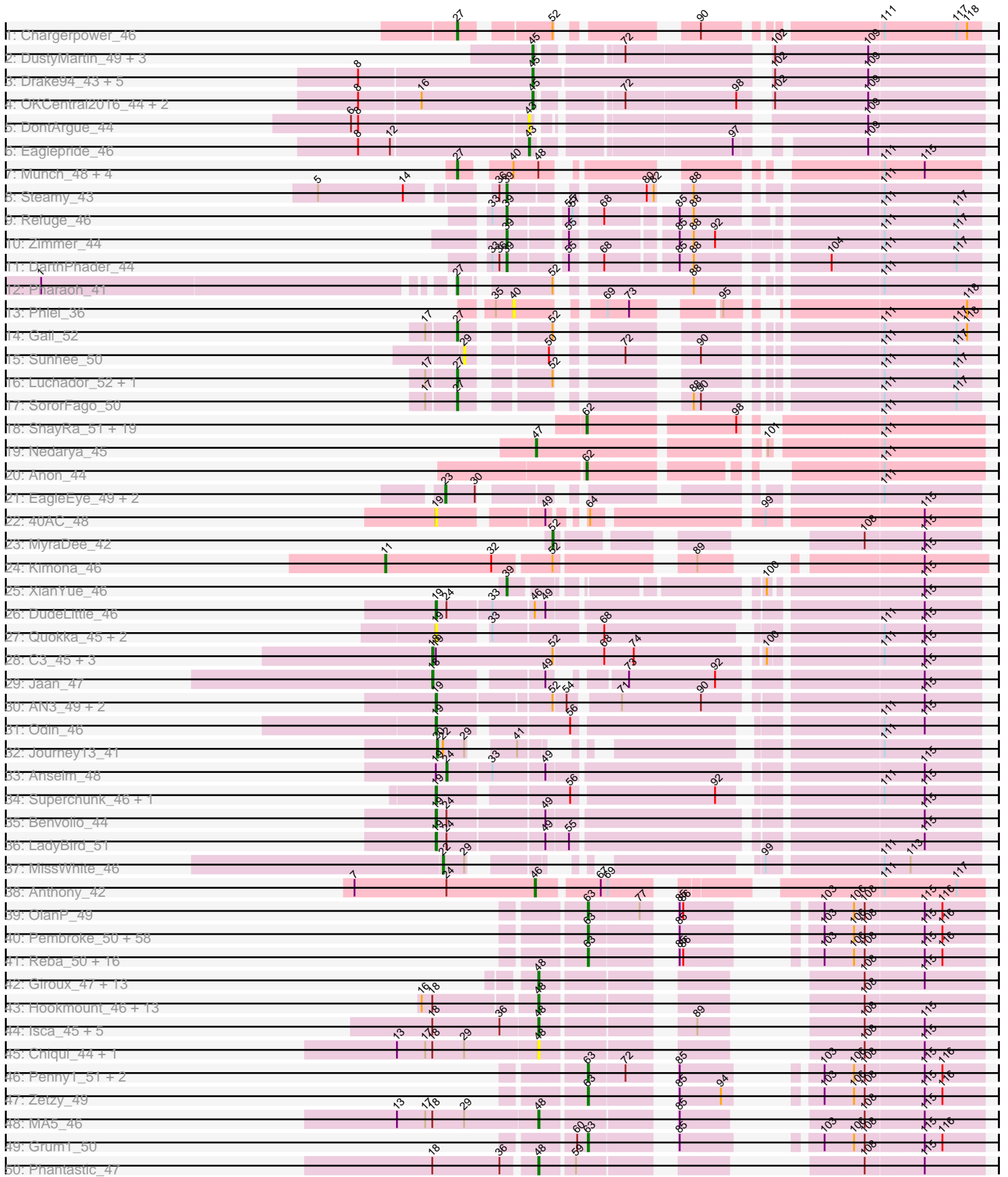
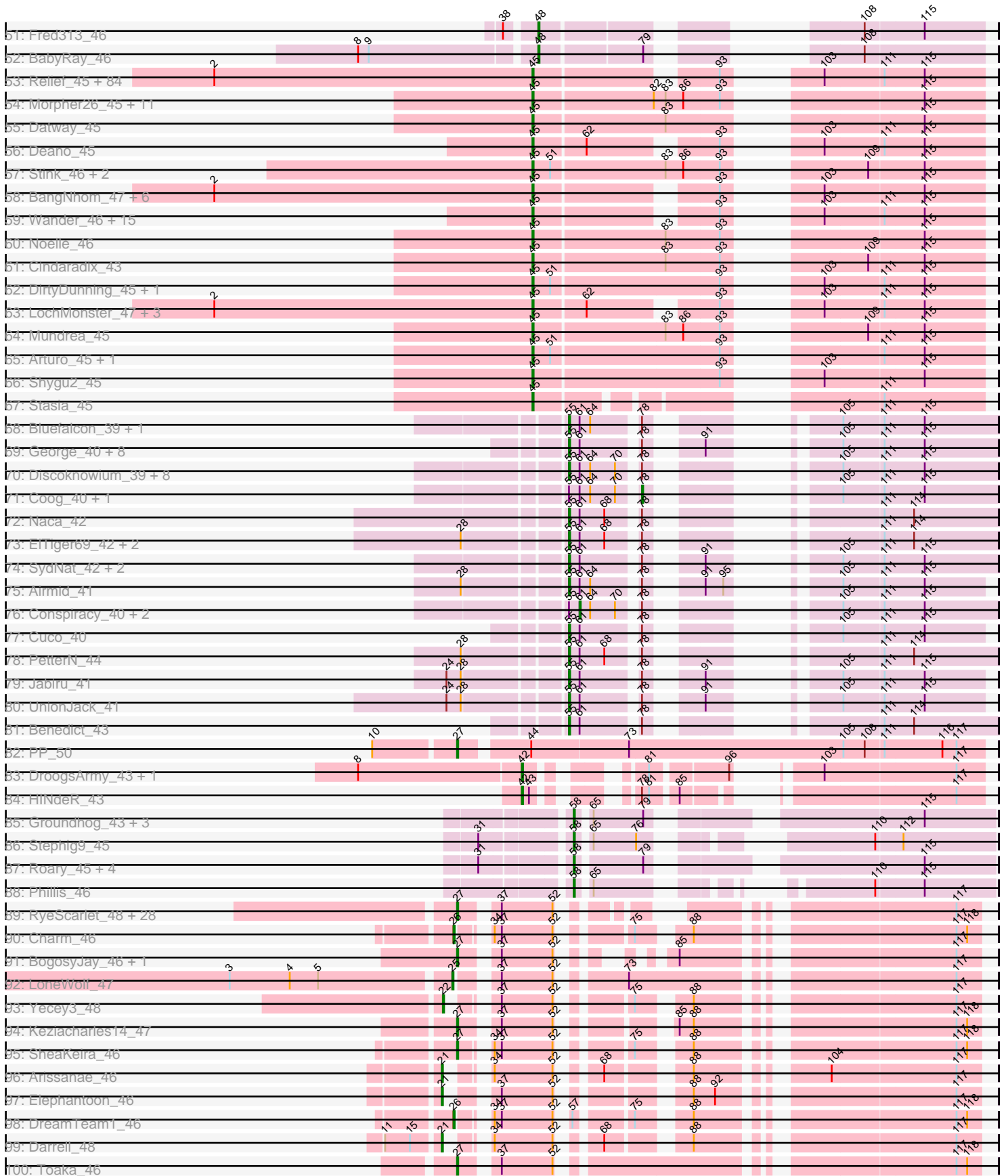


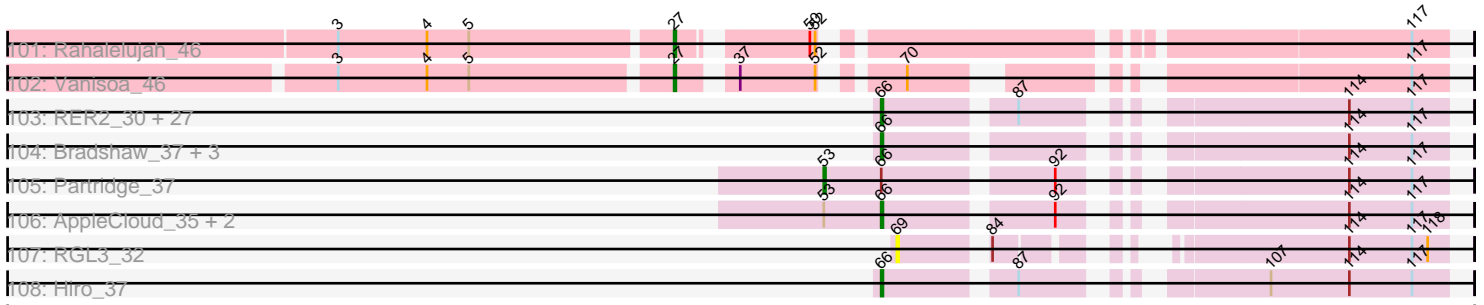
Pham 193640



Pham 193640



Pham 193640



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 193640 Report

This analysis was run 11/02/24 on database version 579.

Pham number 193640 has 476 members, 33 are drafts.

Phages represented in each track:

- Track 1 : Chargerpower\_46
- Track 2 : DustyMartin\_49, Shapes\_49, Rowdy\_49, RhynO\_46
- Track 3 : Drake94\_43, Trike\_43, Poompha\_44, Severus\_43, PeaceMeal1\_43, KittenMittens\_42
- Track 4 : OKCentral2016\_44, Chupacabra\_44, Goose\_45
- Track 5 : DontArgue\_44
- Track 6 : Eaglepride\_46
- Track 7 : Munch\_48, Bowtie\_48, Aneem\_48, Flaverint\_48, Joselito\_48
- Track 8 : Steamy\_43
- Track 9 : Refuge\_46
- Track 10 : Zimmer\_44
- Track 11 : DarthPhader\_44
- Track 12 : Pharaoh\_41
- Track 13 : Phlei\_36
- Track 14 : Gail\_52
- Track 15 : Sunhee\_50
- Track 16 : Luchador\_52, Jeeves\_52
- Track 17 : SororFago\_50
- Track 18 : ShayRa\_51, Soups\_50, Nebulosus\_49, Anaysia\_50, KatherineG\_51, Switzerland\_49, LastResort\_49, Epsocamisio\_48, Remus\_49, Looper\_50, ReMo\_49, Battleship\_50, Strosahl\_49, Boohoo\_50, DekHockey33\_50, Oofda\_50, Waits\_49, MinecraftSteve\_50, Rosalind\_48, JSwag\_48
- Track 19 : Nedarya\_45
- Track 20 : Anon\_44
- Track 21 : EagleEye\_49, Lucyedi\_48, PainterBoy\_48
- Track 22 : 40AC\_48
- Track 23 : MyraDee\_42
- Track 24 : Kimona\_46
- Track 25 : XianYue\_46
- Track 26 : DudeLittle\_46
- Track 27 : Quokka\_45, Bradman\_46, MajorMajor\_46
- Track 28 : C3\_45, AN9\_50, VC3\_50, ANI8\_50
- Track 29 : Jaan\_47
- Track 30 : AN3\_49, BengiVuitton\_48, VA6\_47
- Track 31 : Odin\_46
- Track 32 : Journey13\_41
- Track 33 : Anselm\_48

- Track 34 : Superchunk\_46, Caraxes\_47
- Track 35 : Benvolio\_44
- Track 36 : LadyBird\_51
- Track 37 : MissWhite\_46
- Track 38 : Anthony\_42
- Track 39 : OlanP\_49
- Track 40 : 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, JHC117\_50, Hercules11\_50, Microwolf\_50, Taurus\_51, Fernando\_50, Grif\_50, Colbster\_50, 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, Mainiac\_50, Cullens\_50, Malinsilva\_52, Phoxy\_50, Wooldri\_52, Spike509\_50, Sabia\_50, Lilith\_51, AugsMagnumOpus\_53, Snickers\_50, Phoebe\_51, Grub\_50, Dieselweasel\_51, Watson\_50, Bxz2\_46, PGHhamlin\_52
- Track 41 : Reba\_50, Marius\_51, HaveUMetTed\_51, Groupthink\_51, 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 42 : Giroux\_47, Heathen\_46, Kachowdy\_46, Idleandcovert\_47, SaturnRing\_47, Pistachio\_48, Puppy\_48, Scout\_46, BlueBird\_48, Bugatti\_47, Marchesa\_46, DropBear\_46, TNguyen7\_47, HeIDan\_46
- Track 43 : Hookmount\_46, Texage\_45, Pocahontas\_46, Popcicle\_46, Noella\_46, ResDef\_46, Margo\_46, QuinnKiro\_45, Norbert\_45, Veracruz\_45, Panamaxus\_44, Lambert1\_46, Caviar\_46, Todacoro\_46
- Track 44 : Isca\_45, JF4\_46, MK4\_46, JF2\_46, Rockstar\_46, B1\_43
- Track 45 : Chiqui\_44, BabyJohn\_44
- Track 46 : Penny1\_51, Beauxregard13\_50, EpicPhail\_51
- Track 47 : Zetzy\_49
- Track 48 : MA5\_46
- Track 49 : Grum1\_50
- Track 50 : Phantastic\_47
- Track 51 : Fred313\_46
- Track 52 : BabyRay\_46
- Track 53 : Relief\_45, Jaykayelowell\_44, Melvin\_48, HamSlice\_45, JetBlade\_46, Eapen\_46, 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, Iracema64\_47, Koreni\_45, Iceman\_46, Sparxx\_47, Pumbaa\_46, BubbleTrouble\_45, Kingmustik0402\_46, ICleared\_46, 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, Alberto7\_47, Connomayer\_46, KFPoly\_45, Scamp\_46, Druantia\_46, Eros\_46, LittleGuy\_46, Holli\_45, Citius\_46, Palestino\_45, Phontbonne\_46, Kampy\_46, OKaNui\_46, Ulysses\_45, Chaph\_46, TygerBlood\_46, TroyPia\_47, Millski\_45, Caelakin\_46, LittleB\_46, Medusa\_46, Sabertooth\_46, Wizard007\_46, Skipitt\_45, Lunsford\_47, Peaches\_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, YoSam321\_46, Taquarus\_46
- Track 54 : 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 55 : Datway\_45
- Track 56 : Deano\_45
- Track 57 : Stink\_46, AvatarAhPeg\_45, Miramae\_45
- Track 58 : BangNhom\_47, SheldonCooper\_48, Kremtemulon\_46, LHTSCC\_48, Obama12\_47, ChampagnePapi\_48, Cerulean\_47
- Track 59 : Wander\_46, Cocoaberry\_46, Gadost\_46, Avle17\_46, NotAPhaseMom\_46, Bruiser\_45, Houdini22\_46, BellusTerra\_47, Mazhar510\_46, Camperdownii\_44, Kyee\_46, Funston\_45, JoongJeon\_45, Phacado\_46, Nemo27\_46, Maverick\_46
- Track 60 : Noelle\_46
- Track 61 : Cindaradix\_43
- Track 62 : DirtyDunning\_45, Phighter1804\_46
- Track 63 : LochMonster\_47, Rosa24\_45, Romney\_46, Wilbur\_46
- Track 64 : Mundrea\_45
- Track 65 : Arturo\_45, Kratak\_46
- Track 66 : Shygu2\_45
- Track 67 : Stasia\_45
- Track 68 : Bluefalcon\_39, MarysWell\_39
- Track 69 : George\_40, Micasa\_42, HuhtaEnerson15\_41, Milcery\_41, LittleCherry\_41, Tarynearal\_39, Bonamassa\_41, Dublin\_39, Swirley\_43
- Track 70 : Discoknowium\_39, Lev2\_40, Aragog\_39, AgentM\_39, Archetta\_40, Phlorence\_39, ForGetIt\_40, Jovo\_40, PickleBack\_40
- Track 71 : Coog\_40, Midas2\_40
- Track 72 : Naca\_42
- Track 73 : EITiger69\_42, Scorpia\_44, Chadwick\_44
- Track 74 : SydNat\_42, Ghoulboy\_42, Zolita\_41
- Track 75 : Airmid\_41
- Track 76 : Conspiracy\_40, Tiger\_39, Theia\_38
- Track 77 : Cuco\_40
- Track 78 : PetterN\_44
- Track 79 : Jabiru\_41
- Track 80 : UnionJack\_41
- Track 81 : Benedict\_43
- Track 82 : PP\_50
- Track 83 : DroogsArmy\_43, Timshel\_45
- Track 84 : HINdeR\_43
- Track 85 : Groundhog\_43, Saintus\_39, Astro\_44, NearlyHeadless\_44
- Track 86 : Stephig9\_45
- Track 87 : Roary\_45, Smeadley\_45, Dixon\_44, Expelliarmus\_44, Danforth\_44
- Track 88 : Phillis\_46
- Track 89 : RyeScarlet\_48, Jiawan\_45, EmyBug\_46, PackMan\_46, Scherzo\_47, Fayely\_47, Sachima\_44, Eidsmoe\_47, Halex\_46, Myxus\_47, Ugenie5\_44, Conquerage\_47, Phonnegut\_47, Qobbit\_47, Pioneer\_47, Phaeder\_47, ExplosioNervosa\_47, 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 90 : Charm\_46
- Track 91 : BogosyJay\_46, Maminiaina\_46
- Track 92 : LoneWolf\_47
- Track 93 : Yecey3\_48
- Track 94 : Keziacharles14\_47
- Track 95 : SheaKeira\_46
- Track 96 : Arissanae\_46

- Track 97 : Elephantoon\_46
- Track 98 : DreamTeam1\_46
- Track 99 : Darrell\_48
- Track 100 : Toaka\_46
- Track 101 : Rahalelujah\_46
- Track 102 : Vanisoa\_46
- Track 103 : 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, Phrankenstien\_37, Belenaria\_37, Gollum\_37, Harlequin\_37, Swann\_37, CosmicSans\_37, TWAMP\_37, Alpacados\_36, Takoda\_37, Yoncess\_37, AngryOrchard\_35, Bonanza\_37
- Track 104 : Bradshaw\_37, StCroix\_37, Naiad\_37, Alatin\_37
- Track 105 : Partridge\_37
- Track 106 : AppleCloud\_35, Krishelle\_37, Dinger\_37
- Track 107 : RGL3\_32
- Track 108 : Hiro\_37

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

The start number called the most often in the published annotations is 45, it was called in 147 of the 443 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, Bumblebee11\_44, Burger\_44, Caelakin\_46, Camperdownii\_44, CentreCat\_46, Cerulean\_47, ChampagnePapi\_48, Chaph\_46, Chupacabra\_44, Cici\_45, Cindaradix\_43, Cintron\_45, Citius\_46, Clarenza\_45, Cocoaberry\_46, Commander\_46, Connomayer\_46, Datway\_45, Deano\_45, Dhanush\_46, DirtyDunning\_45, Drake94\_43, Druantia\_46, DustyMartin\_49, Eagle\_46, Eapen\_46, Eris\_45, Eros\_46, Eurydice\_47, Florean\_46, Flux\_46, Funston\_45, Gadost\_46, Goose\_45, HamSlice\_45, Happiness\_45, Holli\_45, Houdini22\_46, ICleared\_46, Iceman\_46, Iracema64\_47, Jaykayelowell\_44, JetBlade\_46, JoongJeon\_45, KFPoly\_45, Kampy\_46, Katalie136\_45, Kingmustik0402\_46, KittenMittens\_42, Koreni\_45, Kratark\_46, Kremtemulon\_46, Kyee\_46, LHTSCC\_48, LappelDuVide\_46, Lemur\_46, LeoAvram\_46, LittleB\_46, LittleGuy\_46, LochMonster\_47, Lorenzo\_46, Lunsford\_47, Maverick\_46, Maxo\_47, 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, NotAPhaseMom\_46, Nyxis\_46, OKCentral2016\_44, 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, Relief\_45, RhynO\_46, Romney\_46, Roosevelt\_45, Rosa24\_45, Rowdy\_49, Ruin\_46, Sabertooth\_46, Scamp\_46, Severus\_43, Shaka\_46, Shapes\_49, SheldonCooper\_48, Shygu2\_45, Skipitt\_45, Sparxx\_47, Spino\_45, Stasia\_45, Stink\_46, Taquarus\_46, Thanksgivukkah\_45, TinaFeyge\_46, Tinybot\_45, TiroTheta9\_46, Trike\_43, TroyPia\_47, TygerBlood\_46, Ulysses\_45, Wander\_46, Wilbur\_46, Wile\_45, Wizard007\_46, Xena\_44, YoSam321\_46,

