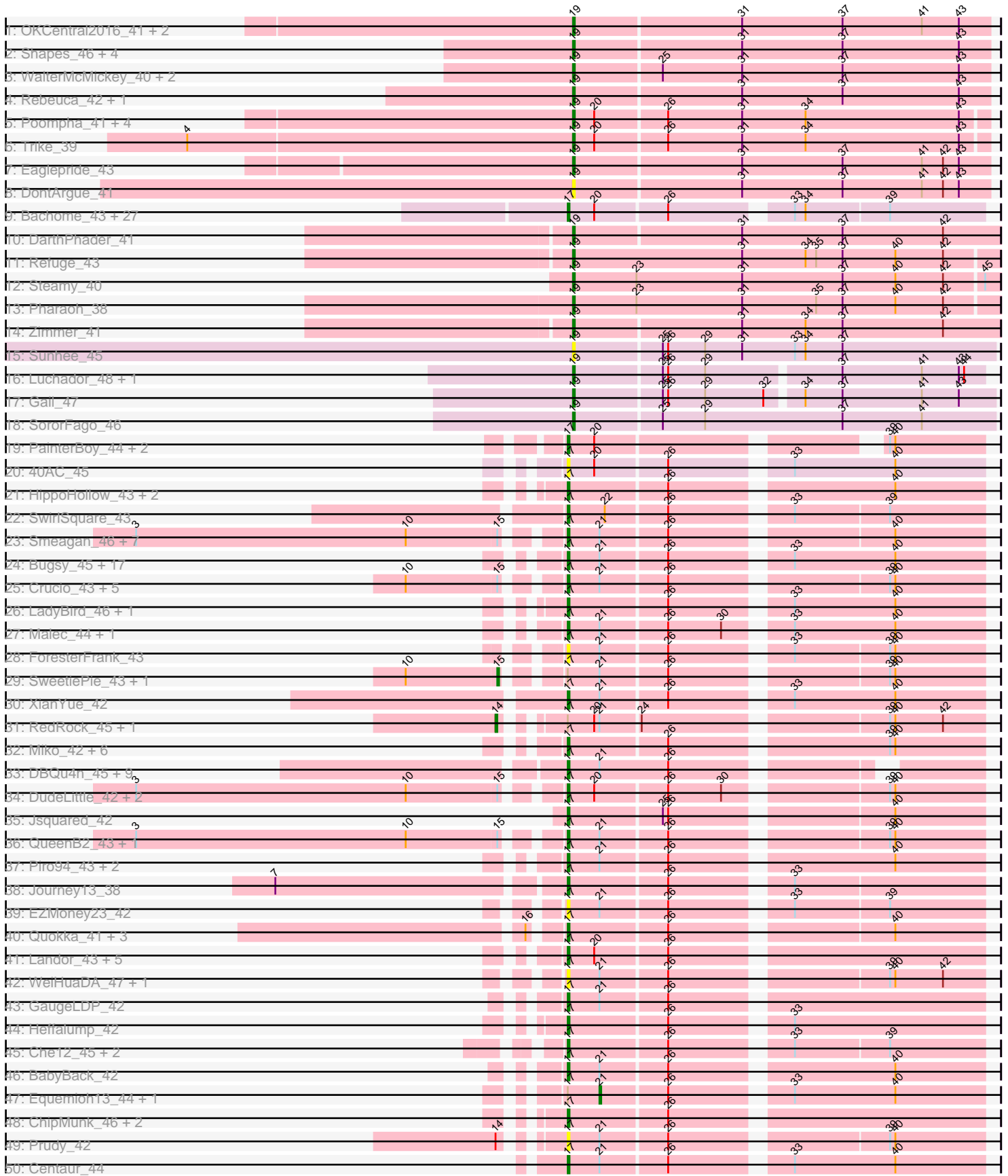
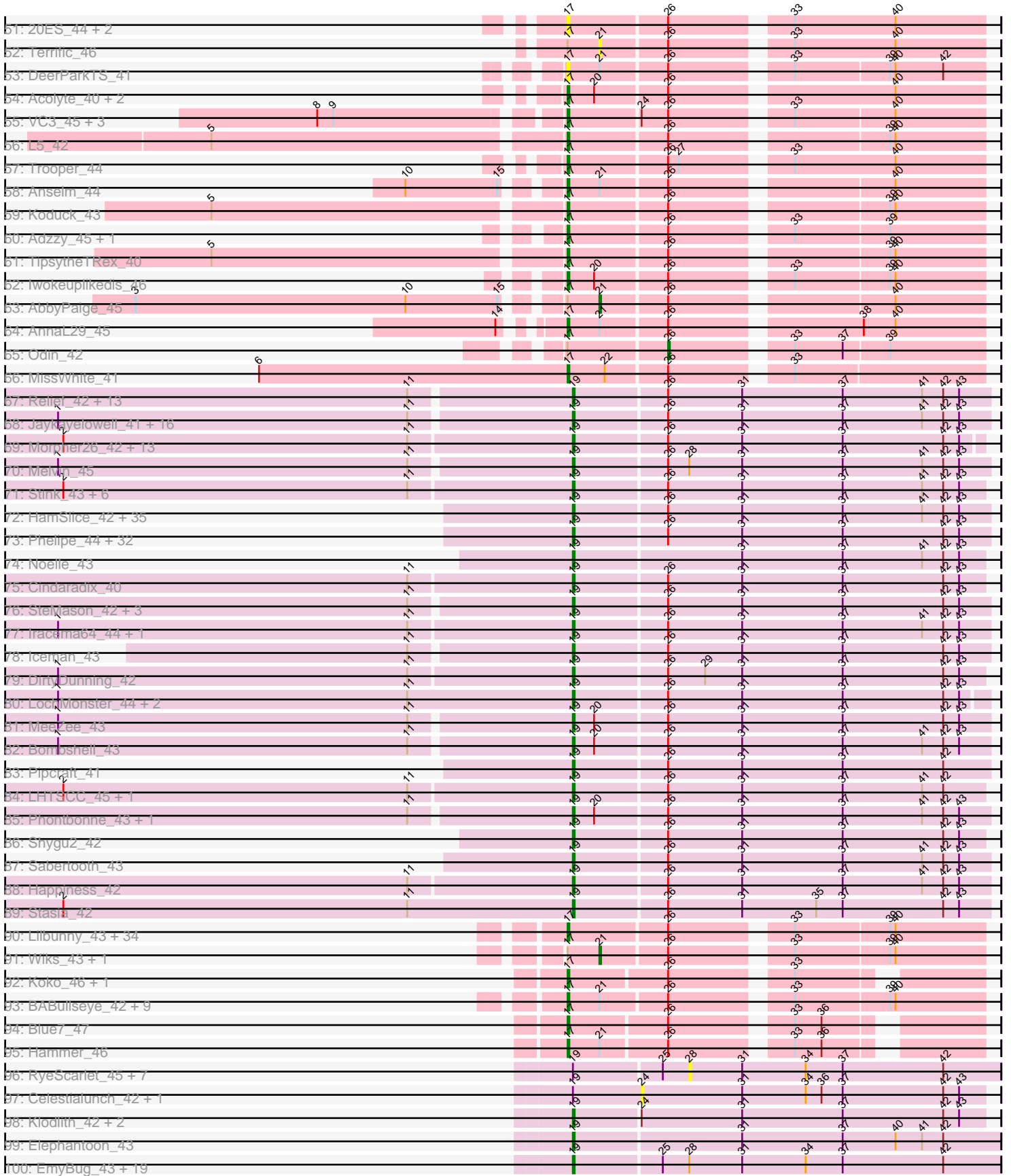


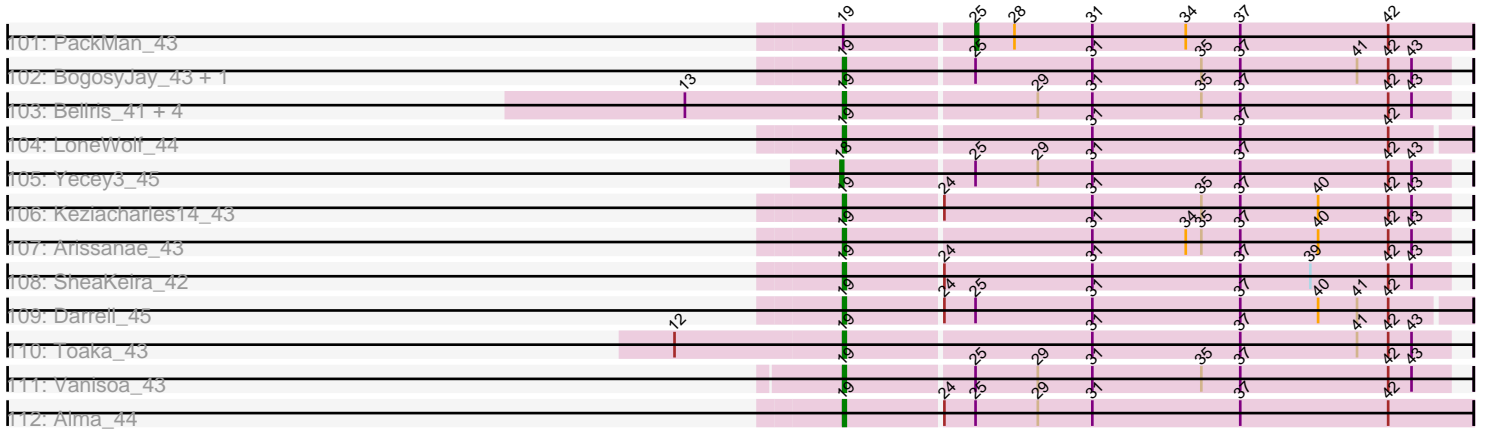
Pham 296131



Pham 296131



Pham 296131



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 296131 Report

This analysis was run 04/25/26 on database version 644.

Pham number 296131 has 434 members, 53 are drafts.

Phages represented in each track:

- Track 1 : OKCentral2016\_41, Chupacabra\_41, Goose\_42
- Track 2 : Shapes\_46, Rowdy\_46, Topanga\_40, RhynO\_43, DustyMartin\_46
- Track 3 : WalterMcMickey\_40, Twister\_40, Edison31\_41
- Track 4 : Rebeuca\_42, Kristoff\_42
- Track 5 : Poompha\_41, Severus\_40, PeaceMeal1\_40, Drake94\_40, KittenMittens\_39
- Track 6 : Trike\_39
- Track 7 : Eaglepride\_43
- Track 8 : DontArgue\_41
- Track 9 : Bachome\_43, Munch\_42, Sham4\_41, Orange\_41, Insomnia\_42, Petersenfast\_40, Mabel\_42, TinyTimmy\_42, Et2Brutus\_41, Fibonacci\_41, Bud\_41, Lucivia\_42, Saskia\_42, Bowtie\_42, MaCh\_42, Mulciber\_41, Jabith\_42, Snape\_41, Gilberta\_42, Timothy\_42, Aneem\_42, Kimba\_42, Flaverint\_42, Hutc2\_41, Ebony\_42, Wolpertinger\_40, Salz\_41, Joselito\_42
- Track 10 : DARTHPhader\_41
- Track 11 : Refuge\_43
- Track 12 : Steamy\_40
- Track 13 : Pharaoh\_38
- Track 14 : Zimmer\_41
- Track 15 : Sunhee\_45
- Track 16 : Luchador\_48, Jeeves\_48
- Track 17 : Gail\_47
- Track 18 : SororFago\_46
- Track 19 : PainterBoy\_44, EagleEye\_45, Lucyedi\_44
- Track 20 : 40AC\_45
- Track 21 : HippoHollow\_43, JoshKayV\_45, LionsBait\_45
- Track 22 : SwirlSquare\_43
- Track 23 : Smeagan\_46, Dignity\_45, Leviathan\_45, LilTurb\_44, Whabigail7\_44, Agape74\_45, Jerm\_45, Turbido\_44
- Track 24 : Buggy\_45, Baehexic\_42, Updawn\_44, Leogania\_43, WideWale\_44, MiculUcigas\_43, Deloris\_42, NaSiaTalie\_43, Flare16\_43, Kalpine\_43, BiancaTri92\_43, Sknot\_43, VA6\_42, HarryHoudini\_44, AN3\_44, Trixie\_43, Drake55\_45, BengiVuitton\_43
- Track 25 : Crucio\_43, FiringLine\_43, Power\_42, SemperFi\_44, QueenBeesly\_43, Georgie2\_44
- Track 26 : LadyBird\_46, TarsusIV\_41
- Track 27 : Malec\_44, Larenn\_43

- Track 28 : ForesterFrank\_43
- Track 29 : SweetiePie\_43, SnapTap\_43
- Track 30 : XianYue\_42
- Track 31 : RedRock\_45, Loser\_45
- Track 32 : Miko\_42, Rachaly\_44, BobSwaget\_43, LOKK\_44, Changeling\_44, ArcherNM\_41, NicoleTera\_44
- Track 33 : DBQu4n\_45, Pomar16\_45, Travvers\_45, Naji\_45, D29\_42, Tomathan\_45, Kerberos\_45, D32\_45, Duplo\_45, StarStuff\_45
- Track 34 : DudeLittle\_42, Retro23\_44, Dalmatian\_44
- Track 35 : Jsquared\_42
- Track 36 : QueenB2\_43, Fameo\_43
- Track 37 : Piro94\_43, Echild\_43, Benvolio\_40
- Track 38 : Journey13\_38
- Track 39 : EZMoney23\_42
- Track 40 : Quokka\_41, Bradman\_42, MajorMajor\_42, Serenity\_43
- Track 41 : Landor\_43, Jaan\_44, Bactobuster\_42, Tristan\_43, Phaded\_45, IronMan\_43
- Track 42 : WeiHuaDA\_47, Colin\_45
- Track 43 : GaugeLDP\_42
- Track 44 : Heffalump\_42
- Track 45 : Che12\_45, Caraxes\_43, Superchunk\_42
- Track 46 : BabyBack\_42
- Track 47 : Equemioh13\_44, Gratitude\_43
- Track 48 : ChipMunk\_46, EvilGenius\_46, KingCyrus\_46
- Track 49 : Prudy\_42
- Track 50 : Centaur\_44
- Track 51 : 20ES\_44, First\_0043, CRB1\_45
- Track 52 : Terrific\_46
- Track 53 : DeerParkTS\_41
- Track 54 : Acolyte\_40, NothingSpecial\_42, Pukovnik\_42
- Track 55 : VC3\_45, AN9\_45, C3\_40, ANI8\_45
- Track 56 : L5\_42
- Track 57 : Trooper\_44
- Track 58 : Anselm\_44
- Track 59 : Koduck\_43
- Track 60 : Adzzy\_45, Ph8s\_45
- Track 61 : TopsytheTRex\_40
- Track 62 : Iwokeuplikedis\_46
- Track 63 : AbbyPaige\_45
- Track 64 : AnnaL29\_45
- Track 65 : Odin\_42
- Track 66 : MissWhite\_41
- Track 67 : Relief\_42, Annyong\_43, Thanksgivukkah\_42, Tinybot\_42, Nyxis\_43, Pumbaa\_43, Lunsford\_44, Rosa24\_42, OKaNui\_43, JoongJeon\_42, Millski\_42, Skipitt\_42, Flux\_43, TiroTheta9\_43
- Track 68 : Jaykayelowell\_41, Shaka\_43, Avle17\_43, JetBlade\_43, Alberto7\_44, Kingmustik0402\_43, Kremtemulon\_43, PeterPeter\_43, Wander\_43, Cintron\_42, KFPoly\_42, Romney\_43, LittleGuy\_43, Eapen\_43, Wilbur\_43, Ulysses\_42, YoSam321\_43
- Track 69 : Morpher26\_42, Cici\_42, Xena\_41, Datway\_42, Perplexer\_42, Achebe\_41, Badger\_41, Bumblebee11\_41, AbbysRanger\_42, Mundrea\_42, Backyardigan\_41, PetiteSangsue\_42, Wile\_42, Katalie136\_42
- Track 70 : Melvin\_45

- Track 71 : Stink\_43, BangNhom\_44, SheldonCooper\_45, AvatarAhPeg\_42, ChampagnePapi\_45, Cerulean\_44, Miramae\_42
- Track 72 : HamSlice\_42, RockieBear\_42, KekoraPapaka\_43, Blackmoor\_43, LappelDuVide\_43, Clarenza\_42, Baby16\_43, Bartimeaus\_43, CentreCat\_43, Kyee\_43, BubbleTrouble\_42, TinaFeyge\_43, Florean\_43, Roosevelt\_42, Spino\_42, Dhanush\_43, NorthStar\_42, Camperdownii\_41, Scamp\_43, Koan\_41, Peaches\_43, Eros\_43, Deano\_42, Kampy\_43, SenorClean\_43, Chaph\_43, TygerBlood\_43, TroyPia\_44, LittleB\_43, Druantia\_43, Burger\_41, Albee\_43, Maxo\_44, Medusa\_43, Lorenzo\_43, Taquarus\_43
- Track 73 : Phelipe\_44, Sultana\_43, Ohfah\_44, Huxley\_43, Abdiel\_43, Broseidon\_43, Koreni\_42, Polymorphads\_44, Cocoaberry\_43, Gadost\_43, Nebs\_44, NotAPhaseMom\_43, Lemur\_43, Morrow\_44, Bruiser\_42, Houdini22\_43, Sparxx\_44, Mayonnaise\_42, LeoAvram\_43, BellusTerra\_44, Connomayer\_43, Holli\_42, Citius\_43, Funston\_42, Mazhar510\_43, Caelakin\_43, Phacado\_43, Wizard007\_43, Nemo27\_43, Maverick\_43, Eris\_42, Eagle\_43, Commander\_43
- Track 74 : Noelle\_43
- Track 75 : Cindaradix\_40
- Track 76 : SteMason\_42, Ruin\_43, Palestino\_42, Eurydice\_44
- Track 77 : Iracema64\_44, Phighter1804\_43
- Track 78 : Iceman\_43
- Track 79 : DirtyDunning\_42
- Track 80 : LochMonster\_44, Arturo\_42, Kratak\_43
- Track 81 : MeeZee\_43
- Track 82 : Bombshell\_43
- Track 83 : Pipcraft\_41
- Track 84 : LHTSCC\_45, Obama12\_44
- Track 85 : Phontbonne\_43, ICleared\_43
- Track 86 : Shygu2\_42
- Track 87 : Sabertooth\_43
- Track 88 : Happiness\_42
- Track 89 : Stasia\_42
- Track 90 : Lilbunny\_43, Tucker\_45, Newrala\_44, Zaka\_44, Dorothea\_44, Chartreuse\_44, Yokurt\_44, DaVinci\_44, ToneTone\_41, Jordennis\_44, Gruunaga\_44, SmellyB\_44, SuperCallie99\_44, McFly\_44, Hoot\_44, Zulu\_45, Blinn1\_47, Jeffabunny\_44, Neeharika16\_44, BennyP\_45, WunderPhul\_44, Priamo\_46, GreedyLawyer\_44, Kipper29\_44, Cookiedough\_44, JewelBug\_46, CloudWang3\_44, Hexamo\_44, SuperAwesome\_44, Candra\_44, Gladiator\_44, VohminGhazi\_44, Kazan\_45, EricB\_44, Pmask\_44
- Track 91 : Wiks\_43, DelvinSonDorr\_43
- Track 92 : Koko\_46, Rifter\_46
- Track 93 : BABullseye\_42, BlessJoy\_45, Isiphiwo\_42, Roksolana\_45, Indra\_47, Polyphemus\_45, Artemis2UCLA\_44, Garak\_46, Helmet\_46, Temprado\_45
- Track 94 : Blue7\_47
- Track 95 : Hammer\_46
- Track 96 : RyeScarlet\_45, Sachima\_41, Holec\_43, Jiawan\_42, Lilleskat\_42, Hanray\_42, Onglai\_42, EdogawaKiddo\_42
- Track 97 : Celestialunch\_42, MegTheThird\_42
- Track 98 : Klodlith\_42, Charm\_41, DreamTeam1\_41
- Track 99 : Elephantoon\_43
- Track 100 : EmyBug\_43, Scherzo\_44, Fayely\_44, Eidsmoe\_44, Myxus\_44, Ugenie5\_41, Conquerage\_44, Phonnegut\_44, Qobbit\_44, Pioneer\_44, Phaeder\_44, ExplosioNervosa\_44, Ayanochan\_45, HortumSL17\_44, Tubs\_44, Spouty\_44, Priya\_44, Beemo\_44, Aliter\_44, Catalina\_45

- Track 101 : PackMan\_43
- Track 102 : BogosyJay\_43, Maminiaina\_43
- Track 103 : Bellris\_41, WorldCup\_41, Minispark\_41, CogOmlette\_41, Rahalelujah\_42
- Track 104 : LoneWolf\_44
- Track 105 : Yecey3\_45
- Track 106 : Keziacharles14\_43
- Track 107 : Arissanae\_43
- Track 108 : SheaKeira\_42
- Track 109 : Darrell\_45
- Track 110 : Toaka\_43
- Track 111 : Vanisoa\_43
- Track 112 : Alma\_44

