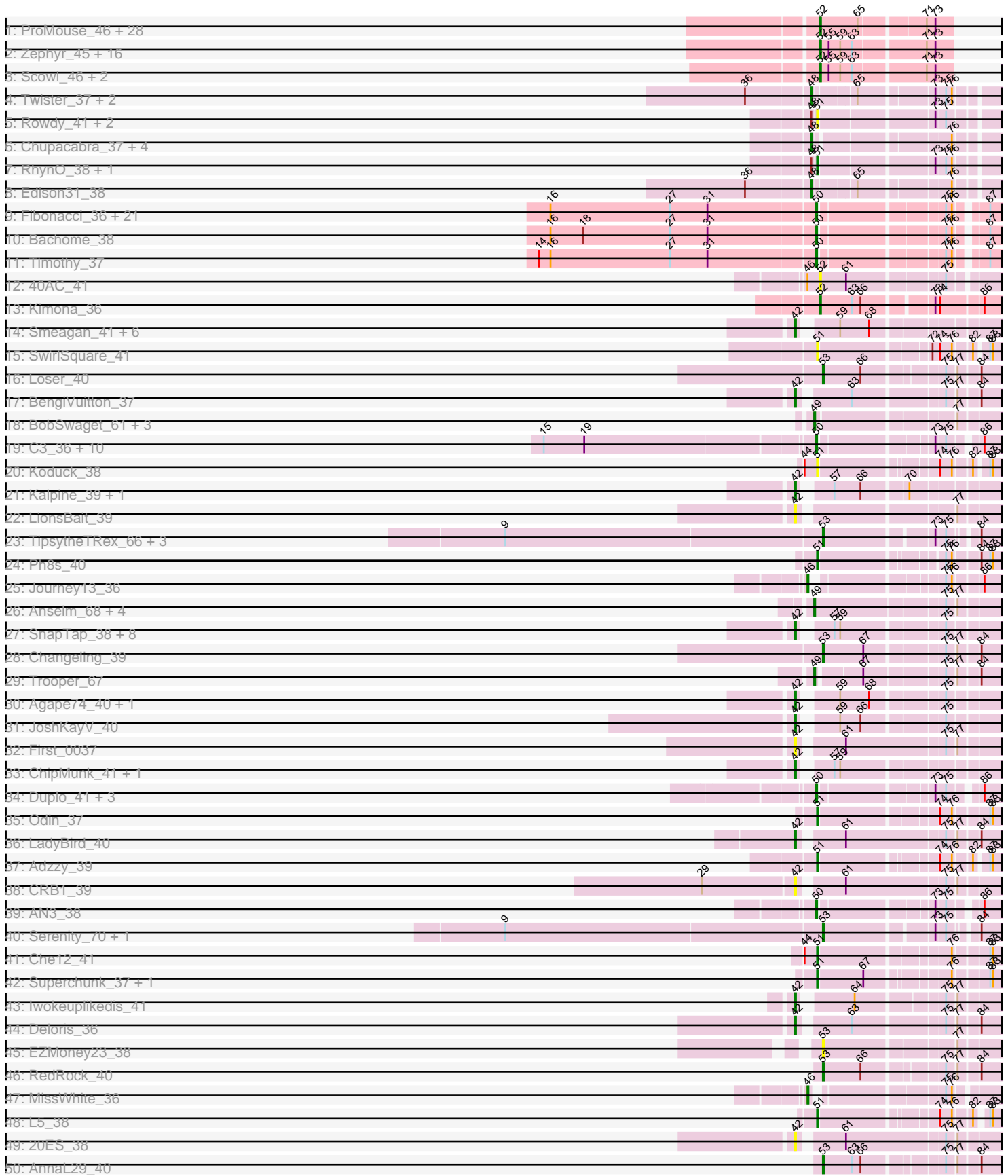
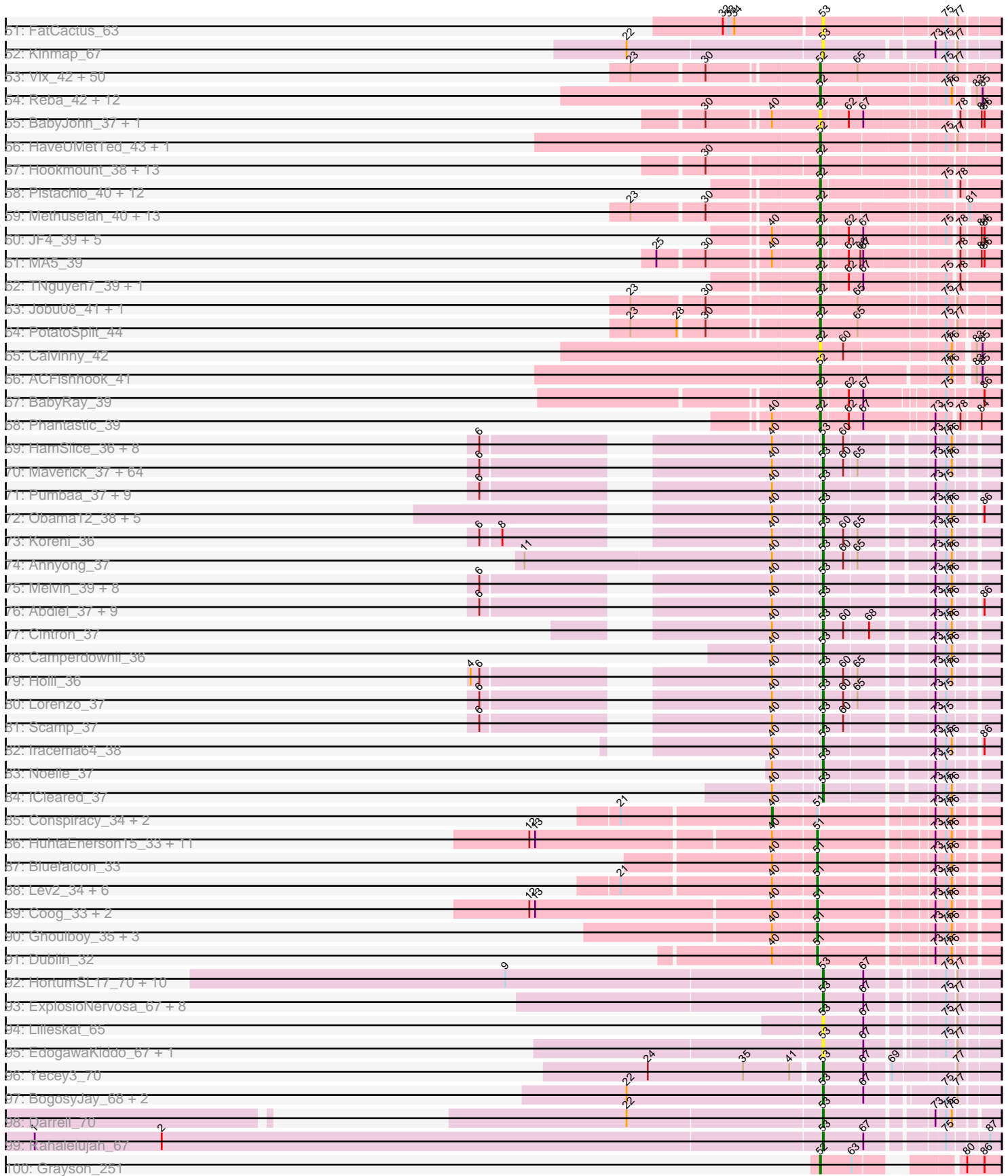


Pham 222744



Pham 222744





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 222744 Report

This analysis was run 03/28/25 on database version 593.

Pham number 222744 has 613 members, 63 are drafts.

Phages represented in each track:

- Track 1 : ProMouse\_46, Sibs6\_46, PattyP\_46, Blue\_45, Bigchunggi\_44, Big3\_44, DreamCatcher\_48, Anglerfish\_46, Molly\_46, Ichabod\_47, McGuire\_46, Raid\_46, Jorgensen\_46, Arlo\_43, Snazzy\_43, Kanely\_46, Altman\_47, Nhonho\_46, SkiPole\_48, PascalRango\_46, Petp2012\_46, HanShotFirst\_44, TwoPeat\_46, PSullivan\_45, Gandalf20\_47, PinkPlastic\_44, Barriga\_46, Atkinbua\_47, Pita2\_48
- Track 2 : Zephyr\_45, JC27\_46, GrecoEtereo\_46, Jasper\_47, Fenn\_47, HarryOW\_44, Bruns\_44, Forsytheast\_45, Corvo\_46, Target\_46, SwissCheese\_47, Naira\_47, Dreamboat\_47, Moose\_45, Mryolo\_43, RidgeCB\_45, PherrisBueller\_45
- Track 3 : Scowl\_46, ConceptII\_47, Alsfro\_49
- Track 4 : Twister\_37, Topanga\_37, WalterMcMickey\_37
- Track 5 : Rowdy\_41, Shapes\_41, DustyMartin\_41
- Track 6 : Chupacabra\_37, Kristoff\_38, Goose\_38, OKCentral2016\_37, Rebeuca\_38
- Track 7 : RhynO\_38, Eaglepride\_39
- Track 8 : Edison31\_38
- Track 9 : Fibonacci\_36, Petersenfast\_35, Sham4\_36, Gilberta\_37, Aneem\_37, Mabel\_37, Bud\_36, MaCh\_37, Hutc2\_36, Snape\_36, Lucivia\_37, Mulciber\_36, Joselito\_37, Orange\_36, Ebony\_37, TinyTimmy\_37, Insomnia\_37, Flaverint\_37, Jabith\_37, Et2Brutus\_36, Bowtie\_37, Munch\_37
- Track 10 : Bachome\_38
- Track 11 : Timothy\_37
- Track 12 : 40AC\_41
- Track 13 : Kimona\_36
- Track 14 : Smeagan\_41, Jerm\_40, Turbido\_39, Dignity\_40, Whabigail7\_39, LilTurb\_39, Leviathan\_40
- Track 15 : SwirlSquare\_41
- Track 16 : Loser\_40
- Track 17 : BengiVuitton\_37
- Track 18 : BobSwaget\_61, Rachaly\_64, Miko\_62, Lökk\_62
- Track 19 : C3\_36, AN9\_41, Pomar16\_41, Naji\_41, D29\_38, VC3\_41, ANI8\_41, StarStuff\_41, Travvers\_41, VA6\_38, D32\_41
- Track 20 : Koduck\_38
- Track 21 : Kalpine\_39, Trixie\_39
- Track 22 : LionsBait\_39
- Track 23 : TipsytheTRex\_66, Quokka\_68, Bradman\_69, MajorMajor\_68
- Track 24 : Ph8s\_40
- Track 25 : Journey13\_36
- Track 26 : Anselm\_68, Retro23\_68, Fameo\_67, Heffalump\_66, QueenB2\_66

- Track 27 : SnapTap\_38, Crucio\_38, FiringLine\_38, QueenBeesly\_38, KingCyrus\_41, Georgie2\_39, Power\_37, SemperFi\_39, SweetiePie\_38
- Track 28 : Changeling\_39
- Track 29 : Trooper\_67
- Track 30 : Agape74\_40, AbbyPaige\_40
- Track 31 : JoshKayV\_40
- Track 32 : First\_0037
- Track 33 : ChipMunk\_41, EvilGenius\_41
- Track 34 : Duplo\_41, Tomathan\_41, DBQu4n\_41, Kerberos\_41
- Track 35 : Odin\_37
- Track 36 : LadyBird\_40
- Track 37 : Adzzy\_39
- Track 38 : CRB1\_39
- Track 39 : AN3\_38
- Track 40 : Serenity\_70, Jsquared\_70
- Track 41 : Che12\_41
- Track 42 : Superchunk\_37, Caraxes\_38
- Track 43 : Iwokeuplikedis\_41
- Track 44 : Deloris\_36
- Track 45 : EZMoney23\_38
- Track 46 : RedRock\_40
- Track 47 : MissWhite\_36
- Track 48 : L5\_38
- Track 49 : 20ES\_38
- Track 50 : AnnaL29\_40
- Track 51 : FatCactus\_63
- Track 52 : Kinmap\_67
- Track 53 : Vix\_42, Microwolf\_42, Aglet\_43, MuchMore\_45, DaHudson\_42, Colbster\_42, Grum1\_42, AugsMagnumOpus\_45, JHC117\_42, GtownJaz\_42, Grif\_42, JenCasNa\_43, Taurus\_43, Tiffany\_42, MarQuardt\_42, GingkoMaracino\_42, Mainiac\_42, Pembroke\_42, Dieselweasel\_43, Cullens\_42, Stagni\_42, Sabia\_42, Fernando\_42, Snickers\_42, Watson\_42, Iowa\_42, LBerry\_43, Bigflo\_42, P28Green\_43, SoYo\_42, Grub\_42, Beauxregard13\_42, MoneyMay\_42, MadMarie\_42, Marie\_42, Malinsilva\_44, Sabinator\_41, Wooldri\_44, Hercules11\_42, Lilith\_43, StepMih\_42, Penny1\_43, Phoebe\_43, Farber\_42, Anubis\_45, LugYA\_45, Zetzy\_41, Ollie\_42, BreSam8\_42, PGHhamlin\_44, EpicPhail\_43
- Track 54 : Reba\_42, Manu\_42, Marius\_43, Groupthink\_43, PurpleHaze\_42, Gemma\_41, Pawn\_42, Kalb97\_43, JeppNRM\_43, Phranny\_43, Heliosoles\_41, PhishRPhriends\_40, Kalnoky\_43
- Track 55 : BabyJohn\_37, Chiqui\_37
- Track 56 : HaveUMetTed\_43, OlanP\_41
- Track 57 : Hookmount\_38, Caviar\_38, Texage\_37, Margo\_38, QuinnKiro\_37, Todacoro\_38, Veracruz\_37, Lambert1\_38, Noella\_38, ResDef\_38, Norbert\_37, Popcicle\_38, Panamaxus\_36, Pocahontas\_38
- Track 58 : Pistachio\_40, Heathen\_39, Fred313\_39, SaturnRing\_39, DropBear\_39, BlueBird\_40, Kachowdy\_39, Giroux\_39, Idleandcovert\_39, HelDan\_39, Marchesa\_39, Bugatti\_39, Scout\_39
- Track 59 : Methuselah\_40, Soshari\_44, Daishi\_41, Misomonster\_43, Louie6\_41, BuzzBuzz\_40, LarryKay\_42, Spike509\_42, Rummer\_41, HashRod\_43, TinyPebbles\_41, KADY\_42, Phoxy\_42, AgronaGT15\_41
- Track 60 : JF4\_39, JF2\_39, MK4\_39, Isca\_38, Rockstar\_39, B1\_36
- Track 61 : MA5\_39
- Track 62 : TNguyen7\_39, Puppy\_40