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

- 

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

- 40AC\_48, ACFishhook\_49, AN3\_49, AN9\_50, ANI8\_50, AgentM\_39, Aglet\_51, AgronaGT15\_49, Airmid\_41, Alatin\_37, Aliter\_47, Alma\_47, Alpacados\_36, Anaysia\_50, Aneem\_48, AngryOrchard\_35, Anon\_44, Anselm\_48, Anthony\_42, Anubis\_53, AppleCloud\_35, Aragog\_39, Archetta\_40, Arissanae\_46, Astro\_44, AugsMagnumOpus\_53, B1\_43, BabyJohn\_44, BabyRay\_46, Battleship\_50, Beauxregard13\_50, Beemo\_47, Belenaria\_37, Benedict\_43, BengiVuitton\_48, Benvolio\_44, BlueBird\_48, Bluefalcon\_39, BobbyDazzler\_37, BogosyJay\_46, Bonamassa\_41, Bonanza\_37, Boohoo\_50, Bowtie\_48, Bradman\_46, Bradshaw\_37, BreSam8\_50, Bryce\_37, Bugatti\_47, BuzzBuzz\_48, Bxz2\_46, C3\_45, Caraxes\_47, Catalina\_48, Caviar\_46, Chadwick\_44, Chargerpower\_46, Charm\_46, Chiqui\_44, Colbster\_50, Conquerage\_47, Conspiracy\_40, Coog\_40, CosmicSans\_37, Cuco\_40, Cullens\_50, DaHudson\_50, Daishi\_49, Danforth\_44, Darrell\_48, DarthPhader\_44, DekHockey33\_50, Dieselweasel\_51, Dinger\_37, Discoknowium\_39, Dixon\_44, DontArgue\_44, DreamTeam1\_46, DroogsArmy\_43, DropBear\_46, Dublin\_39, DudeLittle\_46, EagleEye\_49, Eaglepride\_46, EdogawaKiddo\_45, Eidsmoe\_47, EITiger69\_42, Elephantoon\_46, EmyBug\_46, EpicPhail\_51, Epsocamisio\_48, Erik\_37, Espica\_37, Expelliarmus\_44, ExplosioNervosa\_47, Farber\_50, Fayely\_47, Fernando\_50, Flaverint\_48, ForGetIt\_40, Fred313\_46, Gail\_52, Gemma\_49, George\_40, Ghoulyboy\_42, GingkoMaracino\_50, Giroux\_47, Gollum\_37, Grif\_50, Groundhog\_43, Groupthink\_51, Grub\_50, Grum1\_50, GtownJaz\_50, HINdeR\_43, Hanray\_45, Harlequin\_37, HashRod\_51, HaveUMetTed\_51, Heathen\_46, HelDan\_46, Heliosoles\_49, Hercules11\_50, Hiro\_37, Horex\_46, Hookmount\_46, HortumSL17\_47, HuhtaEnerson15\_41, Idleandcovert\_47, Isca\_45, JF2\_46, JF4\_46, JHC117\_50, JSwag\_48, Jaan\_47, Jabiru\_41, Jeeves\_52, JenCasNa\_51, JeppNRM\_51, Jester\_37, Jiawan\_45, Jobu08\_49, Joselito\_48, Journey13\_41, Jovo\_40, KADY\_50, Kachowdy\_46, Kalb97\_51, Kalnoky\_51, KatherineG\_51, Keziacharles14\_47, Kimona\_46, Krishelle\_37, LBerry\_51, LadyBird\_51, Lambert1\_46, LarryKay\_50, LastResort\_49, Lev2\_40, Lilith\_51, Lilleskat\_45, Lillie\_37, LittleCherry\_41, LoneWolf\_47, Looper\_50, Louie6\_49, Luchador\_52, Lucyedi\_48, LugYA\_53, MA5\_46, MK4\_46, MadMarie\_50, Mainiac\_50, MajorMajor\_46, Malinsilva\_52, Maminiaina\_46, Manu\_50, MarQuardt\_50, Marchesa\_46, Margo\_46, Marie\_50, Marius\_51, MarysWell\_39, Methuselah\_47, Micasa\_42, Microwolf\_50, Midas2\_40, Milcery\_41, MinecraftSteve\_50, Misomonster\_51, MissWhite\_46, MoneyMay\_50, MuchMore\_53, Munch\_48, MyraDee\_42, Myxus\_47, Naca\_42, Naiad\_37, Nancinator\_37, Natosaleda\_37, NearlyHeadless\_44, Nebulosus\_49, Nedarya\_45, Noella\_46, Norbert\_45, Odin\_46, OlanP\_49, Ollie\_50, Onglai\_45, Oofda\_50, P28Green\_51, PGHhamlin\_52, PP\_50, PackMan\_46, PainterBoy\_48, Panamaxus\_44, Partridge\_37, Pawn\_50, Pembroke\_50, Penny1\_51, PetterN\_44, Phaeder\_47, PhailMary\_36, Phantastic\_47, Pharaoh\_41, Phillis\_46, PhishRPhriends\_48, Phlei\_36, Phlorence\_39, Phoebe\_51, Phonnegut\_47, Phoxy\_50, Phrankenstein\_37, Phranny\_51, PickleBack\_40, Pioneer\_47, Pistachio\_48, Pocahontas\_46, Popcicle\_46, PotatoSplit\_52, Priya\_47, Puppy\_48, PurpleHaze\_50, Qobbit\_47, QuinnKiro\_45, Quokka\_45, RER2\_30, RGL3\_32, Rahalelujah\_46, Rasputin\_37, ReMo\_49, Reba\_50, Refuge\_46, Remus\_49, ResDef\_46, RexFury\_37, Rhodalysa\_37, Roary\_45, Rockstar\_46, Rosalind\_48, Rummer\_49, RyeScarlet\_48, Sabia\_50, Sabinator\_49, Sachima\_44, Saintus\_39, SaturnRing\_47, Scherzo\_47, Scorpia\_44, Scout\_46, ShayRa\_51, SheaKeira\_46, Shuman\_37, Smeadley\_45, 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, Superchunk\_46, Swann\_37, Swirley\_43, Switzerland\_49, SydNat\_42, TNguyen7\_47, TWAMP\_37, Takoda\_37, Tarynearal\_39, Taurus\_51, Texage\_45, Theia\_38, Tiffany\_50, Tiger\_39, Timshel\_45, Toaka\_46, Todacoro\_46, Tubs\_47, Ugenie5\_44, UhSalsa\_37, UnionJack\_41, VA6\_47, VC3\_50, Vanisoa\_46, Veracruz\_45, Vix\_50, Waits\_49, Watson\_50, Wooldri\_52, XianYue\_46, Yecey3\_48, Yogi\_37, Yoncess\_37, Zetzy\_49, Zimmer\_44, Zolita\_41,

### Summary by start number:

#### Start 11:

- Found in 2 of 476 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 443
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Kimona\_46 (A19),

#### Start 18:

- Found in 29 of 476 ( 6.1% ) of genes in pham
- Manual Annotations of this start: 5 of 443
- Called 17.2% of time when present
- Phage (with cluster) where this start called: AN9\_50 (A2), ANI8\_50 (A2), C3\_45 (A2), Jaan\_47 (A2), VC3\_50 (A2),

#### Start 19:

- Found in 18 of 476 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 8 of 443
- Called 72.2% of time when present
- Phage (with cluster) where this start called: 40AC\_48 (A17), AN3\_49 (A2), BengiVuitton\_48 (A2), Benvolio\_44 (A2), Bradman\_46 (A2), Caraxes\_47 (A2), DudeLittle\_46 (A2), LadyBird\_51 (A2), MajorMajor\_46 (A2), Odin\_46 (A2), Quokka\_45 (A2), Superchunk\_46 (A2), VA6\_47 (A2),

#### Start 20:

- Found in 1 of 476 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 443
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Journey13\_41 (A2),

#### Start 21:

- Found in 3 of 476 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 3 of 443
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arissanee\_46 (A9), Darrell\_48 (A9), Elephantoon\_46 (A9),

#### Start 22:

- Found in 3 of 476 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 2 of 443
- Called 66.7% of time when present
- Phage (with cluster) where this start called: MissWhite\_46 (A2), Yecey3\_48 (A9),

#### Start 23:

- Found in 3 of 476 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 3 of 443
- Called 100.0% of time when present
- Phage (with cluster) where this start called: EagleEye\_49 (A16), Lucyedi\_48 (A16), PainterBoy\_48 (A16),

#### Start 24:

- Found in 7 of 476 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 443
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Anselm\_48 (A2),

#### Start 25:

- Found in 1 of 476 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 443
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LoneWolf\_47 (A9),

#### Start 26:

- Found in 2 of 476 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 2 of 443
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Charm\_46 (A9), DreamTeam1\_46 (A9),

#### Start 27:

- Found in 48 of 476 ( 10.1% ) of genes in pham
- Manual Annotations of this start: 40 of 443
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aliter\_47 (A9), Alma\_47 (A9), Aneem\_48 (A11), Beemo\_47 (A9), BogosyJay\_46 (A9), Bowtie\_48 (A11), Catalina\_48 (A9), Chargerpower\_46 (A), Conquerage\_47 (A9), EdogawaKiddo\_45 (A9), Eidsmoe\_47 (A9), EmyBug\_46 (A9), ExplosioNervosa\_47 (A9), Fayely\_47 (A9), Flaverint\_48 (A11), Gail\_52 (A14), Hanray\_45 (A9), Horex\_46 (A9), HortumSL17\_47 (A9), Jeeves\_52 (A14), Jiawan\_45 (A9), Joselito\_48 (A11), Keziacharles14\_47 (A9), Lilleskat\_45 (A9), Luchador\_52 (A14), Maminina\_46 (A9), Munch\_48 (A11), Myxus\_47 (A9), Onglai\_45 (A9), PP\_50 (A7), PackMan\_46 (A9), Phaeder\_47 (A9), Pharaoh\_41 (A12), Phonnegut\_47 (A9), Pioneer\_47 (A9), Priya\_47 (A9), Qobbit\_47 (A9), Rahalelujah\_46 (A9), RyeScarlet\_48 (A9), Sachima\_44 (A9), Scherzo\_47 (A9), SheaKeira\_46 (A9), SororFago\_50 (A14), Spouty\_47 (A9), Toaka\_46 (A9), Tubs\_47 (A9), Ugenie5\_44 (A9), Vanisoa\_46 (A9),

#### Start 29:

- Found in 6 of 476 ( 1.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Sunhee\_50 (A14),

#### Start 39:

- Found in 5 of 476 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 5 of 443
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DARTHPhader\_44 (A12), Refuge\_46 (A12), Steamy\_43 (A12), XianYue\_46 (A2), Zimmer\_44 (A12),

Start 40:

- Found in 6 of 476 ( 1.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Phlei\_36 (A13),

Start 42:

- Found in 3 of 476 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 3 of 443
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DroogsArmy\_43 (A7), HINdeR\_43 (A7), Timshel\_45 (A7),

Start 43:

- Found in 3 of 476 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 443
- Called 66.7% of time when present
- Phage (with cluster) where this start called: DontArgue\_44 (A10), Eaglepride\_46 (A10),

Start 45:

- Found in 151 of 476 ( 31.7% ) of genes in pham
- Manual Annotations of this start: 147 of 443
- Called 100.0% 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), Bumblebee11\_44 (A4), Burger\_44 (A4), Caelakin\_46 (A4), Camperdownii\_44 (A4), CentreCat\_46 (A4), Cerulean\_47 (A4), ChampagnePapi\_48 (A4), Chaph\_46 (A4), Chupacabra\_44 (A10), 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), Drake94\_43 (A10), Druantia\_46 (A4), DustyMartin\_49 (A10), 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), Goose\_45 (A10), HamSlice\_45 (A4), Happiness\_45 (A4), Holli\_45 (A4), Houdini22\_46 (A4), ICleared\_46 (A4), Iceman\_46 (A4), Iracema64\_47 (A4), Jaykayelowell\_44 (A4), JetBlade\_46 (A4), JoongJeon\_45 (A4), KFPoly\_45 (A4), Kamy\_46 (A4), Katalie136\_45 (A4), Kingmustik0402\_46 (A4), KittenMittens\_42 (A10), Koreni\_45 (A4), Kratak\_46 (A4), Kremtemulon\_46 (A4), 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), 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), NotAPhaseMom\_46 (A4), Nyxis\_46 (A4), OKCentral2016\_44 (A10), 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), Relief\_45 (A4), RhynO\_46 (A10), Romney\_46 (A4), Roosevelt\_45 (A4), Rosa24\_45 (A4), Rowdy\_49 (A10), Ruin\_46 (A4), Sabertooth\_46 (A4), Scamp\_46 (A4), Severus\_43 (A10), Shaka\_46 (A4), Shapes\_49 (A10), SheldonCooper\_48 (A4), Shygu2\_45 (A4), Skipitt\_45 (A4), Sparxx\_47 (A4), Spino\_45 (A4), Stasia\_45 (A4), Stink\_46 (A4), Taquarus\_46 (A4), Thanksgivukkah\_45 (A4), TinaFeyge\_46 (A4), Tinybot\_45 (A4), TiroTheta9\_46 (A4), Trike\_43 (A10), TroyPia\_47 (A4), TygerBlood\_46 (A4), Ulysses\_45 (A4), Wander\_46 (A4), Wilbur\_46 (A4), Wile\_45 (A4), Wizard007\_46 (A4), Xena\_44 (A4), YoSam321\_46 (A4),

Start 46:

- Found in 2 of 476 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 443
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Anthony\_42 (A20),

Start 47:

- Found in 1 of 476 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 443
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Nedarya\_45 (A15),

Start 48:

- Found in 45 of 476 ( 9.5% ) of genes in pham
- Manual Annotations of this start: 32 of 443
- Called 88.9% 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), Caviar\_46 (A3), Chiqui\_44 (A3), DropBear\_46 (A3), Fred313\_46 (A3), Giroux\_47 (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), Pistachio\_48 (A3), Pocahontas\_46 (A3), Popcicle\_46 (A3), Puppy\_48 (A3), QuinnKiro\_45 (A3), ResDef\_46 (A3), Rockstar\_46 (A3), SaturnRing\_47 (A3), Scout\_46 (A3), TNguyen7\_47 (A3), Texage\_45 (A3), Todacoro\_46 (A3), Veracruz\_45 (A3),

Start 52:

- Found in 57 of 476 ( 12.0% ) of genes in pham
- Manual Annotations of this start: 1 of 443
- Called 1.8% of time when present
- Phage (with cluster) where this start called: MyraDee\_42 (A18),

Start 53:

- Found in 4 of 476 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 443
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Partridge\_37 (CA),

Start 55:

- Found in 42 of 476 ( 8.8% ) of genes in pham
- Manual Annotations of this start: 33 of 443
- Called 78.6% of time when present

- Phage (with cluster) where this start called: AgentM\_39 (A5), Airmid\_41 (A5), Aragog\_39 (A5), Archetta\_40 (A5), Benedict\_43 (A5), Bluefalcon\_39 (A5), Bonamassa\_41 (A5), Chadwick\_44 (A5), Cuco\_40 (A5), Discoknowium\_39 (A5), Dublin\_39 (A5), ElTiger69\_42 (A5), ForGetIt\_40 (A5), George\_40 (A5), Ghouboy\_42 (A5), HuhtaEnerson15\_41 (A5), Jabiru\_41 (A5), Jovo\_40 (A5), Lev2\_40 (A5), LittleCherry\_41 (A5), MarysWell\_39 (A5), Micasa\_42 (A5), Milcery\_41 (A5), Naca\_42 (A5), PetterN\_44 (A5), Phlorence\_39 (A5), PickleBack\_40 (A5), Scorpia\_44 (A5), Swirley\_43 (A5), SydNat\_42 (A5), Tarynearal\_39 (A5), UnionJack\_41 (A5), Zolita\_41 (A5),

#### Start 58:

- Found in 11 of 476 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 11 of 443
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Astro\_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 61:

- Found in 38 of 476 ( 8.0% ) of genes in pham
- Manual Annotations of this start: 3 of 443
- Called 7.9% of time when present
- Phage (with cluster) where this start called: Conspiracy\_40 (A5), Theia\_38 (A5), Tiger\_39 (A5),

#### Start 62:

- Found in 26 of 476 ( 5.5% ) of genes in pham
- Manual Annotations of this start: 20 of 443
- Called 80.8% 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), Epsocamisio\_48 (A15), JSwag\_48 (A15), KatherineG\_51 (A15), LastResort\_49 (A15), Looper\_50 (A15), MinecraftSteve\_50 (A15), Nebulosus\_49 (A15), Oofda\_50 (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),

#### Start 63:

- Found in 82 of 476 ( 17.2% ) of genes in pham
- Manual Annotations of this start: 80 of 443
- 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), BreSam8\_50 (A3), BuzzBuzz\_48 (A3), Bxz2\_46 (A3), Colbster\_50 (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), 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), 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), 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), Vix\_50 (A3), Watson\_50 (A3), Wooldri\_52 (A3), Zetzy\_49 (A3),

Start 66:

- Found in 37 of 476 ( 7.8% ) of genes in pham
- Manual Annotations of this start: 35 of 443
- Called 97.3% 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), Phrankenstien\_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 69:

- Found in 3 of 476 ( 0.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: RGL3\_32 (CA),

Start 78:

- Found in 39 of 476 ( 8.2% ) of genes in pham
- Manual Annotations of this start: 2 of 443
- Called 5.1% of time when present
- Phage (with cluster) where this start called: Coog\_40 (A5), Midas2\_40 (A5),

### Summary by clusters:

There are 20 clusters represented in this pham: A15, A14, A17, A16, A11, A10, A13, A12, CA, A19, A18, A20, A3, A2, A5, A4, A7, A9, A8, A,

Info for manual annotations of cluster A:

- Start number 27 was manually annotated 1 time for cluster A.

Info for manual annotations of cluster A10:

- Start number 43 was manually annotated 1 time for cluster A10.
- Start number 45 was manually annotated 10 times for cluster A10.

Info for manual annotations of cluster A11:

- Start number 27 was manually annotated 5 times for cluster A11.

Info for manual annotations of cluster A12:

- Start number 27 was manually annotated 1 time for cluster A12.
- Start number 39 was manually annotated 4 times for cluster A12.

Info for manual annotations of cluster A14:

- Start number 27 was manually annotated 4 times for cluster A14.

Info for manual annotations of cluster A15:

- Start number 47 was manually annotated 1 time for cluster A15.
- Start number 62 was manually annotated 20 times for cluster A15.

Info for manual annotations of cluster A16:

- Start number 23 was manually annotated 3 times for cluster A16.

Info for manual annotations of cluster A18:

- Start number 52 was manually annotated 1 time for cluster A18.

Info for manual annotations of cluster A19:

- Start number 11 was manually annotated 1 time for cluster A19.

Info for manual annotations of cluster A2:

- Start number 18 was manually annotated 5 times for cluster A2.
- Start number 19 was manually annotated 8 times for cluster A2.
- Start number 20 was manually annotated 1 time for cluster A2.
- Start number 22 was manually annotated 1 time for cluster A2.
- Start number 24 was manually annotated 1 time for cluster A2.
- Start number 39 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster A20:

- Start number 46 was manually annotated 1 time for cluster A20.

Info for manual annotations of cluster A3:

- Start number 48 was manually annotated 32 times for cluster A3.
- Start number 63 was manually annotated 80 times for cluster A3.

Info for manual annotations of cluster A4:

- Start number 45 was manually annotated 137 times for cluster A4.

Info for manual annotations of cluster A5:

- Start number 55 was manually annotated 33 times for cluster A5.
- Start number 61 was manually annotated 3 times for cluster A5.
- Start number 78 was manually annotated 2 times for cluster A5.

Info for manual annotations of cluster A7:

- Start number 27 was manually annotated 1 time for cluster A7.
- Start number 42 was manually annotated 3 times for cluster A7.

Info for manual annotations of cluster A8:

- Start number 58 was manually annotated 11 times for cluster A8.

Info for manual annotations of cluster A9:

- Start number 21 was manually annotated 3 times for cluster A9.
- Start number 22 was manually annotated 1 time for cluster A9.
- Start number 25 was manually annotated 1 time for cluster A9.

- Start number 26 was manually annotated 2 times for cluster A9.
- Start number 27 was manually annotated 28 times for cluster A9.

Info for manual annotations of cluster CA:

- Start number 53 was manually annotated 1 time for cluster CA.
- Start number 66 was manually annotated 35 times for cluster CA.

