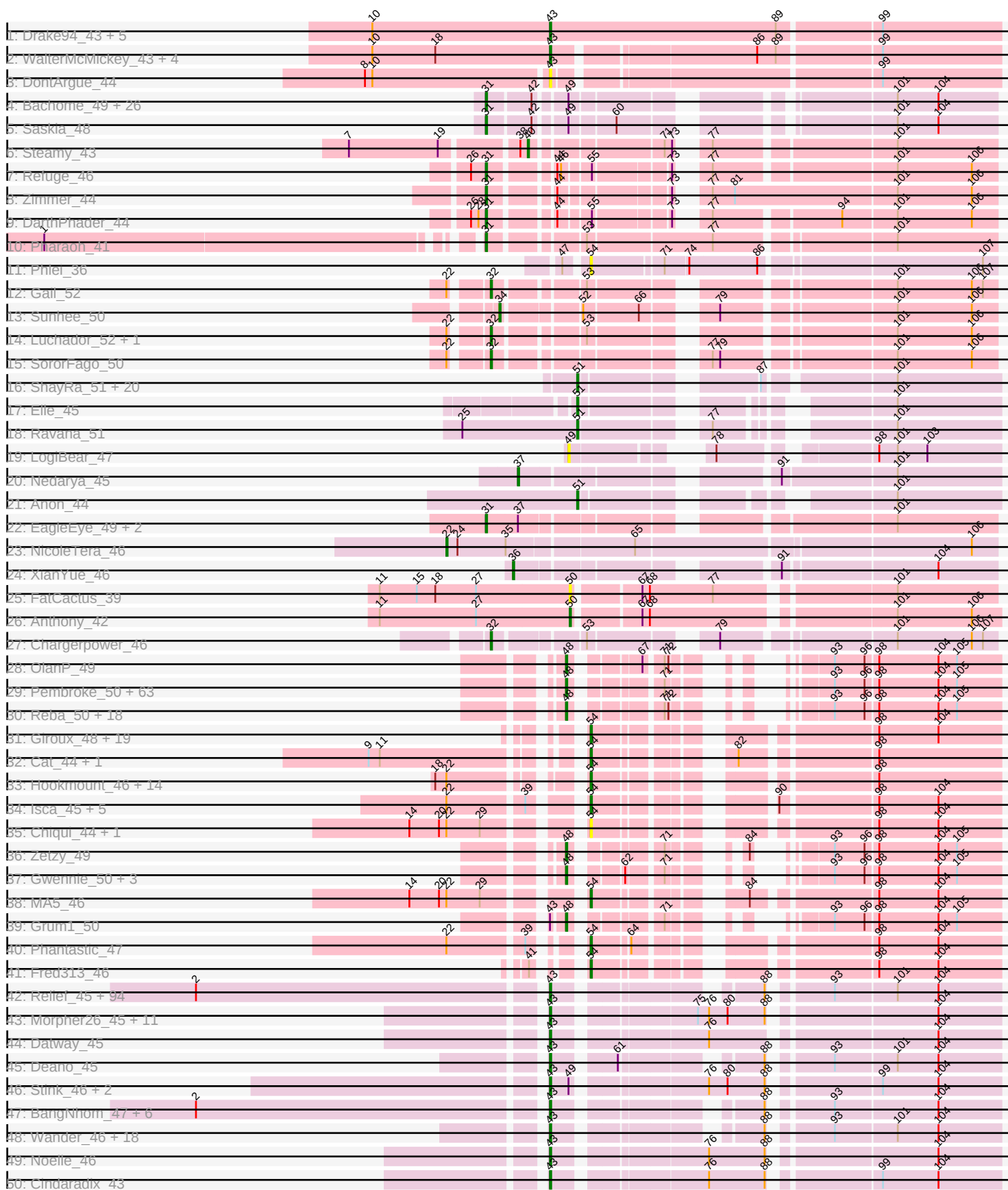
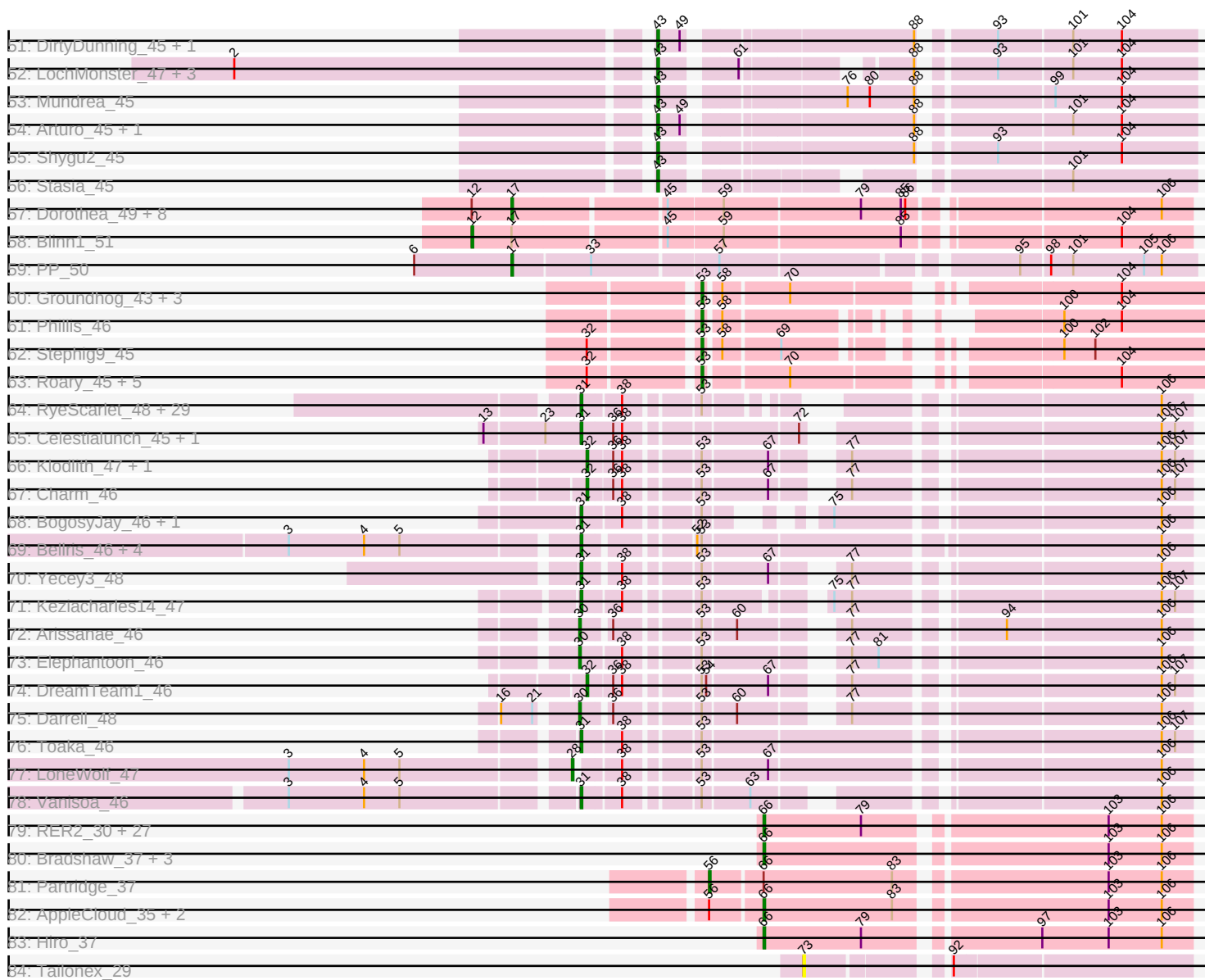


## Pham 330324



## Pham 330324



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 330324 Report

This analysis was run 09/05/26 on database version 662.

Pham number 330324 has 486 members, 46 are drafts.

Phages represented in each track:

- Track 1 : Drake94\_43, Trike\_43, Poompha\_44, Severus\_43, PeaceMeal1\_43, KittenMittens\_42
- Track 2 : WalterMcMickey\_43, Rebeuca\_45, Topanga\_43, Kristoff\_45, Twister\_43
- Track 3 : DontArgue\_44
- Track 4 : Bachome\_49, Sham4\_47, Wolpertinger\_46, Orange\_47, Insomnia\_48, Snape\_47, Mabel\_47, TinyTimmy\_47, Munch\_48, Et2Brutus\_46, Fibonacci\_47, Bud\_47, Lucivia\_48, Bowtie\_48, Mulciber\_47, MaCh\_48, Petersenfast\_47, Gilberta\_48, Salz\_46, Timothy\_47, Aneem\_48, Kimba\_47, Flaverint\_48, Hutc2\_47, Ebony\_47, Jabith\_48, Joselito\_48
- Track 5 : Saskia\_48
- Track 6 : Steamy\_43
- Track 7 : Refuge\_46
- Track 8 : Zimmer\_44
- Track 9 : DarthPhader\_44
- Track 10 : Pharaoh\_41
- Track 11 : Phlei\_36
- Track 12 : Gail\_52
- Track 13 : Sunhee\_50
- Track 14 : Luchador\_52, Jeeves\_52
- Track 15 : SororFago\_50
- Track 16 : ShayRa\_51, Soups\_50, Nebulosus\_49, Anaysia\_50, Switzerland\_49, Warrior24\_50, LastResort\_49, Epsocamisio\_48, Remus\_49, Looper\_50, ReMo\_49, Battleship\_50, Strosahl\_49, Boohoo\_50, DekHockey33\_50, Oofda\_49, KatherineG\_51, Waits\_49, MinecraftSteve\_50, Rosalind\_48, JSwag\_48
- Track 17 : Elle\_45
- Track 18 : Ravana\_51
- Track 19 : LogiBear\_47
- Track 20 : Nedarya\_45
- Track 21 : Anon\_44
- Track 22 : EagleEye\_49, PainterBoy\_48, Lucyedi\_48
- Track 23 : NicoleTera\_46
- Track 24 : XianYue\_46
- Track 25 : FatCactus\_39
- Track 26 : Anthony\_42
- Track 27 : Chargerpower\_46
- Track 28 : OlanP\_49

- Track 29 : Pembroke\_50, Aglet\_51, MarQuardt\_50, SoYo\_50, DaHudson\_50, MadMarie\_50, StepMih\_50, BreSam8\_50, PotatoSplit\_52, Methuselah\_47, Marie\_50, BuzzBuzz\_48, Soshari\_52, LugYA\_53, Tiffany\_50, Misomonster\_51, Daishi\_49, MuchMore\_53, Farber\_50, Anubis\_53, Lowa\_50, Bigflo\_50, JHC117\_50, Hercules11\_50, Microwolf\_50, Taurus\_51, Fernando\_50, Grif\_50, Colbster\_50, TinyPebbles\_49, JenCasNa\_51, Sabinator\_49, LarryKay\_50, Ollie\_50, LBerry\_51, P28Green\_51, AgronaGT15\_49, GtownJaz\_50, Vix\_50, Rummer\_49, Stagni\_50, KADY\_50, MoneyMay\_50, GingkoMaracino\_50, HashRod\_51, Louie6\_49, Montavir\_49, Mainiac\_50, Cullens\_50, Malinsilva\_52, Phoxy\_50, Wooldri\_52, Spike509\_50, Croquant\_51, Sabia\_50, Lilith\_51, AugsMagnumOpus\_53, Watson\_50, Snickers\_50, Phoebe\_51, Grub\_50, Dieselweasel\_51, Bxz2\_46, PGHhamlin\_52
- Track 30 : Reba\_50, Calvinny\_50, Marius\_51, HaveUMetTed\_51, Groupthink\_51, ClownCar\_50, PurpleHaze\_50, Kalb97\_51, JeppNRM\_51, Pawn\_50, Heliosoles\_49, Phranny\_51, Manu\_50, PhishRPhriends\_48, SoilDragon\_50, Kalnoky\_51, Jobu08\_49, ACFishhook\_49, Gemma\_49
- Track 31 : Giroux\_48, Heathen\_46, Kachowdy\_46, Idleandcovert\_47, SaturnRing\_47, DropBear\_46, Shep\_46, Pistachio\_48, Puppy\_48, Scout\_46, BlueBird\_48, Zarafa\_46, Roimos\_46, Goose1X\_46, Bugatti\_47, Marchesa\_46, Clammy\_47, TNguyen7\_47, HelDan\_46, Goose1D\_40
- Track 32 : Cat\_44, BabyRay\_46
- Track 33 : Hookmount\_46, EtoileNova\_47, Pocahontas\_46, Popcicle\_46, Noella\_46, ResDef\_46, Margo\_46, QuinnKiro\_45, Norbert\_45, Panamaxus\_44, Lambert1\_46, Caviar\_46, Veracruz\_45, Todacoro\_46, Texage\_45
- Track 34 : Isca\_45, JF4\_46, MK4\_46, JF2\_46, Rockstar\_46, B1\_43
- Track 35 : Chiqui\_44, BabyJohn\_44
- Track 36 : Zetzy\_49
- Track 37 : Gwennie\_50, Beauxregard13\_50, Penny1\_51, EpicPhail\_51
- Track 38 : MA5\_46
- Track 39 : Grum1\_50
- Track 40 : Phantastic\_47
- Track 41 : Fred313\_46
- Track 42 : Relief\_45, KekoraPapaka\_46, Sultana\_46, Melvin\_48, HamSlice\_45, JetBlade\_46, RockieBear\_45, Jaykayelowell\_44, Phelipe\_47, Shaka\_46, Clarenza\_45, Ohfah\_47, Annyong\_46, Thanksgivukkah\_45, Baby16\_46, LappelDuVide\_46, Tinybot\_45, Abdiel\_46, Broseidon\_46, Bartimeaus\_46, Polymorphads\_47, Nebs\_47, CentreCat\_46, Nyxis\_46, Lemur\_46, Morrow\_47, SteMason\_45, Tracema64\_47, Koreni\_45, Iceman\_46, Junimo\_45, Sparxx\_47, Pumbaa\_46, BubbleTrouble\_45, Kingmustik0402\_46, Skadoosh\_47, TinaFeyge\_46, LeoAvram\_46, Florean\_46, MeeZee\_46, PeterPeter\_46, Spino\_45, Dhanush\_46, Bombshell\_46, Pipcraft\_44, NorthStar\_45, Ruin\_46, Blackmoor\_46, Cintron\_45, Rocksand\_46, Alberto7\_47, Connomayer\_46, KFPoly\_45, Koan\_44, Peaches\_46, Eros\_46, LittleGuy\_46, Holli\_45, Citius\_46, Eapen\_46, Palestino\_45, Phontbonne\_46, Kampy\_46, OKaNui\_46, Buckaroo\_45, ICleared\_46, Ulysses\_45, Chaph\_46, TygerBlood\_46, TroyPia\_47, Millski\_45, Caelakin\_46, LittleB\_46, Medusa\_46, Scamp\_46, Sabertooth\_46, Wizard007\_46, Skipitt\_45, Lunsford\_47, Druantia\_46, Eurydice\_47, Burger\_44, Happiness\_45, Roosevelt\_45, Albee\_46, Maxo\_47, Flux\_46, Eris\_45, Eagle\_46, Commander\_46, TiroTheta9\_46, Lorenzo\_46, Northrop\_46, YoSam321\_46, Taquarus\_46
- Track 43 : Morpher26\_45, Cici\_45, Xena\_44, Perplexer\_45, Achebe\_44, Badger\_44, Bumblebee11\_44, AbbysRanger\_45, Backyardigan\_44, PetiteSangsue\_45, Wile\_45, Katalie136\_45
- Track 44 : Datway\_45
- Track 45 : Deano\_45

- Track 46 : Stink\_46, AvatarAhPeg\_45, Miramae\_45
- Track 47 : BangNhom\_47, SheldonCooper\_48, Kremtemulon\_46, LHTSCC\_48, Obama12\_47, ChampagnePapi\_48, Cerulean\_47
- Track 48 : Wander\_46, Huxley\_45, Cocoaberry\_46, Gadost\_46, Avle17\_46, NotAPhaseMom\_46, Bruiser\_45, Houdini22\_46, BellusTerra\_47, Mazhar510\_46, Camperdownii\_44, Kyee\_46, Funston\_45, SenorClean\_46, JoongJeon\_45, Mayonnaise\_45, Phacado\_46, Nemo27\_46, Maverick\_46
- Track 49 : Noelle\_46
- Track 50 : Cindaradix\_43
- Track 51 : DirtyDunning\_45, Phighter1804\_46
- Track 52 : LochMonster\_47, Rosa24\_45, Romney\_46, Wilbur\_46
- Track 53 : Mundrea\_45
- Track 54 : Arturo\_45, Kratak\_46
- Track 55 : Shygu2\_45
- Track 56 : Stasia\_45
- Track 57 : Dorothea\_49, SmellyB\_49, BennyP\_50, Kipper29\_49, Candra\_49, VohminGhazi\_49, Kazan\_50, EricB\_49, Neeharika16\_48
- Track 58 : Blinn1\_51
- Track 59 : PP\_50
- Track 60 : Groundhog\_43, Saintus\_39, Astro\_44, NearlyHeadless\_44
- Track 61 : Phillis\_46
- Track 62 : Stephig9\_45
- Track 63 : Roary\_45, Smeadley\_45, Dixon\_44, Expelliarmus\_44, Danforth\_44, Caitlin\_44
- Track 64 : RyeScarlet\_48, Jiawan\_45, EmyBug\_46, PackMan\_46, Ugenie5\_44, Scherzo\_47, Fayely\_47, Sachima\_44, Eidsmoe\_47, Halex\_46, Myxus\_47, Conquerage\_47, Phonnegut\_47, Qobbit\_47, Pioneer\_47, Phaeder\_47, ExplosioNervosa\_47, Ayanochan\_46, HortumSL17\_47, Tubs\_47, Spouty\_47, Lilleskat\_45, Priya\_47, Beemo\_47, Hanray\_45, Onglai\_45, EdogawaKiddo\_45, Aliter\_47, Alma\_47, Catalina\_48
- Track 65 : Celestiallunch\_45, MegTheThird\_46
- Track 66 : Klodlith\_47, SheaKeira\_46
- Track 67 : Charm\_46
- Track 68 : BogosyJay\_46, Maminiaina\_46
- Track 69 : Belliris\_46, WorldCup\_45, Minispark\_45, CogOmlette\_45, Rahalelujah\_46
- Track 70 : Yecey3\_48
- Track 71 : Keziacharles14\_47
- Track 72 : Arissanae\_46
- Track 73 : Elephantoon\_46
- Track 74 : DreamTeam1\_46
- Track 75 : Darrell\_48
- Track 76 : Toaka\_46
- Track 77 : LoneWolf\_47
- Track 78 : Vanisoa\_46
- Track 79 : RER2\_30, PhailMary\_36, Lillie\_37, UhSalsa\_37, Shuman\_37, BobbyDazzler\_37, Bryce\_37, Natosaleda\_37, Erik\_37, Nancinator\_37, Yogi\_37, Jester\_37, RexFury\_37, Rhodalysa\_37, Rasputin\_37, Espica\_37, Phrankenstein\_37, Belenaria\_37, Gollum\_37, Swann\_37, CosmicSans\_37, TWAMP\_37, Alpacados\_36, Takoda\_37, Yoncess\_37, AngryOrchard\_35, Harlequin\_37, Bonanza\_37
- Track 80 : Bradshaw\_37, StCroix\_37, Naiad\_37, Alatin\_37
- Track 81 : Partridge\_37
- Track 82 : AppleCloud\_35, Krishelle\_37, Dinger\_37
- Track 83 : Hiro\_37

- Track 84 : Tailonex\_29

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

The start number called the most often in the published annotations is 43, it was called in 154 of the 440 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AbbysRanger\_45, Abdiel\_46, Achebe\_44, Albee\_46, Alberto7\_47, Annyong\_46, Arturo\_45, AvatarAhPeg\_45, Avle17\_46, Baby16\_46, Backyardigan\_44, Badger\_44, BangNhom\_47, Bartimeaus\_46, BellusTerra\_47, Blackmoor\_46, Bombshell\_46, Broseidon\_46, Bruiser\_45, BubbleTrouble\_45, Buckaroo\_45, Bumblebee11\_44, Burger\_44, Caelakin\_46, Camperdownii\_44, CentreCat\_46, Cerulean\_47, ChampagnePapi\_48, Chaph\_46, Cici\_45, Cindaradix\_43, Cintron\_45, Citius\_46, Clarenza\_45, Cocoaberry\_46, Commander\_46, Connomayer\_46, Datway\_45, Deano\_45, Dhanush\_46, DirtyDunning\_45, DontArgue\_44, Drake94\_43, Druantia\_46, Eagle\_46, Eapen\_46, Eris\_45, Eros\_46, Eurydice\_47, Florean\_46, Flux\_46, Funston\_45, Gadost\_46, HamSlice\_45, Happiness\_45, Holli\_45, Houdini22\_46, Huxley\_45, ICleared\_46, Iceman\_46, Iracema64\_47, Jaykayelowell\_44, JetBlade\_46, JoongJeon\_45, Junimo\_45, KFPoly\_45, Kampy\_46, Katalie136\_45, KekoraPapaka\_46, Kingmustik0402\_46, KittenMittens\_42, Koan\_44, Koreni\_45, Kratark\_46, Kremtemulon\_46, Kristoff\_45, Kyee\_46, LHTSCC\_48, LappelDuVide\_46, Lemur\_46, LeoAvram\_46, LittleB\_46, LittleGuy\_46, LochMonster\_47, Lorenzo\_46, Lunsford\_47, Maverick\_46, Maxo\_47, Mayonnaise\_45, Mazhar510\_46, Medusa\_46, MeeZee\_46, Melvin\_48, Millski\_45, Miramae\_45, Morpher26\_45, Morrow\_47, Mundrea\_45, Nebs\_47, Nemo27\_46, Noelle\_46, NorthStar\_45, Northrop\_46, NotAPhaseMom\_46, Nyxis\_46, OKaNui\_46, Obama12\_47, Ohfah\_47, Palestino\_45, PeaceMeal1\_43, Peaches\_46, Perplexer\_45, PeterPeter\_46, PetiteSangsue\_45, Phacado\_46, Phelipe\_47, Phighter1804\_46, Phontbonne\_46, Pipcraft\_44, Polymorphads\_47, Poompha\_44, Pumbaa\_46, Rebeuca\_45, Relief\_45, RockieBear\_45, Rocksand\_46, Romney\_46, Roosevelt\_45, Rosa24\_45, Ruin\_46, Sabertooth\_46, Scamp\_46, SenorClean\_46, Severus\_43, Shaka\_46, SheldonCooper\_48, Shygu2\_45, Skadoosh\_47, Skipitt\_45, Sparxx\_47, Spino\_45, Stasia\_45, SteMason\_45, Stink\_46, Sultana\_46, Taquarus\_46, Thanksgivukkah\_45, TinaFeyge\_46, Tinybot\_45, TiroTheta9\_46, Topanga\_43, Trike\_43, TroyPia\_47, Twister\_43, TygerBlood\_46, Ulysses\_45, WalterMcMickey\_43, Wander\_46, Wilbur\_46, Wile\_45, Wizard007\_46, Xena\_44, YoSam321\_46,