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

The start number called the most often in the published annotations is 19, it was called in 200 of the 381 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AbbysRanger\_42, Abdiel\_43, Achebe\_41, Albee\_43, Alberto7\_44, Aliter\_44, Alma\_44, Annyong\_43, Arissanae\_43, Arturo\_42, AvatarAhPeg\_42, Avle17\_43, Ayanochan\_45, Baby16\_43, Backyardigan\_41, Badger\_41, BangNhom\_44, Bartimeaus\_43, Beemo\_44, Bellris\_41, BellusTerra\_44, Blackmoor\_43, BogosyJay\_43, Bombshell\_43, Broseidon\_43, Bruiser\_42, BubbleTrouble\_42, Bumblebee11\_41, Burger\_41, Caelakin\_43, Camperdownii\_41, Catalina\_45, CentreCat\_43, Cerulean\_44, ChampagnePapi\_45, Chaph\_43, Charm\_41, Chupacabra\_41, Cici\_42, Cindaradix\_40, Cintron\_42, Citius\_43, Clarenza\_42, Cocoaberry\_43, CogOmlette\_41, Commander\_43, Connomayer\_43, Conquerage\_44, Darrell\_45, DarthPhader\_41, Datway\_42, Deano\_42, Dhanush\_43, DirtyDunning\_42, DontArgue\_41, Drake94\_40, DreamTeam1\_41, Druantia\_43, DustyMartin\_46, Eagle\_43, Eaglepride\_43, Eapen\_43, Edison31\_41, Eidsmoe\_44, Elephantoon\_43, EmyBug\_43, Eris\_42, Eros\_43, Eurydice\_44, ExplosioNervosa\_44, Fayely\_44, Florean\_43, Flux\_43, Funston\_42, Gadost\_43, Gail\_47, Goose\_42, HamSlice\_42, Happiness\_42, Holli\_42, HortumSL17\_44, Houdini22\_43, Huxley\_43, ICleared\_43, Iceman\_43, Iracema64\_44, Jaykayelowell\_41, Jeeves\_48, JetBlade\_43, JoongJeon\_42, KFPoly\_42, Kampy\_43, Katalie136\_42, KekoraPapaka\_43, Keziacharles14\_43, Kingmustik0402\_43, KittenMittens\_39, Klodlith\_42, Koan\_41, Koreni\_42, Kratark\_43, Kremtemulon\_43, Kristoff\_42, Kyee\_43, LHTSCC\_45, LappelDuVide\_43, Lemur\_43, LeoAvram\_43, LittleB\_43, LittleGuy\_43, LochMonster\_44, LoneWolf\_44, Lorenzo\_43, Luchador\_48, Lunsford\_44, Maminiaina\_43, Maverick\_43, Maxo\_44, Mayonnaise\_42, Mazhar510\_43, Medusa\_43, MeeZee\_43, Melvin\_45, Millski\_42, Minispark\_41, Miramae\_42, Morpher26\_42, Morrow\_44, Mundrea\_42, Myxus\_44, Nebs\_44, Nemo27\_43, Noelle\_43, NorthStar\_42, NotAPhaseMom\_43, Nyxis\_43, OKCentral2016\_41, OKaNui\_43, Obama12\_44, Ohfah\_44, Palestino\_42, PeaceMeal1\_40, Peaches\_43, Perplexer\_42, PeterPeter\_43, PetiteSangsue\_42, Phacado\_43, Phaeder\_44, Pharaoh\_38, Phelipe\_44, Phighter1804\_43, Phonnegut\_44, Phontbonne\_43, Pioneer\_44, Pipcraft\_41, Polymorphads\_44, Poompha\_41, Priya\_44, Pumbaa\_43, Qobbit\_44, Rahalelujah\_42, Rebeuca\_42,

Refuge\_43, Relief\_42, RhynO\_43, RockieBear\_42, Romney\_43, Roosevelt\_42, Rosa24\_42, Rowdy\_46, Ruin\_43, Sabertooth\_43, Scamp\_43, Scherzo\_44, SenorClean\_43, Severus\_40, Shaka\_43, Shapes\_46, SheaKeira\_42, SheldonCooper\_45, Shygu2\_42, Skipitt\_42, SororFago\_46, Sparxx\_44, Spino\_42, Spouty\_44, Stasia\_42, SteMason\_42, Steamy\_40, Stink\_43, Sultana\_43, Sunhee\_45, Taquarus\_43, Thanksgivukkah\_42, TinaFeyge\_43, Tinybot\_42, TiroTheta9\_43, Toaka\_43, Topanga\_40, Trike\_39, TroyPia\_44, Tubs\_44, Twister\_40, TygerBlood\_43, Ugenie5\_41, Ulysses\_42, Vanisoa\_43, WalterMcMickey\_40, Wander\_43, Wilbur\_43, Wile\_42, Wizard007\_43, WorldCup\_41, Xena\_41, YoSam321\_43, Zimmer\_41,

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

- Celestiallunch\_42, EdogawaKiddo\_42, Hanray\_42, Halex\_43, Jiawan\_42, Lilleskat\_42, MegTheThird\_42, Onglai\_42, PackMan\_43, RyeScarlet\_45, Sachima\_41,

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

- 20ES\_44, 40AC\_45, AN3\_44, AN9\_45, ANI8\_45, AbbyPaige\_45, Acolyte\_40, Adzzy\_45, Agape74\_45, Aneem\_42, AnnaL29\_45, Anselm\_44, ArcherNM\_41, Artemis2UCLA\_44, BABullseye\_42, BabyBack\_42, Bachome\_43, Bactobuster\_42, Baehexic\_42, BengiVuitton\_43, BennyP\_45, Benvolio\_40, BiancaTri92\_43, BlessJoy\_45, Blinn1\_47, Blue7\_47, BobSwaget\_43, Bowtie\_42, Bradman\_42, Bud\_41, Buggy\_45, C3\_40, CRB1\_45, Candra\_44, Caraxes\_43, Centaur\_44, Changeling\_44, Chartreuse\_44, Che12\_45, ChipMunk\_46, CloudWang3\_44, Colin\_45, Cookiedough\_44, Crucio\_43, D29\_42, D32\_45, DBQu4n\_45, DaVinci\_44, Dalmatian\_44, DeerParkTS\_41, Deloris\_42, DelvinSonDorr\_43, Dignity\_45, Dorothea\_44, Drake55\_45, DudeLittle\_42, Duplo\_45, EZMoney23\_42, EagleEye\_45, Ebony\_42, Echild\_43, Equemioh13\_44, EricB\_44, Et2Brutus\_41, EvilGenius\_46, Fameo\_43, Fibonacci\_41, FiringLine\_43, First\_0043, Flare16\_43, Flaverint\_42, ForesterFrank\_43, Garak\_46, GaugeLDP\_42, Georgie2\_44, Gilberta\_42, Gladiator\_44, Gratitude\_43, GreedyLawyer\_44, Gruunaga\_44, Hammer\_46, HarryHoudini\_44, Heffalump\_42, Helmet\_46, Hexamo\_44, HippoHollow\_43, Hoot\_44, Hutc2\_41, Indra\_47, Insomnia\_42, IronMan\_43, Isiphiwo\_42, Iwokeuplikedis\_46, Jaan\_44, Jabith\_42, Jeffabunny\_44, Jerm\_45, JewelBug\_46, Jordennis\_44, Joselito\_42, JoshKayV\_45, Journey13\_38, Jsquared\_42, Kalpine\_43, Kazan\_45, Kerberos\_45, Kimba\_42, KingCyrus\_46, Kipper29\_44, Koduck\_43, Koko\_46, L5\_42, LadyBird\_46, Landor\_43, Larenn\_43, Leogania\_43, Leviathan\_45, LilTurb\_44, Lilbunny\_43, LionsBait\_45, Lokk\_44, Loser\_45, Lucivia\_42, Lucyedi\_44, MaCh\_42, Mabel\_42, MajorMajor\_42, Malec\_44, McFly\_44, MiculUcigas\_43, Miko\_42, MissWhite\_41, Mulciber\_41, Munch\_42, NaSiaTalie\_43, Naji\_45, Neeharika16\_44, Newrala\_44, NicoleTera\_44, NothingSpecial\_42, Odin\_42, Orange\_41, PainterBoy\_44, Petersenfast\_40, Ph8s\_45, Phaded\_45, Piro94\_43, Pmask\_44, Polyphemus\_45, Pomar16\_45, Power\_42, Priamo\_46, Prudy\_42, Pukovnik\_42, QueenB2\_43, QueenBeesly\_43, Quokka\_41, Rachaly\_44, RedRock\_45, Retro23\_44, Rifter\_46, Roksolana\_45, Salz\_41, Saskia\_42, SemperFi\_44, Serenity\_43, Sham4\_41, Sknot\_43, Smeagan\_46, SmellyB\_44, SnapTap\_43, Snape\_41, StarStuff\_45, SuperAwesome\_44, SuperCallie99\_44, Superchunk\_42, SweetiePie\_43, SwirlSquare\_43, TarsusIV\_41, Temprado\_45, Terrific\_46, Timothy\_42, TinyTimmy\_42, TipsytheTRex\_40, Tomathan\_45, ToneTone\_41, Travvers\_45, Tristan\_43, Trixie\_43, Trooper\_44, Tucker\_45, Turbido\_44, Updawg\_44, VA6\_42, VC3\_45, VohminGhazi\_44, WeiHuaDA\_47, Whabigail7\_44, WideWale\_44, Wiks\_43, Wolpertinger\_40, WunderPhul\_44, XianYue\_42, Yecey3\_45, Yokurt\_44, Zaka\_44, Zulu\_45,



## Summary by start number:

### Start 14:

- Found in 4 of 434 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 2 of 381
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Loser\_45 (A2), RedRock\_45 (A2),

### Start 15:

- Found in 23 of 434 ( 5.3% ) of genes in pham
- Manual Annotations of this start: 2 of 381
- Called 8.7% of time when present
- Phage (with cluster) where this start called: SnapTap\_43 (A2), SweetiePie\_43 (A2),

### Start 17:

- Found in 206 of 434 ( 47.5% ) of genes in pham
- Manual Annotations of this start: 171 of 381
- Called 94.7% of time when present
- Phage (with cluster) where this start called: 20ES\_44 (A2), 40AC\_45 (A17), AN3\_44 (A2), AN9\_45 (A2), ANI8\_45 (A2), Acolyte\_40 (A2), Adzzy\_45 (A2), Agape74\_45 (A2), Aneem\_42 (A11), AnnaL29\_45 (A2), Anselm\_44 (A2), ArcherNM\_41 (A2), Artemis2UCLA\_44 (A6), BABullseye\_42 (A6), BabyBack\_42 (A2), Bachome\_43 (A11), Bactobuster\_42 (A2), Baehexic\_42 (A2), BengiVuitton\_43 (A2), BennyP\_45 (A6), Benvolio\_40 (A2), BiancaTri92\_43 (A2), BlessJoy\_45 (A6), Blinn1\_47 (A6), Blue7\_47 (A6), BobSwaget\_43 (A2), Bowtie\_42 (A11), Bradman\_42 (A2), Bud\_41 (A11), Buggy\_45 (A2), C3\_40 (A2), CRB1\_45 (A2), Candra\_44 (A6), Caraxes\_43 (A2), Centaur\_44 (A2), Changeling\_44 (A2), Chartreuse\_44 (A6), Che12\_45 (A2), ChipMunk\_46 (A2), CloudWang3\_44 (A6), Colin\_45 (A2), Cookiedough\_44 (A6), Crucio\_43 (A2), D29\_42 (A2), D32\_45 (A2), DBQu4n\_45 (A2), DaVinci\_44 (A6), Dalmatian\_44 (A2), DeerParkTS\_41 (A2), Deloris\_42 (A2), Dignity\_45 (A2), Dorothea\_44 (A6), Drake55\_45 (A2), DudeLittle\_42 (A2), Duplo\_45 (A2), EZMoney23\_42 (A2), EagleEye\_45 (A16), Ebony\_42 (A11), Echid\_43 (A2), EricB\_44 (A6), Et2Brutus\_41 (A11), EvilGenius\_46 (A2), Fameo\_43 (A2), Fibonacci\_41 (A11), FiringLine\_43 (A2), First\_0043 (A2), Flare16\_43 (A2), Flaverint\_42 (A11), ForesterFrank\_43 (A2), Garak\_46 (A6), GaugeLDP\_42 (A2), Georgie2\_44 (A2), Gilberta\_42 (A11), Gladiator\_44 (A6), GreedyLawyer\_44 (A6), Gruunaga\_44 (A6), Hammer\_46 (A6), HarryHoudini\_44 (A2), Heffalump\_42 (A2), Helmet\_46 (A6), Hexamo\_44 (A6), HippoHollow\_43 (A2), Hoot\_44 (A6), Hutc2\_41 (A11), Indra\_47 (A6), Insomnia\_42 (A11), IronMan\_43 (A2), Isiphiwo\_42 (A6), Iwokeuplikedis\_46 (A2), Jaan\_44 (A2), Jabith\_42 (A11), Jeffabunny\_44 (A6), Jerm\_45 (A2), JewelBug\_46 (A6), Jordennis\_44 (A6), Joselito\_42 (A11), JoshKayV\_45 (A2), Journey13\_38 (A2), Jsquared\_42 (A2), Kalpine\_43 (A2), Kazan\_45 (A6), Kerberos\_45 (A2), Kimba\_42 (A11), KingCyrus\_46 (A2), Kipper29\_44 (A6), Koduck\_43 (A2), Koko\_46 (A6), L5\_42 (A2), LadyBird\_46 (A2), Landor\_43 (A2), Larenn\_43 (A2), Leogania\_43 (A2), Leviathan\_45 (A2), LilTurb\_44 (A2), Lilbunny\_43 (A6), LionsBait\_45 (A2), Lokk\_44 (A2), Lucivia\_42 (A11), Lucyedi\_44 (A16), MaCh\_42 (A11), Mabel\_42 (A11), MajorMajor\_42 (A2), Malec\_44 (A2), McFly\_44 (A6), MiculUcigas\_43 (A2), Miko\_42 (A2), MissWhite\_41 (A2), Mulciber\_41 (A11), Munch\_42 (A11), NaSiaTalie\_43 (A2), Naji\_45 (A2), Neeharika16\_44 (A6), Newrala\_44 (A6), NicoleTera\_44 (A2), NothingSpecial\_42 (A2), Orange\_41 (A11), PainterBoy\_44 (A16), Petersenfast\_40 (A11), Ph8s\_45 (A2), Phaded\_45 (A2), Piro94\_43 (A2), Pmask\_44 (A6), Polyphemus\_45 (A6), Pomar16\_45 (A2), Power\_42

(A2), Priamo\_46 (A6), Prudy\_42 (A2), Pukovnik\_42 (A2), QueenB2\_43 (A2), QueenBeesly\_43 (A2), Quokka\_41 (A2), Rachaly\_44 (A2), Retro23\_44 (A2), Rifter\_46 (A6), Roksolana\_45 (A6), Salz\_41 (A11), Saskia\_42 (A11), SemperFi\_44 (A2), Serenity\_43 (A2), Sham4\_41 (A11), Sknot\_43 (A2), Smeagan\_46 (A2), SmellyB\_44 (A6), Snape\_41 (A11), StarStuff\_45 (A2), SuperAwesome\_44 (A6), SuperCallie99\_44 (A6), Superchunk\_42 (A2), SwirlSquare\_43 (A2), TarsusIV\_41 (A2), Temprado\_45 (A6), Timothy\_42 (A11), TinyTimmy\_42 (A11), TopsytheTRex\_40 (A2), Tomathan\_45 (A2), ToneTone\_41 (A6), Travvers\_45 (A2), Tristan\_43 (A2), Trixie\_43 (A2), Trooper\_44 (A2), Tucker\_45 (A6), Turbido\_44 (A2), Updawg\_44 (A2), VA6\_42 (A2), VC3\_45 (A2), VohminGhazi\_44 (A6), WeiHuaDA\_47 (A2), Whabigail7\_44 (A2), WideWale\_44 (A2), Wolpertinger\_40 (A11), WunderPhul\_44 (A6), XianYue\_42 (A2), Yokurt\_44 (A6), Zaka\_44 (A6), Zulu\_45 (A6),

#### Start 18:

- Found in 1 of 434 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 381
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Yecey3\_45 (A9),

#### Start 19:

- Found in 227 of 434 ( 52.3% ) of genes in pham
- Manual Annotations of this start: 200 of 381
- Called 95.2% of time when present
- Phage (with cluster) where this start called: AbbysRanger\_42 (A4), Abdiel\_43 (A4), Achebe\_41 (A4), Albee\_43 (A4), Alberto7\_44 (A4), Aliter\_44 (A9), Alma\_44 (A9), Annyong\_43 (A4), Arissanae\_43 (A9), Arturo\_42 (A4), AvatarAhPeg\_42 (A4), Avle17\_43 (A4), Ayanochan\_45 (A9), Baby16\_43 (A4), Backyardigan\_41 (A4), Badger\_41 (A4), BangNhom\_44 (A4), Bartimeaus\_43 (A4), Beemo\_44 (A9), Bellris\_41 (A9), BellusTerra\_44 (A4), Blackmoor\_43 (A4), BogosyJay\_43 (A9), Bombshell\_43 (A4), Broseidon\_43 (A4), Bruiser\_42 (A4), BubbleTrouble\_42 (A4), Bumblebee11\_41 (A4), Burger\_41 (A4), Caelakin\_43 (A4), Camperdownii\_41 (A4), Catalina\_45 (A9), CentreCat\_43 (A4), Cerulean\_44 (A4), ChampagnePapi\_45 (A4), Chaph\_43 (A4), Charm\_41 (A9), Chupacabra\_41 (A10), Cici\_42 (A4), Cindaradix\_40 (A4), Cintron\_42 (A4), Citius\_43 (A4), Clarenza\_42 (A4), Cocoaberry\_43 (A4), CogOmlette\_41 (A9), Commander\_43 (A4), Connomayer\_43 (A4), Conquerage\_44 (A9), Darrell\_45 (A9), DarthPhader\_41 (A12), Datway\_42 (A4), Deano\_42 (A4), Dhanush\_43 (A4), DirtyDunning\_42 (A4), DontArgue\_41 (A10), Drake94\_40 (A10), DreamTeam1\_41 (A9), Druantia\_43 (A4), DustyMartin\_46 (A10), Eagle\_43 (A4), Eaglepride\_43 (A10), Eapen\_43 (A4), Edison31\_41 (A10), Eidsmoe\_44 (A9), Elephantoon\_43 (A9), EmyBug\_43 (A9), Eris\_42 (A4), Eros\_43 (A4), Eurydice\_44 (A4), ExplosioNervosa\_44 (A9), Fayely\_44 (A9), Florean\_43 (A4), Flux\_43 (A4), Funston\_42 (A4), Gadost\_43 (A4), Gail\_47 (A14), Goose\_42 (A10), HamSlice\_42 (A4), Happiness\_42 (A4), Holli\_42 (A4), HortumSL17\_44 (A9), Houdini22\_43 (A4), Huxley\_43 (A4), ICleared\_43 (A4), Iceman\_43 (A4), Iracema64\_44 (A4), Jaykayelowell\_41 (A4), Jeeves\_48 (A14), JetBlade\_43 (A4), JoongJeon\_42 (A4), KFPoly\_42 (A4), Kamy\_43 (A4), Katalie136\_42 (A4), KekoraPapaka\_43 (A4), Keziacharles14\_43 (A9), Kingmustik0402\_43 (A4), KittenMittens\_39 (A10), Klodlith\_42 (A9), Koan\_41 (A4), Koreni\_42 (A4), Kratark\_43 (A4), Kremtemulon\_43 (A4), Kristoff\_42 (A10), Kyee\_43 (A4), LHTSCC\_45 (A4), LappelDuVide\_43 (A4), Lemur\_43 (A4), LeoAvram\_43 (A4), LittleB\_43 (A4), LittleGuy\_43 (A4), LochMonster\_44 (A4), LoneWolf\_44 (A9), Lorenzo\_43 (A4), Luchador\_48 (A14), Lunsford\_44 (A4), Maminiaina\_43 (A9), Maverick\_43 (A4), Maxo\_44 (A4), Mayonnaise\_42 (A4), Mazhar510\_43 (A4), Medusa\_43 (A4), MeeZee\_43 (A4),

Melvin\_45 (A4), Millski\_42 (A4), Minispark\_41 (A9), Miramae\_42 (A4), Morpher26\_42 (A4), Morrow\_44 (A4), Mundrea\_42 (A4), Myxus\_44 (A9), Nebs\_44 (A4), Nemo27\_43 (A4), Noelle\_43 (A4), NorthStar\_42 (A4), NotAPhaseMom\_43 (A4), Nyxis\_43 (A4), OKCentral2016\_41 (A10), OKaNui\_43 (A4), Obama12\_44 (A4), Ohfah\_44 (A4), Palestino\_42 (A4), PeaceMeal1\_40 (A10), Peaches\_43 (A4), Perplexer\_42 (A4), PeterPeter\_43 (A4), PetiteSangsue\_42 (A4), Phacado\_43 (A4), Phaeder\_44 (A9), Pharaoh\_38 (A12), Phelipe\_44 (A4), Phighter1804\_43 (A4), Phonnegut\_44 (A9), Phontbonne\_43 (A4), Pioneer\_44 (A9), Pipcraft\_41 (A4), Polymorphads\_44 (A4), Poompha\_41 (A10), Priya\_44 (A9), Pumbaa\_43 (A4), Qobbit\_44 (A9), Rahalelujah\_42 (A9), Rebeuca\_42 (A10), Refuge\_43 (A12), Relief\_42 (A4), RhynO\_43 (A10), RockieBear\_42 (A4), Romney\_43 (A4), Roosevelt\_42 (A4), Rosa24\_42 (A4), Rowdy\_46 (A10), Ruin\_43 (A4), Sabertooth\_43 (A4), Scamp\_43 (A4), Scherzo\_44 (A9), SenorClean\_43 (A4), Severus\_40 (A10), Shaka\_43 (A4), Shapes\_46 (A10), SheaKeira\_42 (A9), SheldonCooper\_45 (A4), Shygu2\_42 (A4), Skipitt\_42 (A4), SororFago\_46 (A14), Sparxx\_44 (A4), Spino\_42 (A4), Spouty\_44 (A9), Stasia\_42 (A4), SteMason\_42 (A4), Steamy\_40 (A12), Stink\_43 (A4), Sultana\_43 (A4), Sunhee\_45 (A14), Taquarus\_43 (A4), Thanksgivukkah\_42 (A4), TinaFeyge\_43 (A4), Tinybot\_42 (A4), TiroTheta9\_43 (A4), Toaka\_43 (A9), Topanga\_40 (A10), Trike\_39 (A10), TroyPia\_44 (A4), Tubs\_44 (A9), Twister\_40 (A10), TygerBlood\_43 (A4), Ugenie5\_41 (A9), Ulysses\_42 (A4), Vanisoa\_43 (A9), WalterMcMickey\_40 (A10), Wander\_43 (A4), Wilbur\_43 (A4), Wile\_42 (A4), Wizard007\_43 (A4), WorldCup\_41 (A9), Xena\_41 (A4), YoSam321\_43 (A4), Zimmer\_41 (A12),

#### Start 21:

- Found in 82 of 434 ( 18.9% ) of genes in pham
- Manual Annotations of this start: 3 of 381
- Called 7.3% of time when present
- Phage (with cluster) where this start called: AbbyPaige\_45 (A2), DelvinSonDorr\_43 (A6), Equemioh13\_44 (A2), Gratitude\_43 (A2), Terrific\_46 (A2), Wiks\_43 (A6),

#### Start 24:

- Found in 15 of 434 ( 3.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 13.3% of time when present
- Phage (with cluster) where this start called: Celestiallunch\_42 (A9), MegTheThird\_42 (A9),

#### Start 25:

- Found in 44 of 434 ( 10.1% ) of genes in pham
- Manual Annotations of this start: 1 of 381
- Called 2.3% of time when present
- Phage (with cluster) where this start called: PackMan\_43 (A9),

#### Start 26:

- Found in 356 of 434 ( 82.0% ) of genes in pham
- Manual Annotations of this start: 1 of 381
- Called 0.3% of time when present
- Phage (with cluster) where this start called: Odin\_42 (A2),

#### Start 28:

- Found in 30 of 434 ( 6.9% ) of genes in pham
- No Manual Annotations of this start.