### **Gene Information:**

Gene: 40AC\_48 Start: 33450, Stop: 33055, Start Num: 19

Candidate Starts for 40AC\_48:

(Start: 19 @33450 has 8 MA's), (49, 33372), (64, 33354), (99, 33225), (115, 33102),

Gene: ACFishhook\_49 Start: 32280, Stop: 32032, Start Num: 63

Candidate Starts for ACFishhook\_49:

(Start: 63 @32280 has 80 MA's), (85, 32226), (86, 32223), (103, 32163), (106, 32139), (108, 32130), (115, 32082), (116, 32067),

Gene: AN3\_49 Start: 32806, Stop: 32393, Start Num: 19

Candidate Starts for AN3\_49:

(Start: 19 @32806 has 8 MA's), (Start: 52 @32716 has 1 MA's), (54, 32707), (71, 32671), (90, 32605), (115, 32440),

Gene: AN9\_50 Start: 32346, Stop: 31912, Start Num: 18

Candidate Starts for AN9\_50:

(Start: 18 @32346 has 5 MA's), (Start: 19 @32343 has 8 MA's), (Start: 52 @32244 has 1 MA's), (68, 32202), (74, 32178), (100, 32079), (111, 31992), (115, 31959),

Gene: ANI8\_50 Start: 32346, Stop: 31912, Start Num: 18

Candidate Starts for ANI8\_50:

(Start: 18 @32346 has 5 MA's), (Start: 19 @32343 has 8 MA's), (Start: 52 @32244 has 1 MA's), (68, 32202), (74, 32178), (100, 32079), (111, 31992), (115, 31959),

Gene: AbbysRanger\_45 Start: 31867, Stop: 31544, Start Num: 45

Candidate Starts for AbbysRanger\_45:

(Start: 45 @31867 has 147 MA's), (82, 31768), (83, 31759), (86, 31744), (93, 31714), (115, 31594),

Gene: Abdiel\_46 Start: 31881, Stop: 31579, Start Num: 45

Candidate Starts for Abdiel\_46:

(2, 32151), (Start: 45 @31881 has 147 MA's), (93, 31749), (103, 31710), (111, 31662), (115, 31629),

Gene: Achebe\_44 Start: 31850, Stop: 31527, Start Num: 45

Candidate Starts for Achebe\_44:

(Start: 45 @31850 has 147 MA's), (82, 31751), (83, 31742), (86, 31727), (93, 31697), (115, 31577),

Gene: AgentM\_39 Start: 30764, Stop: 30501, Start Num: 55

Candidate Starts for AgentM\_39:

(Start: 55 @30764 has 33 MA's), (Start: 61 @30755 has 3 MA's), (64, 30746), (70, 30725), (Start: 78 @30713 has 2 MA's), (105, 30629), (111, 30596), (115, 30563),

Gene: Aglet\_51 Start: 32309, Stop: 32061, Start Num: 63



Candidate Starts for Aglet\_51:

(Start: 63 @32309 has 80 MA's), (85, 32255), (103, 32192), (106, 32168), (108, 32159), (115, 32111), (116, 32096),

Gene: AgronaGT15\_49 Start: 32160, Stop: 31912, Start Num: 63

Candidate Starts for AgronaGT15\_49:

(Start: 63 @32160 has 80 MA's), (85, 32106), (103, 32043), (106, 32019), (108, 32010), (115, 31962), (116, 31947),

Gene: Airmid\_41 Start: 30823, Stop: 30572, Start Num: 55

Candidate Starts for Airmid\_41:

(28, 30901), (Start: 55 @30823 has 33 MA's), (Start: 61 @30814 has 3 MA's), (64, 30805), (Start: 78 @30772 has 2 MA's), (91, 30742), (95, 30727), (105, 30688), (111, 30655), (115, 30622),

Gene: Alatin\_37 Start: 28461, Stop: 28189, Start Num: 66

Candidate Starts for Alatin\_37:

(Start: 66 @28461 has 35 MA's), (114, 28245), (117, 28209),

Gene: Albee\_46 Start: 31880, Stop: 31578, Start Num: 45

Candidate Starts for Albee\_46:

(2, 32150), (Start: 45 @31880 has 147 MA's), (93, 31748), (103, 31709), (111, 31661), (115, 31628),

Gene: Alberto7\_47 Start: 32217, Stop: 31915, Start Num: 45

Candidate Starts for Alberto7\_47:

(2, 32487), (Start: 45 @32217 has 147 MA's), (93, 32085), (103, 32046), (111, 31998), (115, 31965),

Gene: Aliter\_47 Start: 32037, Stop: 31711, Start Num: 27

Candidate Starts for Aliter\_47:

(Start: 27 @32037 has 40 MA's), (37, 32013), (Start: 52 @31971 has 1 MA's), (117, 31731),

Gene: Alma\_47 Start: 32160, Stop: 31834, Start Num: 27

Candidate Starts for Alma\_47:

(Start: 27 @32160 has 40 MA's), (37, 32136), (Start: 52 @32094 has 1 MA's), (117, 31854),

Gene: Alpacados\_36 Start: 28366, Stop: 28094, Start Num: 66

Candidate Starts for Alpacados\_36:

(Start: 66 @28366 has 35 MA's), (87, 28300), (114, 28150), (117, 28114),

Gene: Anaysia\_50 Start: 30853, Stop: 30560, Start Num: 62

Candidate Starts for Anaysia\_50:

(Start: 62 @30853 has 20 MA's), (98, 30736), (111, 30643),

Gene: Aneem\_48 Start: 31705, Stop: 31358, Start Num: 27

Candidate Starts for Aneem\_48:

(Start: 27 @31705 has 40 MA's), (40, 31672), (Start: 48 @31651 has 32 MA's), (111, 31438), (115, 31405),

Gene: AngryOrchard\_35 Start: 28325, Stop: 28053, Start Num: 66

Candidate Starts for AngryOrchard\_35:

(Start: 66 @28325 has 35 MA's), (87, 28259), (114, 28109), (117, 28073),

Gene: Annyong\_46 Start: 31925, Stop: 31623, Start Num: 45

Candidate Starts for Annyong\_46:

(2, 32195), (Start: 45 @31925 has 147 MA's), (93, 31793), (103, 31754), (111, 31706), (115, 31673),

Gene: Anon\_44 Start: 29643, Stop: 29365, Start Num: 62

Candidate Starts for Anon\_44:

(Start: 62 @29643 has 20 MA's), (111, 29448),

Gene: Anselm\_48 Start: 32523, Stop: 32110, Start Num: 24

Candidate Starts for Anselm\_48:

(Start: 19 @32532 has 8 MA's), (Start: 24 @32523 has 1 MA's), (33, 32487), (49, 32445), (115, 32157),

Gene: Anthony\_42 Start: 29795, Stop: 29478, Start Num: 46

Candidate Starts for Anthony\_42:

(7, 29948), (Start: 24 @29870 has 1 MA's), (Start: 46 @29795 has 1 MA's), (67, 29747), (69, 29741), (111, 29561), (117, 29501),

Gene: Anubis\_53 Start: 32195, Stop: 31947, Start Num: 63

Candidate Starts for Anubis\_53:

(Start: 63 @32195 has 80 MA's), (85, 32141), (103, 32078), (106, 32054), (108, 32045), (115, 31997), (116, 31982),

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

Candidate Starts for AppleCloud\_35:

(Start: 53 @28369 has 1 MA's), (Start: 66 @28336 has 35 MA's), (92, 28249), (114, 28120), (117, 28084),

Gene: Aragog\_39 Start: 30794, Stop: 30531, Start Num: 55

Candidate Starts for Aragog\_39:

(Start: 55 @30794 has 33 MA's), (Start: 61 @30785 has 3 MA's), (64, 30776), (70, 30755), (Start: 78 @30743 has 2 MA's), (105, 30659), (111, 30626), (115, 30593),

Gene: Archetta\_40 Start: 31324, Stop: 31061, Start Num: 55

Candidate Starts for Archetta\_40:

(Start: 55 @31324 has 33 MA's), (Start: 61 @31315 has 3 MA's), (64, 31306), (70, 31285), (Start: 78 @31273 has 2 MA's), (105, 31189), (111, 31156), (115, 31123),

Gene: Arissanae\_46 Start: 32694, Stop: 32350, Start Num: 21

Candidate Starts for Arissanae\_46:

(Start: 21 @32694 has 3 MA's), (34, 32679), (Start: 52 @32631 has 1 MA's), (68, 32610), (88, 32556), (104, 32472), (117, 32370),

Gene: Arturo\_45 Start: 32157, Stop: 31834, Start Num: 45

Candidate Starts for Arturo\_45:

(Start: 45 @32157 has 147 MA's), (51, 32142), (93, 32004), (111, 31917), (115, 31884),

Gene: Astro\_44 Start: 31145, Stop: 30849, Start Num: 58

Candidate Starts for Astro\_44:

(Start: 58 @31145 has 11 MA's), (65, 31136), (79, 31094), (115, 30908),

Gene: AugsMagnumOpus\_53 Start: 32300, Stop: 32052, Start Num: 63

Candidate Starts for AugsMagnumOpus\_53:

(Start: 63 @32300 has 80 MA's), (85, 32246), (103, 32183), (106, 32159), (108, 32150), (115, 32102), (116, 32087),

Gene: AvatarAhPeg\_45 Start: 32379, Stop: 32056, Start Num: 45  
Candidate Starts for AvatarAhPeg\_45:  
(Start: 45 @32379 has 147 MA's), (51, 32364), (83, 32271), (86, 32256), (93, 32226), (109, 32151),  
(115, 32106),

Gene: Avle17\_46 Start: 31877, Stop: 31575, Start Num: 45  
Candidate Starts for Avle17\_46:  
(Start: 45 @31877 has 147 MA's), (93, 31745), (103, 31706), (111, 31658), (115, 31625),

Gene: B1\_43 Start: 31013, Stop: 30738, Start Num: 48  
Candidate Starts for B1\_43:  
(Start: 18 @31100 has 5 MA's), (36, 31043), (Start: 48 @31013 has 32 MA's), (89, 30908), (108,  
30836), (115, 30788),

Gene: Baby16\_46 Start: 31891, Stop: 31589, Start Num: 45  
Candidate Starts for Baby16\_46:  
(2, 32161), (Start: 45 @31891 has 147 MA's), (93, 31759), (103, 31720), (111, 31672), (115, 31639),

Gene: BabyJohn\_44 Start: 31805, Stop: 31530, Start Num: 48  
Candidate Starts for BabyJohn\_44:  
(13, 31922), (17, 31898), (Start: 18 @31892 has 5 MA's), (29, 31865), (Start: 48 @31805 has 32  
MA's), (108, 31628), (115, 31580),

Gene: BabyRay\_46 Start: 31749, Stop: 31474, Start Num: 48  
Candidate Starts for BabyRay\_46:  
(8, 31890), (9, 31881), (Start: 48 @31749 has 32 MA's), (79, 31668), (108, 31572),

Gene: Backyardigan\_44 Start: 31883, Stop: 31560, Start Num: 45  
Candidate Starts for Backyardigan\_44:  
(Start: 45 @31883 has 147 MA's), (82, 31784), (83, 31775), (86, 31760), (93, 31730), (115, 31610),

Gene: Badger\_44 Start: 31851, Stop: 31528, Start Num: 45  
Candidate Starts for Badger\_44:  
(Start: 45 @31851 has 147 MA's), (82, 31752), (83, 31743), (86, 31728), (93, 31698), (115, 31578),

Gene: BangNhom\_47 Start: 32302, Stop: 32000, Start Num: 45  
Candidate Starts for BangNhom\_47:  
(2, 32572), (Start: 45 @32302 has 147 MA's), (93, 32170), (103, 32131), (115, 32050),

Gene: Bartimeaus\_46 Start: 31882, Stop: 31580, Start Num: 45  
Candidate Starts for Bartimeaus\_46:  
(2, 32152), (Start: 45 @31882 has 147 MA's), (93, 31750), (103, 31711), (111, 31663), (115, 31630),

Gene: Battleship\_50 Start: 30586, Stop: 30293, Start Num: 62  
Candidate Starts for Battleship\_50:  
(Start: 62 @30586 has 20 MA's), (98, 30469), (111, 30376),

Gene: Beauxregard13\_50 Start: 32312, Stop: 32064, Start Num: 63  
Candidate Starts for Beauxregard13\_50:  
(Start: 63 @32312 has 80 MA's), (72, 32282), (85, 32258), (103, 32195), (106, 32171), (108, 32162),  
(115, 32114), (116, 32099),

Gene: Beemo\_47 Start: 32159, Stop: 31833, Start Num: 27  
Candidate Starts for Beemo\_47:  
(Start: 27 @32159 has 40 MA's), (37, 32135), (Start: 52 @32093 has 1 MA's), (117, 31853),

Gene: Belenaria\_37 Start: 28395, Stop: 28123, Start Num: 66  
Candidate Starts for Belenaria\_37:  
(Start: 66 @28395 has 35 MA's), (87, 28329), (114, 28179), (117, 28143),

Gene: BellusTerra\_47 Start: 31881, Stop: 31579, Start Num: 45  
Candidate Starts for BellusTerra\_47:  
(Start: 45 @31881 has 147 MA's), (93, 31749), (103, 31710), (111, 31662), (115, 31629),

Gene: Benedict\_43 Start: 30995, Stop: 30732, Start Num: 55  
Candidate Starts for Benedict\_43:  
(Start: 55 @30995 has 33 MA's), (Start: 61 @30986 has 3 MA's), (Start: 78 @30944 has 2 MA's),  
(111, 30827), (114, 30803),

Gene: BengiVuitton\_48 Start: 32388, Stop: 31975, Start Num: 19  
Candidate Starts for BengiVuitton\_48:  
(Start: 19 @32388 has 8 MA's), (Start: 52 @32298 has 1 MA's), (54, 32289), (71, 32253), (90, 32187),  
(115, 32022),

Gene: Benvolio\_44 Start: 31563, Stop: 31141, Start Num: 19  
Candidate Starts for Benvolio\_44:  
(Start: 19 @31563 has 8 MA's), (Start: 24 @31554 has 1 MA's), (49, 31476), (115, 31188),

Gene: Blackmoor\_46 Start: 31882, Stop: 31580, Start Num: 45  
Candidate Starts for Blackmoor\_46:  
(2, 32152), (Start: 45 @31882 has 147 MA's), (93, 31750), (103, 31711), (111, 31663), (115, 31630),

Gene: BlueBird\_48 Start: 31838, Stop: 31563, Start Num: 48  
Candidate Starts for BlueBird\_48:  
(Start: 48 @31838 has 32 MA's), (108, 31661), (115, 31613),

Gene: Bluefalcon\_39 Start: 31282, Stop: 31019, Start Num: 55  
Candidate Starts for Bluefalcon\_39:  
(Start: 55 @31282 has 33 MA's), (Start: 61 @31273 has 3 MA's), (64, 31264), (Start: 78 @31231 has  
2 MA's), (105, 31147), (111, 31114), (115, 31081),

Gene: BobbyDazzler\_37 Start: 28440, Stop: 28168, Start Num: 66  
Candidate Starts for BobbyDazzler\_37:  
(Start: 66 @28440 has 35 MA's), (87, 28374), (114, 28224), (117, 28188),

Gene: BogosyJay\_46 Start: 31869, Stop: 31543, Start Num: 27  
Candidate Starts for BogosyJay\_46:  
(Start: 27 @31869 has 40 MA's), (37, 31845), (Start: 52 @31803 has 1 MA's), (85, 31761), (117,  
31563),

Gene: Bombshell\_46 Start: 31877, Stop: 31575, Start Num: 45  
Candidate Starts for Bombshell\_46:  
(2, 32147), (Start: 45 @31877 has 147 MA's), (93, 31745), (103, 31706), (111, 31658), (115, 31625),

Gene: Bonamassa\_41 Start: 31313, Stop: 31050, Start Num: 55

Candidate Starts for Bonamassa\_41:

(Start: 55 @31313 has 33 MA's), (Start: 61 @31304 has 3 MA's), (Start: 78 @31262 has 2 MA's), (91, 31232), (105, 31178), (111, 31145), (115, 31112),

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

Candidate Starts for Bonanza\_37:

(Start: 66 @28368 has 35 MA's), (87, 28302), (114, 28152), (117, 28116),

Gene: Boohoo\_50 Start: 30853, Stop: 30560, Start Num: 62

Candidate Starts for Boohoo\_50:

(Start: 62 @30853 has 20 MA's), (98, 30736), (111, 30643),

Gene: Bowtie\_48 Start: 31712, Stop: 31365, Start Num: 27

Candidate Starts for Bowtie\_48:

(Start: 27 @31712 has 40 MA's), (40, 31679), (Start: 48 @31658 has 32 MA's), (111, 31445), (115, 31412),

Gene: Bradman\_46 Start: 31085, Stop: 30678, Start Num: 19

Candidate Starts for Bradman\_46:

(Start: 19 @31085 has 8 MA's), (33, 31049), (68, 30965), (111, 30758), (115, 30725),

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

Candidate Starts for Bradshaw\_37:

(Start: 66 @28394 has 35 MA's), (114, 28178), (117, 28142),

Gene: BreSam8\_50 Start: 32302, Stop: 32054, Start Num: 63

Candidate Starts for BreSam8\_50:

(Start: 63 @32302 has 80 MA's), (85, 32248), (103, 32185), (106, 32161), (108, 32152), (115, 32104), (116, 32089),

Gene: Broseidon\_46 Start: 31882, Stop: 31580, Start Num: 45

Candidate Starts for Broseidon\_46:

(2, 32152), (Start: 45 @31882 has 147 MA's), (93, 31750), (103, 31711), (111, 31663), (115, 31630),

Gene: Bruiser\_45 Start: 31880, Stop: 31578, Start Num: 45

Candidate Starts for Bruiser\_45:

(Start: 45 @31880 has 147 MA's), (93, 31748), (103, 31709), (111, 31661), (115, 31628),

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

Candidate Starts for Bryce\_37:

(Start: 66 @28369 has 35 MA's), (87, 28303), (114, 28153), (117, 28117),

Gene: BubbleTrouble\_45 Start: 31880, Stop: 31578, Start Num: 45

Candidate Starts for BubbleTrouble\_45:

(2, 32150), (Start: 45 @31880 has 147 MA's), (93, 31748), (103, 31709), (111, 31661), (115, 31628),

Gene: Bugatti\_47 Start: 31838, Stop: 31563, Start Num: 48

Candidate Starts for Bugatti\_47:

(Start: 48 @31838 has 32 MA's), (108, 31661), (115, 31613),

Gene: Bumblebee11\_44 Start: 31853, Stop: 31530, Start Num: 45

Candidate Starts for Bumblebee11\_44:

(Start: 45 @31853 has 147 MA's), (82, 31754), (83, 31745), (86, 31730), (93, 31700), (115, 31580),

Gene: Burger\_44 Start: 31880, Stop: 31578, Start Num: 45

Candidate Starts for Burger\_44:

(2, 32150), (Start: 45 @31880 has 147 MA's), (93, 31748), (103, 31709), (111, 31661), (115, 31628),

Gene: BuzzBuzz\_48 Start: 32339, Stop: 32091, Start Num: 63

Candidate Starts for BuzzBuzz\_48:

(Start: 63 @32339 has 80 MA's), (85, 32285), (103, 32222), (106, 32198), (108, 32189), (115, 32141), (116, 32126),

Gene: Bxz2\_46 Start: 32346, Stop: 32098, Start Num: 63

Candidate Starts for Bxz2\_46:

(Start: 63 @32346 has 80 MA's), (85, 32292), (103, 32229), (106, 32205), (108, 32196), (115, 32148), (116, 32133),

Gene: C3\_45 Start: 32346, Stop: 31912, Start Num: 18

Candidate Starts for C3\_45:

(Start: 18 @32346 has 5 MA's), (Start: 19 @32343 has 8 MA's), (Start: 52 @32244 has 1 MA's), (68, 32202), (74, 32178), (100, 32079), (111, 31992), (115, 31959),

Gene: Caelakin\_46 Start: 31880, Stop: 31578, Start Num: 45

Candidate Starts for Caelakin\_46:

(2, 32150), (Start: 45 @31880 has 147 MA's), (93, 31748), (103, 31709), (111, 31661), (115, 31628),

Gene: Camperdownii\_44 Start: 31553, Stop: 31251, Start Num: 45

Candidate Starts for Camperdownii\_44:

(Start: 45 @31553 has 147 MA's), (93, 31421), (103, 31382), (111, 31334), (115, 31301),

Gene: Caraxes\_47 Start: 30723, Stop: 30316, Start Num: 19

Candidate Starts for Caraxes\_47:

(Start: 19 @30723 has 8 MA's), (56, 30624), (92, 30510), (111, 30396), (115, 30363),

Gene: Catalina\_48 Start: 32110, Stop: 31784, Start Num: 27

Candidate Starts for Catalina\_48:

(Start: 27 @32110 has 40 MA's), (37, 32086), (Start: 52 @32044 has 1 MA's), (117, 31804),

Gene: Caviar\_46 Start: 32081, Stop: 31806, Start Num: 48

Candidate Starts for Caviar\_46:

(16, 32171), (Start: 18 @32162 has 5 MA's), (Start: 48 @32081 has 32 MA's), (108, 31904),

Gene: CentreCat\_46 Start: 31883, Stop: 31581, Start Num: 45

Candidate Starts for CentreCat\_46:

(2, 32153), (Start: 45 @31883 has 147 MA's), (93, 31751), (103, 31712), (111, 31664), (115, 31631),

Gene: Cerulean\_47 Start: 32303, Stop: 32001, Start Num: 45

Candidate Starts for Cerulean\_47:

(2, 32573), (Start: 45 @32303 has 147 MA's), (93, 32171), (103, 32132), (115, 32051),

Gene: Chadwick\_44 Start: 30975, Stop: 30712, Start Num: 55

Candidate Starts for Chadwick\_44:

(28, 31053), (Start: 55 @30975 has 33 MA's), (Start: 61 @30966 has 3 MA's), (68, 30945), (Start: 78 @30924 has 2 MA's), (111, 30807), (114, 30783),

Gene: ChampagnePapi\_48 Start: 32302, Stop: 32000, Start Num: 45  
Candidate Starts for ChampagnePapi\_48:  
(2, 32572), (Start: 45 @32302 has 147 MA's), (93, 32170), (103, 32131), (115, 32050),