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

- Grum1\_50,

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

- ACFishhook\_49, Aglet\_51, AgronaGT15\_49, Alatin\_37, Aliter\_47, Alma\_47, Alpacados\_36, Anaysia\_50, Aneem\_48, AngryOrchard\_35, Anon\_44, Anthony\_42, Anubis\_53, AppleCloud\_35, Arissanae\_46, Astro\_44, AugsMagnumOpus\_53, Ayanochan\_46, B1\_43, BabyJohn\_44, BabyRay\_46, Bachome\_49, Battleship\_50, Beauxregard13\_50, Beemo\_47, Belenaria\_37, Bellris\_46, BennyP\_50, Bigflo\_50, Blinn1\_51, BlueBird\_48, BobbyDazzler\_37, BogosyJay\_46, Bonanza\_37, Boohoo\_50, Bowtie\_48, Bradshaw\_37, BreSam8\_50, Bryce\_37, Bud\_47, Bugatti\_47, BuzzBuzz\_48, Bxz2\_46, Caitlin\_44, Calvinny\_50, Candra\_49, Cat\_44, Catalina\_48,

Caviar\_46, Celestiallunch\_45, Chargerpower\_46, Charm\_46, Chiqui\_44, Clammy\_47,  
 ClownCar\_50, CogOmlette\_45, Colbster\_50, Conquerage\_47, CosmicSans\_37,  
 Croquant\_51, Cullens\_50, DaHudson\_50, Daishi\_49, Danforth\_44, Darrell\_48,  
 DARTHPhader\_44, DekHockey33\_50, Dieselweasel\_51, Dinger\_37, Dixon\_44,  
 Dorothea\_49, DreamTeam1\_46, DropBear\_46, EagleEye\_49, Ebony\_47,  
 EdogawaKiddo\_45, Eidsmoe\_47, Elephantoon\_46, Elle\_45, EmyBug\_46,  
 EpicPhail\_51, Epsocamisio\_48, EricB\_49, Erik\_37, Espica\_37, Et2Brutus\_46,  
 EtoileNova\_47, Expelliarmus\_44, ExplosioNervosa\_47, Farber\_50, FatCactus\_39,  
 Fayely\_47, Fernando\_50, Fibonacci\_47, Flaverint\_48, Fred313\_46, Gail\_52,  
 Gemma\_49, Gilberta\_48, GingkoMaracino\_50, Giroux\_48, Gollum\_37, Goose1D\_40,  
 Goose1X\_46, Grif\_50, Groundhog\_43, Groupthink\_51, Grub\_50, GtownJaz\_50,  
 Gwennie\_50, Hanray\_45, Harlequin\_37, HashRod\_51, HaveUMetTed\_51,  
 Heathen\_46, HelDan\_46, Heliosoles\_49, Hercules11\_50, Hiro\_37, HolEx\_46,  
 Hookmount\_46, HortumSL17\_47, HutC2\_47, Idleandcovert\_47, Insomnia\_48,  
 Isca\_45, JF2\_46, JF4\_46, JHC117\_50, JSwag\_48, Jabith\_48, Jeeves\_52,  
 JenCasNa\_51, JeppNRM\_51, Jester\_37, Jiawan\_45, Jobu08\_49, Joselito\_48,  
 KADY\_50, Kachowdy\_46, Kalb97\_51, Kalnoky\_51, KatherineG\_51, Kazan\_50,  
 Keziacharles14\_47, Kimba\_47, Kipper29\_49, Klodlith\_47, Krishelle\_37, LBerry\_51,  
 Lambert1\_46, LarryKay\_50, LastResort\_49, Lilith\_51, Lilleskat\_45, Lillie\_37,  
 LogiBear\_47, LoneWolf\_47, Looper\_50, Louie6\_49, Lowa\_50, Luchador\_52,  
 Lucivia\_48, Lucyedi\_48, LugYA\_53, MA5\_46, MK4\_46, MaCh\_48, Mabel\_47,  
 MadMarie\_50, Mainiac\_50, Malinsilva\_52, Maminiaina\_46, Manu\_50, MarQuardt\_50,  
 Marchesa\_46, Margo\_46, Marie\_50, Marius\_51, MegTheThird\_46, Methuselah\_47,  
 Microwolf\_50, MinecraftSteve\_50, Minispark\_45, Misomonster\_51, MoneyMay\_50,  
 Montavir\_49, MuchMore\_53, Mulciber\_47, Munch\_48, Myxus\_47, Naiad\_37,  
 Nancinator\_37, Natosaleda\_37, NearlyHeadless\_44, Nebulosus\_49, Nedarya\_45,  
 Neeharika16\_48, NicoleTera\_46, Noella\_46, Norbert\_45, OlanP\_49, Ollie\_50,  
 Onglai\_45, Oofda\_49, Orange\_47, P28Green\_51, PGHhamlin\_52, PP\_50,  
 PackMan\_46, PainterBoy\_48, Panamaxus\_44, Partridge\_37, Pawn\_50,  
 Pembroke\_50, Penny1\_51, Petersenfast\_47, Phaeder\_47, PhailMary\_36,  
 Phantastic\_47, Pharaoh\_41, Phillis\_46, PhishRPhriends\_48, Phlei\_36, Phoebe\_51,  
 Phonnegut\_47, Phoxy\_50, PhrankenStein\_37, Phranny\_51, Pioneer\_47,  
 Pistachio\_48, Pocahontas\_46, Popcicle\_46, PotatoSplit\_52, Priya\_47, Puppy\_48,  
 PurpleHaze\_50, Qobbit\_47, QuinnKiro\_45, RER2\_30, Rahalelujah\_46, Rasputin\_37,  
 Ravana\_51, ReMo\_49, Reba\_50, Refuge\_46, Remus\_49, ResDef\_46, RexFury\_37,  
 Rhodalysa\_37, Roary\_45, Rockstar\_46, Roimos\_46, Rosalind\_48, Rummer\_49,  
 RyeScarlet\_48, Sabia\_50, Sabinator\_49, Sachima\_44, Saintus\_39, Salz\_46,  
 Saskia\_48, SaturnRing\_47, Scherzo\_47, Scout\_46, Sham4\_47, ShayRa\_51,  
 SheaKeira\_46, Shep\_46, Shuman\_37, Smeadley\_45, SmellyB\_49, Snape\_47,  
 Snickers\_50, SoYo\_50, SoilDragon\_50, SororFago\_50, Soshari\_52, Soups\_50,  
 Spike509\_50, Spouty\_47, StCroix\_37, Stagni\_50, Steamy\_43, StepMih\_50,  
 Stephig9\_45, Strosahl\_49, Sunhee\_50, Swann\_37, Switzerland\_49, TNguyen7\_47,  
 TWAMP\_37, Tailonex\_29, Takoda\_37, Taurus\_51, Texage\_45, Tiffany\_50,  
 Timothy\_47, TinyPebbles\_49, TinyTimmy\_47, Toaka\_46, Todacoro\_46, Tubs\_47,  
 Ugenie5\_44, UhSalsa\_37, Vanisoa\_46, Veracruz\_45, Vix\_50, VohminGhazi\_49,  
 Waits\_49, Warrior24\_50, Watson\_50, Wolpertinger\_46, Wooldri\_52, WorldCup\_45,  
 XianYue\_46, Yecey3\_48, Yogi\_37, Yoncess\_37, Zarafa\_46, Zetzy\_49, Zimmer\_44,

### Summary by start number:

Start 12:

- Found in 10 of 486 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 1 of 440

- Called 10.0% of time when present
- Phage (with cluster) where this start called: Blinn1\_51 (A6),

Start 17:

- Found in 11 of 486 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 9 of 440
- Called 90.9% of time when present
- Phage (with cluster) where this start called: BennyP\_50 (A6), Candra\_49 (A6), Dorothea\_49 (A6), EricB\_49 (A6), Kazan\_50 (A6), Kipper29\_49 (A6), Neeharika16\_48 (A6), PP\_50 (A7), SmellyB\_49 (A6), VohminGhazi\_49 (A6),

Start 22:

- Found in 30 of 486 ( 6.2% ) of genes in pham
- Manual Annotations of this start: 1 of 440
- Called 3.3% of time when present
- Phage (with cluster) where this start called: NicoleTera\_46 (A2),

Start 28:

- Found in 2 of 486 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 440
- Called 50.0% of time when present
- Phage (with cluster) where this start called: LoneWolf\_47 (A9),

Start 30:

- Found in 3 of 486 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 3 of 440
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arissanae\_46 (A9), Darrell\_48 (A9), Elephantoon\_46 (A9),

Start 31:

- Found in 78 of 486 ( 16.0% ) of genes in pham
- Manual Annotations of this start: 65 of 440
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aliter\_47 (A9), Alma\_47 (A9), Aneem\_48 (A11), Ayanochan\_46 (A9), Bachome\_49 (A11), Beemo\_47 (A9), Bellris\_46 (A9), BogosyJay\_46 (A9), Bowtie\_48 (A11), Bud\_47 (A11), Catalina\_48 (A9), Celestiallunch\_45 (A9), CogOmlette\_45 (A9), Conquerage\_47 (A9), DarthPhader\_44 (A12), EagleEye\_49 (A16), Ebony\_47 (A11), EdogawaKiddo\_45 (A9), Eidsmoe\_47 (A9), EmyBug\_46 (A9), Et2Brutus\_46 (A11), ExplosioNervosa\_47 (A9), Fayely\_47 (A9), Fibonacci\_47 (A11), Flaverint\_48 (A11), Gilberta\_48 (A11), Hanray\_45 (A9), Horex\_46 (A9), HortumSL17\_47 (A9), Hutc2\_47 (A11), Insomnia\_48 (A11), Jabith\_48 (A11), Jiawan\_45 (A9), Joselito\_48 (A11), Keziacharles14\_47 (A9), Kimba\_47 (A11), Lilleskat\_45 (A9), Lucivia\_48 (A11), Lucyedi\_48 (A16), MaCh\_48 (A11), Mabel\_47 (A11), Maminiaina\_46 (A9), MegTheThird\_46 (A9), Minispark\_45 (A9), Mulciber\_47 (A11), Munch\_48 (A11), Myxus\_47 (A9), Onglai\_45 (A9), Orange\_47 (A11), PackMan\_46 (A9), PainterBoy\_48 (A16), Petersenfast\_47 (A11), Phaeder\_47 (A9), Pharaoh\_41 (A12), Phonnegut\_47 (A9), Pioneer\_47 (A9), Priya\_47 (A9), Qobbit\_47 (A9), Rañalelujah\_46 (A9), Refuge\_46 (A12), RyeScarlet\_48 (A9), Sachima\_44 (A9), Salz\_46 (A11), Saskia\_48 (A11), Scherzo\_47 (A9), Sham4\_47 (A11), Snape\_47 (A11), Spouty\_47 (A9), Timothy\_47 (A11), TinyTimmy\_47 (A11), Toaka\_46 (A9), Tubs\_47 (A9), Ugenie5\_44 (A9), Vanisoa\_46 (A9), Wolpertinger\_46 (A11), WorldCup\_45 (A9), Yecey3\_48 (A9), Zimmer\_44 (A12),

Start 32:

- Found in 16 of 486 ( 3.3% ) of genes in pham
- Manual Annotations of this start: 8 of 440
- Called 56.2% of time when present
- Phage (with cluster) where this start called: Chargerpower\_46 (A22), Charm\_46 (A9), DreamTeam1\_46 (A9), Gail\_52 (A14), Jeeves\_52 (A14), Klodlith\_47 (A9), Luchador\_52 (A14), SheaKeira\_46 (A9), SororFago\_50 (A14),

Start 34:

- Found in 1 of 486 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 440
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sunhee\_50 (A14),

Start 36:

- Found in 9 of 486 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 1 of 440
- Called 11.1% of time when present
- Phage (with cluster) where this start called: XianYue\_46 (A2),

Start 37:

- Found in 4 of 486 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 440
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Nedarya\_45 (A15),

Start 40:

- Found in 1 of 486 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 440
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Steamy\_43 (A12),

Start 43:

- Found in 164 of 486 ( 33.7% ) of genes in pham
- Manual Annotations of this start: 154 of 440
- Called 99.4% of time when present
- Phage (with cluster) where this start called: AbbysRanger\_45 (A4), Abdiel\_46 (A4), Achebe\_44 (A4), Albee\_46 (A4), Alberto7\_47 (A4), Annyong\_46 (A4), Arturo\_45 (A4), AvatarAhPeg\_45 (A4), Avle17\_46 (A4), Baby16\_46 (A4), Backyardigan\_44 (A4), Badger\_44 (A4), BangNhom\_47 (A4), Bartimeaus\_46 (A4), BellusTerra\_47 (A4), Blackmoor\_46 (A4), Bombshell\_46 (A4), Broseidon\_46 (A4), Bruiser\_45 (A4), BubbleTrouble\_45 (A4), Buckaroo\_45 (A4), Bumblebee11\_44 (A4), Burger\_44 (A4), Caelakin\_46 (A4), Camperdownii\_44 (A4), CentreCat\_46 (A4), Cerulean\_47 (A4), ChampagnePapi\_48 (A4), Chaph\_46 (A4), Cici\_45 (A4), Cindaradix\_43 (A4), Cintron\_45 (A4), Citius\_46 (A4), Clarenza\_45 (A4), CocoaBerry\_46 (A4), Commander\_46 (A4), Connomayer\_46 (A4), Datway\_45 (A4), Deano\_45 (A4), Dhanush\_46 (A4), DirtyDunning\_45 (A4), DontArgue\_44 (A10), Drake94\_43 (A10), Druantia\_46 (A4), Eagle\_46 (A4), Eapen\_46 (A4), Eris\_45 (A4), Eros\_46 (A4), Eurydice\_47 (A4), Florean\_46 (A4), Flux\_46 (A4), Funston\_45 (A4), Gadost\_46 (A4), HamSlice\_45 (A4), Happiness\_45 (A4), Holli\_45 (A4), Houdini22\_46 (A4), Huxley\_45 (A4), ICleared\_46 (A4), Iceman\_46 (A4), Iracema64\_47 (A4), Jaykayelowell\_44 (A4), JetBlade\_46 (A4), JoongJeon\_45 (A4), Junimo\_45 (A4), KFPoly\_45 (A4), Kampy\_46

(A4), Katalie136\_45 (A4), KekoraPapaka\_46 (A4), Kingmustik0402\_46 (A4), KittenMittens\_42 (A10), Koan\_44 (A4), Koreni\_45 (A4), Kratark\_46 (A4), Kremtemulon\_46 (A4), Kristoff\_45 (A10), Kyee\_46 (A4), LHTSCC\_48 (A4), LappelDuVide\_46 (A4), Lemur\_46 (A4), LeoAvram\_46 (A4), LittleB\_46 (A4), LittleGuy\_46 (A4), LochMonster\_47 (A4), Lorenzo\_46 (A4), Lunsford\_47 (A4), Maverick\_46 (A4), Maxo\_47 (A4), Mayonnaise\_45 (A4), Mazhar510\_46 (A4), Medusa\_46 (A4), MeeZee\_46 (A4), Melvin\_48 (A4), Millski\_45 (A4), Miramae\_45 (A4), Morpher26\_45 (A4), Morrow\_47 (A4), Mundrea\_45 (A4), Nebs\_47 (A4), Nemo27\_46 (A4), Noelle\_46 (A4), NorthStar\_45 (A4), Northrop\_46 (A4), NotAPhaseMom\_46 (A4), Nyxis\_46 (A4), OKaNui\_46 (A4), Obama12\_47 (A4), Ohfah\_47 (A4), Palestino\_45 (A4), PeaceMeal1\_43 (A10), Peaches\_46 (A4), Perplexer\_45 (A4), PeterPeter\_46 (A4), PetiteSangsue\_45 (A4), Phacado\_46 (A4), Phelipe\_47 (A4), Phighter1804\_46 (A4), Phontbonne\_46 (A4), Pipcraft\_44 (A4), Polymorphads\_47 (A4), Poompha\_44 (A10), Pumbaa\_46 (A4), Rebeuca\_45 (A10), Relief\_45 (A4), RockieBear\_45 (A4), Rocksand\_46 (A4), Romney\_46 (A4), Roosevelt\_45 (A4), Rosa24\_45 (A4), Ruin\_46 (A4), Sabertooth\_46 (A4), Scamp\_46 (A4), SenorClean\_46 (A4), Severus\_43 (A10), Shaka\_46 (A4), SheldonCooper\_48 (A4), Shygu2\_45 (A4), Skadoosh\_47 (A4), Skipitt\_45 (A4), Sparxx\_47 (A4), Spino\_45 (A4), Stasia\_45 (A4), SteMason\_45 (A4), Stink\_46 (A4), Sultana\_46 (A4), Taquarus\_46 (A4), Thanksgivukkah\_45 (A4), TinaFeyge\_46 (A4), Tinybot\_45 (A4), TiroTheta9\_46 (A4), Topanga\_43 (A10), Trike\_43 (A10), TroyPia\_47 (A4), Twister\_43 (A10), TygerBlood\_46 (A4), Ulysses\_45 (A4), WalterMcMickey\_43 (A10), Wander\_46 (A4), Wilbur\_46 (A4), Wile\_45 (A4), Wizard007\_46 (A4), Xena\_44 (A4), YoSam321\_46 (A4),

Start 48:

- Found in 90 of 486 ( 18.5% ) of genes in pham
- Manual Annotations of this start: 86 of 440
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ACFishhook\_49 (A3), Aglet\_51 (A3), AgronaGT15\_49 (A3), Anubis\_53 (A3), AugsMagnumOpus\_53 (A3), Beauxregard13\_50 (A3), Bigflo\_50 (A3), BreSam8\_50 (A3), BuzzBuzz\_48 (A3), Bxz2\_46 (A3), Calvinny\_50 (A3), ClownCar\_50 (A3), Colbster\_50 (A3), Croquant\_51 (A3), Cullens\_50 (A3), DaHudson\_50 (A3), Daishi\_49 (A3), Dieselweasel\_51 (A3), EpicPhail\_51 (A3), Farber\_50 (A3), Fernando\_50 (A3), Gemma\_49 (A3), GingkoMaracino\_50 (A3), Grif\_50 (A3), Groupthink\_51 (A3), Grub\_50 (A3), Grum1\_50 (A3), GtownJaz\_50 (A3), Gwennie\_50 (A3), HashRod\_51 (A3), HaveUMetTed\_51 (A3), Heliosoles\_49 (A3), Hercules11\_50 (A3), JHC117\_50 (A3), JenCasNa\_51 (A3), JeppNRM\_51 (A3), Jobu08\_49 (A3), KADY\_50 (A3), Kalb97\_51 (A3), Kalnoky\_51 (A3), LBerry\_51 (A3), LarryKay\_50 (A3), Lilith\_51 (A3), Louie6\_49 (A3), Lowa\_50 (A3), LugYA\_53 (A3), MadMarie\_50 (A3), Mainiac\_50 (A3), Malinsilva\_52 (A3), Manu\_50 (A3), MarQuardt\_50 (A3), Marie\_50 (A3), Marius\_51 (A3), Methuselah\_47 (A3), Microwolf\_50 (A3), Misomonster\_51 (A3), MoneyMay\_50 (A3), Montavir\_49 (A3), MuchMore\_53 (A3), OlanP\_49 (A3), Ollie\_50 (A3), P28Green\_51 (A3), PGHhamlin\_52 (A3), Pawn\_50 (A3), Pembroke\_50 (A3), Penny1\_51 (A3), PhishRPhriends\_48 (A3), Phoebe\_51 (A3), Phoxy\_50 (A3), Phranny\_51 (A3), PotatoSplit\_52 (A3), PurpleHaze\_50 (A3), Reba\_50 (A3), Rummer\_49 (A3), Sabia\_50 (A3), Sabinator\_49 (A3), Snickers\_50 (A3), SoYo\_50 (A3), SoilDragon\_50 (A3), Soshari\_52 (A3), Spike509\_50 (A3), Stagni\_50 (A3), StepMih\_50 (A3), Taurus\_51 (A3), Tiffany\_50 (A3), TinyPebbles\_49 (A3), Vix\_50 (A3), Watson\_50 (A3), Wooldri\_52 (A3), Zetzy\_49 (A3),

Start 49:

- Found in 36 of 486 ( 7.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 2.8% of time when present
- Phage (with cluster) where this start called: LogiBear\_47 (A15),