- Track 63 : Jobu08\_41, SoilDragon\_42
- Track 64 : PotatoSplit\_44
- Track 65 : Calvinny\_42
- Track 66 : ACFishhook\_41
- Track 67 : BabyRay\_39
- Track 68 : Phantastic\_39
- Track 69 : HamSlice\_36, Wilbur\_37, Arturo\_35, Sparxx\_38, Kingmustik0402\_37, Romney\_37, Chaph\_37, Koan\_36, Gadost\_37
- Track 70 : Maverick\_37, Bartimeaus\_37, Bruiser\_36, Ruin\_37, TygerBlood\_37, Albee\_37, Lunsford\_38, Flux\_37, Bombshell\_37, TiroTheta9\_37, Sabertooth\_37, LochMonster\_37, JoongJeon\_37, Millski\_36, PeterPeter\_37, Broseidon\_37, Eapen\_37, Avle17\_37, Relief\_36, CentreCat\_37, Thanksgivukkah\_37, Phighter1804\_37, Nemo27\_37, LappelDuVide\_37, Lemur\_37, Caelakin\_37, LittleB\_37, Eris\_36, Druantia\_37, Skipitt\_36, JetBlade\_37, BubbleTrouble\_37, Jaykayelowell\_36, Huxley\_38, Spino\_37, Roosevelt\_36, KFPoly\_37, Cocoaberry\_37, Houdini22\_37, Taquarus\_37, Kyee\_37, Baby16\_37, Burger\_35, Iceman\_38, NorthStar\_36, Phacado\_37, Peaches\_37, Shaka\_37, Deano\_37, Mayonnaise\_38, Mazhar510\_37, Connomayer\_37, Florean\_37, SenorClean\_36, Dhanush\_37, Eros\_37, Palestino\_36, Wizard007\_37, NotAPhaseMom\_37, Wander\_37, MeeZee\_37, Funston\_37, Blackmoor\_37, Clarenza\_37, YoSam321\_37
- Track 71 : Pumbaa\_37, Phelipe\_38, Tinybot\_36, Nyxis\_37, TroyPia\_38, Commander\_37, Phontbonne\_37, Ulysses\_36, LittleGuy\_37, Medusa\_37
- Track 72 : Obama12\_38, SheldonCooper\_39, ChampagnePapi\_39, LHTSCC\_39, BangNhom\_38, Cerulean\_38
- Track 73 : Koreni\_36
- Track 74 : Annyong\_37
- Track 75 : Melvin\_39, OKaNui\_38, Alberto7\_38, Kratark\_37, Rosa24\_37, Kremtemulon\_37, TinaFeyge\_38, Polymorphads\_38, Citius\_37
- Track 76 : Abdiel\_37, Maxo\_38, Morrow\_38, Kampy\_37, BellusTerra\_38, Eurydice\_38, Eagle\_37, Ohfah\_38, LeoAvram\_37, Nebs\_38
- Track 77 : Cintron\_37
- Track 78 : Camperdownii\_36
- Track 79 : Holli\_36
- Track 80 : Lorenzo\_37
- Track 81 : Scamp\_37
- Track 82 : Iracema64\_38
- Track 83 : Noelle\_37
- Track 84 : ICleared\_37
- Track 85 : Conspiracy\_34, Discoknowium\_34, Jovo\_34
- Track 86 : HuhtaEnerson15\_33, George\_32, LittleCherry\_33, Prinasha11\_34, Bonamassa\_33, Archetta\_33, Cuco\_33, Milcery\_33, Twigg\_33, Tarynearal\_32, Theia\_31, Swirley\_35
- Track 87 : Bluefalcon\_33
- Track 88 : Lev2\_34, Aragog\_34, AgentM\_34, Tiger\_34, Phlorence\_34, ForGetIt\_34, PickleBack\_34
- Track 89 : Coog\_33, Micasa\_35, Midas2\_33
- Track 90 : Ghoulboy\_35, SydNat\_35, Zolita\_34, MarysWell\_32
- Track 91 : Dublin\_32
- Track 92 : HortumSL17\_70, Jiawan\_66, Aliter\_70, Catalina\_71, Hanray\_67, Tubs\_69, Onglai\_67, PackMan\_68, Horex\_67, Myxus\_69, Phaeder\_69
- Track 93 : ExplosioNervosa\_67, Eidsmoe\_67, Priya\_67, EmyBug\_66, Alma\_67, Fayely\_67, Spouty\_67, Qobbit\_67, Conquerage\_67
- Track 94 : Lilleskat\_65

- Track 95 : EdogawaKiddo\_67, Sachima\_65
- Track 96 : Yecey3\_70
- Track 97 : BogosyJay\_68, Maminiaina\_68, Elephantoan\_67
- Track 98 : Darrell\_70
- Track 99 : Rahalelujah\_67
- Track 100 : Grayson\_251
- Track 101 : Peregrin\_249
- Track 102 : Peel\_52, CREW\_52, LindNT\_51, Jeckyll\_52, Bern\_53, Atiba\_53, Zavala\_54, Capricorn\_52, Beezoo\_54, Durfee\_52, Tachez\_52, Mynx\_53, Ganymede\_53, Deby\_52, Piatt\_52, MeaningOfLife\_53, Ramen\_53, Jarvi\_52, Rosmarinus\_52, AlishaPH\_52, BaghaKamala\_51, Adonis\_52, Pokerus\_51, Inky\_52, Lunahalos\_52, TreyKay\_53, CallaLilly\_54, Adephagia\_52, Llorens\_52, Jayhawk\_53, Rapunzel97\_53, CaseJules\_54, Geraldini\_55, Boiii\_52, BGIluviae\_52, Hyperbowlee\_52, Apocalypse\_55, ActinUp\_52, BEEST\_52, Zabiza\_47, Slimphazie\_52, Prithvi\_53, Spock\_52, Twitch\_52, Emerson\_53, QuincyRose\_51, Sulley\_52, BarrelRoll\_52, TruffulaTree\_52, Topper\_52, Dalmuri\_52, Tiri\_53, Asayake\_52, Padfoot\_52, Joy99\_52, JAWS\_52, CheetoDust\_51, Blizzard\_52, Belladonna\_52, Angelica\_52, Homura\_52, Padpat\_54, HedwigODU\_52, ShiaSurprise\_53, Veliki\_53
- Track 103 : MacKat\_47, TiniBug\_53, Clipper\_56, Efra2\_55, TaiwanKao\_54, Anaya\_54, Bella96\_53, CrimD\_52
- Track 104 : Urkel\_53, SamuelLPlaqson\_53, DrHayes\_53
- Track 105 : Murucutumbu\_53, Illumine\_55, Dole\_55, LaterM\_53, Ageofdapage\_54, Devera\_57, LastHope\_55, Stinson\_53
- Track 106 : Peanam\_55, Dartin\_55, Shaobing\_55, Richo\_55, McMater\_55, Niklas\_55
- Track 107 : Megsy\_54
- Track 108 : Chavito\_56
- Track 109 : Validus\_57
- Track 110 : TingHuaYa\_53
- Track 111 : YoureAdopted\_51
- Track 112 : MacnCheese\_67, Pixie\_64, ShedlockHolmes\_66, TribbleTrouble\_65, Lea83\_66
- Track 113 : Pharb\_64
- Track 114 : Keshu\_67
- Track 115 : Hurricane\_65
- Track 116 : TBond007\_61
- Track 117 : Y2\_03, Fionnbharth\_3, Juliette\_3, Ruthiejr\_3, Malthus\_3, Y10\_03, Kraw\_3, Wintermute\_3
- Track 118 : Slarp\_3, Cheetobro\_3, Mitti\_3, Chancellor\_3, Patt\_3, Reptar3000\_3, Bobquesha\_3
- Track 119 : JF1\_3
- Track 120 : MissDaisy\_3
- Track 121 : Eponine\_3
- Track 122 : OmniCritical\_3
- Track 123 : Lebo14\_3
- Track 124 : Omnicron\_36
- Track 125 : Edugator\_35
- Track 126 : Rando14\_36
- Track 127 : Bryler\_56, Syra333\_58, Krueger\_59, Cain\_56, Tierra\_56, Phrank\_56
- Track 128 : Shadow1\_58
- Track 129 : Sunflower1121\_59
- Track 130 : Ximenita\_59

- Track 131 : TClif\_65

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

The start number called the most often in the published annotations is 52, it was called in 161 of the 550 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 40AC\_41, ACFishhook\_41, Aglet\_43, AgronaGT15\_41, Alsfro\_49, Altman\_47, Anglerfish\_46, Anubis\_45, Arlo\_43, Atkinbua\_47, AugsMagnumOpus\_45, B1\_36, BabyJohn\_37, BabyRay\_39, Barriga\_46, Beauxregard13\_42, Big3\_44, Bigchungi\_44, Bigflo\_42, BlueBird\_40, Blue\_45, BreSam8\_42, Bruns\_44, Bugatti\_39, BuzzBuzz\_40, Calvinny\_42, Caviar\_38, Chiqui\_37, Colbster\_42, ConceptII\_47, Corvo\_46, Cullens\_42, DaHudson\_42, Daishi\_41, Dieselweasel\_43, DreamCatcher\_48, Dreamboat\_47, DropBear\_39, EpicPhail\_43, Farber\_42, Fenn\_47, Fernando\_42, Forsytheast\_45, Fred313\_39, Gandalf20\_47, Gemma\_41, GingkoMaracino\_42, Giroux\_39, Grayson\_251, GrecoEtereo\_46, Grif\_42, Groupthink\_43, Grub\_42, Grum1\_42, GtownJaz\_42, HanShotFirst\_44, HarryOW\_44, HashRod\_43, HaveUMetTed\_43, Heathen\_39, HelDan\_39, Heliosoles\_41, Hercules11\_42, Hookmount\_38, Ichabod\_47, Idleandcovert\_39, Isca\_38, JC27\_46, JF2\_39, JF4\_39, JHC117\_42, Jasper\_47, JenCasNa\_43, JeppNRM\_43, Jobu08\_41, Jorgensen\_46, KADY\_42, Kachowdy\_39, Kalb97\_43, Kalnoky\_43, Kanely\_46, Kimona\_36, LBerry\_43, Lambert1\_38, LarryKay\_42, Lilith\_43, Louie6\_41, Lowa\_42, LugYA\_45, MA5\_39, MK4\_39, MadMarie\_42, Mainiac\_42, Malinsilva\_44, Manu\_42, MarQuardt\_42, Marchesa\_39, Margo\_38, Marie\_42, Marius\_43, McGuire\_46, Methuselah\_40, Microwolf\_42, Misomonster\_43, Molly\_46, MoneyMay\_42, Moose\_45, Mryolo\_43, MuchMore\_45, Naira\_47, Nhonho\_46, Noella\_38, Norbert\_37, OlanP\_41, Ollie\_42, P28Green\_43, PGHhamlin\_44, PSullivan\_45, Panamaxus\_36, PascalRango\_46, PattyP\_46, Pawn\_42, Pembroke\_42, Penny1\_43, Peregrin\_249, Petp2012\_46, Phantastic\_39, PherrisBueller\_45, PhishRPhriends\_40, Phoebe\_43, Phoxy\_42, Phranny\_43, PinkPlastic\_44, Pistachio\_40, Pita2\_48, Pocahontas\_38, Popcicle\_38, PotatoSplit\_44, ProMouse\_46, Puppy\_40, PurpleHaze\_42, QuinnKiro\_37, Raid\_46, Reba\_42, ResDef\_38, RidgeCB\_45, Rockstar\_39, Rummer\_41, Sabia\_42, Sabinator\_41, SaturnRing\_39, Scout\_39, Scowl\_46, Sibs6\_46, SkiPole\_48, Snazzy\_43, Snickers\_42, SoYo\_42, SoilDragon\_42, Soshari\_44, Spike509\_42, Stagni\_42, StepMih\_42, SwissCheese\_47, TNguyen7\_39, Target\_46, Taurus\_43, Texage\_37, Tiffany\_42, TinyPebbles\_41, Todacoro\_38, TwoPeat\_46, Veracruz\_37, Vix\_42, Watson\_42, Wooldri\_44, Zephyr\_45, Zetzy\_41,

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

- Dartin\_55, McMater\_55, Niklas\_55, Peanam\_55, Richo\_55, Shaobing\_55,

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

- 20ES\_38, AN3\_38, AN9\_41, ANI8\_41, AbbyPaige\_40, Abdiel\_37, ActinUp\_52, Adephagia\_52, Adonis\_52, Adzzy\_39, Agape74\_40, AgentM\_34, Ageofdapage\_54, Albee\_37, Alberto7\_38, AlishaPH\_52, Aliter\_70, Alma\_67, Anaya\_54, Aneem\_37, Angelica\_52, AnnaL29\_40, Annyong\_37, Anselm\_68, Apocalypse\_55, Aragog\_34, Archetta\_33, Arturo\_35, Asayake\_52, Atiba\_53, Avle17\_37, BEEST\_52, BGlluviae\_52, Baby16\_37, Bachome\_38, BaghaKamala\_51, BangNhom\_38,