- Called 26.7% of time when present
- Phage (with cluster) where this start called: EdogawaKiddo\_42 (A9), Hanray\_42 (A9), Holes\_43 (A9), Jiawan\_42 (A9), Lilleskat\_42 (A9), Onglai\_42 (A9), RyeScarlet\_45 (A9), Sachima\_41 (A9),

### **Summary by clusters:**

There are 10 clusters represented in this pham: A14, A17, A16, A11, A10, A12, A2, A4, A6, A9,

Info for manual annotations of cluster A10:

- Start number 19 was manually annotated 17 times for cluster A10.

Info for manual annotations of cluster A11:

- Start number 17 was manually annotated 24 times for cluster A11.

Info for manual annotations of cluster A12:

- Start number 19 was manually annotated 5 times for cluster A12.

Info for manual annotations of cluster A14:

- Start number 19 was manually annotated 4 times for cluster A14.

Info for manual annotations of cluster A16:

- Start number 17 was manually annotated 3 times for cluster A16.

Info for manual annotations of cluster A2:

- Start number 14 was manually annotated 2 times for cluster A2.
- Start number 15 was manually annotated 2 times for cluster A2.
- Start number 17 was manually annotated 98 times for cluster A2.
- Start number 21 was manually annotated 2 times for cluster A2.
- Start number 26 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster A4:

- Start number 19 was manually annotated 141 times for cluster A4.

Info for manual annotations of cluster A6:

- Start number 17 was manually annotated 46 times for cluster A6.
- Start number 21 was manually annotated 1 time for cluster A6.

Info for manual annotations of cluster A9:

- Start number 18 was manually annotated 1 time for cluster A9.
- Start number 19 was manually annotated 33 times for cluster A9.
- Start number 25 was manually annotated 1 time for cluster A9.

### **Gene Information:**

Gene: 20ES\_44 Start: 29445, Stop: 29224, Start Num: 17

Candidate Starts for 20ES\_44:

(Start: 17 @29445 has 171 MA's), (Start: 26 @29391 has 1 MA's), (33, 29331), (40, 29274),

Gene: 40AC\_45 Start: 30946, Stop: 30725, Start Num: 17

Candidate Starts for 40AC\_45:

(Start: 17 @30946 has 171 MA's), (20, 30931), (Start: 26 @30892 has 1 MA's), (33, 30832), (40, 30775),

Gene: AN3\_44 Start: 29828, Stop: 29607, Start Num: 17

Candidate Starts for AN3\_44:

(Start: 17 @29828 has 171 MA's), (Start: 21 @29810 has 3 MA's), (Start: 26 @29774 has 1 MA's), (33, 29714), (40, 29657),

Gene: AN9\_45 Start: 29290, Stop: 29072, Start Num: 17

Candidate Starts for AN9\_45:

(8, 29416), (9, 29407), (Start: 17 @29290 has 171 MA's), (24, 29251), (Start: 26 @29236 has 1 MA's), (33, 29176), (40, 29122),

Gene: ANI8\_45 Start: 29290, Stop: 29072, Start Num: 17

Candidate Starts for ANI8\_45:

(8, 29416), (9, 29407), (Start: 17 @29290 has 171 MA's), (24, 29251), (Start: 26 @29236 has 1 MA's), (33, 29176), (40, 29122),

Gene: AbbyPaige\_45 Start: 29839, Stop: 29639, Start Num: 21

Candidate Starts for AbbyPaige\_45:

(3, 30085), (10, 29932), (Start: 15 @29881 has 2 MA's), (Start: 17 @29857 has 171 MA's), (Start: 21 @29839 has 3 MA's), (Start: 26 @29803 has 1 MA's), (40, 29689),

Gene: AbbysRanger\_42 Start: 29519, Stop: 29292, Start Num: 19

Candidate Starts for AbbysRanger\_42:

(2, 29804), (11, 29609), (Start: 19 @29519 has 200 MA's), (Start: 26 @29468 has 1 MA's), (31, 29426), (37, 29369), (42, 29312), (43, 29303),

Gene: Abdiel\_43 Start: 29557, Stop: 29324, Start Num: 19

Candidate Starts for Abdiel\_43:

(Start: 19 @29557 has 200 MA's), (Start: 26 @29506 has 1 MA's), (31, 29464), (37, 29407), (42, 29350), (43, 29341),

Gene: Achebe\_41 Start: 29502, Stop: 29275, Start Num: 19

Candidate Starts for Achebe\_41:

(2, 29787), (11, 29592), (Start: 19 @29502 has 200 MA's), (Start: 26 @29451 has 1 MA's), (31, 29409), (37, 29352), (42, 29295), (43, 29286),

Gene: Acolyte\_40 Start: 29150, Stop: 28929, Start Num: 17

Candidate Starts for Acolyte\_40:

(Start: 17 @29150 has 171 MA's), (20, 29135), (Start: 26 @29096 has 1 MA's), (40, 28979),

Gene: Adzzy\_45 Start: 28273, Stop: 28055, Start Num: 17

Candidate Starts for Adzzy\_45:

(Start: 17 @28273 has 171 MA's), (Start: 26 @28219 has 1 MA's), (33, 28159), (39, 28108),

Gene: Agape74\_45 Start: 29842, Stop: 29624, Start Num: 17

Candidate Starts for Agape74\_45:

(3, 30070), (10, 29917), (Start: 15 @29866 has 2 MA's), (Start: 17 @29842 has 171 MA's), (Start: 21 @29824 has 3 MA's), (Start: 26 @29788 has 1 MA's), (40, 29674),

Gene: Albee\_43 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Albee\_43:

(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (41, 29361), (42, 29349), (43, 29340),

Gene: Alberto7\_44 Start: 29896, Stop: 29663, Start Num: 19

Candidate Starts for Alberto7\_44:

(1, 30181), (11, 29983), (Start: 19 @29896 has 200 MA's), (Start: 26 @29845 has 1 MA's), (31, 29803), (37, 29746), (41, 29701), (42, 29689), (43, 29680),

Gene: Aliter\_44 Start: 29587, Stop: 29348, Start Num: 19

Candidate Starts for Aliter\_44:

(Start: 19 @29587 has 200 MA's), (Start: 25 @29539 has 1 MA's), (28, 29524), (31, 29494), (34, 29458), (37, 29437), (42, 29380),

Gene: Alma\_44 Start: 29671, Stop: 29432, Start Num: 19

Candidate Starts for Alma\_44:

(Start: 19 @29671 has 200 MA's), (24, 29635), (Start: 25 @29623 has 1 MA's), (29, 29599), (31, 29578), (37, 29521), (42, 29464),

Gene: Aneem\_42 Start: 28639, Stop: 28421, Start Num: 17

Candidate Starts for Aneem\_42:

(Start: 17 @28639 has 171 MA's), (20, 28624), (Start: 26 @28585 has 1 MA's), (33, 28525), (34, 28519), (39, 28474),

Gene: AnnaL29\_45 Start: 30497, Stop: 30276, Start Num: 17

Candidate Starts for AnnaL29\_45:

(Start: 14 @30521 has 2 MA's), (Start: 17 @30497 has 171 MA's), (Start: 21 @30479 has 3 MA's), (Start: 26 @30443 has 1 MA's), (38, 30344), (40, 30326),

Gene: Annyong\_43 Start: 29604, Stop: 29371, Start Num: 19

Candidate Starts for Annyong\_43:

(11, 29691), (Start: 19 @29604 has 200 MA's), (Start: 26 @29553 has 1 MA's), (31, 29511), (37, 29454), (41, 29409), (42, 29397), (43, 29388),

Gene: Anselm\_44 Start: 29883, Stop: 29665, Start Num: 17

Candidate Starts for Anselm\_44:

(10, 29958), (Start: 15 @29907 has 2 MA's), (Start: 17 @29883 has 171 MA's), (Start: 21 @29865 has 3 MA's), (Start: 26 @29829 has 1 MA's), (40, 29715),

Gene: ArcherNM\_41 Start: 29951, Stop: 29733, Start Num: 17

Candidate Starts for ArcherNM\_41:

(Start: 17 @29951 has 171 MA's), (Start: 26 @29897 has 1 MA's), (39, 29786), (40, 29783),

Gene: Arissanae\_43 Start: 30217, Stop: 29987, Start Num: 19

Candidate Starts for Arissanae\_43:

(Start: 19 @30217 has 200 MA's), (31, 30124), (34, 30088), (35, 30082), (37, 30067), (40, 30037), (42, 30010), (43, 30001),

Gene: Artemis2UCLA\_44 Start: 27460, Stop: 27242, Start Num: 17

Candidate Starts for Artemis2UCLA\_44:

(Start: 17 @27460 has 171 MA's), (Start: 21 @27442 has 3 MA's), (Start: 26 @27406 has 1 MA's), (33, 27346), (39, 27295), (40, 27292),

Gene: Arturo\_42 Start: 29812, Stop: 29582, Start Num: 19

Candidate Starts for Arturo\_42:

(1, 30100), (11, 29902), (Start: 19 @29812 has 200 MA's), (Start: 26 @29761 has 1 MA's), (31, 29719), (37, 29662), (42, 29605), (43, 29596),

Gene: AvatarAhPeg\_42 Start: 30031, Stop: 29801, Start Num: 19

Candidate Starts for AvatarAhPeg\_42:

(2, 30316), (11, 30121), (Start: 19 @30031 has 200 MA's), (Start: 26 @29980 has 1 MA's), (31, 29938), (37, 29881), (41, 29836), (42, 29824), (43, 29815),

Gene: Avle17\_43 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Avle17\_43:

(1, 29841), (11, 29643), (Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (41, 29361), (42, 29349), (43, 29340),

Gene: Ayanochan\_45 Start: 29714, Stop: 29475, Start Num: 19

Candidate Starts for Ayanochan\_45:

(Start: 19 @29714 has 200 MA's), (Start: 25 @29666 has 1 MA's), (28, 29651), (31, 29621), (34, 29585), (37, 29564), (42, 29507),

Gene: BABullseye\_42 Start: 27306, Stop: 27088, Start Num: 17

Candidate Starts for BABullseye\_42:

(Start: 17 @27306 has 171 MA's), (Start: 21 @27288 has 3 MA's), (Start: 26 @27252 has 1 MA's), (33, 27192), (39, 27141), (40, 27138),

Gene: Baby16\_43 Start: 29567, Stop: 29334, Start Num: 19

Candidate Starts for Baby16\_43:

(Start: 19 @29567 has 200 MA's), (Start: 26 @29516 has 1 MA's), (31, 29474), (37, 29417), (41, 29372), (42, 29360), (43, 29351),

Gene: BabyBack\_42 Start: 30028, Stop: 29807, Start Num: 17

Candidate Starts for BabyBack\_42:

(Start: 17 @30028 has 171 MA's), (Start: 21 @30010 has 3 MA's), (Start: 26 @29974 has 1 MA's), (40, 29857),

Gene: Bachome\_43 Start: 28627, Stop: 28409, Start Num: 17

Candidate Starts for Bachome\_43:

(Start: 17 @28627 has 171 MA's), (20, 28612), (Start: 26 @28573 has 1 MA's), (33, 28513), (34, 28507), (39, 28462),

Gene: Backyardigan\_41 Start: 29535, Stop: 29308, Start Num: 19

Candidate Starts for Backyardigan\_41:

(2, 29820), (11, 29625), (Start: 19 @29535 has 200 MA's), (Start: 26 @29484 has 1 MA's), (31, 29442), (37, 29385), (42, 29328), (43, 29319),

Gene: Bactobuster\_42 Start: 30456, Stop: 30235, Start Num: 17

Candidate Starts for Bactobuster\_42:

(Start: 17 @30456 has 171 MA's), (20, 30441), (Start: 26 @30402 has 1 MA's),

Gene: Badger\_41 Start: 29503, Stop: 29276, Start Num: 19

Candidate Starts for Badger\_41:

(2, 29788), (11, 29593), (Start: 19 @29503 has 200 MA's), (Start: 26 @29452 has 1 MA's), (31, 29410), (37, 29353), (42, 29296), (43, 29287),

Gene: Baehexic\_42 Start: 29664, Stop: 29443, Start Num: 17

Candidate Starts for Baehexic\_42:

(Start: 17 @29664 has 171 MA's), (Start: 21 @29646 has 3 MA's), (Start: 26 @29610 has 1 MA's), (33, 29550), (40, 29493),

Gene: BangNhom\_44 Start: 29978, Stop: 29748, Start Num: 19

Candidate Starts for BangNhom\_44:

(2, 30263), (11, 30068), (Start: 19 @29978 has 200 MA's), (Start: 26 @29927 has 1 MA's), (31, 29885), (37, 29828), (41, 29783), (42, 29771), (43, 29762),

Gene: Bartimeaus\_43 Start: 29558, Stop: 29325, Start Num: 19

Candidate Starts for Bartimeaus\_43:

(Start: 19 @29558 has 200 MA's), (Start: 26 @29507 has 1 MA's), (31, 29465), (37, 29408), (41, 29363), (42, 29351), (43, 29342),

Gene: Beemo\_44 Start: 29715, Stop: 29476, Start Num: 19

Candidate Starts for Beemo\_44:

(Start: 19 @29715 has 200 MA's), (Start: 25 @29667 has 1 MA's), (28, 29652), (31, 29622), (34, 29586), (37, 29565), (42, 29508),

Gene: Bellris\_41 Start: 28655, Stop: 28425, Start Num: 19

Candidate Starts for Bellris\_41:

(13, 28715), (Start: 19 @28655 has 200 MA's), (29, 28583), (31, 28562), (35, 28520), (37, 28505), (42, 28448), (43, 28439),

Gene: BellusTerra\_44 Start: 29557, Stop: 29324, Start Num: 19

Candidate Starts for BellusTerra\_44:

(Start: 19 @29557 has 200 MA's), (Start: 26 @29506 has 1 MA's), (31, 29464), (37, 29407), (42, 29350), (43, 29341),

Gene: BengiVuitton\_43 Start: 29410, Stop: 29189, Start Num: 17

Candidate Starts for BengiVuitton\_43:

(Start: 17 @29410 has 171 MA's), (Start: 21 @29392 has 3 MA's), (Start: 26 @29356 has 1 MA's), (33, 29296), (40, 29239),

Gene: BennyP\_45 Start: 27908, Stop: 27690, Start Num: 17

Candidate Starts for BennyP\_45:

(Start: 17 @27908 has 171 MA's), (Start: 26 @27854 has 1 MA's), (33, 27794), (39, 27743), (40, 27740),

Gene: Benvolio\_40 Start: 28936, Stop: 28718, Start Num: 17

Candidate Starts for Benvolio\_40:

(Start: 17 @28936 has 171 MA's), (Start: 21 @28918 has 3 MA's), (Start: 26 @28882 has 1 MA's), (40, 28768),

Gene: BiancaTri92\_43 Start: 30226, Stop: 30005, Start Num: 17

Candidate Starts for BiancaTri92\_43:

(Start: 17 @30226 has 171 MA's), (Start: 21 @30208 has 3 MA's), (Start: 26 @30172 has 1 MA's), (33, 30112), (40, 30055),



Gene: Blackmoor\_43 Start: 29558, Stop: 29325, Start Num: 19

Candidate Starts for Blackmoor\_43:

(Start: 19 @29558 has 200 MA's), (Start: 26 @29507 has 1 MA's), (31, 29465), (37, 29408), (41, 29363), (42, 29351), (43, 29342),

Gene: BlessJoy\_45 Start: 27921, Stop: 27703, Start Num: 17

Candidate Starts for BlessJoy\_45:

(Start: 17 @27921 has 171 MA's), (Start: 21 @27903 has 3 MA's), (Start: 26 @27867 has 1 MA's), (33, 27807), (39, 27756), (40, 27753),

Gene: Blinn1\_47 Start: 28280, Stop: 28062, Start Num: 17

Candidate Starts for Blinn1\_47:

(Start: 17 @28280 has 171 MA's), (Start: 26 @28226 has 1 MA's), (33, 28166), (39, 28115), (40, 28112),

Gene: Blue7\_47 Start: 28156, Stop: 27953, Start Num: 17

Candidate Starts for Blue7\_47:

(Start: 17 @28156 has 171 MA's), (Start: 26 @28102 has 1 MA's), (33, 28042), (36, 28027),

Gene: BobSwaget\_43 Start: 29572, Stop: 29351, Start Num: 17

Candidate Starts for BobSwaget\_43:

(Start: 17 @29572 has 171 MA's), (Start: 26 @29518 has 1 MA's), (39, 29404), (40, 29401),

Gene: BogosyJay\_43 Start: 29518, Stop: 29288, Start Num: 19

Candidate Starts for BogosyJay\_43:

(Start: 19 @29518 has 200 MA's), (Start: 25 @29470 has 1 MA's), (31, 29425), (35, 29383), (37, 29368), (41, 29323), (42, 29311), (43, 29302),

Gene: Bombshell\_43 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Bombshell\_43:

(1, 29841), (11, 29643), (Start: 19 @29556 has 200 MA's), (20, 29544), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (41, 29361), (42, 29349), (43, 29340),

Gene: Bowtie\_42 Start: 28646, Stop: 28428, Start Num: 17

Candidate Starts for Bowtie\_42:

(Start: 17 @28646 has 171 MA's), (20, 28631), (Start: 26 @28592 has 1 MA's), (33, 28532), (34, 28526), (39, 28481),

Gene: Bradman\_42 Start: 28357, Stop: 28139, Start Num: 17

Candidate Starts for Bradman\_42:

(16, 28372), (Start: 17 @28357 has 171 MA's), (Start: 26 @28303 has 1 MA's), (40, 28189),

Gene: Broseidon\_43 Start: 29558, Stop: 29325, Start Num: 19

Candidate Starts for Broseidon\_43:

(Start: 19 @29558 has 200 MA's), (Start: 26 @29507 has 1 MA's), (31, 29465), (37, 29408), (42, 29351), (43, 29342),

Gene: Bruiser\_42 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Bruiser\_42:

(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (42, 29349), (43, 29340),

Gene: BubbleTrouble\_42 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for BubbleTrouble\_42:

(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (41, 29361), (42, 29349), (43, 29340),

Gene: Bud\_41 Start: 28201, Stop: 27983, Start Num: 17

Candidate Starts for Bud\_41:

(Start: 17 @28201 has 171 MA's), (20, 28186), (Start: 26 @28147 has 1 MA's), (33, 28087), (34, 28081), (39, 28036),

Gene: Buggy\_45 Start: 30034, Stop: 29813, Start Num: 17

Candidate Starts for Buggy\_45:

(Start: 17 @30034 has 171 MA's), (Start: 21 @30016 has 3 MA's), (Start: 26 @29980 has 1 MA's), (33, 29920), (40, 29863),

Gene: Bumblebee11\_41 Start: 29505, Stop: 29278, Start Num: 19

Candidate Starts for Bumblebee11\_41:

(2, 29790), (11, 29595), (Start: 19 @29505 has 200 MA's), (Start: 26 @29454 has 1 MA's), (31, 29412), (37, 29355), (42, 29298), (43, 29289),

