 36063), (36, 35931), (38, 35922), (42, 35763), (43, 35727),

Gene: Houdini22\_49 Start: 33392, Stop: 32853, Start Num: 11

Candidate Starts for Houdini22\_49:

(Start: 4 @33449 has 1 MA's), (Start: 5 @33434 has 1 MA's), (Start: 11 @33392 has 149 MA's), (31, 33134), (36, 33101), (39, 33062), (43, 32894),

Gene: HuhtaEnerson15\_43 Start: 32535, Stop: 32008, Start Num: 8

Candidate Starts for HuhtaEnerson15\_43:

(Start: 8 @32535 has 37 MA's), (18, 32400), (19, 32394), (36, 32250), (44, 32049), (45, 32031),

Gene: ICleared\_49 Start: 33417, Stop: 32878, Start Num: 11

Candidate Starts for ICleared\_49:

(Start: 4 @33474 has 1 MA's), (Start: 5 @33459 has 1 MA's), (Start: 11 @33417 has 149 MA's), (31, 33159), (36, 33126), (39, 33087), (43, 32919),

Gene: ILeeKay\_51 Start: 36502, Stop: 36011, Start Num: 14

Candidate Starts for ILeeKay\_51:

(3, 36574), (7, 36535), (Start: 14 @36502 has 185 MA's), (17, 36421), (20, 36400), (29, 36331), (33, 36292), (36, 36268), (38, 36259), (42, 36100), (43, 36064),

Gene: Iceman\_49 Start: 33674, Stop: 33135, Start Num: 11

Candidate Starts for Iceman\_49:

(Start: 4 @33731 has 1 MA's), (Start: 5 @33716 has 1 MA's), (Start: 11 @33674 has 149 MA's), (31, 33416), (36, 33383), (39, 33344), (43, 33176),

Gene: Ichabod\_49 Start: 35764, Stop: 35270, Start Num: 14

Candidate Starts for Ichabod\_49:

(Start: 14 @35764 has 185 MA's), (17, 35683), (20, 35662), (36, 35530), (38, 35521), (42, 35362), (43, 35326),

Gene: Idleandcovert\_51 Start: 33751, Stop: 33158, Start Num: 6

Candidate Starts for Idleandcovert\_51:

(Start: 4 @33778 has 1 MA's), (Start: 5 @33763 has 1 MA's), (Start: 6 @33751 has 22 MA's), (Start: 10 @33721 has 7 MA's), (15, 33652), (22, 33574), (27, 33538), (31, 33454), (43, 33199),

Gene: IgnatiusPatJac\_47 Start: 35765, Stop: 35271, Start Num: 14

Candidate Starts for IgnatiusPatJac\_47:

(Start: 14 @35765 has 185 MA's), (17, 35684), (20, 35663), (36, 35531), (38, 35522), (42, 35363), (43, 35327),

Gene: Iracema64\_50 Start: 33652, Stop: 33113, Start Num: 11

Candidate Starts for Iracema64\_50:

(Start: 4 @33709 has 1 MA's), (Start: 5 @33694 has 1 MA's), (Start: 11 @33652 has 149 MA's), (31, 33394), (36, 33361), (39, 33322), (43, 33154),

Gene: Isca\_49 Start: 33194, Stop: 32589, Start Num: 6

Candidate Starts for Isca\_49:

(Start: 4 @33221 has 1 MA's), (Start: 5 @33206 has 1 MA's), (Start: 6 @33194 has 22 MA's), (Start: 11 @33164 has 149 MA's), (15, 33092), (22, 33014), (26, 32981), (27, 32978), (31, 32894), (38, 32849), (41, 32681), (43, 32630),

Gene: JC27\_48 Start: 35809, Stop: 35318, Start Num: 14

Candidate Starts for JC27\_48:

(Start: 14 @35809 has 185 MA's), (17, 35728), (20, 35707), (29, 35638), (36, 35575), (38, 35566), (42, 35407), (43, 35371),

Gene: JF2\_48 Start: 31895, Stop: 31290, Start Num: 6

Candidate Starts for JF2\_48:

(Start: 4 @31922 has 1 MA's), (Start: 5 @31907 has 1 MA's), (Start: 6 @31895 has 22 MA's), (Start: 11 @31865 has 149 MA's), (15, 31793), (22, 31715), (26, 31682), (27, 31679), (31, 31595), (38, 31550), (41, 31382), (43, 31331),

Gene: JF4\_48 Start: 31895, Stop: 31290, Start Num: 6

Candidate Starts for JF4\_48:

(Start: 4 @31922 has 1 MA's), (Start: 5 @31907 has 1 MA's), (Start: 6 @31895 has 22 MA's), (Start: 11 @31865 has 149 MA's), (15, 31793), (22, 31715), (26, 31682), (27, 31679), (31, 31595), (38, 31550), (41, 31382), (43, 31331),

Gene: Jabiru\_43 Start: 32142, Stop: 31618, Start Num: 8

Candidate Starts for Jabiru\_43:

(Start: 8 @32142 has 37 MA's), (18, 32010), (19, 32004), (36, 31860), (45, 31641),

Gene: JackSparrow\_48 Start: 35944, Stop: 35465, Start Num: 14

Candidate Starts for JackSparrow\_48:

(3, 36016), (7, 35977), (Start: 14 @35944 has 185 MA's), (17, 35863), (20, 35842), (29, 35773), (33, 35734), (36, 35710), (38, 35701), (42, 35554), (43, 35518),

Gene: Jasper\_49 Start: 35226, Stop: 34723, Start Num: 14

Candidate Starts for Jasper\_49:

(3, 35298), (7, 35259), (Start: 14 @35226 has 185 MA's), (17, 35145), (20, 35124), (33, 35016), (36, 34992), (38, 34983), (42, 34815), (43, 34779),

Gene: Jaykayelowell\_47 Start: 33381, Stop: 32842, Start Num: 11

Candidate Starts for Jaykayelowell\_47:

(Start: 4 @33438 has 1 MA's), (Start: 5 @33423 has 1 MA's), (Start: 11 @33381 has 149 MA's), (31, 33123), (36, 33090), (39, 33051), (43, 32883),

Gene: Jerm2\_48 Start: 35963, Stop: 35472, Start Num: 14

Candidate Starts for Jerm2\_48:

(3, 36035), (7, 35996), (Start: 14 @35963 has 185 MA's), (17, 35882), (20, 35861), (29, 35792), (36, 35729), (38, 35720), (42, 35561), (43, 35525),

Gene: JetBlade\_49 Start: 33382, Stop: 32843, Start Num: 11

Candidate Starts for JetBlade\_49:

(Start: 4 @33439 has 1 MA's), (Start: 5 @33424 has 1 MA's), (Start: 11 @33382 has 149 MA's), (31, 33124), (36, 33091), (39, 33052), (43, 32884),

Gene: JoongJeon\_48 Start: 33385, Stop: 32846, Start Num: 11

Candidate Starts for JoongJeon\_48:

(Start: 4 @33442 has 1 MA's), (Start: 5 @33427 has 1 MA's), (Start: 11 @33385 has 149 MA's), (31, 33127), (36, 33094), (39, 33055), (43, 32887),

Gene: Jovo\_42 Start: 32588, Stop: 32055, Start Num: 8

Candidate Starts for Jovo\_42:

(Start: 8 @32588 has 37 MA's), (18, 32456), (19, 32450), (36, 32306),

Gene: JuliaChild\_48 Start: 35588, Stop: 35097, Start Num: 14

Candidate Starts for JuliaChild\_48:

(3, 35660), (7, 35621), (Start: 14 @35588 has 185 MA's), (17, 35507), (20, 35486), (29, 35417), (36, 35354), (38, 35345), (42, 35186), (43, 35150),

Gene: KBG\_49 Start: 36909, Stop: 36418, Start Num: 14

Candidate Starts for KBG\_49:

(3, 36981), (7, 36942), (Start: 14 @36909 has 185 MA's), (17, 36828), (20, 36807), (36, 36675), (38, 36666), (42, 36507), (43, 36471),

Gene: KFPoly\_48 Start: 33382, Stop: 32843, Start Num: 11

Candidate Starts for KFPoly\_48:

(Start: 4 @33439 has 1 MA's), (Start: 5 @33424 has 1 MA's), (Start: 11 @33382 has 149 MA's), (31, 33124), (36, 33091), (39, 33052), (43, 32884),

Gene: KSSJEB\_46 Start: 35208, Stop: 34714, Start Num: 14

Candidate Starts for KSSJEB\_46:

(Start: 14 @35208 has 185 MA's), (17, 35127), (20, 35106), (36, 34974), (38, 34965), (40, 34914), (42, 34806), (43, 34770),

Gene: Kamy\_49 Start: 33390, Stop: 32851, Start Num: 11

Candidate Starts for Kamy\_49:

(Start: 4 @33447 has 1 MA's), (Start: 5 @33432 has 1 MA's), (Start: 11 @33390 has 149 MA's), (31, 33132), (36, 33099), (39, 33060), (43, 32892),

Gene: Kanely\_48 Start: 35863, Stop: 35372, Start Num: 14

Candidate Starts for Kanely\_48:

(Start: 14 @35863 has 185 MA's), (17, 35782), (20, 35761), (33, 35653), (36, 35629), (38, 35620), (42, 35461), (43, 35425),

Gene: Katalie136\_48 Start: 33364, Stop: 32825, Start Num: 11

Candidate Starts for Katalie136\_48:

(Start: 4 @33421 has 1 MA's), (Start: 5 @33406 has 1 MA's), (Start: 11 @33364 has 149 MA's), (31, 33106), (36, 33073), (39, 33034), (43, 32866),

Gene: KatherineG\_55 Start: 33020, Stop: 32460, Start Num: 12

Candidate Starts for KatherineG\_55:

(Start: 12 @33020 has 9 MA's), (13, 33014), (16, 32915), (20, 32888), (21, 32885), (32, 32774), (34, 32753), (36, 32744), (38, 32735), (43, 32516),

Gene: Kenmech\_51 Start: 36926, Stop: 36435, Start Num: 14

Candidate Starts for Kenmech\_51:

(3, 36998), (7, 36959), (Start: 14 @36926 has 185 MA's), (17, 36845), (20, 36824), (29, 36755), (36, 36692), (38, 36683), (42, 36524), (43, 36488),

Gene: Killigrew\_47 Start: 35642, Stop: 35133, Start Num: 14

Candidate Starts for Killigrew\_47:

(3, 35714), (7, 35675), (Start: 14 @35642 has 185 MA's), (17, 35561), (20, 35540), (36, 35408), (38, 35399), (43, 35204),

Gene: Kingmustik0402\_49 Start: 33377, Stop: 32838, Start Num: 11

Candidate Starts for Kingmustik0402\_49:

(Start: 4 @33434 has 1 MA's), (Start: 5 @33419 has 1 MA's), (Start: 11 @33377 has 149 MA's), (31, 33119), (36, 33086), (39, 33047), (43, 32879),

Gene: KittenMittens\_45 Start: 32313, Stop: 31765, Start Num: 11

Candidate Starts for KittenMittens\_45:

(Start: 11 @32313 has 149 MA's), (15, 32244), (23, 32160), (24, 32157), (26, 32139), (27, 32136), (31, 32052), (36, 32019), (43, 31812),

Gene: Koreni\_48 Start: 33069, Stop: 32530, Start Num: 11

Candidate Starts for Koreni\_48:

(Start: 4 @33126 has 1 MA's), (Start: 5 @33111 has 1 MA's), (Start: 11 @33069 has 149 MA's), (31, 32811), (36, 32778), (39, 32739), (43, 32571),

Gene: Kratak\_49 Start: 33545, Stop: 33012, Start Num: 11

Candidate Starts for Kratak\_49:

(Start: 11 @33545 has 149 MA's), (31, 33287), (36, 33254), (39, 33215), (43, 33053),

Gene: Kremtemulon\_47 Start: 33336, Stop: 32800, Start Num: 11

Candidate Starts for Kremtemulon\_47:

(Start: 4 @33393 has 1 MA's), (Start: 5 @33378 has 1 MA's), (Start: 11 @33336 has 149 MA's), (31, 33078), (36, 33045), (39, 33006), (43, 32841),

Gene: Kristoff\_48 Start: 33413, Stop: 32862, Start Num: 11

Candidate Starts for Kristoff\_48:

(Start: 11 @33413 has 149 MA's), (15, 33344), (27, 33233), (31, 33149), (34, 33125), (36, 33116), (38, 33107), (43, 32909),

Gene: Kugel\_48 Start: 35883, Stop: 35392, Start Num: 14

Candidate Starts for Kugel\_48:

(3, 35955), (7, 35916), (Start: 14 @35883 has 185 MA's), (17, 35802), (20, 35781), (36, 35649), (38, 35640), (42, 35481), (43, 35445),

Gene: KyMonks1A\_49 Start: 35782, Stop: 35288, Start Num: 14

Candidate Starts for KyMonks1A\_49:

(3, 35854), (7, 35815), (Start: 14 @35782 has 185 MA's), (17, 35701), (20, 35680), (29, 35611), (36, 35548), (38, 35539), (42, 35377), (43, 35341),

Gene: Kyee\_49 Start: 33386, Stop: 32847, Start Num: 11

Candidate Starts for Kyee\_49:

(Start: 4 @33443 has 1 MA's), (Start: 5 @33428 has 1 MA's), (Start: 11 @33386 has 149 MA's), (31, 33128), (36, 33095), (39, 33056), (43, 32888),

Gene: Kykar\_47 Start: 35565, Stop: 35086, Start Num: 14

Candidate Starts for Kykar\_47:

(3, 35637), (7, 35598), (Start: 14 @35565 has 185 MA's), (17, 35484), (20, 35463), (29, 35394), (36, 35331), (38, 35322), (42, 35175), (43, 35139),

Gene: LHTSCC\_51 Start: 33807, Stop: 33271, Start Num: 11

Candidate Starts for LHTSCC\_51:

(2, 33870), (Start: 11 @33807 has 149 MA's), (31, 33549), (36, 33516), (39, 33477), (43, 33312),

Gene: Lambert1\_49 Start: 33695, Stop: 33096, Start Num: 6

Candidate Starts for Lambert1\_49:

(Start: 4 @33722 has 1 MA's), (Start: 5 @33707 has 1 MA's), (Start: 6 @33695 has 22 MA's), (Start: 10 @33665 has 7 MA's), (15, 33596), (22, 33518), (31, 33398), (43, 33137),

Gene: Lamina13\_47 Start: 35176, Stop: 34685, Start Num: 14

Candidate Starts for Lamina13\_47:

(Start: 14 @35176 has 185 MA's), (17, 35095), (20, 35074), (36, 34942), (38, 34933), (40, 34882), (42, 34774), (43, 34738),

Gene: LappelDuVide\_48 Start: 33387, Stop: 32848, Start Num: 11

Candidate Starts for LappelDuVide\_48:

(Start: 4 @33444 has 1 MA's), (Start: 5 @33429 has 1 MA's), (Start: 11 @33387 has 149 MA's), (31, 33129), (36, 33096), (39, 33057), (43, 32889),

Gene: Lemur\_49 Start: 33385, Stop: 32846, Start Num: 11

Candidate Starts for Lemur\_49:

(Start: 4 @33442 has 1 MA's), (Start: 5 @33427 has 1 MA's), (Start: 11 @33385 has 149 MA's), (31, 33127), (36, 33094), (39, 33055), (43, 32887),

Gene: LeoAvram\_49 Start: 33388, Stop: 32849, Start Num: 11

Candidate Starts for LeoAvram\_49:

(Start: 4 @33445 has 1 MA's), (Start: 5 @33430 has 1 MA's), (Start: 11 @33388 has 149 MA's), (31, 33130), (36, 33097), (39, 33058), (43, 32890),

Gene: Lesedi\_44 Start: 34760, Stop: 34239, Start Num: 14

Candidate Starts for Lesedi\_44:

(3, 34832), (7, 34793), (Start: 14 @34760 has 185 MA's), (17, 34649), (20, 34628), (36, 34496), (38, 34487), (42, 34328), (43, 34292),

Gene: Lev2\_42 Start: 32220, Stop: 31687, Start Num: 8

Candidate Starts for Lev2\_42:

(Start: 8 @32220 has 37 MA's), (18, 32088), (19, 32082), (36, 31938),

Gene: Licorice\_50 Start: 36999, Stop: 36508, Start Num: 14

Candidate Starts for Licorice\_50:

(3, 37071), (7, 37032), (Start: 14 @36999 has 185 MA's), (17, 36918), (20, 36897), (29, 36828), (36, 36765), (38, 36756), (43, 36561),

Gene: LilBib\_48 Start: 36057, Stop: 35566, Start Num: 14

Candidate Starts for LilBib\_48:

(3, 36129), (7, 36090), (Start: 14 @36057 has 185 MA's), (17, 35976), (20, 35955), (36, 35823), (38, 35814), (42, 35655), (43, 35619),

Gene: LittleB\_49 Start: 33389, Stop: 32850, Start Num: 11

Candidate Starts for LittleB\_49:

(Start: 4 @33446 has 1 MA's), (Start: 5 @33431 has 1 MA's), (Start: 11 @33389 has 149 MA's), (31, 33131), (36, 33098), (39, 33059), (43, 32891),

Gene: LittleCherry\_43 Start: 32555, Stop: 32028, Start Num: 8

Candidate Starts for LittleCherry\_43:

(Start: 8 @32555 has 37 MA's), (18, 32420), (19, 32414), (36, 32270), (44, 32069), (45, 32051),

Gene: LittleGuy\_49 Start: 33284, Stop: 32745, Start Num: 11

Candidate Starts for LittleGuy\_49:

(Start: 4 @33341 has 1 MA's), (Start: 5 @33326 has 1 MA's), (Start: 11 @33284 has 149 MA's), (31, 33026), (36, 32993), (39, 32954), (43, 32786),

Gene: LochMonster\_50 Start: 33624, Stop: 33085, Start Num: 11

Candidate Starts for LochMonster\_50:

(Start: 4 @33681 has 1 MA's), (Start: 5 @33666 has 1 MA's), (Start: 11 @33624 has 149 MA's), (31, 33366), (36, 33333), (39, 33294), (43, 33126),

Gene: Lockley\_46 Start: 35284, Stop: 34793, Start Num: 14

Candidate Starts for Lockley\_46:

(3, 35356), (7, 35317), (Start: 14 @35284 has 185 MA's), (17, 35203), (20, 35182), (33, 35074), (36, 35050), (38, 35041), (42, 34882), (43, 34846),

Gene: Lopton\_48 Start: 36884, Stop: 36393, Start Num: 14

Candidate Starts for Lopton\_48:

(3, 36956), (7, 36917), (Start: 14 @36884 has 185 MA's), (17, 36803), (20, 36782), (29, 36713), (36, 36650), (38, 36641), (42, 36482), (43, 36446),

Gene: Lorenzo\_49 Start: 33388, Stop: 32849, Start Num: 11

Candidate Starts for Lorenzo\_49:

(Start: 4 @33445 has 1 MA's), (Start: 5 @33430 has 1 MA's), (Start: 11 @33388 has 149 MA's), (31, 33130), (36, 33097), (39, 33058), (43, 32890),

Gene: Lunsford\_50 Start: 33382, Stop: 32843, Start Num: 11

Candidate Starts for Lunsford\_50:

(Start: 4 @33439 has 1 MA's), (Start: 5 @33424 has 1 MA's), (Start: 11 @33382 has 149 MA's), (31, 33124), (36, 33091), (39, 33052), (43, 32884),

Gene: MA5\_50 Start: 33050, Stop: 32487, Start Num: 11

Candidate Starts for MA5\_50:

(Start: 4 @33107 has 1 MA's), (Start: 5 @33092 has 1 MA's), (Start: 11 @33050 has 149 MA's), (15, 32981), (22, 32903), (27, 32867), (31, 32783), (43, 32528),

Gene: MK4\_50 Start: 33179, Stop: 32574, Start Num: 6

Candidate Starts for MK4\_50:

(Start: 4 @33206 has 1 MA's), (Start: 5 @33191 has 1 MA's), (Start: 6 @33179 has 22 MA's), (Start: 11 @33149 has 149 MA's), (15, 33077), (22, 32999), (26, 32966), (27, 32963), (31, 32879), (38, 32834), (41, 32666), (43, 32615),

Gene: MPlant7149\_46 Start: 34826, Stop: 34335, Start Num: 14

Candidate Starts for MPlant7149\_46:

(3, 34898), (7, 34859), (Start: 14 @34826 has 185 MA's), (17, 34745), (20, 34724), (36, 34592), (38, 34583), (42, 34424), (43, 34388),

Gene: Magnar\_46 Start: 35936, Stop: 35445, Start Num: 14

Candidate Starts for Magnar\_46:

(Start: 14 @35936 has 185 MA's), (17, 35855), (20, 35834), (33, 35726), (36, 35702), (38, 35693), (42, 35534), (43, 35498),

Gene: Magnito\_44 Start: 34508, Stop: 34017, Start Num: 14

Candidate Starts for Magnito\_44:



(Start: 14 @34508 has 185 MA's), (17, 34427), (20, 34406), (36, 34274), (38, 34265), (42, 34106), (43, 34070),

Gene: Makemake\_47 Start: 36354, Stop: 35863, Start Num: 14

Candidate Starts for Makemake\_47:

(3, 36426), (7, 36387), (Start: 14 @36354 has 185 MA's), (17, 36273), (20, 36252), (36, 36120), (38, 36111), (42, 35952), (43, 35916),

Gene: Manatee\_48 Start: 35062, Stop: 34571, Start Num: 14

Candidate Starts for Manatee\_48:

(Start: 14 @35062 has 185 MA's), (17, 34981), (20, 34960), (33, 34852), (36, 34828), (38, 34819), (42, 34660), (43, 34624),

Gene: Marcell\_45 Start: 35220, Stop: 34729, Start Num: 14

Candidate Starts for Marcell\_45:

(3, 35292), (7, 35253), (Start: 14 @35220 has 185 MA's), (17, 35139), (20, 35118), (29, 35049), (36, 34986), (38, 34977), (42, 34818), (43, 34782),

Gene: Marge\_47 Start: 36031, Stop: 35540, Start Num: 14

Candidate Starts for Marge\_47:

(3, 36103), (7, 36064), (Start: 14 @36031 has 185 MA's), (17, 35950), (20, 35929), (29, 35860), (33, 35821), (36, 35797), (38, 35788), (42, 35629), (43, 35593),

Gene: Margo\_49 Start: 33721, Stop: 33122, Start Num: 6

Candidate Starts for Margo\_49:

(Start: 4 @33748 has 1 MA's), (Start: 5 @33733 has 1 MA's), (Start: 6 @33721 has 22 MA's), (Start: 10 @33691 has 7 MA's), (15, 33622), (22, 33544), (31, 33424), (43, 33163),

Gene: Marsha\_47 Start: 36587, Stop: 36096, Start Num: 14

Candidate Starts for Marsha\_47:

(3, 36659), (7, 36620), (Start: 14 @36587 has 185 MA's), (17, 36506), (20, 36485), (29, 36416), (33, 36377), (36, 36353), (38, 36344), (42, 36185), (43, 36149),

Gene: MaryBeth\_47 Start: 35493, Stop: 35002, Start Num: 14

Candidate Starts for MaryBeth\_47:

(3, 35565), (7, 35526), (Start: 14 @35493 has 185 MA's), (17, 35412), (20, 35391), (36, 35259), (38, 35250), (42, 35091), (43, 35055),

Gene: MarysWell\_41 Start: 32408, Stop: 31881, Start Num: 8

Candidate Starts for MarysWell\_41:

(Start: 8 @32408 has 37 MA's), (18, 32273), (19, 32267), (36, 32123),

Gene: Maverick\_49 Start: 33388, Stop: 32849, Start Num: 11

Candidate Starts for Maverick\_49:

(Start: 4 @33445 has 1 MA's), (Start: 5 @33430 has 1 MA's), (Start: 11 @33388 has 149 MA's), (31, 33130), (36, 33097), (39, 33058), (43, 32890),

Gene: Maxo\_50 Start: 33390, Stop: 32851, Start Num: 11

Candidate Starts for Maxo\_50:

(Start: 4 @33447 has 1 MA's), (Start: 5 @33432 has 1 MA's), (Start: 11 @33390 has 149 MA's), (31, 33132), (36, 33099), (39, 33060), (43, 32892),

Gene: Mazhar510\_49 Start: 33389, Stop: 32850, Start Num: 11

Candidate Starts for Mazhar510\_49:

(Start: 4 @33446 has 1 MA's), (Start: 5 @33431 has 1 MA's), (Start: 11 @33389 has 149 MA's), (31, 33131), (36, 33098), (39, 33059), (43, 32891),

Gene: McGuire\_48 Start: 35312, Stop: 34818, Start Num: 14

Candidate Starts for McGuire\_48:

(Start: 14 @35312 has 185 MA's), (17, 35231), (20, 35210), (36, 35078), (38, 35069), (42, 34910), (43, 34874),

Gene: Medusa\_49 Start: 33387, Stop: 32848, Start Num: 11

Candidate Starts for Medusa\_49:

(Start: 4 @33444 has 1 MA's), (Start: 5 @33429 has 1 MA's), (Start: 11 @33387 has 149 MA's), (31, 33129), (36, 33096), (39, 33057), (43, 32889),

Gene: MeeZee\_49 Start: 33385, Stop: 32846, Start Num: 11

Candidate Starts for MeeZee\_49:

(Start: 4 @33442 has 1 MA's), (Start: 5 @33427 has 1 MA's), (Start: 11 @33385 has 149 MA's), (31, 33127), (36, 33094), (39, 33055), (43, 32887),

Gene: Melvin\_51 Start: 33383, Stop: 32844, Start Num: 11

Candidate Starts for Melvin\_51:

(Start: 4 @33440 has 1 MA's), (Start: 5 @33425 has 1 MA's), (Start: 11 @33383 has 149 MA's), (31, 33125), (36, 33092), (39, 33053), (43, 32885),

Gene: MetalQZJ\_46 Start: 35493, Stop: 35002, Start Num: 14

Candidate Starts for MetalQZJ\_46:

(3, 35565), (7, 35526), (Start: 14 @35493 has 185 MA's), (17, 35412), (20, 35391), (36, 35259), (38, 35250), (42, 35091), (43, 35055),

Gene: Micasa\_43 Start: 32549, Stop: 32157, Start Num: 18

Candidate Starts for Micasa\_43:

(Start: 8 @32684 has 37 MA's), (18, 32549), (19, 32543), (36, 32399), (45, 32180),

Gene: Michley\_46 Start: 35011, Stop: 34520, Start Num: 14

Candidate Starts for Michley\_46:

(Start: 14 @35011 has 185 MA's), (17, 34930), (20, 34909), (29, 34840), (33, 34801), (36, 34777), (38, 34768), (42, 34609), (43, 34573),

Gene: Midas2\_42 Start: 32408, Stop: 31872, Start Num: 8

Candidate Starts for Midas2\_42:

(Start: 8 @32408 has 37 MA's), (18, 32273), (19, 32267), (36, 32123), (45, 31895),

Gene: Milcery\_43 Start: 32512, Stop: 31985, Start Num: 8

Candidate Starts for Milcery\_43:

(Start: 8 @32512 has 37 MA's), (18, 32377), (19, 32371), (36, 32227), (45, 32008),

Gene: Millski\_48 Start: 33389, Stop: 32850, Start Num: 11

Candidate Starts for Millski\_48:

(Start: 4 @33446 has 1 MA's), (Start: 5 @33431 has 1 MA's), (Start: 11 @33389 has 149 MA's), (31, 33131), (36, 33098), (39, 33059), (43, 32891),

Gene: MinecraftSteve\_55 Start: 32820, Stop: 32260, Start Num: 12

Candidate Starts for MinecraftSteve\_55:

(Start: 12 @32820 has 9 MA's), (13, 32814), (16, 32715), (20, 32688), (21, 32685), (32, 32574), (34, 32553), (36, 32544), (38, 32535), (43, 32316),

Gene: Miramae\_47 Start: 32831, Stop: 32283, Start Num: 11

Candidate Starts for Miramae\_47:

(Start: 11 @32831 has 149 MA's), (23, 32684), (36, 32534), (41, 32372), (43, 32324),

Gene: Molly\_48 Start: 34897, Stop: 34406, Start Num: 14

Candidate Starts for Molly\_48:

(Start: 14 @34897 has 185 MA's), (17, 34816), (20, 34795), (29, 34726), (36, 34663), (38, 34654), (42, 34495), (43, 34459),

Gene: Monet\_50 Start: 37023, Stop: 36532, Start Num: 14

Candidate Starts for Monet\_50:

(3, 37095), (7, 37056), (Start: 14 @37023 has 185 MA's), (17, 36942), (20, 36921), (36, 36789), (38, 36780), (42, 36621), (43, 36585),

Gene: Moose\_47 Start: 35394, Stop: 34903, Start Num: 14

Candidate Starts for Moose\_47:

(3, 35466), (7, 35427), (Start: 14 @35394 has 185 MA's), (17, 35313), (20, 35292), (36, 35160), (38, 35151), (42, 34992), (43, 34956),

Gene: Morpher26\_48 Start: 33385, Stop: 32846, Start Num: 11

Candidate Starts for Morpher26\_48:

(Start: 4 @33442 has 1 MA's), (Start: 5 @33427 has 1 MA's), (Start: 11 @33385 has 149 MA's), (31, 33127), (36, 33094), (39, 33055), (43, 32887),

Gene: Morrow\_50 Start: 33394, Stop: 32855, Start Num: 11

Candidate Starts for Morrow\_50:

(Start: 4 @33451 has 1 MA's), (Start: 5 @33436 has 1 MA's), (Start: 11 @33394 has 149 MA's), (31, 33136), (36, 33103), (39, 33064), (43, 32896),

Gene: MrGordo\_46 Start: 34805, Stop: 34314, Start Num: 14

Candidate Starts for MrGordo\_46:

(Start: 14 @34805 has 185 MA's), (17, 34724), (20, 34703), (33, 34595), (36, 34571), (38, 34562), (42, 34403), (43, 34367),

Gene: Mryolo\_45 Start: 34872, Stop: 34381, Start Num: 14

Candidate Starts for Mryolo\_45:

(3, 34944), (7, 34905), (Start: 14 @34872 has 185 MA's), (17, 34791), (20, 34770), (29, 34701), (36, 34638), (38, 34629), (42, 34470), (43, 34434),

Gene: Mule\_44 Start: 33043, Stop: 32564, Start Num: 14

Candidate Starts for Mule\_44:

(3, 33115), (7, 33076), (Start: 14 @33043 has 185 MA's), (17, 32962), (20, 32941), (29, 32872), (33, 32833), (36, 32809), (38, 32800), (42, 32653), (43, 32617),

Gene: Mundrea\_48 Start: 33386, Stop: 32841, Start Num: 11

Candidate Starts for Mundrea\_48:

(Start: 11 @33386 has 149 MA's), (23, 33239), (30, 33146), (36, 33089), (43, 32882),

Gene: Museum\_48 Start: 35048, Stop: 34557, Start Num: 14

Candidate Starts for Museum\_48:

(Start: 14 @35048 has 185 MA's), (17, 34967), (20, 34946), (29, 34877), (36, 34814), (38, 34805), (42, 34646), (43, 34610),

Gene: NEHalo\_45 Start: 34818, Stop: 34324, Start Num: 14

Candidate Starts for NEHalo\_45:

(3, 34890), (7, 34851), (Start: 14 @34818 has 185 MA's), (17, 34737), (20, 34716), (33, 34608), (36, 34584), (38, 34575), (42, 34416), (43, 34380),

Gene: Naca\_44 Start: 32823, Stop: 32299, Start Num: 8

Candidate Starts for Naca\_44:

(Start: 8 @32823 has 37 MA's), (18, 32691), (19, 32685), (36, 32541),

Gene: Naira\_49 Start: 37425, Stop: 36931, Start Num: 14

Candidate Starts for Naira\_49:

(Start: 14 @37425 has 185 MA's), (17, 37344), (20, 37323), (36, 37191), (38, 37182), (42, 37023), (43, 36987),

Gene: NearlyHeadless\_46 Start: 31699, Stop: 31181, Start Num: 9

Candidate Starts for NearlyHeadless\_46:

(Start: 9 @31699 has 11 MA's), (18, 31582), (28, 31543), (30, 31483), (36, 31432), (37, 31426), (45, 31204),

Gene: Nebs\_50 Start: 33388, Stop: 32849, Start Num: 11

Candidate Starts for Nebs\_50:

(Start: 4 @33445 has 1 MA's), (Start: 5 @33430 has 1 MA's), (Start: 11 @33388 has 149 MA's), (31, 33130), (36, 33097), (39, 33058), (43, 32890),