BarrelRoll\_52, Bartimeaus\_37, Beezoo\_54, Bella96\_53, Belladonna\_52, BellusTerra\_38, BengiVuitton\_37, Bern\_53, Blackmoor\_37, Blizzard\_52, Bluefalcon\_33, BobSwaget\_61, Bobquesha\_3, BogosyJay\_68, Boiiii\_52, Bombshell\_37, Bonamassa\_33, Bowtie\_37, Bradman\_69, Broseidon\_37, Bruiser\_36, Bryler\_56, BubbleTrouble\_37, Bud\_36, Burger\_35, C3\_36, CRB1\_39, CREW\_52, Caelakin\_37, Cain\_56, CallaLilly\_54, Camperdownii\_36, Capricorn\_52, Caraxes\_38, CaseJules\_54, Catalina\_71, CentreCat\_37, Cerulean\_38, ChampagnePapi\_39, Chancellor\_3, Changeling\_39, Chaph\_37, Chavito\_56, Che12\_41, CheetoDust\_51, Cheetobro\_3, ChipMunk\_41, Chupacabra\_37, Cintron\_37, Citius\_37, Clarenza\_37, Clipper\_56, Cocoaberry\_37, Commander\_37, Connomayer\_37, Conquerage\_67, Conspiracy\_34, Coog\_33, CrimD\_52, Crucio\_38, Cuco\_33, D29\_38, D32\_41, DBQu4n\_41, Dalmuri\_52, Darrell\_70, Deano\_37, Deby\_52, Deloris\_36, Devera\_57, Dhanush\_37, Dignity\_40, Discoknowium\_34, Dole\_55, DrHayes\_53, Druantia\_37, Dublin\_32, Duplo\_41, Durfee\_52, DustyMartin\_41, EZMoney23\_38, Eagle\_37, Eaglepride\_39, Eapen\_37, Ebony\_37, Edison31\_38, EdogawaKiddo\_67, Edugator\_35, Efra2\_55, Eidsmoe\_67, Elephantoon\_67, Emerson\_53, EmyBug\_66, Eponine\_3, Eris\_36, Eros\_37, Et2Brutus\_36, Eurydice\_38, EvilGenius\_41, ExplosioNervosa\_67, Fameo\_67, FatCactus\_63, Fayely\_67, Fibonacci\_36, Fionnbharth\_3, FiringLine\_38, First\_0037, Flaverint\_37, Florean\_37, Flux\_37, ForGetIt\_34, Funston\_37, Gadost\_37, Ganymede\_53, George\_32, Georgie2\_39, Geraldini\_55, Ghoulyboy\_35, Gilberta\_37, Goose\_38, HamSlice\_36, Hanray\_67, HedwigODU\_52, Heffalump\_66, Horex\_67, Holli\_36, Homura\_52, HortumSL17\_70, Houdini22\_37, HuhtaEnerson15\_33, Hurricane\_65, Hutc2\_36, Huxley\_38, Hyperbowlee\_52, ICleared\_37, Iceman\_38, Illumine\_55, Inky\_52, Insomnia\_37, Iracema64\_38, Iwokeuplikedis\_41, JAWS\_52, JF1\_3, Jabith\_37, Jarvi\_52, Jayhawk\_53, Jaykayelowell\_36, Jeckyll\_52, Jerm\_40, JetBlade\_37, Jiawan\_66, JoongJeon\_37, Joselito\_37, JoshKayV\_40, Journey13\_36, Jovo\_34, Joy99\_52, Jsquared\_70, Juliette\_3, KFPoly\_37, Kalpine\_39, Kampy\_37, Kerberos\_41, Keshu\_67, KingCyrus\_41, Kingmustik0402\_37, Kinmap\_67, Koan\_36, Koduck\_38, Koreni\_36, Kratak\_37, Kraw\_3, Kremtemulon\_37, Kristoff\_38, Krueger\_59, Kyee\_37, L5\_38, LHTSCC\_39, LadyBird\_40, LappelDuVide\_37, LastHope\_55, LaterM\_53, Lea83\_66, Lebo14\_3, Lemur\_37, LeoAvram\_37, Lev2\_34, Leviathan\_40, LilTurb\_39, Lilleskat\_65, LindNT\_51, LionsBait\_39, LittleB\_37, LittleCherry\_33, LittleGuy\_37, Llorens\_52, LochMonster\_37, Lokk\_62, Lorenzo\_37, Loser\_40, Lucivia\_37, Lunahalos\_52, Lunsford\_38, MaCh\_37, Mabel\_37, MacKat\_47, MacnCheese\_67, MajorMajor\_68, Malthus\_3, Maminiaina\_68, MarysWell\_32, Maverick\_37, Maxo\_38, Mayonnaise\_38, Mazhar510\_37, MeaningOfLife\_53, Medusa\_37, MeeZee\_37, Megsy\_54, Melvin\_39, Micasa\_35, Midas2\_33, Miko\_62, Milcery\_33, Millski\_36, MissDaisy\_3, MissWhite\_36, Mitti\_3, Morrow\_38, Mulciber\_36, Munch\_37, Murucutumbu\_53, Mynx\_53, Myxus\_69, Naji\_41, Nebs\_38, Nemo27\_37, Noelle\_37, NorthStar\_36, NotAPhaseMom\_37, Nyxis\_37, OKCentral2016\_37, OKaNui\_38, Obama12\_38, Odin\_37, Ohfah\_38, OmniCritical\_3, Omnicron\_36, Onglai\_67, Orange\_36, PackMan\_68, Padfoot\_52, Padpat\_54, Palestino\_36, Patt\_3, Peaches\_37, Peel\_52, PeterPeter\_37, Petersenfast\_35, Ph8s\_40, Phacado\_37, Phaeder\_69, Pharb\_64, Phelipe\_38, Phighter1804\_37, Phlorence\_34, Phontbonne\_37, Phrank\_56, Piatt\_52, PickleBack\_34, Pixie\_64, Pokerus\_51, Polymorphads\_38, Pomar16\_41, Power\_37, Prinash11\_34, Prithvi\_53, Priya\_67, Pumbaa\_37, Qobbit\_67, QueenB2\_66, QueenBeesly\_38, QuincyRose\_51, Quokka\_68, Rachaly\_64, Rahalelujah\_67, Ramen\_53, Rando14\_36, Rapunzel97\_53, Rebeuca\_38, RedRock\_40, Relief\_36, Reptar3000\_3, Retro23\_68, RhynO\_38, Romney\_37, Roosevelt\_36, Rosa24\_37, Rosmarinus\_52, Rowdy\_41, Ruin\_37, Ruthiejr\_3, Sabertooth\_37, Sachima\_65, SamuelLPlaqson\_53, Scamp\_37, SemperFi\_39, SenorClean\_36, Serenity\_70, Shadow1\_58, Shaka\_37, Sham4\_36,

Shapes\_41, ShedlockHolmes\_66, SheldonCooper\_39, ShiaSurprise\_53, Skipitt\_36, Slarp\_3, Slimphazie\_52, Smeagan\_41, SnapTap\_38, Snape\_36, Sparxx\_38, Spino\_37, Spock\_52, Spouty\_67, StarStuff\_41, Stinson\_53, Sulley\_52, Sunflower1121\_59, Superchunk\_37, SweetiePie\_38, SwirlSquare\_41, Swirley\_35, SydNat\_35, Syra333\_58, TBond007\_61, TClif\_65, Tachez\_52, TaiwanKao\_54, Taquarus\_37, Tarynearal\_32, Thanksgivukkah\_37, Theia\_31, Tierra\_56, Tiger\_34, Timothy\_37, TinaFeyge\_38, TingHuaYa\_53, TiniBug\_53, TinyTimmy\_37, Tinybot\_36, TipsytheTRex\_66, Tiri\_53, TiroTheta9\_37, Tomathan\_41, Topanga\_37, Topper\_52, Travvers\_41, TreyKay\_53, TribbleTrouble\_65, Trixie\_39, Trooper\_67, TroyPia\_38, TruffulaTree\_52, Tubs\_69, Turbido\_39, Twigg\_33, Twister\_37, Twitch\_52, TygerBlood\_37, Ulysses\_36, Urkel\_53, VA6\_38, VC3\_41, Validus\_57, Veliki\_53, WalterMcMickey\_37, Wander\_37, Whabigail7\_39, Wilbur\_37, Wintermute\_3, Wizard007\_37, Ximenita\_59, Y10\_03, Y2\_03, Yecey3\_70, YoSam321\_37, YoureAdopted\_51, Zabiza\_47, Zavala\_54, Zolita\_34,

### Summary by start number:

#### Start 40:

- Found in 160 of 613 ( 26.1% ) of genes in pham
- Manual Annotations of this start: 3 of 550
- Called 1.9% of time when present
- Phage (with cluster) where this start called: Conspiracy\_34 (A5), Discoknowium\_34 (A5), Jovo\_34 (A5),

#### Start 42:

- Found in 31 of 613 ( 5.1% ) of genes in pham
- Manual Annotations of this start: 27 of 550
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 20ES\_38 (A2), AbbyPaige\_40 (A2), Agape74\_40 (A2), BengiVuitton\_37 (A2), CRB1\_39 (A2), ChipMunk\_41 (A2), Crucio\_38 (A2), Deloris\_36 (A2), Dignity\_40 (A2), EvilGenius\_41 (A2), FiringLine\_38 (A2), First\_0037 (A2), Georgie2\_39 (A2), Iwokeuplikedis\_41 (A2), Jerm\_40 (A2), JoshKayV\_40 (A2), Kalpine\_39 (A2), KingCyrus\_41 (A2), LadyBird\_40 (A2), Leviathan\_40 (A2), LilTurb\_39 (A2), LionsBait\_39 (A2), Power\_37 (A2), QueenBeesly\_38 (A2), SemperFi\_39 (A2), Smeagan\_41 (A2), SnapTap\_38 (A2), SweetiePie\_38 (A2), Trixie\_39 (A2), Turbido\_39 (A2), Whabigail7\_39 (A2),

#### Start 43:

- Found in 10 of 613 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 550
- Called 10.0% of time when present
- Phage (with cluster) where this start called: TBond007\_61 (K3),

#### Start 45:

- Found in 128 of 613 ( 20.9% ) of genes in pham
- Manual Annotations of this start: 114 of 550
- Called 99.2% of time when present
- Phage (with cluster) where this start called: ActinUp\_52 (K1), Adephegia\_52 (K1), Adonis\_52 (K1), Ageofdapage\_54 (K1), AlishaPH\_52 (K1), Anaya\_54 (K1), Angelica\_52 (K1), Apocalypse\_55 (K1), Asayake\_52 (K1), Atiba\_53 (K1), BEEST\_52 (K1), BGIluviae\_52 (K1), BaghaKamala\_51 (K1), BarrelRoll\_52 (K1), Beezoo\_54 (K1), Bella96\_53 (K1), Belladonna\_52 (K1), Bern\_53 (K1), Blizzard\_52 (K1), Bobquesha\_3 (K4), Boiiii\_52 (K1), Bryler\_56 (K6), CREW\_52 (K1), Cain\_56 (K6), CallaLilly\_54 (K1),

Capricorn\_52 (K1), CaseJules\_54 (K1), Chancellor\_3 (K4), Chavito\_56 (K1), CheetoDust\_51 (K1), Cheetobro\_3 (K4), Clipper\_56 (K1), CrimD\_52 (K1), Dalmuri\_52 (K1), Dartin\_55 (K1), Deby\_52 (K1), Devera\_57 (K1), Dole\_55 (K1), DrHayes\_53 (K1), Durfee\_52 (K1), Edugator\_35 (K5), Efra2\_55 (K1), Emerson\_53 (K1), Eponine\_3 (K4), Fionnbharth\_3 (K4), Ganymede\_53 (K1), Geraldini\_55 (K1), HedwigODU\_52 (K1), Homura\_52 (K1), Hyperbowlee\_52 (K1), Illumine\_55 (K1), Inky\_52 (K1), JAWS\_52 (K1), Jarvi\_52 (K1), Jayhawk\_53 (K1), Jeckyll\_52 (K1), Joy99\_52 (K1), Juliette\_3 (K4), Kraw\_3 (K4), Krueger\_59 (K6), LastHope\_55 (K1), LaterM\_53 (K1), Lebo14\_3 (K4), LindNT\_51 (K1), Llorens\_52 (K1), Lunahalos\_52 (K1), MacKat\_47 (K1), Malthus\_3 (K4), McMater\_55 (K1), MeaningOfLife\_53 (K1), Megsy\_54 (K1), MissDaisy\_3 (K4), Mitti\_3 (K4), Murucutumbu\_53 (K1), Mynx\_53 (K1), Niklas\_55 (K1), OmniCritical\_3 (K4), Omnicron\_36 (K5), Padfoot\_52 (K1), Padpat\_54 (K1), Patt\_3 (K4), Peanam\_55 (K1), Peel\_52 (K1), Phrank\_56 (K6), Piatt\_52 (K1), Pokerus\_51 (K1), Prithvi\_53 (K1), QuincyRose\_51 (K1), Ramen\_53 (K1), Rando14\_36 (K5), Rapunzel97\_53 (K1), Reptar3000\_3 (K4), Richo\_55 (K1), Rosmarinus\_52 (K1), Ruthiejr\_3 (K4), SamuelLPlaqson\_53 (K1), Shadow1\_58 (K6), Shaobing\_55 (K1), ShiaSurprise\_53 (K1), Slarp\_3 (K4), Slimphazie\_52 (K1), Spock\_52 (K1), Stinson\_53 (K1), Sulley\_52 (K1), Sunflower1121\_59 (K6), Syra333\_58 (K6), TClif\_65 (K6), Tachez\_52 (K1), TaiwanKao\_54 (K1), Tierra\_56 (K6), TingHuaYa\_53 (K1), TiniBug\_53 (K1), Tiri\_53 (K1), Topper\_52 (K1), TreyKay\_53 (K1), TruffulaTree\_52 (K1), Twitch\_52 (K1), Urkel\_53 (K1), Validus\_57 (K1), Veliki\_53 (K1), Wintermute\_3 (K4), Ximenita\_59 (K6), Y10\_03 (K4), Y2\_03 (K4), YoureAdopted\_51 (K1), Zabiza\_47 (K1), Zavala\_54 (K1),

#### Start 46:

- Found in 3 of 613 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 2 of 550
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Journey13\_36 (A2), MissWhite\_36 (A2),

#### Start 47:

- Found in 9 of 613 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 7 of 550
- Called 88.9% of time when present
- Phage (with cluster) where this start called: Hurricane\_65 (K3), Keshu\_67 (K3), Lea83\_66 (K3), MacnCheese\_67 (K3), Pharb\_64 (K3), Pixie\_64 (K3), ShedlockHolmes\_66 (K3), TripleTrouble\_65 (K3),

#### Start 48:

- Found in 14 of 613 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 9 of 550
- Called 64.3% of time when present
- Phage (with cluster) where this start called: Chupacabra\_37 (A10), Edison31\_38 (A10), Goose\_38 (A10), Kristoff\_38 (A10), OKCentral2016\_37 (A10), Rebeuca\_38 (A10), Topanga\_37 (A10), Twister\_37 (A10), WalterMcMickey\_37 (A10),

#### Start 49:

- Found in 11 of 613 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 10 of 550
- Called 90.9% of time when present
- Phage (with cluster) where this start called: Anselm\_68 (A2), BobSwaget\_61 (A2), Fameo\_67 (A2), Heffalump\_66 (A2), Lokk\_62 (A2), Miko\_62 (A2), QueenB2\_66 (A2), Rachaly\_64 (A2), Retro23\_68 (A2), Trooper\_67 (A2),

Start 50:

- Found in 40 of 613 ( 6.5% ) of genes in pham
- Manual Annotations of this start: 38 of 550
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AN3\_38 (A2), AN9\_41 (A2), ANI8\_41 (A2), Aneem\_37 (A11), Bachome\_38 (A11), Bowtie\_37 (A11), Bud\_36 (A11), C3\_36 (A2), D29\_38 (A2), D32\_41 (A2), DBQu4n\_41 (A2), Duplo\_41 (A2), Ebony\_37 (A11), Et2Brutus\_36 (A11), Fibonacci\_36 (A11), Flaverint\_37 (A11), Gilberta\_37 (A11), Hut2\_36 (A11), Insomnia\_37 (A11), Jabith\_37 (A11), Joselito\_37 (A11), Kerberos\_41 (A2), Lucivia\_37 (A11), MaCh\_37 (A11), Mabel\_37 (A11), Mulciber\_36 (A11), Munch\_37 (A11), Naji\_41 (A2), Orange\_36 (A11), Petersenfast\_35 (A11), Pomar16\_41 (A2), Sham4\_36 (A11), Snape\_36 (A11), StarStuff\_41 (A2), Timothy\_37 (A11), TinyTimmy\_37 (A11), Tomathan\_41 (A2), Travvers\_41 (A2), VA6\_38 (A2), VC3\_41 (A2),

Start 51:

- Found in 45 of 613 ( 7.3% ) of genes in pham
- Manual Annotations of this start: 34 of 550
- Called 93.3% of time when present
- Phage (with cluster) where this start called: Adzzy\_39 (A2), AgentM\_34 (A5), Aragog\_34 (A5), Archetta\_33 (A5), Bluefalcon\_33 (A5), Bonamassa\_33 (A5), Caraxes\_38 (A2), Che12\_41 (A2), Coog\_33 (A5), Cuco\_33 (A5), Dublin\_32 (A5), DustyMartin\_41 (A10), Eaglepride\_39 (A10), ForGetIt\_34 (A5), George\_32 (A5), Ghouboy\_35 (A5), HuhtaEnerson15\_33 (A5), Koduck\_38 (A2), L5\_38 (A2), Lev2\_34 (A5), LittleCherry\_33 (A5), MarysWell\_32 (A5), Micasa\_35 (A5), Midas2\_33 (A5), Milcery\_33 (A5), Odin\_37 (A2), Ph8s\_40 (A2), Phlorence\_34 (A5), PickleBack\_34 (A5), Prinashe11\_34 (A5), RhynO\_38 (A10), Rowdy\_41 (A10), Shapes\_41 (A10), Superchunk\_37 (A2), SwirlSquare\_41 (A2), Swirley\_35 (A5), SydNat\_35 (A5), Tarynearl\_32 (A5), Theia\_31 (A5), Tiger\_34 (A5), Twigg\_33 (A5), Zolita\_34 (A5),