#### Start 50:

- Found in 2 of 486 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 440
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anthony\_42 (A20), FatCactus\_39 (A20),

#### Start 51:

- Found in 24 of 486 ( 4.9% ) of genes in pham
- Manual Annotations of this start: 24 of 440
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anaysia\_50 (A15), Anon\_44 (A15), Battleship\_50 (A15), Boohoo\_50 (A15), DekHockey33\_50 (A15), Elle\_45 (A15), Epsocamisio\_48 (A15), JSwag\_48 (A15), KatherineG\_51 (A15), LastResort\_49 (A15), Looper\_50 (A15), MinecraftSteve\_50 (A15), Nebulosus\_49 (A15), Oofda\_49 (A15), Ravana\_51 (A15), ReMo\_49 (A15), Remus\_49 (A15), Rosalind\_48 (A15), ShayRa\_51 (A15), Soups\_50 (A15), Strosahl\_49 (A15), Switzerland\_49 (A15), Waits\_49 (A15), Warrior24\_50 (A15),

#### Start 53:

- Found in 66 of 486 ( 13.6% ) of genes in pham
- Manual Annotations of this start: 12 of 440
- Called 18.2% of time when present
- Phage (with cluster) where this start called: Astro\_44 (A8), Caitlin\_44 (A8), Danforth\_44 (A8), Dixon\_44 (A8), Expelliarmus\_44 (A8), Groundhog\_43 (A8), NearlyHeadless\_44 (A8), Phillis\_46 (A8), Roary\_45 (A8), Saintus\_39 (A8), Smeadley\_45 (A8), Stephig9\_45 (A8),

#### Start 54:

- Found in 50 of 486 ( 10.3% ) of genes in pham
- Manual Annotations of this start: 35 of 440
- Called 98.0% of time when present
- Phage (with cluster) where this start called: B1\_43 (A3), BabyJohn\_44 (A3), BabyRay\_46 (A3), BlueBird\_48 (A3), Bugatti\_47 (A3), Cat\_44 (A3), Caviar\_46 (A3), Chiqui\_44 (A3), Clammy\_47 (A3), DropBear\_46 (A3), EtoileNova\_47 (A3), Fred313\_46 (A3), Giroux\_48 (A3), Goose1D\_40 (A3), Goose1X\_46 (A3), Heathen\_46 (A3), HelDan\_46 (A3), Hookmount\_46 (A3), Idleandcovert\_47 (A3), Isca\_45 (A3), JF2\_46 (A3), JF4\_46 (A3), Kachowdy\_46 (A3), Lambert1\_46 (A3), MA5\_46 (A3), MK4\_46 (A3), Marchesa\_46 (A3), Margo\_46 (A3), Noella\_46 (A3), Norbert\_45 (A3), Panamaxus\_44 (A3), Phantastic\_47 (A3), Phlei\_36 (A13), Pistachio\_48 (A3), Pocahontas\_46 (A3), Popcicle\_46 (A3), Puppy\_48 (A3), QuinnKiro\_45 (A3), ResDef\_46 (A3), Rockstar\_46 (A3), Roimos\_46 (A3), SaturnRing\_47 (A3), Scout\_46 (A3), Shep\_46 (A3), TNguyen7\_47 (A3), Texage\_45 (A3), Todacoro\_46 (A3), Veracruz\_45 (A3), Zarafa\_46 (A3),

#### Start 56:

- Found in 4 of 486 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 440
- Called 25.0% of time when present

- Phage (with cluster) where this start called: Partridge\_37 (CA),

Start 66:

- Found in 38 of 486 ( 7.8% ) of genes in pham
- Manual Annotations of this start: 35 of 440
- Called 94.7% of time when present
- Phage (with cluster) where this start called: Alatin\_37 (CA), Alpacados\_36 (CA), AngryOrchard\_35 (CA), AppleCloud\_35 (CA), Belenaria\_37 (CA), BobbyDazzler\_37 (CA), Bonanza\_37 (CA), Bradshaw\_37 (CA), Bryce\_37 (CA), CosmicSans\_37 (CA), Dinger\_37 (CA), Erik\_37 (CA), Espica\_37 (CA), Gollum\_37 (CA), Harlequin\_37 (CA), Hiro\_37 (CA), Jester\_37 (CA), Krishelle\_37 (CA), Lillie\_37 (CA), Naiad\_37 (CA), Nancinator\_37 (CA), Natosaleda\_37 (CA), PhailMary\_36 (CA), Phrankenstein\_37 (CA), RER2\_30 (CA), Rasputin\_37 (CA), RexFury\_37 (CA), Rhodalysa\_37 (CA), Shuman\_37 (CA), StCroix\_37 (CA), Swann\_37 (CA), TWAMP\_37 (CA), Takoda\_37 (CA), UhSalsa\_37 (CA), Yogi\_37 (CA), Yoncess\_37 (CA),

Start 73:

- Found in 5 of 486 ( 1.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Tailonex\_29 (singleton),

### **Summary by clusters:**

There are 18 clusters represented in this pham: A15, A14, singleton, A16, A11, A10, A13, A12, CA, A22, A20, A3, A2, A4, A7, A6, A9, A8,

Info for manual annotations of cluster A10:

- Start number 43 was manually annotated 11 times for cluster A10.

Info for manual annotations of cluster A11:

- Start number 31 was manually annotated 27 times for cluster A11.

Info for manual annotations of cluster A12:

- Start number 31 was manually annotated 4 times for cluster A12.
- Start number 40 was manually annotated 1 time for cluster A12.

Info for manual annotations of cluster A14:

- Start number 32 was manually annotated 4 times for cluster A14.
- Start number 34 was manually annotated 1 time for cluster A14.

Info for manual annotations of cluster A15:

- Start number 37 was manually annotated 1 time for cluster A15.
- Start number 51 was manually annotated 24 times for cluster A15.

Info for manual annotations of cluster A16:

- Start number 31 was manually annotated 3 times for cluster A16.

Info for manual annotations of cluster A2:

- Start number 22 was manually annotated 1 time for cluster A2.
- Start number 36 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster A20:

- Start number 50 was manually annotated 1 time for cluster A20.

Info for manual annotations of cluster A22:

- Start number 32 was manually annotated 1 time for cluster A22.

Info for manual annotations of cluster A3:

- Start number 48 was manually annotated 86 times for cluster A3.
- Start number 54 was manually annotated 35 times for cluster A3.

Info for manual annotations of cluster A4:

- Start number 43 was manually annotated 143 times for cluster A4.

Info for manual annotations of cluster A6:

- Start number 12 was manually annotated 1 time for cluster A6.
- Start number 17 was manually annotated 8 times for cluster A6.

Info for manual annotations of cluster A7:

- Start number 17 was manually annotated 1 time for cluster A7.

Info for manual annotations of cluster A8:

- Start number 53 was manually annotated 12 times for cluster A8.

Info for manual annotations of cluster A9:

- Start number 28 was manually annotated 1 time for cluster A9.
- Start number 30 was manually annotated 3 times for cluster A9.
- Start number 31 was manually annotated 31 times for cluster A9.
- Start number 32 was manually annotated 3 times for cluster A9.

Info for manual annotations of cluster CA:

- Start number 56 was manually annotated 1 time for cluster CA.
- Start number 66 was manually annotated 35 times for cluster CA.

### **Gene Information:**

Gene: ACFishhook\_49 Start: 32280, Stop: 32032, Start Num: 48

Candidate Starts for ACFishhook\_49:

(Start: 48 @32280 has 86 MA's), (71, 32226), (72, 32223), (93, 32163), (96, 32139), (98, 32130), (104, 32082), (105, 32067),

Gene: AbbysRanger\_45 Start: 31867, Stop: 31544, Start Num: 43

Candidate Starts for AbbysRanger\_45:

(Start: 43 @31867 has 154 MA's), (75, 31768), (76, 31759), (80, 31744), (88, 31714), (104, 31594),

Gene: Abdiel\_46 Start: 31881, Stop: 31579, Start Num: 43

Candidate Starts for Abdiel\_46:

(2, 32151), (Start: 43 @31881 has 154 MA's), (88, 31749), (93, 31710), (101, 31662), (104, 31629),

Gene: Achebe\_44 Start: 31850, Stop: 31527, Start Num: 43

Candidate Starts for Achebe\_44:

(Start: 43 @31850 has 154 MA's), (75, 31751), (76, 31742), (80, 31727), (88, 31697), (104, 31577),

Gene: Aglet\_51 Start: 32309, Stop: 32061, Start Num: 48  
Candidate Starts for Aglet\_51:  
(Start: 48 @32309 has 86 MA's), (71, 32255), (93, 32192), (96, 32168), (98, 32159), (104, 32111),  
(105, 32096),

Gene: AgronaGT15\_49 Start: 32160, Stop: 31912, Start Num: 48  
Candidate Starts for AgronaGT15\_49:  
(Start: 48 @32160 has 86 MA's), (71, 32106), (93, 32043), (96, 32019), (98, 32010), (104, 31962),  
(105, 31947),

Gene: Alatin\_37 Start: 28461, Stop: 28189, Start Num: 66  
Candidate Starts for Alatin\_37:  
(Start: 66 @28461 has 35 MA's), (103, 28245), (106, 28209),

Gene: Albee\_46 Start: 31880, Stop: 31578, Start Num: 43  
Candidate Starts for Albee\_46:  
(2, 32150), (Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Alberto7\_47 Start: 32217, Stop: 31915, Start Num: 43  
Candidate Starts for Alberto7\_47:  
(2, 32487), (Start: 43 @32217 has 154 MA's), (88, 32085), (93, 32046), (101, 31998), (104, 31965),

Gene: Aliter\_47 Start: 32037, Stop: 31711, Start Num: 31  
Candidate Starts for Aliter\_47:  
(Start: 31 @32037 has 65 MA's), (38, 32013), (Start: 53 @31971 has 12 MA's), (106, 31731),

Gene: Alma\_47 Start: 32160, Stop: 31834, Start Num: 31  
Candidate Starts for Alma\_47:  
(Start: 31 @32160 has 65 MA's), (38, 32136), (Start: 53 @32094 has 12 MA's), (106, 31854),

Gene: Alpacados\_36 Start: 28366, Stop: 28094, Start Num: 66  
Candidate Starts for Alpacados\_36:  
(Start: 66 @28366 has 35 MA's), (79, 28300), (103, 28150), (106, 28114),

Gene: Anaysia\_50 Start: 30853, Stop: 30560, Start Num: 51  
Candidate Starts for Anaysia\_50:  
(Start: 51 @30853 has 24 MA's), (87, 30736), (101, 30643),

Gene: Aneem\_48 Start: 31705, Stop: 31358, Start Num: 31  
Candidate Starts for Aneem\_48:  
(Start: 31 @31705 has 65 MA's), (42, 31672), (49, 31651), (101, 31438), (104, 31405),

Gene: AngryOrchard\_35 Start: 28325, Stop: 28053, Start Num: 66  
Candidate Starts for AngryOrchard\_35:  
(Start: 66 @28325 has 35 MA's), (79, 28259), (103, 28109), (106, 28073),

Gene: Annyong\_46 Start: 31925, Stop: 31623, Start Num: 43  
Candidate Starts for Annyong\_46:  
(2, 32195), (Start: 43 @31925 has 154 MA's), (88, 31793), (93, 31754), (101, 31706), (104, 31673),

Gene: Anon\_44 Start: 29643, Stop: 29365, Start Num: 51  
Candidate Starts for Anon\_44:

(Start: 51 @29643 has 24 MA's), (101, 29448),

Gene: Anthony\_42 Start: 29795, Stop: 29478, Start Num: 50

Candidate Starts for Anthony\_42:

(11, 29948), (27, 29870), (Start: 50 @29795 has 1 MA's), (67, 29747), (68, 29741), (101, 29561), (106, 29501),

Gene: Anubis\_53 Start: 32195, Stop: 31947, Start Num: 48

Candidate Starts for Anubis\_53:

(Start: 48 @32195 has 86 MA's), (71, 32141), (93, 32078), (96, 32054), (98, 32045), (104, 31997), (105, 31982),

Gene: AppleCloud\_35 Start: 28336, Stop: 28064, Start Num: 66

Candidate Starts for AppleCloud\_35:

(Start: 56 @28369 has 1 MA's), (Start: 66 @28336 has 35 MA's), (83, 28249), (103, 28120), (106, 28084),

Gene: Arissanae\_46 Start: 32694, Stop: 32350, Start Num: 30

Candidate Starts for Arissanae\_46:

(Start: 30 @32694 has 3 MA's), (Start: 36 @32679 has 1 MA's), (Start: 53 @32631 has 12 MA's), (60, 32610), (77, 32556), (94, 32472), (106, 32370),

Gene: Arturo\_45 Start: 32157, Stop: 31834, Start Num: 43

Candidate Starts for Arturo\_45:

(Start: 43 @32157 has 154 MA's), (49, 32142), (88, 32004), (101, 31917), (104, 31884),

Gene: Astro\_44 Start: 31145, Stop: 30849, Start Num: 53

Candidate Starts for Astro\_44:

(Start: 53 @31145 has 12 MA's), (58, 31136), (70, 31094), (104, 30908),

Gene: AugsMagnumOpus\_53 Start: 32300, Stop: 32052, Start Num: 48

Candidate Starts for AugsMagnumOpus\_53:

(Start: 48 @32300 has 86 MA's), (71, 32246), (93, 32183), (96, 32159), (98, 32150), (104, 32102), (105, 32087),

Gene: AvatarAhPeg\_45 Start: 32379, Stop: 32056, Start Num: 43

Candidate Starts for AvatarAhPeg\_45:

(Start: 43 @32379 has 154 MA's), (49, 32364), (76, 32271), (80, 32256), (88, 32226), (99, 32151), (104, 32106),

Gene: Avle17\_46 Start: 31877, Stop: 31575, Start Num: 43

Candidate Starts for Avle17\_46:

(Start: 43 @31877 has 154 MA's), (88, 31745), (93, 31706), (101, 31658), (104, 31625),

Gene: Ayanochan\_46 Start: 32164, Stop: 31838, Start Num: 31

Candidate Starts for Ayanochan\_46:

(Start: 31 @32164 has 65 MA's), (38, 32140), (Start: 53 @32098 has 12 MA's), (106, 31858),

Gene: B1\_43 Start: 31013, Stop: 30738, Start Num: 54

Candidate Starts for B1\_43:

(Start: 22 @31100 has 1 MA's), (39, 31043), (Start: 54 @31013 has 35 MA's), (90, 30908), (98, 30836), (104, 30788),

Gene: Baby16\_46 Start: 31891, Stop: 31589, Start Num: 43

Candidate Starts for Baby16\_46:

(2, 32161), (Start: 43 @31891 has 154 MA's), (88, 31759), (93, 31720), (101, 31672), (104, 31639),

Gene: BabyJohn\_44 Start: 31805, Stop: 31530, Start Num: 54

Candidate Starts for BabyJohn\_44:

(14, 31922), (20, 31898), (Start: 22 @31892 has 1 MA's), (29, 31865), (Start: 54 @31805 has 35 MA's), (98, 31628), (104, 31580),

Gene: BabyRay\_46 Start: 31749, Stop: 31474, Start Num: 54

Candidate Starts for BabyRay\_46:

(9, 31890), (11, 31881), (Start: 54 @31749 has 35 MA's), (82, 31668), (98, 31572),

Gene: Bachome\_49 Start: 31693, Stop: 31346, Start Num: 31

Candidate Starts for Bachome\_49:

(Start: 31 @31693 has 65 MA's), (42, 31660), (49, 31639), (101, 31426), (104, 31393),

Gene: Backyardigan\_44 Start: 31883, Stop: 31560, Start Num: 43

Candidate Starts for Backyardigan\_44:

(Start: 43 @31883 has 154 MA's), (75, 31784), (76, 31775), (80, 31760), (88, 31730), (104, 31610),

Gene: Badger\_44 Start: 31851, Stop: 31528, Start Num: 43

Candidate Starts for Badger\_44:

(Start: 43 @31851 has 154 MA's), (75, 31752), (76, 31743), (80, 31728), (88, 31698), (104, 31578),

Gene: BangNhom\_47 Start: 32302, Stop: 32000, Start Num: 43

Candidate Starts for BangNhom\_47:

(2, 32572), (Start: 43 @32302 has 154 MA's), (88, 32170), (93, 32131), (104, 32050),

Gene: Bartimeaus\_46 Start: 31882, Stop: 31580, Start Num: 43

Candidate Starts for Bartimeaus\_46:

(2, 32152), (Start: 43 @31882 has 154 MA's), (88, 31750), (93, 31711), (101, 31663), (104, 31630),

Gene: Battleship\_50 Start: 30586, Stop: 30293, Start Num: 51

Candidate Starts for Battleship\_50:

(Start: 51 @30586 has 24 MA's), (87, 30469), (101, 30376),

Gene: Beauxregard13\_50 Start: 32312, Stop: 32064, Start Num: 48

Candidate Starts for Beauxregard13\_50:

(Start: 48 @32312 has 86 MA's), (62, 32282), (71, 32258), (93, 32195), (96, 32171), (98, 32162), (104, 32114), (105, 32099),

Gene: Beemo\_47 Start: 32159, Stop: 31833, Start Num: 31

Candidate Starts for Beemo\_47:

(Start: 31 @32159 has 65 MA's), (38, 32135), (Start: 53 @32093 has 12 MA's), (106, 31853),

Gene: Belenaria\_37 Start: 28395, Stop: 28123, Start Num: 66

Candidate Starts for Belenaria\_37:

(Start: 66 @28395 has 35 MA's), (79, 28329), (103, 28179), (106, 28143),

Gene: Bellris\_46 Start: 31402, Stop: 31031, Start Num: 31

Candidate Starts for Bellris\_46:

(3, 31588), (4, 31537), (5, 31513), (Start: 31 @31402 has 65 MA's), (52, 31342), (Start: 53 @31339 has 12 MA's), (106, 31051),

Gene: BellusTerra\_47 Start: 31881, Stop: 31579, Start Num: 43

Candidate Starts for BellusTerra\_47:

(Start: 43 @31881 has 154 MA's), (88, 31749), (93, 31710), (101, 31662), (104, 31629),

Gene: BennyP\_50 Start: 31282, Stop: 30854, Start Num: 17

Candidate Starts for BennyP\_50:

(Start: 12 @31309 has 1 MA's), (Start: 17 @31282 has 9 MA's), (45, 31186), (59, 31150), (79, 31060), (85, 31033), (86, 31030), (106, 30874),

Gene: Bigflo\_50 Start: 32308, Stop: 32060, Start Num: 48

Candidate Starts for Bigflo\_50:

(Start: 48 @32308 has 86 MA's), (71, 32254), (93, 32191), (96, 32167), (98, 32158), (104, 32110), (105, 32095),

Gene: Blackmoor\_46 Start: 31882, Stop: 31580, Start Num: 43

Candidate Starts for Blackmoor\_46:

(2, 32152), (Start: 43 @31882 has 154 MA's), (88, 31750), (93, 31711), (101, 31663), (104, 31630),

Gene: Blinn1\_51 Start: 31121, Stop: 30666, Start Num: 12

Candidate Starts for Blinn1\_51:

(Start: 12 @31121 has 1 MA's), (Start: 17 @31094 has 9 MA's), (45, 30998), (59, 30962), (85, 30845), (104, 30713),

Gene: BlueBird\_48 Start: 31838, Stop: 31563, Start Num: 54

Candidate Starts for BlueBird\_48:

(Start: 54 @31838 has 35 MA's), (98, 31661), (104, 31613),

Gene: BobbyDazzler\_37 Start: 28440, Stop: 28168, Start Num: 66

Candidate Starts for BobbyDazzler\_37:

(Start: 66 @28440 has 35 MA's), (79, 28374), (103, 28224), (106, 28188),

Gene: BogosyJay\_46 Start: 31869, Stop: 31543, Start Num: 31

Candidate Starts for BogosyJay\_46:

(Start: 31 @31869 has 65 MA's), (38, 31845), (Start: 53 @31803 has 12 MA's), (75, 31761), (106, 31563),

Gene: Bombshell\_46 Start: 31877, Stop: 31575, Start Num: 43

Candidate Starts for Bombshell\_46:

(2, 32147), (Start: 43 @31877 has 154 MA's), (88, 31745), (93, 31706), (101, 31658), (104, 31625),

Gene: Bonanza\_37 Start: 28368, Stop: 28096, Start Num: 66

Candidate Starts for Bonanza\_37:

(Start: 66 @28368 has 35 MA's), (79, 28302), (103, 28152), (106, 28116),

Gene: Boohoo\_50 Start: 30853, Stop: 30560, Start Num: 51

Candidate Starts for Boohoo\_50:

(Start: 51 @30853 has 24 MA's), (87, 30736), (101, 30643),

Gene: Bowtie\_48 Start: 31712, Stop: 31365, Start Num: 31

Candidate Starts for Bowtie\_48:

(Start: 31 @31712 has 65 MA's), (42, 31679), (49, 31658), (101, 31445), (104, 31412),

Gene: Bradshaw\_37 Start: 28394, Stop: 28122, Start Num: 66

Candidate Starts for Bradshaw\_37:

(Start: 66 @28394 has 35 MA's), (103, 28178), (106, 28142),

Gene: BreSam8\_50 Start: 32302, Stop: 32054, Start Num: 48

Candidate Starts for BreSam8\_50:

(Start: 48 @32302 has 86 MA's), (71, 32248), (93, 32185), (96, 32161), (98, 32152), (104, 32104), (105, 32089),

Gene: Broseidon\_46 Start: 31882, Stop: 31580, Start Num: 43

Candidate Starts for Broseidon\_46:

(2, 32152), (Start: 43 @31882 has 154 MA's), (88, 31750), (93, 31711), (101, 31663), (104, 31630),