Gene: Burger\_41 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Burger\_41:

(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (41, 29361), (42, 29349), (43, 29340),

Gene: C3\_40 Start: 29290, Stop: 29072, Start Num: 17

Candidate Starts for C3\_40:

(8, 29416), (9, 29407), (Start: 17 @29290 has 171 MA's), (24, 29251), (Start: 26 @29236 has 1 MA's), (33, 29176), (40, 29122),

Gene: CRB1\_45 Start: 29957, Stop: 29736, Start Num: 17

Candidate Starts for CRB1\_45:

(Start: 17 @29957 has 171 MA's), (Start: 26 @29903 has 1 MA's), (33, 29843), (40, 29786),

Gene: Caelakin\_43 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Caelakin\_43:

(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (42, 29349), (43, 29340),

Gene: Camperdownii\_41 Start: 29229, Stop: 28996, Start Num: 19

Candidate Starts for Camperdownii\_41:

(Start: 19 @29229 has 200 MA's), (Start: 26 @29178 has 1 MA's), (31, 29136), (37, 29079), (41, 29034), (42, 29022), (43, 29013),

Gene: Candra\_44 Start: 27799, Stop: 27581, Start Num: 17

Candidate Starts for Candra\_44:

(Start: 17 @27799 has 171 MA's), (Start: 26 @27745 has 1 MA's), (33, 27685), (39, 27634), (40, 27631),

Gene: Caraxes\_43 Start: 28002, Stop: 27784, Start Num: 17

Candidate Starts for Caraxes\_43:

(Start: 17 @28002 has 171 MA's), (Start: 26 @27948 has 1 MA's), (33, 27888), (39, 27837),

Gene: Catalina\_45 Start: 29660, Stop: 29421, Start Num: 19

Candidate Starts for Catalina\_45:

(Start: 19 @29660 has 200 MA's), (Start: 25 @29612 has 1 MA's), (28, 29597), (31, 29567), (34, 29531), (37, 29510), (42, 29453),

Gene: Celestiallunch\_42 Start: 28924, Stop: 28730, Start Num: 24

Candidate Starts for Celestiallunch\_42:

(Start: 19 @28960 has 200 MA's), (24, 28924), (31, 28867), (34, 28831), (36, 28822), (37, 28810), (42, 28753), (43, 28744),

Gene: Centaur\_44 Start: 29879, Stop: 29658, Start Num: 17

Candidate Starts for Centaur\_44:

(Start: 17 @29879 has 171 MA's), (Start: 21 @29861 has 3 MA's), (Start: 26 @29825 has 1 MA's), (33, 29765), (40, 29708),

Gene: CentreCat\_43 Start: 29559, Stop: 29326, Start Num: 19

Candidate Starts for CentreCat\_43:

(Start: 19 @29559 has 200 MA's), (Start: 26 @29508 has 1 MA's), (31, 29466), (37, 29409), (41, 29364), (42, 29352), (43, 29343),

Gene: Cerulean\_44 Start: 29979, Stop: 29749, Start Num: 19

Candidate Starts for Cerulean\_44:

(2, 30264), (11, 30069), (Start: 19 @29979 has 200 MA's), (Start: 26 @29928 has 1 MA's), (31, 29886), (37, 29829), (41, 29784), (42, 29772), (43, 29763),

Gene: ChampagnePapi\_45 Start: 29978, Stop: 29748, Start Num: 19

Candidate Starts for ChampagnePapi\_45:

(2, 30263), (11, 30068), (Start: 19 @29978 has 200 MA's), (Start: 26 @29927 has 1 MA's), (31, 29885), (37, 29828), (41, 29783), (42, 29771), (43, 29762),

Gene: Changeling\_44 Start: 30485, Stop: 30267, Start Num: 17

Candidate Starts for Changeling\_44:

(Start: 17 @30485 has 171 MA's), (Start: 26 @30431 has 1 MA's), (39, 30320), (40, 30317),

Gene: Chaph\_43 Start: 29567, Stop: 29334, Start Num: 19

Candidate Starts for Chaph\_43:

(Start: 19 @29567 has 200 MA's), (Start: 26 @29516 has 1 MA's), (31, 29474), (37, 29417), (41, 29372), (42, 29360), (43, 29351),

Gene: Charm\_41 Start: 29010, Stop: 28780, Start Num: 19

Candidate Starts for Charm\_41:

(Start: 19 @29010 has 200 MA's), (24, 28974), (31, 28917), (37, 28860), (42, 28803), (43, 28794),

Gene: Chartreuse\_44 Start: 27710, Stop: 27492, Start Num: 17

Candidate Starts for Chartreuse\_44:

(Start: 17 @27710 has 171 MA's), (Start: 26 @27656 has 1 MA's), (33, 27596), (39, 27545), (40, 27542),

Gene: Che12\_45 Start: 28470, Stop: 28252, Start Num: 17

Candidate Starts for Che12\_45:

(Start: 17 @28470 has 171 MA's), (Start: 26 @28416 has 1 MA's), (33, 28356), (39, 28305),

Gene: ChipMunk\_46 Start: 31386, Stop: 31165, Start Num: 17

Candidate Starts for ChipMunk\_46:

(Start: 17 @31386 has 171 MA's), (Start: 26 @31332 has 1 MA's),

Gene: Chupacabra\_41 Start: 29108, Stop: 28875, Start Num: 19

Candidate Starts for Chupacabra\_41:

(Start: 19 @29108 has 200 MA's), (31, 29015), (37, 28958), (41, 28913), (43, 28892),

Gene: Cici\_42 Start: 29520, Stop: 29293, Start Num: 19

Candidate Starts for Cici\_42:

(2, 29805), (11, 29610), (Start: 19 @29520 has 200 MA's), (Start: 26 @29469 has 1 MA's), (31, 29427), (37, 29370), (42, 29313), (43, 29304),

Gene: Cindaradix\_40 Start: 29145, Stop: 28915, Start Num: 19

Candidate Starts for Cindaradix\_40:

(11, 29235), (Start: 19 @29145 has 200 MA's), (Start: 26 @29094 has 1 MA's), (31, 29052), (37, 28995), (42, 28938), (43, 28929),

Gene: Cintron\_42 Start: 29539, Stop: 29306, Start Num: 19

Candidate Starts for Cintron\_42:

(1, 29824), (11, 29626), (Start: 19 @29539 has 200 MA's), (Start: 26 @29488 has 1 MA's), (31, 29446), (37, 29389), (41, 29344), (42, 29332), (43, 29323),

Gene: Citius\_43 Start: 29577, Stop: 29344, Start Num: 19

Candidate Starts for Citius\_43:

(Start: 19 @29577 has 200 MA's), (Start: 26 @29526 has 1 MA's), (31, 29484), (37, 29427), (42, 29370), (43, 29361),

Gene: Clarenza\_42 Start: 29553, Stop: 29320, Start Num: 19

Candidate Starts for Clarenza\_42:

(Start: 19 @29553 has 200 MA's), (Start: 26 @29502 has 1 MA's), (31, 29460), (37, 29403), (41, 29358), (42, 29346), (43, 29337),

Gene: CloudWang3\_44 Start: 27560, Stop: 27342, Start Num: 17

Candidate Starts for CloudWang3\_44:

(Start: 17 @27560 has 171 MA's), (Start: 26 @27506 has 1 MA's), (33, 27446), (39, 27395), (40, 27392),

Gene: Cocoaberry\_43 Start: 29560, Stop: 29327, Start Num: 19

Candidate Starts for Cocoaberry\_43:

(Start: 19 @29560 has 200 MA's), (Start: 26 @29509 has 1 MA's), (31, 29467), (37, 29410), (42, 29353), (43, 29344),

Gene: CogOmlette\_41 Start: 28652, Stop: 28422, Start Num: 19

Candidate Starts for CogOmlette\_41:

(13, 28712), (Start: 19 @28652 has 200 MA's), (29, 28580), (31, 28559), (35, 28517), (37, 28502), (42, 28445), (43, 28436),

Gene: Colin\_45 Start: 30257, Stop: 30039, Start Num: 17

Candidate Starts for Colin\_45:

(Start: 17 @30257 has 171 MA's), (Start: 21 @30239 has 3 MA's), (Start: 26 @30203 has 1 MA's), (39, 30092), (40, 30089), (42, 30062),

Gene: Commander\_43 Start: 29555, Stop: 29322, Start Num: 19

Candidate Starts for Commander\_43:

(Start: 19 @29555 has 200 MA's), (Start: 26 @29504 has 1 MA's), (31, 29462), (37, 29405), (42, 29348), (43, 29339),

Gene: Connomayer\_43 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Connomayer\_43:

(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (42, 29349), (43, 29340),

Gene: Conquerage\_44 Start: 29689, Stop: 29450, Start Num: 19

Candidate Starts for Conquerage\_44:

(Start: 19 @29689 has 200 MA's), (Start: 25 @29641 has 1 MA's), (28, 29626), (31, 29596), (34, 29560), (37, 29539), (42, 29482),

Gene: Cookiedough\_44 Start: 27775, Stop: 27557, Start Num: 17

Candidate Starts for Cookiedough\_44:

(Start: 17 @27775 has 171 MA's), (Start: 26 @27721 has 1 MA's), (33, 27661), (39, 27610), (40, 27607),

Gene: Crucio\_43 Start: 29466, Stop: 29248, Start Num: 17

Candidate Starts for Crucio\_43:

(10, 29541), (Start: 15 @29490 has 2 MA's), (Start: 17 @29466 has 171 MA's), (Start: 21 @29448 has 3 MA's), (Start: 26 @29412 has 1 MA's), (39, 29301), (40, 29298),

Gene: D29\_42 Start: 29179, Stop: 28973, Start Num: 17

Candidate Starts for D29\_42:

(Start: 17 @29179 has 171 MA's), (Start: 21 @29161 has 3 MA's), (Start: 26 @29122 has 1 MA's),

Gene: D32\_45 Start: 29179, Stop: 28973, Start Num: 17

Candidate Starts for D32\_45:

(Start: 17 @29179 has 171 MA's), (Start: 21 @29161 has 3 MA's), (Start: 26 @29122 has 1 MA's),

Gene: DBQu4n\_45 Start: 29179, Stop: 28973, Start Num: 17

Candidate Starts for DBQu4n\_45:

(Start: 17 @29179 has 171 MA's), (Start: 21 @29161 has 3 MA's), (Start: 26 @29122 has 1 MA's),

Gene: DaVinci\_44 Start: 27764, Stop: 27546, Start Num: 17

Candidate Starts for DaVinci\_44:

(Start: 17 @27764 has 171 MA's), (Start: 26 @27710 has 1 MA's), (33, 27650), (39, 27599), (40, 27596),

Gene: Dalmatian\_44 Start: 29859, Stop: 29641, Start Num: 17

Candidate Starts for Dalmatian\_44:

(3, 30087), (10, 29934), (Start: 15 @29883 has 2 MA's), (Start: 17 @29859 has 171 MA's), (20, 29844), (Start: 26 @29805 has 1 MA's), (30, 29775), (39, 29694), (40, 29691),

Gene: Darrell\_45 Start: 30026, Stop: 29790, Start Num: 19

Candidate Starts for Darrell\_45:

(Start: 19 @30026 has 200 MA's), (24, 29990), (Start: 25 @29978 has 1 MA's), (31, 29933), (37, 29876), (40, 29846), (41, 29831), (42, 29819),

Gene: DarthPhader\_41 Start: 30405, Stop: 30166, Start Num: 19

Candidate Starts for DarthPhader\_41:

(Start: 19 @30405 has 200 MA's), (31, 30312), (37, 30255), (42, 30198),

Gene: Datway\_42 Start: 29491, Stop: 29264, Start Num: 19

Candidate Starts for Datway\_42:

(2, 29776), (11, 29581), (Start: 19 @29491 has 200 MA's), (Start: 26 @29440 has 1 MA's), (31, 29398), (37, 29341), (42, 29284), (43, 29275),

Gene: Deano\_42 Start: 29564, Stop: 29331, Start Num: 19

Candidate Starts for Deano\_42:

(Start: 19 @29564 has 200 MA's), (Start: 26 @29513 has 1 MA's), (31, 29471), (37, 29414), (41, 29369), (42, 29357), (43, 29348),

Gene: DeerParkTS\_41 Start: 28994, Stop: 28776, Start Num: 17

Candidate Starts for DeerParkTS\_41:

(Start: 17 @28994 has 171 MA's), (Start: 21 @28976 has 3 MA's), (Start: 26 @28940 has 1 MA's), (33, 28880), (39, 28829), (40, 28826), (42, 28799),

Gene: Deloris\_42 Start: 29079, Stop: 28858, Start Num: 17

Candidate Starts for Deloris\_42:

(Start: 17 @29079 has 171 MA's), (Start: 21 @29061 has 3 MA's), (Start: 26 @29025 has 1 MA's), (33, 28965), (40, 28908),

Gene: DelvinSonDorr\_43 Start: 27759, Stop: 27559, Start Num: 21

Candidate Starts for DelvinSonDorr\_43:

(Start: 17 @27777 has 171 MA's), (Start: 21 @27759 has 3 MA's), (Start: 26 @27723 has 1 MA's), (33, 27663), (39, 27612), (40, 27609),

Gene: Dhanush\_43 Start: 29559, Stop: 29326, Start Num: 19

Candidate Starts for Dhanush\_43:

(Start: 19 @29559 has 200 MA's), (Start: 26 @29508 has 1 MA's), (31, 29466), (37, 29409), (41, 29364), (42, 29352), (43, 29343),

Gene: Dignity\_45 Start: 29922, Stop: 29704, Start Num: 17

Candidate Starts for Dignity\_45:

(3, 30150), (10, 29997), (Start: 15 @29946 has 2 MA's), (Start: 17 @29922 has 171 MA's), (Start: 21 @29904 has 3 MA's), (Start: 26 @29868 has 1 MA's), (40, 29754),

Gene: DirtyDunning\_42 Start: 29553, Stop: 29323, Start Num: 19

Candidate Starts for DirtyDunning\_42:

(1, 29841), (11, 29643), (Start: 19 @29553 has 200 MA's), (Start: 26 @29502 has 1 MA's), (29, 29481), (31, 29460), (37, 29403), (42, 29346), (43, 29337),

Gene: DontArgue\_41 Start: 28357, Stop: 28124, Start Num: 19

Candidate Starts for DontArgue\_41:

(Start: 19 @28357 has 200 MA's), (31, 28264), (37, 28207), (41, 28162), (42, 28150), (43, 28141),

Gene: Dorothea\_44 Start: 27782, Stop: 27564, Start Num: 17

Candidate Starts for Dorothea\_44:

(Start: 17 @27782 has 171 MA's), (Start: 26 @27728 has 1 MA's), (33, 27668), (39, 27617), (40, 27614),

Gene: Drake55\_45 Start: 29843, Stop: 29622, Start Num: 17

Candidate Starts for Drake55\_45:

(Start: 17 @29843 has 171 MA's), (Start: 21 @29825 has 3 MA's), (Start: 26 @29789 has 1 MA's), (33, 29729), (40, 29672),

Gene: Drake94\_40 Start: 28369, Stop: 28139, Start Num: 19

Candidate Starts for Drake94\_40:

(Start: 19 @28369 has 200 MA's), (20, 28357), (Start: 26 @28318 has 1 MA's), (31, 28276), (34, 28240), (43, 28153),

Gene: DreamTeam1\_41 Start: 28884, Stop: 28654, Start Num: 19

Candidate Starts for DreamTeam1\_41:

(Start: 19 @28884 has 200 MA's), (24, 28848), (31, 28791), (37, 28734), (42, 28677), (43, 28668),

Gene: Druantia\_43 Start: 29559, Stop: 29326, Start Num: 19

Candidate Starts for Druantia\_43:

(Start: 19 @29559 has 200 MA's), (Start: 26 @29508 has 1 MA's), (31, 29466), (37, 29409), (41, 29364), (42, 29352), (43, 29343),

Gene: DudeLittle\_42 Start: 29525, Stop: 29307, Start Num: 17

Candidate Starts for DudeLittle\_42:

(3, 29753), (10, 29600), (Start: 15 @29549 has 2 MA's), (Start: 17 @29525 has 171 MA's), (20, 29510), (Start: 26 @29471 has 1 MA's), (30, 29441), (39, 29360), (40, 29357),

Gene: Duplo\_45 Start: 29217, Stop: 29011, Start Num: 17

Candidate Starts for Duplo\_45:

(Start: 17 @29217 has 171 MA's), (Start: 21 @29199 has 3 MA's), (Start: 26 @29160 has 1 MA's),

Gene: DustyMartin\_46 Start: 29191, Stop: 28958, Start Num: 19

Candidate Starts for DustyMartin\_46:

(Start: 19 @29191 has 200 MA's), (31, 29098), (37, 29041), (43, 28975),

Gene: EZMoney23\_42 Start: 29484, Stop: 29266, Start Num: 17

Candidate Starts for EZMoney23\_42:

(Start: 17 @29484 has 171 MA's), (Start: 21 @29466 has 3 MA's), (Start: 26 @29430 has 1 MA's), (33, 29370), (39, 29319),

Gene: Eagle\_43 Start: 29581, Stop: 29348, Start Num: 19

Candidate Starts for Eagle\_43:

(Start: 19 @29581 has 200 MA's), (Start: 26 @29530 has 1 MA's), (31, 29488), (37, 29431), (42, 29374), (43, 29365),

Gene: EagleEye\_45 Start: 28911, Stop: 28705, Start Num: 17

Candidate Starts for EagleEye\_45:

(Start: 17 @28911 has 171 MA's), (20, 28896), (39, 28758), (40, 28755),

Gene: Eaglepride\_43 Start: 29208, Stop: 28975, Start Num: 19

Candidate Starts for Eaglepride\_43:

(Start: 19 @29208 has 200 MA's), (31, 29115), (37, 29058), (41, 29013), (42, 29001), (43, 28992),

Gene: Eapen\_43 Start: 29554, Stop: 29321, Start Num: 19

Candidate Starts for Eapen\_43:

(1, 29839), (11, 29641), (Start: 19 @29554 has 200 MA's), (Start: 26 @29503 has 1 MA's), (31, 29461), (37, 29404), (41, 29359), (42, 29347), (43, 29338),

Gene: Ebony\_42 Start: 28601, Stop: 28383, Start Num: 17

Candidate Starts for Ebony\_42:

(Start: 17 @28601 has 171 MA's), (20, 28586), (Start: 26 @28547 has 1 MA's), (33, 28487), (34, 28481), (39, 28436),

Gene: Echild\_43 Start: 28960, Stop: 28742, Start Num: 17

Candidate Starts for Echild\_43:

(Start: 17 @28960 has 171 MA's), (Start: 21 @28942 has 3 MA's), (Start: 26 @28906 has 1 MA's), (40, 28792),

Gene: Edison31\_41 Start: 29131, Stop: 28898, Start Num: 19

Candidate Starts for Edison31\_41:

(Start: 19 @29131 has 200 MA's), (Start: 25 @29083 has 1 MA's), (31, 29038), (37, 28981), (43, 28915),

Gene: EdogawaKiddo\_42 Start: 29603, Stop: 29427, Start Num: 28

Candidate Starts for EdogawaKiddo\_42:

(Start: 19 @29666 has 200 MA's), (Start: 25 @29618 has 1 MA's), (28, 29603), (31, 29573), (34, 29537), (37, 29516), (42, 29459),

Gene: Eidsmoe\_44 Start: 29723, Stop: 29484, Start Num: 19

Candidate Starts for Eidsmoe\_44:

(Start: 19 @29723 has 200 MA's), (Start: 25 @29675 has 1 MA's), (28, 29660), (31, 29630), (34, 29594), (37, 29573), (42, 29516),

Gene: Elephantoon\_43 Start: 29006, Stop: 28767, Start Num: 19

Candidate Starts for Elephantoon\_43:

(Start: 19 @29006 has 200 MA's), (31, 28913), (37, 28856), (40, 28826), (41, 28811), (42, 28799),

Gene: EmyBug\_43 Start: 29725, Stop: 29486, Start Num: 19

Candidate Starts for EmyBug\_43:

(Start: 19 @29725 has 200 MA's), (Start: 25 @29677 has 1 MA's), (28, 29662), (31, 29632), (34, 29596), (37, 29575), (42, 29518),

Gene: Equemioh13\_44 Start: 29765, Stop: 29562, Start Num: 21

Candidate Starts for Equemioh13\_44:

(Start: 17 @29783 has 171 MA's), (Start: 21 @29765 has 3 MA's), (Start: 26 @29729 has 1 MA's), (33, 29669), (40, 29612),

Gene: EricB\_44 Start: 27756, Stop: 27538, Start Num: 17

Candidate Starts for EricB\_44:

(Start: 17 @27756 has 171 MA's), (Start: 26 @27702 has 1 MA's), (33, 27642), (39, 27591), (40, 27588),

Gene: Eris\_42 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Eris\_42:

(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (42, 29349), (43, 29340),

Gene: Eros\_43 Start: 29558, Stop: 29325, Start Num: 19

Candidate Starts for Eros\_43:

(Start: 19 @29558 has 200 MA's), (Start: 26 @29507 has 1 MA's), (31, 29465), (37, 29408), (41, 29363), (42, 29351), (43, 29342),



Gene: Et2Brutus\_41 Start: 28561, Stop: 28343, Start Num: 17

Candidate Starts for Et2Brutus\_41:

(Start: 17 @28561 has 171 MA's), (20, 28546), (Start: 26 @28507 has 1 MA's), (33, 28447), (34, 28441), (39, 28396),

Gene: Eurydice\_44 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Eurydice\_44:

(11, 29643), (Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (42, 29349), (43, 29340),

Gene: EvilGenius\_46 Start: 31390, Stop: 31169, Start Num: 17

Candidate Starts for EvilGenius\_46:

(Start: 17 @31390 has 171 MA's), (Start: 26 @31336 has 1 MA's),

Gene: ExplosioNervosa\_44 Start: 29749, Stop: 29510, Start Num: 19

Candidate Starts for ExplosioNervosa\_44:

(Start: 19 @29749 has 200 MA's), (Start: 25 @29701 has 1 MA's), (28, 29686), (31, 29656), (34, 29620), (37, 29599), (42, 29542),

Gene: Fameo\_43 Start: 29653, Stop: 29435, Start Num: 17

Candidate Starts for Fameo\_43:

(3, 29881), (10, 29728), (Start: 15 @29677 has 2 MA's), (Start: 17 @29653 has 171 MA's), (Start: 21 @29635 has 3 MA's), (Start: 26 @29599 has 1 MA's), (39, 29488), (40, 29485),

Gene: Fayely\_44 Start: 29692, Stop: 29453, Start Num: 19

Candidate Starts for Fayely\_44:

(Start: 19 @29692 has 200 MA's), (Start: 25 @29644 has 1 MA's), (28, 29629), (31, 29599), (34, 29563), (37, 29542), (42, 29485),

Gene: Fibonacci\_41 Start: 28193, Stop: 27975, Start Num: 17

Candidate Starts for Fibonacci\_41:

(Start: 17 @28193 has 171 MA's), (20, 28178), (Start: 26 @28139 has 1 MA's), (33, 28079), (34, 28073), (39, 28028),

Gene: FiringLine\_43 Start: 29447, Stop: 29229, Start Num: 17

Candidate Starts for FiringLine\_43:

(10, 29522), (Start: 15 @29471 has 2 MA's), (Start: 17 @29447 has 171 MA's), (Start: 21 @29429 has 3 MA's), (Start: 26 @29393 has 1 MA's), (39, 29282), (40, 29279),

Gene: First\_0043 Start: 29321, Stop: 29100, Start Num: 17

Candidate Starts for First\_0043:

(Start: 17 @29321 has 171 MA's), (Start: 26 @29267 has 1 MA's), (33, 29207), (40, 29150),

Gene: Flare16\_43 Start: 29542, Stop: 29321, Start Num: 17

Candidate Starts for Flare16\_43:

(Start: 17 @29542 has 171 MA's), (Start: 21 @29524 has 3 MA's), (Start: 26 @29488 has 1 MA's), (33, 29428), (40, 29371),

Gene: Flaverint\_42 Start: 28640, Stop: 28422, Start Num: 17

Candidate Starts for Flaverint\_42:

(Start: 17 @28640 has 171 MA's), (20, 28625), (Start: 26 @28586 has 1 MA's), (33, 28526), (34, 28520), (39, 28475),

Gene: Florean\_43 Start: 29555, Stop: 29322, Start Num: 19

Candidate Starts for Florean\_43:

(Start: 19 @29555 has 200 MA's), (Start: 26 @29504 has 1 MA's), (31, 29462), (37, 29405), (41, 29360), (42, 29348), (43, 29339),

Gene: Flux\_43 Start: 29558, Stop: 29325, Start Num: 19

Candidate Starts for Flux\_43:

(11, 29645), (Start: 19 @29558 has 200 MA's), (Start: 26 @29507 has 1 MA's), (31, 29465), (37, 29408), (41, 29363), (42, 29351), (43, 29342),

Gene: ForesterFrank\_43 Start: 30554, Stop: 30336, Start Num: 17

Candidate Starts for ForesterFrank\_43:

(Start: 17 @30554 has 171 MA's), (Start: 21 @30536 has 3 MA's), (Start: 26 @30500 has 1 MA's), (33, 30440), (39, 30389), (40, 30386),

Gene: Funston\_42 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Funston\_42:

(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (42, 29349), (43, 29340),

Gene: Gadost\_43 Start: 29560, Stop: 29327, Start Num: 19

Candidate Starts for Gadost\_43:

(Start: 19 @29560 has 200 MA's), (Start: 26 @29509 has 1 MA's), (31, 29467), (37, 29410), (42, 29353), (43, 29344),

Gene: Gail\_47 Start: 30879, Stop: 30649, Start Num: 19

Candidate Starts for Gail\_47:

(Start: 19 @30879 has 200 MA's), (Start: 25 @30831 has 1 MA's), (Start: 26 @30828 has 1 MA's), (29, 30807), (32, 30774), (34, 30756), (37, 30735), (41, 30690), (43, 30669),

Gene: Garak\_46 Start: 27927, Stop: 27709, Start Num: 17

Candidate Starts for Garak\_46:

(Start: 17 @27927 has 171 MA's), (Start: 21 @27909 has 3 MA's), (Start: 26 @27873 has 1 MA's), (33, 27813), (39, 27762), (40, 27759),

Gene: GaugeLDP\_42 Start: 29927, Stop: 29706, Start Num: 17

Candidate Starts for GaugeLDP\_42:

(Start: 17 @29927 has 171 MA's), (Start: 21 @29909 has 3 MA's), (Start: 26 @29873 has 1 MA's),

Gene: Georgie2\_44 Start: 29492, Stop: 29274, Start Num: 17

Candidate Starts for Georgie2\_44:

(10, 29567), (Start: 15 @29516 has 2 MA's), (Start: 17 @29492 has 171 MA's), (Start: 21 @29474 has 3 MA's), (Start: 26 @29438 has 1 MA's), (39, 29327), (40, 29324),

Gene: Gilberta\_42 Start: 28630, Stop: 28412, Start Num: 17

Candidate Starts for Gilberta\_42:

(Start: 17 @28630 has 171 MA's), (20, 28615), (Start: 26 @28576 has 1 MA's), (33, 28516), (34, 28510), (39, 28465),

Gene: Gladiator\_44 Start: 27764, Stop: 27546, Start Num: 17

Candidate Starts for Gladiator\_44:

(Start: 17 @27764 has 171 MA's), (Start: 26 @27710 has 1 MA's), (33, 27650), (39, 27599), (40, 27596),

Gene: Goose\_42 Start: 28912, Stop: 28679, Start Num: 19

Candidate Starts for Goose\_42:

(Start: 19 @28912 has 200 MA's), (31, 28819), (37, 28762), (41, 28717), (43, 28696),

Gene: Gratitude\_43 Start: 29765, Stop: 29562, Start Num: 21

Candidate Starts for Gratitude\_43:

(Start: 17 @29783 has 171 MA's), (Start: 21 @29765 has 3 MA's), (Start: 26 @29729 has 1 MA's), (33, 29669), (40, 29612),

Gene: GreedyLawyer\_44 Start: 27763, Stop: 27545, Start Num: 17

Candidate Starts for GreedyLawyer\_44:

(Start: 17 @27763 has 171 MA's), (Start: 26 @27709 has 1 MA's), (33, 27649), (39, 27598), (40, 27595),

Gene: Gruunaga\_44 Start: 27763, Stop: 27545, Start Num: 17

Candidate Starts for Gruunaga\_44:

(Start: 17 @27763 has 171 MA's), (Start: 26 @27709 has 1 MA's), (33, 27649), (39, 27598), (40, 27595),

Gene: HamSlice\_42 Start: 29554, Stop: 29321, Start Num: 19

Candidate Starts for HamSlice\_42:

(Start: 19 @29554 has 200 MA's), (Start: 26 @29503 has 1 MA's), (31, 29461), (37, 29404), (41, 29359), (42, 29347), (43, 29338),

Gene: Hammer\_46 Start: 27966, Stop: 27763, Start Num: 17

Candidate Starts for Hammer\_46:

(Start: 17 @27966 has 171 MA's), (Start: 21 @27948 has 3 MA's), (Start: 26 @27912 has 1 MA's), (33, 27852), (36, 27837),

Gene: Hanray\_42 Start: 29607, Stop: 29431, Start Num: 28

Candidate Starts for Hanray\_42:

(Start: 19 @29670 has 200 MA's), (Start: 25 @29622 has 1 MA's), (28, 29607), (31, 29577), (34, 29541), (37, 29520), (42, 29463),

Gene: Happiness\_42 Start: 29561, Stop: 29328, Start Num: 19

Candidate Starts for Happiness\_42:

(11, 29651), (Start: 19 @29561 has 200 MA's), (Start: 26 @29510 has 1 MA's), (31, 29468), (37, 29411), (41, 29366), (42, 29354), (43, 29345),

Gene: HarryHoudini\_44 Start: 29987, Stop: 29766, Start Num: 17

Candidate Starts for HarryHoudini\_44:

(Start: 17 @29987 has 171 MA's), (Start: 21 @29969 has 3 MA's), (Start: 26 @29933 has 1 MA's), (33, 29873), (40, 29816),

Gene: Heffalump\_42 Start: 30122, Stop: 29901, Start Num: 17

Candidate Starts for Heffalump\_42:

(Start: 17 @30122 has 171 MA's), (Start: 26 @30068 has 1 MA's), (33, 30008),

Gene: Helmet\_46 Start: 27927, Stop: 27709, Start Num: 17

Candidate Starts for Helmet\_46:

(Start: 17 @27927 has 171 MA's), (Start: 21 @27909 has 3 MA's), (Start: 26 @27873 has 1 MA's), (33, 27813), (39, 27762), (40, 27759),

Gene: Hexamo\_44 Start: 27548, Stop: 27330, Start Num: 17

Candidate Starts for Hexamo\_44:

(Start: 17 @27548 has 171 MA's), (Start: 26 @27494 has 1 MA's), (33, 27434), (39, 27383), (40, 27380),

Gene: HippoHollow\_43 Start: 31014, Stop: 30793, Start Num: 17

Candidate Starts for HippoHollow\_43:

(Start: 17 @31014 has 171 MA's), (Start: 26 @30960 has 1 MA's), (40, 30843),

Gene: Holec\_43 Start: 29620, Stop: 29444, Start Num: 28

Candidate Starts for Holec\_43:

(Start: 19 @29683 has 200 MA's), (Start: 25 @29635 has 1 MA's), (28, 29620), (31, 29590), (34, 29554), (37, 29533), (42, 29476),

Gene: Holli\_42 Start: 29346, Stop: 29113, Start Num: 19

Candidate Starts for Holli\_42:

(Start: 19 @29346 has 200 MA's), (Start: 26 @29295 has 1 MA's), (31, 29253), (37, 29196), (42, 29139), (43, 29130),

Gene: Hoot\_44 Start: 27741, Stop: 27523, Start Num: 17

Candidate Starts for Hoot\_44:

(Start: 17 @27741 has 171 MA's), (Start: 26 @27687 has 1 MA's), (33, 27627), (39, 27576), (40, 27573),

Gene: HortumSL17\_44 Start: 29659, Stop: 29420, Start Num: 19

Candidate Starts for HortumSL17\_44:

(Start: 19 @29659 has 200 MA's), (Start: 25 @29611 has 1 MA's), (28, 29596), (31, 29566), (34, 29530), (37, 29509), (42, 29452),

Gene: Houdini22\_43 Start: 29560, Stop: 29327, Start Num: 19

Candidate Starts for Houdini22\_43:

(Start: 19 @29560 has 200 MA's), (Start: 26 @29509 has 1 MA's), (31, 29467), (37, 29410), (42, 29353), (43, 29344),

Gene: Hutc2\_41 Start: 28193, Stop: 27975, Start Num: 17

Candidate Starts for Hutc2\_41:

(Start: 17 @28193 has 171 MA's), (20, 28178), (Start: 26 @28139 has 1 MA's), (33, 28079), (34, 28073), (39, 28028),

Gene: Huxley\_43 Start: 29617, Stop: 29384, Start Num: 19

Candidate Starts for Huxley\_43:

(Start: 19 @29617 has 200 MA's), (Start: 26 @29566 has 1 MA's), (31, 29524), (37, 29467), (42, 29410), (43, 29401),

Gene: ICleared\_43 Start: 29588, Stop: 29355, Start Num: 19

Candidate Starts for ICleared\_43:

(11, 29675), (Start: 19 @29588 has 200 MA's), (20, 29576), (Start: 26 @29537 has 1 MA's), (31, 29495), (37, 29438), (41, 29393), (42, 29381), (43, 29372),

Gene: Iceman\_43 Start: 29845, Stop: 29612, Start Num: 19

Candidate Starts for Iceman\_43:

(11, 29932), (Start: 19 @29845 has 200 MA's), (Start: 26 @29794 has 1 MA's), (31, 29752), (37, 29695), (42, 29638), (43, 29629),

Gene: Indra\_47 Start: 27928, Stop: 27710, Start Num: 17

Candidate Starts for Indra\_47:

(Start: 17 @27928 has 171 MA's), (Start: 21 @27910 has 3 MA's), (Start: 26 @27874 has 1 MA's), (33, 27814), (39, 27763), (40, 27760),

Gene: Insomnia\_42 Start: 28698, Stop: 28480, Start Num: 17

Candidate Starts for Insomnia\_42:

(Start: 17 @28698 has 171 MA's), (20, 28683), (Start: 26 @28644 has 1 MA's), (33, 28584), (34, 28578), (39, 28533),

Gene: Iracema64\_44 Start: 29820, Stop: 29587, Start Num: 19

Candidate Starts for Iracema64\_44:

(1, 30108), (11, 29910), (Start: 19 @29820 has 200 MA's), (Start: 26 @29769 has 1 MA's), (31, 29727), (37, 29670), (41, 29625), (42, 29613), (43, 29604),

Gene: IronMan\_43 Start: 30639, Stop: 30418, Start Num: 17

Candidate Starts for IronMan\_43:

(Start: 17 @30639 has 171 MA's), (20, 30624), (Start: 26 @30585 has 1 MA's),

Gene: Isiphiwo\_42 Start: 27300, Stop: 27082, Start Num: 17

Candidate Starts for Isiphiwo\_42:

(Start: 17 @27300 has 171 MA's), (Start: 21 @27282 has 3 MA's), (Start: 26 @27246 has 1 MA's), (33, 27186), (39, 27135), (40, 27132),

Gene: Iwokeuplikedis\_46 Start: 29558, Stop: 29340, Start Num: 17

Candidate Starts for Iwokeuplikedis\_46:

(Start: 17 @29558 has 171 MA's), (20, 29543), (Start: 26 @29504 has 1 MA's), (33, 29444), (39, 29393), (40, 29390),

Gene: Jaan\_44 Start: 30928, Stop: 30707, Start Num: 17

Candidate Starts for Jaan\_44:

(Start: 17 @30928 has 171 MA's), (20, 30913), (Start: 26 @30874 has 1 MA's),

Gene: Jabith\_42 Start: 28699, Stop: 28481, Start Num: 17

Candidate Starts for Jabith\_42:

(Start: 17 @28699 has 171 MA's), (20, 28684), (Start: 26 @28645 has 1 MA's), (33, 28585), (34, 28579), (39, 28534),

Gene: Jaykayelowell\_41 Start: 29552, Stop: 29319, Start Num: 19

Candidate Starts for Jaykayelowell\_41:

(1, 29837), (11, 29639), (Start: 19 @29552 has 200 MA's), (Start: 26 @29501 has 1 MA's), (31, 29459), (37, 29402), (41, 29357), (42, 29345), (43, 29336),

Gene: Jeeves\_48 Start: 29822, Stop: 29598, Start Num: 19

Candidate Starts for Jeeves\_48:

(Start: 19 @29822 has 200 MA's), (Start: 25 @29774 has 1 MA's), (Start: 26 @29771 has 1 MA's), (29, 29750), (37, 29678), (41, 29633), (43, 29612), (44, 29609),

Gene: Jeffabunny\_44 Start: 27584, Stop: 27366, Start Num: 17

Candidate Starts for Jeffabunny\_44:

(Start: 17 @27584 has 171 MA's), (Start: 26 @27530 has 1 MA's), (33, 27470), (39, 27419), (40, 27416),

Gene: Jerm\_45 Start: 29915, Stop: 29697, Start Num: 17

Candidate Starts for Jerm\_45:

(3, 30143), (10, 29990), (Start: 15 @29939 has 2 MA's), (Start: 17 @29915 has 171 MA's), (Start: 21 @29897 has 3 MA's), (Start: 26 @29861 has 1 MA's), (40, 29747),

Gene: JetBlade\_43 Start: 29553, Stop: 29320, Start Num: 19

Candidate Starts for JetBlade\_43:

(1, 29838), (11, 29640), (Start: 19 @29553 has 200 MA's), (Start: 26 @29502 has 1 MA's), (31, 29460), (37, 29403), (41, 29358), (42, 29346), (43, 29337),

Gene: JewelBug\_46 Start: 27932, Stop: 27714, Start Num: 17

Candidate Starts for JewelBug\_46:

(Start: 17 @27932 has 171 MA's), (Start: 26 @27878 has 1 MA's), (33, 27818), (39, 27767), (40, 27764),

Gene: Jiawan\_42 Start: 29639, Stop: 29463, Start Num: 28

Candidate Starts for Jiawan\_42:

(Start: 19 @29702 has 200 MA's), (Start: 25 @29654 has 1 MA's), (28, 29639), (31, 29609), (34, 29573), (37, 29552), (42, 29495),

Gene: JoongJeon\_42 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for JoongJeon\_42:

(11, 29643), (Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (41, 29361), (42, 29349), (43, 29340),

Gene: Jordennis\_44 Start: 27771, Stop: 27553, Start Num: 17

Candidate Starts for Jordennis\_44:

(Start: 17 @27771 has 171 MA's), (Start: 26 @27717 has 1 MA's), (33, 27657), (39, 27606), (40, 27603),

Gene: Joselito\_42 Start: 28639, Stop: 28421, Start Num: 17

Candidate Starts for Joselito\_42:

(Start: 17 @28639 has 171 MA's), (20, 28624), (Start: 26 @28585 has 1 MA's), (33, 28525), (34, 28519), (39, 28474),

Gene: JoshKayV\_45 Start: 29974, Stop: 29756, Start Num: 17

Candidate Starts for JoshKayV\_45:

(Start: 17 @29974 has 171 MA's), (Start: 26 @29920 has 1 MA's), (40, 29806),

Gene: Journey13\_38 Start: 28092, Stop: 27874, Start Num: 17

Candidate Starts for Journey13\_38:

(7, 28248), (Start: 17 @28092 has 171 MA's), (Start: 26 @28038 has 1 MA's), (33, 27978),

Gene: Jsquared\_42 Start: 28494, Stop: 28276, Start Num: 17

Candidate Starts for Jsquared\_42:

(Start: 17 @28494 has 171 MA's), (Start: 25 @28443 has 1 MA's), (Start: 26 @28440 has 1 MA's), (40, 28326),

Gene: KFPoly\_42 Start: 29553, Stop: 29320, Start Num: 19

Candidate Starts for KFPoly\_42:

(1, 29838), (11, 29640), (Start: 19 @29553 has 200 MA's), (Start: 26 @29502 has 1 MA's), (31, 29460), (37, 29403), (41, 29358), (42, 29346), (43, 29337),

Gene: Kalpine\_43 Start: 30155, Stop: 29934, Start Num: 17

Candidate Starts for Kalpine\_43:

(Start: 17 @30155 has 171 MA's), (Start: 21 @30137 has 3 MA's), (Start: 26 @30101 has 1 MA's), (33, 30041), (40, 29984),

Gene: Kamy\_43 Start: 29558, Stop: 29325, Start Num: 19

Candidate Starts for Kamy\_43:

(Start: 19 @29558 has 200 MA's), (Start: 26 @29507 has 1 MA's), (31, 29465), (37, 29408), (41, 29363), (42, 29351), (43, 29342),

Gene: Katalie136\_42 Start: 29505, Stop: 29278, Start Num: 19

Candidate Starts for Katalie136\_42:

(2, 29790), (11, 29595), (Start: 19 @29505 has 200 MA's), (Start: 26 @29454 has 1 MA's), (31, 29412), (37, 29355), (42, 29298), (43, 29289),

Gene: Kazan\_45 Start: 27769, Stop: 27551, Start Num: 17

Candidate Starts for Kazan\_45:

(Start: 17 @27769 has 171 MA's), (Start: 26 @27715 has 1 MA's), (33, 27655), (39, 27604), (40, 27601),

Gene: KekoraPapaka\_43 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for KekoraPapaka\_43:

(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (41, 29361), (42, 29349), (43, 29340),

Gene: Kerberos\_45 Start: 29179, Stop: 28973, Start Num: 17

Candidate Starts for Kerberos\_45:

(Start: 17 @29179 has 171 MA's), (Start: 21 @29161 has 3 MA's), (Start: 26 @29122 has 1 MA's),

Gene: Keziacharles14\_43 Start: 30333, Stop: 30103, Start Num: 19

Candidate Starts for Keziacharles14\_43:

(Start: 19 @30333 has 200 MA's), (24, 30297), (31, 30240), (35, 30198), (37, 30183), (40, 30153), (42, 30126), (43, 30117),

Gene: Kimba\_42 Start: 28602, Stop: 28384, Start Num: 17

Candidate Starts for Kimba\_42:

(Start: 17 @28602 has 171 MA's), (20, 28587), (Start: 26 @28548 has 1 MA's), (33, 28488), (34, 28482), (39, 28437),

Gene: KingCyrus\_46 Start: 31385, Stop: 31164, Start Num: 17

Candidate Starts for KingCyrus\_46:

(Start: 17 @31385 has 171 MA's), (Start: 26 @31331 has 1 MA's),

Gene: Kingmustik0402\_43 Start: 29548, Stop: 29315, Start Num: 19

Candidate Starts for Kingmustik0402\_43:

(1, 29833), (11, 29635), (Start: 19 @29548 has 200 MA's), (Start: 26 @29497 has 1 MA's), (31, 29455), (37, 29398), (41, 29353), (42, 29341), (43, 29332),

Gene: Kipper29\_44 Start: 27782, Stop: 27564, Start Num: 17

Candidate Starts for Kipper29\_44:

(Start: 17 @27782 has 171 MA's), (Start: 26 @27728 has 1 MA's), (33, 27668), (39, 27617), (40, 27614),

Gene: KittenMittens\_39 Start: 28377, Stop: 28147, Start Num: 19

Candidate Starts for KittenMittens\_39:

(Start: 19 @28377 has 200 MA's), (20, 28365), (Start: 26 @28326 has 1 MA's), (31, 28284), (34, 28248), (43, 28161),

Gene: Klodlith\_42 Start: 28901, Stop: 28671, Start Num: 19

Candidate Starts for Klodlith\_42:

(Start: 19 @28901 has 200 MA's), (24, 28865), (31, 28808), (37, 28751), (42, 28694), (43, 28685),

Gene: Koan\_41 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Koan\_41:

(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (41, 29361), (42, 29349), (43, 29340),

Gene: Koduck\_43 Start: 28297, Stop: 28079, Start Num: 17

Candidate Starts for Koduck\_43:

(5, 28489), (Start: 17 @28297 has 171 MA's), (Start: 26 @28243 has 1 MA's), (39, 28132), (40, 28129),

Gene: Koko\_46 Start: 28505, Stop: 28302, Start Num: 17

Candidate Starts for Koko\_46:

(Start: 17 @28505 has 171 MA's), (Start: 26 @28451 has 1 MA's), (33, 28391),

Gene: Koreni\_42 Start: 29237, Stop: 29004, Start Num: 19

Candidate Starts for Koreni\_42:

(Start: 19 @29237 has 200 MA's), (Start: 26 @29186 has 1 MA's), (31, 29144), (37, 29087), (42, 29030), (43, 29021),

Gene: Kratak\_43 Start: 29695, Stop: 29465, Start Num: 19

Candidate Starts for Kratak\_43:

(1, 29983), (11, 29785), (Start: 19 @29695 has 200 MA's), (Start: 26 @29644 has 1 MA's), (31, 29602), (37, 29545), (42, 29488), (43, 29479),

Gene: Kremtemulon\_43 Start: 29510, Stop: 29277, Start Num: 19

Candidate Starts for Kremtemulon\_43:

(1, 29795), (11, 29597), (Start: 19 @29510 has 200 MA's), (Start: 26 @29459 has 1 MA's), (31, 29417), (37, 29360), (41, 29315), (42, 29303), (43, 29294),

Gene: Kristoff\_42 Start: 29480, Stop: 29247, Start Num: 19

Candidate Starts for Kristoff\_42:

(Start: 19 @29480 has 200 MA's), (31, 29387), (37, 29330), (43, 29264),

Gene: Kyee\_43 Start: 29554, Stop: 29321, Start Num: 19

Candidate Starts for Kyee\_43:

(Start: 19 @29554 has 200 MA's), (Start: 26 @29503 has 1 MA's), (31, 29461), (37, 29404), (41, 29359), (42, 29347), (43, 29338),

Gene: L5\_42 Start: 28266, Stop: 28048, Start Num: 17

Candidate Starts for L5\_42:

(5, 28458), (Start: 17 @28266 has 171 MA's), (Start: 26 @28212 has 1 MA's), (39, 28101), (40, 28098),



Gene: LHTSCC\_45 Start: 29978, Stop: 29748, Start Num: 19

Candidate Starts for LHTSCC\_45:

(2, 30263), (11, 30068), (Start: 19 @29978 has 200 MA's), (Start: 26 @29927 has 1 MA's), (31, 29885), (37, 29828), (41, 29783), (42, 29771),

Gene: LadyBird\_46 Start: 29919, Stop: 29698, Start Num: 17

Candidate Starts for LadyBird\_46:

(Start: 17 @29919 has 171 MA's), (Start: 26 @29865 has 1 MA's), (33, 29805), (40, 29748),

Gene: Landor\_43 Start: 30717, Stop: 30496, Start Num: 17

Candidate Starts for Landor\_43:

(Start: 17 @30717 has 171 MA's), (20, 30702), (Start: 26 @30663 has 1 MA's),

Gene: LappelDuVide\_43 Start: 29555, Stop: 29322, Start Num: 19

Candidate Starts for LappelDuVide\_43:

(Start: 19 @29555 has 200 MA's), (Start: 26 @29504 has 1 MA's), (31, 29462), (37, 29405), (41, 29360), (42, 29348), (43, 29339),

Gene: Larenn\_43 Start: 29776, Stop: 29555, Start Num: 17

Candidate Starts for Larenn\_43:

(Start: 17 @29776 has 171 MA's), (Start: 21 @29758 has 3 MA's), (Start: 26 @29722 has 1 MA's), (30, 29692), (33, 29662), (40, 29605),

Gene: Lemur\_43 Start: 29553, Stop: 29320, Start Num: 19

Candidate Starts for Lemur\_43:

(Start: 19 @29553 has 200 MA's), (Start: 26 @29502 has 1 MA's), (31, 29460), (37, 29403), (42, 29346), (43, 29337),

Gene: LeoAvram\_43 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for LeoAvram\_43:

(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (42, 29349), (43, 29340),

Gene: Leogania\_43 Start: 30593, Stop: 30372, Start Num: 17

Candidate Starts for Leogania\_43:

(Start: 17 @30593 has 171 MA's), (Start: 21 @30575 has 3 MA's), (Start: 26 @30539 has 1 MA's), (33, 30479), (40, 30422),

Gene: Leviathan\_45 Start: 29971, Stop: 29753, Start Num: 17

Candidate Starts for Leviathan\_45:

(3, 30199), (10, 30046), (Start: 15 @29995 has 2 MA's), (Start: 17 @29971 has 171 MA's), (Start: 21 @29953 has 3 MA's), (Start: 26 @29917 has 1 MA's), (40, 29803),

Gene: LilTurb\_44 Start: 29804, Stop: 29586, Start Num: 17

Candidate Starts for LilTurb\_44:

(3, 30032), (10, 29879), (Start: 15 @29828 has 2 MA's), (Start: 17 @29804 has 171 MA's), (Start: 21 @29786 has 3 MA's), (Start: 26 @29750 has 1 MA's), (40, 29636),

Gene: Lilbunny\_43 Start: 27558, Stop: 27340, Start Num: 17

Candidate Starts for Lilbunny\_43:

(Start: 17 @27558 has 171 MA's), (Start: 26 @27504 has 1 MA's), (33, 27444), (39, 27393), (40, 27390),

Gene: Lilleskat\_42 Start: 29556, Stop: 29380, Start Num: 28

Candidate Starts for Lilleskat\_42:

(Start: 19 @29619 has 200 MA's), (Start: 25 @29571 has 1 MA's), (28, 29556), (31, 29526), (34, 29490), (37, 29469), (42, 29412),

Gene: LionsBait\_45 Start: 30997, Stop: 30776, Start Num: 17

Candidate Starts for LionsBait\_45:

(Start: 17 @30997 has 171 MA's), (Start: 26 @30943 has 1 MA's), (40, 30826),

Gene: LittleB\_43 Start: 29557, Stop: 29324, Start Num: 19

Candidate Starts for LittleB\_43:

(Start: 19 @29557 has 200 MA's), (Start: 26 @29506 has 1 MA's), (31, 29464), (37, 29407), (41, 29362), (42, 29350), (43, 29341),

Gene: LittleGuy\_43 Start: 29455, Stop: 29222, Start Num: 19

Candidate Starts for LittleGuy\_43:

(1, 29740), (11, 29542), (Start: 19 @29455 has 200 MA's), (Start: 26 @29404 has 1 MA's), (31, 29362), (37, 29305), (41, 29260), (42, 29248), (43, 29239),

Gene: LochMonster\_44 Start: 29792, Stop: 29562, Start Num: 19

Candidate Starts for LochMonster\_44:

(1, 30080), (11, 29882), (Start: 19 @29792 has 200 MA's), (Start: 26 @29741 has 1 MA's), (31, 29699), (37, 29642), (42, 29585), (43, 29576),

Gene: Lokk\_44 Start: 30097, Stop: 29876, Start Num: 17

Candidate Starts for Lokk\_44:

(Start: 17 @30097 has 171 MA's), (Start: 26 @30043 has 1 MA's), (39, 29929), (40, 29926),

Gene: LoneWolf\_44 Start: 29477, Stop: 29241, Start Num: 19

Candidate Starts for LoneWolf\_44:

(Start: 19 @29477 has 200 MA's), (31, 29384), (37, 29327), (42, 29270),

Gene: Lorenzo\_43 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Lorenzo\_43:

(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (41, 29361), (42, 29349), (43, 29340),

Gene: Loser\_45 Start: 30461, Stop: 30219, Start Num: 14

Candidate Starts for Loser\_45:

(Start: 14 @30461 has 2 MA's), (Start: 17 @30437 has 171 MA's), (20, 30422), (Start: 21 @30419 has 3 MA's), (24, 30398), (39, 30272), (40, 30269), (42, 30242),

Gene: Luchador\_48 Start: 31613, Stop: 31389, Start Num: 19

Candidate Starts for Luchador\_48:

(Start: 19 @31613 has 200 MA's), (Start: 25 @31565 has 1 MA's), (Start: 26 @31562 has 1 MA's), (29, 31541), (37, 31469), (41, 31424), (43, 31403), (44, 31400),

Gene: Lucivia\_42 Start: 28688, Stop: 28470, Start Num: 17

Candidate Starts for Lucivia\_42:

(Start: 17 @28688 has 171 MA's), (20, 28673), (Start: 26 @28634 has 1 MA's), (33, 28574), (34, 28568), (39, 28523),

Gene: Lucyedi\_44 Start: 29106, Stop: 28900, Start Num: 17  
Candidate Starts for Lucyedi\_44:  
(Start: 17 @29106 has 171 MA's), (20, 29091), (39, 28953), (40, 28950),

Gene: Lunsford\_44 Start: 29553, Stop: 29320, Start Num: 19  
Candidate Starts for Lunsford\_44:  
(11, 29640), (Start: 19 @29553 has 200 MA's), (Start: 26 @29502 has 1 MA's), (31, 29460), (37, 29403), (41, 29358), (42, 29346), (43, 29337),

Gene: MaCh\_42 Start: 28626, Stop: 28408, Start Num: 17  
Candidate Starts for MaCh\_42:  
(Start: 17 @28626 has 171 MA's), (20, 28611), (Start: 26 @28572 has 1 MA's), (33, 28512), (34, 28506), (39, 28461),

Gene: Mabel\_42 Start: 28611, Stop: 28393, Start Num: 17  
Candidate Starts for Mabel\_42:  
(Start: 17 @28611 has 171 MA's), (20, 28596), (Start: 26 @28557 has 1 MA's), (33, 28497), (34, 28491), (39, 28446),

Gene: MajorMajor\_42 Start: 28357, Stop: 28139, Start Num: 17  
Candidate Starts for MajorMajor\_42:  
(16, 28372), (Start: 17 @28357 has 171 MA's), (Start: 26 @28303 has 1 MA's), (40, 28189),

Gene: Malec\_44 Start: 30340, Stop: 30119, Start Num: 17  
Candidate Starts for Malec\_44:  
(Start: 17 @30340 has 171 MA's), (Start: 21 @30322 has 3 MA's), (Start: 26 @30286 has 1 MA's), (30, 30256), (33, 30226), (40, 30169),

Gene: Maminiaina\_43 Start: 29500, Stop: 29270, Start Num: 19  
Candidate Starts for Maminiaina\_43:  
(Start: 19 @29500 has 200 MA's), (Start: 25 @29452 has 1 MA's), (31, 29407), (35, 29365), (37, 29350), (41, 29305), (42, 29293), (43, 29284),

Gene: Maverick\_43 Start: 29556, Stop: 29323, Start Num: 19  
Candidate Starts for Maverick\_43:  
(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (42, 29349), (43, 29340),

Gene: Maxo\_44 Start: 29558, Stop: 29325, Start Num: 19  
Candidate Starts for Maxo\_44:  
(Start: 19 @29558 has 200 MA's), (Start: 26 @29507 has 1 MA's), (31, 29465), (37, 29408), (41, 29363), (42, 29351), (43, 29342),

Gene: Mayonnaise\_42 Start: 29556, Stop: 29323, Start Num: 19  
Candidate Starts for Mayonnaise\_42:  
(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (42, 29349), (43, 29340),

Gene: Mazhar510\_43 Start: 29557, Stop: 29324, Start Num: 19  
Candidate Starts for Mazhar510\_43:  
(Start: 19 @29557 has 200 MA's), (Start: 26 @29506 has 1 MA's), (31, 29464), (37, 29407), (42, 29350), (43, 29341),

Gene: McFly\_44 Start: 27763, Stop: 27545, Start Num: 17

Candidate Starts for McFly\_44:

(Start: 17 @27763 has 171 MA's), (Start: 26 @27709 has 1 MA's), (33, 27649), (39, 27598), (40, 27595),

Gene: Medusa\_43 Start: 29555, Stop: 29322, Start Num: 19

Candidate Starts for Medusa\_43:

(Start: 19 @29555 has 200 MA's), (Start: 26 @29504 has 1 MA's), (31, 29462), (37, 29405), (41, 29360), (42, 29348), (43, 29339),

Gene: MeeZee\_43 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for MeeZee\_43:

(1, 29841), (11, 29643), (Start: 19 @29556 has 200 MA's), (20, 29544), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (42, 29349), (43, 29340),

Gene: MegTheThird\_42 Start: 28923, Stop: 28729, Start Num: 24

Candidate Starts for MegTheThird\_42:

(Start: 19 @28959 has 200 MA's), (24, 28923), (31, 28866), (34, 28830), (36, 28821), (37, 28809), (42, 28752), (43, 28743),

Gene: Melvin\_45 Start: 29554, Stop: 29321, Start Num: 19

Candidate Starts for Melvin\_45:

(1, 29839), (11, 29641), (Start: 19 @29554 has 200 MA's), (Start: 26 @29503 has 1 MA's), (28, 29491), (31, 29461), (37, 29404), (41, 29359), (42, 29347), (43, 29338),

Gene: MiculUcigas\_43 Start: 29442, Stop: 29221, Start Num: 17

Candidate Starts for MiculUcigas\_43:

(Start: 17 @29442 has 171 MA's), (Start: 21 @29424 has 3 MA's), (Start: 26 @29388 has 1 MA's), (33, 29328), (40, 29271),

Gene: Miko\_42 Start: 29994, Stop: 29773, Start Num: 17

Candidate Starts for Miko\_42:

(Start: 17 @29994 has 171 MA's), (Start: 26 @29940 has 1 MA's), (39, 29826), (40, 29823),

Gene: Millski\_42 Start: 29560, Stop: 29327, Start Num: 19

Candidate Starts for Millski\_42:

(11, 29647), (Start: 19 @29560 has 200 MA's), (Start: 26 @29509 has 1 MA's), (31, 29467), (37, 29410), (41, 29365), (42, 29353), (43, 29344),

Gene: Minispark\_41 Start: 28649, Stop: 28419, Start Num: 19

Candidate Starts for Minispark\_41:

(13, 28709), (Start: 19 @28649 has 200 MA's), (29, 28577), (31, 28556), (35, 28514), (37, 28499), (42, 28442), (43, 28433),

Gene: Miramae\_42 Start: 29693, Stop: 29463, Start Num: 19

Candidate Starts for Miramae\_42:

(2, 29978), (11, 29783), (Start: 19 @29693 has 200 MA's), (Start: 26 @29642 has 1 MA's), (31, 29600), (37, 29543), (41, 29498), (42, 29486), (43, 29477),

Gene: MissWhite\_41 Start: 27754, Stop: 27536, Start Num: 17

Candidate Starts for MissWhite\_41:

(6, 27928), (Start: 17 @27754 has 171 MA's), (22, 27733), (Start: 26 @27700 has 1 MA's), (33, 27640),

Gene: Morpher26\_42 Start: 29526, Stop: 29299, Start Num: 19  
Candidate Starts for Morpher26\_42:  
(2, 29811), (11, 29616), (Start: 19 @29526 has 200 MA's), (Start: 26 @29475 has 1 MA's), (31, 29433),  
(37, 29376), (42, 29319), (43, 29310),

Gene: Morrow\_44 Start: 29562, Stop: 29329, Start Num: 19  
Candidate Starts for Morrow\_44:  
(Start: 19 @29562 has 200 MA's), (Start: 26 @29511 has 1 MA's), (31, 29469), (37, 29412), (42,  
29355), (43, 29346),

Gene: Mulciber\_41 Start: 28190, Stop: 27972, Start Num: 17  
Candidate Starts for Mulciber\_41:  
(Start: 17 @28190 has 171 MA's), (20, 28175), (Start: 26 @28136 has 1 MA's), (33, 28076), (34,  
28070), (39, 28025),

Gene: Munch\_42 Start: 28639, Stop: 28421, Start Num: 17  
Candidate Starts for Munch\_42:  
(Start: 17 @28639 has 171 MA's), (20, 28624), (Start: 26 @28585 has 1 MA's), (33, 28525), (34,  
28519), (39, 28474),

Gene: Mundrea\_42 Start: 29513, Stop: 29283, Start Num: 19  
Candidate Starts for Mundrea\_42:  
(2, 29798), (11, 29603), (Start: 19 @29513 has 200 MA's), (Start: 26 @29462 has 1 MA's), (31, 29420),  
(37, 29363), (42, 29306), (43, 29297),

Gene: Myxus\_44 Start: 29659, Stop: 29420, Start Num: 19  
Candidate Starts for Myxus\_44:  
(Start: 19 @29659 has 200 MA's), (Start: 25 @29611 has 1 MA's), (28, 29596), (31, 29566), (34,  
29530), (37, 29509), (42, 29452),

Gene: NaSiaTalie\_43 Start: 29539, Stop: 29318, Start Num: 17  
Candidate Starts for NaSiaTalie\_43:  
(Start: 17 @29539 has 171 MA's), (Start: 21 @29521 has 3 MA's), (Start: 26 @29485 has 1 MA's), (33,  
29425), (40, 29368),

Gene: Naji\_45 Start: 29179, Stop: 28973, Start Num: 17  
Candidate Starts for Naji\_45:  
(Start: 17 @29179 has 171 MA's), (Start: 21 @29161 has 3 MA's), (Start: 26 @29122 has 1 MA's),

Gene: Nebs\_44 Start: 29556, Stop: 29323, Start Num: 19  
Candidate Starts for Nebs\_44:  
(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (42,  
29349), (43, 29340),

Gene: Neeharika16\_44 Start: 27774, Stop: 27556, Start Num: 17  
Candidate Starts for Neeharika16\_44:  
(Start: 17 @27774 has 171 MA's), (Start: 26 @27720 has 1 MA's), (33, 27660), (39, 27609), (40,  
27606),

Gene: Nemo27\_43 Start: 29555, Stop: 29322, Start Num: 19  
Candidate Starts for Nemo27\_43:  
(Start: 19 @29555 has 200 MA's), (Start: 26 @29504 has 1 MA's), (31, 29462), (37, 29405), (42,  
29348), (43, 29339),

Gene: Newrala\_44 Start: 27774, Stop: 27556, Start Num: 17

Candidate Starts for Newrala\_44:

(Start: 17 @27774 has 171 MA's), (Start: 26 @27720 has 1 MA's), (33, 27660), (39, 27609), (40, 27606),

Gene: NicoleTera\_44 Start: 30200, Stop: 29982, Start Num: 17

Candidate Starts for NicoleTera\_44:

(Start: 17 @30200 has 171 MA's), (Start: 26 @30146 has 1 MA's), (39, 30035), (40, 30032),

Gene: Noelle\_43 Start: 29818, Stop: 29588, Start Num: 19

Candidate Starts for Noelle\_43:

(Start: 19 @29818 has 200 MA's), (31, 29725), (37, 29668), (41, 29623), (42, 29611), (43, 29602),

Gene: NorthStar\_42 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for NorthStar\_42:

(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (41, 29361), (42, 29349), (43, 29340),

Gene: NotAPhaseMom\_43 Start: 29560, Stop: 29327, Start Num: 19

Candidate Starts for NotAPhaseMom\_43:

(Start: 19 @29560 has 200 MA's), (Start: 26 @29509 has 1 MA's), (31, 29467), (37, 29410), (42, 29353), (43, 29344),

Gene: NothingSpecial\_42 Start: 30204, Stop: 29983, Start Num: 17

Candidate Starts for NothingSpecial\_42:

(Start: 17 @30204 has 171 MA's), (20, 30189), (Start: 26 @30150 has 1 MA's), (40, 30033),

Gene: Nyxis\_43 Start: 29449, Stop: 29216, Start Num: 19

Candidate Starts for Nyxis\_43:

(11, 29536), (Start: 19 @29449 has 200 MA's), (Start: 26 @29398 has 1 MA's), (31, 29356), (37, 29299), (41, 29254), (42, 29242), (43, 29233),