Start 52:

- Found in 184 of 613 ( 30.0% ) of genes in pham
- Manual Annotations of this start: 161 of 550
- Called 96.7% of time when present
- Phage (with cluster) where this start called: 40AC\_41 (A17), ACFishhook\_41 (A3), Aglet\_43 (A3), AgronaGT15\_41 (A3), Alsfro\_49 (A1), Altman\_47 (A1), Anglerfish\_46 (A1), Anubis\_45 (A3), Arlo\_43 (A1), Atkinbua\_47 (A1), AugsMagnumOpus\_45 (A3), B1\_36 (A3), BabyJohn\_37 (A3), BabyRay\_39 (A3), Barriga\_46 (A1), Beauxregard13\_42 (A3), Big3\_44 (A1), Bigchungu\_44 (A1), Bigflo\_42 (A3), BlueBird\_40 (A3), Blue\_45 (A1), BreSam8\_42 (A3), Bruns\_44 (A1), Bugatti\_39 (A3), BuzzBuzz\_40 (A3), Calvinny\_42 (A3), Caviar\_38 (A3), Chiqui\_37 (A3), Colbster\_42 (A3), Conceptll\_47 (A1), Corvo\_46 (A1), Cullens\_42 (A3), DaHudson\_42 (A3), Daishi\_41 (A3), Dieselweasel\_43 (A3), DreamCatcher\_48 (A1), Dreamboat\_47 (A1), DropBear\_39 (A3), EpicPhail\_43 (A3), Farber\_42 (A3), Fenn\_47 (A1), Fernando\_42 (A3), Forsytheast\_45 (A1), Fred313\_39 (A3), Gandalf20\_47 (A1), Gemma\_41 (A3), GingkoMaracino\_42 (A3), Giroux\_39 (A3), Grayson\_251 (CB), GrecoEtereo\_46 (A1), Grif\_42 (A3), Groupthink\_43 (A3), Grub\_42 (A3), Grum1\_42 (A3), GtownJaz\_42 (A3), HanShotFirst\_44 (A1), HarryOW\_44 (A1), HashRod\_43 (A3), HaveUMetTed\_43 (A3), Heathen\_39 (A3), HelDan\_39 (A3), Heliosoles\_41 (A3), Hercules11\_42 (A3), Hookmount\_38 (A3), Ichabod\_47 (A1), Idleandcovert\_39 (A3), Isca\_38 (A3), JC27\_46 (A1), JF2\_39 (A3), JF4\_39 (A3), JHC117\_42 (A3), Jasper\_47 (A1), JenCasNa\_43 (A3), JeppNRM\_43 (A3), Jobu08\_41 (A3), Jorgensen\_46 (A1), KADY\_42 (A3),

Kachowdy\_39 (A3), Kalb97\_43 (A3), Kalnoky\_43 (A3), Kanely\_46 (A1), Kimona\_36 (A19), LBerry\_43 (A3), Lambert1\_38 (A3), LarryKay\_42 (A3), Lilith\_43 (A3), Louie6\_41 (A3), Iowa\_42 (A3), LugYA\_45 (A3), MA5\_39 (A3), MK4\_39 (A3), MadMarie\_42 (A3), Mainiac\_42 (A3), Malinsilva\_44 (A3), Manu\_42 (A3), MarQuardt\_42 (A3), Marchesa\_39 (A3), Margo\_38 (A3), Marie\_42 (A3), Marius\_43 (A3), McGuire\_46 (A1), Methuselah\_40 (A3), Microwolf\_42 (A3), Misomonster\_43 (A3), Molly\_46 (A1), MoneyMay\_42 (A3), Moose\_45 (A1), Mryolo\_43 (A1), MuchMore\_45 (A3), Naira\_47 (A1), Nhonho\_46 (A1), Noella\_38 (A3), Norbert\_37 (A3), OlanP\_41 (A3), Ollie\_42 (A3), P28Green\_43 (A3), PGHhamlin\_44 (A3), PSullivan\_45 (A1), Panamaxus\_36 (A3), PascalRango\_46 (A1), PattyP\_46 (A1), Pawn\_42 (A3), Pembroke\_42 (A3), Penny1\_43 (A3), Peregrin\_249 (CB), Petp2012\_46 (A1), Phantastic\_39 (A3), PherrisBueller\_45 (A1), PhishRPhriends\_40 (A3), Phoebe\_43 (A3), Phoxy\_42 (A3), Phranny\_43 (A3), PinkPlastic\_44 (A1), Pistachio\_40 (A3), Pita2\_48 (A1), Pocahontas\_38 (A3), Popcicle\_38 (A3), PotatoSplit\_44 (A3), ProMouse\_46 (A1), Puppy\_40 (A3), PurpleHaze\_42 (A3), QuinnKiro\_37 (A3), Raid\_46 (A1), Reba\_42 (A3), ResDef\_38 (A3), RidgeCB\_45 (A1), Rockstar\_39 (A3), Rummer\_41 (A3), Sabia\_42 (A3), Sabinator\_41 (A3), SaturnRing\_39 (A3), Scout\_39 (A3), Scowl\_46 (A1), Sibs6\_46 (A1), SkiPole\_48 (A1), Snazzy\_43 (A1), Snickers\_42 (A3), SoYo\_42 (A3), SoilDragon\_42 (A3), Soshari\_44 (A3), Spike509\_42 (A3), Stagni\_42 (A3), StepMih\_42 (A3), SwissCheese\_47 (A1), TNguyen7\_39 (A3), Target\_46 (A1), Taurus\_43 (A3), Texage\_37 (A3), Tiffany\_42 (A3), TinyPebbles\_41 (A3), Todacoro\_38 (A3), TwoPeat\_46 (A1), Veracruz\_37 (A3), Vix\_42 (A3), Watson\_42 (A3), Wooldri\_44 (A3), Zephyr\_45 (A1), Zetzy\_41 (A3),

Start 53:

- Found in 161 of 613 ( 26.3% ) of genes in pham
- Manual Annotations of this start: 143 of 550
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abdiel\_37 (A4), Albee\_37 (A4), Alberto7\_38 (A4), Aliter\_70 (A9), Alma\_67 (A9), AnnaL29\_40 (A2), Annyong\_37 (A4), Arturo\_35 (A4), Avle17\_37 (A4), Baby16\_37 (A4), BangNhom\_38 (A4), Bartimeaus\_37 (A4), BellusTerra\_38 (A4), Blackmoor\_37 (A4), BogosyJay\_68 (A9), Bombshell\_37 (A4), Bradman\_69 (A2), Broseidon\_37 (A4), Bruiser\_36 (A4), BubbleTrouble\_37 (A4), Burger\_35 (A4), Caelakin\_37 (A4), Camperdownii\_36 (A4), Catalina\_71 (A9), CentreCat\_37 (A4), Cerulean\_38 (A4), ChampagnePapi\_39 (A4), Changeling\_39 (A2), Chaph\_37 (A4), Cintron\_37 (A4), Citius\_37 (A4), Clarenza\_37 (A4), Cocoaberry\_37 (A4), Commander\_37 (A4), Connomayer\_37 (A4), Conquerage\_67 (A9), Darrell\_70 (A9), Deano\_37 (A4), Dhanush\_37 (A4), Druantia\_37 (A4), EZMoney23\_38 (A2), Eagle\_37 (A4), Eapen\_37 (A4), EdogawaKiddo\_67 (A9), Eidsmoe\_67 (A9), Elephantoon\_67 (A9), EmyBug\_66 (A9), Eris\_36 (A4), Eros\_37 (A4), Eurydice\_38 (A4), ExplosioNervosa\_67 (A9), FatCactus\_63 (A20), Fayely\_67 (A9), Florean\_37 (A4), Flux\_37 (A4), Funston\_37 (A4), Gadost\_37 (A4), HamSlice\_36 (A4), Hanray\_67 (A9), Halex\_67 (A9), Holli\_36 (A4), HortumSL17\_70 (A9), Houdini22\_37 (A4), Huxley\_38 (A4), ICleared\_37 (A4), Iceman\_38 (A4), Iracema64\_38 (A4), Jaykayelowell\_36 (A4), JetBlade\_37 (A4), Jiawan\_66 (A9), JoongJeon\_37 (A4), Jsquared\_70 (A2), KFPoly\_37 (A4), Kampy\_37 (A4), Kingmustik0402\_37 (A4), Kinmap\_67 (A21), Koan\_36 (A4), Koreni\_36 (A4), Kratark\_37 (A4), Kremtemulon\_37 (A4), Kyee\_37 (A4), LHTSCC\_39 (A4), LappelDuVide\_37 (A4), Lemur\_37 (A4), LeoAvram\_37 (A4), Lilleskat\_65 (A9), LittleB\_37 (A4), LittleGuy\_37 (A4), LochMonster\_37 (A4), Lorenzo\_37 (A4), Loser\_40 (A2), Lunsford\_38 (A4), MajorMajor\_68 (A2), Maminiana\_68 (A9), Maverick\_37 (A4), Maxo\_38 (A4), Mayonnaise\_38 (A4), Mazhar510\_37 (A4), Medusa\_37 (A4), MeeZee\_37 (A4), Melvin\_39 (A4), Millski\_36 (A4), Morrow\_38 (A4), Myxus\_69 (A9),

Nebs\_38 (A4), Nemo27\_37 (A4), Noelle\_37 (A4), NorthStar\_36 (A4), NotAPhaseMom\_37 (A4), Nyxis\_37 (A4), OKaNui\_38 (A4), Obama12\_38 (A4), Ohfah\_38 (A4), Onglai\_67 (A9), PackMan\_68 (A9), Palestino\_36 (A4), Peaches\_37 (A4), PeterPeter\_37 (A4), Phacado\_37 (A4), Phaeder\_69 (A9), Phelipe\_38 (A4), Phighter1804\_37 (A4), Phontbonne\_37 (A4), Polymorphads\_38 (A4), Priya\_67 (A9), Pumbaa\_37 (A4), Qobbit\_67 (A9), Quokka\_68 (A2), Rahalelujah\_67 (A9), RedRock\_40 (A2), Relief\_36 (A4), Romney\_37 (A4), Roosevelt\_36 (A4), Rosa24\_37 (A4), Ruin\_37 (A4), Sabertooth\_37 (A4), Sachima\_65 (A9), Scamp\_37 (A4), SenorClean\_36 (A4), Serenity\_70 (A2), Shaka\_37 (A4), SheldonCooper\_39 (A4), Skipitt\_36 (A4), Sparxx\_38 (A4), Spino\_37 (A4), Spouty\_67 (A9), Taquarus\_37 (A4), Thanksgivukkah\_37 (A4), TinaFeyge\_38 (A4), Tinybot\_36 (A4), TopsytheTRex\_66 (A2), TiroTheta9\_37 (A4), TroyPia\_38 (A4), Tubs\_69 (A9), TygerBlood\_37 (A4), Ulysses\_36 (A4), Wander\_37 (A4), Wilbur\_37 (A4), Wizard007\_37 (A4), Yecy3\_70 (A9), YoSam321\_37 (A4),

Start 58:

- Found in 13 of 613 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 1 of 550
- Called 7.7% of time when present
- Phage (with cluster) where this start called: JF1\_3 (K4),

### **Summary by clusters:**

There are 18 clusters represented in this pham: A20, A21, A17, A11, A10, CB, A19, A3, A1, K1, A2, A5, A4, K5, K4, A9, K3, K6,

Info for manual annotations of cluster A1:

- Start number 52 was manually annotated 46 times for cluster A1.

Info for manual annotations of cluster A10:

- Start number 48 was manually annotated 9 times for cluster A10.
- Start number 51 was manually annotated 2 times for cluster A10.

Info for manual annotations of cluster A11:

- Start number 50 was manually annotated 23 times for cluster A11.

Info for manual annotations of cluster A19:

- Start number 52 was manually annotated 1 time for cluster A19.

Info for manual annotations of cluster A2:

- Start number 42 was manually annotated 27 times for cluster A2.
- Start number 46 was manually annotated 2 times for cluster A2.
- Start number 49 was manually annotated 10 times for cluster A2.
- Start number 50 was manually annotated 15 times for cluster A2.
- Start number 51 was manually annotated 6 times for cluster A2.
- Start number 53 was manually annotated 7 times for cluster A2.

Info for manual annotations of cluster A3:

- Start number 52 was manually annotated 112 times for cluster A3.

Info for manual annotations of cluster A4:

- Start number 53 was manually annotated 114 times for cluster A4.

Info for manual annotations of cluster A5:

- Start number 40 was manually annotated 3 times for cluster A5.
- Start number 51 was manually annotated 26 times for cluster A5.

Info for manual annotations of cluster A9:

- Start number 53 was manually annotated 22 times for cluster A9.

Info for manual annotations of cluster CB:

- Start number 52 was manually annotated 2 times for cluster CB.

Info for manual annotations of cluster K1:

- Start number 45 was manually annotated 85 times for cluster K1.

Info for manual annotations of cluster K3:

- Start number 43 was manually annotated 1 time for cluster K3.
- Start number 47 was manually annotated 7 times for cluster K3.

Info for manual annotations of cluster K4:

- Start number 45 was manually annotated 16 times for cluster K4.
- Start number 58 was manually annotated 1 time for cluster K4.

Info for manual annotations of cluster K5:

- Start number 45 was manually annotated 3 times for cluster K5.

Info for manual annotations of cluster K6:

- Start number 45 was manually annotated 10 times for cluster K6.