Gene: Chaph\_46 Start: 31891, Stop: 31589, Start Num: 45  
Candidate Starts for Chaph\_46:  
(2, 32161), (Start: 45 @31891 has 147 MA's), (93, 31759), (103, 31720), (111, 31672), (115, 31639),

Gene: Chargerpower\_46 Start: 31054, Stop: 30704, Start Num: 27  
Candidate Starts for Chargerpower\_46:  
(Start: 27 @31054 has 40 MA's), (Start: 52 @30991 has 1 MA's), (90, 30910), (111, 30784), (117, 30724), (118, 30715),

Gene: Charm\_46 Start: 31899, Stop: 31555, Start Num: 26  
Candidate Starts for Charm\_46:  
(Start: 26 @31899 has 2 MA's), (34, 31884), (37, 31878), (Start: 52 @31836 has 1 MA's), (75, 31794), (88, 31761), (117, 31575), (118, 31566),

Gene: Chiqui\_44 Start: 31814, Stop: 31539, Start Num: 48  
Candidate Starts for Chiqui\_44:  
(13, 31931), (17, 31907), (Start: 18 @31901 has 5 MA's), (29, 31874), (Start: 48 @31814 has 32 MA's), (108, 31637), (115, 31589),

Gene: Chupacabra\_44 Start: 31467, Stop: 31129, Start Num: 45  
Candidate Starts for Chupacabra\_44:  
(8, 31611), (16, 31560), (Start: 45 @31467 has 147 MA's), (72, 31407), (98, 31317), (102, 31302), (109, 31224),

Gene: Cici\_45 Start: 31868, Stop: 31545, Start Num: 45  
Candidate Starts for Cici\_45:  
(Start: 45 @31868 has 147 MA's), (82, 31769), (83, 31760), (86, 31745), (93, 31715), (115, 31595),

Gene: Cindaradix\_43 Start: 31493, Stop: 31170, Start Num: 45  
Candidate Starts for Cindaradix\_43:  
(Start: 45 @31493 has 147 MA's), (83, 31385), (93, 31340), (109, 31265), (115, 31220),

Gene: Cintron\_45 Start: 31860, Stop: 31558, Start Num: 45  
Candidate Starts for Cintron\_45:  
(2, 32130), (Start: 45 @31860 has 147 MA's), (93, 31728), (103, 31689), (111, 31641), (115, 31608),

Gene: Citius\_46 Start: 31901, Stop: 31599, Start Num: 45  
Candidate Starts for Citius\_46:  
(2, 32171), (Start: 45 @31901 has 147 MA's), (93, 31769), (103, 31730), (111, 31682), (115, 31649),

Gene: Clarenza\_45 Start: 31877, Stop: 31575, Start Num: 45  
Candidate Starts for Clarenza\_45:  
(2, 32147), (Start: 45 @31877 has 147 MA's), (93, 31745), (103, 31706), (111, 31658), (115, 31625),

Gene: Cocoaberry\_46 Start: 31884, Stop: 31582, Start Num: 45  
Candidate Starts for Cocoaberry\_46:  
(Start: 45 @31884 has 147 MA's), (93, 31752), (103, 31713), (111, 31665), (115, 31632),

Gene: Colbster\_50 Start: 32312, Stop: 32064, Start Num: 63

Candidate Starts for Colbster\_50:

(Start: 63 @32312 has 80 MA's), (85, 32258), (103, 32195), (106, 32171), (108, 32162), (115, 32114), (116, 32099),

Gene: Commander\_46 Start: 31879, Stop: 31577, Start Num: 45

Candidate Starts for Commander\_46:

(2, 32149), (Start: 45 @31879 has 147 MA's), (93, 31747), (103, 31708), (111, 31660), (115, 31627),

Gene: Connomayer\_46 Start: 31880, Stop: 31578, Start Num: 45

Candidate Starts for Connomayer\_46:

(2, 32150), (Start: 45 @31880 has 147 MA's), (93, 31748), (103, 31709), (111, 31661), (115, 31628),

Gene: Conquerage\_47 Start: 32133, Stop: 31807, Start Num: 27

Candidate Starts for Conquerage\_47:

(Start: 27 @32133 has 40 MA's), (37, 32109), (Start: 52 @32067 has 1 MA's), (117, 31827),

Gene: Conspiracy\_40 Start: 30997, Stop: 30743, Start Num: 61

Candidate Starts for Conspiracy\_40:

(Start: 55 @31006 has 33 MA's), (Start: 61 @30997 has 3 MA's), (64, 30988), (70, 30967), (Start: 78 @30955 has 2 MA's), (105, 30871), (111, 30838), (115, 30805),

Gene: Coog\_40 Start: 31053, Stop: 30841, Start Num: 78

Candidate Starts for Coog\_40:

(Start: 55 @31104 has 33 MA's), (Start: 61 @31095 has 3 MA's), (64, 31086), (70, 31065), (Start: 78 @31053 has 2 MA's), (105, 30969), (111, 30936), (115, 30903),

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

Candidate Starts for CosmicSans\_37:

(Start: 66 @28394 has 35 MA's), (87, 28328), (114, 28178), (117, 28142),

Gene: Cuco\_40 Start: 31061, Stop: 30810, Start Num: 55

Candidate Starts for Cuco\_40:

(Start: 55 @31061 has 33 MA's), (Start: 61 @31052 has 3 MA's), (Start: 78 @31010 has 2 MA's), (105, 30926), (111, 30893), (115, 30860),

Gene: Cullens\_50 Start: 32308, Stop: 32060, Start Num: 63

Candidate Starts for Cullens\_50:

(Start: 63 @32308 has 80 MA's), (85, 32254), (103, 32191), (106, 32167), (108, 32158), (115, 32110), (116, 32095),

Gene: DaHudson\_50 Start: 32301, Stop: 32053, Start Num: 63

Candidate Starts for DaHudson\_50:

(Start: 63 @32301 has 80 MA's), (85, 32247), (103, 32184), (106, 32160), (108, 32151), (115, 32103), (116, 32088),

Gene: Daishi\_49 Start: 31180, Stop: 30932, Start Num: 63

Candidate Starts for Daishi\_49:

(Start: 63 @31180 has 80 MA's), (85, 31126), (103, 31063), (106, 31039), (108, 31030), (115, 30982), (116, 30967),

Gene: Danforth\_44 Start: 31174, Stop: 30878, Start Num: 58

Candidate Starts for Danforth\_44:

(31, 31240), (Start: 58 @31174 has 11 MA's), (79, 31123), (115, 30937),



Gene: Darrell\_48 Start: 32497, Stop: 32153, Start Num: 21

Candidate Starts for Darrell\_48:

(Start: 11 @32539 has 1 MA's), (15, 32518), (Start: 21 @32497 has 3 MA's), (34, 32482), (Start: 52 @32434 has 1 MA's), (68, 32413), (88, 32359), (117, 32173),

Gene: DarthPhader\_44 Start: 32954, Stop: 32610, Start Num: 39

Candidate Starts for DarthPhader\_44:

(33, 32966), (36, 32960), (Start: 39 @32954 has 5 MA's), (Start: 55 @32912 has 33 MA's), (68, 32891), (85, 32837), (88, 32825), (104, 32732), (111, 32690), (117, 32630),

Gene: Datway\_45 Start: 31839, Stop: 31516, Start Num: 45

Candidate Starts for Datway\_45:

(Start: 45 @31839 has 147 MA's), (83, 31731), (115, 31566),

Gene: Deano\_45 Start: 31888, Stop: 31586, Start Num: 45

Candidate Starts for Deano\_45:

(Start: 45 @31888 has 147 MA's), (Start: 62 @31846 has 20 MA's), (93, 31756), (103, 31717), (111, 31669), (115, 31636),

Gene: DekHockey33\_50 Start: 31068, Stop: 30775, Start Num: 62

Candidate Starts for DekHockey33\_50:

(Start: 62 @31068 has 20 MA's), (98, 30951), (111, 30858),

Gene: Dhanush\_46 Start: 31883, Stop: 31581, Start Num: 45

Candidate Starts for Dhanush\_46:

(2, 32153), (Start: 45 @31883 has 147 MA's), (93, 31751), (103, 31712), (111, 31664), (115, 31631),

Gene: Dieselweasel\_51 Start: 32311, Stop: 32063, Start Num: 63

Candidate Starts for Dieselweasel\_51:

(Start: 63 @32311 has 80 MA's), (85, 32257), (103, 32194), (106, 32170), (108, 32161), (115, 32113), (116, 32098),

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

Candidate Starts for Dinger\_37:

(Start: 53 @28411 has 1 MA's), (Start: 66 @28378 has 35 MA's), (92, 28291), (114, 28162), (117, 28126),

Gene: DirtyDunning\_45 Start: 31898, Stop: 31575, Start Num: 45

Candidate Starts for DirtyDunning\_45:

(Start: 45 @31898 has 147 MA's), (51, 31883), (93, 31745), (103, 31706), (111, 31658), (115, 31625),

Gene: Discoknowium\_39 Start: 30803, Stop: 30540, Start Num: 55

Candidate Starts for Discoknowium\_39:

(Start: 55 @30803 has 33 MA's), (Start: 61 @30794 has 3 MA's), (64, 30785), (70, 30764), (Start: 78 @30752 has 2 MA's), (105, 30668), (111, 30635), (115, 30602),

Gene: Dixon\_44 Start: 31047, Stop: 30760, Start Num: 58

Candidate Starts for Dixon\_44:

(31, 31113), (Start: 58 @31047 has 11 MA's), (79, 30996), (115, 30810),

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

Candidate Starts for DontArgue\_44:

(6, 30847), (8, 30841), (Start: 43 @30703 has 1 MA's), (109, 30463),

Gene: Drake94\_43 Start: 30743, Stop: 30387, Start Num: 45

Candidate Starts for Drake94\_43:

(8, 30887), (Start: 45 @30743 has 147 MA's), (102, 30560), (109, 30482),

Gene: DreamTeam1\_46 Start: 31773, Stop: 31429, Start Num: 26

Candidate Starts for DreamTeam1\_46:

(Start: 26 @31773 has 2 MA's), (34, 31758), (37, 31752), (Start: 52 @31710 has 1 MA's), (57, 31707), (75, 31668), (88, 31635), (117, 31449), (118, 31440),

Gene: DroogsArmy\_43 Start: 33565, Stop: 33284, Start Num: 42

Candidate Starts for DroogsArmy\_43:

(8, 33700), (Start: 42 @33565 has 3 MA's), (81, 33502), (96, 33445), (103, 33415), (117, 33307),

Gene: DropBear\_46 Start: 31726, Stop: 31451, Start Num: 48

Candidate Starts for DropBear\_46:

(Start: 48 @31726 has 32 MA's), (108, 31549), (115, 31501),

Gene: Druantia\_46 Start: 31883, Stop: 31581, Start Num: 45

Candidate Starts for Druantia\_46:

(2, 32153), (Start: 45 @31883 has 147 MA's), (93, 31751), (103, 31712), (111, 31664), (115, 31631),

Gene: Dublin\_39 Start: 30825, Stop: 30562, Start Num: 55

Candidate Starts for Dublin\_39:

(Start: 55 @30825 has 33 MA's), (Start: 61 @30816 has 3 MA's), (Start: 78 @30774 has 2 MA's), (91, 30744), (105, 30690), (111, 30657), (115, 30624),

Gene: DudeLittle\_46 Start: 32250, Stop: 31828, Start Num: 19

Candidate Starts for DudeLittle\_46:

(Start: 19 @32250 has 8 MA's), (Start: 24 @32241 has 1 MA's), (33, 32205), (Start: 46 @32172 has 1 MA's), (49, 32163), (115, 31875),

Gene: DustyMartin\_49 Start: 31547, Stop: 31209, Start Num: 45

Candidate Starts for DustyMartin\_49:

(Start: 45 @31547 has 147 MA's), (72, 31487), (102, 31382), (109, 31304),

Gene: Eagle\_46 Start: 31905, Stop: 31603, Start Num: 45

Candidate Starts for Eagle\_46:

(2, 32175), (Start: 45 @31905 has 147 MA's), (93, 31773), (103, 31734), (111, 31686), (115, 31653),

Gene: EagleEye\_49 Start: 31670, Stop: 31308, Start Num: 23

Candidate Starts for EagleEye\_49:

(Start: 23 @31670 has 3 MA's), (30, 31646), (111, 31388),

Gene: Eaglepride\_46 Start: 31543, Stop: 31214, Start Num: 43

Candidate Starts for Eaglepride\_46:

(8, 31681), (12, 31654), (Start: 43 @31543 has 1 MA's), (97, 31393), (109, 31309),

Gene: Eapen\_46 Start: 31875, Stop: 31573, Start Num: 45

Candidate Starts for Eapen\_46:

(2, 32145), (Start: 45 @31875 has 147 MA's), (93, 31743), (103, 31704), (111, 31656), (115, 31623),

Gene: EdogawaKiddo\_45 Start: 32110, Stop: 31784, Start Num: 27  
Candidate Starts for EdogawaKiddo\_45:  
(Start: 27 @32110 has 40 MA's), (37, 32086), (Start: 52 @32044 has 1 MA's), (117, 31804),

Gene: Eidsmoe\_47 Start: 32173, Stop: 31847, Start Num: 27  
Candidate Starts for Eidsmoe\_47:  
(Start: 27 @32173 has 40 MA's), (37, 32149), (Start: 52 @32107 has 1 MA's), (117, 31867),

Gene: EITiger69\_42 Start: 30992, Stop: 30729, Start Num: 55  
Candidate Starts for EITiger69\_42:  
(28, 31070), (Start: 55 @30992 has 33 MA's), (Start: 61 @30983 has 3 MA's), (68, 30962), (Start: 78 @30941 has 2 MA's), (111, 30824), (114, 30800),

Gene: Elephantoon\_46 Start: 31477, Stop: 31130, Start Num: 21  
Candidate Starts for Elephantoon\_46:  
(Start: 21 @31477 has 3 MA's), (37, 31453), (Start: 52 @31411 has 1 MA's), (88, 31336), (92, 31318), (117, 31150),

Gene: EmyBug\_46 Start: 32175, Stop: 31849, Start Num: 27  
Candidate Starts for EmyBug\_46:  
(Start: 27 @32175 has 40 MA's), (37, 32151), (Start: 52 @32109 has 1 MA's), (117, 31869),

Gene: EpicPhail\_51 Start: 32312, Stop: 32064, Start Num: 63  
Candidate Starts for EpicPhail\_51:  
(Start: 63 @32312 has 80 MA's), (72, 32282), (85, 32258), (103, 32195), (106, 32171), (108, 32162), (115, 32114), (116, 32099),

Gene: Epsocamisio\_48 Start: 30391, Stop: 30098, Start Num: 62  
Candidate Starts for Epsocamisio\_48:  
(Start: 62 @30391 has 20 MA's), (98, 30274), (111, 30181),

Gene: Erik\_37 Start: 28392, Stop: 28120, Start Num: 66  
Candidate Starts for Erik\_37:  
(Start: 66 @28392 has 35 MA's), (87, 28326), (114, 28176), (117, 28140),

Gene: Eris\_45 Start: 31880, Stop: 31578, Start Num: 45  
Candidate Starts for Eris\_45:  
(2, 32150), (Start: 45 @31880 has 147 MA's), (93, 31748), (103, 31709), (111, 31661), (115, 31628),

Gene: Eros\_46 Start: 31882, Stop: 31580, Start Num: 45  
Candidate Starts for Eros\_46:  
(2, 32152), (Start: 45 @31882 has 147 MA's), (93, 31750), (103, 31711), (111, 31663), (115, 31630),

Gene: Espica\_37 Start: 28395, Stop: 28123, Start Num: 66  
Candidate Starts for Espica\_37:  
(Start: 66 @28395 has 35 MA's), (87, 28329), (114, 28179), (117, 28143),

Gene: Eurydice\_47 Start: 31877, Stop: 31575, Start Num: 45  
Candidate Starts for Eurydice\_47:  
(2, 32147), (Start: 45 @31877 has 147 MA's), (93, 31745), (103, 31706), (111, 31658), (115, 31625),

Gene: Expelliarmus\_44 Start: 31203, Stop: 30907, Start Num: 58  
Candidate Starts for Expelliarmus\_44:

(31, 31269), (Start: 58 @31203 has 11 MA's), (79, 31152), (115, 30966),

Gene: ExplosioNervosa\_47 Start: 32193, Stop: 31867, Start Num: 27

Candidate Starts for ExplosioNervosa\_47:

(Start: 27 @32193 has 40 MA's), (37, 32169), (Start: 52 @32127 has 1 MA's), (117, 31887),

Gene: Farber\_50 Start: 32301, Stop: 32053, Start Num: 63

Candidate Starts for Farber\_50:

(Start: 63 @32301 has 80 MA's), (85, 32247), (103, 32184), (106, 32160), (108, 32151), (115, 32103), (116, 32088),

Gene: Fayely\_47 Start: 32142, Stop: 31816, Start Num: 27

Candidate Starts for Fayely\_47:

(Start: 27 @32142 has 40 MA's), (37, 32118), (Start: 52 @32076 has 1 MA's), (117, 31836),

Gene: Fernando\_50 Start: 32308, Stop: 32060, Start Num: 63

Candidate Starts for Fernando\_50:

(Start: 63 @32308 has 80 MA's), (85, 32254), (103, 32191), (106, 32167), (108, 32158), (115, 32110), (116, 32095),

Gene: Flaverint\_48 Start: 31706, Stop: 31359, Start Num: 27

Candidate Starts for Flaverint\_48:

(Start: 27 @31706 has 40 MA's), (40, 31673), (Start: 48 @31652 has 32 MA's), (111, 31439), (115, 31406),

Gene: Florean\_46 Start: 31879, Stop: 31577, Start Num: 45

Candidate Starts for Florean\_46:

(2, 32149), (Start: 45 @31879 has 147 MA's), (93, 31747), (103, 31708), (111, 31660), (115, 31627),

Gene: Flux\_46 Start: 31879, Stop: 31577, Start Num: 45

Candidate Starts for Flux\_46:

(2, 32149), (Start: 45 @31879 has 147 MA's), (93, 31747), (103, 31708), (111, 31660), (115, 31627),

Gene: ForGetIt\_40 Start: 31031, Stop: 30768, Start Num: 55

Candidate Starts for ForGetIt\_40:

(Start: 55 @31031 has 33 MA's), (Start: 61 @31022 has 3 MA's), (64, 31013), (70, 30992), (Start: 78 @30980 has 2 MA's), (105, 30896), (111, 30863), (115, 30830),

Gene: Fred313\_46 Start: 31411, Stop: 31136, Start Num: 48

Candidate Starts for Fred313\_46:

(38, 31432), (Start: 48 @31411 has 32 MA's), (108, 31234), (115, 31186),

Gene: Funston\_45 Start: 31880, Stop: 31578, Start Num: 45

Candidate Starts for Funston\_45:

(Start: 45 @31880 has 147 MA's), (93, 31748), (103, 31709), (111, 31661), (115, 31628),

Gene: Gadost\_46 Start: 31884, Stop: 31582, Start Num: 45

Candidate Starts for Gadost\_46:

(Start: 45 @31884 has 147 MA's), (93, 31752), (103, 31713), (111, 31665), (115, 31632),

Gene: Gail\_52 Start: 33875, Stop: 33528, Start Num: 27

Candidate Starts for Gail\_52:

(17, 33899), (Start: 27 @33875 has 40 MA's), (Start: 52 @33815 has 1 MA's), (111, 33608), (117, 33548), (118, 33539),

Gene: Gemma\_49 Start: 32204, Stop: 31956, Start Num: 63

Candidate Starts for Gemma\_49:

(Start: 63 @32204 has 80 MA's), (85, 32150), (86, 32147), (103, 32087), (106, 32063), (108, 32054), (115, 32006), (116, 31991),

Gene: George\_40 Start: 31255, Stop: 30992, Start Num: 55

Candidate Starts for George\_40:

(Start: 55 @31255 has 33 MA's), (Start: 61 @31246 has 3 MA's), (Start: 78 @31204 has 2 MA's), (91, 31174), (105, 31120), (111, 31087), (115, 31054),

Gene: Ghoulboy\_42 Start: 31768, Stop: 31505, Start Num: 55

Candidate Starts for Ghoulboy\_42:

(Start: 55 @31768 has 33 MA's), (Start: 61 @31759 has 3 MA's), (Start: 78 @31717 has 2 MA's), (91, 31687), (105, 31633), (111, 31600), (115, 31567),

Gene: GingkoMaracino\_50 Start: 32194, Stop: 31946, Start Num: 63

Candidate Starts for GingkoMaracino\_50:

(Start: 63 @32194 has 80 MA's), (85, 32140), (103, 32077), (106, 32053), (108, 32044), (115, 31996), (116, 31981),

Gene: Giroux\_47 Start: 31837, Stop: 31562, Start Num: 48

Candidate Starts for Giroux\_47:

(Start: 48 @31837 has 32 MA's), (108, 31660), (115, 31612),

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

Candidate Starts for Gollum\_37:

(Start: 66 @28394 has 35 MA's), (87, 28328), (114, 28178), (117, 28142),

Gene: Goose\_45 Start: 31271, Stop: 30933, Start Num: 45

Candidate Starts for Goose\_45:

(8, 31415), (16, 31364), (Start: 45 @31271 has 147 MA's), (72, 31211), (98, 31121), (102, 31106), (109, 31028),

Gene: Grif\_50 Start: 32383, Stop: 32135, Start Num: 63

Candidate Starts for Grif\_50:

(Start: 63 @32383 has 80 MA's), (85, 32329), (103, 32266), (106, 32242), (108, 32233), (115, 32185), (116, 32170),

Gene: Groundhog\_43 Start: 31110, Stop: 30814, Start Num: 58

Candidate Starts for Groundhog\_43:

(Start: 58 @31110 has 11 MA's), (65, 31101), (79, 31059), (115, 30873),

Gene: Groupthink\_51 Start: 32208, Stop: 31960, Start Num: 63

Candidate Starts for Groupthink\_51:

(Start: 63 @32208 has 80 MA's), (85, 32154), (86, 32151), (103, 32091), (106, 32067), (108, 32058), (115, 32010), (116, 31995),

Gene: Grub\_50 Start: 32300, Stop: 32052, Start Num: 63

Candidate Starts for Grub\_50:

(Start: 63 @32300 has 80 MA's), (85, 32246), (103, 32183), (106, 32159), (108, 32150), (115, 32102), (116, 32087),

Gene: Grum1\_50 Start: 32308, Stop: 32060, Start Num: 63

Candidate Starts for Grum1\_50:

(60, 32317), (Start: 63 @32308 has 80 MA's), (85, 32254), (103, 32191), (106, 32167), (108, 32158), (115, 32110), (116, 32095),

Gene: GtownJaz\_50 Start: 32310, Stop: 32062, Start Num: 63

Candidate Starts for GtownJaz\_50:

(Start: 63 @32310 has 80 MA's), (85, 32256), (103, 32193), (106, 32169), (108, 32160), (115, 32112), (116, 32097),

Gene: HINdeR\_43 Start: 33388, Stop: 33113, Start Num: 42

Candidate Starts for HINdeR\_43:

(Start: 42 @33388 has 3 MA's), (Start: 43 @33382 has 1 MA's), (Start: 78 @33331 has 2 MA's), (81, 33325), (85, 33307), (117, 33136),

Gene: HamSlice\_45 Start: 31878, Stop: 31576, Start Num: 45

Candidate Starts for HamSlice\_45:

(2, 32148), (Start: 45 @31878 has 147 MA's), (93, 31746), (103, 31707), (111, 31659), (115, 31626),

Gene: Hanray\_45 Start: 32114, Stop: 31788, Start Num: 27

Candidate Starts for Hanray\_45:

(Start: 27 @32114 has 40 MA's), (37, 32090), (Start: 52 @32048 has 1 MA's), (117, 31808),

Gene: Happiness\_45 Start: 31885, Stop: 31583, Start Num: 45

Candidate Starts for Happiness\_45:

(2, 32155), (Start: 45 @31885 has 147 MA's), (93, 31753), (103, 31714), (111, 31666), (115, 31633),

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

Candidate Starts for Harlequin\_37:

(Start: 66 @28399 has 35 MA's), (87, 28333), (114, 28183), (117, 28147),

Gene: HashRod\_51 Start: 32339, Stop: 32091, Start Num: 63

Candidate Starts for HashRod\_51:

(Start: 63 @32339 has 80 MA's), (85, 32285), (103, 32222), (106, 32198), (108, 32189), (115, 32141), (116, 32126),

Gene: HaveUMetTed\_51 Start: 32190, Stop: 31942, Start Num: 63

Candidate Starts for HaveUMetTed\_51:

(Start: 63 @32190 has 80 MA's), (85, 32136), (86, 32133), (103, 32073), (106, 32049), (108, 32040), (115, 31992), (116, 31977),

Gene: Heathen\_46 Start: 31467, Stop: 31192, Start Num: 48

Candidate Starts for Heathen\_46:

(Start: 48 @31467 has 32 MA's), (108, 31290), (115, 31242),

Gene: HelDan\_46 Start: 31719, Stop: 31444, Start Num: 48

Candidate Starts for HelDan\_46:

(Start: 48 @31719 has 32 MA's), (108, 31542), (115, 31494),

Gene: Heliosoles\_49 Start: 32211, Stop: 31963, Start Num: 63

Candidate Starts for Heliosoles\_49:

(Start: 63 @32211 has 80 MA's), (85, 32157), (86, 32154), (103, 32094), (106, 32070), (108, 32061), (115, 32013), (116, 31998),

Gene: Hercules11\_50 Start: 32317, Stop: 32069, Start Num: 63

Candidate Starts for Hercules11\_50:

(Start: 63 @32317 has 80 MA's), (85, 32263), (103, 32200), (106, 32176), (108, 32167), (115, 32119), (116, 32104),

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

Candidate Starts for Hiro\_37:

(Start: 66 @28654 has 35 MA's), (87, 28588), (107, 28483), (114, 28438), (117, 28402),

Gene: Horex\_46 Start: 32133, Stop: 31807, Start Num: 27

Candidate Starts for Horex\_46:

(Start: 27 @32133 has 40 MA's), (37, 32109), (Start: 52 @32067 has 1 MA's), (117, 31827),

Gene: Holli\_45 Start: 31670, Stop: 31368, Start Num: 45

Candidate Starts for Holli\_45:

(2, 31940), (Start: 45 @31670 has 147 MA's), (93, 31538), (103, 31499), (111, 31451), (115, 31418),

Gene: Hookmount\_46 Start: 32082, Stop: 31807, Start Num: 48

Candidate Starts for Hookmount\_46:

(16, 32172), (Start: 18 @32163 has 5 MA's), (Start: 48 @32082 has 32 MA's), (108, 31905),

Gene: HortumSL17\_47 Start: 32109, Stop: 31783, Start Num: 27

Candidate Starts for HortumSL17\_47:

(Start: 27 @32109 has 40 MA's), (37, 32085), (Start: 52 @32043 has 1 MA's), (117, 31803),

Gene: Houdini22\_46 Start: 31884, Stop: 31582, Start Num: 45

Candidate Starts for Houdini22\_46:

(Start: 45 @31884 has 147 MA's), (93, 31752), (103, 31713), (111, 31665), (115, 31632),

Gene: HuhtaEnerson15\_41 Start: 31246, Stop: 30983, Start Num: 55

Candidate Starts for HuhtaEnerson15\_41:

(Start: 55 @31246 has 33 MA's), (Start: 61 @31237 has 3 MA's), (Start: 78 @31195 has 2 MA's), (91, 31165), (105, 31111), (111, 31078), (115, 31045),

Gene: ICleared\_46 Start: 31909, Stop: 31607, Start Num: 45

Candidate Starts for ICleared\_46:

(2, 32179), (Start: 45 @31909 has 147 MA's), (93, 31777), (103, 31738), (111, 31690), (115, 31657),

Gene: Iceman\_46 Start: 32166, Stop: 31864, Start Num: 45

Candidate Starts for Iceman\_46:

(2, 32436), (Start: 45 @32166 has 147 MA's), (93, 32034), (103, 31995), (111, 31947), (115, 31914),

Gene: Idleandcovert\_47 Start: 31838, Stop: 31563, Start Num: 48

Candidate Starts for Idleandcovert\_47:

(Start: 48 @31838 has 32 MA's), (108, 31661), (115, 31613),

Gene: Iracema64\_47 Start: 32144, Stop: 31842, Start Num: 45

Candidate Starts for Iracema64\_47:

(2, 32414), (Start: 45 @32144 has 147 MA's), (93, 32012), (103, 31973), (111, 31925), (115, 31892),

Gene: Isca\_45 Start: 31262, Stop: 30987, Start Num: 48

Candidate Starts for Isca\_45:

(Start: 18 @31349 has 5 MA's), (36, 31292), (Start: 48 @31262 has 32 MA's), (89, 31157), (108, 31085), (115, 31037),

Gene: JF2\_46 Start: 31013, Stop: 30738, Start Num: 48

Candidate Starts for JF2\_46:

(Start: 18 @31100 has 5 MA's), (36, 31043), (Start: 48 @31013 has 32 MA's), (89, 30908), (108, 30836), (115, 30788),

Gene: JF4\_46 Start: 31013, Stop: 30738, Start Num: 48

Candidate Starts for JF4\_46:

(Start: 18 @31100 has 5 MA's), (36, 31043), (Start: 48 @31013 has 32 MA's), (89, 30908), (108, 30836), (115, 30788),

Gene: JHC117\_50 Start: 32307, Stop: 32059, Start Num: 63

Candidate Starts for JHC117\_50:

(Start: 63 @32307 has 80 MA's), (85, 32253), (103, 32190), (106, 32166), (108, 32157), (115, 32109), (116, 32094),

Gene: JSwag\_48 Start: 30329, Stop: 30036, Start Num: 62

Candidate Starts for JSwag\_48:

(Start: 62 @30329 has 20 MA's), (98, 30212), (111, 30119),

Gene: Jaan\_47 Start: 33445, Stop: 33047, Start Num: 18

Candidate Starts for Jaan\_47:

(Start: 18 @33445 has 5 MA's), (49, 33364), (73, 33322), (92, 33250), (115, 33094),

Gene: Jabiru\_41 Start: 30865, Stop: 30614, Start Num: 55

Candidate Starts for Jabiru\_41:

(Start: 24 @30955 has 1 MA's), (28, 30943), (Start: 55 @30865 has 33 MA's), (Start: 61 @30856 has 3 MA's), (Start: 78 @30814 has 2 MA's), (91, 30784), (105, 30730), (111, 30697), (115, 30664),

Gene: Jaykayelowell\_44 Start: 31873, Stop: 31571, Start Num: 45

Candidate Starts for Jaykayelowell\_44:

(2, 32143), (Start: 45 @31873 has 147 MA's), (93, 31741), (103, 31702), (111, 31654), (115, 31621),

Gene: Jeeves\_52 Start: 32647, Stop: 32300, Start Num: 27

Candidate Starts for Jeeves\_52:

(17, 32671), (Start: 27 @32647 has 40 MA's), (Start: 52 @32587 has 1 MA's), (111, 32380), (117, 32320),

Gene: JenCasNa\_51 Start: 32308, Stop: 32060, Start Num: 63

Candidate Starts for JenCasNa\_51:

(Start: 63 @32308 has 80 MA's), (85, 32254), (103, 32191), (106, 32167), (108, 32158), (115, 32110), (116, 32095),

Gene: JeppNRM\_51 Start: 32209, Stop: 31961, Start Num: 63

Candidate Starts for JeppNRM\_51:

(Start: 63 @32209 has 80 MA's), (85, 32155), (86, 32152), (103, 32092), (106, 32068), (108, 32059), (115, 32011), (116, 31996),



Gene: Jester\_37 Start: 28330, Stop: 28058, Start Num: 66  
Candidate Starts for Jester\_37:  
(Start: 66 @28330 has 35 MA's), (87, 28264), (114, 28114), (117, 28078),

Gene: JetBlade\_46 Start: 31874, Stop: 31572, Start Num: 45  
Candidate Starts for JetBlade\_46:  
(2, 32144), (Start: 45 @31874 has 147 MA's), (93, 31742), (103, 31703), (111, 31655), (115, 31622),

Gene: Jiawan\_45 Start: 32146, Stop: 31820, Start Num: 27  
Candidate Starts for Jiawan\_45:  
(Start: 27 @32146 has 40 MA's), (37, 32122), (Start: 52 @32080 has 1 MA's), (117, 31840),

Gene: Jobu08\_49 Start: 32140, Stop: 31892, Start Num: 63  
Candidate Starts for Jobu08\_49:  
(Start: 63 @32140 has 80 MA's), (85, 32086), (86, 32083), (103, 32023), (106, 31999), (108, 31990),  
(115, 31942), (116, 31927),

Gene: JoongJeon\_45 Start: 31877, Stop: 31575, Start Num: 45  
Candidate Starts for JoongJeon\_45:  
(Start: 45 @31877 has 147 MA's), (93, 31745), (103, 31706), (111, 31658), (115, 31625),

Gene: Joselito\_48 Start: 31705, Stop: 31358, Start Num: 27  
Candidate Starts for Joselito\_48:  
(Start: 27 @31705 has 40 MA's), (40, 31672), (Start: 48 @31651 has 32 MA's), (111, 31438), (115, 31405),

Gene: Journey13\_41 Start: 30529, Stop: 30176, Start Num: 20  
Candidate Starts for Journey13\_41:  
(Start: 20 @30529 has 1 MA's), (Start: 22 @30526 has 2 MA's), (29, 30508), (41, 30484), (111, 30256),

Gene: Jovo\_40 Start: 31287, Stop: 31024, Start Num: 55  
Candidate Starts for Jovo\_40:  
(Start: 55 @31287 has 33 MA's), (Start: 61 @31278 has 3 MA's), (64, 31269), (70, 31248), (Start: 78 @31236 has 2 MA's), (105, 31152), (111, 31119), (115, 31086),

Gene: KADY\_50 Start: 32339, Stop: 32091, Start Num: 63  
Candidate Starts for KADY\_50:  
(Start: 63 @32339 has 80 MA's), (85, 32285), (103, 32222), (106, 32198), (108, 32189), (115, 32141),  
(116, 32126),

Gene: KFPoly\_45 Start: 31874, Stop: 31572, Start Num: 45  
Candidate Starts for KFPoly\_45:  
(2, 32144), (Start: 45 @31874 has 147 MA's), (93, 31742), (103, 31703), (111, 31655), (115, 31622),

Gene: Kachowdy\_46 Start: 31719, Stop: 31444, Start Num: 48  
Candidate Starts for Kachowdy\_46:  
(Start: 48 @31719 has 32 MA's), (108, 31542), (115, 31494),

Gene: Kalb97\_51 Start: 32207, Stop: 31959, Start Num: 63  
Candidate Starts for Kalb97\_51:  
(Start: 63 @32207 has 80 MA's), (85, 32153), (86, 32150), (103, 32090), (106, 32066), (108, 32057),  
(115, 32009), (116, 31994),

Gene: Kalnoky\_51 Start: 32205, Stop: 31957, Start Num: 63

Candidate Starts for Kalnoky\_51:

(Start: 63 @32205 has 80 MA's), (85, 32151), (86, 32148), (103, 32088), (106, 32064), (108, 32055), (115, 32007), (116, 31992),

Gene: Kamy\_46 Start: 31882, Stop: 31580, Start Num: 45

Candidate Starts for Kamy\_46:

(2, 32152), (Start: 45 @31882 has 147 MA's), (93, 31750), (103, 31711), (111, 31663), (115, 31630),

Gene: Katalie136\_45 Start: 31853, Stop: 31530, Start Num: 45

Candidate Starts for Katalie136\_45:

(Start: 45 @31853 has 147 MA's), (82, 31754), (83, 31745), (86, 31730), (93, 31700), (115, 31580),

Gene: KatherineG\_51 Start: 31068, Stop: 30775, Start Num: 62

Candidate Starts for KatherineG\_51:

(Start: 62 @31068 has 20 MA's), (98, 30951), (111, 30858),

Gene: Keziacharles14\_47 Start: 33144, Stop: 32797, Start Num: 27

Candidate Starts for Keziacharles14\_47:

(Start: 27 @33144 has 40 MA's), (37, 33120), (Start: 52 @33078 has 1 MA's), (85, 33015), (88, 33003), (117, 32817), (118, 32808),

Gene: Kimona\_46 Start: 30459, Stop: 30046, Start Num: 11

Candidate Starts for Kimona\_46:

(Start: 11 @30459 has 1 MA's), (32, 30369), (Start: 52 @30324 has 1 MA's), (89, 30228), (115, 30099),

Gene: Kingmustik0402\_46 Start: 31869, Stop: 31567, Start Num: 45

Candidate Starts for Kingmustik0402\_46:

(2, 32139), (Start: 45 @31869 has 147 MA's), (93, 31737), (103, 31698), (111, 31650), (115, 31617),

Gene: KittenMittens\_42 Start: 30751, Stop: 30395, Start Num: 45

Candidate Starts for KittenMittens\_42:

(8, 30895), (Start: 45 @30751 has 147 MA's), (102, 30568), (109, 30490),

Gene: Koreni\_45 Start: 31561, Stop: 31259, Start Num: 45

Candidate Starts for Koreni\_45:

(2, 31831), (Start: 45 @31561 has 147 MA's), (93, 31429), (103, 31390), (111, 31342), (115, 31309),

Gene: Kratak\_46 Start: 32040, Stop: 31717, Start Num: 45

Candidate Starts for Kratak\_46:

(Start: 45 @32040 has 147 MA's), (51, 32025), (93, 31887), (111, 31800), (115, 31767),

Gene: Kremtemulon\_46 Start: 31831, Stop: 31529, Start Num: 45

Candidate Starts for Kremtemulon\_46:

(2, 32101), (Start: 45 @31831 has 147 MA's), (93, 31699), (103, 31660), (115, 31579),

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

Candidate Starts for Krishelle\_37:

(Start: 53 @28711 has 1 MA's), (Start: 66 @28678 has 35 MA's), (92, 28591), (114, 28462), (117, 28426),

Gene: Kyee\_46 Start: 31878, Stop: 31576, Start Num: 45  
Candidate Starts for Kyee\_46:  
(Start: 45 @31878 has 147 MA's), (93, 31746), (103, 31707), (111, 31659), (115, 31626),

Gene: LBerry\_51 Start: 32312, Stop: 32064, Start Num: 63  
Candidate Starts for LBerry\_51:  
(Start: 63 @32312 has 80 MA's), (85, 32258), (103, 32195), (106, 32171), (108, 32162), (115, 32114),  
(116, 32099),

Gene: LHTSCC\_48 Start: 32302, Stop: 32000, Start Num: 45  
Candidate Starts for LHTSCC\_48:  
(2, 32572), (Start: 45 @32302 has 147 MA's), (93, 32170), (103, 32131), (115, 32050),

Gene: LadyBird\_51 Start: 32746, Stop: 32324, Start Num: 19  
Candidate Starts for LadyBird\_51:  
(Start: 19 @32746 has 8 MA's), (Start: 24 @32737 has 1 MA's), (49, 32659), (Start: 55 @32641 has  
33 MA's), (115, 32371),

Gene: Lambert1\_46 Start: 32081, Stop: 31806, Start Num: 48  
Candidate Starts for Lambert1\_46:  
(16, 32171), (Start: 18 @32162 has 5 MA's), (Start: 48 @32081 has 32 MA's), (108, 31904),

Gene: LappelDuVide\_46 Start: 31879, Stop: 31577, Start Num: 45  
Candidate Starts for LappelDuVide\_46:  
(2, 32149), (Start: 45 @31879 has 147 MA's), (93, 31747), (103, 31708), (111, 31660), (115, 31627),

Gene: LarryKay\_50 Start: 32341, Stop: 32093, Start Num: 63  
Candidate Starts for LarryKay\_50:  
(Start: 63 @32341 has 80 MA's), (85, 32287), (103, 32224), (106, 32200), (108, 32191), (115, 32143),  
(116, 32128),

Gene: LastResort\_49 Start: 30629, Stop: 30336, Start Num: 62  
Candidate Starts for LastResort\_49:  
(Start: 62 @30629 has 20 MA's), (98, 30512), (111, 30419),

Gene: Lemur\_46 Start: 31877, Stop: 31575, Start Num: 45  
Candidate Starts for Lemur\_46:  
(2, 32147), (Start: 45 @31877 has 147 MA's), (93, 31745), (103, 31706), (111, 31658), (115, 31625),

Gene: LeoAvram\_46 Start: 31880, Stop: 31578, Start Num: 45  
Candidate Starts for LeoAvram\_46:  
(2, 32150), (Start: 45 @31880 has 147 MA's), (93, 31748), (103, 31709), (111, 31661), (115, 31628),

Gene: Lev2\_40 Start: 30919, Stop: 30656, Start Num: 55  
Candidate Starts for Lev2\_40:  
(Start: 55 @30919 has 33 MA's), (Start: 61 @30910 has 3 MA's), (64, 30901), (70, 30880), (Start: 78  
@30868 has 2 MA's), (105, 30784), (111, 30751), (115, 30718),

Gene: Lilith\_51 Start: 32301, Stop: 32053, Start Num: 63  
Candidate Starts for Lilith\_51:  
(Start: 63 @32301 has 80 MA's), (85, 32247), (103, 32184), (106, 32160), (108, 32151), (115, 32103),  
(116, 32088),

Gene: Lilleskat\_45 Start: 32063, Stop: 31737, Start Num: 27  
Candidate Starts for Lilleskat\_45:  
(Start: 27 @32063 has 40 MA's), (37, 32039), (Start: 52 @31997 has 1 MA's), (117, 31757),

Gene: Lillie\_37 Start: 28394, Stop: 28122, Start Num: 66  
Candidate Starts for Lillie\_37:  
(Start: 66 @28394 has 35 MA's), (87, 28328), (114, 28178), (117, 28142),