Gene: OKCentral2016\_41 Start: 28815, Stop: 28582, Start Num: 19

Candidate Starts for OKCentral2016\_41:

(Start: 19 @28815 has 200 MA's), (31, 28722), (37, 28665), (41, 28620), (43, 28599),

Gene: OKaNui\_43 Start: 29609, Stop: 29376, Start Num: 19

Candidate Starts for OKaNui\_43:

(11, 29696), (Start: 19 @29609 has 200 MA's), (Start: 26 @29558 has 1 MA's), (31, 29516), (37, 29459), (41, 29414), (42, 29402), (43, 29393),

Gene: Obama12\_44 Start: 29980, Stop: 29750, Start Num: 19

Candidate Starts for Obama12\_44:

(2, 30265), (11, 30070), (Start: 19 @29980 has 200 MA's), (Start: 26 @29929 has 1 MA's), (31, 29887), (37, 29830), (41, 29785), (42, 29773),

Gene: Odin\_42 Start: 28121, Stop: 27957, Start Num: 26

Candidate Starts for Odin\_42:

(Start: 17 @28175 has 171 MA's), (Start: 26 @28121 has 1 MA's), (33, 28061), (37, 28034), (39, 28010),

Gene: Ohfah\_44 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Ohfah\_44:

(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (42, 29349), (43, 29340),

Gene: Onglai\_42 Start: 27937, Stop: 27761, Start Num: 28

Candidate Starts for Onglai\_42:

(Start: 19 @28000 has 200 MA's), (Start: 25 @27952 has 1 MA's), (28, 27937), (31, 27907), (34, 27871), (37, 27850), (42, 27793),

Gene: Orange\_41 Start: 28188, Stop: 27970, Start Num: 17

Candidate Starts for Orange\_41:

(Start: 17 @28188 has 171 MA's), (20, 28173), (Start: 26 @28134 has 1 MA's), (33, 28074), (34, 28068), (39, 28023),

Gene: PackMan\_43 Start: 29611, Stop: 29420, Start Num: 25

Candidate Starts for PackMan\_43:

(Start: 19 @29659 has 200 MA's), (Start: 25 @29611 has 1 MA's), (28, 29596), (31, 29566), (34, 29530), (37, 29509), (42, 29452),

Gene: PainterBoy\_44 Start: 29042, Stop: 28836, Start Num: 17

Candidate Starts for PainterBoy\_44:

(Start: 17 @29042 has 171 MA's), (20, 29027), (39, 28889), (40, 28886),

Gene: Palestino\_42 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Palestino\_42:

(11, 29643), (Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (42, 29349), (43, 29340),

Gene: PeaceMeal1\_40 Start: 28378, Stop: 28148, Start Num: 19

Candidate Starts for PeaceMeal1\_40:

(Start: 19 @28378 has 200 MA's), (20, 28366), (Start: 26 @28327 has 1 MA's), (31, 28285), (34, 28249), (43, 28162),

Gene: Peaches\_43 Start: 29555, Stop: 29322, Start Num: 19

Candidate Starts for Peaches\_43:

(Start: 19 @29555 has 200 MA's), (Start: 26 @29504 has 1 MA's), (31, 29462), (37, 29405), (41, 29360), (42, 29348), (43, 29339),

Gene: Perplexer\_42 Start: 29502, Stop: 29275, Start Num: 19

Candidate Starts for Perplexer\_42:

(2, 29787), (11, 29592), (Start: 19 @29502 has 200 MA's), (Start: 26 @29451 has 1 MA's), (31, 29409), (37, 29352), (42, 29295), (43, 29286),

Gene: PeterPeter\_43 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for PeterPeter\_43:

(1, 29841), (11, 29643), (Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (41, 29361), (42, 29349), (43, 29340),

Gene: Petersenfast\_40 Start: 28195, Stop: 27977, Start Num: 17

Candidate Starts for Petersenfast\_40:

(Start: 17 @28195 has 171 MA's), (20, 28180), (Start: 26 @28141 has 1 MA's), (33, 28081), (34, 28075), (39, 28030),

Gene: PetiteSangusue\_42 Start: 29505, Stop: 29278, Start Num: 19  
Candidate Starts for PetiteSangusue\_42:  
(2, 29790), (11, 29595), (Start: 19 @29505 has 200 MA's), (Start: 26 @29454 has 1 MA's), (31, 29412),  
(37, 29355), (42, 29298), (43, 29289),

Gene: Ph8s\_45 Start: 28708, Stop: 28490, Start Num: 17  
Candidate Starts for Ph8s\_45:  
(Start: 17 @28708 has 171 MA's), (Start: 26 @28654 has 1 MA's), (33, 28594), (39, 28543),

Gene: Phacado\_43 Start: 29555, Stop: 29322, Start Num: 19  
Candidate Starts for Phacado\_43:  
(Start: 19 @29555 has 200 MA's), (Start: 26 @29504 has 1 MA's), (31, 29462), (37, 29405), (42,  
29348), (43, 29339),

Gene: Phaded\_45 Start: 30804, Stop: 30583, Start Num: 17  
Candidate Starts for Phaded\_45:  
(Start: 17 @30804 has 171 MA's), (20, 30789), (Start: 26 @30750 has 1 MA's),

Gene: Phaeder\_44 Start: 29659, Stop: 29420, Start Num: 19  
Candidate Starts for Phaeder\_44:  
(Start: 19 @29659 has 200 MA's), (Start: 25 @29611 has 1 MA's), (28, 29596), (31, 29566), (34,  
29530), (37, 29509), (42, 29452),

Gene: Pharaoh\_38 Start: 29104, Stop: 28865, Start Num: 19  
Candidate Starts for Pharaoh\_38:  
(Start: 19 @29104 has 200 MA's), (23, 29068), (31, 29008), (35, 28966), (37, 28951), (40, 28921), (42,  
28894),

Gene: Phelipe\_44 Start: 29556, Stop: 29323, Start Num: 19  
Candidate Starts for Phelipe\_44:  
(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (42,  
29349), (43, 29340),

Gene: Phighter1804\_43 Start: 29598, Stop: 29365, Start Num: 19  
Candidate Starts for Phighter1804\_43:  
(1, 29886), (11, 29688), (Start: 19 @29598 has 200 MA's), (Start: 26 @29547 has 1 MA's), (31, 29505),  
(37, 29448), (41, 29403), (42, 29391), (43, 29382),

Gene: Phonnegut\_44 Start: 29714, Stop: 29475, Start Num: 19  
Candidate Starts for Phonnegut\_44:  
(Start: 19 @29714 has 200 MA's), (Start: 25 @29666 has 1 MA's), (28, 29651), (31, 29621), (34,  
29585), (37, 29564), (42, 29507),

Gene: Phontbonne\_43 Start: 29450, Stop: 29217, Start Num: 19  
Candidate Starts for Phontbonne\_43:  
(11, 29537), (Start: 19 @29450 has 200 MA's), (20, 29438), (Start: 26 @29399 has 1 MA's), (31,  
29357), (37, 29300), (41, 29255), (42, 29243), (43, 29234),

Gene: Pioneer\_44 Start: 29714, Stop: 29475, Start Num: 19  
Candidate Starts for Pioneer\_44:  
(Start: 19 @29714 has 200 MA's), (Start: 25 @29666 has 1 MA's), (28, 29651), (31, 29621), (34,  
29585), (37, 29564), (42, 29507),



Gene: Pipcraft\_41 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Pipcraft\_41:

(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (42, 29349),

Gene: Piro94\_43 Start: 29904, Stop: 29683, Start Num: 17

Candidate Starts for Piro94\_43:

(Start: 17 @29904 has 171 MA's), (Start: 21 @29886 has 3 MA's), (Start: 26 @29850 has 1 MA's), (40, 29733),

Gene: Pmask\_44 Start: 27775, Stop: 27557, Start Num: 17

Candidate Starts for Pmask\_44:

(Start: 17 @27775 has 171 MA's), (Start: 26 @27721 has 1 MA's), (33, 27661), (39, 27610), (40, 27607),

Gene: Polymorphads\_44 Start: 29549, Stop: 29316, Start Num: 19

Candidate Starts for Polymorphads\_44:

(Start: 19 @29549 has 200 MA's), (Start: 26 @29498 has 1 MA's), (31, 29456), (37, 29399), (42, 29342), (43, 29333),

Gene: Polyphemus\_45 Start: 27918, Stop: 27700, Start Num: 17

Candidate Starts for Polyphemus\_45:

(Start: 17 @27918 has 171 MA's), (Start: 21 @27900 has 3 MA's), (Start: 26 @27864 has 1 MA's), (33, 27804), (39, 27753), (40, 27750),

Gene: Pomar16\_45 Start: 29220, Stop: 29014, Start Num: 17

Candidate Starts for Pomar16\_45:

(Start: 17 @29220 has 171 MA's), (Start: 21 @29202 has 3 MA's), (Start: 26 @29163 has 1 MA's),

Gene: Poompha\_41 Start: 28376, Stop: 28146, Start Num: 19

Candidate Starts for Poompha\_41:

(Start: 19 @28376 has 200 MA's), (20, 28364), (Start: 26 @28325 has 1 MA's), (31, 28283), (34, 28247), (43, 28160),

Gene: Power\_42 Start: 29500, Stop: 29282, Start Num: 17

Candidate Starts for Power\_42:

(10, 29575), (Start: 15 @29524 has 2 MA's), (Start: 17 @29500 has 171 MA's), (Start: 21 @29482 has 3 MA's), (Start: 26 @29446 has 1 MA's), (39, 29335), (40, 29332),

Gene: Priamo\_46 Start: 28075, Stop: 27857, Start Num: 17

Candidate Starts for Priamo\_46:

(Start: 17 @28075 has 171 MA's), (Start: 26 @28021 has 1 MA's), (33, 27961), (39, 27910), (40, 27907),

Gene: Priya\_44 Start: 29726, Stop: 29487, Start Num: 19

Candidate Starts for Priya\_44:

(Start: 19 @29726 has 200 MA's), (Start: 25 @29678 has 1 MA's), (28, 29663), (31, 29633), (34, 29597), (37, 29576), (42, 29519),

Gene: Prudy\_42 Start: 30167, Stop: 29949, Start Num: 17

Candidate Starts for Prudy\_42:

(Start: 14 @30191 has 2 MA's), (Start: 17 @30167 has 171 MA's), (Start: 21 @30149 has 3 MA's), (Start: 26 @30113 has 1 MA's), (39, 30002), (40, 29999),

Gene: Pukovnik\_42 Start: 30292, Stop: 30071, Start Num: 17

Candidate Starts for Pukovnik\_42:

(Start: 17 @30292 has 171 MA's), (20, 30277), (Start: 26 @30238 has 1 MA's), (40, 30121),

Gene: Pumbaa\_43 Start: 29501, Stop: 29268, Start Num: 19

Candidate Starts for Pumbaa\_43:

(11, 29588), (Start: 19 @29501 has 200 MA's), (Start: 26 @29450 has 1 MA's), (31, 29408), (37, 29351), (41, 29306), (42, 29294), (43, 29285),

Gene: Qobbit\_44 Start: 29688, Stop: 29449, Start Num: 19

Candidate Starts for Qobbit\_44:

(Start: 19 @29688 has 200 MA's), (Start: 25 @29640 has 1 MA's), (28, 29625), (31, 29595), (34, 29559), (37, 29538), (42, 29481),

Gene: QueenB2\_43 Start: 29571, Stop: 29353, Start Num: 17

Candidate Starts for QueenB2\_43:

(3, 29799), (10, 29646), (Start: 15 @29595 has 2 MA's), (Start: 17 @29571 has 171 MA's), (Start: 21 @29553 has 3 MA's), (Start: 26 @29517 has 1 MA's), (39, 29406), (40, 29403),

Gene: QueenBeesly\_43 Start: 29447, Stop: 29229, Start Num: 17

Candidate Starts for QueenBeesly\_43:

(10, 29522), (Start: 15 @29471 has 2 MA's), (Start: 17 @29447 has 171 MA's), (Start: 21 @29429 has 3 MA's), (Start: 26 @29393 has 1 MA's), (39, 29282), (40, 29279),

Gene: Quokka\_41 Start: 28357, Stop: 28139, Start Num: 17

Candidate Starts for Quokka\_41:

(16, 28372), (Start: 17 @28357 has 171 MA's), (Start: 26 @28303 has 1 MA's), (40, 28189),

Gene: Rachaly\_44 Start: 30171, Stop: 29950, Start Num: 17

Candidate Starts for Rachaly\_44:

(Start: 17 @30171 has 171 MA's), (Start: 26 @30117 has 1 MA's), (39, 30003), (40, 30000),

Gene: Rahalelujah\_42 Start: 28664, Stop: 28434, Start Num: 19

Candidate Starts for Rahalelujah\_42:

(13, 28724), (Start: 19 @28664 has 200 MA's), (29, 28592), (31, 28571), (35, 28529), (37, 28514), (42, 28457), (43, 28448),

Gene: Rebeuca\_42 Start: 29481, Stop: 29248, Start Num: 19

Candidate Starts for Rebeuca\_42:

(Start: 19 @29481 has 200 MA's), (31, 29388), (37, 29331), (43, 29265),

Gene: RedRock\_45 Start: 30674, Stop: 30432, Start Num: 14

Candidate Starts for RedRock\_45:

(Start: 14 @30674 has 2 MA's), (Start: 17 @30650 has 171 MA's), (20, 30635), (Start: 21 @30632 has 3 MA's), (24, 30611), (39, 30485), (40, 30482), (42, 30455),

Gene: Refuge\_43 Start: 30783, Stop: 30544, Start Num: 19

Candidate Starts for Refuge\_43:

(Start: 19 @30783 has 200 MA's), (31, 30687), (34, 30651), (35, 30645), (37, 30630), (40, 30600), (42, 30573),

Gene: Relief\_42 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Relief\_42:

(11, 29643), (Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (41, 29361), (42, 29349), (43, 29340),

Gene: Retro23\_44 Start: 29855, Stop: 29637, Start Num: 17

Candidate Starts for Retro23\_44:

(3, 30083), (10, 29930), (Start: 15 @29879 has 2 MA's), (Start: 17 @29855 has 171 MA's), (20, 29840), (Start: 26 @29801 has 1 MA's), (30, 29771), (39, 29690), (40, 29687),

Gene: RhynO\_43 Start: 29283, Stop: 29050, Start Num: 19

Candidate Starts for RhynO\_43:

(Start: 19 @29283 has 200 MA's), (31, 29190), (37, 29133), (43, 29067),

Gene: Rifter\_46 Start: 27929, Stop: 27726, Start Num: 17

Candidate Starts for Rifter\_46:

(Start: 17 @27929 has 171 MA's), (Start: 26 @27875 has 1 MA's), (33, 27815),

Gene: RockieBear\_42 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for RockieBear\_42:

(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (41, 29361), (42, 29349), (43, 29340),

Gene: Roksolana\_45 Start: 27811, Stop: 27593, Start Num: 17

Candidate Starts for Roksolana\_45:

(Start: 17 @27811 has 171 MA's), (Start: 21 @27793 has 3 MA's), (Start: 26 @27757 has 1 MA's), (33, 27697), (39, 27646), (40, 27643),

Gene: Romney\_43 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Romney\_43:

(1, 29841), (11, 29643), (Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (41, 29361), (42, 29349), (43, 29340),

Gene: Roosevelt\_42 Start: 29558, Stop: 29325, Start Num: 19

Candidate Starts for Roosevelt\_42:

(Start: 19 @29558 has 200 MA's), (Start: 26 @29507 has 1 MA's), (31, 29465), (37, 29408), (41, 29363), (42, 29351), (43, 29342),

Gene: Rosa24\_42 Start: 29590, Stop: 29357, Start Num: 19

Candidate Starts for Rosa24\_42:

(11, 29677), (Start: 19 @29590 has 200 MA's), (Start: 26 @29539 has 1 MA's), (31, 29497), (37, 29440), (41, 29395), (42, 29383), (43, 29374),

Gene: Rowdy\_46 Start: 29191, Stop: 28958, Start Num: 19

Candidate Starts for Rowdy\_46:

(Start: 19 @29191 has 200 MA's), (31, 29098), (37, 29041), (43, 28975),

Gene: Ruin\_43 Start: 29552, Stop: 29319, Start Num: 19

Candidate Starts for Ruin\_43:

(11, 29639), (Start: 19 @29552 has 200 MA's), (Start: 26 @29501 has 1 MA's), (31, 29459), (37, 29402), (42, 29345), (43, 29336),

Gene: RyeScarlet\_45 Start: 29620, Stop: 29444, Start Num: 28

Candidate Starts for RyeScarlet\_45:

(Start: 19 @29683 has 200 MA's), (Start: 25 @29635 has 1 MA's), (28, 29620), (31, 29590), (34, 29554), (37, 29533), (42, 29476),

Gene: Sabertooth\_43 Start: 29555, Stop: 29322, Start Num: 19

Candidate Starts for Sabertooth\_43:

(Start: 19 @29555 has 200 MA's), (Start: 26 @29504 has 1 MA's), (31, 29462), (37, 29405), (41, 29360), (42, 29348), (43, 29339),

Gene: Sachima\_41 Start: 29536, Stop: 29360, Start Num: 28

Candidate Starts for Sachima\_41:

(Start: 19 @29599 has 200 MA's), (Start: 25 @29551 has 1 MA's), (28, 29536), (31, 29506), (34, 29470), (37, 29449), (42, 29392),

Gene: Salz\_41 Start: 28549, Stop: 28331, Start Num: 17

Candidate Starts for Salz\_41:

(Start: 17 @28549 has 171 MA's), (20, 28534), (Start: 26 @28495 has 1 MA's), (33, 28435), (34, 28429), (39, 28384),

Gene: Saskia\_42 Start: 28543, Stop: 28325, Start Num: 17

Candidate Starts for Saskia\_42:

(Start: 17 @28543 has 171 MA's), (20, 28528), (Start: 26 @28489 has 1 MA's), (33, 28429), (34, 28423), (39, 28378),

Gene: Scamp\_43 Start: 29558, Stop: 29325, Start Num: 19

Candidate Starts for Scamp\_43:

(Start: 19 @29558 has 200 MA's), (Start: 26 @29507 has 1 MA's), (31, 29465), (37, 29408), (41, 29363), (42, 29351), (43, 29342),

Gene: Scherzo\_44 Start: 29903, Stop: 29664, Start Num: 19

Candidate Starts for Scherzo\_44:

(Start: 19 @29903 has 200 MA's), (Start: 25 @29855 has 1 MA's), (28, 29840), (31, 29810), (34, 29774), (37, 29753), (42, 29696),

Gene: SemperFi\_44 Start: 29715, Stop: 29497, Start Num: 17

Candidate Starts for SemperFi\_44:

(10, 29790), (Start: 15 @29739 has 2 MA's), (Start: 17 @29715 has 171 MA's), (Start: 21 @29697 has 3 MA's), (Start: 26 @29661 has 1 MA's), (39, 29550), (40, 29547),

Gene: SenorClean\_43 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for SenorClean\_43:

(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (41, 29361), (42, 29349), (43, 29340),

Gene: Serenity\_43 Start: 28480, Stop: 28262, Start Num: 17

Candidate Starts for Serenity\_43:

(16, 28495), (Start: 17 @28480 has 171 MA's), (Start: 26 @28426 has 1 MA's), (40, 28312),

Gene: Severus\_40 Start: 28376, Stop: 28146, Start Num: 19

Candidate Starts for Severus\_40:

(Start: 19 @28376 has 200 MA's), (20, 28364), (Start: 26 @28325 has 1 MA's), (31, 28283), (34, 28247), (43, 28160),

Gene: Shaka\_43 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Shaka\_43:

(1, 29841), (11, 29643), (Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (41, 29361), (42, 29349), (43, 29340),

Gene: Sham4\_41 Start: 28194, Stop: 27976, Start Num: 17

Candidate Starts for Sham4\_41:

(Start: 17 @28194 has 171 MA's), (20, 28179), (Start: 26 @28140 has 1 MA's), (33, 28080), (34, 28074), (39, 28029),

Gene: Shapes\_46 Start: 29191, Stop: 28958, Start Num: 19

Candidate Starts for Shapes\_46:

(Start: 19 @29191 has 200 MA's), (31, 29098), (37, 29041), (43, 28975),

Gene: SheaKeira\_42 Start: 28970, Stop: 28740, Start Num: 19

Candidate Starts for SheaKeira\_42:

(Start: 19 @28970 has 200 MA's), (24, 28934), (31, 28877), (37, 28820), (39, 28793), (42, 28763), (43, 28754),

Gene: SheldonCooper\_45 Start: 29979, Stop: 29749, Start Num: 19

Candidate Starts for SheldonCooper\_45:

(2, 30264), (11, 30069), (Start: 19 @29979 has 200 MA's), (Start: 26 @29928 has 1 MA's), (31, 29886), (37, 29829), (41, 29784), (42, 29772), (43, 29763),

Gene: Shygu2\_42 Start: 29508, Stop: 29278, Start Num: 19

Candidate Starts for Shygu2\_42:

(Start: 19 @29508 has 200 MA's), (Start: 26 @29457 has 1 MA's), (31, 29415), (37, 29358), (42, 29301), (43, 29292),

Gene: Skipitt\_42 Start: 29553, Stop: 29320, Start Num: 19

Candidate Starts for Skipitt\_42:

(11, 29640), (Start: 19 @29553 has 200 MA's), (Start: 26 @29502 has 1 MA's), (31, 29460), (37, 29403), (41, 29358), (42, 29346), (43, 29337),