### ***Gene Information:***

Gene: 20ES\_38 Start: 27875, Stop: 27690, Start Num: 42

Candidate Starts for 20ES\_38:

(Start: 42 @27875 has 27 MA's), (61, 27836), (75, 27737), (77, 27728),

Gene: 40AC\_41 Start: 29813, Stop: 29652, Start Num: 52

Candidate Starts for 40AC\_41:

(Start: 46 @29825 has 2 MA's), (Start: 52 @29813 has 161 MA's), (61, 29786), (75, 29696),

Gene: ACFishhook\_41 Start: 28759, Stop: 28598, Start Num: 52

Candidate Starts for ACFishhook\_41:

(Start: 52 @28759 has 161 MA's), (75, 28642), (76, 28636), (83, 28621), (85, 28615),

Gene: AN3\_38 Start: 28249, Stop: 28097, Start Num: 50

Candidate Starts for AN3\_38:

(Start: 50 @28249 has 38 MA's), (73, 28147), (75, 28138), (86, 28114),

Gene: AN9\_41 Start: 28234, Stop: 28082, Start Num: 50

Candidate Starts for AN9\_41:

(15, 28501), (19, 28459), (Start: 50 @28234 has 38 MA's), (73, 28132), (75, 28123), (86, 28099),

Gene: ANI8\_41 Start: 28234, Stop: 28082, Start Num: 50  
Candidate Starts for ANI8\_41:  
(15, 28501), (19, 28459), (Start: 50 @28234 has 38 MA's), (73, 28132), (75, 28123), (86, 28099),

Gene: AbbyPaige\_40 Start: 28584, Stop: 28411, Start Num: 42  
Candidate Starts for AbbyPaige\_40:  
(Start: 42 @28584 has 27 MA's), (59, 28554), (68, 28524), (75, 28458),

Gene: Abdiel\_37 Start: 28112, Stop: 27954, Start Num: 53  
Candidate Starts for Abdiel\_37:  
(6, 28403), (Start: 40 @28154 has 3 MA's), (Start: 53 @28112 has 143 MA's), (73, 28007), (75, 27998),  
(76, 27992), (86, 27971),

Gene: ActinUp\_52 Start: 38569, Stop: 38739, Start Num: 45  
Candidate Starts for ActinUp\_52:  
(Start: 45 @38569 has 114 MA's), (73, 38683), (75, 38692), (76, 38698), (86, 38722),

Gene: Adephagia\_52 Start: 38566, Stop: 38736, Start Num: 45  
Candidate Starts for Adephagia\_52:  
(Start: 45 @38566 has 114 MA's), (73, 38680), (75, 38689), (76, 38695), (86, 38719),

Gene: Adonis\_52 Start: 38810, Stop: 38980, Start Num: 45  
Candidate Starts for Adonis\_52:  
(Start: 45 @38810 has 114 MA's), (73, 38924), (75, 38933), (76, 38939), (86, 38963),

Gene: Adzzy\_39 Start: 26707, Stop: 26552, Start Num: 51  
Candidate Starts for Adzzy\_39:  
(Start: 51 @26707 has 34 MA's), (74, 26602), (76, 26590), (82, 26575), (87, 26563), (88, 26560),

Gene: Agape74\_40 Start: 28569, Stop: 28396, Start Num: 42  
Candidate Starts for Agape74\_40:  
(Start: 42 @28569 has 27 MA's), (59, 28539), (68, 28509), (75, 28443),

Gene: AgentM\_34 Start: 27388, Stop: 27230, Start Num: 51  
Candidate Starts for AgentM\_34:  
(21, 27580), (Start: 40 @27430 has 3 MA's), (Start: 51 @27388 has 34 MA's), (73, 27283), (75, 27274),  
(76, 27268),

Gene: Ageofdapage\_54 Start: 39552, Stop: 39722, Start Num: 45  
Candidate Starts for Ageofdapage\_54:  
(Start: 45 @39552 has 114 MA's), (73, 39666), (75, 39675),

Gene: Aglet\_43 Start: 28867, Stop: 28700, Start Num: 52  
Candidate Starts for Aglet\_43:  
(23, 29047), (30, 28975), (Start: 52 @28867 has 161 MA's), (65, 28828), (75, 28747), (77, 28738),

Gene: AgronaGT15\_41 Start: 28685, Stop: 28518, Start Num: 52  
Candidate Starts for AgronaGT15\_41:  
(23, 28865), (30, 28793), (Start: 52 @28685 has 161 MA's), (81, 28550),

Gene: Albee\_37 Start: 28111, Stop: 27959, Start Num: 53  
Candidate Starts for Albee\_37:



(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078), (73, 28012), (75, 28003), (76, 27997),

Gene: Alberto7\_38 Start: 28451, Stop: 28299, Start Num: 53

Candidate Starts for Alberto7\_38:

(6, 28742), (Start: 40 @28493 has 3 MA's), (Start: 53 @28451 has 143 MA's), (73, 28352), (75, 28343), (76, 28337),

Gene: AlishaPH\_52 Start: 38839, Stop: 38997, Start Num: 45

Candidate Starts for AlishaPH\_52:

(Start: 45 @38839 has 114 MA's), (73, 38941), (75, 38950), (76, 38956), (86, 38980),

Gene: Aliter\_70 Start: 40977, Stop: 40822, Start Num: 53

Candidate Starts for Aliter\_70:

(9, 41301), (Start: 53 @40977 has 143 MA's), (67, 40935), (75, 40869), (77, 40860),

Gene: Alma\_67 Start: 40956, Stop: 40801, Start Num: 53

Candidate Starts for Alma\_67:

(Start: 53 @40956 has 143 MA's), (67, 40914), (75, 40848), (77, 40839),

Gene: Alsfro\_49 Start: 35106, Stop: 34978, Start Num: 52

Candidate Starts for Alsfro\_49:

(Start: 52 @35106 has 161 MA's), (55, 35097), (59, 35085), (63, 35073), (71, 35004), (73, 34995),

Gene: Altman\_47 Start: 35338, Stop: 35216, Start Num: 52

Candidate Starts for Altman\_47:

(Start: 52 @35338 has 161 MA's), (65, 35299), (71, 35242), (73, 35233),

Gene: Anaya\_54 Start: 39085, Stop: 39258, Start Num: 45

Candidate Starts for Anaya\_54:

(Start: 45 @39085 has 114 MA's), (73, 39199),

Gene: Aneem\_37 Start: 27432, Stop: 27277, Start Num: 50

Candidate Starts for Aneem\_37:

(16, 27702), (27, 27579), (31, 27540), (Start: 50 @27432 has 38 MA's), (75, 27318), (76, 27312), (87, 27288),

Gene: Angelica\_52 Start: 38715, Stop: 38885, Start Num: 45

Candidate Starts for Angelica\_52:

(Start: 45 @38715 has 114 MA's), (73, 38829), (75, 38838), (76, 38844), (86, 38868),

Gene: Anglerfish\_46 Start: 34888, Stop: 34763, Start Num: 52

Candidate Starts for Anglerfish\_46:

(Start: 52 @34888 has 161 MA's), (65, 34849), (71, 34789), (73, 34780),

Gene: AnnaL29\_40 Start: 29084, Stop: 28926, Start Num: 53

Candidate Starts for AnnaL29\_40:

(Start: 53 @29084 has 143 MA's), (63, 29054), (66, 29045), (75, 28973), (77, 28964), (84, 28946),

Gene: Annyong\_37 Start: 28112, Stop: 27960, Start Num: 53

Candidate Starts for Annyong\_37:

(11, 28409), (Start: 40 @28154 has 3 MA's), (Start: 53 @28112 has 143 MA's), (60, 28091), (65, 28079), (73, 28013), (75, 28004), (76, 27998),

Gene: Anselm\_68 Start: 41870, Stop: 41697, Start Num: 49

Candidate Starts for Anselm\_68:

(Start: 49 @41870 has 10 MA's), (75, 41744), (77, 41735),

Gene: Anubis\_45 Start: 28752, Stop: 28585, Start Num: 52

Candidate Starts for Anubis\_45:

(23, 28932), (30, 28860), (Start: 52 @28752 has 161 MA's), (65, 28713), (75, 28632), (77, 28623),

Gene: Apocalypse\_55 Start: 39503, Stop: 39673, Start Num: 45

Candidate Starts for Apocalypse\_55:

(Start: 45 @39503 has 114 MA's), (73, 39617), (75, 39626), (76, 39632), (86, 39656),

Gene: Aragog\_34 Start: 27418, Stop: 27260, Start Num: 51

Candidate Starts for Aragog\_34:

(21, 27610), (Start: 40 @27460 has 3 MA's), (Start: 51 @27418 has 34 MA's), (73, 27313), (75, 27304), (76, 27298),

Gene: Archetta\_33 Start: 27354, Stop: 27196, Start Num: 51

Candidate Starts for Archetta\_33:

(12, 27636), (13, 27630), (Start: 40 @27396 has 3 MA's), (Start: 51 @27354 has 34 MA's), (73, 27249), (75, 27240), (76, 27234),

Gene: Arlo\_43 Start: 34235, Stop: 34110, Start Num: 52

Candidate Starts for Arlo\_43:

(Start: 52 @34235 has 161 MA's), (65, 34196), (71, 34136), (73, 34127),

Gene: Arturo\_35 Start: 28170, Stop: 28018, Start Num: 53

Candidate Starts for Arturo\_35:

(6, 28461), (Start: 40 @28212 has 3 MA's), (Start: 53 @28170 has 143 MA's), (60, 28149), (73, 28071), (75, 28062), (76, 28056),

Gene: Asayake\_52 Start: 38881, Stop: 39051, Start Num: 45

Candidate Starts for Asayake\_52:

(Start: 45 @38881 has 114 MA's), (73, 38995), (75, 39004), (76, 39010), (86, 39034),

Gene: Atiba\_53 Start: 38529, Stop: 38699, Start Num: 45

Candidate Starts for Atiba\_53:

(Start: 45 @38529 has 114 MA's), (73, 38643), (75, 38652), (76, 38658), (86, 38682),

Gene: Atkinbua\_47 Start: 34991, Stop: 34866, Start Num: 52

Candidate Starts for Atkinbua\_47:

(Start: 52 @34991 has 161 MA's), (65, 34952), (71, 34892), (73, 34883),

Gene: AugsMagnumOpus\_45 Start: 28858, Stop: 28691, Start Num: 52

Candidate Starts for AugsMagnumOpus\_45:

(23, 29038), (30, 28966), (Start: 52 @28858 has 161 MA's), (65, 28819), (75, 28738), (77, 28729),

Gene: Avle17\_37 Start: 28111, Stop: 27959, Start Num: 53

Candidate Starts for Avle17\_37:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078), (73, 28012), (75, 28003), (76, 27997),

Gene: B1\_36 Start: 27743, Stop: 27579, Start Num: 52

Candidate Starts for B1\_36:

(Start: 40 @27791 has 3 MA's), (Start: 52 @27743 has 161 MA's), (62, 27716), (67, 27701), (75, 27626), (78, 27617), (84, 27599), (86, 27596),

Gene: BEEST\_52 Start: 38881, Stop: 39051, Start Num: 45

Candidate Starts for BEEST\_52:

(Start: 45 @38881 has 114 MA's), (73, 38995), (75, 39004), (76, 39010), (86, 39034),

Gene: BGlluviae\_52 Start: 38684, Stop: 38854, Start Num: 45

Candidate Starts for BGlluviae\_52:

(Start: 45 @38684 has 114 MA's), (73, 38798), (75, 38807), (76, 38813), (86, 38837),

Gene: Baby16\_37 Start: 28122, Stop: 27970, Start Num: 53

Candidate Starts for Baby16\_37:

(6, 28413), (Start: 40 @28164 has 3 MA's), (Start: 53 @28122 has 143 MA's), (60, 28101), (65, 28089), (73, 28023), (75, 28014), (76, 28008),

Gene: BabyJohn\_37 Start: 28513, Stop: 28352, Start Num: 52

Candidate Starts for BabyJohn\_37:

(30, 28621), (Start: 40 @28561 has 3 MA's), (Start: 52 @28513 has 161 MA's), (62, 28486), (67, 28471), (78, 28390), (84, 28372), (86, 28369),

Gene: BabyRay\_39 Start: 28442, Stop: 28278, Start Num: 52

Candidate Starts for BabyRay\_39:

(Start: 52 @28442 has 161 MA's), (62, 28415), (67, 28400), (75, 28328), (86, 28295),

Gene: Bachome\_38 Start: 27420, Stop: 27265, Start Num: 50

Candidate Starts for Bachome\_38:

(16, 27690), (18, 27657), (27, 27567), (31, 27528), (Start: 50 @27420 has 38 MA's), (75, 27306), (76, 27300), (87, 27276),

Gene: BaghaKamala\_51 Start: 37929, Stop: 38099, Start Num: 45

Candidate Starts for BaghaKamala\_51:

(Start: 45 @37929 has 114 MA's), (73, 38043), (75, 38052), (76, 38058), (86, 38082),

Gene: BangNhom\_38 Start: 28413, Stop: 28255, Start Num: 53

Candidate Starts for BangNhom\_38:

(Start: 40 @28455 has 3 MA's), (Start: 53 @28413 has 143 MA's), (73, 28308), (75, 28299), (76, 28293), (86, 28272),

Gene: BarrelRoll\_52 Start: 38552, Stop: 38722, Start Num: 45

Candidate Starts for BarrelRoll\_52:

(Start: 45 @38552 has 114 MA's), (73, 38666), (75, 38675), (76, 38681), (86, 38705),

Gene: Barriga\_46 Start: 34493, Stop: 34368, Start Num: 52

Candidate Starts for Barriga\_46:

(Start: 52 @34493 has 161 MA's), (65, 34454), (71, 34394), (73, 34385),

Gene: Bartimeaus\_37 Start: 28113, Stop: 27961, Start Num: 53

Candidate Starts for Bartimeaus\_37:

(6, 28404), (Start: 40 @28155 has 3 MA's), (Start: 53 @28113 has 143 MA's), (60, 28092), (65, 28080), (73, 28014), (75, 28005), (76, 27999),

Gene: Beauxregard13\_42 Start: 28869, Stop: 28699, Start Num: 52  
Candidate Starts for Beauxregard13\_42:  
(23, 29049), (30, 28977), (Start: 52 @28869 has 161 MA's), (65, 28830), (75, 28746), (77, 28737),

Gene: Beezoo\_54 Start: 39527, Stop: 39697, Start Num: 45  
Candidate Starts for Beezoo\_54:  
(Start: 45 @39527 has 114 MA's), (73, 39641), (75, 39650), (76, 39656), (86, 39680),

Gene: Bella96\_53 Start: 39309, Stop: 39479, Start Num: 45  
Candidate Starts for Bella96\_53:  
(Start: 45 @39309 has 114 MA's), (73, 39423),

Gene: Belladonna\_52 Start: 38684, Stop: 38854, Start Num: 45  
Candidate Starts for Belladonna\_52:  
(Start: 45 @38684 has 114 MA's), (73, 38798), (75, 38807), (76, 38813), (86, 38837),

Gene: BellusTerra\_38 Start: 28112, Stop: 27954, Start Num: 53  
Candidate Starts for BellusTerra\_38:  
(6, 28403), (Start: 40 @28154 has 3 MA's), (Start: 53 @28112 has 143 MA's), (73, 28007), (75, 27998),  
(76, 27992), (86, 27971),

Gene: BengiVuitton\_37 Start: 27840, Stop: 27661, Start Num: 42  
Candidate Starts for BengiVuitton\_37:  
(Start: 42 @27840 has 27 MA's), (63, 27795), (75, 27708), (77, 27699), (84, 27681),

Gene: Bern\_53 Start: 37518, Stop: 37688, Start Num: 45  
Candidate Starts for Bern\_53:  
(Start: 45 @37518 has 114 MA's), (73, 37632), (75, 37641), (76, 37647), (86, 37671),

Gene: Big3\_44 Start: 34810, Stop: 34685, Start Num: 52  
Candidate Starts for Big3\_44:  
(Start: 52 @34810 has 161 MA's), (65, 34771), (71, 34711), (73, 34702),

Gene: Bigchungj\_44 Start: 33937, Stop: 33812, Start Num: 52  
Candidate Starts for Bigchungj\_44:  
(Start: 52 @33937 has 161 MA's), (65, 33898), (71, 33838), (73, 33829),

Gene: Bigflo\_42 Start: 28865, Stop: 28698, Start Num: 52  
Candidate Starts for Bigflo\_42:  
(23, 29045), (30, 28973), (Start: 52 @28865 has 161 MA's), (65, 28826), (75, 28745), (77, 28736),

Gene: Blackmoor\_37 Start: 28113, Stop: 27961, Start Num: 53  
Candidate Starts for Blackmoor\_37:  
(6, 28404), (Start: 40 @28155 has 3 MA's), (Start: 53 @28113 has 143 MA's), (60, 28092), (65, 28080),  
(73, 28014), (75, 28005), (76, 27999),