Gene: LittleB\_46 Start: 31881, Stop: 31579, Start Num: 45  
Candidate Starts for LittleB\_46:  
(2, 32151), (Start: 45 @31881 has 147 MA's), (93, 31749), (103, 31710), (111, 31662), (115, 31629),

Gene: LittleCherry\_41 Start: 31256, Stop: 30993, Start Num: 55  
Candidate Starts for LittleCherry\_41:  
(Start: 55 @31256 has 33 MA's), (Start: 61 @31247 has 3 MA's), (Start: 78 @31205 has 2 MA's), (91, 31175), (105, 31121), (111, 31088), (115, 31055),

Gene: LittleGuy\_46 Start: 31776, Stop: 31474, Start Num: 45  
Candidate Starts for LittleGuy\_46:  
(2, 32046), (Start: 45 @31776 has 147 MA's), (93, 31644), (103, 31605), (111, 31557), (115, 31524),

Gene: LochMonster\_47 Start: 32116, Stop: 31814, Start Num: 45  
Candidate Starts for LochMonster\_47:  
(2, 32386), (Start: 45 @32116 has 147 MA's), (Start: 62 @32074 has 20 MA's), (93, 31984), (103, 31945), (111, 31897), (115, 31864),

Gene: LoneWolf\_47 Start: 31870, Stop: 31502, Start Num: 25  
Candidate Starts for LoneWolf\_47:  
(3, 32050), (4, 31999), (5, 31975), (Start: 25 @31870 has 1 MA's), (37, 31846), (Start: 52 @31804 has 1 MA's), (73, 31762), (117, 31522),

Gene: Looper\_50 Start: 30606, Stop: 30313, Start Num: 62  
Candidate Starts for Looper\_50:  
(Start: 62 @30606 has 20 MA's), (98, 30489), (111, 30396),

Gene: Lorenzo\_46 Start: 31880, Stop: 31578, Start Num: 45  
Candidate Starts for Lorenzo\_46:  
(2, 32150), (Start: 45 @31880 has 147 MA's), (93, 31748), (103, 31709), (111, 31661), (115, 31628),

Gene: Louie6\_49 Start: 32340, Stop: 32092, Start Num: 63  
Candidate Starts for Louie6\_49:  
(Start: 63 @32340 has 80 MA's), (85, 32286), (103, 32223), (106, 32199), (108, 32190), (115, 32142), (116, 32127),

Gene: Luchador\_52 Start: 34435, Stop: 34088, Start Num: 27  
Candidate Starts for Luchador\_52:  
(17, 34459), (Start: 27 @34435 has 40 MA's), (Start: 52 @34375 has 1 MA's), (111, 34168), (117, 34108),

Gene: Lucyedi\_48 Start: 31865, Stop: 31503, Start Num: 23  
Candidate Starts for Lucyedi\_48:  
(Start: 23 @31865 has 3 MA's), (30, 31841), (111, 31583),

Gene: LugYA\_53 Start: 32309, Stop: 32061, Start Num: 63

Candidate Starts for LugYA\_53:

(Start: 63 @32309 has 80 MA's), (85, 32255), (103, 32192), (106, 32168), (108, 32159), (115, 32111), (116, 32096),

Gene: Lunsford\_47 Start: 31874, Stop: 31572, Start Num: 45

Candidate Starts for Lunsford\_47:

(2, 32144), (Start: 45 @31874 has 147 MA's), (93, 31742), (103, 31703), (111, 31655), (115, 31622),

Gene: MA5\_46 Start: 31164, Stop: 30889, Start Num: 48

Candidate Starts for MA5\_46:

(13, 31281), (17, 31257), (Start: 18 @31251 has 5 MA's), (29, 31224), (Start: 48 @31164 has 32 MA's), (85, 31074), (108, 30987), (115, 30939),

Gene: MK4\_46 Start: 31247, Stop: 30972, Start Num: 48

Candidate Starts for MK4\_46:

(Start: 18 @31334 has 5 MA's), (36, 31277), (Start: 48 @31247 has 32 MA's), (89, 31142), (108, 31070), (115, 31022),

Gene: MadMarie\_50 Start: 32310, Stop: 32062, Start Num: 63

Candidate Starts for MadMarie\_50:

(Start: 63 @32310 has 80 MA's), (85, 32256), (103, 32193), (106, 32169), (108, 32160), (115, 32112), (116, 32097),

Gene: Mainiac\_50 Start: 32302, Stop: 32054, Start Num: 63

Candidate Starts for Mainiac\_50:

(Start: 63 @32302 has 80 MA's), (85, 32248), (103, 32185), (106, 32161), (108, 32152), (115, 32104), (116, 32089),

Gene: MajorMajor\_46 Start: 31085, Stop: 30678, Start Num: 19

Candidate Starts for MajorMajor\_46:

(Start: 19 @31085 has 8 MA's), (33, 31049), (68, 30965), (111, 30758), (115, 30725),

Gene: Malinsilva\_52 Start: 32300, Stop: 32052, Start Num: 63

Candidate Starts for Malinsilva\_52:

(Start: 63 @32300 has 80 MA's), (85, 32246), (103, 32183), (106, 32159), (108, 32150), (115, 32102), (116, 32087),

Gene: Maminiaina\_46 Start: 31851, Stop: 31525, Start Num: 27

Candidate Starts for Maminiaina\_46:

(Start: 27 @31851 has 40 MA's), (37, 31827), (Start: 52 @31785 has 1 MA's), (85, 31743), (117, 31545),

Gene: Manu\_50 Start: 32208, Stop: 31960, Start Num: 63

Candidate Starts for Manu\_50:

(Start: 63 @32208 has 80 MA's), (85, 32154), (86, 32151), (103, 32091), (106, 32067), (108, 32058), (115, 32010), (116, 31995),

Gene: MarQuardt\_50 Start: 32310, Stop: 32062, Start Num: 63

Candidate Starts for MarQuardt\_50:

(Start: 63 @32310 has 80 MA's), (85, 32256), (103, 32193), (106, 32169), (108, 32160), (115, 32112), (116, 32097),

Gene: Marchesa\_46 Start: 31717, Stop: 31442, Start Num: 48  
Candidate Starts for Marchesa\_46:  
(Start: 48 @31717 has 32 MA's), (108, 31540), (115, 31492),

Gene: Margo\_46 Start: 32107, Stop: 31832, Start Num: 48  
Candidate Starts for Margo\_46:  
(16, 32197), (Start: 18 @32188 has 5 MA's), (Start: 48 @32107 has 32 MA's), (108, 31930),

Gene: Marie\_50 Start: 32308, Stop: 32060, Start Num: 63  
Candidate Starts for Marie\_50:  
(Start: 63 @32308 has 80 MA's), (85, 32254), (103, 32191), (106, 32167), (108, 32158), (115, 32110),  
(116, 32095),

Gene: Marius\_51 Start: 32205, Stop: 31957, Start Num: 63  
Candidate Starts for Marius\_51:  
(Start: 63 @32205 has 80 MA's), (85, 32151), (86, 32148), (103, 32088), (106, 32064), (108, 32055),  
(115, 32007), (116, 31992),

Gene: MarysWell\_39 Start: 31119, Stop: 30856, Start Num: 55  
Candidate Starts for MarysWell\_39:  
(Start: 55 @31119 has 33 MA's), (Start: 61 @31110 has 3 MA's), (64, 31101), (Start: 78 @31068 has  
2 MA's), (105, 30984), (111, 30951), (115, 30918),

Gene: Maverick\_46 Start: 31880, Stop: 31578, Start Num: 45  
Candidate Starts for Maverick\_46:  
(Start: 45 @31880 has 147 MA's), (93, 31748), (103, 31709), (111, 31661), (115, 31628),

Gene: Maxo\_47 Start: 31882, Stop: 31580, Start Num: 45  
Candidate Starts for Maxo\_47:  
(2, 32152), (Start: 45 @31882 has 147 MA's), (93, 31750), (103, 31711), (111, 31663), (115, 31630),

Gene: Mazhar510\_46 Start: 31881, Stop: 31579, Start Num: 45  
Candidate Starts for Mazhar510\_46:  
(Start: 45 @31881 has 147 MA's), (93, 31749), (103, 31710), (111, 31662), (115, 31629),

Gene: Medusa\_46 Start: 31879, Stop: 31577, Start Num: 45  
Candidate Starts for Medusa\_46:  
(2, 32149), (Start: 45 @31879 has 147 MA's), (93, 31747), (103, 31708), (111, 31660), (115, 31627),

Gene: MeeZee\_46 Start: 31877, Stop: 31575, Start Num: 45  
Candidate Starts for MeeZee\_46:  
(2, 32147), (Start: 45 @31877 has 147 MA's), (93, 31745), (103, 31706), (111, 31658), (115, 31625),

Gene: Melvin\_48 Start: 31875, Stop: 31573, Start Num: 45  
Candidate Starts for Melvin\_48:  
(2, 32145), (Start: 45 @31875 has 147 MA's), (93, 31743), (103, 31704), (111, 31656), (115, 31623),

Gene: Methuselah\_47 Start: 32335, Stop: 32087, Start Num: 63  
Candidate Starts for Methuselah\_47:  
(Start: 63 @32335 has 80 MA's), (85, 32281), (103, 32218), (106, 32194), (108, 32185), (115, 32137),  
(116, 32122),

Gene: Micasa\_42 Start: 31386, Stop: 31123, Start Num: 55

Candidate Starts for Micasa\_42:

(Start: 55 @31386 has 33 MA's), (Start: 61 @31377 has 3 MA's), (Start: 78 @31335 has 2 MA's), (91, 31305), (105, 31251), (111, 31218), (115, 31185),

Gene: Microwolf\_50 Start: 32309, Stop: 32061, Start Num: 63

Candidate Starts for Microwolf\_50:

(Start: 63 @32309 has 80 MA's), (85, 32255), (103, 32192), (106, 32168), (108, 32159), (115, 32111), (116, 32096),

Gene: Midas2\_40 Start: 31053, Stop: 30841, Start Num: 78

Candidate Starts for Midas2\_40:

(Start: 55 @31104 has 33 MA's), (Start: 61 @31095 has 3 MA's), (64, 31086), (70, 31065), (Start: 78 @31053 has 2 MA's), (105, 30969), (111, 30936), (115, 30903),

Gene: Milcery\_41 Start: 31223, Stop: 30960, Start Num: 55

Candidate Starts for Milcery\_41:

(Start: 55 @31223 has 33 MA's), (Start: 61 @31214 has 3 MA's), (Start: 78 @31172 has 2 MA's), (91, 31142), (105, 31088), (111, 31055), (115, 31022),

Gene: Millski\_45 Start: 31881, Stop: 31579, Start Num: 45

Candidate Starts for Millski\_45:

(2, 32151), (Start: 45 @31881 has 147 MA's), (93, 31749), (103, 31710), (111, 31662), (115, 31629),

Gene: MinecraftSteve\_50 Start: 30593, Stop: 30300, Start Num: 62

Candidate Starts for MinecraftSteve\_50:

(Start: 62 @30593 has 20 MA's), (98, 30476), (111, 30383),

Gene: Miramae\_45 Start: 32041, Stop: 31718, Start Num: 45

Candidate Starts for Miramae\_45:

(Start: 45 @32041 has 147 MA's), (51, 32026), (83, 31933), (86, 31918), (93, 31888), (109, 31813), (115, 31768),

Gene: Misomonster\_51 Start: 32338, Stop: 32090, Start Num: 63

Candidate Starts for Misomonster\_51:

(Start: 63 @32338 has 80 MA's), (85, 32284), (103, 32221), (106, 32197), (108, 32188), (115, 32140), (116, 32125),

Gene: MissWhite\_46 Start: 30606, Stop: 30256, Start Num: 22

Candidate Starts for MissWhite\_46:

(Start: 22 @30606 has 2 MA's), (29, 30588), (99, 30426), (111, 30336), (113, 30315),

Gene: MoneyMay\_50 Start: 32308, Stop: 32060, Start Num: 63

Candidate Starts for MoneyMay\_50:

(Start: 63 @32308 has 80 MA's), (85, 32254), (103, 32191), (106, 32167), (108, 32158), (115, 32110), (116, 32095),

Gene: Morpher26\_45 Start: 31874, Stop: 31551, Start Num: 45

Candidate Starts for Morpher26\_45:

(Start: 45 @31874 has 147 MA's), (82, 31775), (83, 31766), (86, 31751), (93, 31721), (115, 31601),

Gene: Morrow\_47 Start: 31886, Stop: 31584, Start Num: 45

Candidate Starts for Morrow\_47:

(2, 32156), (Start: 45 @31886 has 147 MA's), (93, 31754), (103, 31715), (111, 31667), (115, 31634),

Gene: MuchMore\_53 Start: 32300, Stop: 32052, Start Num: 63

Candidate Starts for MuchMore\_53:

(Start: 63 @32300 has 80 MA's), (85, 32246), (103, 32183), (106, 32159), (108, 32150), (115, 32102), (116, 32087),

Gene: Munch\_48 Start: 31705, Stop: 31358, Start Num: 27

Candidate Starts for Munch\_48:

(Start: 27 @31705 has 40 MA's), (40, 31672), (Start: 48 @31651 has 32 MA's), (111, 31438), (115, 31405),

Gene: Mundrea\_45 Start: 31861, Stop: 31538, Start Num: 45

Candidate Starts for Mundrea\_45:

(Start: 45 @31861 has 147 MA's), (83, 31753), (86, 31738), (93, 31708), (109, 31633), (115, 31588),

Gene: MyraDee\_42 Start: 29297, Stop: 29043, Start Num: 52

Candidate Starts for MyraDee\_42:

(Start: 52 @29297 has 1 MA's), (108, 29138), (115, 29090),

Gene: Myxus\_47 Start: 32109, Stop: 31783, Start Num: 27

Candidate Starts for Myxus\_47:

(Start: 27 @32109 has 40 MA's), (37, 32085), (Start: 52 @32043 has 1 MA's), (117, 31803),

Gene: Naca\_42 Start: 31534, Stop: 31271, Start Num: 55

Candidate Starts for Naca\_42:

(Start: 55 @31534 has 33 MA's), (Start: 61 @31525 has 3 MA's), (68, 31504), (Start: 78 @31483 has 2 MA's), (111, 31366), (114, 31342),

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

Candidate Starts for Naiad\_37:

(Start: 66 @28407 has 35 MA's), (114, 28191), (117, 28155),

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

Candidate Starts for Nancinator\_37:

(Start: 66 @28395 has 35 MA's), (87, 28329), (114, 28179), (117, 28143),

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

Candidate Starts for Natosaleda\_37:

(Start: 66 @28394 has 35 MA's), (87, 28328), (114, 28178), (117, 28142),

Gene: NearlyHeadless\_44 Start: 30949, Stop: 30662, Start Num: 58

Candidate Starts for NearlyHeadless\_44:

(Start: 58 @30949 has 11 MA's), (65, 30940), (79, 30898), (115, 30712),

Gene: Nebs\_47 Start: 31880, Stop: 31578, Start Num: 45

Candidate Starts for Nebs\_47:

(2, 32150), (Start: 45 @31880 has 147 MA's), (93, 31748), (103, 31709), (111, 31661), (115, 31628),

Gene: Nebulosus\_49 Start: 30625, Stop: 30332, Start Num: 62

Candidate Starts for Nebulosus\_49:

(Start: 62 @30625 has 20 MA's), (98, 30508), (111, 30415),

Gene: Nedarya\_45 Start: 30054, Stop: 29713, Start Num: 47



Candidate Starts for Nedarya\_45:

(Start: 47 @30054 has 1 MA's), (101, 29883), (111, 29796),

Gene: Nemo27\_46 Start: 31879, Stop: 31577, Start Num: 45

Candidate Starts for Nemo27\_46:

(Start: 45 @31879 has 147 MA's), (93, 31747), (103, 31708), (111, 31660), (115, 31627),

Gene: Noella\_46 Start: 32082, Stop: 31807, Start Num: 48

Candidate Starts for Noella\_46:

(16, 32172), (Start: 18 @32163 has 5 MA's), (Start: 48 @32082 has 32 MA's), (108, 31905),

Gene: Noelle\_46 Start: 32163, Stop: 31840, Start Num: 45

Candidate Starts for Noelle\_46:

(Start: 45 @32163 has 147 MA's), (83, 32055), (93, 32010), (115, 31890),

Gene: Norbert\_45 Start: 32081, Stop: 31806, Start Num: 48

Candidate Starts for Norbert\_45:

(16, 32171), (Start: 18 @32162 has 5 MA's), (Start: 48 @32081 has 32 MA's), (108, 31904),

Gene: NorthStar\_45 Start: 31880, Stop: 31578, Start Num: 45

Candidate Starts for NorthStar\_45:

(2, 32150), (Start: 45 @31880 has 147 MA's), (93, 31748), (103, 31709), (111, 31661), (115, 31628),

Gene: NotAPhaseMom\_46 Start: 31884, Stop: 31582, Start Num: 45

Candidate Starts for NotAPhaseMom\_46:

(Start: 45 @31884 has 147 MA's), (93, 31752), (103, 31713), (111, 31665), (115, 31632),

Gene: Nyxis\_46 Start: 31770, Stop: 31468, Start Num: 45

Candidate Starts for Nyxis\_46:

(2, 32040), (Start: 45 @31770 has 147 MA's), (93, 31638), (103, 31599), (111, 31551), (115, 31518),

Gene: OKCentral2016\_44 Start: 31174, Stop: 30836, Start Num: 45

Candidate Starts for OKCentral2016\_44:

(8, 31318), (16, 31267), (Start: 45 @31174 has 147 MA's), (72, 31114), (98, 31024), (102, 31009), (109, 30931),

Gene: OKaNui\_46 Start: 31930, Stop: 31628, Start Num: 45

Candidate Starts for OKaNui\_46:

(2, 32200), (Start: 45 @31930 has 147 MA's), (93, 31798), (103, 31759), (111, 31711), (115, 31678),

Gene: Obama12\_47 Start: 32304, Stop: 32002, Start Num: 45

Candidate Starts for Obama12\_47:

(2, 32574), (Start: 45 @32304 has 147 MA's), (93, 32172), (103, 32133), (115, 32052),

Gene: Odin\_46 Start: 30872, Stop: 30465, Start Num: 19

Candidate Starts for Odin\_46:

(Start: 19 @30872 has 8 MA's), (56, 30773), (111, 30545), (115, 30512),

Gene: Ohfah\_47 Start: 31880, Stop: 31578, Start Num: 45

Candidate Starts for Ohfah\_47:

(2, 32150), (Start: 45 @31880 has 147 MA's), (93, 31748), (103, 31709), (111, 31661), (115, 31628),

Gene: OlanP\_49 Start: 32378, Stop: 32130, Start Num: 63

Candidate Starts for OlanP\_49:

(Start: 63 @32378 has 80 MA's), (77, 32336), (85, 32324), (86, 32321), (103, 32261), (106, 32237), (108, 32228), (115, 32180), (116, 32165),

Gene: Ollie\_50 Start: 32179, Stop: 31931, Start Num: 63

Candidate Starts for Ollie\_50:

(Start: 63 @32179 has 80 MA's), (85, 32125), (103, 32062), (106, 32038), (108, 32029), (115, 31981), (116, 31966),

Gene: Onglai\_45 Start: 30450, Stop: 30124, Start Num: 27

Candidate Starts for Onglai\_45:

(Start: 27 @30450 has 40 MA's), (37, 30426), (Start: 52 @30384 has 1 MA's), (117, 30144),

Gene: Oofda\_50 Start: 30484, Stop: 30191, Start Num: 62

Candidate Starts for Oofda\_50:

(Start: 62 @30484 has 20 MA's), (98, 30367), (111, 30274),

Gene: P28Green\_51 Start: 32311, Stop: 32063, Start Num: 63

Candidate Starts for P28Green\_51:

(Start: 63 @32311 has 80 MA's), (85, 32257), (103, 32194), (106, 32170), (108, 32161), (115, 32113), (116, 32098),

Gene: PGHhamlin\_52 Start: 32300, Stop: 32052, Start Num: 63

Candidate Starts for PGHhamlin\_52:

(Start: 63 @32300 has 80 MA's), (85, 32246), (103, 32183), (106, 32159), (108, 32150), (115, 32102), (116, 32087),

Gene: PP\_50 Start: 36311, Stop: 35883, Start Num: 27

Candidate Starts for PP\_50:

(10, 36377), (Start: 27 @36311 has 40 MA's), (44, 36260), (73, 36179), (105, 35999), (108, 35981), (111, 35966), (116, 35918), (117, 35906),

Gene: PackMan\_46 Start: 32109, Stop: 31783, Start Num: 27

Candidate Starts for PackMan\_46:

(Start: 27 @32109 has 40 MA's), (37, 32085), (Start: 52 @32043 has 1 MA's), (117, 31803),

Gene: PainterBoy\_48 Start: 31801, Stop: 31439, Start Num: 23

Candidate Starts for PainterBoy\_48:

(Start: 23 @31801 has 3 MA's), (30, 31777), (111, 31519),

Gene: Palestino\_45 Start: 31880, Stop: 31578, Start Num: 45

Candidate Starts for Palestino\_45:

(2, 32150), (Start: 45 @31880 has 147 MA's), (93, 31748), (103, 31709), (111, 31661), (115, 31628),

Gene: Panamaxus\_44 Start: 32081, Stop: 31806, Start Num: 48

Candidate Starts for Panamaxus\_44:

(16, 32171), (Start: 18 @32162 has 5 MA's), (Start: 48 @32081 has 32 MA's), (108, 31904),

Gene: Partridge\_37 Start: 28510, Stop: 28205, Start Num: 53

Candidate Starts for Partridge\_37:

(Start: 53 @28510 has 1 MA's), (Start: 66 @28477 has 35 MA's), (92, 28390), (114, 28261), (117, 28225),

Gene: Pawn\_50 Start: 32212, Stop: 31964, Start Num: 63  
Candidate Starts for Pawn\_50:  
(Start: 63 @32212 has 80 MA's), (85, 32158), (86, 32155), (103, 32095), (106, 32071), (108, 32062),  
(115, 32014), (116, 31999),

Gene: PeaceMeal1\_43 Start: 30752, Stop: 30396, Start Num: 45  
Candidate Starts for PeaceMeal1\_43:  
(8, 30896), (Start: 45 @30752 has 147 MA's), (102, 30569), (109, 30491),

Gene: Peaches\_46 Start: 31879, Stop: 31577, Start Num: 45  
Candidate Starts for Peaches\_46:  
(2, 32149), (Start: 45 @31879 has 147 MA's), (93, 31747), (103, 31708), (111, 31660), (115, 31627),

Gene: Pembroke\_50 Start: 32309, Stop: 32061, Start Num: 63  
Candidate Starts for Pembroke\_50:  
(Start: 63 @32309 has 80 MA's), (85, 32255), (103, 32192), (106, 32168), (108, 32159), (115, 32111),  
(116, 32096),

Gene: Penny1\_51 Start: 32312, Stop: 32064, Start Num: 63  
Candidate Starts for Penny1\_51:  
(Start: 63 @32312 has 80 MA's), (72, 32282), (85, 32258), (103, 32195), (106, 32171), (108, 32162),  
(115, 32114), (116, 32099),

Gene: Perplexer\_45 Start: 31850, Stop: 31527, Start Num: 45  
Candidate Starts for Perplexer\_45:  
(Start: 45 @31850 has 147 MA's), (82, 31751), (83, 31742), (86, 31727), (93, 31697), (115, 31577),

Gene: PeterPeter\_46 Start: 31877, Stop: 31575, Start Num: 45  
Candidate Starts for PeterPeter\_46:  
(2, 32147), (Start: 45 @31877 has 147 MA's), (93, 31745), (103, 31706), (111, 31658), (115, 31625),

Gene: PetiteSangsue\_45 Start: 31853, Stop: 31530, Start Num: 45  
Candidate Starts for PetiteSangsue\_45:  
(Start: 45 @31853 has 147 MA's), (82, 31754), (83, 31745), (86, 31730), (93, 31700), (115, 31580),

Gene: PetterN\_44 Start: 30975, Stop: 30712, Start Num: 55  
Candidate Starts for PetterN\_44:  
(28, 31053), (Start: 55 @30975 has 33 MA's), (Start: 61 @30966 has 3 MA's), (68, 30945), (Start: 78  
@30924 has 2 MA's), (111, 30807), (114, 30783),

Gene: Phacado\_46 Start: 31879, Stop: 31577, Start Num: 45  
Candidate Starts for Phacado\_46:  
(Start: 45 @31879 has 147 MA's), (93, 31747), (103, 31708), (111, 31660), (115, 31627),

Gene: Phaeder\_47 Start: 32109, Stop: 31783, Start Num: 27  
Candidate Starts for Phaeder\_47:  
(Start: 27 @32109 has 40 MA's), (37, 32085), (Start: 52 @32043 has 1 MA's), (117, 31803),

Gene: PhailMary\_36 Start: 28716, Stop: 28444, Start Num: 66  
Candidate Starts for PhailMary\_36:  
(Start: 66 @28716 has 35 MA's), (87, 28650), (114, 28500), (117, 28464),

Gene: Phantastic\_47 Start: 31457, Stop: 31182, Start Num: 48

Candidate Starts for Phantastic\_47:

(Start: 18 @31538 has 5 MA's), (36, 31481), (Start: 48 @31457 has 32 MA's), (59, 31430), (108, 31280), (115, 31232),

Gene: Pharaoh\_41 Start: 31682, Stop: 31311, Start Num: 27

Candidate Starts for Pharaoh\_41:

(1, 32006), (Start: 27 @31682 has 40 MA's), (Start: 52 @31619 has 1 MA's), (88, 31523), (111, 31391),

Gene: Phelipe\_47 Start: 31880, Stop: 31578, Start Num: 45

Candidate Starts for Phelipe\_47:

(2, 32150), (Start: 45 @31880 has 147 MA's), (93, 31748), (103, 31709), (111, 31661), (115, 31628),

Gene: Phighter1804\_46 Start: 31943, Stop: 31620, Start Num: 45

Candidate Starts for Phighter1804\_46:

(Start: 45 @31943 has 147 MA's), (51, 31928), (93, 31790), (103, 31751), (111, 31703), (115, 31670),

Gene: Phillis\_46 Start: 31492, Stop: 31232, Start Num: 58

Candidate Starts for Phillis\_46:

(Start: 58 @31492 has 11 MA's), (65, 31483), (110, 31330), (115, 31291),

Gene: PhishRPhriends\_48 Start: 31386, Stop: 31138, Start Num: 63

Candidate Starts for PhishRPhriends\_48:

(Start: 63 @31386 has 80 MA's), (85, 31332), (86, 31329), (103, 31269), (106, 31245), (108, 31236), (115, 31188), (116, 31173),

Gene: Phlei\_36 Start: 31613, Stop: 31308, Start Num: 40

Candidate Starts for Phlei\_36:

(35, 31628), (40, 31613), (69, 31559), (73, 31541), (95, 31487), (118, 31319),

Gene: Phlorence\_39 Start: 30794, Stop: 30531, Start Num: 55

Candidate Starts for Phlorence\_39:

(Start: 55 @30794 has 33 MA's), (Start: 61 @30785 has 3 MA's), (64, 30776), (70, 30755), (Start: 78 @30743 has 2 MA's), (105, 30659), (111, 30626), (115, 30593),

Gene: Phoebe\_51 Start: 32301, Stop: 32053, Start Num: 63

Candidate Starts for Phoebe\_51:

(Start: 63 @32301 has 80 MA's), (85, 32247), (103, 32184), (106, 32160), (108, 32151), (115, 32103), (116, 32088),

Gene: Phonnegut\_47 Start: 32158, Stop: 31832, Start Num: 27

Candidate Starts for Phonnegut\_47:

(Start: 27 @32158 has 40 MA's), (37, 32134), (Start: 52 @32092 has 1 MA's), (117, 31852),

Gene: Phontbonne\_46 Start: 31771, Stop: 31469, Start Num: 45

Candidate Starts for Phontbonne\_46:

(2, 32041), (Start: 45 @31771 has 147 MA's), (93, 31639), (103, 31600), (111, 31552), (115, 31519),

Gene: Phoxy\_50 Start: 32336, Stop: 32088, Start Num: 63

Candidate Starts for Phoxy\_50:

(Start: 63 @32336 has 80 MA's), (85, 32282), (103, 32219), (106, 32195), (108, 32186), (115, 32138), (116, 32123),

Gene: Phrankenstein\_37 Start: 28340, Stop: 28068, Start Num: 66  
Candidate Starts for Phrankenstein\_37:  
(Start: 66 @28340 has 35 MA's), (87, 28274), (114, 28124), (117, 28088),

Gene: Phranny\_51 Start: 32194, Stop: 31946, Start Num: 63  
Candidate Starts for Phranny\_51:  
(Start: 63 @32194 has 80 MA's), (85, 32140), (86, 32137), (103, 32077), (106, 32053), (108, 32044),  
(115, 31996), (116, 31981),

Gene: PickleBack\_40 Start: 30920, Stop: 30657, Start Num: 55  
Candidate Starts for PickleBack\_40:  
(Start: 55 @30920 has 33 MA's), (Start: 61 @30911 has 3 MA's), (64, 30902), (70, 30881), (Start: 78  
@30869 has 2 MA's), (105, 30785), (111, 30752), (115, 30719),

Gene: Pioneer\_47 Start: 32158, Stop: 31832, Start Num: 27  
Candidate Starts for Pioneer\_47:  
(Start: 27 @32158 has 40 MA's), (37, 32134), (Start: 52 @32092 has 1 MA's), (117, 31852),

Gene: Pipcraft\_44 Start: 31880, Stop: 31578, Start Num: 45  
Candidate Starts for Pipcraft\_44:  
(2, 32150), (Start: 45 @31880 has 147 MA's), (93, 31748), (103, 31709), (111, 31661), (115, 31628),

Gene: Pistachio\_48 Start: 31385, Stop: 31110, Start Num: 48  
Candidate Starts for Pistachio\_48:  
(Start: 48 @31385 has 32 MA's), (108, 31208), (115, 31160),

Gene: Pocahontas\_46 Start: 32078, Stop: 31803, Start Num: 48  
Candidate Starts for Pocahontas\_46:  
(16, 32168), (Start: 18 @32159 has 5 MA's), (Start: 48 @32078 has 32 MA's), (108, 31901),

Gene: Polymorphads\_47 Start: 31873, Stop: 31571, Start Num: 45  
Candidate Starts for Polymorphads\_47:  
(2, 32143), (Start: 45 @31873 has 147 MA's), (93, 31741), (103, 31702), (111, 31654), (115, 31621),

Gene: Poompha\_44 Start: 30750, Stop: 30394, Start Num: 45  
Candidate Starts for Poompha\_44:  
(8, 30894), (Start: 45 @30750 has 147 MA's), (102, 30567), (109, 30489),

Gene: Popcicle\_46 Start: 32078, Stop: 31803, Start Num: 48  
Candidate Starts for Popcicle\_46:  
(16, 32168), (Start: 18 @32159 has 5 MA's), (Start: 48 @32078 has 32 MA's), (108, 31901),

Gene: PotatoSplit\_52 Start: 32312, Stop: 32064, Start Num: 63  
Candidate Starts for PotatoSplit\_52:  
(Start: 63 @32312 has 80 MA's), (85, 32258), (103, 32195), (106, 32171), (108, 32162), (115, 32114),  
(116, 32099),

Gene: Priya\_47 Start: 32176, Stop: 31850, Start Num: 27  
Candidate Starts for Priya\_47:  
(Start: 27 @32176 has 40 MA's), (37, 32152), (Start: 52 @32110 has 1 MA's), (117, 31870),

Gene: Pumbaa\_46 Start: 31825, Stop: 31523, Start Num: 45  
Candidate Starts for Pumbaa\_46:

(2, 32095), (Start: 45 @31825 has 147 MA's), (93, 31693), (103, 31654), (111, 31606), (115, 31573),

Gene: Puppy\_48 Start: 31458, Stop: 31183, Start Num: 48

Candidate Starts for Puppy\_48:

(Start: 48 @31458 has 32 MA's), (108, 31281), (115, 31233),

Gene: PurpleHaze\_50 Start: 32207, Stop: 31959, Start Num: 63

Candidate Starts for PurpleHaze\_50:

(Start: 63 @32207 has 80 MA's), (85, 32153), (86, 32150), (103, 32090), (106, 32066), (108, 32057), (115, 32009), (116, 31994),

Gene: Qobbit\_47 Start: 32138, Stop: 31812, Start Num: 27

Candidate Starts for Qobbit\_47:

(Start: 27 @32138 has 40 MA's), (37, 32114), (Start: 52 @32072 has 1 MA's), (117, 31832),

Gene: QuinnKiro\_45 Start: 32081, Stop: 31806, Start Num: 48

Candidate Starts for QuinnKiro\_45:

(16, 32171), (Start: 18 @32162 has 5 MA's), (Start: 48 @32081 has 32 MA's), (108, 31904),

Gene: Quokka\_45 Start: 31085, Stop: 30678, Start Num: 19

Candidate Starts for Quokka\_45:

(Start: 19 @31085 has 8 MA's), (33, 31049), (68, 30965), (111, 30758), (115, 30725),

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

Candidate Starts for RER2\_30:

(Start: 66 @25266 has 35 MA's), (87, 25200), (114, 25050), (117, 25014),

Gene: RGL3\_32 Start: 26225, Stop: 25980, Start Num: 69

Candidate Starts for RGL3\_32:

(69, 26225), (84, 26183), (114, 26036), (117, 26000), (118, 25991),

Gene: Rahalelujah\_46 Start: 31411, Stop: 31040, Start Num: 27

Candidate Starts for Rahalelujah\_46:

(3, 31597), (4, 31546), (5, 31522), (Start: 27 @31411 has 40 MA's), (50, 31351), (Start: 52 @31348 has 1 MA's), (117, 31060),

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

Candidate Starts for Rasputin\_37:

(Start: 66 @28364 has 35 MA's), (87, 28298), (114, 28148), (117, 28112),

Gene: ReMo\_49 Start: 30626, Stop: 30333, Start Num: 62

Candidate Starts for ReMo\_49:

(Start: 62 @30626 has 20 MA's), (98, 30509), (111, 30416),

Gene: Reba\_50 Start: 31867, Stop: 31619, Start Num: 63

Candidate Starts for Reba\_50:

(Start: 63 @31867 has 80 MA's), (85, 31813), (86, 31810), (103, 31750), (106, 31726), (108, 31717), (115, 31669), (116, 31654),

Gene: Refuge\_46 Start: 33330, Stop: 32986, Start Num: 39

Candidate Starts for Refuge\_46:

(33, 33342), (Start: 39 @33330 has 5 MA's), (Start: 55 @33288 has 33 MA's), (57, 33285), (68, 33267), (85, 33213), (88, 33201), (111, 33066), (117, 33006),

Gene: Relief\_45 Start: 31877, Stop: 31575, Start Num: 45  
Candidate Starts for Relief\_45:  
(2, 32147), (Start: 45 @31877 has 147 MA's), (93, 31745), (103, 31706), (111, 31658), (115, 31625),

Gene: Remus\_49 Start: 30309, Stop: 30016, Start Num: 62  
Candidate Starts for Remus\_49:  
(Start: 62 @30309 has 20 MA's), (98, 30192), (111, 30099),

Gene: ResDef\_46 Start: 32081, Stop: 31806, Start Num: 48  
Candidate Starts for ResDef\_46:  
(16, 32171), (Start: 18 @32162 has 5 MA's), (Start: 48 @32081 has 32 MA's), (108, 31904),

Gene: RexFury\_37 Start: 28425, Stop: 28153, Start Num: 66  
Candidate Starts for RexFury\_37:  
(Start: 66 @28425 has 35 MA's), (87, 28359), (114, 28209), (117, 28173),

Gene: Rhodalysa\_37 Start: 28394, Stop: 28122, Start Num: 66  
Candidate Starts for Rhodalysa\_37:  
(Start: 66 @28394 has 35 MA's), (87, 28328), (114, 28178), (117, 28142),

Gene: RhynO\_46 Start: 31639, Stop: 31301, Start Num: 45  
Candidate Starts for RhynO\_46:  
(Start: 45 @31639 has 147 MA's), (72, 31579), (102, 31474), (109, 31396),

Gene: Roary\_45 Start: 31159, Stop: 30863, Start Num: 58  
Candidate Starts for Roary\_45:  
(31, 31225), (Start: 58 @31159 has 11 MA's), (79, 31108), (115, 30922),

Gene: Rockstar\_46 Start: 31256, Stop: 30981, Start Num: 48  
Candidate Starts for Rockstar\_46:  
(Start: 18 @31343 has 5 MA's), (36, 31286), (Start: 48 @31256 has 32 MA's), (89, 31151), (108, 31079), (115, 31031),

Gene: Romney\_46 Start: 31877, Stop: 31575, Start Num: 45  
Candidate Starts for Romney\_46:  
(2, 32147), (Start: 45 @31877 has 147 MA's), (Start: 62 @31835 has 20 MA's), (93, 31745), (103, 31706), (111, 31658), (115, 31625),

Gene: Roosevelt\_45 Start: 31882, Stop: 31580, Start Num: 45  
Candidate Starts for Roosevelt\_45:  
(2, 32152), (Start: 45 @31882 has 147 MA's), (93, 31750), (103, 31711), (111, 31663), (115, 31630),

Gene: Rosa24\_45 Start: 31911, Stop: 31609, Start Num: 45  
Candidate Starts for Rosa24\_45:  
(2, 32181), (Start: 45 @31911 has 147 MA's), (Start: 62 @31869 has 20 MA's), (93, 31779), (103, 31740), (111, 31692), (115, 31659),

Gene: Rosalind\_48 Start: 30512, Stop: 30219, Start Num: 62  
Candidate Starts for Rosalind\_48:  
(Start: 62 @30512 has 20 MA's), (98, 30395), (111, 30302),

Gene: Rowdy\_49 Start: 31547, Stop: 31209, Start Num: 45

Candidate Starts for Rowdy\_49:

(Start: 45 @31547 has 147 MA's), (72, 31487), (102, 31382), (109, 31304),

Gene: Ruin\_46 Start: 31873, Stop: 31571, Start Num: 45

Candidate Starts for Ruin\_46:

(2, 32143), (Start: 45 @31873 has 147 MA's), (93, 31741), (103, 31702), (111, 31654), (115, 31621),

Gene: Rummer\_49 Start: 32339, Stop: 32091, Start Num: 63

Candidate Starts for Rummer\_49:

(Start: 63 @32339 has 80 MA's), (85, 32285), (103, 32222), (106, 32198), (108, 32189), (115, 32141), (116, 32126),

Gene: RyeScarlet\_48 Start: 32133, Stop: 31807, Start Num: 27

Candidate Starts for RyeScarlet\_48:

(Start: 27 @32133 has 40 MA's), (37, 32109), (Start: 52 @32067 has 1 MA's), (117, 31827),

Gene: Sabertooth\_46 Start: 31882, Stop: 31580, Start Num: 45

Candidate Starts for Sabertooth\_46:

(2, 32152), (Start: 45 @31882 has 147 MA's), (93, 31750), (103, 31711), (111, 31663), (115, 31630),

Gene: Sabia\_50 Start: 32302, Stop: 32054, Start Num: 63

Candidate Starts for Sabia\_50:

(Start: 63 @32302 has 80 MA's), (85, 32248), (103, 32185), (106, 32161), (108, 32152), (115, 32104), (116, 32089),

Gene: Sabinator\_49 Start: 32307, Stop: 32059, Start Num: 63

Candidate Starts for Sabinator\_49:

(Start: 63 @32307 has 80 MA's), (85, 32253), (103, 32190), (106, 32166), (108, 32157), (115, 32109), (116, 32094),

Gene: Sachima\_44 Start: 32043, Stop: 31717, Start Num: 27

Candidate Starts for Sachima\_44:

(Start: 27 @32043 has 40 MA's), (37, 32019), (Start: 52 @31977 has 1 MA's), (117, 31737),

Gene: Saintus\_39 Start: 27880, Stop: 27593, Start Num: 58

Candidate Starts for Saintus\_39:

(Start: 58 @27880 has 11 MA's), (65, 27871), (79, 27829), (115, 27643),

Gene: SaturnRing\_47 Start: 31838, Stop: 31563, Start Num: 48

Candidate Starts for SaturnRing\_47:

(Start: 48 @31838 has 32 MA's), (108, 31661), (115, 31613),

Gene: Scamp\_46 Start: 31882, Stop: 31580, Start Num: 45

Candidate Starts for Scamp\_46:

(2, 32152), (Start: 45 @31882 has 147 MA's), (93, 31750), (103, 31711), (111, 31663), (115, 31630),

Gene: Scherzo\_47 Start: 32347, Stop: 32021, Start Num: 27

Candidate Starts for Scherzo\_47:

(Start: 27 @32347 has 40 MA's), (37, 32323), (Start: 52 @32281 has 1 MA's), (117, 32041),

Gene: Scorpia\_44 Start: 31052, Stop: 30789, Start Num: 55

Candidate Starts for Scorpia\_44:



(28, 31130), (Start: 55 @31052 has 33 MA's), (Start: 61 @31043 has 3 MA's), (68, 31022), (Start: 78 @31001 has 2 MA's), (111, 30884), (114, 30860),

Gene: Scout\_46 Start: 30966, Stop: 30691, Start Num: 48  
Candidate Starts for Scout\_46:  
(Start: 48 @30966 has 32 MA's), (108, 30789), (115, 30741),

Gene: Severus\_43 Start: 30750, Stop: 30394, Start Num: 45  
Candidate Starts for Severus\_43:  
(8, 30894), (Start: 45 @30750 has 147 MA's), (102, 30567), (109, 30489),

Gene: Shaka\_46 Start: 31877, Stop: 31575, Start Num: 45  
Candidate Starts for Shaka\_46:  
(2, 32147), (Start: 45 @31877 has 147 MA's), (93, 31745), (103, 31706), (111, 31658), (115, 31625),