Gene: Nemo27\_49 Start: 33387, Stop: 32848, Start Num: 11

Candidate Starts for Nemo27\_49:

(Start: 4 @33444 has 1 MA's), (Start: 5 @33429 has 1 MA's), (Start: 11 @33387 has 149 MA's), (31, 33129), (36, 33096), (39, 33057), (43, 32889),

Gene: Nerujay\_49 Start: 36116, Stop: 35637, Start Num: 14

Candidate Starts for Nerujay\_49:

(Start: 14 @36116 has 185 MA's), (17, 36035), (20, 36014), (36, 35882), (38, 35873), (42, 35726), (43, 35690),

Gene: Nhonho\_48 Start: 35986, Stop: 35495, Start Num: 14

Candidate Starts for Nhonho\_48:

(Start: 14 @35986 has 185 MA's), (17, 35905), (20, 35884), (36, 35752), (38, 35743), (42, 35584), (43, 35548),

Gene: Niza\_50 Start: 36895, Stop: 36404, Start Num: 14

Candidate Starts for Niza\_50:

(3, 36967), (7, 36928), (Start: 14 @36895 has 185 MA's), (17, 36814), (20, 36793), (36, 36661), (38, 36652), (42, 36493), (43, 36457),

Gene: Noella\_49 Start: 33696, Stop: 33097, Start Num: 6

Candidate Starts for Noella\_49:

(Start: 4 @33723 has 1 MA's), (Start: 5 @33708 has 1 MA's), (Start: 6 @33696 has 22 MA's), (Start: 10 @33666 has 7 MA's), (15, 33597), (22, 33519), (31, 33399), (43, 33138),

Gene: Noelle\_49 Start: 33677, Stop: 33135, Start Num: 11

Candidate Starts for Noelle\_49:

(Start: 4 @33734 has 1 MA's), (Start: 5 @33719 has 1 MA's), (Start: 11 @33677 has 149 MA's), (36, 33383), (39, 33344), (43, 33176),

Gene: Norbert\_48 Start: 33695, Stop: 33096, Start Num: 6

Candidate Starts for Norbert\_48:

(Start: 4 @33722 has 1 MA's), (Start: 5 @33707 has 1 MA's), (Start: 6 @33695 has 22 MA's), (Start: 10 @33665 has 7 MA's), (15, 33596), (22, 33518), (31, 33398), (43, 33137),

Gene: NorthStar\_48 Start: 33388, Stop: 32849, Start Num: 11

Candidate Starts for NorthStar\_48:

(Start: 4 @33445 has 1 MA's), (Start: 5 @33430 has 1 MA's), (Start: 11 @33388 has 149 MA's), (31, 33130), (36, 33097), (39, 33058), (43, 32890),

Gene: NotAPhaseMom\_49 Start: 33392, Stop: 32853, Start Num: 11

Candidate Starts for NotAPhaseMom\_49:

(Start: 4 @33449 has 1 MA's), (Start: 5 @33434 has 1 MA's), (Start: 11 @33392 has 149 MA's), (31, 33134), (36, 33101), (39, 33062), (43, 32894),

Gene: Nyxis\_49 Start: 33278, Stop: 32739, Start Num: 11

Candidate Starts for Nyxis\_49:

(Start: 4 @33335 has 1 MA's), (Start: 5 @33320 has 1 MA's), (Start: 11 @33278 has 149 MA's), (31, 33020), (36, 32987), (39, 32948), (43, 32780),

Gene: OKCentral2016\_47 Start: 32762, Stop: 32202, Start Num: 11

Candidate Starts for OKCentral2016\_47:

(Start: 11 @32762 has 149 MA's), (15, 32690), (26, 32576), (27, 32573), (34, 32465), (36, 32456), (43, 32249),

Gene: OKaNui\_49 Start: 33438, Stop: 32899, Start Num: 11

Candidate Starts for OKaNui\_49:

(Start: 4 @33495 has 1 MA's), (Start: 5 @33480 has 1 MA's), (Start: 11 @33438 has 149 MA's), (31, 33180), (36, 33147), (39, 33108), (43, 32940),

Gene: Obama12\_50 Start: 33809, Stop: 33273, Start Num: 11

Candidate Starts for Obama12\_50:

(2, 33872), (Start: 11 @33809 has 149 MA's), (31, 33551), (36, 33518), (39, 33479), (43, 33314),

Gene: Ohfah\_50 Start: 33388, Stop: 32849, Start Num: 11

Candidate Starts for Ohfah\_50:

(Start: 4 @33445 has 1 MA's), (Start: 5 @33430 has 1 MA's), (Start: 11 @33388 has 149 MA's), (31, 33130), (36, 33097), (39, 33058), (43, 32890),

Gene: Ohno789\_48 Start: 36219, Stop: 35725, Start Num: 14

Candidate Starts for Ohno789\_48:

(Start: 14 @36219 has 185 MA's), (17, 36138), (20, 36117), (33, 36009), (36, 35985), (38, 35976), (42, 35817), (43, 35781),

Gene: Oogway\_44 Start: 34350, Stop: 33859, Start Num: 14

Candidate Starts for Oogway\_44:

(Start: 14 @34350 has 185 MA's), (17, 34269), (20, 34248), (36, 34116), (38, 34107), (42, 33948), (43, 33912),

Gene: PSullivan\_47 Start: 34862, Stop: 34371, Start Num: 14

Candidate Starts for PSullivan\_47:

(3, 34934), (7, 34895), (Start: 14 @34862 has 185 MA's), (17, 34781), (20, 34760), (29, 34691), (36, 34628), (38, 34619), (42, 34460), (43, 34424),

Gene: PacerPaul\_47 Start: 35606, Stop: 35115, Start Num: 14

Candidate Starts for PacerPaul\_47:

(3, 35678), (7, 35639), (Start: 14 @35606 has 185 MA's), (17, 35525), (20, 35504), (29, 35435), (33, 35396), (36, 35372), (38, 35363), (42, 35204), (43, 35168),

Gene: Palestino\_48 Start: 33388, Stop: 32849, Start Num: 11

Candidate Starts for Palestino\_48:

(Start: 4 @33445 has 1 MA's), (Start: 5 @33430 has 1 MA's), (Start: 11 @33388 has 149 MA's), (31, 33130), (36, 33097), (39, 33058), (43, 32890),

Gene: Panamaxus\_47 Start: 33665, Stop: 33096, Start Num: 10

Candidate Starts for Panamaxus\_47:

(Start: 4 @33722 has 1 MA's), (Start: 5 @33707 has 1 MA's), (Start: 6 @33695 has 22 MA's), (Start: 10 @33665 has 7 MA's), (15, 33596), (22, 33518), (31, 33398), (43, 33137),

Gene: Papez\_50 Start: 37983, Stop: 37492, Start Num: 14

Candidate Starts for Papez\_50:

(Start: 14 @37983 has 185 MA's), (17, 37902), (20, 37881), (29, 37812), (33, 37773), (36, 37749), (38, 37740), (42, 37581), (43, 37545),

Gene: Paphu\_45 Start: 35117, Stop: 34626, Start Num: 14

Candidate Starts for Paphu\_45:

(Start: 14 @35117 has 185 MA's), (17, 35036), (20, 35015), (29, 34946), (36, 34883), (38, 34874), (42, 34715), (43, 34679),

Gene: Paraselene\_45 Start: 35484, Stop: 34990, Start Num: 14

Candidate Starts for Paraselene\_45:

(3, 35556), (7, 35517), (Start: 14 @35484 has 185 MA's), (17, 35403), (20, 35382), (29, 35313), (36, 35250), (38, 35241), (42, 35082), (43, 35046),

Gene: Pari\_48 Start: 35131, Stop: 34640, Start Num: 14

Candidate Starts for Pari\_48:

(Start: 14 @35131 has 185 MA's), (17, 35050), (20, 35029), (36, 34897), (38, 34888), (42, 34729), (43, 34693),

Gene: PascalRango\_48 Start: 35376, Stop: 34882, Start Num: 14

Candidate Starts for PascalRango\_48:

(Start: 14 @35376 has 185 MA's), (17, 35295), (20, 35274), (29, 35205), (36, 35142), (38, 35133), (42, 34974), (43, 34938),

Gene: PattyP\_48 Start: 35244, Stop: 34753, Start Num: 14

Candidate Starts for PattyP\_48:

(3, 35316), (7, 35277), (Start: 14 @35244 has 185 MA's), (17, 35163), (20, 35142), (29, 35073), (36, 35010), (38, 35001), (42, 34842), (43, 34806),

Gene: PeaceMeal1\_46 Start: 32314, Stop: 31766, Start Num: 11

Candidate Starts for PeaceMeal1\_46:

(Start: 11 @32314 has 149 MA's), (15, 32245), (23, 32161), (24, 32158), (26, 32140), (27, 32137), (31, 32053), (36, 32020), (43, 31813),

Gene: Peaches\_49 Start: 33387, Stop: 32848, Start Num: 11

Candidate Starts for Peaches\_49:

(Start: 4 @33444 has 1 MA's), (Start: 5 @33429 has 1 MA's), (Start: 11 @33387 has 149 MA's), (31, 33129), (36, 33096), (39, 33057), (43, 32889),

Gene: Pelly\_46 Start: 35645, Stop: 35154, Start Num: 14

Candidate Starts for Pelly\_46:

(Start: 14 @35645 has 185 MA's), (17, 35564), (20, 35543), (36, 35411), (38, 35402), (42, 35243), (43, 35207),

Gene: Pepe\_44 Start: 33805, Stop: 33314, Start Num: 14

Candidate Starts for Pepe\_44:

(3, 33877), (7, 33838), (Start: 14 @33805 has 185 MA's), (17, 33724), (20, 33703), (29, 33634), (36, 33571), (38, 33562), (42, 33403), (43, 33367),

Gene: Perplexer\_48 Start: 33361, Stop: 32822, Start Num: 11

Candidate Starts for Perplexer\_48:

(Start: 4 @33418 has 1 MA's), (Start: 5 @33403 has 1 MA's), (Start: 11 @33361 has 149 MA's), (31, 33103), (36, 33070), (39, 33031), (43, 32863),

Gene: Perseus\_47 Start: 35929, Stop: 35450, Start Num: 14

Candidate Starts for Perseus\_47:

(3, 36001), (7, 35962), (Start: 14 @35929 has 185 MA's), (17, 35848), (20, 35827), (29, 35758), (33, 35719), (36, 35695), (38, 35686), (42, 35539), (43, 35503),

Gene: PeterPeter\_49 Start: 33385, Stop: 32846, Start Num: 11

Candidate Starts for PeterPeter\_49:

(Start: 4 @33442 has 1 MA's), (Start: 5 @33427 has 1 MA's), (Start: 11 @33385 has 149 MA's), (31, 33127), (36, 33094), (39, 33055), (43, 32887),

Gene: Peterson\_50 Start: 37831, Stop: 37337, Start Num: 14

Candidate Starts for Peterson\_50:

(Start: 14 @37831 has 185 MA's), (17, 37750), (20, 37729), (29, 37660), (36, 37597), (38, 37588), (42, 37429), (43, 37393),