Gene: Sknot\_43 Start: 29542, Stop: 29321, Start Num: 17

Candidate Starts for Sknot\_43:

(Start: 17 @29542 has 171 MA's), (Start: 21 @29524 has 3 MA's), (Start: 26 @29488 has 1 MA's), (33, 29428), (40, 29371),

Gene: Smeagan\_46 Start: 30058, Stop: 29840, Start Num: 17

Candidate Starts for Smeagan\_46:

(3, 30286), (10, 30133), (Start: 15 @30082 has 2 MA's), (Start: 17 @30058 has 171 MA's), (Start: 21 @30040 has 3 MA's), (Start: 26 @30004 has 1 MA's), (40, 29890),

Gene: SmellyB\_44 Start: 27763, Stop: 27545, Start Num: 17

Candidate Starts for SmellyB\_44:

(Start: 17 @27763 has 171 MA's), (Start: 26 @27709 has 1 MA's), (33, 27649), (39, 27598), (40, 27595),

Gene: SnapTap\_43 Start: 29550, Stop: 29308, Start Num: 15

Candidate Starts for SnapTap\_43:

(10, 29601), (Start: 15 @29550 has 2 MA's), (Start: 17 @29526 has 171 MA's), (Start: 21 @29508 has 3 MA's), (Start: 26 @29472 has 1 MA's), (39, 29361), (40, 29358),

Gene: Snape\_41 Start: 28192, Stop: 27974, Start Num: 17

Candidate Starts for Snape\_41:

(Start: 17 @28192 has 171 MA's), (20, 28177), (Start: 26 @28138 has 1 MA's), (33, 28078), (34, 28072), (39, 28027),

Gene: SororFago\_46 Start: 30934, Stop: 30698, Start Num: 19

Candidate Starts for SororFago\_46:

(Start: 19 @30934 has 200 MA's), (Start: 25 @30886 has 1 MA's), (29, 30862), (37, 30784), (41, 30739),

Gene: Sparxx\_44 Start: 29551, Stop: 29318, Start Num: 19

Candidate Starts for Sparxx\_44:

(Start: 19 @29551 has 200 MA's), (Start: 26 @29500 has 1 MA's), (31, 29458), (37, 29401), (42, 29344), (43, 29335),

Gene: Spino\_42 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Spino\_42:

(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (41, 29361), (42, 29349), (43, 29340),

Gene: Spouty\_44 Start: 29725, Stop: 29486, Start Num: 19

Candidate Starts for Spouty\_44:

(Start: 19 @29725 has 200 MA's), (Start: 25 @29677 has 1 MA's), (28, 29662), (31, 29632), (34, 29596), (37, 29575), (42, 29518),

Gene: StarStuff\_45 Start: 29182, Stop: 28976, Start Num: 17

Candidate Starts for StarStuff\_45:

(Start: 17 @29182 has 171 MA's), (Start: 21 @29164 has 3 MA's), (Start: 26 @29125 has 1 MA's),

Gene: Stasia\_42 Start: 29425, Stop: 29192, Start Num: 19

Candidate Starts for Stasia\_42:

(2, 29710), (11, 29515), (Start: 19 @29425 has 200 MA's), (Start: 26 @29374 has 1 MA's), (31, 29332), (35, 29290), (37, 29275), (42, 29218), (43, 29209),

Gene: SteMason\_42 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for SteMason\_42:

(11, 29643), (Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (42, 29349), (43, 29340),

Gene: Steamy\_40 Start: 29085, Stop: 28846, Start Num: 19

Candidate Starts for Steamy\_40:

(Start: 19 @29085 has 200 MA's), (23, 29049), (31, 28989), (37, 28932), (40, 28902), (42, 28875), (45, 28854),

Gene: Stink\_43 Start: 29973, Stop: 29743, Start Num: 19

Candidate Starts for Stink\_43:

(2, 30258), (11, 30063), (Start: 19 @29973 has 200 MA's), (Start: 26 @29922 has 1 MA's), (31, 29880), (37, 29823), (41, 29778), (42, 29766), (43, 29757),

Gene: Sultana\_43 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Sultana\_43:

(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (42, 29349), (43, 29340),

Gene: Sunhee\_45 Start: 29064, Stop: 28828, Start Num: 19

Candidate Starts for Sunhee\_45:

(Start: 19 @29064 has 200 MA's), (Start: 25 @29016 has 1 MA's), (Start: 26 @29013 has 1 MA's), (29, 28992), (31, 28971), (33, 28941), (34, 28935), (37, 28914),

Gene: SuperAwesome\_44 Start: 27774, Stop: 27556, Start Num: 17

Candidate Starts for SuperAwesome\_44:

(Start: 17 @27774 has 171 MA's), (Start: 26 @27720 has 1 MA's), (33, 27660), (39, 27609), (40, 27606),

Gene: SuperCallie99\_44 Start: 27773, Stop: 27555, Start Num: 17

Candidate Starts for SuperCallie99\_44:

(Start: 17 @27773 has 171 MA's), (Start: 26 @27719 has 1 MA's), (33, 27659), (39, 27608), (40, 27605),

Gene: Superchunk\_42 Start: 28002, Stop: 27784, Start Num: 17

Candidate Starts for Superchunk\_42:

(Start: 17 @28002 has 171 MA's), (Start: 26 @27948 has 1 MA's), (33, 27888), (39, 27837),

Gene: SweetiePie\_43 Start: 29550, Stop: 29308, Start Num: 15

Candidate Starts for SweetiePie\_43:

(10, 29601), (Start: 15 @29550 has 2 MA's), (Start: 17 @29526 has 171 MA's), (Start: 21 @29508 has 3 MA's), (Start: 26 @29472 has 1 MA's), (39, 29361), (40, 29358),

Gene: SwirlSquare\_43 Start: 28039, Stop: 27821, Start Num: 17

Candidate Starts for SwirlSquare\_43:

(Start: 17 @28039 has 171 MA's), (22, 28018), (Start: 26 @27985 has 1 MA's), (33, 27925), (39, 27874),

Gene: Taquarus\_43 Start: 29559, Stop: 29326, Start Num: 19

Candidate Starts for Taquarus\_43:

(Start: 19 @29559 has 200 MA's), (Start: 26 @29508 has 1 MA's), (31, 29466), (37, 29409), (41, 29364), (42, 29352), (43, 29343),

Gene: TarsusIV\_41 Start: 29209, Stop: 28988, Start Num: 17

Candidate Starts for TarsusIV\_41:

(Start: 17 @29209 has 171 MA's), (Start: 26 @29155 has 1 MA's), (33, 29095), (40, 29038),

Gene: Temprado\_45 Start: 27927, Stop: 27709, Start Num: 17

Candidate Starts for Temprado\_45:

(Start: 17 @27927 has 171 MA's), (Start: 21 @27909 has 3 MA's), (Start: 26 @27873 has 1 MA's), (33, 27813), (39, 27762), (40, 27759),

Gene: Terrific\_46 Start: 29876, Stop: 29673, Start Num: 21

Candidate Starts for Terrific\_46:

(Start: 17 @29894 has 171 MA's), (Start: 21 @29876 has 3 MA's), (Start: 26 @29840 has 1 MA's), (33, 29780), (40, 29723),

Gene: Thanksgivukkah\_42 Start: 29557, Stop: 29324, Start Num: 19

Candidate Starts for Thanksgivukkah\_42:

(11, 29644), (Start: 19 @29557 has 200 MA's), (Start: 26 @29506 has 1 MA's), (31, 29464), (37, 29407), (41, 29362), (42, 29350), (43, 29341),

Gene: Timothy\_42 Start: 28552, Stop: 28334, Start Num: 17

Candidate Starts for Timothy\_42:

(Start: 17 @28552 has 171 MA's), (20, 28537), (Start: 26 @28498 has 1 MA's), (33, 28438), (34, 28432), (39, 28387),

Gene: TinaFeyge\_43 Start: 29551, Stop: 29318, Start Num: 19

Candidate Starts for TinaFeyge\_43:

(Start: 19 @29551 has 200 MA's), (Start: 26 @29500 has 1 MA's), (31, 29458), (37, 29401), (41, 29356), (42, 29344), (43, 29335),

Gene: TinyTimmy\_42 Start: 28595, Stop: 28377, Start Num: 17

Candidate Starts for TinyTimmy\_42:

(Start: 17 @28595 has 171 MA's), (20, 28580), (Start: 26 @28541 has 1 MA's), (33, 28481), (34, 28475), (39, 28430),

Gene: Tinybot\_42 Start: 29586, Stop: 29353, Start Num: 19

Candidate Starts for Tinybot\_42:

(11, 29673), (Start: 19 @29586 has 200 MA's), (Start: 26 @29535 has 1 MA's), (31, 29493), (37, 29436), (41, 29391), (42, 29379), (43, 29370),

Gene: TopsytheTRex\_40 Start: 28535, Stop: 28317, Start Num: 17

Candidate Starts for TopsytheTRex\_40:

(5, 28727), (Start: 17 @28535 has 171 MA's), (Start: 26 @28481 has 1 MA's), (39, 28370), (40, 28367),

Gene: TiroTheta9\_43 Start: 29553, Stop: 29320, Start Num: 19

Candidate Starts for TiroTheta9\_43:

(11, 29640), (Start: 19 @29553 has 200 MA's), (Start: 26 @29502 has 1 MA's), (31, 29460), (37, 29403), (41, 29358), (42, 29346), (43, 29337),

Gene: Toaka\_43 Start: 29156, Stop: 28926, Start Num: 19

Candidate Starts for Toaka\_43:

(12, 29219), (Start: 19 @29156 has 200 MA's), (31, 29063), (37, 29006), (41, 28961), (42, 28949), (43, 28940),

Gene: Tomathan\_45 Start: 29179, Stop: 28973, Start Num: 17

Candidate Starts for Tomathan\_45:

(Start: 17 @29179 has 171 MA's), (Start: 21 @29161 has 3 MA's), (Start: 26 @29122 has 1 MA's),

Gene: ToneTone\_41 Start: 27490, Stop: 27272, Start Num: 17

Candidate Starts for ToneTone\_41:

(Start: 17 @27490 has 171 MA's), (Start: 26 @27436 has 1 MA's), (33, 27376), (39, 27325), (40, 27322),

Gene: Topanga\_40 Start: 29133, Stop: 28900, Start Num: 19

Candidate Starts for Topanga\_40:

(Start: 19 @29133 has 200 MA's), (31, 29040), (37, 28983), (43, 28917),

Gene: Travvers\_45 Start: 29179, Stop: 28973, Start Num: 17

Candidate Starts for Travvers\_45:

(Start: 17 @29179 has 171 MA's), (Start: 21 @29161 has 3 MA's), (Start: 26 @29122 has 1 MA's),

Gene: Trike\_39 Start: 28209, Stop: 27979, Start Num: 19



Candidate Starts for Trike\_39:

(4, 28425), (Start: 19 @28209 has 200 MA's), (20, 28197), (Start: 26 @28158 has 1 MA's), (31, 28116), (34, 28080), (43, 27993),

Gene: Tristan\_43 Start: 30608, Stop: 30387, Start Num: 17

Candidate Starts for Tristan\_43:

(Start: 17 @30608 has 171 MA's), (20, 30593), (Start: 26 @30554 has 1 MA's),

Gene: Trixie\_43 Start: 29993, Stop: 29772, Start Num: 17

Candidate Starts for Trixie\_43:

(Start: 17 @29993 has 171 MA's), (Start: 21 @29975 has 3 MA's), (Start: 26 @29939 has 1 MA's), (33, 29879), (40, 29822),

Gene: Trooper\_44 Start: 29761, Stop: 29540, Start Num: 17

Candidate Starts for Trooper\_44:

(Start: 17 @29761 has 171 MA's), (Start: 26 @29707 has 1 MA's), (27, 29701), (33, 29647), (40, 29590),

Gene: TroyPia\_44 Start: 29554, Stop: 29321, Start Num: 19

Candidate Starts for TroyPia\_44:

(Start: 19 @29554 has 200 MA's), (Start: 26 @29503 has 1 MA's), (31, 29461), (37, 29404), (41, 29359), (42, 29347), (43, 29338),

Gene: Tubs\_44 Start: 29659, Stop: 29420, Start Num: 19

Candidate Starts for Tubs\_44:

(Start: 19 @29659 has 200 MA's), (Start: 25 @29611 has 1 MA's), (28, 29596), (31, 29566), (34, 29530), (37, 29509), (42, 29452),

Gene: Tucker\_45 Start: 27928, Stop: 27710, Start Num: 17

Candidate Starts for Tucker\_45:

(Start: 17 @27928 has 171 MA's), (Start: 26 @27874 has 1 MA's), (33, 27814), (39, 27763), (40, 27760),

Gene: Turbido\_44 Start: 29798, Stop: 29580, Start Num: 17

Candidate Starts for Turbido\_44:

(3, 30026), (10, 29873), (Start: 15 @29822 has 2 MA's), (Start: 17 @29798 has 171 MA's), (Start: 21 @29780 has 3 MA's), (Start: 26 @29744 has 1 MA's), (40, 29630),

Gene: Twister\_40 Start: 29044, Stop: 28811, Start Num: 19

Candidate Starts for Twister\_40:

(Start: 19 @29044 has 200 MA's), (Start: 25 @28996 has 1 MA's), (31, 28951), (37, 28894), (43, 28828),

Gene: TygerBlood\_43 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for TygerBlood\_43:

(Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (41, 29361), (42, 29349), (43, 29340),

Gene: Ugenie5\_41 Start: 29902, Stop: 29663, Start Num: 19

Candidate Starts for Ugenie5\_41:

(Start: 19 @29902 has 200 MA's), (Start: 25 @29854 has 1 MA's), (28, 29839), (31, 29809), (34, 29773), (37, 29752), (42, 29695),

Gene: Ulysses\_42 Start: 29236, Stop: 29003, Start Num: 19

Candidate Starts for Ulysses\_42:

(1, 29521), (11, 29323), (Start: 19 @29236 has 200 MA's), (Start: 26 @29185 has 1 MA's), (31, 29143), (37, 29086), (41, 29041), (42, 29029), (43, 29020),

Gene: Updawg\_44 Start: 29783, Stop: 29562, Start Num: 17

Candidate Starts for Updawg\_44:

(Start: 17 @29783 has 171 MA's), (Start: 21 @29765 has 3 MA's), (Start: 26 @29729 has 1 MA's), (33, 29669), (40, 29612),

Gene: VA6\_42 Start: 29302, Stop: 29084, Start Num: 17

Candidate Starts for VA6\_42:

(Start: 17 @29302 has 171 MA's), (Start: 21 @29284 has 3 MA's), (Start: 26 @29248 has 1 MA's), (33, 29188), (40, 29134),

Gene: VC3\_45 Start: 29290, Stop: 29072, Start Num: 17

Candidate Starts for VC3\_45:

(8, 29416), (9, 29407), (Start: 17 @29290 has 171 MA's), (24, 29251), (Start: 26 @29236 has 1 MA's), (33, 29176), (40, 29122),

Gene: Vanisoa\_43 Start: 30225, Stop: 29995, Start Num: 19

Candidate Starts for Vanisoa\_43:

(Start: 19 @30225 has 200 MA's), (Start: 25 @30177 has 1 MA's), (29, 30153), (31, 30132), (35, 30090), (37, 30075), (42, 30018), (43, 30009),

Gene: VohminGhazi\_44 Start: 27764, Stop: 27546, Start Num: 17

Candidate Starts for VohminGhazi\_44:

(Start: 17 @27764 has 171 MA's), (Start: 26 @27710 has 1 MA's), (33, 27650), (39, 27599), (40, 27596),

Gene: WalterMcMickey\_40 Start: 29044, Stop: 28811, Start Num: 19

Candidate Starts for WalterMcMickey\_40:

(Start: 19 @29044 has 200 MA's), (Start: 25 @28996 has 1 MA's), (31, 28951), (37, 28894), (43, 28828),

Gene: Wander\_43 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Wander\_43:

(1, 29841), (11, 29643), (Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (41, 29361), (42, 29349), (43, 29340),

Gene: WeiHuaDA\_47 Start: 30879, Stop: 30661, Start Num: 17

Candidate Starts for WeiHuaDA\_47:

(Start: 17 @30879 has 171 MA's), (Start: 21 @30861 has 3 MA's), (Start: 26 @30825 has 1 MA's), (39, 30714), (40, 30711), (42, 30684),

Gene: Whabigail7\_44 Start: 29786, Stop: 29568, Start Num: 17

Candidate Starts for Whabigail7\_44:

(3, 30014), (10, 29861), (Start: 15 @29810 has 2 MA's), (Start: 17 @29786 has 171 MA's), (Start: 21 @29768 has 3 MA's), (Start: 26 @29732 has 1 MA's), (40, 29618),

Gene: WideWale\_44 Start: 29783, Stop: 29562, Start Num: 17

Candidate Starts for WideWale\_44:

(Start: 17 @29783 has 171 MA's), (Start: 21 @29765 has 3 MA's), (Start: 26 @29729 has 1 MA's), (33, 29669), (40, 29612),

Gene: Wiks\_43 Start: 27540, Stop: 27340, Start Num: 21

Candidate Starts for Wiks\_43:

(Start: 17 @27558 has 171 MA's), (Start: 21 @27540 has 3 MA's), (Start: 26 @27504 has 1 MA's), (33, 27444), (39, 27393), (40, 27390),

Gene: Wilbur\_43 Start: 29556, Stop: 29323, Start Num: 19

Candidate Starts for Wilbur\_43:

(1, 29841), (11, 29643), (Start: 19 @29556 has 200 MA's), (Start: 26 @29505 has 1 MA's), (31, 29463), (37, 29406), (41, 29361), (42, 29349), (43, 29340),

Gene: Wile\_42 Start: 29536, Stop: 29309, Start Num: 19

Candidate Starts for Wile\_42:

(2, 29821), (11, 29626), (Start: 19 @29536 has 200 MA's), (Start: 26 @29485 has 1 MA's), (31, 29443), (37, 29386), (42, 29329), (43, 29320),

Gene: Wizard007\_43 Start: 29561, Stop: 29328, Start Num: 19

Candidate Starts for Wizard007\_43:

(Start: 19 @29561 has 200 MA's), (Start: 26 @29510 has 1 MA's), (31, 29468), (37, 29411), (42, 29354), (43, 29345),

Gene: Wolpertinger\_40 Start: 28195, Stop: 27977, Start Num: 17

Candidate Starts for Wolpertinger\_40:

(Start: 17 @28195 has 171 MA's), (20, 28180), (Start: 26 @28141 has 1 MA's), (33, 28081), (34, 28075), (39, 28030),

Gene: WorldCup\_41 Start: 28658, Stop: 28428, Start Num: 19

Candidate Starts for WorldCup\_41:

(13, 28718), (Start: 19 @28658 has 200 MA's), (29, 28586), (31, 28565), (35, 28523), (37, 28508), (42, 28451), (43, 28442),

Gene: WunderPhul\_44 Start: 27556, Stop: 27338, Start Num: 17

Candidate Starts for WunderPhul\_44:

(Start: 17 @27556 has 171 MA's), (Start: 26 @27502 has 1 MA's), (33, 27442), (39, 27391), (40, 27388),

Gene: Xena\_41 Start: 29502, Stop: 29275, Start Num: 19

Candidate Starts for Xena\_41:

(2, 29787), (11, 29592), (Start: 19 @29502 has 200 MA's), (Start: 26 @29451 has 1 MA's), (31, 29409), (37, 29352), (42, 29295), (43, 29286),

Gene: XianYue\_42 Start: 29248, Stop: 29027, Start Num: 17

Candidate Starts for XianYue\_42:

(Start: 17 @29248 has 171 MA's), (Start: 21 @29230 has 3 MA's), (Start: 26 @29194 has 1 MA's), (33, 29134), (40, 29077),

Gene: Yecey3\_45 Start: 29175, Stop: 28945, Start Num: 18

Candidate Starts for Yecey3\_45:

(Start: 18 @29175 has 1 MA's), (Start: 25 @29127 has 1 MA's), (29, 29103), (31, 29082), (37, 29025), (42, 28968), (43, 28959),

Gene: YoSam321\_43 Start: 29553, Stop: 29320, Start Num: 19

Candidate Starts for YoSam321\_43:

(1, 29838), (11, 29640), (Start: 19 @29553 has 200 MA's), (Start: 26 @29502 has 1 MA's), (31, 29460), (37, 29403), (41, 29358), (42, 29346), (43, 29337),

Gene: Yokurt\_44 Start: 27558, Stop: 27340, Start Num: 17

Candidate Starts for Yokurt\_44:

(Start: 17 @27558 has 171 MA's), (Start: 26 @27504 has 1 MA's), (33, 27444), (39, 27393), (40, 27390),

Gene: Zaka\_44 Start: 27558, Stop: 27340, Start Num: 17

Candidate Starts for Zaka\_44:

(Start: 17 @27558 has 171 MA's), (Start: 26 @27504 has 1 MA's), (33, 27444), (39, 27393), (40, 27390),

Gene: Zimmer\_41 Start: 30268, Stop: 30029, Start Num: 19

Candidate Starts for Zimmer\_41:

(Start: 19 @30268 has 200 MA's), (31, 30175), (34, 30139), (37, 30118), (42, 30061),

Gene: Zulu\_45 Start: 27909, Stop: 27691, Start Num: 17

Candidate Starts for Zulu\_45:

(Start: 17 @27909 has 171 MA's), (Start: 26 @27855 has 1 MA's), (33, 27795), (39, 27744), (40, 27741),