Gene: Shapes\_49 Start: 31547, Stop: 31209, Start Num: 45  
Candidate Starts for Shapes\_49:  
(Start: 45 @31547 has 147 MA's), (72, 31487), (102, 31382), (109, 31304),

Gene: ShayRa\_51 Start: 30830, Stop: 30537, Start Num: 62  
Candidate Starts for ShayRa\_51:  
(Start: 62 @30830 has 20 MA's), (98, 30713), (111, 30620),

Gene: SheaKeira\_46 Start: 31684, Stop: 31340, Start Num: 27  
Candidate Starts for SheaKeira\_46:  
(Start: 27 @31684 has 40 MA's), (34, 31669), (37, 31663), (Start: 52 @31621 has 1 MA's), (75, 31579), (88, 31546), (117, 31360), (118, 31351),

Gene: SheldonCooper\_48 Start: 32303, Stop: 32001, Start Num: 45  
Candidate Starts for SheldonCooper\_48:  
(2, 32573), (Start: 45 @32303 has 147 MA's), (93, 32171), (103, 32132), (115, 32051),

Gene: Shuman\_37 Start: 28407, Stop: 28135, Start Num: 66  
Candidate Starts for Shuman\_37:  
(Start: 66 @28407 has 35 MA's), (87, 28341), (114, 28191), (117, 28155),

Gene: Shygu2\_45 Start: 31853, Stop: 31530, Start Num: 45  
Candidate Starts for Shygu2\_45:  
(Start: 45 @31853 has 147 MA's), (93, 31700), (103, 31661), (115, 31580),

Gene: Skipitt\_45 Start: 31874, Stop: 31572, Start Num: 45  
Candidate Starts for Skipitt\_45:  
(2, 32144), (Start: 45 @31874 has 147 MA's), (93, 31742), (103, 31703), (111, 31655), (115, 31622),

Gene: Smeadley\_45 Start: 31325, Stop: 31029, Start Num: 58  
Candidate Starts for Smeadley\_45:  
(31, 31391), (Start: 58 @31325 has 11 MA's), (79, 31274), (115, 31088),

Gene: Snickers\_50 Start: 32282, Stop: 32034, Start Num: 63  
Candidate Starts for Snickers\_50:  
(Start: 63 @32282 has 80 MA's), (85, 32228), (103, 32165), (106, 32141), (108, 32132), (115, 32084), (116, 32069),

Gene: SoYo\_50 Start: 32220, Stop: 31972, Start Num: 63  
Candidate Starts for SoYo\_50:  
(Start: 63 @32220 has 80 MA's), (85, 32166), (103, 32103), (106, 32079), (108, 32070), (115, 32022),  
(116, 32007),

Gene: SoilDragon\_50 Start: 31756, Stop: 31508, Start Num: 63  
Candidate Starts for SoilDragon\_50:  
(Start: 63 @31756 has 80 MA's), (85, 31702), (86, 31699), (103, 31639), (106, 31615), (108, 31606),  
(115, 31558), (116, 31543),

Gene: SororFago\_50 Start: 33759, Stop: 33412, Start Num: 27  
Candidate Starts for SororFago\_50:  
(17, 33783), (Start: 27 @33759 has 40 MA's), (88, 33624), (90, 33618), (111, 33492), (117, 33432),

Gene: Soshari\_52 Start: 32335, Stop: 32087, Start Num: 63  
Candidate Starts for Soshari\_52:  
(Start: 63 @32335 has 80 MA's), (85, 32281), (103, 32218), (106, 32194), (108, 32185), (115, 32137),  
(116, 32122),

Gene: Soups\_50 Start: 30829, Stop: 30536, Start Num: 62  
Candidate Starts for Soups\_50:  
(Start: 62 @30829 has 20 MA's), (98, 30712), (111, 30619),

Gene: Sparxx\_47 Start: 31875, Stop: 31573, Start Num: 45  
Candidate Starts for Sparxx\_47:  
(2, 32145), (Start: 45 @31875 has 147 MA's), (93, 31743), (103, 31704), (111, 31656), (115, 31623),

Gene: Spike509\_50 Start: 32336, Stop: 32088, Start Num: 63  
Candidate Starts for Spike509\_50:  
(Start: 63 @32336 has 80 MA's), (85, 32282), (103, 32219), (106, 32195), (108, 32186), (115, 32138),  
(116, 32123),

Gene: Spino\_45 Start: 31880, Stop: 31578, Start Num: 45  
Candidate Starts for Spino\_45:  
(2, 32150), (Start: 45 @31880 has 147 MA's), (93, 31748), (103, 31709), (111, 31661), (115, 31628),

Gene: Spouty\_47 Start: 32175, Stop: 31849, Start Num: 27  
Candidate Starts for Spouty\_47:  
(Start: 27 @32175 has 40 MA's), (37, 32151), (Start: 52 @32109 has 1 MA's), (117, 31869),

Gene: StCroix\_37 Start: 28407, Stop: 28135, Start Num: 66  
Candidate Starts for StCroix\_37:  
(Start: 66 @28407 has 35 MA's), (114, 28191), (117, 28155),

Gene: Stagni\_50 Start: 32311, Stop: 32063, Start Num: 63  
Candidate Starts for Stagni\_50:  
(Start: 63 @32311 has 80 MA's), (85, 32257), (103, 32194), (106, 32170), (108, 32161), (115, 32113),  
(116, 32098),

Gene: Stasia\_45 Start: 31752, Stop: 31450, Start Num: 45  
Candidate Starts for Stasia\_45:  
(Start: 45 @31752 has 147 MA's), (111, 31533),

Gene: Steamy\_43 Start: 31608, Stop: 31282, Start Num: 39  
Candidate Starts for Steamy\_43:  
(5, 31740), (14, 31668), (36, 31614), (Start: 39 @31608 has 5 MA's), (80, 31515), (82, 31509), (88, 31497), (111, 31362),

Gene: StepMih\_50 Start: 32302, Stop: 32054, Start Num: 63  
Candidate Starts for StepMih\_50:  
(Start: 63 @32302 has 80 MA's), (85, 32248), (103, 32185), (106, 32161), (108, 32152), (115, 32104), (116, 32089),

Gene: Stephig9\_45 Start: 31163, Stop: 30888, Start Num: 58  
Candidate Starts for Stephig9\_45:  
(31, 31229), (Start: 58 @31163 has 11 MA's), (65, 31154), (76, 31118), (110, 30986), (112, 30965),

Gene: Stink\_46 Start: 32321, Stop: 31998, Start Num: 45  
Candidate Starts for Stink\_46:  
(Start: 45 @32321 has 147 MA's), (51, 32306), (83, 32213), (86, 32198), (93, 32168), (109, 32093), (115, 32048),

Gene: Strosahl\_49 Start: 30309, Stop: 30016, Start Num: 62  
Candidate Starts for Strosahl\_49:  
(Start: 62 @30309 has 20 MA's), (98, 30192), (111, 30099),

Gene: Sunhee\_50 Start: 32074, Stop: 31730, Start Num: 29  
Candidate Starts for Sunhee\_50:  
(29, 32074), (50, 32020), (72, 31978), (90, 31936), (111, 31810), (117, 31750),

Gene: Superchunk\_46 Start: 30723, Stop: 30316, Start Num: 19  
Candidate Starts for Superchunk\_46:  
(Start: 19 @30723 has 8 MA's), (56, 30624), (92, 30510), (111, 30396), (115, 30363),

Gene: Swann\_37 Start: 28394, Stop: 28122, Start Num: 66  
Candidate Starts for Swann\_37:  
(Start: 66 @28394 has 35 MA's), (87, 28328), (114, 28178), (117, 28142),

Gene: Swirley\_43 Start: 31587, Stop: 31324, Start Num: 55  
Candidate Starts for Swirley\_43:  
(Start: 55 @31587 has 33 MA's), (Start: 61 @31578 has 3 MA's), (Start: 78 @31536 has 2 MA's), (91, 31506), (105, 31452), (111, 31419), (115, 31386),

Gene: Switzerland\_49 Start: 30692, Stop: 30399, Start Num: 62  
Candidate Starts for Switzerland\_49:  
(Start: 62 @30692 has 20 MA's), (98, 30575), (111, 30482),

Gene: SydNat\_42 Start: 31777, Stop: 31514, Start Num: 55  
Candidate Starts for SydNat\_42:  
(Start: 55 @31777 has 33 MA's), (Start: 61 @31768 has 3 MA's), (Start: 78 @31726 has 2 MA's), (91, 31696), (105, 31642), (111, 31609), (115, 31576),

Gene: TNguyen7\_47 Start: 31805, Stop: 31530, Start Num: 48  
Candidate Starts for TNguyen7\_47:  
(Start: 48 @31805 has 32 MA's), (108, 31628), (115, 31580),

Gene: TWAMP\_37 Start: 28394, Stop: 28122, Start Num: 66  
Candidate Starts for TWAMP\_37:  
(Start: 66 @28394 has 35 MA's), (87, 28328), (114, 28178), (117, 28142),

Gene: Takoda\_37 Start: 28367, Stop: 28095, Start Num: 66  
Candidate Starts for Takoda\_37:  
(Start: 66 @28367 has 35 MA's), (87, 28301), (114, 28151), (117, 28115),

Gene: Taquarus\_46 Start: 31883, Stop: 31581, Start Num: 45  
Candidate Starts for Taquarus\_46:  
(2, 32153), (Start: 45 @31883 has 147 MA's), (93, 31751), (103, 31712), (111, 31664), (115, 31631),

Gene: Tarynearal\_39 Start: 31029, Stop: 30766, Start Num: 55  
Candidate Starts for Tarynearal\_39:  
(Start: 55 @31029 has 33 MA's), (Start: 61 @31020 has 3 MA's), (Start: 78 @30978 has 2 MA's), (91, 30948), (105, 30894), (111, 30861), (115, 30828),

Gene: Taurus\_51 Start: 32308, Stop: 32060, Start Num: 63  
Candidate Starts for Taurus\_51:  
(Start: 63 @32308 has 80 MA's), (85, 32254), (103, 32191), (106, 32167), (108, 32158), (115, 32110), (116, 32095),

Gene: Texage\_45 Start: 32082, Stop: 31807, Start Num: 48  
Candidate Starts for Texage\_45:  
(16, 32172), (Start: 18 @32163 has 5 MA's), (Start: 48 @32082 has 32 MA's), (108, 31905),

Gene: Thanksgivukkah\_45 Start: 31878, Stop: 31576, Start Num: 45  
Candidate Starts for Thanksgivukkah\_45:  
(2, 32148), (Start: 45 @31878 has 147 MA's), (93, 31746), (103, 31707), (111, 31659), (115, 31626),

Gene: Theia\_38 Start: 31043, Stop: 30789, Start Num: 61  
Candidate Starts for Theia\_38:  
(Start: 55 @31052 has 33 MA's), (Start: 61 @31043 has 3 MA's), (64, 31034), (70, 31013), (Start: 78 @31001 has 2 MA's), (105, 30917), (111, 30884), (115, 30851),

Gene: Tiffany\_50 Start: 32194, Stop: 31946, Start Num: 63  
Candidate Starts for Tiffany\_50:  
(Start: 63 @32194 has 80 MA's), (85, 32140), (103, 32077), (106, 32053), (108, 32044), (115, 31996), (116, 31981),

Gene: Tiger\_39 Start: 30576, Stop: 30322, Start Num: 61  
Candidate Starts for Tiger\_39:  
(Start: 55 @30585 has 33 MA's), (Start: 61 @30576 has 3 MA's), (64, 30567), (70, 30546), (Start: 78 @30534 has 2 MA's), (105, 30450), (111, 30417), (115, 30384),

Gene: Timshel\_45 Start: 33822, Stop: 33541, Start Num: 42  
Candidate Starts for Timshel\_45:  
(8, 33957), (Start: 42 @33822 has 3 MA's), (81, 33759), (96, 33702), (103, 33672), (117, 33564),

Gene: TinaFeyge\_46 Start: 31875, Stop: 31573, Start Num: 45  
Candidate Starts for TinaFeyge\_46:  
(2, 32145), (Start: 45 @31875 has 147 MA's), (93, 31743), (103, 31704), (111, 31656), (115, 31623),

Gene: Tinybot\_45 Start: 31907, Stop: 31605, Start Num: 45  
Candidate Starts for Tinybot\_45:  
(2, 32177), (Start: 45 @31907 has 147 MA's), (93, 31775), (103, 31736), (111, 31688), (115, 31655),

Gene: TiroTheta9\_46 Start: 31874, Stop: 31572, Start Num: 45  
Candidate Starts for TiroTheta9\_46:  
(2, 32144), (Start: 45 @31874 has 147 MA's), (93, 31742), (103, 31703), (111, 31655), (115, 31622),

Gene: Toaka\_46 Start: 31676, Stop: 31308, Start Num: 27  
Candidate Starts for Toaka\_46:  
(Start: 27 @31676 has 40 MA's), (37, 31652), (Start: 52 @31610 has 1 MA's), (117, 31328), (118, 31319),

Gene: Todacoro\_46 Start: 32081, Stop: 31806, Start Num: 48  
Candidate Starts for Todacoro\_46:  
(16, 32171), (Start: 18 @32162 has 5 MA's), (Start: 48 @32081 has 32 MA's), (108, 31904),

Gene: Trike\_43 Start: 30758, Stop: 30402, Start Num: 45  
Candidate Starts for Trike\_43:  
(8, 30902), (Start: 45 @30758 has 147 MA's), (102, 30575), (109, 30497),

Gene: TroyPia\_47 Start: 31878, Stop: 31576, Start Num: 45  
Candidate Starts for TroyPia\_47:  
(2, 32148), (Start: 45 @31878 has 147 MA's), (93, 31746), (103, 31707), (111, 31659), (115, 31626),

Gene: Tubs\_47 Start: 32109, Stop: 31783, Start Num: 27  
Candidate Starts for Tubs\_47:  
(Start: 27 @32109 has 40 MA's), (37, 32085), (Start: 52 @32043 has 1 MA's), (117, 31803),

Gene: TygerBlood\_46 Start: 31880, Stop: 31578, Start Num: 45  
Candidate Starts for TygerBlood\_46:  
(2, 32150), (Start: 45 @31880 has 147 MA's), (93, 31748), (103, 31709), (111, 31661), (115, 31628),

Gene: Ugenie5\_44 Start: 32346, Stop: 32020, Start Num: 27  
Candidate Starts for Ugenie5\_44:  
(Start: 27 @32346 has 40 MA's), (37, 32322), (Start: 52 @32280 has 1 MA's), (117, 32040),

Gene: UhSalsa\_37 Start: 28395, Stop: 28123, Start Num: 66  
Candidate Starts for UhSalsa\_37:  
(Start: 66 @28395 has 35 MA's), (87, 28329), (114, 28179), (117, 28143),

Gene: Ulysses\_45 Start: 31557, Stop: 31255, Start Num: 45  
Candidate Starts for Ulysses\_45:  
(2, 31827), (Start: 45 @31557 has 147 MA's), (93, 31425), (103, 31386), (111, 31338), (115, 31305),

Gene: UnionJack\_41 Start: 30553, Stop: 30302, Start Num: 55  
Candidate Starts for UnionJack\_41:  
(Start: 24 @30643 has 1 MA's), (28, 30631), (Start: 55 @30553 has 33 MA's), (Start: 61 @30544 has 3 MA's), (Start: 78 @30502 has 2 MA's), (91, 30472), (105, 30418), (111, 30385), (115, 30352),

Gene: VA6\_47 Start: 32280, Stop: 31867, Start Num: 19  
Candidate Starts for VA6\_47:

(Start: 19 @32280 has 8 MA's), (Start: 52 @32190 has 1 MA's), (54, 32181), (71, 32145), (90, 32079), (115, 31914),

Gene: VC3\_50 Start: 32346, Stop: 31912, Start Num: 18

Candidate Starts for VC3\_50:

(Start: 18 @32346 has 5 MA's), (Start: 19 @32343 has 8 MA's), (Start: 52 @32244 has 1 MA's), (68, 32202), (74, 32178), (100, 32079), (111, 31992), (115, 31959),

Gene: Vanisoa\_46 Start: 32705, Stop: 32358, Start Num: 27

Candidate Starts for Vanisoa\_46:

(3, 32888), (4, 32837), (5, 32813), (Start: 27 @32705 has 40 MA's), (37, 32681), (Start: 52 @32639 has 1 MA's), (70, 32609), (117, 32378),

Gene: Veracruz\_45 Start: 32081, Stop: 31806, Start Num: 48

Candidate Starts for Veracruz\_45:

(16, 32171), (Start: 18 @32162 has 5 MA's), (Start: 48 @32081 has 32 MA's), (108, 31904),

Gene: Vix\_50 Start: 32391, Stop: 32143, Start Num: 63

Candidate Starts for Vix\_50:

(Start: 63 @32391 has 80 MA's), (85, 32337), (103, 32274), (106, 32250), (108, 32241), (115, 32193), (116, 32178),

Gene: Waits\_49 Start: 30481, Stop: 30188, Start Num: 62

Candidate Starts for Waits\_49:

(Start: 62 @30481 has 20 MA's), (98, 30364), (111, 30271),

Gene: Wander\_46 Start: 31877, Stop: 31575, Start Num: 45

Candidate Starts for Wander\_46:

(Start: 45 @31877 has 147 MA's), (93, 31745), (103, 31706), (111, 31658), (115, 31625),

Gene: Watson\_50 Start: 32300, Stop: 32052, Start Num: 63

Candidate Starts for Watson\_50:

(Start: 63 @32300 has 80 MA's), (85, 32246), (103, 32183), (106, 32159), (108, 32150), (115, 32102), (116, 32087),

Gene: Wilbur\_46 Start: 31877, Stop: 31575, Start Num: 45

Candidate Starts for Wilbur\_46:

(2, 32147), (Start: 45 @31877 has 147 MA's), (Start: 62 @31835 has 20 MA's), (93, 31745), (103, 31706), (111, 31658), (115, 31625),

Gene: Wile\_45 Start: 31884, Stop: 31561, Start Num: 45

Candidate Starts for Wile\_45:

(Start: 45 @31884 has 147 MA's), (82, 31785), (83, 31776), (86, 31761), (93, 31731), (115, 31611),

Gene: Wizard007\_46 Start: 31885, Stop: 31583, Start Num: 45

Candidate Starts for Wizard007\_46:

(2, 32155), (Start: 45 @31885 has 147 MA's), (93, 31753), (103, 31714), (111, 31666), (115, 31633),

Gene: Wooldri\_52 Start: 32220, Stop: 31972, Start Num: 63

Candidate Starts for Wooldri\_52:

(Start: 63 @32220 has 80 MA's), (85, 32166), (103, 32103), (106, 32079), (108, 32070), (115, 32022), (116, 32007),

Gene: Xena\_44 Start: 31850, Stop: 31527, Start Num: 45  
Candidate Starts for Xena\_44:  
(Start: 45 @31850 has 147 MA's), (82, 31751), (83, 31742), (86, 31727), (93, 31697), (115, 31577),

Gene: XianYue\_46 Start: 31886, Stop: 31548, Start Num: 39  
Candidate Starts for XianYue\_46:  
(Start: 39 @31886 has 5 MA's), (100, 31712), (115, 31595),

Gene: Yecey3\_48 Start: 31582, Stop: 31238, Start Num: 22  
Candidate Starts for Yecey3\_48:  
(Start: 22 @31582 has 2 MA's), (37, 31561), (Start: 52 @31519 has 1 MA's), (75, 31477), (88, 31444),  
(117, 31258),

Gene: YoSam321\_46 Start: 31874, Stop: 31572, Start Num: 45  
Candidate Starts for YoSam321\_46:  
(2, 32144), (Start: 45 @31874 has 147 MA's), (93, 31742), (103, 31703), (111, 31655), (115, 31622),

Gene: Yogi\_37 Start: 28368, Stop: 28096, Start Num: 66  
Candidate Starts for Yogi\_37:  
(Start: 66 @28368 has 35 MA's), (87, 28302), (114, 28152), (117, 28116),

Gene: Yoncess\_37 Start: 28369, Stop: 28097, Start Num: 66  
Candidate Starts for Yoncess\_37:  
(Start: 66 @28369 has 35 MA's), (87, 28303), (114, 28153), (117, 28117),

Gene: Zetzy\_49 Start: 31871, Stop: 31623, Start Num: 63  
Candidate Starts for Zetzy\_49:  
(Start: 63 @31871 has 80 MA's), (85, 31817), (94, 31784), (103, 31754), (106, 31730), (108, 31721),  
(115, 31673), (116, 31658),

Gene: Zimmer\_44 Start: 32823, Stop: 32467, Start Num: 39  
Candidate Starts for Zimmer\_44:  
(Start: 39 @32823 has 5 MA's), (Start: 55 @32781 has 33 MA's), (85, 32706), (88, 32694), (92,  
32676), (111, 32547), (117, 32487),

Gene: Zolita\_41 Start: 31781, Stop: 31518, Start Num: 55  
Candidate Starts for Zolita\_41:  
(Start: 55 @31781 has 33 MA's), (Start: 61 @31772 has 3 MA's), (Start: 78 @31730 has 2 MA's), (91,  
31700), (105, 31646), (111, 31613), (115, 31580),