Gene: PetiteSangsue\_48 Start: 33364, Stop: 32825, Start Num: 11

Candidate Starts for PetiteSangsue\_48:

(Start: 4 @33421 has 1 MA's), (Start: 5 @33406 has 1 MA's), (Start: 11 @33364 has 149 MA's), (31, 33106), (36, 33073), (39, 33034), (43, 32866),

Gene: Petp2012\_48 Start: 35856, Stop: 35365, Start Num: 14

Candidate Starts for Petp2012\_48:

(Start: 14 @35856 has 185 MA's), (17, 35775), (20, 35754), (29, 35685), (36, 35622), (38, 35613), (42, 35454), (43, 35418),

Gene: Petrucchio\_47 Start: 35590, Stop: 35099, Start Num: 14

Candidate Starts for Petrucchio\_47:

(3, 35662), (7, 35623), (Start: 14 @35590 has 185 MA's), (17, 35509), (20, 35488), (29, 35419), (33, 35380), (36, 35356), (38, 35347), (42, 35188), (43, 35152),

Gene: PetterN\_46 Start: 32243, Stop: 31719, Start Num: 8  
Candidate Starts for PetterN\_46:  
(Start: 8 @32243 has 37 MA's), (18, 32111), (19, 32105), (36, 31961),

Gene: Phacado\_49 Start: 33387, Stop: 32848, Start Num: 11  
Candidate Starts for Phacado\_49:  
(Start: 4 @33444 has 1 MA's), (Start: 5 @33429 has 1 MA's), (Start: 11 @33387 has 149 MA's), (31, 33129), (36, 33096), (39, 33057), (43, 32889),

Gene: Phantastic\_51 Start: 33380, Stop: 32778, Start Num: 6  
Candidate Starts for Phantastic\_51:  
(Start: 4 @33407 has 1 MA's), (Start: 5 @33392 has 1 MA's), (Start: 6 @33380 has 22 MA's), (Start: 11 @33350 has 149 MA's), (15, 33281), (22, 33203), (27, 33167), (31, 33083), (43, 32819),

Gene: Phelipe\_50 Start: 33388, Stop: 32849, Start Num: 11  
Candidate Starts for Phelipe\_50:  
(Start: 4 @33445 has 1 MA's), (Start: 5 @33430 has 1 MA's), (Start: 11 @33388 has 149 MA's), (31, 33130), (36, 33097), (39, 33058), (43, 32890),

Gene: PherrisBueller\_47 Start: 34859, Stop: 34356, Start Num: 14  
Candidate Starts for PherrisBueller\_47:  
(3, 34931), (7, 34892), (Start: 14 @34859 has 185 MA's), (17, 34778), (20, 34757), (33, 34649), (36, 34625), (38, 34616), (42, 34448), (43, 34412),

Gene: Phighter1804\_49 Start: 33451, Stop: 32915, Start Num: 11  
Candidate Starts for Phighter1804\_49:  
(Start: 11 @33451 has 149 MA's), (31, 33193), (36, 33160), (39, 33121), (43, 32956),

Gene: Phillis\_48 Start: 32245, Stop: 31724, Start Num: 9  
Candidate Starts for Phillis\_48:  
(Start: 9 @32245 has 11 MA's), (18, 32128), (30, 32029), (36, 31978), (37, 31972), (45, 31747),

Gene: Phlorence\_41 Start: 32083, Stop: 31556, Start Num: 8  
Candidate Starts for Phlorence\_41:  
(Start: 8 @32083 has 37 MA's), (18, 31948), (19, 31942), (36, 31798), (45, 31579),

Gene: Phontbonne\_49 Start: 33279, Stop: 32740, Start Num: 11  
Candidate Starts for Phontbonne\_49:  
(Start: 4 @33336 has 1 MA's), (Start: 5 @33321 has 1 MA's), (Start: 11 @33279 has 149 MA's), (31, 33021), (36, 32988), (39, 32949), (43, 32781),

Gene: PhrostyMug\_46 Start: 35208, Stop: 34729, Start Num: 14  
Candidate Starts for PhrostyMug\_46:  
(3, 35280), (7, 35241), (Start: 14 @35208 has 185 MA's), (17, 35127), (20, 35106), (29, 35037), (33, 34998), (36, 34974), (38, 34965), (42, 34818), (43, 34782),

Gene: PickleBack\_42 Start: 32212, Stop: 31688, Start Num: 8  
Candidate Starts for PickleBack\_42:  
(Start: 8 @32212 has 37 MA's), (18, 32080), (19, 32074), (36, 31930), (45, 31711),

Gene: PinkPlastic\_46 Start: 35066, Stop: 34575, Start Num: 14  
Candidate Starts for PinkPlastic\_46:



(Start: 14 @35066 has 185 MA's), (17, 34985), (20, 34964), (36, 34832), (38, 34823), (40, 34772), (42, 34664), (43, 34628),

Gene: Pinto\_47 Start: 35047, Stop: 34556, Start Num: 14

Candidate Starts for Pinto\_47:

(3, 35119), (7, 35080), (Start: 14 @35047 has 185 MA's), (17, 34966), (20, 34945), (33, 34837), (36, 34813), (38, 34804), (42, 34645), (43, 34609),

Gene: Pipcraft\_47 Start: 33388, Stop: 32849, Start Num: 11

Candidate Starts for Pipcraft\_47:

(Start: 4 @33445 has 1 MA's), (Start: 5 @33430 has 1 MA's), (Start: 11 @33388 has 149 MA's), (31, 33130), (36, 33097), (39, 33058), (43, 32890),

Gene: Pippin\_49 Start: 35957, Stop: 35466, Start Num: 14

Candidate Starts for Pippin\_49:

(3, 36029), (7, 35990), (Start: 14 @35957 has 185 MA's), (17, 35876), (20, 35855), (36, 35723), (38, 35714), (42, 35555), (43, 35519),

Gene: Pistachio\_52 Start: 33268, Stop: 32705, Start Num: 10

Candidate Starts for Pistachio\_52:

(Start: 4 @33325 has 1 MA's), (Start: 5 @33310 has 1 MA's), (Start: 6 @33298 has 22 MA's), (Start: 10 @33268 has 7 MA's), (15, 33199), (22, 33121), (27, 33085), (31, 33001), (43, 32746),

Gene: Pita2\_50 Start: 36359, Stop: 35868, Start Num: 14

Candidate Starts for Pita2\_50:

(3, 36431), (7, 36392), (Start: 14 @36359 has 185 MA's), (17, 36278), (20, 36257), (29, 36188), (36, 36125), (38, 36116), (42, 35957), (43, 35921),

Gene: Pocahontas\_49 Start: 33692, Stop: 33093, Start Num: 6

Candidate Starts for Pocahontas\_49:

(Start: 4 @33719 has 1 MA's), (Start: 5 @33704 has 1 MA's), (Start: 6 @33692 has 22 MA's), (Start: 10 @33662 has 7 MA's), (15, 33593), (22, 33515), (31, 33395), (43, 33134),

Gene: Polymorphads\_50 Start: 33381, Stop: 32842, Start Num: 11

Candidate Starts for Polymorphads\_50:

(Start: 4 @33438 has 1 MA's), (Start: 5 @33423 has 1 MA's), (Start: 11 @33381 has 149 MA's), (31, 33123), (36, 33090), (39, 33051), (43, 32883),

Gene: Poompha\_47 Start: 32312, Stop: 31764, Start Num: 11

Candidate Starts for Poompha\_47:

(Start: 11 @32312 has 149 MA's), (15, 32243), (23, 32159), (24, 32156), (26, 32138), (27, 32135), (31, 32051), (36, 32018), (43, 31811),

Gene: Popcicle\_49 Start: 33662, Stop: 33093, Start Num: 10

Candidate Starts for Popcicle\_49:

(Start: 4 @33719 has 1 MA's), (Start: 5 @33704 has 1 MA's), (Start: 6 @33692 has 22 MA's), (Start: 10 @33662 has 7 MA's), (15, 33593), (22, 33515), (31, 33395), (43, 33134),

Gene: Pumbaa\_49 Start: 33333, Stop: 32794, Start Num: 11

Candidate Starts for Pumbaa\_49:

(Start: 4 @33390 has 1 MA's), (Start: 5 @33375 has 1 MA's), (Start: 11 @33333 has 149 MA's), (31, 33075), (36, 33042), (39, 33003), (43, 32835),

Gene: Puppy\_52 Start: 33370, Stop: 32777, Start Num: 6

Candidate Starts for Puppy\_52:

(Start: 4 @33397 has 1 MA's), (Start: 5 @33382 has 1 MA's), (Start: 6 @33370 has 22 MA's), (Start: 10 @33340 has 7 MA's), (15, 33271), (22, 33193), (27, 33157), (31, 33073), (43, 32818),

Gene: QTRlifeCrisis\_51 Start: 36055, Stop: 35564, Start Num: 14

Candidate Starts for QTRlifeCrisis\_51:

(3, 36127), (7, 36088), (Start: 14 @36055 has 185 MA's), (17, 35974), (20, 35953), (33, 35845), (36, 35821), (38, 35812), (42, 35653), (43, 35617),

Gene: QuinnKiro\_48 Start: 33695, Stop: 33096, Start Num: 6

Candidate Starts for QuinnKiro\_48:

(Start: 4 @33722 has 1 MA's), (Start: 5 @33707 has 1 MA's), (Start: 6 @33695 has 22 MA's), (Start: 10 @33665 has 7 MA's), (15, 33596), (22, 33518), (31, 33398), (43, 33137),

Gene: Rajelicia\_48 Start: 35989, Stop: 35498, Start Num: 14

Candidate Starts for Rajelicia\_48:

(3, 36061), (7, 36022), (Start: 14 @35989 has 185 MA's), (17, 35908), (20, 35887), (29, 35818), (36, 35755), (38, 35746), (42, 35587), (43, 35551),

Gene: Rebeuca\_48 Start: 33414, Stop: 32863, Start Num: 11

Candidate Starts for Rebeuca\_48:

(Start: 11 @33414 has 149 MA's), (15, 33345), (27, 33234), (31, 33150), (34, 33126), (36, 33117), (38, 33108), (43, 32910),

Gene: Relief\_48 Start: 33385, Stop: 32846, Start Num: 11

Candidate Starts for Relief\_48:

(Start: 4 @33442 has 1 MA's), (Start: 5 @33427 has 1 MA's), (Start: 11 @33385 has 149 MA's), (31, 33127), (36, 33094), (39, 33055), (43, 32887),

Gene: ResDef\_50 Start: 33665, Stop: 33096, Start Num: 10

Candidate Starts for ResDef\_50:

(Start: 4 @33722 has 1 MA's), (Start: 5 @33707 has 1 MA's), (Start: 6 @33695 has 22 MA's), (Start: 10 @33665 has 7 MA's), (15, 33596), (22, 33518), (31, 33398), (43, 33137),

Gene: RhynO\_49 Start: 33216, Stop: 32662, Start Num: 11

Candidate Starts for RhynO\_49:

(Start: 11 @33216 has 149 MA's), (15, 33147), (25, 33054), (27, 33033), (31, 32949), (34, 32925), (36, 32916), (38, 32907), (43, 32709),

Gene: Rhynn\_46 Start: 35290, Stop: 34811, Start Num: 14

Candidate Starts for Rhynn\_46:

(3, 35362), (7, 35323), (Start: 14 @35290 has 185 MA's), (17, 35209), (20, 35188), (29, 35119), (36, 35056), (38, 35047), (42, 34900), (43, 34864),

Gene: RidgeCB\_47 Start: 35205, Stop: 34714, Start Num: 14

Candidate Starts for RidgeCB\_47:

(3, 35277), (7, 35238), (Start: 14 @35205 has 185 MA's), (17, 35124), (20, 35103), (29, 35034), (36, 34971), (38, 34962), (42, 34803), (43, 34767),

Gene: Ringer\_48 Start: 36321, Stop: 35830, Start Num: 14

Candidate Starts for Ringer\_48:

(3, 36393), (7, 36354), (Start: 14 @36321 has 185 MA's), (17, 36240), (20, 36219), (36, 36087), (38, 36078), (42, 35919), (43, 35883),

Gene: Roary\_47 Start: 31912, Stop: 31391, Start Num: 9

Candidate Starts for Roary\_47:

(Start: 9 @31912 has 11 MA's), (18, 31795), (30, 31696), (36, 31645), (37, 31639), (45, 31414),

Gene: Rockstar\_50 Start: 33188, Stop: 32583, Start Num: 6

Candidate Starts for Rockstar\_50:

(Start: 4 @33215 has 1 MA's), (Start: 5 @33200 has 1 MA's), (Start: 6 @33188 has 22 MA's), (Start: 11 @33158 has 149 MA's), (15, 33086), (22, 33008), (26, 32975), (27, 32972), (31, 32888), (38, 32843), (41, 32675), (43, 32624),

Gene: Rohr\_48 Start: 36009, Stop: 35518, Start Num: 14

Candidate Starts for Rohr\_48:

(3, 36081), (7, 36042), (Start: 14 @36009 has 185 MA's), (17, 35928), (20, 35907), (29, 35838), (36, 35775), (38, 35766), (42, 35607), (43, 35571),

Gene: Romney\_49 Start: 33385, Stop: 32846, Start Num: 11

Candidate Starts for Romney\_49:

(Start: 4 @33442 has 1 MA's), (Start: 5 @33427 has 1 MA's), (Start: 11 @33385 has 149 MA's), (31, 33127), (36, 33094), (39, 33055), (43, 32887),

Gene: Roosevelt\_48 Start: 33390, Stop: 32851, Start Num: 11

Candidate Starts for Roosevelt\_48:

(Start: 4 @33447 has 1 MA's), (Start: 5 @33432 has 1 MA's), (Start: 11 @33390 has 149 MA's), (31, 33132), (36, 33099), (39, 33060), (43, 32892),

Gene: Rosalind\_53 Start: 32742, Stop: 32176, Start Num: 12

Candidate Starts for Rosalind\_53:

(Start: 12 @32742 has 9 MA's), (13, 32736), (16, 32631), (20, 32604), (21, 32601), (32, 32490), (34, 32469), (36, 32460), (38, 32451), (43, 32232),

Gene: Rubeus\_47 Start: 33866, Stop: 33372, Start Num: 14

Candidate Starts for Rubeus\_47:

(3, 33938), (7, 33899), (Start: 14 @33866 has 185 MA's), (17, 33785), (20, 33764), (29, 33695), (33, 33656), (36, 33632), (38, 33623), (42, 33461), (43, 33425),

Gene: Rufus\_48 Start: 35636, Stop: 35142, Start Num: 14

Candidate Starts for Rufus\_48:

(3, 35708), (7, 35669), (Start: 14 @35636 has 185 MA's), (17, 35555), (20, 35534), (29, 35465), (33, 35426), (36, 35402), (38, 35393), (42, 35231), (43, 35195),

Gene: Ruin\_49 Start: 33381, Stop: 32842, Start Num: 11

Candidate Starts for Ruin\_49:

(Start: 4 @33438 has 1 MA's), (Start: 5 @33423 has 1 MA's), (Start: 11 @33381 has 149 MA's), (31, 33123), (36, 33090), (39, 33051), (43, 32883),

Gene: Ruotula\_50 Start: 37126, Stop: 36635, Start Num: 14

Candidate Starts for Ruotula\_50:

(3, 37198), (7, 37159), (Start: 14 @37126 has 185 MA's), (17, 37045), (20, 37024), (29, 36955), (33, 36916), (36, 36892), (38, 36883), (42, 36724), (43, 36688),

Gene: Rutherferd\_49 Start: 36503, Stop: 36024, Start Num: 14  
Candidate Starts for Rutherferd\_49:  
(Start: 14 @36503 has 185 MA's), (17, 36422), (20, 36401), (29, 36332), (36, 36269), (38, 36260), (42, 36113), (43, 36077),

Gene: STLscum\_48 Start: 36506, Stop: 36015, Start Num: 14  
Candidate Starts for STLscum\_48:  
(Start: 14 @36506 has 185 MA's), (17, 36425), (20, 36404), (36, 36272), (38, 36263), (42, 36104), (43, 36068),

Gene: Sabertooth\_49 Start: 33390, Stop: 32851, Start Num: 11  
Candidate Starts for Sabertooth\_49:  
(Start: 4 @33447 has 1 MA's), (Start: 5 @33432 has 1 MA's), (Start: 11 @33390 has 149 MA's), (31, 33132), (36, 33099), (39, 33060), (43, 32892),

Gene: Sagefire\_50 Start: 36875, Stop: 36384, Start Num: 14  
Candidate Starts for Sagefire\_50:  
(3, 36947), (7, 36908), (Start: 14 @36875 has 185 MA's), (17, 36794), (20, 36773), (36, 36641), (38, 36632), (42, 36473), (43, 36437),

Gene: Saintus\_41 Start: 28634, Stop: 28113, Start Num: 9  
Candidate Starts for Saintus\_41:  
(Start: 9 @28634 has 11 MA's), (18, 28517), (28, 28478), (30, 28418), (36, 28367), (37, 28361), (45, 28136),

Gene: SarFire\_45 Start: 35227, Stop: 34736, Start Num: 14  
Candidate Starts for SarFire\_45:  
(3, 35299), (7, 35260), (Start: 14 @35227 has 185 MA's), (17, 35146), (20, 35125), (36, 34993), (38, 34984), (42, 34825), (43, 34789),

Gene: SaturnRing\_51 Start: 33721, Stop: 33158, Start Num: 10  
Candidate Starts for SaturnRing\_51:  
(Start: 4 @33778 has 1 MA's), (Start: 5 @33763 has 1 MA's), (Start: 6 @33751 has 22 MA's), (Start: 10 @33721 has 7 MA's), (15, 33652), (22, 33574), (27, 33538), (31, 33454), (43, 33199),

Gene: Scamp\_49 Start: 33390, Stop: 32851, Start Num: 11  
Candidate Starts for Scamp\_49:  
(Start: 4 @33447 has 1 MA's), (Start: 5 @33432 has 1 MA's), (Start: 11 @33390 has 149 MA's), (31, 33132), (36, 33099), (39, 33060), (43, 32892),

Gene: Scorpia\_46 Start: 32329, Stop: 31805, Start Num: 8  
Candidate Starts for Scorpia\_46:  
(Start: 8 @32329 has 37 MA's), (18, 32197), (19, 32191), (36, 32047),

Gene: Scout\_50 Start: 32872, Stop: 32279, Start Num: 6  
Candidate Starts for Scout\_50:  
(Start: 4 @32899 has 1 MA's), (Start: 5 @32884 has 1 MA's), (Start: 6 @32872 has 22 MA's), (Start: 10 @32842 has 7 MA's), (15, 32773), (22, 32695), (26, 32662), (27, 32659), (31, 32575), (43, 32320),

Gene: Scowl\_48 Start: 36163, Stop: 35660, Start Num: 14  
Candidate Starts for Scowl\_48:  
(3, 36235), (7, 36196), (Start: 14 @36163 has 185 MA's), (17, 36082), (20, 36061), (36, 35929), (38, 35920), (42, 35752), (43, 35716),

Gene: Seabiscuit\_49 Start: 35399, Stop: 34908, Start Num: 14

Candidate Starts for Seabiscuit\_49:

(Start: 14 @35399 has 185 MA's), (17, 35318), (20, 35297), (36, 35165), (38, 35156), (40, 35105), (42, 34997), (43, 34961),

Gene: Seanderson\_49 Start: 36566, Stop: 36075, Start Num: 14

Candidate Starts for Seanderson\_49:

(3, 36638), (7, 36599), (Start: 14 @36566 has 185 MA's), (17, 36485), (20, 36464), (36, 36332), (38, 36323), (42, 36164), (43, 36128),

Gene: Severus\_46 Start: 32312, Stop: 31764, Start Num: 11

Candidate Starts for Severus\_46:

(Start: 11 @32312 has 149 MA's), (15, 32243), (23, 32159), (24, 32156), (26, 32138), (27, 32135), (31, 32051), (36, 32018), (43, 31811),

Gene: Shaka\_49 Start: 33385, Stop: 32846, Start Num: 11

Candidate Starts for Shaka\_49:

(Start: 4 @33442 has 1 MA's), (Start: 5 @33427 has 1 MA's), (Start: 11 @33385 has 149 MA's), (31, 33127), (36, 33094), (39, 33055), (43, 32887),

Gene: ShayRa\_55 Start: 32786, Stop: 32223, Start Num: 12

Candidate Starts for ShayRa\_55:

(Start: 12 @32786 has 9 MA's), (13, 32780), (16, 32678), (20, 32651), (21, 32648), (32, 32537), (34, 32516), (36, 32507), (38, 32498), (43, 32279),

Gene: SheldonCooper\_51 Start: 33808, Stop: 33272, Start Num: 11

Candidate Starts for SheldonCooper\_51:

(2, 33871), (Start: 11 @33808 has 149 MA's), (31, 33550), (36, 33517), (39, 33478), (43, 33313),

Gene: Shygu2\_48 Start: 33364, Stop: 32825, Start Num: 11

Candidate Starts for Shygu2\_48:

(Start: 4 @33421 has 1 MA's), (Start: 5 @33406 has 1 MA's), (Start: 11 @33364 has 149 MA's), (36, 33073), (39, 33034), (43, 32866),

Gene: Sibs6\_48 Start: 34494, Stop: 34003, Start Num: 14

Candidate Starts for Sibs6\_48:

(Start: 14 @34494 has 185 MA's), (17, 34413), (20, 34392), (29, 34323), (36, 34260), (38, 34251), (42, 34092), (43, 34056),

Gene: SkiPole\_50 Start: 36227, Stop: 35736, Start Num: 14

Candidate Starts for SkiPole\_50:

(Start: 14 @36227 has 185 MA's), (17, 36146), (20, 36125), (36, 35993), (38, 35984), (42, 35825), (43, 35789),