Gene: Blizzard\_52 Start: 38881, Stop: 39051, Start Num: 45  
Candidate Starts for Blizzard\_52:  
(Start: 45 @38881 has 114 MA's), (73, 38995), (75, 39004), (76, 39010), (86, 39034),

Gene: Blue\_45 Start: 35132, Stop: 35007, Start Num: 52  
Candidate Starts for Blue\_45:

(Start: 52 @35132 has 161 MA's), (65, 35093), (71, 35033), (73, 35024),

Gene: BlueBird\_40 Start: 28368, Stop: 28207, Start Num: 52

Candidate Starts for BlueBird\_40:

(Start: 52 @28368 has 161 MA's), (75, 28254), (78, 28245),

Gene: Bluefalcon\_33 Start: 27477, Stop: 27319, Start Num: 51

Candidate Starts for Bluefalcon\_33:

(Start: 40 @27519 has 3 MA's), (Start: 51 @27477 has 34 MA's), (73, 27372), (75, 27363), (76, 27357),

Gene: BobSwaget\_61 Start: 39908, Stop: 39744, Start Num: 49

Candidate Starts for BobSwaget\_61:

(Start: 49 @39908 has 10 MA's), (77, 39782),

Gene: Bobquesha\_3 Start: 478, Stop: 645, Start Num: 45

Candidate Starts for Bobquesha\_3:

(7, 163), (37, 424), (Start: 45 @478 has 114 MA's), (68, 535), (73, 592), (76, 607), (86, 628), (87, 634),

Gene: BogosyJay\_68 Start: 41031, Stop: 40873, Start Num: 53

Candidate Starts for BogosyJay\_68:

(22, 41232), (Start: 53 @41031 has 143 MA's), (67, 40989), (75, 40920), (77, 40911),

Gene: Boiiii\_52 Start: 38883, Stop: 39053, Start Num: 45

Candidate Starts for Boiiii\_52:

(Start: 45 @38883 has 114 MA's), (73, 38997), (75, 39006), (76, 39012), (86, 39036),

Gene: Bombshell\_37 Start: 28111, Stop: 27959, Start Num: 53

Candidate Starts for Bombshell\_37:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078), (73, 28012), (75, 28003), (76, 27997),

Gene: Bonamassa\_33 Start: 27148, Stop: 26990, Start Num: 51

Candidate Starts for Bonamassa\_33:

(12, 27430), (13, 27424), (Start: 40 @27190 has 3 MA's), (Start: 51 @27148 has 34 MA's), (73, 27043), (75, 27034), (76, 27028),

Gene: Bowtie\_37 Start: 27439, Stop: 27284, Start Num: 50

Candidate Starts for Bowtie\_37:

(16, 27709), (27, 27586), (31, 27547), (Start: 50 @27439 has 38 MA's), (75, 27325), (76, 27319), (87, 27295),

Gene: Bradman\_69 Start: 40626, Stop: 40474, Start Num: 53

Candidate Starts for Bradman\_69:

(9, 40950), (Start: 53 @40626 has 143 MA's), (73, 40524), (75, 40515), (84, 40494),

Gene: BreSam8\_42 Start: 28859, Stop: 28692, Start Num: 52

Candidate Starts for BreSam8\_42:

(23, 29039), (30, 28967), (Start: 52 @28859 has 161 MA's), (65, 28820), (75, 28739), (77, 28730),

Gene: Broseidon\_37 Start: 28113, Stop: 27961, Start Num: 53

Candidate Starts for Broseidon\_37:

(6, 28404), (Start: 40 @28155 has 3 MA's), (Start: 53 @28113 has 143 MA's), (60, 28092), (65, 28080), (73, 28014), (75, 28005), (76, 27999),

Gene: Bruiser\_36 Start: 28111, Stop: 27959, Start Num: 53

Candidate Starts for Bruiser\_36:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078), (73, 28012), (75, 28003), (76, 27997),

Gene: Bruns\_44 Start: 34427, Stop: 34302, Start Num: 52

Candidate Starts for Bruns\_44:

(Start: 52 @34427 has 161 MA's), (55, 34418), (59, 34406), (63, 34394), (71, 34328), (73, 34319),

Gene: Bryler\_56 Start: 38331, Stop: 38504, Start Num: 45

Candidate Starts for Bryler\_56:

(17, 38100), (20, 38127), (26, 38184), (Start: 45 @38331 has 114 MA's), (59, 38364), (75, 38457), (79, 38472),

Gene: BubbleTrouble\_37 Start: 28111, Stop: 27959, Start Num: 53

Candidate Starts for BubbleTrouble\_37:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078), (73, 28012), (75, 28003), (76, 27997),

Gene: Bud\_36 Start: 26994, Stop: 26839, Start Num: 50

Candidate Starts for Bud\_36:

(16, 27264), (27, 27141), (31, 27102), (Start: 50 @26994 has 38 MA's), (75, 26880), (76, 26874), (87, 26850),

Gene: Bugatti\_39 Start: 28368, Stop: 28207, Start Num: 52

Candidate Starts for Bugatti\_39:

(Start: 52 @28368 has 161 MA's), (75, 28254), (78, 28245),

Gene: Burger\_35 Start: 28111, Stop: 27959, Start Num: 53

Candidate Starts for Burger\_35:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078), (73, 28012), (75, 28003), (76, 27997),

Gene: BuzzBuzz\_40 Start: 28864, Stop: 28697, Start Num: 52

Candidate Starts for BuzzBuzz\_40:

(23, 29044), (30, 28972), (Start: 52 @28864 has 161 MA's), (81, 28729),

Gene: C3\_36 Start: 28234, Stop: 28082, Start Num: 50

Candidate Starts for C3\_36:

(15, 28501), (19, 28459), (Start: 50 @28234 has 38 MA's), (73, 28132), (75, 28123), (86, 28099),

Gene: CRB1\_39 Start: 28360, Stop: 28175, Start Num: 42

Candidate Starts for CRB1\_39:

(29, 28453), (Start: 42 @28360 has 27 MA's), (61, 28321), (75, 28222), (77, 28213),

Gene: CREW\_52 Start: 38684, Stop: 38854, Start Num: 45

Candidate Starts for CREW\_52:

(Start: 45 @38684 has 114 MA's), (73, 38798), (75, 38807), (76, 38813), (86, 38837),

Gene: Caelakin\_37 Start: 28111, Stop: 27959, Start Num: 53

Candidate Starts for Caelakin\_37:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078), (73, 28012), (75, 28003), (76, 27997),

Gene: Cain\_56 Start: 38319, Stop: 38492, Start Num: 45

Candidate Starts for Cain\_56:

(17, 38088), (20, 38115), (26, 38172), (Start: 45 @38319 has 114 MA's), (59, 38352), (75, 38445), (79, 38460),

Gene: CallaLilly\_54 Start: 38607, Stop: 38777, Start Num: 45

Candidate Starts for CallaLilly\_54:

(Start: 45 @38607 has 114 MA's), (73, 38721), (75, 38730), (76, 38736), (86, 38760),

Gene: Calvinny\_42 Start: 28687, Stop: 28523, Start Num: 52

Candidate Starts for Calvinny\_42:

(Start: 52 @28687 has 161 MA's), (60, 28663), (75, 28567), (76, 28561), (83, 28546), (85, 28540),

Gene: Camperdownii\_36 Start: 27805, Stop: 27653, Start Num: 53

Candidate Starts for Camperdownii\_36:

(Start: 40 @27847 has 3 MA's), (Start: 53 @27805 has 143 MA's), (73, 27706), (75, 27697), (76, 27691),

Gene: Capricorn\_52 Start: 38684, Stop: 38854, Start Num: 45

Candidate Starts for Capricorn\_52:

(Start: 45 @38684 has 114 MA's), (73, 38798), (75, 38807), (76, 38813), (86, 38837),

Gene: Caraxes\_38 Start: 26594, Stop: 26436, Start Num: 51

Candidate Starts for Caraxes\_38:

(Start: 51 @26594 has 34 MA's), (67, 26549), (76, 26477), (87, 26447), (88, 26444),

Gene: CaseJules\_54 Start: 38881, Stop: 39051, Start Num: 45

Candidate Starts for CaseJules\_54:

(Start: 45 @38881 has 114 MA's), (73, 38995), (75, 39004), (76, 39010), (86, 39034),

Gene: Catalina\_71 Start: 41050, Stop: 40895, Start Num: 53

Candidate Starts for Catalina\_71:

(9, 41374), (Start: 53 @41050 has 143 MA's), (67, 41008), (75, 40942), (77, 40933),

Gene: Caviar\_38 Start: 28523, Stop: 28356, Start Num: 52

Candidate Starts for Caviar\_38:

(30, 28631), (Start: 52 @28523 has 161 MA's),

Gene: CentreCat\_37 Start: 28114, Stop: 27962, Start Num: 53

Candidate Starts for CentreCat\_37:

(6, 28405), (Start: 40 @28156 has 3 MA's), (Start: 53 @28114 has 143 MA's), (60, 28093), (65, 28081), (73, 28015), (75, 28006), (76, 28000),

Gene: Cerulean\_38 Start: 28414, Stop: 28256, Start Num: 53

Candidate Starts for Cerulean\_38:

(Start: 40 @28456 has 3 MA's), (Start: 53 @28414 has 143 MA's), (73, 28309), (75, 28300), (76, 28294), (86, 28273),

Gene: ChampagnePapi\_39 Start: 28413, Stop: 28255, Start Num: 53

Candidate Starts for ChampagnePapi\_39:

(Start: 40 @28455 has 3 MA's), (Start: 53 @28413 has 143 MA's), (73, 28308), (75, 28299), (76, 28293), (86, 28272),

Gene: Chancellor\_3 Start: 478, Stop: 645, Start Num: 45

Candidate Starts for Chancellor\_3:

(7, 163), (37, 424), (Start: 45 @478 has 114 MA's), (68, 535), (73, 592), (76, 607), (86, 628), (87, 634),

Gene: Changeling\_39 Start: 29036, Stop: 28875, Start Num: 53

Candidate Starts for Changeling\_39:

(Start: 53 @29036 has 143 MA's), (67, 28994), (75, 28922), (77, 28913), (84, 28895),

Gene: Chaph\_37 Start: 28122, Stop: 27970, Start Num: 53

Candidate Starts for Chaph\_37:

(6, 28413), (Start: 40 @28164 has 3 MA's), (Start: 53 @28122 has 143 MA's), (60, 28101), (73, 28023), (75, 28014), (76, 28008),

Gene: Chavito\_56 Start: 39989, Stop: 40159, Start Num: 45

Candidate Starts for Chavito\_56:

(Start: 45 @39989 has 114 MA's), (Start: 58 @40019 has 1 MA's), (73, 40100), (79, 40124),

Gene: Che12\_41 Start: 27298, Stop: 27137, Start Num: 51

Candidate Starts for Che12\_41:

(44, 27310), (Start: 51 @27298 has 34 MA's), (76, 27178), (87, 27148), (88, 27145),

Gene: CheetoDust\_51 Start: 37972, Stop: 38142, Start Num: 45

Candidate Starts for CheetoDust\_51:

(Start: 45 @37972 has 114 MA's), (73, 38086), (75, 38095), (76, 38101), (86, 38125),

Gene: Cheetobro\_3 Start: 478, Stop: 645, Start Num: 45

Candidate Starts for Cheetobro\_3:

(7, 163), (37, 424), (Start: 45 @478 has 114 MA's), (68, 535), (73, 592), (76, 607), (86, 628), (87, 634),

Gene: ChipMunk\_41 Start: 30014, Stop: 29841, Start Num: 42

Candidate Starts for ChipMunk\_41:

(Start: 42 @30014 has 27 MA's), (57, 29990), (59, 29984),

Gene: Chiqui\_37 Start: 28522, Stop: 28361, Start Num: 52

Candidate Starts for Chiqui\_37:

(30, 28630), (Start: 40 @28570 has 3 MA's), (Start: 52 @28522 has 161 MA's), (62, 28495), (67, 28480), (78, 28399), (84, 28381), (86, 28378),

Gene: Chupacabra\_37 Start: 28075, Stop: 27917, Start Num: 48

Candidate Starts for Chupacabra\_37:

(Start: 48 @28075 has 9 MA's), (76, 27955),

Gene: Cintron\_37 Start: 28177, Stop: 28025, Start Num: 53

Candidate Starts for Cintron\_37:

(Start: 40 @28219 has 3 MA's), (Start: 53 @28177 has 143 MA's), (60, 28156), (68, 28132), (73, 28078), (75, 28069), (76, 28063),

Gene: Citius\_37 Start: 28132, Stop: 27974, Start Num: 53

Candidate Starts for Citius\_37:



(6, 28423), (Start: 40 @28174 has 3 MA's), (Start: 53 @28132 has 143 MA's), (73, 28027), (75, 28018), (76, 28012),

Gene: Clarenza\_37 Start: 28108, Stop: 27956, Start Num: 53

Candidate Starts for Clarenza\_37:

(6, 28399), (Start: 40 @28150 has 3 MA's), (Start: 53 @28108 has 143 MA's), (60, 28087), (65, 28075), (73, 28009), (75, 28000), (76, 27994),

Gene: Clipper\_56 Start: 39146, Stop: 39319, Start Num: 45

Candidate Starts for Clipper\_56:

(Start: 45 @39146 has 114 MA's), (73, 39260),

Gene: Cocoaberry\_37 Start: 28115, Stop: 27963, Start Num: 53

Candidate Starts for Cocoaberry\_37:

(6, 28406), (Start: 40 @28157 has 3 MA's), (Start: 53 @28115 has 143 MA's), (60, 28094), (65, 28082), (73, 28016), (75, 28007), (76, 28001),

Gene: Colbster\_42 Start: 28869, Stop: 28699, Start Num: 52

Candidate Starts for Colbster\_42:

(23, 29049), (30, 28977), (Start: 52 @28869 has 161 MA's), (65, 28830), (75, 28746), (77, 28737),

Gene: Commander\_37 Start: 28110, Stop: 27958, Start Num: 53

Candidate Starts for Commander\_37:

(6, 28401), (Start: 40 @28152 has 3 MA's), (Start: 53 @28110 has 143 MA's), (73, 28011), (75, 28002),

Gene: ConceptII\_47 Start: 35507, Stop: 35379, Start Num: 52

Candidate Starts for ConceptII\_47:

(Start: 52 @35507 has 161 MA's), (55, 35498), (59, 35486), (63, 35474), (71, 35405), (73, 35396),

Gene: Connomayer\_37 Start: 28111, Stop: 27959, Start Num: 53

Candidate Starts for Connomayer\_37:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078), (73, 28012), (75, 28003), (76, 27997),

Gene: Conquerage\_67 Start: 40725, Stop: 40570, Start Num: 53

Candidate Starts for Conquerage\_67:

(Start: 53 @40725 has 143 MA's), (67, 40683), (75, 40617), (77, 40608),

Gene: Conspiracy\_34 Start: 27260, Stop: 27060, Start Num: 40

Candidate Starts for Conspiracy\_34:

(21, 27410), (Start: 40 @27260 has 3 MA's), (Start: 51 @27218 has 34 MA's), (73, 27113), (75, 27104), (76, 27098),

Gene: Coog\_33 Start: 27188, Stop: 27030, Start Num: 51

Candidate Starts for Coog\_33:

(12, 27476), (13, 27470), (Start: 40 @27230 has 3 MA's), (Start: 51 @27188 has 34 MA's), (73, 27083), (75, 27074), (76, 27068),

Gene: Corvo\_46 Start: 35367, Stop: 35242, Start Num: 52

Candidate Starts for Corvo\_46:

(Start: 52 @35367 has 161 MA's), (55, 35358), (59, 35346), (63, 35334), (71, 35268), (73, 35259),

Gene: CrimD\_52 Start: 38799, Stop: 38972, Start Num: 45

Candidate Starts for CrimD\_52:  
(Start: 45 @38799 has 114 MA's), (73, 38913),

Gene: Crucio\_38 Start: 28097, Stop: 27924, Start Num: 42  
Candidate Starts for Crucio\_38:  
(Start: 42 @28097 has 27 MA's), (57, 28073), (59, 28067), (75, 27971),

Gene: Cuco\_33 Start: 27147, Stop: 26989, Start Num: 51  
Candidate Starts for Cuco\_33:  
(12, 27429), (13, 27423), (Start: 40 @27189 has 3 MA's), (Start: 51 @27147 has 34 MA's), (73, 27042),  
(75, 27033), (76, 27027),

Gene: Cullens\_42 Start: 28865, Stop: 28698, Start Num: 52  
Candidate Starts for Cullens\_42:  
(23, 29045), (30, 28973), (Start: 52 @28865 has 161 MA's), (65, 28826), (75, 28745), (77, 28736),

Gene: D29\_38 Start: 28135, Stop: 27983, Start Num: 50  
Candidate Starts for D29\_38:  
(15, 28402), (19, 28360), (Start: 50 @28135 has 38 MA's), (73, 28033), (75, 28024), (86, 28000),

Gene: D32\_41 Start: 28135, Stop: 27983, Start Num: 50  
Candidate Starts for D32\_41:  
(15, 28402), (19, 28360), (Start: 50 @28135 has 38 MA's), (73, 28033), (75, 28024), (86, 28000),

Gene: DBQu4n\_41 Start: 28135, Stop: 27983, Start Num: 50  
Candidate Starts for DBQu4n\_41:  
(Start: 50 @28135 has 38 MA's), (73, 28033), (75, 28024), (86, 28000),

Gene: DaHudson\_42 Start: 28858, Stop: 28691, Start Num: 52  
Candidate Starts for DaHudson\_42:  
(23, 29038), (30, 28966), (Start: 52 @28858 has 161 MA's), (65, 28819), (75, 28738), (77, 28729),

Gene: Daishi\_41 Start: 27705, Stop: 27538, Start Num: 52  
Candidate Starts for Daishi\_41:  
(23, 27885), (30, 27813), (Start: 52 @27705 has 161 MA's), (81, 27570),

Gene: Dalmuri\_52 Start: 38684, Stop: 38854, Start Num: 45  
Candidate Starts for Dalmuri\_52:  
(Start: 45 @38684 has 114 MA's), (73, 38798), (75, 38807), (76, 38813), (86, 38837),

Gene: Darrell\_70 Start: 41552, Stop: 41397, Start Num: 53  
Candidate Starts for Darrell\_70:  
(22, 41750), (Start: 53 @41552 has 143 MA's), (73, 41450), (75, 41441), (76, 41435),

Gene: Dartin\_55 Start: 39264, Stop: 39437, Start Num: 45  
Candidate Starts for Dartin\_55:  
(Start: 45 @39264 has 114 MA's), (Start: 52 @39276 has 161 MA's), (61, 39303), (73, 39378), (79, 39402),

Gene: Deano\_37 Start: 28119, Stop: 27967, Start Num: 53  
Candidate Starts for Deano\_37:  
(6, 28410), (Start: 40 @28161 has 3 MA's), (Start: 53 @28119 has 143 MA's), (60, 28098), (65, 28086),  
(73, 28020), (75, 28011), (76, 28005),

Gene: Deby\_52 Start: 38743, Stop: 38913, Start Num: 45  
Candidate Starts for Deby\_52:  
(Start: 45 @38743 has 114 MA's), (73, 38857), (75, 38866), (76, 38872), (86, 38896),

Gene: Deloris\_36 Start: 27509, Stop: 27330, Start Num: 42  
Candidate Starts for Deloris\_36:  
(Start: 42 @27509 has 27 MA's), (63, 27464), (75, 27377), (77, 27368), (84, 27350),

Gene: Devera\_57 Start: 39316, Stop: 39486, Start Num: 45  
Candidate Starts for Devera\_57:  
(Start: 45 @39316 has 114 MA's), (73, 39430), (75, 39439),

Gene: Dhanush\_37 Start: 28114, Stop: 27962, Start Num: 53  
Candidate Starts for Dhanush\_37:  
(6, 28405), (Start: 40 @28156 has 3 MA's), (Start: 53 @28114 has 143 MA's), (60, 28093), (65, 28081),  
(73, 28015), (75, 28006), (76, 28000),

Gene: Dieselweasel\_43 Start: 28868, Stop: 28701, Start Num: 52  
Candidate Starts for Dieselweasel\_43:  
(23, 29048), (30, 28976), (Start: 52 @28868 has 161 MA's), (65, 28829), (75, 28748), (77, 28739),

Gene: Dignity\_40 Start: 28649, Stop: 28476, Start Num: 42  
Candidate Starts for Dignity\_40:  
(Start: 42 @28649 has 27 MA's), (59, 28619), (68, 28589),

Gene: Discoknowium\_34 Start: 27469, Stop: 27269, Start Num: 40  
Candidate Starts for Discoknowium\_34:  
(21, 27619), (Start: 40 @27469 has 3 MA's), (Start: 51 @27427 has 34 MA's), (73, 27322), (75, 27313),  
(76, 27307),

Gene: Dole\_55 Start: 39319, Stop: 39489, Start Num: 45  
Candidate Starts for Dole\_55:  
(Start: 45 @39319 has 114 MA's), (73, 39433), (75, 39442),

Gene: DrHayes\_53 Start: 39464, Stop: 39634, Start Num: 45  
Candidate Starts for DrHayes\_53:  
(Start: 45 @39464 has 114 MA's), (73, 39578), (79, 39602),

Gene: DreamCatcher\_48 Start: 35874, Stop: 35749, Start Num: 52  
Candidate Starts for DreamCatcher\_48:  
(Start: 52 @35874 has 161 MA's), (65, 35835), (71, 35775), (73, 35766),

Gene: Dreamboat\_47 Start: 34567, Stop: 34439, Start Num: 52  
Candidate Starts for Dreamboat\_47:  
(Start: 52 @34567 has 161 MA's), (55, 34558), (59, 34546), (63, 34534), (71, 34465), (73, 34456),

Gene: DropBear\_39 Start: 28435, Stop: 28274, Start Num: 52  
Candidate Starts for DropBear\_39:  
(Start: 52 @28435 has 161 MA's), (75, 28321), (78, 28312),

Gene: Druantia\_37 Start: 28114, Stop: 27962, Start Num: 53  
Candidate Starts for Druantia\_37:

(6, 28405), (Start: 40 @28156 has 3 MA's), (Start: 53 @28114 has 143 MA's), (60, 28093), (65, 28081), (73, 28015), (75, 28006), (76, 28000),

Gene: Dublin\_32 Start: 27119, Stop: 26961, Start Num: 51

Candidate Starts for Dublin\_32:

(Start: 40 @27161 has 3 MA's), (Start: 51 @27119 has 34 MA's), (73, 27014), (75, 27005), (76, 26999),

Gene: Duplo\_41 Start: 28173, Stop: 28021, Start Num: 50

Candidate Starts for Duplo\_41:

(Start: 50 @28173 has 38 MA's), (73, 28071), (75, 28062), (86, 28038),

Gene: Durfee\_52 Start: 38881, Stop: 39051, Start Num: 45

Candidate Starts for Durfee\_52:

(Start: 45 @38881 has 114 MA's), (73, 38995), (75, 39004), (76, 39010), (86, 39034),

Gene: DustyMartin\_41 Start: 27874, Stop: 27713, Start Num: 51

Candidate Starts for DustyMartin\_41:

(Start: 48 @27877 has 9 MA's), (Start: 51 @27874 has 34 MA's), (73, 27766), (75, 27757),

Gene: EZMoney23\_38 Start: 28376, Stop: 28215, Start Num: 53

Candidate Starts for EZMoney23\_38:

(Start: 53 @28376 has 143 MA's), (77, 28253),

Gene: Eagle\_37 Start: 28136, Stop: 27978, Start Num: 53

Candidate Starts for Eagle\_37:

(6, 28427), (Start: 40 @28178 has 3 MA's), (Start: 53 @28136 has 143 MA's), (73, 28031), (75, 28022), (76, 28016), (86, 27995),

Gene: Eaglepride\_39 Start: 28184, Stop: 28023, Start Num: 51

Candidate Starts for Eaglepride\_39:

(Start: 48 @28187 has 9 MA's), (Start: 51 @28184 has 34 MA's), (73, 28076), (75, 28067), (76, 28061),

Gene: Eapen\_37 Start: 28109, Stop: 27957, Start Num: 53

Candidate Starts for Eapen\_37:

(6, 28400), (Start: 40 @28151 has 3 MA's), (Start: 53 @28109 has 143 MA's), (60, 28088), (65, 28076), (73, 28010), (75, 28001), (76, 27995),

Gene: Ebony\_37 Start: 27394, Stop: 27239, Start Num: 50

Candidate Starts for Ebony\_37:

(16, 27664), (27, 27541), (31, 27502), (Start: 50 @27394 has 38 MA's), (75, 27280), (76, 27274), (87, 27250),

Gene: Edison31\_38 Start: 28283, Stop: 28125, Start Num: 48

Candidate Starts for Edison31\_38:

(36, 28346), (Start: 48 @28283 has 9 MA's), (65, 28247), (76, 28163),

Gene: EdogawaKiddo\_67 Start: 41017, Stop: 40862, Start Num: 53

Candidate Starts for EdogawaKiddo\_67:

(Start: 53 @41017 has 143 MA's), (67, 40975), (75, 40909), (77, 40900),

Gene: Edugator\_35 Start: 30175, Stop: 30339, Start Num: 45

Candidate Starts for Edugator\_35:

(38, 30136), (39, 30139), (Start: 45 @30175 has 114 MA's), (54, 30187), (60, 30202), (63, 30208), (65, 30214), (66, 30217), (73, 30286), (76, 30301),

Gene: Efra2\_55 Start: 38400, Stop: 38573, Start Num: 45

Candidate Starts for Efra2\_55:

(Start: 45 @38400 has 114 MA's), (73, 38514),

Gene: Eidsmoe\_67 Start: 40717, Stop: 40562, Start Num: 53

Candidate Starts for Eidsmoe\_67:

(Start: 53 @40717 has 143 MA's), (67, 40675), (75, 40609), (77, 40600),

Gene: Elephantoon\_67 Start: 40355, Stop: 40197, Start Num: 53

Candidate Starts for Elephantoon\_67:

(22, 40556), (Start: 53 @40355 has 143 MA's), (67, 40313), (75, 40244), (77, 40235),

Gene: Emerson\_53 Start: 38563, Stop: 38733, Start Num: 45

Candidate Starts for Emerson\_53:

(Start: 45 @38563 has 114 MA's), (73, 38677), (75, 38686), (76, 38692), (86, 38716),

Gene: EmyBug\_66 Start: 40719, Stop: 40564, Start Num: 53

Candidate Starts for EmyBug\_66:

(Start: 53 @40719 has 143 MA's), (67, 40677), (75, 40611), (77, 40602),

Gene: EpicPhail\_43 Start: 28869, Stop: 28699, Start Num: 52

Candidate Starts for EpicPhail\_43:

(23, 29049), (30, 28977), (Start: 52 @28869 has 161 MA's), (65, 28830), (75, 28746), (77, 28737),

Gene: Eponine\_3 Start: 478, Stop: 645, Start Num: 45

Candidate Starts for Eponine\_3:

(3, 121), (5, 139), (10, 172), (Start: 45 @478 has 114 MA's), (Start: 58 @505 has 1 MA's), (73, 592), (76, 607), (87, 634),

Gene: Eris\_36 Start: 28111, Stop: 27959, Start Num: 53

Candidate Starts for Eris\_36:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078), (73, 28012), (75, 28003), (76, 27997),

Gene: Eros\_37 Start: 28113, Stop: 27961, Start Num: 53

Candidate Starts for Eros\_37:

(6, 28404), (Start: 40 @28155 has 3 MA's), (Start: 53 @28113 has 143 MA's), (60, 28092), (65, 28080), (73, 28014), (75, 28005), (76, 27999),

Gene: Et2Brutus\_36 Start: 27354, Stop: 27199, Start Num: 50

Candidate Starts for Et2Brutus\_36:

(16, 27624), (27, 27501), (31, 27462), (Start: 50 @27354 has 38 MA's), (75, 27240), (76, 27234), (87, 27210),

Gene: Eurydice\_38 Start: 28111, Stop: 27953, Start Num: 53

Candidate Starts for Eurydice\_38:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (73, 28006), (75, 27997), (76, 27991), (86, 27970),

Gene: EvilGenius\_41 Start: 30018, Stop: 29845, Start Num: 42

Candidate Starts for EvilGenius\_41:

(Start: 42 @30018 has 27 MA's), (57, 29994), (59, 29988),

Gene: ExplosioNervosa\_67 Start: 40785, Stop: 40630, Start Num: 53

Candidate Starts for ExplosioNervosa\_67:

(Start: 53 @40785 has 143 MA's), (67, 40743), (75, 40677), (77, 40668),

Gene: Fameo\_67 Start: 41968, Stop: 41795, Start Num: 49

Candidate Starts for Fameo\_67:

(Start: 49 @41968 has 10 MA's), (75, 41842), (77, 41833),

Gene: Farber\_42 Start: 28859, Stop: 28692, Start Num: 52

Candidate Starts for Farber\_42:

(23, 29039), (30, 28967), (Start: 52 @28859 has 161 MA's), (65, 28820), (75, 28739), (77, 28730),

Gene: FatCactus\_63 Start: 40301, Stop: 40134, Start Num: 53

Candidate Starts for FatCactus\_63:

(32, 40400), (33, 40394), (34, 40388), (Start: 53 @40301 has 143 MA's), (75, 40181), (77, 40172),

Gene: Fayely\_67 Start: 40686, Stop: 40531, Start Num: 53

Candidate Starts for Fayely\_67:

(Start: 53 @40686 has 143 MA's), (67, 40644), (75, 40578), (77, 40569),

Gene: Fenn\_47 Start: 36614, Stop: 36486, Start Num: 52

Candidate Starts for Fenn\_47:

(Start: 52 @36614 has 161 MA's), (55, 36605), (59, 36593), (63, 36581), (71, 36512), (73, 36503),

Gene: Fernando\_42 Start: 28865, Stop: 28698, Start Num: 52

Candidate Starts for Fernando\_42:

(23, 29045), (30, 28973), (Start: 52 @28865 has 161 MA's), (65, 28826), (75, 28745), (77, 28736),

Gene: Fibonacci\_36 Start: 26986, Stop: 26831, Start Num: 50

Candidate Starts for Fibonacci\_36:

(16, 27256), (27, 27133), (31, 27094), (Start: 50 @26986 has 38 MA's), (75, 26872), (76, 26866), (87, 26842),