Gene: Bruiser\_45 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for Bruiser\_45:

(Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Bryce\_37 Start: 28369, Stop: 28097, Start Num: 66

Candidate Starts for Bryce\_37:

(Start: 66 @28369 has 35 MA's), (79, 28303), (103, 28153), (106, 28117),

Gene: BubbleTrouble\_45 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for BubbleTrouble\_45:

(2, 32150), (Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Buckaroo\_45 Start: 31884, Stop: 31582, Start Num: 43

Candidate Starts for Buckaroo\_45:

(2, 32154), (Start: 43 @31884 has 154 MA's), (88, 31752), (93, 31713), (101, 31665), (104, 31632),

Gene: Bud\_47 Start: 31267, Stop: 30920, Start Num: 31

Candidate Starts for Bud\_47:

(Start: 31 @31267 has 65 MA's), (42, 31234), (49, 31213), (101, 31000), (104, 30967),

Gene: Bugatti\_47 Start: 31838, Stop: 31563, Start Num: 54

Candidate Starts for Bugatti\_47:

(Start: 54 @31838 has 35 MA's), (98, 31661), (104, 31613),

Gene: Bumblebee11\_44 Start: 31853, Stop: 31530, Start Num: 43

Candidate Starts for Bumblebee11\_44:

(Start: 43 @31853 has 154 MA's), (75, 31754), (76, 31745), (80, 31730), (88, 31700), (104, 31580),

Gene: Burger\_44 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for Burger\_44:

(2, 32150), (Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: BuzzBuzz\_48 Start: 32339, Stop: 32091, Start Num: 48

Candidate Starts for BuzzBuzz\_48:

(Start: 48 @32339 has 86 MA's), (71, 32285), (93, 32222), (96, 32198), (98, 32189), (104, 32141), (105, 32126),

Gene: Bxz2\_46 Start: 32346, Stop: 32098, Start Num: 48

Candidate Starts for Bxz2\_46:

(Start: 48 @32346 has 86 MA's), (71, 32292), (93, 32229), (96, 32205), (98, 32196), (104, 32148), (105, 32133),

Gene: Caelakin\_46 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for Caelakin\_46:

(2, 32150), (Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Caitlin\_44 Start: 31138, Stop: 30842, Start Num: 53

Candidate Starts for Caitlin\_44:

(Start: 32 @31204 has 8 MA's), (Start: 53 @31138 has 12 MA's), (70, 31087), (104, 30901),

Gene: Calvinny\_50 Start: 32208, Stop: 31960, Start Num: 48

Candidate Starts for Calvinny\_50:

(Start: 48 @32208 has 86 MA's), (71, 32154), (72, 32151), (93, 32091), (96, 32067), (98, 32058), (104, 32010), (105, 31995),

Gene: Camperdownii\_44 Start: 31553, Stop: 31251, Start Num: 43

Candidate Starts for Camperdownii\_44:

(Start: 43 @31553 has 154 MA's), (88, 31421), (93, 31382), (101, 31334), (104, 31301),

Gene: Candra\_49 Start: 31173, Stop: 30745, Start Num: 17

Candidate Starts for Candra\_49:

(Start: 12 @31200 has 1 MA's), (Start: 17 @31173 has 9 MA's), (45, 31077), (59, 31041), (79, 30951), (85, 30924), (86, 30921), (106, 30765),

Gene: Cat\_44 Start: 31362, Stop: 31087, Start Num: 54

Candidate Starts for Cat\_44:

(9, 31503), (11, 31494), (Start: 54 @31362 has 35 MA's), (82, 31281), (98, 31185),

Gene: Catalina\_48 Start: 32110, Stop: 31784, Start Num: 31

Candidate Starts for Catalina\_48:

(Start: 31 @32110 has 65 MA's), (38, 32086), (Start: 53 @32044 has 12 MA's), (106, 31804),

Gene: Caviar\_46 Start: 32081, Stop: 31806, Start Num: 54

Candidate Starts for Caviar\_46:

(18, 32171), (Start: 22 @32162 has 1 MA's), (Start: 54 @32081 has 35 MA's), (98, 31904),

Gene: Celestiallunch\_45 Start: 31680, Stop: 31330, Start Num: 31

Candidate Starts for Celestiallunch\_45:

(13, 31743), (23, 31704), (Start: 31 @31680 has 65 MA's), (Start: 36 @31659 has 1 MA's), (38, 31653), (72, 31551), (106, 31350), (107, 31341),

Gene: CentreCat\_46 Start: 31883, Stop: 31581, Start Num: 43

Candidate Starts for CentreCat\_46:

(2, 32153), (Start: 43 @31883 has 154 MA's), (88, 31751), (93, 31712), (101, 31664), (104, 31631),

Gene: Cerulean\_47 Start: 32303, Stop: 32001, Start Num: 43

Candidate Starts for Cerulean\_47:

(2, 32573), (Start: 43 @32303 has 154 MA's), (88, 32171), (93, 32132), (104, 32051),

Gene: ChampagnePapi\_48 Start: 32302, Stop: 32000, Start Num: 43

Candidate Starts for ChampagnePapi\_48:

(2, 32572), (Start: 43 @32302 has 154 MA's), (88, 32170), (93, 32131), (104, 32050),

Gene: Chaph\_46 Start: 31891, Stop: 31589, Start Num: 43

Candidate Starts for Chaph\_46:

(2, 32161), (Start: 43 @31891 has 154 MA's), (88, 31759), (93, 31720), (101, 31672), (104, 31639),

Gene: Chargerpower\_46 Start: 31054, Stop: 30704, Start Num: 32

Candidate Starts for Chargerpower\_46:

(Start: 32 @31054 has 8 MA's), (Start: 53 @30991 has 12 MA's), (79, 30910), (101, 30784), (106, 30724), (107, 30715),

Gene: Charm\_46 Start: 31899, Stop: 31555, Start Num: 32

Candidate Starts for Charm\_46:

(Start: 32 @31899 has 8 MA's), (Start: 36 @31884 has 1 MA's), (38, 31878), (Start: 53 @31836 has 12 MA's), (67, 31794), (77, 31761), (106, 31575), (107, 31566),

Gene: Chiqui\_44 Start: 31814, Stop: 31539, Start Num: 54

Candidate Starts for Chiqui\_44:

(14, 31931), (20, 31907), (Start: 22 @31901 has 1 MA's), (29, 31874), (Start: 54 @31814 has 35 MA's), (98, 31637), (104, 31589),

Gene: Cici\_45 Start: 31868, Stop: 31545, Start Num: 43

Candidate Starts for Cici\_45:

(Start: 43 @31868 has 154 MA's), (75, 31769), (76, 31760), (80, 31745), (88, 31715), (104, 31595),

Gene: Cindaradix\_43 Start: 31493, Stop: 31170, Start Num: 43

Candidate Starts for Cindaradix\_43:

(Start: 43 @31493 has 154 MA's), (76, 31385), (88, 31340), (99, 31265), (104, 31220),

Gene: Cintron\_45 Start: 31860, Stop: 31558, Start Num: 43

Candidate Starts for Cintron\_45:

(2, 32130), (Start: 43 @31860 has 154 MA's), (88, 31728), (93, 31689), (101, 31641), (104, 31608),

Gene: Citius\_46 Start: 31901, Stop: 31599, Start Num: 43

Candidate Starts for Citius\_46:

(2, 32171), (Start: 43 @31901 has 154 MA's), (88, 31769), (93, 31730), (101, 31682), (104, 31649),

Gene: Clammy\_47 Start: 31838, Stop: 31563, Start Num: 54

Candidate Starts for Clammy\_47:

(Start: 54 @31838 has 35 MA's), (98, 31661), (104, 31613),

Gene: Clarenza\_45 Start: 31877, Stop: 31575, Start Num: 43

Candidate Starts for Clarenza\_45:

(2, 32147), (Start: 43 @31877 has 154 MA's), (88, 31745), (93, 31706), (101, 31658), (104, 31625),

Gene: ClownCar\_50 Start: 32201, Stop: 31953, Start Num: 48

Candidate Starts for ClownCar\_50:

(Start: 48 @32201 has 86 MA's), (71, 32147), (72, 32144), (93, 32084), (96, 32060), (98, 32051), (104, 32003), (105, 31988),

Gene: Cocoaberry\_46 Start: 31884, Stop: 31582, Start Num: 43

Candidate Starts for Cocoaberry\_46:

(Start: 43 @31884 has 154 MA's), (88, 31752), (93, 31713), (101, 31665), (104, 31632),

Gene: CogOmlette\_45 Start: 31399, Stop: 31028, Start Num: 31  
Candidate Starts for CogOmlette\_45:  
(3, 31585), (4, 31534), (5, 31510), (Start: 31 @31399 has 65 MA's), (52, 31339), (Start: 53 @31336 has 12 MA's), (106, 31048),

Gene: Colbster\_50 Start: 32312, Stop: 32064, Start Num: 48  
Candidate Starts for Colbster\_50:  
(Start: 48 @32312 has 86 MA's), (71, 32258), (93, 32195), (96, 32171), (98, 32162), (104, 32114), (105, 32099),

Gene: Commander\_46 Start: 31879, Stop: 31577, Start Num: 43  
Candidate Starts for Commander\_46:  
(2, 32149), (Start: 43 @31879 has 154 MA's), (88, 31747), (93, 31708), (101, 31660), (104, 31627),

Gene: Connomayer\_46 Start: 31880, Stop: 31578, Start Num: 43  
Candidate Starts for Connomayer\_46:  
(2, 32150), (Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Conquerage\_47 Start: 32133, Stop: 31807, Start Num: 31  
Candidate Starts for Conquerage\_47:  
(Start: 31 @32133 has 65 MA's), (38, 32109), (Start: 53 @32067 has 12 MA's), (106, 31827),

Gene: CosmicSans\_37 Start: 28394, Stop: 28122, Start Num: 66  
Candidate Starts for CosmicSans\_37:  
(Start: 66 @28394 has 35 MA's), (79, 28328), (103, 28178), (106, 28142),

Gene: Croquant\_51 Start: 32307, Stop: 32059, Start Num: 48  
Candidate Starts for Croquant\_51:  
(Start: 48 @32307 has 86 MA's), (71, 32253), (93, 32190), (96, 32166), (98, 32157), (104, 32109), (105, 32094),

Gene: Cullens\_50 Start: 32308, Stop: 32060, Start Num: 48  
Candidate Starts for Cullens\_50:  
(Start: 48 @32308 has 86 MA's), (71, 32254), (93, 32191), (96, 32167), (98, 32158), (104, 32110), (105, 32095),

Gene: DaHudson\_50 Start: 32301, Stop: 32053, Start Num: 48  
Candidate Starts for DaHudson\_50:  
(Start: 48 @32301 has 86 MA's), (71, 32247), (93, 32184), (96, 32160), (98, 32151), (104, 32103), (105, 32088),

Gene: Daishi\_49 Start: 31180, Stop: 30932, Start Num: 48  
Candidate Starts for Daishi\_49:  
(Start: 48 @31180 has 86 MA's), (71, 31126), (93, 31063), (96, 31039), (98, 31030), (104, 30982), (105, 30967),

Gene: Danforth\_44 Start: 31174, Stop: 30878, Start Num: 53  
Candidate Starts for Danforth\_44:  
(Start: 32 @31240 has 8 MA's), (Start: 53 @31174 has 12 MA's), (70, 31123), (104, 30937),

Gene: Darrell\_48 Start: 32497, Stop: 32153, Start Num: 30  
Candidate Starts for Darrell\_48:

(16, 32539), (21, 32518), (Start: 30 @32497 has 3 MA's), (Start: 36 @32482 has 1 MA's), (Start: 53 @32434 has 12 MA's), (60, 32413), (77, 32359), (106, 32173),

Gene: DARTHPhader\_44 Start: 32954, Stop: 32610, Start Num: 31

Candidate Starts for DARTHPhader\_44:

(26, 32966), (Start: 28 @32960 has 1 MA's), (Start: 31 @32954 has 65 MA's), (44, 32912), (55, 32891), (73, 32837), (77, 32825), (94, 32732), (101, 32690), (106, 32630),

Gene: Datway\_45 Start: 31839, Stop: 31516, Start Num: 43

Candidate Starts for Datway\_45:

(Start: 43 @31839 has 154 MA's), (76, 31731), (104, 31566),

Gene: Deano\_45 Start: 31888, Stop: 31586, Start Num: 43

Candidate Starts for Deano\_45:

(Start: 43 @31888 has 154 MA's), (61, 31846), (88, 31756), (93, 31717), (101, 31669), (104, 31636),

Gene: DekHockey33\_50 Start: 31068, Stop: 30775, Start Num: 51

Candidate Starts for DekHockey33\_50:

(Start: 51 @31068 has 24 MA's), (87, 30951), (101, 30858),

Gene: Dhanush\_46 Start: 31883, Stop: 31581, Start Num: 43

Candidate Starts for Dhanush\_46:

(2, 32153), (Start: 43 @31883 has 154 MA's), (88, 31751), (93, 31712), (101, 31664), (104, 31631),

Gene: Dieselweasel\_51 Start: 32311, Stop: 32063, Start Num: 48

Candidate Starts for Dieselweasel\_51:

(Start: 48 @32311 has 86 MA's), (71, 32257), (93, 32194), (96, 32170), (98, 32161), (104, 32113), (105, 32098),

Gene: Dinger\_37 Start: 28378, Stop: 28106, Start Num: 66

Candidate Starts for Dinger\_37:

(Start: 56 @28411 has 1 MA's), (Start: 66 @28378 has 35 MA's), (83, 28291), (103, 28162), (106, 28126),

Gene: DirtyDunning\_45 Start: 31898, Stop: 31575, Start Num: 43

Candidate Starts for DirtyDunning\_45:

(Start: 43 @31898 has 154 MA's), (49, 31883), (88, 31745), (93, 31706), (101, 31658), (104, 31625),

Gene: Dixon\_44 Start: 31047, Stop: 30760, Start Num: 53

Candidate Starts for Dixon\_44:

(Start: 32 @31113 has 8 MA's), (Start: 53 @31047 has 12 MA's), (70, 30996), (104, 30810),

Gene: DontArgue\_44 Start: 30703, Stop: 30368, Start Num: 43

Candidate Starts for DontArgue\_44:

(8, 30847), (10, 30841), (Start: 43 @30703 has 154 MA's), (99, 30463),

Gene: Dorothea\_49 Start: 31156, Stop: 30728, Start Num: 17

Candidate Starts for Dorothea\_49:

(Start: 12 @31183 has 1 MA's), (Start: 17 @31156 has 9 MA's), (45, 31060), (59, 31024), (79, 30934), (85, 30907), (86, 30904), (106, 30748),

Gene: Drake94\_43 Start: 30743, Stop: 30387, Start Num: 43

Candidate Starts for Drake94\_43:

(10, 30887), (Start: 43 @30743 has 154 MA's), (89, 30560), (99, 30482),

Gene: DreamTeam1\_46 Start: 31773, Stop: 31429, Start Num: 32

Candidate Starts for DreamTeam1\_46:

(Start: 32 @31773 has 8 MA's), (Start: 36 @31758 has 1 MA's), (38, 31752), (Start: 53 @31710 has 12 MA's), (Start: 54 @31707 has 35 MA's), (67, 31668), (77, 31635), (106, 31449), (107, 31440),

Gene: DropBear\_46 Start: 31726, Stop: 31451, Start Num: 54

Candidate Starts for DropBear\_46:

(Start: 54 @31726 has 35 MA's), (98, 31549), (104, 31501),

Gene: Druantia\_46 Start: 31883, Stop: 31581, Start Num: 43

Candidate Starts for Druantia\_46:

(2, 32153), (Start: 43 @31883 has 154 MA's), (88, 31751), (93, 31712), (101, 31664), (104, 31631),

Gene: Eagle\_46 Start: 31905, Stop: 31603, Start Num: 43

Candidate Starts for Eagle\_46:

(2, 32175), (Start: 43 @31905 has 154 MA's), (88, 31773), (93, 31734), (101, 31686), (104, 31653),

Gene: EagleEye\_49 Start: 31670, Stop: 31308, Start Num: 31

Candidate Starts for EagleEye\_49:

(Start: 31 @31670 has 65 MA's), (Start: 37 @31646 has 1 MA's), (101, 31388),

Gene: Eapen\_46 Start: 31875, Stop: 31573, Start Num: 43

Candidate Starts for Eapen\_46:

(2, 32145), (Start: 43 @31875 has 154 MA's), (88, 31743), (93, 31704), (101, 31656), (104, 31623),

Gene: Ebony\_47 Start: 31284, Stop: 30937, Start Num: 31

Candidate Starts for Ebony\_47:

(Start: 31 @31284 has 65 MA's), (42, 31251), (49, 31230), (101, 31017), (104, 30984),

Gene: EdogawaKiddo\_45 Start: 32110, Stop: 31784, Start Num: 31

Candidate Starts for EdogawaKiddo\_45:

(Start: 31 @32110 has 65 MA's), (38, 32086), (Start: 53 @32044 has 12 MA's), (106, 31804),

Gene: Eidsmoe\_47 Start: 32173, Stop: 31847, Start Num: 31

Candidate Starts for Eidsmoe\_47:

(Start: 31 @32173 has 65 MA's), (38, 32149), (Start: 53 @32107 has 12 MA's), (106, 31867),

Gene: Elephantoon\_46 Start: 31477, Stop: 31130, Start Num: 30

Candidate Starts for Elephantoon\_46:

(Start: 30 @31477 has 3 MA's), (38, 31453), (Start: 53 @31411 has 12 MA's), (77, 31336), (81, 31318), (106, 31150),

Gene: Elle\_45 Start: 29059, Stop: 28784, Start Num: 51

Candidate Starts for Elle\_45:

(Start: 51 @29059 has 24 MA's), (101, 28867),

Gene: EmyBug\_46 Start: 32175, Stop: 31849, Start Num: 31

Candidate Starts for EmyBug\_46:

(Start: 31 @32175 has 65 MA's), (38, 32151), (Start: 53 @32109 has 12 MA's), (106, 31869),

Gene: EpicPhail\_51 Start: 32312, Stop: 32064, Start Num: 48

Candidate Starts for EpicPhail\_51:

(Start: 48 @32312 has 86 MA's), (62, 32282), (71, 32258), (93, 32195), (96, 32171), (98, 32162), (104, 32114), (105, 32099),

Gene: Epsocamisio\_48 Start: 30391, Stop: 30098, Start Num: 51

Candidate Starts for Epsocamisio\_48:

(Start: 51 @30391 has 24 MA's), (87, 30274), (101, 30181),

Gene: EricB\_49 Start: 31130, Stop: 30702, Start Num: 17

Candidate Starts for EricB\_49:

(Start: 12 @31157 has 1 MA's), (Start: 17 @31130 has 9 MA's), (45, 31034), (59, 30998), (79, 30908), (85, 30881), (86, 30878), (106, 30722),

Gene: Erik\_37 Start: 28392, Stop: 28120, Start Num: 66

Candidate Starts for Erik\_37:

(Start: 66 @28392 has 35 MA's), (79, 28326), (103, 28176), (106, 28140),

Gene: Eris\_45 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for Eris\_45:

(2, 32150), (Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Eros\_46 Start: 31882, Stop: 31580, Start Num: 43

Candidate Starts for Eros\_46:

(2, 32152), (Start: 43 @31882 has 154 MA's), (88, 31750), (93, 31711), (101, 31663), (104, 31630),

Gene: Espica\_37 Start: 28395, Stop: 28123, Start Num: 66

Candidate Starts for Espica\_37:

(Start: 66 @28395 has 35 MA's), (79, 28329), (103, 28179), (106, 28143),

Gene: Et2Brutus\_46 Start: 31244, Stop: 30897, Start Num: 31

Candidate Starts for Et2Brutus\_46:

(Start: 31 @31244 has 65 MA's), (42, 31211), (49, 31190), (101, 30977), (104, 30944),

Gene: EtoileNova\_47 Start: 32085, Stop: 31810, Start Num: 54

Candidate Starts for EtoileNova\_47:

(18, 32175), (Start: 22 @32166 has 1 MA's), (Start: 54 @32085 has 35 MA's), (98, 31908),

Gene: Eurydice\_47 Start: 31877, Stop: 31575, Start Num: 43

Candidate Starts for Eurydice\_47:

(2, 32147), (Start: 43 @31877 has 154 MA's), (88, 31745), (93, 31706), (101, 31658), (104, 31625),

Gene: Expelliarmus\_44 Start: 31203, Stop: 30907, Start Num: 53

Candidate Starts for Expelliarmus\_44:

(Start: 32 @31269 has 8 MA's), (Start: 53 @31203 has 12 MA's), (70, 31152), (104, 30966),

Gene: ExplosioNervosa\_47 Start: 32193, Stop: 31867, Start Num: 31

Candidate Starts for ExplosioNervosa\_47:

(Start: 31 @32193 has 65 MA's), (38, 32169), (Start: 53 @32127 has 12 MA's), (106, 31887),

Gene: Farber\_50 Start: 32301, Stop: 32053, Start Num: 48

Candidate Starts for Farber\_50:

(Start: 48 @32301 has 86 MA's), (71, 32247), (93, 32184), (96, 32160), (98, 32151), (104, 32103), (105, 32088),

Gene: FatCactus\_39 Start: 29455, Stop: 29141, Start Num: 50

Candidate Starts for FatCactus\_39:

(11, 29608), (15, 29578), (18, 29563), (27, 29530), (Start: 50 @29455 has 1 MA's), (67, 29407), (68, 29401), (77, 29350), (101, 29221),

Gene: Fayely\_47 Start: 32142, Stop: 31816, Start Num: 31

Candidate Starts for Fayely\_47:

(Start: 31 @32142 has 65 MA's), (38, 32118), (Start: 53 @32076 has 12 MA's), (106, 31836),

Gene: Fernando\_50 Start: 32308, Stop: 32060, Start Num: 48

Candidate Starts for Fernando\_50:

(Start: 48 @32308 has 86 MA's), (71, 32254), (93, 32191), (96, 32167), (98, 32158), (104, 32110), (105, 32095),

Gene: Fibonacci\_47 Start: 31259, Stop: 30912, Start Num: 31

Candidate Starts for Fibonacci\_47:

(Start: 31 @31259 has 65 MA's), (42, 31226), (49, 31205), (101, 30992), (104, 30959),

Gene: Flaverint\_48 Start: 31706, Stop: 31359, Start Num: 31

Candidate Starts for Flaverint\_48:

(Start: 31 @31706 has 65 MA's), (42, 31673), (49, 31652), (101, 31439), (104, 31406),

Gene: Florean\_46 Start: 31879, Stop: 31577, Start Num: 43

Candidate Starts for Florean\_46:

(2, 32149), (Start: 43 @31879 has 154 MA's), (88, 31747), (93, 31708), (101, 31660), (104, 31627),

Gene: Flux\_46 Start: 31879, Stop: 31577, Start Num: 43

Candidate Starts for Flux\_46:

(2, 32149), (Start: 43 @31879 has 154 MA's), (88, 31747), (93, 31708), (101, 31660), (104, 31627),

Gene: Fred313\_46 Start: 31411, Stop: 31136, Start Num: 54

Candidate Starts for Fred313\_46:

(41, 31432), (Start: 54 @31411 has 35 MA's), (98, 31234), (104, 31186),

Gene: Funston\_45 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for Funston\_45:

(Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Gadost\_46 Start: 31884, Stop: 31582, Start Num: 43

Candidate Starts for Gadost\_46:

(Start: 43 @31884 has 154 MA's), (88, 31752), (93, 31713), (101, 31665), (104, 31632),

Gene: Gail\_52 Start: 33875, Stop: 33528, Start Num: 32

Candidate Starts for Gail\_52:

(Start: 22 @33899 has 1 MA's), (Start: 32 @33875 has 8 MA's), (Start: 53 @33815 has 12 MA's), (101, 33608), (106, 33548), (107, 33539),

Gene: Gemma\_49 Start: 32204, Stop: 31956, Start Num: 48

Candidate Starts for Gemma\_49:

(Start: 48 @32204 has 86 MA's), (71, 32150), (72, 32147), (93, 32087), (96, 32063), (98, 32054), (104, 32006), (105, 31991),

Gene: Gilberta\_48 Start: 31696, Stop: 31349, Start Num: 31

Candidate Starts for Gilberta\_48:

(Start: 31 @31696 has 65 MA's), (42, 31663), (49, 31642), (101, 31429), (104, 31396),

Gene: GingkoMaracino\_50 Start: 32194, Stop: 31946, Start Num: 48

Candidate Starts for GingkoMaracino\_50:

(Start: 48 @32194 has 86 MA's), (71, 32140), (93, 32077), (96, 32053), (98, 32044), (104, 31996), (105, 31981),

Gene: Giroux\_48 Start: 31837, Stop: 31562, Start Num: 54

Candidate Starts for Giroux\_48:

(Start: 54 @31837 has 35 MA's), (98, 31660), (104, 31612),

Gene: Gollum\_37 Start: 28394, Stop: 28122, Start Num: 66

Candidate Starts for Gollum\_37:

(Start: 66 @28394 has 35 MA's), (79, 28328), (103, 28178), (106, 28142),

Gene: Goose1D\_40 Start: 27859, Stop: 27584, Start Num: 54

Candidate Starts for Goose1D\_40:

(Start: 54 @27859 has 35 MA's), (98, 27682), (104, 27634),

Gene: Goose1X\_46 Start: 31001, Stop: 30726, Start Num: 54

Candidate Starts for Goose1X\_46:

(Start: 54 @31001 has 35 MA's), (98, 30824), (104, 30776),

Gene: Grif\_50 Start: 32383, Stop: 32135, Start Num: 48

Candidate Starts for Grif\_50:

(Start: 48 @32383 has 86 MA's), (71, 32329), (93, 32266), (96, 32242), (98, 32233), (104, 32185), (105, 32170),

Gene: Groundhog\_43 Start: 31110, Stop: 30814, Start Num: 53

Candidate Starts for Groundhog\_43:

(Start: 53 @31110 has 12 MA's), (58, 31101), (70, 31059), (104, 30873),

Gene: Groupthink\_51 Start: 32208, Stop: 31960, Start Num: 48

Candidate Starts for Groupthink\_51:

(Start: 48 @32208 has 86 MA's), (71, 32154), (72, 32151), (93, 32091), (96, 32067), (98, 32058), (104, 32010), (105, 31995),

Gene: Grub\_50 Start: 32300, Stop: 32052, Start Num: 48

Candidate Starts for Grub\_50:

(Start: 48 @32300 has 86 MA's), (71, 32246), (93, 32183), (96, 32159), (98, 32150), (104, 32102), (105, 32087),

Gene: Grum1\_50 Start: 32308, Stop: 32060, Start Num: 48

Candidate Starts for Grum1\_50:

(Start: 43 @32317 has 154 MA's), (Start: 48 @32308 has 86 MA's), (71, 32254), (93, 32191), (96, 32167), (98, 32158), (104, 32110), (105, 32095),

Gene: GtownJaz\_50 Start: 32310, Stop: 32062, Start Num: 48

Candidate Starts for GtownJaz\_50:

(Start: 48 @32310 has 86 MA's), (71, 32256), (93, 32193), (96, 32169), (98, 32160), (104, 32112), (105, 32097),

Gene: Gwennie\_50 Start: 32312, Stop: 32064, Start Num: 48

Candidate Starts for Gwennie\_50:

(Start: 48 @32312 has 86 MA's), (62, 32282), (71, 32258), (93, 32195), (96, 32171), (98, 32162), (104, 32114), (105, 32099),

Gene: HamSlice\_45 Start: 31878, Stop: 31576, Start Num: 43

Candidate Starts for HamSlice\_45:

(2, 32148), (Start: 43 @31878 has 154 MA's), (88, 31746), (93, 31707), (101, 31659), (104, 31626),

Gene: Hanray\_45 Start: 32114, Stop: 31788, Start Num: 31

Candidate Starts for Hanray\_45:

(Start: 31 @32114 has 65 MA's), (38, 32090), (Start: 53 @32048 has 12 MA's), (106, 31808),

Gene: Happiness\_45 Start: 31885, Stop: 31583, Start Num: 43

Candidate Starts for Happiness\_45:

(2, 32155), (Start: 43 @31885 has 154 MA's), (88, 31753), (93, 31714), (101, 31666), (104, 31633),

Gene: Harlequin\_37 Start: 28399, Stop: 28127, Start Num: 66

Candidate Starts for Harlequin\_37:

(Start: 66 @28399 has 35 MA's), (79, 28333), (103, 28183), (106, 28147),

Gene: HashRod\_51 Start: 32339, Stop: 32091, Start Num: 48

Candidate Starts for HashRod\_51:

(Start: 48 @32339 has 86 MA's), (71, 32285), (93, 32222), (96, 32198), (98, 32189), (104, 32141), (105, 32126),

Gene: HaveUMetTed\_51 Start: 32190, Stop: 31942, Start Num: 48

Candidate Starts for HaveUMetTed\_51:

(Start: 48 @32190 has 86 MA's), (71, 32136), (72, 32133), (93, 32073), (96, 32049), (98, 32040), (104, 31992), (105, 31977),

Gene: Heathen\_46 Start: 31467, Stop: 31192, Start Num: 54

Candidate Starts for Heathen\_46:

(Start: 54 @31467 has 35 MA's), (98, 31290), (104, 31242),

Gene: HelDan\_46 Start: 31719, Stop: 31444, Start Num: 54

Candidate Starts for HelDan\_46:

(Start: 54 @31719 has 35 MA's), (98, 31542), (104, 31494),

Gene: Heliosoles\_49 Start: 32211, Stop: 31963, Start Num: 48

Candidate Starts for Heliosoles\_49:

(Start: 48 @32211 has 86 MA's), (71, 32157), (72, 32154), (93, 32094), (96, 32070), (98, 32061), (104, 32013), (105, 31998),

Gene: Hercules11\_50 Start: 32317, Stop: 32069, Start Num: 48

Candidate Starts for Hercules11\_50:

(Start: 48 @32317 has 86 MA's), (71, 32263), (93, 32200), (96, 32176), (98, 32167), (104, 32119), (105, 32104),

Gene: Hiro\_37 Start: 28654, Stop: 28382, Start Num: 66

Candidate Starts for Hiro\_37:

(Start: 66 @28654 has 35 MA's), (79, 28588), (97, 28483), (103, 28438), (106, 28402),

Gene: Horex\_46 Start: 32133, Stop: 31807, Start Num: 31

Candidate Starts for Horex\_46:

(Start: 31 @32133 has 65 MA's), (38, 32109), (Start: 53 @32067 has 12 MA's), (106, 31827),

Gene: Holli\_45 Start: 31670, Stop: 31368, Start Num: 43

Candidate Starts for Holli\_45:

(2, 31940), (Start: 43 @31670 has 154 MA's), (88, 31538), (93, 31499), (101, 31451), (104, 31418),

Gene: Hookmount\_46 Start: 32082, Stop: 31807, Start Num: 54

Candidate Starts for Hookmount\_46:

(18, 32172), (Start: 22 @32163 has 1 MA's), (Start: 54 @32082 has 35 MA's), (98, 31905),

Gene: HortumSL17\_47 Start: 32109, Stop: 31783, Start Num: 31

Candidate Starts for HortumSL17\_47:

(Start: 31 @32109 has 65 MA's), (38, 32085), (Start: 53 @32043 has 12 MA's), (106, 31803),

Gene: Houdini22\_46 Start: 31884, Stop: 31582, Start Num: 43

Candidate Starts for Houdini22\_46:

(Start: 43 @31884 has 154 MA's), (88, 31752), (93, 31713), (101, 31665), (104, 31632),

Gene: Hutc2\_47 Start: 31259, Stop: 30912, Start Num: 31

Candidate Starts for Hutc2\_47:

(Start: 31 @31259 has 65 MA's), (42, 31226), (49, 31205), (101, 30992), (104, 30959),

Gene: Huxley\_45 Start: 31941, Stop: 31639, Start Num: 43

Candidate Starts for Huxley\_45:

(Start: 43 @31941 has 154 MA's), (88, 31809), (93, 31770), (101, 31722), (104, 31689),

Gene: ICleared\_46 Start: 31909, Stop: 31607, Start Num: 43

Candidate Starts for ICleared\_46:

(2, 32179), (Start: 43 @31909 has 154 MA's), (88, 31777), (93, 31738), (101, 31690), (104, 31657),

Gene: Iceman\_46 Start: 32166, Stop: 31864, Start Num: 43

Candidate Starts for Iceman\_46:

(2, 32436), (Start: 43 @32166 has 154 MA's), (88, 32034), (93, 31995), (101, 31947), (104, 31914),

Gene: Idleandcovert\_47 Start: 31838, Stop: 31563, Start Num: 54

Candidate Starts for Idleandcovert\_47:

(Start: 54 @31838 has 35 MA's), (98, 31661), (104, 31613),

Gene: Insomnia\_48 Start: 31764, Stop: 31417, Start Num: 31

Candidate Starts for Insomnia\_48:

(Start: 31 @31764 has 65 MA's), (42, 31731), (49, 31710), (101, 31497), (104, 31464),

Gene: Iracema64\_47 Start: 32144, Stop: 31842, Start Num: 43

Candidate Starts for Iracema64\_47:

(2, 32414), (Start: 43 @32144 has 154 MA's), (88, 32012), (93, 31973), (101, 31925), (104, 31892),

Gene: Isca\_45 Start: 31262, Stop: 30987, Start Num: 54

Candidate Starts for Isca\_45:

(Start: 22 @31349 has 1 MA's), (39, 31292), (Start: 54 @31262 has 35 MA's), (90, 31157), (98, 31085), (104, 31037),

Gene: JF2\_46 Start: 31013, Stop: 30738, Start Num: 54

Candidate Starts for JF2\_46:

(Start: 22 @31100 has 1 MA's), (39, 31043), (Start: 54 @31013 has 35 MA's), (90, 30908), (98, 30836), (104, 30788),

Gene: JF4\_46 Start: 31013, Stop: 30738, Start Num: 54

Candidate Starts for JF4\_46:

(Start: 22 @31100 has 1 MA's), (39, 31043), (Start: 54 @31013 has 35 MA's), (90, 30908), (98, 30836), (104, 30788),

Gene: JHC117\_50 Start: 32307, Stop: 32059, Start Num: 48

Candidate Starts for JHC117\_50:

(Start: 48 @32307 has 86 MA's), (71, 32253), (93, 32190), (96, 32166), (98, 32157), (104, 32109), (105, 32094),

Gene: JSwag\_48 Start: 30329, Stop: 30036, Start Num: 51

Candidate Starts for JSwag\_48:

(Start: 51 @30329 has 24 MA's), (87, 30212), (101, 30119),

Gene: Jabith\_48 Start: 31765, Stop: 31418, Start Num: 31

Candidate Starts for Jabith\_48:

(Start: 31 @31765 has 65 MA's), (42, 31732), (49, 31711), (101, 31498), (104, 31465),

Gene: Jaykayelowell\_44 Start: 31873, Stop: 31571, Start Num: 43

Candidate Starts for Jaykayelowell\_44:

(2, 32143), (Start: 43 @31873 has 154 MA's), (88, 31741), (93, 31702), (101, 31654), (104, 31621),

Gene: Jeeves\_52 Start: 32647, Stop: 32300, Start Num: 32

Candidate Starts for Jeeves\_52:

(Start: 22 @32671 has 1 MA's), (Start: 32 @32647 has 8 MA's), (Start: 53 @32587 has 12 MA's), (101, 32380), (106, 32320),

Gene: JenCasNa\_51 Start: 32308, Stop: 32060, Start Num: 48

Candidate Starts for JenCasNa\_51:

(Start: 48 @32308 has 86 MA's), (71, 32254), (93, 32191), (96, 32167), (98, 32158), (104, 32110), (105, 32095),

Gene: JeppNRM\_51 Start: 32209, Stop: 31961, Start Num: 48

Candidate Starts for JeppNRM\_51:

(Start: 48 @32209 has 86 MA's), (71, 32155), (72, 32152), (93, 32092), (96, 32068), (98, 32059), (104, 32011), (105, 31996),

Gene: Jester\_37 Start: 28330, Stop: 28058, Start Num: 66

Candidate Starts for Jester\_37:

(Start: 66 @28330 has 35 MA's), (79, 28264), (103, 28114), (106, 28078),

Gene: JetBlade\_46 Start: 31874, Stop: 31572, Start Num: 43

Candidate Starts for JetBlade\_46:

(2, 32144), (Start: 43 @31874 has 154 MA's), (88, 31742), (93, 31703), (101, 31655), (104, 31622),

Gene: Jiawan\_45 Start: 32146, Stop: 31820, Start Num: 31

Candidate Starts for Jiawan\_45:

(Start: 31 @32146 has 65 MA's), (38, 32122), (Start: 53 @32080 has 12 MA's), (106, 31840),

Gene: Jobu08\_49 Start: 32140, Stop: 31892, Start Num: 48

Candidate Starts for Jobu08\_49:

(Start: 48 @32140 has 86 MA's), (71, 32086), (72, 32083), (93, 32023), (96, 31999), (98, 31990), (104, 31942), (105, 31927),

Gene: JoongJeon\_45 Start: 31877, Stop: 31575, Start Num: 43

Candidate Starts for JoongJeon\_45:

(Start: 43 @31877 has 154 MA's), (88, 31745), (93, 31706), (101, 31658), (104, 31625),

Gene: Joselito\_48 Start: 31705, Stop: 31358, Start Num: 31

Candidate Starts for Joselito\_48:

(Start: 31 @31705 has 65 MA's), (42, 31672), (49, 31651), (101, 31438), (104, 31405),

Gene: Junimo\_45 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for Junimo\_45:

(2, 32150), (Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: KADY\_50 Start: 32339, Stop: 32091, Start Num: 48

Candidate Starts for KADY\_50:

(Start: 48 @32339 has 86 MA's), (71, 32285), (93, 32222), (96, 32198), (98, 32189), (104, 32141), (105, 32126),

Gene: KFPoly\_45 Start: 31874, Stop: 31572, Start Num: 43

Candidate Starts for KFPoly\_45:

(2, 32144), (Start: 43 @31874 has 154 MA's), (88, 31742), (93, 31703), (101, 31655), (104, 31622),

Gene: Kachowdy\_46 Start: 31719, Stop: 31444, Start Num: 54

Candidate Starts for Kachowdy\_46:

(Start: 54 @31719 has 35 MA's), (98, 31542), (104, 31494),

Gene: Kalb97\_51 Start: 32207, Stop: 31959, Start Num: 48

Candidate Starts for Kalb97\_51:

(Start: 48 @32207 has 86 MA's), (71, 32153), (72, 32150), (93, 32090), (96, 32066), (98, 32057), (104, 32009), (105, 31994),

Gene: Kalnoky\_51 Start: 32205, Stop: 31957, Start Num: 48

Candidate Starts for Kalnoky\_51:

(Start: 48 @32205 has 86 MA's), (71, 32151), (72, 32148), (93, 32088), (96, 32064), (98, 32055), (104, 32007), (105, 31992),

Gene: Kamy\_46 Start: 31882, Stop: 31580, Start Num: 43

Candidate Starts for Kamy\_46:

(2, 32152), (Start: 43 @31882 has 154 MA's), (88, 31750), (93, 31711), (101, 31663), (104, 31630),

Gene: Katalie136\_45 Start: 31853, Stop: 31530, Start Num: 43

Candidate Starts for Katalie136\_45:

(Start: 43 @31853 has 154 MA's), (75, 31754), (76, 31745), (80, 31730), (88, 31700), (104, 31580),

Gene: KatherineG\_51 Start: 31068, Stop: 30775, Start Num: 51

Candidate Starts for KatherineG\_51:

(Start: 51 @31068 has 24 MA's), (87, 30951), (101, 30858),

Gene: Kazan\_50 Start: 31143, Stop: 30715, Start Num: 17

Candidate Starts for Kazan\_50:

(Start: 12 @31170 has 1 MA's), (Start: 17 @31143 has 9 MA's), (45, 31047), (59, 31011), (79, 30921), (85, 30894), (86, 30891), (106, 30735),

Gene: KekoraPapaka\_46 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for KekoraPapaka\_46:

(2, 32150), (Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Keziacharles14\_47 Start: 33144, Stop: 32797, Start Num: 31

Candidate Starts for Keziacharles14\_47:

(Start: 31 @33144 has 65 MA's), (38, 33120), (Start: 53 @33078 has 12 MA's), (75, 33015), (77, 33003), (106, 32817), (107, 32808),

Gene: Kimba\_47 Start: 31285, Stop: 30938, Start Num: 31

Candidate Starts for Kimba\_47:

(Start: 31 @31285 has 65 MA's), (42, 31252), (49, 31231), (101, 31018), (104, 30985),

Gene: Kingmustik0402\_46 Start: 31869, Stop: 31567, Start Num: 43

Candidate Starts for Kingmustik0402\_46:

(2, 32139), (Start: 43 @31869 has 154 MA's), (88, 31737), (93, 31698), (101, 31650), (104, 31617),

Gene: Kipper29\_49 Start: 31156, Stop: 30728, Start Num: 17

Candidate Starts for Kipper29\_49:

(Start: 12 @31183 has 1 MA's), (Start: 17 @31156 has 9 MA's), (45, 31060), (59, 31024), (79, 30934), (85, 30907), (86, 30904), (106, 30748),

Gene: KittenMittens\_42 Start: 30751, Stop: 30395, Start Num: 43

Candidate Starts for KittenMittens\_42:

(10, 30895), (Start: 43 @30751 has 154 MA's), (89, 30568), (99, 30490),

Gene: Klodlith\_47 Start: 31790, Stop: 31446, Start Num: 32

Candidate Starts for Klodlith\_47:

(Start: 32 @31790 has 8 MA's), (Start: 36 @31775 has 1 MA's), (38, 31769), (Start: 53 @31727 has 12 MA's), (67, 31685), (77, 31652), (106, 31466), (107, 31457),

Gene: Koan\_44 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for Koan\_44:

(2, 32150), (Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Koreni\_45 Start: 31561, Stop: 31259, Start Num: 43

Candidate Starts for Koreni\_45:

(2, 31831), (Start: 43 @31561 has 154 MA's), (88, 31429), (93, 31390), (101, 31342), (104, 31309),

Gene: Kratark\_46 Start: 32040, Stop: 31717, Start Num: 43

Candidate Starts for Kratark\_46:

(Start: 43 @32040 has 154 MA's), (49, 32025), (88, 31887), (101, 31800), (104, 31767),

Gene: Kremtemulon\_46 Start: 31831, Stop: 31529, Start Num: 43

Candidate Starts for Kremtemulon\_46:

(2, 32101), (Start: 43 @31831 has 154 MA's), (88, 31699), (93, 31660), (104, 31579),

Gene: Krishelle\_37 Start: 28678, Stop: 28406, Start Num: 66

Candidate Starts for Krishelle\_37:

(Start: 56 @28711 has 1 MA's), (Start: 66 @28678 has 35 MA's), (83, 28591), (103, 28462), (106, 28426),

Gene: Kristoff\_45 Start: 31839, Stop: 31501, Start Num: 43

Candidate Starts for Kristoff\_45:

(10, 31983), (18, 31932), (Start: 43 @31839 has 154 MA's), (86, 31689), (89, 31674), (99, 31596),

Gene: Kyee\_46 Start: 31878, Stop: 31576, Start Num: 43

Candidate Starts for Kyee\_46:

(Start: 43 @31878 has 154 MA's), (88, 31746), (93, 31707), (101, 31659), (104, 31626),

Gene: LBerry\_51 Start: 32312, Stop: 32064, Start Num: 48

Candidate Starts for LBerry\_51:

(Start: 48 @32312 has 86 MA's), (71, 32258), (93, 32195), (96, 32171), (98, 32162), (104, 32114), (105, 32099),

Gene: LHTSCC\_48 Start: 32302, Stop: 32000, Start Num: 43

Candidate Starts for LHTSCC\_48:

(2, 32572), (Start: 43 @32302 has 154 MA's), (88, 32170), (93, 32131), (104, 32050),

Gene: Lambert1\_46 Start: 32081, Stop: 31806, Start Num: 54

Candidate Starts for Lambert1\_46:

(18, 32171), (Start: 22 @32162 has 1 MA's), (Start: 54 @32081 has 35 MA's), (98, 31904),

Gene: LappelDuVide\_46 Start: 31879, Stop: 31577, Start Num: 43

Candidate Starts for LappelDuVide\_46:

(2, 32149), (Start: 43 @31879 has 154 MA's), (88, 31747), (93, 31708), (101, 31660), (104, 31627),

Gene: LarryKay\_50 Start: 32341, Stop: 32093, Start Num: 48

Candidate Starts for LarryKay\_50:

(Start: 48 @32341 has 86 MA's), (71, 32287), (93, 32224), (96, 32200), (98, 32191), (104, 32143), (105, 32128),

Gene: LastResort\_49 Start: 30629, Stop: 30336, Start Num: 51

Candidate Starts for LastResort\_49:

(Start: 51 @30629 has 24 MA's), (87, 30512), (101, 30419),

Gene: Lemur\_46 Start: 31877, Stop: 31575, Start Num: 43

Candidate Starts for Lemur\_46:

(2, 32147), (Start: 43 @31877 has 154 MA's), (88, 31745), (93, 31706), (101, 31658), (104, 31625),

Gene: LeoAvram\_46 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for LeoAvram\_46:

(2, 32150), (Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Lilith\_51 Start: 32301, Stop: 32053, Start Num: 48

Candidate Starts for Lilith\_51:

(Start: 48 @32301 has 86 MA's), (71, 32247), (93, 32184), (96, 32160), (98, 32151), (104, 32103), (105, 32088),

Gene: Lilleskat\_45 Start: 32063, Stop: 31737, Start Num: 31

Candidate Starts for Lilleskat\_45:

(Start: 31 @32063 has 65 MA's), (38, 32039), (Start: 53 @31997 has 12 MA's), (106, 31757),

Gene: Lillie\_37 Start: 28394, Stop: 28122, Start Num: 66

Candidate Starts for Lillie\_37:

(Start: 66 @28394 has 35 MA's), (79, 28328), (103, 28178), (106, 28142),

Gene: LittleB\_46 Start: 31881, Stop: 31579, Start Num: 43

Candidate Starts for LittleB\_46:

(2, 32151), (Start: 43 @31881 has 154 MA's), (88, 31749), (93, 31710), (101, 31662), (104, 31629),

Gene: LittleGuy\_46 Start: 31776, Stop: 31474, Start Num: 43

Candidate Starts for LittleGuy\_46:

(2, 32046), (Start: 43 @31776 has 154 MA's), (88, 31644), (93, 31605), (101, 31557), (104, 31524),

Gene: LochMonster\_47 Start: 32116, Stop: 31814, Start Num: 43

Candidate Starts for LochMonster\_47:

(2, 32386), (Start: 43 @32116 has 154 MA's), (61, 32074), (88, 31984), (93, 31945), (101, 31897), (104, 31864),

Gene: LogiBear\_47 Start: 30262, Stop: 29981, Start Num: 49

Candidate Starts for LogiBear\_47:

(49, 30262), (78, 30184), (98, 30079), (101, 30064), (103, 30040),

Gene: LoneWolf\_47 Start: 31870, Stop: 31502, Start Num: 28

Candidate Starts for LoneWolf\_47:

(3, 32050), (4, 31999), (5, 31975), (Start: 28 @31870 has 1 MA's), (38, 31846), (Start: 53 @31804 has 12 MA's), (67, 31762), (106, 31522),

Gene: Looper\_50 Start: 30606, Stop: 30313, Start Num: 51

Candidate Starts for Looper\_50:

(Start: 51 @30606 has 24 MA's), (87, 30489), (101, 30396),

Gene: Lorenzo\_46 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for Lorenzo\_46:

(2, 32150), (Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Louie6\_49 Start: 32340, Stop: 32092, Start Num: 48

Candidate Starts for Louie6\_49:

(Start: 48 @32340 has 86 MA's), (71, 32286), (93, 32223), (96, 32199), (98, 32190), (104, 32142), (105, 32127),

Gene: Lowa\_50 Start: 32300, Stop: 32052, Start Num: 48

Candidate Starts for Lowa\_50:

(Start: 48 @32300 has 86 MA's), (71, 32246), (93, 32183), (96, 32159), (98, 32150), (104, 32102), (105, 32087),

Gene: Luchador\_52 Start: 34435, Stop: 34088, Start Num: 32

Candidate Starts for Luchador\_52:

(Start: 22 @34459 has 1 MA's), (Start: 32 @34435 has 8 MA's), (Start: 53 @34375 has 12 MA's), (101, 34168), (106, 34108),

Gene: Lucivia\_48 Start: 31754, Stop: 31407, Start Num: 31

Candidate Starts for Lucivia\_48:

(Start: 31 @31754 has 65 MA's), (42, 31721), (49, 31700), (101, 31487), (104, 31454),

Gene: Lucyedi\_48 Start: 31865, Stop: 31503, Start Num: 31

Candidate Starts for Lucyedi\_48:

(Start: 31 @31865 has 65 MA's), (Start: 37 @31841 has 1 MA's), (101, 31583),

Gene: LugYA\_53 Start: 32309, Stop: 32061, Start Num: 48

Candidate Starts for LugYA\_53:

(Start: 48 @32309 has 86 MA's), (71, 32255), (93, 32192), (96, 32168), (98, 32159), (104, 32111), (105, 32096),

Gene: Lunsford\_47 Start: 31874, Stop: 31572, Start Num: 43

Candidate Starts for Lunsford\_47:

(2, 32144), (Start: 43 @31874 has 154 MA's), (88, 31742), (93, 31703), (101, 31655), (104, 31622),

Gene: MA5\_46 Start: 31164, Stop: 30889, Start Num: 54

Candidate Starts for MA5\_46:

(14, 31281), (20, 31257), (Start: 22 @31251 has 1 MA's), (29, 31224), (Start: 54 @31164 has 35 MA's), (84, 31074), (98, 30987), (104, 30939),

Gene: MK4\_46 Start: 31247, Stop: 30972, Start Num: 54

Candidate Starts for MK4\_46:

(Start: 22 @31334 has 1 MA's), (39, 31277), (Start: 54 @31247 has 35 MA's), (90, 31142), (98, 31070), (104, 31022),

Gene: MaCh\_48 Start: 31692, Stop: 31345, Start Num: 31

Candidate Starts for MaCh\_48:

(Start: 31 @31692 has 65 MA's), (42, 31659), (49, 31638), (101, 31425), (104, 31392),

Gene: Mabel\_47 Start: 31294, Stop: 30947, Start Num: 31

Candidate Starts for Mabel\_47:

(Start: 31 @31294 has 65 MA's), (42, 31261), (49, 31240), (101, 31027), (104, 30994),

Gene: MadMarie\_50 Start: 32310, Stop: 32062, Start Num: 48

Candidate Starts for MadMarie\_50:

(Start: 48 @32310 has 86 MA's), (71, 32256), (93, 32193), (96, 32169), (98, 32160), (104, 32112), (105, 32097),

Gene: Mainiac\_50 Start: 32302, Stop: 32054, Start Num: 48

Candidate Starts for Mainiac\_50:

(Start: 48 @32302 has 86 MA's), (71, 32248), (93, 32185), (96, 32161), (98, 32152), (104, 32104), (105, 32089),

Gene: Malinsilva\_52 Start: 32300, Stop: 32052, Start Num: 48

Candidate Starts for Malinsilva\_52:

(Start: 48 @32300 has 86 MA's), (71, 32246), (93, 32183), (96, 32159), (98, 32150), (104, 32102), (105, 32087),

Gene: Maminiaina\_46 Start: 31851, Stop: 31525, Start Num: 31

Candidate Starts for Maminiaina\_46:

(Start: 31 @31851 has 65 MA's), (38, 31827), (Start: 53 @31785 has 12 MA's), (75, 31743), (106, 31545),

Gene: Manu\_50 Start: 32208, Stop: 31960, Start Num: 48

Candidate Starts for Manu\_50:

(Start: 48 @32208 has 86 MA's), (71, 32154), (72, 32151), (93, 32091), (96, 32067), (98, 32058), (104, 32010), (105, 31995),

Gene: MarQuardt\_50 Start: 32310, Stop: 32062, Start Num: 48

Candidate Starts for MarQuardt\_50:

(Start: 48 @32310 has 86 MA's), (71, 32256), (93, 32193), (96, 32169), (98, 32160), (104, 32112), (105, 32097),

Gene: Marchesa\_46 Start: 31717, Stop: 31442, Start Num: 54

Candidate Starts for Marchesa\_46:

(Start: 54 @31717 has 35 MA's), (98, 31540), (104, 31492),

Gene: Margo\_46 Start: 32107, Stop: 31832, Start Num: 54

Candidate Starts for Margo\_46:

(18, 32197), (Start: 22 @32188 has 1 MA's), (Start: 54 @32107 has 35 MA's), (98, 31930),

Gene: Marie\_50 Start: 32308, Stop: 32060, Start Num: 48

Candidate Starts for Marie\_50:

(Start: 48 @32308 has 86 MA's), (71, 32254), (93, 32191), (96, 32167), (98, 32158), (104, 32110), (105, 32095),

Gene: Marius\_51 Start: 32205, Stop: 31957, Start Num: 48

Candidate Starts for Marius\_51:

(Start: 48 @32205 has 86 MA's), (71, 32151), (72, 32148), (93, 32088), (96, 32064), (98, 32055), (104, 32007), (105, 31992),

Gene: Maverick\_46 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for Maverick\_46:

(Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Maxo\_47 Start: 31882, Stop: 31580, Start Num: 43

Candidate Starts for Maxo\_47:

(2, 32152), (Start: 43 @31882 has 154 MA's), (88, 31750), (93, 31711), (101, 31663), (104, 31630),

Gene: Mayonnaise\_45 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for Mayonnaise\_45:

(Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Mazhar510\_46 Start: 31881, Stop: 31579, Start Num: 43

Candidate Starts for Mazhar510\_46:

(Start: 43 @31881 has 154 MA's), (88, 31749), (93, 31710), (101, 31662), (104, 31629),

Gene: Medusa\_46 Start: 31879, Stop: 31577, Start Num: 43

Candidate Starts for Medusa\_46:

(2, 32149), (Start: 43 @31879 has 154 MA's), (88, 31747), (93, 31708), (101, 31660), (104, 31627),

Gene: MeeZee\_46 Start: 31877, Stop: 31575, Start Num: 43

Candidate Starts for MeeZee\_46:

(2, 32147), (Start: 43 @31877 has 154 MA's), (88, 31745), (93, 31706), (101, 31658), (104, 31625),

Gene: MegTheThird\_46 Start: 31679, Stop: 31329, Start Num: 31

Candidate Starts for MegTheThird\_46:

(13, 31742), (23, 31703), (Start: 31 @31679 has 65 MA's), (Start: 36 @31658 has 1 MA's), (38, 31652), (72, 31550), (106, 31349), (107, 31340),

Gene: Melvin\_48 Start: 31875, Stop: 31573, Start Num: 43

Candidate Starts for Melvin\_48:

(2, 32145), (Start: 43 @31875 has 154 MA's), (88, 31743), (93, 31704), (101, 31656), (104, 31623),

Gene: Methuselah\_47 Start: 32335, Stop: 32087, Start Num: 48

Candidate Starts for Methuselah\_47:

(Start: 48 @32335 has 86 MA's), (71, 32281), (93, 32218), (96, 32194), (98, 32185), (104, 32137), (105, 32122),

Gene: Microwolf\_50 Start: 32309, Stop: 32061, Start Num: 48

Candidate Starts for Microwolf\_50:

(Start: 48 @32309 has 86 MA's), (71, 32255), (93, 32192), (96, 32168), (98, 32159), (104, 32111), (105, 32096),

Gene: Millski\_45 Start: 31881, Stop: 31579, Start Num: 43

Candidate Starts for Millski\_45:

(2, 32151), (Start: 43 @31881 has 154 MA's), (88, 31749), (93, 31710), (101, 31662), (104, 31629),

Gene: MinecraftSteve\_50 Start: 30593, Stop: 30300, Start Num: 51

Candidate Starts for MinecraftSteve\_50:

(Start: 51 @30593 has 24 MA's), (87, 30476), (101, 30383),

Gene: Minispark\_45 Start: 31396, Stop: 31025, Start Num: 31

Candidate Starts for Minispark\_45:

(3, 31582), (4, 31531), (5, 31507), (Start: 31 @31396 has 65 MA's), (52, 31336), (Start: 53 @31333 has 12 MA's), (106, 31045),

Gene: Miramae\_45 Start: 32041, Stop: 31718, Start Num: 43

Candidate Starts for Miramae\_45:

(Start: 43 @32041 has 154 MA's), (49, 32026), (76, 31933), (80, 31918), (88, 31888), (99, 31813), (104, 31768),

Gene: Misomonster\_51 Start: 32338, Stop: 32090, Start Num: 48

Candidate Starts for Misomonster\_51:

(Start: 48 @32338 has 86 MA's), (71, 32284), (93, 32221), (96, 32197), (98, 32188), (104, 32140), (105, 32125),

Gene: MoneyMay\_50 Start: 32308, Stop: 32060, Start Num: 48

Candidate Starts for MoneyMay\_50:

(Start: 48 @32308 has 86 MA's), (71, 32254), (93, 32191), (96, 32167), (98, 32158), (104, 32110), (105, 32095),

Gene: Montavir\_49 Start: 32309, Stop: 32061, Start Num: 48

Candidate Starts for Montavir\_49:

(Start: 48 @32309 has 86 MA's), (71, 32255), (93, 32192), (96, 32168), (98, 32159), (104, 32111), (105, 32096),

Gene: Morpher26\_45 Start: 31874, Stop: 31551, Start Num: 43

Candidate Starts for Morpher26\_45:

(Start: 43 @31874 has 154 MA's), (75, 31775), (76, 31766), (80, 31751), (88, 31721), (104, 31601),

Gene: Morrow\_47 Start: 31886, Stop: 31584, Start Num: 43

Candidate Starts for Morrow\_47:

(2, 32156), (Start: 43 @31886 has 154 MA's), (88, 31754), (93, 31715), (101, 31667), (104, 31634),

Gene: MuchMore\_53 Start: 32300, Stop: 32052, Start Num: 48

Candidate Starts for MuchMore\_53:

(Start: 48 @32300 has 86 MA's), (71, 32246), (93, 32183), (96, 32159), (98, 32150), (104, 32102), (105, 32087),

Gene: Mulciber\_47 Start: 31256, Stop: 30909, Start Num: 31

Candidate Starts for Mulciber\_47:

(Start: 31 @31256 has 65 MA's), (42, 31223), (49, 31202), (101, 30989), (104, 30956),

Gene: Munch\_48 Start: 31705, Stop: 31358, Start Num: 31

Candidate Starts for Munch\_48:

(Start: 31 @31705 has 65 MA's), (42, 31672), (49, 31651), (101, 31438), (104, 31405),

Gene: Mundrea\_45 Start: 31861, Stop: 31538, Start Num: 43

Candidate Starts for Mundrea\_45:

(Start: 43 @31861 has 154 MA's), (76, 31753), (80, 31738), (88, 31708), (99, 31633), (104, 31588),

Gene: Myxus\_47 Start: 32109, Stop: 31783, Start Num: 31

Candidate Starts for Myxus\_47:

(Start: 31 @32109 has 65 MA's), (38, 32085), (Start: 53 @32043 has 12 MA's), (106, 31803),

Gene: Naiad\_37 Start: 28407, Stop: 28135, Start Num: 66

Candidate Starts for Naiad\_37:

(Start: 66 @28407 has 35 MA's), (103, 28191), (106, 28155),

Gene: Nancinator\_37 Start: 28395, Stop: 28123, Start Num: 66

Candidate Starts for Nancinator\_37:

(Start: 66 @28395 has 35 MA's), (79, 28329), (103, 28179), (106, 28143),

Gene: Natosaleda\_37 Start: 28394, Stop: 28122, Start Num: 66

Candidate Starts for Natosaleda\_37:

(Start: 66 @28394 has 35 MA's), (79, 28328), (103, 28178), (106, 28142),

Gene: NearlyHeadless\_44 Start: 30949, Stop: 30662, Start Num: 53

Candidate Starts for NearlyHeadless\_44:

(Start: 53 @30949 has 12 MA's), (58, 30940), (70, 30898), (104, 30712),

Gene: Nebs\_47 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for Nebs\_47:

(2, 32150), (Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Nebulosus\_49 Start: 30625, Stop: 30332, Start Num: 51

Candidate Starts for Nebulosus\_49:

(Start: 51 @30625 has 24 MA's), (87, 30508), (101, 30415),

Gene: Nedarya\_45 Start: 30054, Stop: 29713, Start Num: 37

Candidate Starts for Nedarya\_45:

(Start: 37 @30054 has 1 MA's), (91, 29883), (101, 29796),

Gene: Neeharika16\_48 Start: 30597, Stop: 30169, Start Num: 17

Candidate Starts for Neeharika16\_48:

(Start: 12 @30624 has 1 MA's), (Start: 17 @30597 has 9 MA's), (45, 30501), (59, 30465), (79, 30375), (85, 30348), (86, 30345), (106, 30189),

Gene: Nemo27\_46 Start: 31879, Stop: 31577, Start Num: 43

Candidate Starts for Nemo27\_46:

(Start: 43 @31879 has 154 MA's), (88, 31747), (93, 31708), (101, 31660), (104, 31627),

Gene: NicoleTera\_46 Start: 32449, Stop: 32027, Start Num: 22

Candidate Starts for NicoleTera\_46:

(Start: 22 @32449 has 1 MA's), (24, 32440), (35, 32401), (65, 32305), (106, 32047),

Gene: Noella\_46 Start: 32082, Stop: 31807, Start Num: 54

Candidate Starts for Noella\_46:

(18, 32172), (Start: 22 @32163 has 1 MA's), (Start: 54 @32082 has 35 MA's), (98, 31905),

Gene: Noelle\_46 Start: 32163, Stop: 31840, Start Num: 43

Candidate Starts for Noelle\_46:

(Start: 43 @32163 has 154 MA's), (76, 32055), (88, 32010), (104, 31890),

Gene: Norbert\_45 Start: 32081, Stop: 31806, Start Num: 54

Candidate Starts for Norbert\_45:

(18, 32171), (Start: 22 @32162 has 1 MA's), (Start: 54 @32081 has 35 MA's), (98, 31904),

Gene: NorthStar\_45 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for NorthStar\_45:

(2, 32150), (Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Northrop\_46 Start: 31876, Stop: 31574, Start Num: 43

Candidate Starts for Northrop\_46:

(2, 32146), (Start: 43 @31876 has 154 MA's), (88, 31744), (93, 31705), (101, 31657), (104, 31624),

Gene: NotAPhaseMom\_46 Start: 31884, Stop: 31582, Start Num: 43

Candidate Starts for NotAPhaseMom\_46:

(Start: 43 @31884 has 154 MA's), (88, 31752), (93, 31713), (101, 31665), (104, 31632),

Gene: Nyxis\_46 Start: 31770, Stop: 31468, Start Num: 43

Candidate Starts for Nyxis\_46:

(2, 32040), (Start: 43 @31770 has 154 MA's), (88, 31638), (93, 31599), (101, 31551), (104, 31518),

Gene: OKaNui\_46 Start: 31930, Stop: 31628, Start Num: 43

Candidate Starts for OKaNui\_46:

(2, 32200), (Start: 43 @31930 has 154 MA's), (88, 31798), (93, 31759), (101, 31711), (104, 31678),

Gene: Obama12\_47 Start: 32304, Stop: 32002, Start Num: 43

Candidate Starts for Obama12\_47:

(2, 32574), (Start: 43 @32304 has 154 MA's), (88, 32172), (93, 32133), (104, 32052),

Gene: Ohfah\_47 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for Ohfah\_47:

(2, 32150), (Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: OlanP\_49 Start: 32378, Stop: 32130, Start Num: 48

Candidate Starts for OlanP\_49:

(Start: 48 @32378 has 86 MA's), (67, 32336), (71, 32324), (72, 32321), (93, 32261), (96, 32237), (98, 32228), (104, 32180), (105, 32165),

Gene: Ollie\_50 Start: 32179, Stop: 31931, Start Num: 48

Candidate Starts for Ollie\_50:

(Start: 48 @32179 has 86 MA's), (71, 32125), (93, 32062), (96, 32038), (98, 32029), (104, 31981), (105, 31966),

Gene: Onglai\_45 Start: 30450, Stop: 30124, Start Num: 31

Candidate Starts for Onglai\_45:

(Start: 31 @30450 has 65 MA's), (38, 30426), (Start: 53 @30384 has 12 MA's), (106, 30144),

Gene: Oofda\_49 Start: 30484, Stop: 30191, Start Num: 51

Candidate Starts for Oofda\_49:

(Start: 51 @30484 has 24 MA's), (87, 30367), (101, 30274),

Gene: Orange\_47 Start: 31254, Stop: 30907, Start Num: 31

Candidate Starts for Orange\_47:

(Start: 31 @31254 has 65 MA's), (42, 31221), (49, 31200), (101, 30987), (104, 30954),

Gene: P28Green\_51 Start: 32311, Stop: 32063, Start Num: 48

Candidate Starts for P28Green\_51:

(Start: 48 @32311 has 86 MA's), (71, 32257), (93, 32194), (96, 32170), (98, 32161), (104, 32113), (105, 32098),

Gene: PGHhamlin\_52 Start: 32300, Stop: 32052, Start Num: 48

Candidate Starts for PGHhamlin\_52:

(Start: 48 @32300 has 86 MA's), (71, 32246), (93, 32183), (96, 32159), (98, 32150), (104, 32102), (105, 32087),

Gene: PP\_50 Start: 36311, Stop: 35883, Start Num: 17

Candidate Starts for PP\_50:

(6, 36377), (Start: 17 @36311 has 9 MA's), (33, 36260), (57, 36179), (95, 35999), (98, 35981), (101, 35966), (105, 35918), (106, 35906),

Gene: PackMan\_46 Start: 32109, Stop: 31783, Start Num: 31

Candidate Starts for PackMan\_46:

(Start: 31 @32109 has 65 MA's), (38, 32085), (Start: 53 @32043 has 12 MA's), (106, 31803),

Gene: PainterBoy\_48 Start: 31801, Stop: 31439, Start Num: 31

Candidate Starts for PainterBoy\_48:

(Start: 31 @31801 has 65 MA's), (Start: 37 @31777 has 1 MA's), (101, 31519),

Gene: Palestino\_45 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for Palestino\_45:

(2, 32150), (Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Panamaxus\_44 Start: 32081, Stop: 31806, Start Num: 54

Candidate Starts for Panamaxus\_44:

(18, 32171), (Start: 22 @32162 has 1 MA's), (Start: 54 @32081 has 35 MA's), (98, 31904),

Gene: Partridge\_37 Start: 28510, Stop: 28205, Start Num: 56

Candidate Starts for Partridge\_37:

(Start: 56 @28510 has 1 MA's), (Start: 66 @28477 has 35 MA's), (83, 28390), (103, 28261), (106, 28225),

Gene: Pawn\_50 Start: 32212, Stop: 31964, Start Num: 48

Candidate Starts for Pawn\_50:

(Start: 48 @32212 has 86 MA's), (71, 32158), (72, 32155), (93, 32095), (96, 32071), (98, 32062), (104, 32014), (105, 31999),

Gene: PeaceMeal1\_43 Start: 30752, Stop: 30396, Start Num: 43

Candidate Starts for PeaceMeal1\_43:

(10, 30896), (Start: 43 @30752 has 154 MA's), (89, 30569), (99, 30491),

Gene: Peaches\_46 Start: 31879, Stop: 31577, Start Num: 43

Candidate Starts for Peaches\_46:

(2, 32149), (Start: 43 @31879 has 154 MA's), (88, 31747), (93, 31708), (101, 31660), (104, 31627),

Gene: Pembroke\_50 Start: 32309, Stop: 32061, Start Num: 48

Candidate Starts for Pembroke\_50:

(Start: 48 @32309 has 86 MA's), (71, 32255), (93, 32192), (96, 32168), (98, 32159), (104, 32111), (105, 32096),

Gene: Penny1\_51 Start: 32312, Stop: 32064, Start Num: 48

Candidate Starts for Penny1\_51:

(Start: 48 @32312 has 86 MA's), (62, 32282), (71, 32258), (93, 32195), (96, 32171), (98, 32162), (104, 32114), (105, 32099),

Gene: Perplexer\_45 Start: 31850, Stop: 31527, Start Num: 43

Candidate Starts for Perplexer\_45:

(Start: 43 @31850 has 154 MA's), (75, 31751), (76, 31742), (80, 31727), (88, 31697), (104, 31577),

Gene: PeterPeter\_46 Start: 31877, Stop: 31575, Start Num: 43

Candidate Starts for PeterPeter\_46:

(2, 32147), (Start: 43 @31877 has 154 MA's), (88, 31745), (93, 31706), (101, 31658), (104, 31625),

Gene: Petersenfast\_47 Start: 31261, Stop: 30914, Start Num: 31

Candidate Starts for Petersenfast\_47:

(Start: 31 @31261 has 65 MA's), (42, 31228), (49, 31207), (101, 30994), (104, 30961),

Gene: PetiteSangsue\_45 Start: 31853, Stop: 31530, Start Num: 43

Candidate Starts for PetiteSangsue\_45:

(Start: 43 @31853 has 154 MA's), (75, 31754), (76, 31745), (80, 31730), (88, 31700), (104, 31580),

Gene: Phacado\_46 Start: 31879, Stop: 31577, Start Num: 43

Candidate Starts for Phacado\_46:

(Start: 43 @31879 has 154 MA's), (88, 31747), (93, 31708), (101, 31660), (104, 31627),

Gene: Phaeder\_47 Start: 32109, Stop: 31783, Start Num: 31

Candidate Starts for Phaeder\_47:

(Start: 31 @32109 has 65 MA's), (38, 32085), (Start: 53 @32043 has 12 MA's), (106, 31803),

Gene: PhailMary\_36 Start: 28716, Stop: 28444, Start Num: 66

Candidate Starts for PhailMary\_36:

(Start: 66 @28716 has 35 MA's), (79, 28650), (103, 28500), (106, 28464),

Gene: Phantastic\_47 Start: 31457, Stop: 31182, Start Num: 54

Candidate Starts for Phantastic\_47:

(Start: 22 @31538 has 1 MA's), (39, 31481), (Start: 54 @31457 has 35 MA's), (64, 31430), (98, 31280), (104, 31232),

Gene: Pharaoh\_41 Start: 31682, Stop: 31311, Start Num: 31

Candidate Starts for Pharaoh\_41:

(1, 32006), (Start: 31 @31682 has 65 MA's), (Start: 53 @31619 has 12 MA's), (77, 31523), (101, 31391),

Gene: Phelipe\_47 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for Phelipe\_47:

(2, 32150), (Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Phighter1804\_46 Start: 31943, Stop: 31620, Start Num: 43

Candidate Starts for Phighter1804\_46:

(Start: 43 @31943 has 154 MA's), (49, 31928), (88, 31790), (93, 31751), (101, 31703), (104, 31670),

Gene: Phillis\_46 Start: 31492, Stop: 31232, Start Num: 53

Candidate Starts for Phillis\_46:

(Start: 53 @31492 has 12 MA's), (58, 31483), (100, 31330), (104, 31291),

Gene: PhishRPhriends\_48 Start: 31386, Stop: 31138, Start Num: 48

Candidate Starts for PhishRPhriends\_48:

(Start: 48 @31386 has 86 MA's), (71, 31332), (72, 31329), (93, 31269), (96, 31245), (98, 31236), (104, 31188), (105, 31173),

Gene: Phlei\_36 Start: 31613, Stop: 31308, Start Num: 54

Candidate Starts for Phlei\_36:

(47, 31628), (Start: 54 @31613 has 35 MA's), (71, 31559), (74, 31541), (86, 31487), (107, 31319),

Gene: Phoebe\_51 Start: 32301, Stop: 32053, Start Num: 48

Candidate Starts for Phoebe\_51:

(Start: 48 @32301 has 86 MA's), (71, 32247), (93, 32184), (96, 32160), (98, 32151), (104, 32103), (105, 32088),

Gene: Phonnegut\_47 Start: 32158, Stop: 31832, Start Num: 31

Candidate Starts for Phonnegut\_47:

(Start: 31 @32158 has 65 MA's), (38, 32134), (Start: 53 @32092 has 12 MA's), (106, 31852),

Gene: Phontbonne\_46 Start: 31771, Stop: 31469, Start Num: 43

Candidate Starts for Phontbonne\_46:

(2, 32041), (Start: 43 @31771 has 154 MA's), (88, 31639), (93, 31600), (101, 31552), (104, 31519),

Gene: Phoxy\_50 Start: 32336, Stop: 32088, Start Num: 48

Candidate Starts for Phoxy\_50:

(Start: 48 @32336 has 86 MA's), (71, 32282), (93, 32219), (96, 32195), (98, 32186), (104, 32138), (105, 32123),

Gene: Phrankenstein\_37 Start: 28340, Stop: 28068, Start Num: 66

Candidate Starts for Phrankenstein\_37:

(Start: 66 @28340 has 35 MA's), (79, 28274), (103, 28124), (106, 28088),

Gene: Phranny\_51 Start: 32194, Stop: 31946, Start Num: 48

Candidate Starts for Phranny\_51:

(Start: 48 @32194 has 86 MA's), (71, 32140), (72, 32137), (93, 32077), (96, 32053), (98, 32044), (104, 31996), (105, 31981),

Gene: Pioneer\_47 Start: 32158, Stop: 31832, Start Num: 31

Candidate Starts for Pioneer\_47:

(Start: 31 @32158 has 65 MA's), (38, 32134), (Start: 53 @32092 has 12 MA's), (106, 31852),

Gene: Pipcraft\_44 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for Pipcraft\_44:

(2, 32150), (Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Pistachio\_48 Start: 31385, Stop: 31110, Start Num: 54

Candidate Starts for Pistachio\_48:

(Start: 54 @31385 has 35 MA's), (98, 31208), (104, 31160),

Gene: Pocahontas\_46 Start: 32078, Stop: 31803, Start Num: 54

Candidate Starts for Pocahontas\_46:

(18, 32168), (Start: 22 @32159 has 1 MA's), (Start: 54 @32078 has 35 MA's), (98, 31901),

Gene: Polymorphads\_47 Start: 31873, Stop: 31571, Start Num: 43

Candidate Starts for Polymorphads\_47:

(2, 32143), (Start: 43 @31873 has 154 MA's), (88, 31741), (93, 31702), (101, 31654), (104, 31621),

Gene: Poompha\_44 Start: 30750, Stop: 30394, Start Num: 43

Candidate Starts for Poompha\_44:

(10, 30894), (Start: 43 @30750 has 154 MA's), (89, 30567), (99, 30489),

Gene: Popcicle\_46 Start: 32078, Stop: 31803, Start Num: 54

Candidate Starts for Popcicle\_46:

(18, 32168), (Start: 22 @32159 has 1 MA's), (Start: 54 @32078 has 35 MA's), (98, 31901),

Gene: PotatoSplit\_52 Start: 32312, Stop: 32064, Start Num: 48

Candidate Starts for PotatoSplit\_52:

(Start: 48 @32312 has 86 MA's), (71, 32258), (93, 32195), (96, 32171), (98, 32162), (104, 32114), (105, 32099),

Gene: Priya\_47 Start: 32176, Stop: 31850, Start Num: 31

Candidate Starts for Priya\_47:

(Start: 31 @32176 has 65 MA's), (38, 32152), (Start: 53 @32110 has 12 MA's), (106, 31870),

Gene: Pumbaa\_46 Start: 31825, Stop: 31523, Start Num: 43

Candidate Starts for Pumbaa\_46:

(2, 32095), (Start: 43 @31825 has 154 MA's), (88, 31693), (93, 31654), (101, 31606), (104, 31573),

Gene: Puppy\_48 Start: 31458, Stop: 31183, Start Num: 54

Candidate Starts for Puppy\_48:

(Start: 54 @31458 has 35 MA's), (98, 31281), (104, 31233),

Gene: PurpleHaze\_50 Start: 32207, Stop: 31959, Start Num: 48

Candidate Starts for PurpleHaze\_50:

(Start: 48 @32207 has 86 MA's), (71, 32153), (72, 32150), (93, 32090), (96, 32066), (98, 32057), (104, 32009), (105, 31994),

Gene: Qobbit\_47 Start: 32138, Stop: 31812, Start Num: 31

Candidate Starts for Qobbit\_47:

(Start: 31 @32138 has 65 MA's), (38, 32114), (Start: 53 @32072 has 12 MA's), (106, 31832),

Gene: QuinnKiro\_45 Start: 32081, Stop: 31806, Start Num: 54

Candidate Starts for QuinnKiro\_45:

(18, 32171), (Start: 22 @32162 has 1 MA's), (Start: 54 @32081 has 35 MA's), (98, 31904),

Gene: RER2\_30 Start: 25266, Stop: 24994, Start Num: 66

Candidate Starts for RER2\_30:

(Start: 66 @25266 has 35 MA's), (79, 25200), (103, 25050), (106, 25014),

Gene: Rahalelujah\_46 Start: 31411, Stop: 31040, Start Num: 31

Candidate Starts for Rahalelujah\_46:

(3, 31597), (4, 31546), (5, 31522), (Start: 31 @31411 has 65 MA's), (52, 31351), (Start: 53 @31348 has 12 MA's), (106, 31060),

Gene: Rasputin\_37 Start: 28364, Stop: 28092, Start Num: 66

Candidate Starts for Rasputin\_37:

(Start: 66 @28364 has 35 MA's), (79, 28298), (103, 28148), (106, 28112),

Gene: Ravana\_51 Start: 31221, Stop: 30943, Start Num: 51

Candidate Starts for Ravana\_51:

(25, 31314), (Start: 51 @31221 has 24 MA's), (77, 31137), (101, 31026),

Gene: ReMo\_49 Start: 30626, Stop: 30333, Start Num: 51

Candidate Starts for ReMo\_49:

(Start: 51 @30626 has 24 MA's), (87, 30509), (101, 30416),

Gene: Reba\_50 Start: 31867, Stop: 31619, Start Num: 48

Candidate Starts for Reba\_50:

(Start: 48 @31867 has 86 MA's), (71, 31813), (72, 31810), (93, 31750), (96, 31726), (98, 31717), (104, 31669), (105, 31654),

Gene: Rebeuca\_45 Start: 31840, Stop: 31502, Start Num: 43

Candidate Starts for Rebeuca\_45:

(10, 31984), (18, 31933), (Start: 43 @31840 has 154 MA's), (86, 31690), (89, 31675), (99, 31597),

Gene: Refuge\_46 Start: 33330, Stop: 32986, Start Num: 31

Candidate Starts for Refuge\_46:

(26, 33342), (Start: 31 @33330 has 65 MA's), (44, 33288), (46, 33285), (55, 33267), (73, 33213), (77, 33201), (101, 33066), (106, 33006),

Gene: Relief\_45 Start: 31877, Stop: 31575, Start Num: 43

Candidate Starts for Relief\_45:

(2, 32147), (Start: 43 @31877 has 154 MA's), (88, 31745), (93, 31706), (101, 31658), (104, 31625),

Gene: Remus\_49 Start: 30309, Stop: 30016, Start Num: 51

Candidate Starts for Remus\_49:

(Start: 51 @30309 has 24 MA's), (87, 30192), (101, 30099),

Gene: ResDef\_46 Start: 32081, Stop: 31806, Start Num: 54

Candidate Starts for ResDef\_46:

(18, 32171), (Start: 22 @32162 has 1 MA's), (Start: 54 @32081 has 35 MA's), (98, 31904),

Gene: RexFury\_37 Start: 28425, Stop: 28153, Start Num: 66

Candidate Starts for RexFury\_37:

(Start: 66 @28425 has 35 MA's), (79, 28359), (103, 28209), (106, 28173),

Gene: Rhodalysa\_37 Start: 28394, Stop: 28122, Start Num: 66

Candidate Starts for Rhodalysa\_37:

(Start: 66 @28394 has 35 MA's), (79, 28328), (103, 28178), (106, 28142),

Gene: Roary\_45 Start: 31159, Stop: 30863, Start Num: 53

Candidate Starts for Roary\_45:

(Start: 32 @31225 has 8 MA's), (Start: 53 @31159 has 12 MA's), (70, 31108), (104, 30922),

Gene: RockieBear\_45 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for RockieBear\_45:

(2, 32150), (Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Rocksand\_46 Start: 31876, Stop: 31574, Start Num: 43

Candidate Starts for Rocksand\_46:

(2, 32146), (Start: 43 @31876 has 154 MA's), (88, 31744), (93, 31705), (101, 31657), (104, 31624),

Gene: Rockstar\_46 Start: 31256, Stop: 30981, Start Num: 54

Candidate Starts for Rockstar\_46:

(Start: 22 @31343 has 1 MA's), (39, 31286), (Start: 54 @31256 has 35 MA's), (90, 31151), (98, 31079), (104, 31031),

Gene: Roimos\_46 Start: 31635, Stop: 31360, Start Num: 54

Candidate Starts for Roimos\_46:

(Start: 54 @31635 has 35 MA's), (98, 31458), (104, 31410),

Gene: Romney\_46 Start: 31877, Stop: 31575, Start Num: 43

Candidate Starts for Romney\_46:

(2, 32147), (Start: 43 @31877 has 154 MA's), (61, 31835), (88, 31745), (93, 31706), (101, 31658), (104, 31625),

Gene: Roosevelt\_45 Start: 31882, Stop: 31580, Start Num: 43

Candidate Starts for Roosevelt\_45:

(2, 32152), (Start: 43 @31882 has 154 MA's), (88, 31750), (93, 31711), (101, 31663), (104, 31630),

Gene: Rosa24\_45 Start: 31911, Stop: 31609, Start Num: 43

Candidate Starts for Rosa24\_45:

(2, 32181), (Start: 43 @31911 has 154 MA's), (61, 31869), (88, 31779), (93, 31740), (101, 31692), (104, 31659),

Gene: Rosalind\_48 Start: 30512, Stop: 30219, Start Num: 51

Candidate Starts for Rosalind\_48:

(Start: 51 @30512 has 24 MA's), (87, 30395), (101, 30302),

Gene: Ruin\_46 Start: 31873, Stop: 31571, Start Num: 43

Candidate Starts for Ruin\_46:

(2, 32143), (Start: 43 @31873 has 154 MA's), (88, 31741), (93, 31702), (101, 31654), (104, 31621),

Gene: Rummer\_49 Start: 32339, Stop: 32091, Start Num: 48

Candidate Starts for Rummer\_49:

(Start: 48 @32339 has 86 MA's), (71, 32285), (93, 32222), (96, 32198), (98, 32189), (104, 32141), (105, 32126),

Gene: RyeScarlet\_48 Start: 32133, Stop: 31807, Start Num: 31

Candidate Starts for RyeScarlet\_48:

(Start: 31 @32133 has 65 MA's), (38, 32109), (Start: 53 @32067 has 12 MA's), (106, 31827),

Gene: Sabertooth\_46 Start: 31882, Stop: 31580, Start Num: 43

Candidate Starts for Sabertooth\_46:

(2, 32152), (Start: 43 @31882 has 154 MA's), (88, 31750), (93, 31711), (101, 31663), (104, 31630),

Gene: Sabia\_50 Start: 32302, Stop: 32054, Start Num: 48

Candidate Starts for Sabia\_50:

(Start: 48 @32302 has 86 MA's), (71, 32248), (93, 32185), (96, 32161), (98, 32152), (104, 32104), (105, 32089),

Gene: Sabinator\_49 Start: 32307, Stop: 32059, Start Num: 48

Candidate Starts for Sabinator\_49:

(Start: 48 @32307 has 86 MA's), (71, 32253), (93, 32190), (96, 32166), (98, 32157), (104, 32109), (105, 32094),

Gene: Sachima\_44 Start: 32043, Stop: 31717, Start Num: 31

Candidate Starts for Sachima\_44:

(Start: 31 @32043 has 65 MA's), (38, 32019), (Start: 53 @31977 has 12 MA's), (106, 31737),

Gene: Saintus\_39 Start: 27880, Stop: 27593, Start Num: 53

Candidate Starts for Saintus\_39:

(Start: 53 @27880 has 12 MA's), (58, 27871), (70, 27829), (104, 27643),

Gene: Salz\_46 Start: 31232, Stop: 30885, Start Num: 31

Candidate Starts for Salz\_46:

(Start: 31 @31232 has 65 MA's), (42, 31199), (49, 31178), (101, 30965), (104, 30932),

Gene: Saskia\_48 Start: 31226, Stop: 30879, Start Num: 31

Candidate Starts for Saskia\_48:

(Start: 31 @31226 has 65 MA's), (42, 31193), (49, 31172), (60, 31139), (101, 30959), (104, 30926),

Gene: SaturnRing\_47 Start: 31838, Stop: 31563, Start Num: 54

Candidate Starts for SaturnRing\_47:

(Start: 54 @31838 has 35 MA's), (98, 31661), (104, 31613),

Gene: Scamp\_46 Start: 31882, Stop: 31580, Start Num: 43

Candidate Starts for Scamp\_46:

(2, 32152), (Start: 43 @31882 has 154 MA's), (88, 31750), (93, 31711), (101, 31663), (104, 31630),

Gene: Scherzo\_47 Start: 32347, Stop: 32021, Start Num: 31

Candidate Starts for Scherzo\_47:

(Start: 31 @32347 has 65 MA's), (38, 32323), (Start: 53 @32281 has 12 MA's), (106, 32041),

Gene: Scout\_46 Start: 30966, Stop: 30691, Start Num: 54

Candidate Starts for Scout\_46:

(Start: 54 @30966 has 35 MA's), (98, 30789), (104, 30741),

Gene: SenorClean\_46 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for SenorClean\_46:

(Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Severus\_43 Start: 30750, Stop: 30394, Start Num: 43

Candidate Starts for Severus\_43:

(10, 30894), (Start: 43 @30750 has 154 MA's), (89, 30567), (99, 30489),

Gene: Shaka\_46 Start: 31877, Stop: 31575, Start Num: 43

Candidate Starts for Shaka\_46:

(2, 32147), (Start: 43 @31877 has 154 MA's), (88, 31745), (93, 31706), (101, 31658), (104, 31625),

Gene: Sham4\_47 Start: 31260, Stop: 30913, Start Num: 31

Candidate Starts for Sham4\_47:

(Start: 31 @31260 has 65 MA's), (42, 31227), (49, 31206), (101, 30993), (104, 30960),

Gene: ShayRa\_51 Start: 30830, Stop: 30537, Start Num: 51

Candidate Starts for ShayRa\_51:

(Start: 51 @30830 has 24 MA's), (87, 30713), (101, 30620),

Gene: SheaKeira\_46 Start: 31684, Stop: 31340, Start Num: 32

Candidate Starts for SheaKeira\_46:

(Start: 32 @31684 has 8 MA's), (Start: 36 @31669 has 1 MA's), (38, 31663), (Start: 53 @31621 has 12 MA's), (67, 31579), (77, 31546), (106, 31360), (107, 31351),

Gene: SheldonCooper\_48 Start: 32303, Stop: 32001, Start Num: 43

Candidate Starts for SheldonCooper\_48:

(2, 32573), (Start: 43 @32303 has 154 MA's), (88, 32171), (93, 32132), (104, 32051),

Gene: Shep\_46 Start: 30680, Stop: 30405, Start Num: 54

Candidate Starts for Shep\_46:

(Start: 54 @30680 has 35 MA's), (98, 30503), (104, 30455),

Gene: Shuman\_37 Start: 28407, Stop: 28135, Start Num: 66

Candidate Starts for Shuman\_37:

(Start: 66 @28407 has 35 MA's), (79, 28341), (103, 28191), (106, 28155),

Gene: Shygu2\_45 Start: 31853, Stop: 31530, Start Num: 43

Candidate Starts for Shygu2\_45:

(Start: 43 @31853 has 154 MA's), (88, 31700), (93, 31661), (104, 31580),

Gene: Skadoosh\_47 Start: 31877, Stop: 31575, Start Num: 43

Candidate Starts for Skadoosh\_47:

(2, 32147), (Start: 43 @31877 has 154 MA's), (88, 31745), (93, 31706), (101, 31658), (104, 31625),

Gene: Skipitt\_45 Start: 31874, Stop: 31572, Start Num: 43

Candidate Starts for Skipitt\_45:

(2, 32144), (Start: 43 @31874 has 154 MA's), (88, 31742), (93, 31703), (101, 31655), (104, 31622),

Gene: Smeadley\_45 Start: 31325, Stop: 31029, Start Num: 53

Candidate Starts for Smeadley\_45:

(Start: 32 @31391 has 8 MA's), (Start: 53 @31325 has 12 MA's), (70, 31274), (104, 31088),

Gene: SmellyB\_49 Start: 31137, Stop: 30709, Start Num: 17

Candidate Starts for SmellyB\_49:

(Start: 12 @31164 has 1 MA's), (Start: 17 @31137 has 9 MA's), (45, 31041), (59, 31005), (79, 30915), (85, 30888), (86, 30885), (106, 30729),

Gene: Snape\_47 Start: 31258, Stop: 30911, Start Num: 31

Candidate Starts for Snape\_47:

(Start: 31 @31258 has 65 MA's), (42, 31225), (49, 31204), (101, 30991), (104, 30958),

Gene: Snickers\_50 Start: 32282, Stop: 32034, Start Num: 48

Candidate Starts for Snickers\_50:

(Start: 48 @32282 has 86 MA's), (71, 32228), (93, 32165), (96, 32141), (98, 32132), (104, 32084), (105, 32069),

Gene: SoYo\_50 Start: 32220, Stop: 31972, Start Num: 48

Candidate Starts for SoYo\_50:

(Start: 48 @32220 has 86 MA's), (71, 32166), (93, 32103), (96, 32079), (98, 32070), (104, 32022), (105, 32007),

Gene: SoilDragon\_50 Start: 31756, Stop: 31508, Start Num: 48

Candidate Starts for SoilDragon\_50:

(Start: 48 @31756 has 86 MA's), (71, 31702), (72, 31699), (93, 31639), (96, 31615), (98, 31606), (104, 31558), (105, 31543),

Gene: SororFago\_50 Start: 33759, Stop: 33412, Start Num: 32

Candidate Starts for SororFago\_50:

(Start: 22 @33783 has 1 MA's), (Start: 32 @33759 has 8 MA's), (77, 33624), (79, 33618), (101, 33492), (106, 33432),

Gene: Soshari\_52 Start: 32335, Stop: 32087, Start Num: 48

Candidate Starts for Soshari\_52:

(Start: 48 @32335 has 86 MA's), (71, 32281), (93, 32218), (96, 32194), (98, 32185), (104, 32137), (105, 32122),

Gene: Soups\_50 Start: 30829, Stop: 30536, Start Num: 51

Candidate Starts for Soups\_50:

(Start: 51 @30829 has 24 MA's), (87, 30712), (101, 30619),

Gene: Sparxx\_47 Start: 31875, Stop: 31573, Start Num: 43

Candidate Starts for Sparxx\_47:

(2, 32145), (Start: 43 @31875 has 154 MA's), (88, 31743), (93, 31704), (101, 31656), (104, 31623),

Gene: Spike509\_50 Start: 32336, Stop: 32088, Start Num: 48

Candidate Starts for Spike509\_50:

(Start: 48 @32336 has 86 MA's), (71, 32282), (93, 32219), (96, 32195), (98, 32186), (104, 32138), (105, 32123),

Gene: Spino\_45 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for Spino\_45:

(2, 32150), (Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Spouty\_47 Start: 32175, Stop: 31849, Start Num: 31

Candidate Starts for Spouty\_47:

(Start: 31 @32175 has 65 MA's), (38, 32151), (Start: 53 @32109 has 12 MA's), (106, 31869),

Gene: StCroix\_37 Start: 28407, Stop: 28135, Start Num: 66

Candidate Starts for StCroix\_37:

(Start: 66 @28407 has 35 MA's), (103, 28191), (106, 28155),

Gene: Stagni\_50 Start: 32311, Stop: 32063, Start Num: 48

Candidate Starts for Stagni\_50:

(Start: 48 @32311 has 86 MA's), (71, 32257), (93, 32194), (96, 32170), (98, 32161), (104, 32113), (105, 32098),

Gene: Stasia\_45 Start: 31752, Stop: 31450, Start Num: 43

Candidate Starts for Stasia\_45:

(Start: 43 @31752 has 154 MA's), (101, 31533),

Gene: SteMason\_45 Start: 31877, Stop: 31575, Start Num: 43

Candidate Starts for SteMason\_45:

(2, 32147), (Start: 43 @31877 has 154 MA's), (88, 31745), (93, 31706), (101, 31658), (104, 31625),

Gene: Steamy\_43 Start: 31608, Stop: 31282, Start Num: 40

Candidate Starts for Steamy\_43:

(7, 31740), (19, 31668), (38, 31614), (Start: 40 @31608 has 1 MA's), (71, 31515), (73, 31509), (77, 31497), (101, 31362),

Gene: StepMih\_50 Start: 32302, Stop: 32054, Start Num: 48

Candidate Starts for StepMih\_50:

(Start: 48 @32302 has 86 MA's), (71, 32248), (93, 32185), (96, 32161), (98, 32152), (104, 32104), (105, 32089),

Gene: Stephig9\_45 Start: 31163, Stop: 30888, Start Num: 53

Candidate Starts for Stephig9\_45:

(Start: 32 @31229 has 8 MA's), (Start: 53 @31163 has 12 MA's), (58, 31154), (69, 31118), (100, 30986), (102, 30965),

Gene: Stink\_46 Start: 32321, Stop: 31998, Start Num: 43

Candidate Starts for Stink\_46:

(Start: 43 @32321 has 154 MA's), (49, 32306), (76, 32213), (80, 32198), (88, 32168), (99, 32093), (104, 32048),

Gene: Strosahl\_49 Start: 30309, Stop: 30016, Start Num: 51

Candidate Starts for Strosahl\_49:

(Start: 51 @30309 has 24 MA's), (87, 30192), (101, 30099),

Gene: Sultana\_46 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for Sultana\_46:

(2, 32150), (Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Sunhee\_50 Start: 32074, Stop: 31730, Start Num: 34

Candidate Starts for Sunhee\_50:

(Start: 34 @32074 has 1 MA's), (52, 32020), (Start: 66 @31978 has 35 MA's), (79, 31936), (101, 31810), (106, 31750),

Gene: Swann\_37 Start: 28394, Stop: 28122, Start Num: 66

Candidate Starts for Swann\_37:

(Start: 66 @28394 has 35 MA's), (79, 28328), (103, 28178), (106, 28142),

Gene: Switzerland\_49 Start: 30692, Stop: 30399, Start Num: 51

Candidate Starts for Switzerland\_49:

(Start: 51 @30692 has 24 MA's), (87, 30575), (101, 30482),

Gene: TNguyen7\_47 Start: 31805, Stop: 31530, Start Num: 54

Candidate Starts for TNguyen7\_47:

(Start: 54 @31805 has 35 MA's), (98, 31628), (104, 31580),

Gene: TWAMP\_37 Start: 28394, Stop: 28122, Start Num: 66

Candidate Starts for TWAMP\_37:

(Start: 66 @28394 has 35 MA's), (79, 28328), (103, 28178), (106, 28142),

Gene: Tailonex\_29 Start: 27177, Stop: 26944, Start Num: 73

Candidate Starts for Tailonex\_29:

(73, 27177), (92, 27099),

Gene: Takoda\_37 Start: 28367, Stop: 28095, Start Num: 66

Candidate Starts for Takoda\_37:

(Start: 66 @28367 has 35 MA's), (79, 28301), (103, 28151), (106, 28115),

Gene: Taquarus\_46 Start: 31883, Stop: 31581, Start Num: 43

Candidate Starts for Taquarus\_46:

(2, 32153), (Start: 43 @31883 has 154 MA's), (88, 31751), (93, 31712), (101, 31664), (104, 31631),

Gene: Taurus\_51 Start: 32308, Stop: 32060, Start Num: 48

Candidate Starts for Taurus\_51:

(Start: 48 @32308 has 86 MA's), (71, 32254), (93, 32191), (96, 32167), (98, 32158), (104, 32110), (105, 32095),

Gene: Texage\_45 Start: 32082, Stop: 31807, Start Num: 54

Candidate Starts for Texage\_45:

(18, 32172), (Start: 22 @32163 has 1 MA's), (Start: 54 @32082 has 35 MA's), (98, 31905),

Gene: Thanksgivukkah\_45 Start: 31878, Stop: 31576, Start Num: 43

Candidate Starts for Thanksgivukkah\_45:

(2, 32148), (Start: 43 @31878 has 154 MA's), (88, 31746), (93, 31707), (101, 31659), (104, 31626),

Gene: Tiffany\_50 Start: 32194, Stop: 31946, Start Num: 48

Candidate Starts for Tiffany\_50:

(Start: 48 @32194 has 86 MA's), (71, 32140), (93, 32077), (96, 32053), (98, 32044), (104, 31996), (105, 31981),

Gene: Timothy\_47 Start: 31235, Stop: 30888, Start Num: 31

Candidate Starts for Timothy\_47:

(Start: 31 @31235 has 65 MA's), (42, 31202), (49, 31181), (101, 30968), (104, 30935),

Gene: TinaFeyge\_46 Start: 31875, Stop: 31573, Start Num: 43

Candidate Starts for TinaFeyge\_46:

(2, 32145), (Start: 43 @31875 has 154 MA's), (88, 31743), (93, 31704), (101, 31656), (104, 31623),

Gene: TinyPebbles\_49 Start: 32341, Stop: 32093, Start Num: 48

Candidate Starts for TinyPebbles\_49:

(Start: 48 @32341 has 86 MA's), (71, 32287), (93, 32224), (96, 32200), (98, 32191), (104, 32143), (105, 32128),

Gene: TinyTimmy\_47 Start: 31278, Stop: 30931, Start Num: 31

Candidate Starts for TinyTimmy\_47:

(Start: 31 @31278 has 65 MA's), (42, 31245), (49, 31224), (101, 31011), (104, 30978),

Gene: Tinybot\_45 Start: 31907, Stop: 31605, Start Num: 43

Candidate Starts for Tinybot\_45:

(2, 32177), (Start: 43 @31907 has 154 MA's), (88, 31775), (93, 31736), (101, 31688), (104, 31655),

Gene: TiroTheta9\_46 Start: 31874, Stop: 31572, Start Num: 43

Candidate Starts for TiroTheta9\_46:

(2, 32144), (Start: 43 @31874 has 154 MA's), (88, 31742), (93, 31703), (101, 31655), (104, 31622),

Gene: Toaka\_46 Start: 31676, Stop: 31308, Start Num: 31

Candidate Starts for Toaka\_46:

(Start: 31 @31676 has 65 MA's), (38, 31652), (Start: 53 @31610 has 12 MA's), (106, 31328), (107, 31319),

Gene: Todacoro\_46 Start: 32081, Stop: 31806, Start Num: 54

Candidate Starts for Todacoro\_46:

(18, 32171), (Start: 22 @32162 has 1 MA's), (Start: 54 @32081 has 35 MA's), (98, 31904),

Gene: Topanga\_43 Start: 31489, Stop: 31151, Start Num: 43

Candidate Starts for Topanga\_43:

(10, 31633), (18, 31582), (Start: 43 @31489 has 154 MA's), (86, 31339), (89, 31324), (99, 31246),

Gene: Trike\_43 Start: 30758, Stop: 30402, Start Num: 43

Candidate Starts for Trike\_43:

(10, 30902), (Start: 43 @30758 has 154 MA's), (89, 30575), (99, 30497),

Gene: TroyPia\_47 Start: 31878, Stop: 31576, Start Num: 43

Candidate Starts for TroyPia\_47:

(2, 32148), (Start: 43 @31878 has 154 MA's), (88, 31746), (93, 31707), (101, 31659), (104, 31626),

Gene: Tubs\_47 Start: 32109, Stop: 31783, Start Num: 31

Candidate Starts for Tubs\_47:

(Start: 31 @32109 has 65 MA's), (38, 32085), (Start: 53 @32043 has 12 MA's), (106, 31803),

Gene: Twister\_43 Start: 31400, Stop: 31062, Start Num: 43

Candidate Starts for Twister\_43:

(10, 31544), (18, 31493), (Start: 43 @31400 has 154 MA's), (86, 31250), (89, 31235), (99, 31157),

Gene: TygerBlood\_46 Start: 31880, Stop: 31578, Start Num: 43

Candidate Starts for TygerBlood\_46:

(2, 32150), (Start: 43 @31880 has 154 MA's), (88, 31748), (93, 31709), (101, 31661), (104, 31628),

Gene: Ugenie5\_44 Start: 32346, Stop: 32020, Start Num: 31

Candidate Starts for Ugenie5\_44:

(Start: 31 @32346 has 65 MA's), (38, 32322), (Start: 53 @32280 has 12 MA's), (106, 32040),

Gene: UhSalsa\_37 Start: 28395, Stop: 28123, Start Num: 66

Candidate Starts for UhSalsa\_37:

(Start: 66 @28395 has 35 MA's), (79, 28329), (103, 28179), (106, 28143),

Gene: Ulysses\_45 Start: 31557, Stop: 31255, Start Num: 43

Candidate Starts for Ulysses\_45:

(2, 31827), (Start: 43 @31557 has 154 MA's), (88, 31425), (93, 31386), (101, 31338), (104, 31305),

Gene: Vanisoa\_46 Start: 32705, Stop: 32358, Start Num: 31

Candidate Starts for Vanisoa\_46:

(3, 32888), (4, 32837), (5, 32813), (Start: 31 @32705 has 65 MA's), (38, 32681), (Start: 53 @32639 has 12 MA's), (63, 32609), (106, 32378),

Gene: Veracruz\_45 Start: 32081, Stop: 31806, Start Num: 54

Candidate Starts for Veracruz\_45:

(18, 32171), (Start: 22 @32162 has 1 MA's), (Start: 54 @32081 has 35 MA's), (98, 31904),

Gene: Vix\_50 Start: 32391, Stop: 32143, Start Num: 48

Candidate Starts for Vix\_50:

(Start: 48 @32391 has 86 MA's), (71, 32337), (93, 32274), (96, 32250), (98, 32241), (104, 32193), (105, 32178),

Gene: VohminGhazi\_49 Start: 31138, Stop: 30710, Start Num: 17

Candidate Starts for VohminGhazi\_49:

(Start: 12 @31165 has 1 MA's), (Start: 17 @31138 has 9 MA's), (45, 31042), (59, 31006), (79, 30916), (85, 30889), (86, 30886), (106, 30730),

Gene: Waits\_49 Start: 30481, Stop: 30188, Start Num: 51

Candidate Starts for Waits\_49:

(Start: 51 @30481 has 24 MA's), (87, 30364), (101, 30271),

Gene: WalterMcMickey\_43 Start: 31400, Stop: 31062, Start Num: 43

Candidate Starts for WalterMcMickey\_43:

(10, 31544), (18, 31493), (Start: 43 @31400 has 154 MA's), (86, 31250), (89, 31235), (99, 31157),

Gene: Wander\_46 Start: 31877, Stop: 31575, Start Num: 43

Candidate Starts for Wander\_46:

(Start: 43 @31877 has 154 MA's), (88, 31745), (93, 31706), (101, 31658), (104, 31625),

Gene: Warrior24\_50 Start: 30688, Stop: 30395, Start Num: 51

Candidate Starts for Warrior24\_50:

(Start: 51 @30688 has 24 MA's), (87, 30571), (101, 30478),

Gene: Watson\_50 Start: 32300, Stop: 32052, Start Num: 48

Candidate Starts for Watson\_50:

(Start: 48 @32300 has 86 MA's), (71, 32246), (93, 32183), (96, 32159), (98, 32150), (104, 32102), (105, 32087),

Gene: Wilbur\_46 Start: 31877, Stop: 31575, Start Num: 43

Candidate Starts for Wilbur\_46:

(2, 32147), (Start: 43 @31877 has 154 MA's), (61, 31835), (88, 31745), (93, 31706), (101, 31658), (104, 31625),

Gene: Wile\_45 Start: 31884, Stop: 31561, Start Num: 43

Candidate Starts for Wile\_45:

(Start: 43 @31884 has 154 MA's), (75, 31785), (76, 31776), (80, 31761), (88, 31731), (104, 31611),

Gene: Wizard007\_46 Start: 31885, Stop: 31583, Start Num: 43

Candidate Starts for Wizard007\_46:

(2, 32155), (Start: 43 @31885 has 154 MA's), (88, 31753), (93, 31714), (101, 31666), (104, 31633),

Gene: Wolpertinger\_46 Start: 31261, Stop: 30914, Start Num: 31

Candidate Starts for Wolpertinger\_46:

(Start: 31 @31261 has 65 MA's), (42, 31228), (49, 31207), (101, 30994), (104, 30961),

Gene: Wooldri\_52 Start: 32220, Stop: 31972, Start Num: 48

Candidate Starts for Wooldri\_52:

(Start: 48 @32220 has 86 MA's), (71, 32166), (93, 32103), (96, 32079), (98, 32070), (104, 32022), (105, 32007),

Gene: WorldCup\_45 Start: 31405, Stop: 31034, Start Num: 31

Candidate Starts for WorldCup\_45:

(3, 31591), (4, 31540), (5, 31516), (Start: 31 @31405 has 65 MA's), (52, 31345), (Start: 53 @31342 has 12 MA's), (106, 31054),

Gene: Xena\_44 Start: 31850, Stop: 31527, Start Num: 43

Candidate Starts for Xena\_44:

(Start: 43 @31850 has 154 MA's), (75, 31751), (76, 31742), (80, 31727), (88, 31697), (104, 31577),

Gene: XianYue\_46 Start: 31886, Stop: 31548, Start Num: 36

Candidate Starts for XianYue\_46:

(Start: 36 @31886 has 1 MA's), (91, 31712), (104, 31595),

Gene: Yecey3\_48 Start: 31582, Stop: 31238, Start Num: 31

Candidate Starts for Yecey3\_48:

(Start: 31 @31582 has 65 MA's), (38, 31561), (Start: 53 @31519 has 12 MA's), (67, 31477), (77, 31444), (106, 31258),

Gene: YoSam321\_46 Start: 31874, Stop: 31572, Start Num: 43

Candidate Starts for YoSam321\_46:

(2, 32144), (Start: 43 @31874 has 154 MA's), (88, 31742), (93, 31703), (101, 31655), (104, 31622),

Gene: Yogi\_37 Start: 28368, Stop: 28096, Start Num: 66

Candidate Starts for Yogi\_37:

(Start: 66 @28368 has 35 MA's), (79, 28302), (103, 28152), (106, 28116),

Gene: Yoncess\_37 Start: 28369, Stop: 28097, Start Num: 66

Candidate Starts for Yoncess\_37:

(Start: 66 @28369 has 35 MA's), (79, 28303), (103, 28153), (106, 28117),

Gene: Zarafa\_46 Start: 31728, Stop: 31453, Start Num: 54

Candidate Starts for Zarafa\_46:

(Start: 54 @31728 has 35 MA's), (98, 31551), (104, 31503),

Gene: Zetzy\_49 Start: 31871, Stop: 31623, Start Num: 48

Candidate Starts for Zetzy\_49:

(Start: 48 @31871 has 86 MA's), (71, 31817), (84, 31784), (93, 31754), (96, 31730), (98, 31721), (104, 31673), (105, 31658),

Gene: Zimmer\_44 Start: 32823, Stop: 32467, Start Num: 31

Candidate Starts for Zimmer\_44:

(Start: 31 @32823 has 65 MA's), (44, 32781), (73, 32706), (77, 32694), (81, 32676), (101, 32547), (106, 32487),