Gene: Skipitt\_48 Start: 33382, Stop: 32843, Start Num: 11

Candidate Starts for Skipitt\_48:

(Start: 4 @33439 has 1 MA's), (Start: 5 @33424 has 1 MA's), (Start: 11 @33382 has 149 MA's), (31, 33124), (36, 33091), (39, 33052), (43, 32884),

Gene: Slagathor\_49 Start: 35914, Stop: 35423, Start Num: 14

Candidate Starts for Slagathor\_49:

(3, 35986), (7, 35947), (Start: 14 @35914 has 185 MA's), (17, 35833), (20, 35812), (29, 35743), (36, 35680), (38, 35671), (42, 35512), (43, 35476),

Gene: Smairt\_49 Start: 36201, Stop: 35722, Start Num: 14

Candidate Starts for Smairt\_49:

(3, 36273), (7, 36234), (Start: 14 @36201 has 185 MA's), (17, 36120), (20, 36099), (29, 36030), (33, 35991), (36, 35967), (38, 35958), (42, 35811), (43, 35775),

Gene: Smeadley\_47 Start: 32078, Stop: 31557, Start Num: 9

Candidate Starts for Smeadley\_47:

(Start: 9 @32078 has 11 MA's), (18, 31961), (30, 31862), (36, 31811), (37, 31805), (45, 31580),

Gene: Smeagol\_48 Start: 36735, Stop: 36244, Start Num: 14

Candidate Starts for Smeagol\_48:

(Start: 14 @36735 has 185 MA's), (17, 36654), (20, 36633), (36, 36501), (38, 36492), (42, 36333), (43, 36297),

Gene: Snazzy\_45 Start: 34933, Stop: 34439, Start Num: 14

Candidate Starts for Snazzy\_45:

(Start: 14 @34933 has 185 MA's), (17, 34852), (20, 34831), (36, 34699), (38, 34690), (40, 34639), (42, 34531), (43, 34495),

Gene: Solon\_46 Start: 35558, Stop: 35067, Start Num: 14

Candidate Starts for Solon\_46:

(3, 35630), (7, 35591), (Start: 14 @35558 has 185 MA's), (17, 35477), (20, 35456), (33, 35348), (36, 35324), (38, 35315), (42, 35156), (43, 35120),

Gene: Soups\_55 Start: 33022, Stop: 32456, Start Num: 12

Candidate Starts for Soups\_55:

(Start: 12 @33022 has 9 MA's), (13, 33016), (16, 32911), (20, 32884), (21, 32881), (32, 32770), (34, 32749), (36, 32740), (38, 32731), (43, 32512),

Gene: Sparxx\_50 Start: 33383, Stop: 32844, Start Num: 11

Candidate Starts for Sparxx\_50:

(Start: 4 @33440 has 1 MA's), (Start: 5 @33425 has 1 MA's), (Start: 11 @33383 has 149 MA's), (31, 33125), (36, 33092), (39, 33053), (43, 32885),

Gene: SpikeBT\_47 Start: 35915, Stop: 35421, Start Num: 14

Candidate Starts for SpikeBT\_47:

(Start: 14 @35915 has 185 MA's), (17, 35834), (20, 35813), (33, 35705), (36, 35681), (38, 35672), (42, 35513), (43, 35477),

Gene: Spino\_48 Start: 33388, Stop: 32849, Start Num: 11

Candidate Starts for Spino\_48:

(Start: 4 @33445 has 1 MA's), (Start: 5 @33430 has 1 MA's), (Start: 11 @33388 has 149 MA's), (31, 33130), (36, 33097), (39, 33058), (43, 32890),

Gene: Squee\_47 Start: 35892, Stop: 35398, Start Num: 14

Candidate Starts for Squee\_47:

(Start: 14 @35892 has 185 MA's), (17, 35811), (20, 35790), (36, 35658), (38, 35649), (42, 35490), (43, 35454),

Gene: Stasia\_48 Start: 33264, Stop: 32728, Start Num: 11

Candidate Starts for Stasia\_48:

(Start: 4 @33321 has 1 MA's), (Start: 5 @33306 has 1 MA's), (Start: 11 @33264 has 149 MA's), (31, 33006), (36, 32973), (39, 32934), (41, 32817), (43, 32769),

Gene: Stephig9\_47 Start: 31916, Stop: 31395, Start Num: 9

Candidate Starts for Stephig9\_47:

(Start: 9 @31916 has 11 MA's), (18, 31799), (30, 31700), (35, 31652), (36, 31649), (37, 31643), (45, 31418),

Gene: StewieG\_46 Start: 33078, Stop: 32599, Start Num: 14

Candidate Starts for StewieG\_46:

(3, 33150), (7, 33111), (Start: 14 @33078 has 185 MA's), (17, 32997), (20, 32976), (29, 32907), (36, 32844), (38, 32835), (42, 32688), (43, 32652),

Gene: Stink\_46 Start: 33111, Stop: 32563, Start Num: 11

Candidate Starts for Stink\_46:

(Start: 11 @33111 has 149 MA's), (23, 32964), (36, 32814), (41, 32652), (43, 32604),

Gene: StrongArm\_47 Start: 36761, Stop: 36270, Start Num: 14

Candidate Starts for StrongArm\_47:

(3, 36833), (7, 36794), (Start: 14 @36761 has 185 MA's), (17, 36680), (20, 36659), (36, 36527), (38, 36518), (42, 36359), (43, 36323),

Gene: Sumter\_44 Start: 35263, Stop: 34772, Start Num: 14

Candidate Starts for Sumter\_44:

(3, 35335), (7, 35296), (Start: 14 @35263 has 185 MA's), (17, 35182), (20, 35161), (33, 35053), (36, 35029), (38, 35020), (42, 34861), (43, 34825),

Gene: Sunshine924\_48 Start: 35178, Stop: 34687, Start Num: 14

Candidate Starts for Sunshine924\_48:

(Start: 14 @35178 has 185 MA's), (17, 35097), (20, 35076), (36, 34944), (38, 34935), (42, 34776), (43, 34740),

Gene: Swirley\_45 Start: 32876, Stop: 32349, Start Num: 8

Candidate Starts for Swirley\_45:

(Start: 8 @32876 has 37 MA's), (18, 32741), (19, 32735), (36, 32591), (45, 32372),

Gene: SwissCheese\_49 Start: 35894, Stop: 35403, Start Num: 14

Candidate Starts for SwissCheese\_49:

(3, 35966), (7, 35927), (Start: 14 @35894 has 185 MA's), (17, 35813), (20, 35792), (36, 35660), (38, 35651), (42, 35492), (43, 35456),

Gene: Switzer\_48 Start: 35468, Stop: 34977, Start Num: 14

Candidate Starts for Switzer\_48:

(Start: 14 @35468 has 185 MA's), (17, 35387), (20, 35366), (33, 35258), (36, 35234), (38, 35225), (42, 35066), (43, 35030),

Gene: Switzerland\_54 Start: 32922, Stop: 32356, Start Num: 12

Candidate Starts for Switzerland\_54:

(Start: 12 @32922 has 9 MA's), (13, 32916), (16, 32811), (20, 32784), (21, 32781), (32, 32670), (34, 32649), (36, 32640), (38, 32631), (43, 32412),

Gene: Swole\_48 Start: 35063, Stop: 34572, Start Num: 14

Candidate Starts for Swole\_48:

(3, 35135), (7, 35096), (Start: 14 @35063 has 185 MA's), (17, 34982), (20, 34961), (29, 34892), (36, 34829), (38, 34820), (42, 34661), (43, 34625),

Gene: SydNat\_44 Start: 33081, Stop: 32545, Start Num: 8

Candidate Starts for SydNat\_44:

(Start: 8 @33081 has 37 MA's), (18, 32946), (19, 32940), (36, 32796),

Gene: TNguyen7\_51 Start: 33687, Stop: 33124, Start Num: 10

Candidate Starts for TNguyen7\_51:

(Start: 4 @33744 has 1 MA's), (Start: 5 @33729 has 1 MA's), (Start: 6 @33717 has 22 MA's), (Start: 10 @33687 has 7 MA's), (15, 33618), (22, 33540), (27, 33504), (31, 33420), (43, 33165),

Gene: Taquarus\_49 Start: 33391, Stop: 32852, Start Num: 11

Candidate Starts for Taquarus\_49:

(Start: 4 @33448 has 1 MA's), (Start: 5 @33433 has 1 MA's), (Start: 11 @33391 has 149 MA's), (31, 33133), (36, 33100), (39, 33061), (43, 32893),

Gene: Target\_48 Start: 34467, Stop: 33976, Start Num: 14

Candidate Starts for Target\_48:

(3, 34539), (7, 34500), (Start: 14 @34467 has 185 MA's), (17, 34386), (36, 34233), (38, 34224), (42, 34065), (43, 34029),

Gene: Tarynearal\_41 Start: 32318, Stop: 31791, Start Num: 8

Candidate Starts for Tarynearal\_41:

(Start: 8 @32318 has 37 MA's), (18, 32183), (19, 32177), (36, 32033), (45, 31814),

Gene: Tasp14\_48 Start: 35800, Stop: 35309, Start Num: 14

Candidate Starts for Tasp14\_48:

(Start: 14 @35800 has 185 MA's), (17, 35719), (20, 35698), (36, 35566), (38, 35557), (40, 35506), (42, 35398), (43, 35362),

Gene: Texage\_48 Start: 33696, Stop: 33097, Start Num: 6

Candidate Starts for Texage\_48:

(Start: 4 @33723 has 1 MA's), (Start: 5 @33708 has 1 MA's), (Start: 6 @33696 has 22 MA's), (Start: 10 @33666 has 7 MA's), (15, 33597), (22, 33519), (31, 33399), (43, 33138),

Gene: Thanksgivukkah\_48 Start: 33428, Stop: 32847, Start Num: 5

Candidate Starts for Thanksgivukkah\_48:

(Start: 4 @33443 has 1 MA's), (Start: 5 @33428 has 1 MA's), (Start: 11 @33386 has 149 MA's), (31, 33128), (36, 33095), (39, 33056), (43, 32888),

Gene: Theia\_40 Start: 32347, Stop: 31820, Start Num: 8

Candidate Starts for Theia\_40:

(Start: 8 @32347 has 37 MA's), (18, 32212), (19, 32206), (36, 32062),

Gene: TheloniousMonk\_48 Start: 36922, Stop: 36431, Start Num: 14

Candidate Starts for TheloniousMonk\_48:

(3, 36994), (7, 36955), (Start: 14 @36922 has 185 MA's), (17, 36841), (20, 36820), (29, 36751), (36, 36688), (38, 36679), (42, 36520), (43, 36484),

Gene: Thor\_45 Start: 34585, Stop: 34094, Start Num: 14

Candidate Starts for Thor\_45:



(3, 34657), (7, 34618), (Start: 14 @34585 has 185 MA's), (17, 34504), (20, 34483), (36, 34351), (38, 34342), (42, 34183), (43, 34147),

Gene: Tiger\_41 Start: 31886, Stop: 31353, Start Num: 8

Candidate Starts for Tiger\_41:

(Start: 8 @31886 has 37 MA's), (18, 31754), (19, 31748), (36, 31604),

Gene: TinaFeyge\_49 Start: 33383, Stop: 32844, Start Num: 11

Candidate Starts for TinaFeyge\_49:

(Start: 4 @33440 has 1 MA's), (Start: 5 @33425 has 1 MA's), (Start: 11 @33383 has 149 MA's), (31, 33125), (36, 33092), (39, 33053), (43, 32885),

Gene: Tinybot\_48 Start: 33415, Stop: 32876, Start Num: 11

Candidate Starts for Tinybot\_48:

(Start: 4 @33472 has 1 MA's), (Start: 5 @33457 has 1 MA's), (Start: 11 @33415 has 149 MA's), (31, 33157), (36, 33124), (39, 33085), (43, 32917),

Gene: TiroTheta9\_49 Start: 33382, Stop: 32843, Start Num: 11

Candidate Starts for TiroTheta9\_49:

(Start: 4 @33439 has 1 MA's), (Start: 5 @33424 has 1 MA's), (Start: 11 @33382 has 149 MA's), (31, 33124), (36, 33091), (39, 33052), (43, 32884),

Gene: Todacoro\_49 Start: 33695, Stop: 33096, Start Num: 6

Candidate Starts for Todacoro\_49:

(Start: 4 @33722 has 1 MA's), (Start: 5 @33707 has 1 MA's), (Start: 6 @33695 has 22 MA's), (Start: 10 @33665 has 7 MA's), (15, 33596), (22, 33518), (31, 33398), (43, 33137),

Gene: Topanga\_46 Start: 33064, Stop: 32513, Start Num: 11

Candidate Starts for Topanga\_46:

(Start: 11 @33064 has 149 MA's), (15, 32995), (27, 32884), (31, 32800), (34, 32776), (36, 32767), (38, 32758), (43, 32560),

Gene: Tote\_43 Start: 32330, Stop: 31839, Start Num: 14

Candidate Starts for Tote\_43:

(3, 32402), (7, 32363), (Start: 14 @32330 has 185 MA's), (17, 32249), (20, 32228), (29, 32159), (36, 32096), (38, 32087), (42, 31928), (43, 31892),

Gene: Traft412\_47 Start: 36020, Stop: 35529, Start Num: 14

Candidate Starts for Traft412\_47:

(Start: 14 @36020 has 185 MA's), (17, 35939), (20, 35918), (33, 35810), (36, 35786), (38, 35777), (42, 35618), (43, 35582),

Gene: Treddle\_48 Start: 36535, Stop: 36044, Start Num: 14

Candidate Starts for Treddle\_48:

(3, 36607), (7, 36568), (Start: 14 @36535 has 185 MA's), (17, 36454), (20, 36433), (29, 36364), (36, 36301), (38, 36292), (42, 36133), (43, 36097),

Gene: Trike\_46 Start: 32321, Stop: 31773, Start Num: 11

Candidate Starts for Trike\_46:

(Start: 11 @32321 has 149 MA's), (15, 32252), (23, 32168), (24, 32165), (26, 32147), (27, 32144), (31, 32060), (36, 32027), (43, 31820),

Gene: Tripl3t\_47 Start: 36206, Stop: 35715, Start Num: 14

Candidate Starts for Trip13t\_47:

(3, 36278), (7, 36239), (Start: 14 @36206 has 185 MA's), (17, 36125), (20, 36104), (29, 36035), (36, 35972), (38, 35963), (42, 35804), (43, 35768),

Gene: Trouble\_49 Start: 36916, Stop: 36437, Start Num: 14

Candidate Starts for Trouble\_49:

(Start: 14 @36916 has 185 MA's), (17, 36835), (20, 36814), (36, 36682), (38, 36673), (42, 36526), (43, 36490),

Gene: TroyPia\_50 Start: 33386, Stop: 32847, Start Num: 11

Candidate Starts for TroyPia\_50:

(Start: 4 @33443 has 1 MA's), (Start: 5 @33428 has 1 MA's), (Start: 11 @33386 has 149 MA's), (31, 33128), (36, 33095), (39, 33056), (43, 32888),

Gene: Turj99\_44 Start: 34778, Stop: 34287, Start Num: 14

Candidate Starts for Turj99\_44:

(Start: 14 @34778 has 185 MA's), (17, 34697), (20, 34676), (36, 34544), (38, 34535), (42, 34376), (43, 34340),

Gene: Twister\_46 Start: 32975, Stop: 32424, Start Num: 11

Candidate Starts for Twister\_46:

(Start: 11 @32975 has 149 MA's), (15, 32906), (27, 32795), (31, 32711), (34, 32687), (36, 32678), (38, 32669), (43, 32471),

Gene: TwoPeat\_47 Start: 35654, Stop: 35163, Start Num: 14

Candidate Starts for TwoPeat\_47:

(3, 35726), (7, 35687), (Start: 14 @35654 has 185 MA's), (17, 35573), (20, 35552), (29, 35483), (36, 35420), (38, 35411), (42, 35252), (43, 35216),

Gene: TygerBlood\_49 Start: 33388, Stop: 32849, Start Num: 11

Candidate Starts for TygerBlood\_49:

(Start: 4 @33445 has 1 MA's), (Start: 5 @33430 has 1 MA's), (Start: 11 @33388 has 149 MA's), (31, 33130), (36, 33097), (39, 33058), (43, 32890),

Gene: U2\_46 Start: 35448, Stop: 34957, Start Num: 14

Candidate Starts for U2\_46:

(Start: 14 @35448 has 185 MA's), (17, 35367), (20, 35346), (33, 35238), (36, 35214), (38, 35205), (42, 35046), (43, 35010),

Gene: Ulysses\_48 Start: 33065, Stop: 32526, Start Num: 11

Candidate Starts for Ulysses\_48:

(Start: 4 @33122 has 1 MA's), (Start: 5 @33107 has 1 MA's), (Start: 11 @33065 has 149 MA's), (31, 32807), (36, 32774), (39, 32735), (43, 32567),

Gene: UnionJack\_43 Start: 31830, Stop: 31306, Start Num: 8

Candidate Starts for UnionJack\_43:

(Start: 8 @31830 has 37 MA's), (18, 31698), (19, 31692), (36, 31548), (45, 31329),

Gene: Veracruz\_48 Start: 33695, Stop: 33096, Start Num: 6

Candidate Starts for Veracruz\_48:

(Start: 4 @33722 has 1 MA's), (Start: 5 @33707 has 1 MA's), (Start: 6 @33695 has 22 MA's), (Start: 10 @33665 has 7 MA's), (15, 33596), (22, 33518), (31, 33398), (43, 33137),

Gene: Violet\_45 Start: 35592, Stop: 35101, Start Num: 14

Candidate Starts for Violet\_45:

(3, 35664), (7, 35625), (Start: 14 @35592 has 185 MA's), (17, 35511), (20, 35490), (38, 35349), (42, 35190), (43, 35154),

Gene: WalterMcMickey\_46 Start: 32975, Stop: 32424, Start Num: 11

Candidate Starts for WalterMcMickey\_46:

(Start: 11 @32975 has 149 MA's), (15, 32906), (27, 32795), (31, 32711), (34, 32687), (36, 32678), (38, 32669), (43, 32471),

Gene: Wander\_49 Start: 33385, Stop: 32846, Start Num: 11

Candidate Starts for Wander\_49:

(Start: 4 @33442 has 1 MA's), (Start: 5 @33427 has 1 MA's), (Start: 11 @33385 has 149 MA's), (31, 33127), (36, 33094), (39, 33055), (43, 32887),

Gene: Watermelon\_48 Start: 35984, Stop: 35463, Start Num: 14

Candidate Starts for Watermelon\_48:

(3, 36056), (7, 36017), (Start: 14 @35984 has 185 MA's), (17, 35873), (20, 35852), (29, 35783), (36, 35720), (38, 35711), (42, 35552), (43, 35516),

Gene: Wheeler\_47 Start: 35662, Stop: 35171, Start Num: 14

Candidate Starts for Wheeler\_47:

(Start: 14 @35662 has 185 MA's), (17, 35581), (20, 35560), (29, 35491), (36, 35428), (38, 35419), (42, 35260), (43, 35224),

Gene: Wilbur\_49 Start: 33385, Stop: 32846, Start Num: 11

Candidate Starts for Wilbur\_49:

(Start: 4 @33442 has 1 MA's), (Start: 5 @33427 has 1 MA's), (Start: 11 @33385 has 149 MA's), (31, 33127), (36, 33094), (39, 33055), (43, 32887),

Gene: Wile\_48 Start: 33395, Stop: 32856, Start Num: 11

Candidate Starts for Wile\_48:

(Start: 4 @33452 has 1 MA's), (Start: 5 @33437 has 1 MA's), (Start: 11 @33395 has 149 MA's), (31, 33137), (36, 33104), (39, 33065), (43, 32897),

Gene: Wizard007\_49 Start: 33393, Stop: 32854, Start Num: 11

Candidate Starts for Wizard007\_49:

(Start: 4 @33450 has 1 MA's), (Start: 5 @33435 has 1 MA's), (Start: 11 @33393 has 149 MA's), (31, 33135), (36, 33102), (39, 33063), (43, 32895),

Gene: Xena\_47 Start: 33361, Stop: 32822, Start Num: 11

Candidate Starts for Xena\_47:

(Start: 4 @33418 has 1 MA's), (Start: 5 @33403 has 1 MA's), (Start: 11 @33361 has 149 MA's), (31, 33103), (36, 33070), (39, 33031), (43, 32863),

Gene: YoSam321\_49 Start: 33382, Stop: 32843, Start Num: 11

Candidate Starts for YoSam321\_49:

(Start: 4 @33439 has 1 MA's), (Start: 5 @33424 has 1 MA's), (Start: 11 @33382 has 149 MA's), (31, 33124), (36, 33091), (39, 33052), (43, 32884),

Gene: Zeeculate\_45 Start: 35637, Stop: 35146, Start Num: 14

Candidate Starts for Zeeculate\_45:

(3, 35709), (7, 35670), (Start: 14 @35637 has 185 MA's), (17, 35556), (20, 35535), (36, 35403), (38, 35394), (42, 35235), (43, 35199),

Gene: Zephyr\_47 Start: 35477, Stop: 34986, Start Num: 14

Candidate Starts for Zephyr\_47:

(3, 35549), (7, 35510), (Start: 14 @35477 has 185 MA's), (17, 35396), (20, 35375), (33, 35267), (36, 35243), (38, 35234), (42, 35075), (43, 35039),

Gene: Zeuska\_46 Start: 35568, Stop: 35089, Start Num: 14

Candidate Starts for Zeuska\_46:

(3, 35640), (7, 35601), (Start: 14 @35568 has 185 MA's), (17, 35487), (20, 35466), (29, 35397), (36, 35334), (38, 35325), (42, 35178), (43, 35142),

Gene: Zolita\_43 Start: 33085, Stop: 32549, Start Num: 8

Candidate Starts for Zolita\_43:

(Start: 8 @33085 has 37 MA's), (18, 32950), (19, 32944), (36, 32800),