Gene: Fionnbharth\_3 Start: 478, Stop: 645, Start Num: 45

Candidate Starts for Fionnbharth\_3:

(10, 172), (Start: 45 @478 has 114 MA's), (Start: 58 @505 has 1 MA's), (73, 592), (76, 607), (87, 634),

Gene: FiringLine\_38 Start: 28078, Stop: 27905, Start Num: 42

Candidate Starts for FiringLine\_38:

(Start: 42 @28078 has 27 MA's), (57, 28054), (59, 28048), (75, 27952),

Gene: First\_0037 Start: 27751, Stop: 27566, Start Num: 42

Candidate Starts for First\_0037:

(Start: 42 @27751 has 27 MA's), (61, 27712), (75, 27613), (77, 27604),

Gene: Flaverint\_37 Start: 27433, Stop: 27278, Start Num: 50

Candidate Starts for Flaverint\_37:

(16, 27703), (27, 27580), (31, 27541), (Start: 50 @27433 has 38 MA's), (75, 27319), (76, 27313), (87, 27289),

Gene: Florean\_37 Start: 28110, Stop: 27958, Start Num: 53

Candidate Starts for Florean\_37:

(6, 28401), (Start: 40 @28152 has 3 MA's), (Start: 53 @28110 has 143 MA's), (60, 28089), (65, 28077), (73, 28011), (75, 28002), (76, 27996),

Gene: Flux\_37 Start: 28113, Stop: 27961, Start Num: 53

Candidate Starts for Flux\_37:

(6, 28404), (Start: 40 @28155 has 3 MA's), (Start: 53 @28113 has 143 MA's), (60, 28092), (65, 28080), (73, 28014), (75, 28005), (76, 27999),

Gene: ForGetIt\_34 Start: 27243, Stop: 27085, Start Num: 51

Candidate Starts for ForGetIt\_34:

(21, 27435), (Start: 40 @27285 has 3 MA's), (Start: 51 @27243 has 34 MA's), (73, 27138), (75, 27129), (76, 27123),

Gene: Forsytheast\_45 Start: 34645, Stop: 34520, Start Num: 52

Candidate Starts for Forsytheast\_45:

(Start: 52 @34645 has 161 MA's), (55, 34636), (59, 34624), (63, 34612), (71, 34546), (73, 34537),

Gene: Fred313\_39 Start: 28120, Stop: 27959, Start Num: 52

Candidate Starts for Fred313\_39:

(Start: 52 @28120 has 161 MA's), (75, 28006), (78, 27997),

Gene: Funston\_37 Start: 28111, Stop: 27959, Start Num: 53

Candidate Starts for Funston\_37:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078), (73, 28012), (75, 28003), (76, 27997),

Gene: Gadost\_37 Start: 28115, Stop: 27963, Start Num: 53

Candidate Starts for Gadost\_37:

(6, 28406), (Start: 40 @28157 has 3 MA's), (Start: 53 @28115 has 143 MA's), (60, 28094), (73, 28016), (75, 28007), (76, 28001),

Gene: Gandalf20\_47 Start: 35644, Stop: 35519, Start Num: 52

Candidate Starts for Gandalf20\_47:

(Start: 52 @35644 has 161 MA's), (65, 35605), (71, 35545), (73, 35536),

Gene: Ganymede\_53 Start: 38945, Stop: 39115, Start Num: 45

Candidate Starts for Ganymede\_53:

(Start: 45 @38945 has 114 MA's), (73, 39059), (75, 39068), (76, 39074), (86, 39098),

Gene: Gemma\_41 Start: 28683, Stop: 28519, Start Num: 52

Candidate Starts for Gemma\_41:

(Start: 52 @28683 has 161 MA's), (75, 28563), (76, 28557), (83, 28542), (85, 28536),

Gene: George\_32 Start: 27148, Stop: 26990, Start Num: 51

Candidate Starts for George\_32:

(12, 27430), (13, 27424), (Start: 40 @27190 has 3 MA's), (Start: 51 @27148 has 34 MA's), (73, 27043), (75, 27034), (76, 27028),

Gene: Georgie2\_39 Start: 28123, Stop: 27950, Start Num: 42

Candidate Starts for Georgie2\_39:

(Start: 42 @28123 has 27 MA's), (57, 28099), (59, 28093), (75, 27997),

Gene: Geraldini\_55 Start: 39616, Stop: 39786, Start Num: 45

Candidate Starts for Geraldini\_55:

(Start: 45 @39616 has 114 MA's), (73, 39730), (75, 39739), (76, 39745), (86, 39769),

Gene: Ghoulboy\_35 Start: 27747, Stop: 27589, Start Num: 51

Candidate Starts for Ghoulboy\_35:

(Start: 40 @27789 has 3 MA's), (Start: 51 @27747 has 34 MA's), (73, 27642), (75, 27633), (76, 27627),

Gene: Gilberta\_37 Start: 27423, Stop: 27268, Start Num: 50

Candidate Starts for Gilberta\_37:

(16, 27693), (27, 27570), (31, 27531), (Start: 50 @27423 has 38 MA's), (75, 27309), (76, 27303), (87, 27279),

Gene: GingkoMaracino\_42 Start: 28752, Stop: 28585, Start Num: 52

Candidate Starts for GingkoMaracino\_42:

(23, 28932), (30, 28860), (Start: 52 @28752 has 161 MA's), (65, 28713), (75, 28632), (77, 28623),

Gene: Giroux\_39 Start: 28367, Stop: 28206, Start Num: 52

Candidate Starts for Giroux\_39:

(Start: 52 @28367 has 161 MA's), (75, 28253), (78, 28244),

Gene: Goose\_38 Start: 27879, Stop: 27721, Start Num: 48

Candidate Starts for Goose\_38:

(Start: 48 @27879 has 9 MA's), (76, 27759),

Gene: Grayson\_251 Start: 118509, Stop: 118658, Start Num: 52

Candidate Starts for Grayson\_251:

(Start: 52 @118509 has 161 MA's), (63, 118542), (80, 118623), (86, 118641),

Gene: GrecoEtereo\_46 Start: 34972, Stop: 34847, Start Num: 52

Candidate Starts for GrecoEtereo\_46:

(Start: 52 @34972 has 161 MA's), (55, 34963), (59, 34951), (63, 34939), (71, 34873), (73, 34864),

Gene: Grif\_42 Start: 28940, Stop: 28773, Start Num: 52

Candidate Starts for Grif\_42:

(23, 29120), (30, 29048), (Start: 52 @28940 has 161 MA's), (65, 28901), (75, 28820), (77, 28811),

Gene: Groupthink\_43 Start: 28687, Stop: 28523, Start Num: 52

Candidate Starts for Groupthink\_43:

(Start: 52 @28687 has 161 MA's), (75, 28567), (76, 28561), (83, 28546), (85, 28540),

Gene: Grub\_42 Start: 28858, Stop: 28691, Start Num: 52

Candidate Starts for Grub\_42:

(23, 29038), (30, 28966), (Start: 52 @28858 has 161 MA's), (65, 28819), (75, 28738), (77, 28729),

Gene: Grum1\_42 Start: 28865, Stop: 28698, Start Num: 52

Candidate Starts for Grum1\_42:

(23, 29045), (30, 28973), (Start: 52 @28865 has 161 MA's), (65, 28826), (75, 28745), (77, 28736),

Gene: GtownJaz\_42 Start: 28867, Stop: 28700, Start Num: 52

Candidate Starts for GtownJaz\_42:

(23, 29047), (30, 28975), (Start: 52 @28867 has 161 MA's), (65, 28828), (75, 28747), (77, 28738),



Gene: HamSlice\_36 Start: 28109, Stop: 27957, Start Num: 53

Candidate Starts for HamSlice\_36:

(6, 28400), (Start: 40 @28151 has 3 MA's), (Start: 53 @28109 has 143 MA's), (60, 28088), (73, 28010), (75, 28001), (76, 27995),

Gene: HanShotFirst\_44 Start: 33997, Stop: 33872, Start Num: 52

Candidate Starts for HanShotFirst\_44:

(Start: 52 @33997 has 161 MA's), (65, 33958), (71, 33898), (73, 33889),

Gene: Hanray\_67 Start: 41049, Stop: 40894, Start Num: 53

Candidate Starts for Hanray\_67:

(9, 41373), (Start: 53 @41049 has 143 MA's), (67, 41007), (75, 40941), (77, 40932),

Gene: HarryOW\_44 Start: 34144, Stop: 34019, Start Num: 52

Candidate Starts for HarryOW\_44:

(Start: 52 @34144 has 161 MA's), (55, 34135), (59, 34123), (63, 34111), (71, 34045), (73, 34036),

Gene: HashRod\_43 Start: 28864, Stop: 28697, Start Num: 52

Candidate Starts for HashRod\_43:

(23, 29044), (30, 28972), (Start: 52 @28864 has 161 MA's), (81, 28729),

Gene: HaveUMetTed\_43 Start: 28681, Stop: 28517, Start Num: 52

Candidate Starts for HaveUMetTed\_43:

(Start: 52 @28681 has 161 MA's), (75, 28564), (77, 28555),

Gene: Heathen\_39 Start: 28176, Stop: 28015, Start Num: 52

Candidate Starts for Heathen\_39:

(Start: 52 @28176 has 161 MA's), (75, 28062), (78, 28053),

Gene: HedwigODU\_52 Start: 38569, Stop: 38739, Start Num: 45

Candidate Starts for HedwigODU\_52:

(Start: 45 @38569 has 114 MA's), (73, 38683), (75, 38692), (76, 38698), (86, 38722),

Gene: Heffalump\_66 Start: 42436, Stop: 42263, Start Num: 49

Candidate Starts for Heffalump\_66:

(Start: 49 @42436 has 10 MA's), (75, 42310), (77, 42301),

Gene: HelDan\_39 Start: 28428, Stop: 28267, Start Num: 52

Candidate Starts for HelDan\_39:

(Start: 52 @28428 has 161 MA's), (75, 28314), (78, 28305),

Gene: Heliosoles\_41 Start: 28690, Stop: 28523, Start Num: 52

Candidate Starts for Heliosoles\_41:

(Start: 52 @28690 has 161 MA's), (75, 28567), (76, 28561), (83, 28546), (85, 28540),

Gene: Hercules11\_42 Start: 28874, Stop: 28707, Start Num: 52

Candidate Starts for Hercules11\_42:

(23, 29054), (30, 28982), (Start: 52 @28874 has 161 MA's), (65, 28835), (75, 28754), (77, 28745),

Gene: Horex\_67 Start: 41065, Stop: 40910, Start Num: 53

Candidate Starts for Horex\_67:

(9, 41389), (Start: 53 @41065 has 143 MA's), (67, 41023), (75, 40957), (77, 40948),

Gene: Holli\_36 Start: 27901, Stop: 27749, Start Num: 53

Candidate Starts for Holli\_36:

(4, 28201), (6, 28192), (Start: 40 @27943 has 3 MA's), (Start: 53 @27901 has 143 MA's), (60, 27880), (65, 27868), (73, 27802), (75, 27793), (76, 27787),

Gene: Homura\_52 Start: 38684, Stop: 38854, Start Num: 45

Candidate Starts for Homura\_52:

(Start: 45 @38684 has 114 MA's), (73, 38798), (75, 38807), (76, 38813), (86, 38837),

Gene: Hookmount\_38 Start: 28524, Stop: 28357, Start Num: 52

Candidate Starts for Hookmount\_38:

(30, 28632), (Start: 52 @28524 has 161 MA's),

Gene: HortumSL17\_70 Start: 41049, Stop: 40894, Start Num: 53

Candidate Starts for HortumSL17\_70:

(9, 41373), (Start: 53 @41049 has 143 MA's), (67, 41007), (75, 40941), (77, 40932),

Gene: Houdini22\_37 Start: 28115, Stop: 27963, Start Num: 53

Candidate Starts for Houdini22\_37:

(6, 28406), (Start: 40 @28157 has 3 MA's), (Start: 53 @28115 has 143 MA's), (60, 28094), (65, 28082), (73, 28016), (75, 28007), (76, 28001),

Gene: HuhtaEnerson15\_33 Start: 27139, Stop: 26981, Start Num: 51

Candidate Starts for HuhtaEnerson15\_33:

(12, 27421), (13, 27415), (Start: 40 @27181 has 3 MA's), (Start: 51 @27139 has 34 MA's), (73, 27034), (75, 27025), (76, 27019),

Gene: Hurricane\_65 Start: 43122, Stop: 43292, Start Num: 47

Candidate Starts for Hurricane\_65:

(Start: 43 @43113 has 1 MA's), (Start: 47 @43122 has 7 MA's), (56, 43146), (75, 43251), (76, 43257),

Gene: Hutc2\_36 Start: 26986, Stop: 26831, Start Num: 50

Candidate Starts for Hutc2\_36:

(16, 27256), (27, 27133), (31, 27094), (Start: 50 @26986 has 38 MA's), (75, 26872), (76, 26866), (87, 26842),

Gene: Huxley\_38 Start: 28172, Stop: 28020, Start Num: 53

Candidate Starts for Huxley\_38:

(6, 28463), (Start: 40 @28214 has 3 MA's), (Start: 53 @28172 has 143 MA's), (60, 28151), (65, 28139), (73, 28073), (75, 28064), (76, 28058),

Gene: Hyperbowlee\_52 Start: 38881, Stop: 39051, Start Num: 45

Candidate Starts for Hyperbowlee\_52:

(Start: 45 @38881 has 114 MA's), (73, 38995), (75, 39004), (76, 39010), (86, 39034),

Gene: ICleared\_37 Start: 28143, Stop: 27991, Start Num: 53

Candidate Starts for ICleared\_37:

(Start: 40 @28185 has 3 MA's), (Start: 53 @28143 has 143 MA's), (73, 28044), (75, 28035), (76, 28029),

Gene: Iceman\_38 Start: 28400, Stop: 28248, Start Num: 53

Candidate Starts for Iceman\_38:

(6, 28691), (Start: 40 @28442 has 3 MA's), (Start: 53 @28400 has 143 MA's), (60, 28379), (65, 28367), (73, 28301), (75, 28292), (76, 28286),

Gene: Ichabod\_47 Start: 35000, Stop: 34878, Start Num: 52  
Candidate Starts for Ichabod\_47:  
(Start: 52 @35000 has 161 MA's), (65, 34961), (71, 34904), (73, 34895),

Gene: Idleandcovert\_39 Start: 28368, Stop: 28207, Start Num: 52  
Candidate Starts for Idleandcovert\_39:  
(Start: 52 @28368 has 161 MA's), (75, 28254), (78, 28245),

Gene: Illumine\_55 Start: 39318, Stop: 39488, Start Num: 45  
Candidate Starts for Illumine\_55:  
(Start: 45 @39318 has 114 MA's), (73, 39432), (75, 39441),

Gene: Inky\_52 Start: 38684, Stop: 38854, Start Num: 45  
Candidate Starts for Inky\_52:  
(Start: 45 @38684 has 114 MA's), (73, 38798), (75, 38807), (76, 38813), (86, 38837),

Gene: Insomnia\_37 Start: 27491, Stop: 27336, Start Num: 50  
Candidate Starts for Insomnia\_37:  
(16, 27761), (27, 27638), (31, 27599), (Start: 50 @27491 has 38 MA's), (75, 27377), (76, 27371), (87, 27347),

Gene: Iracema64\_38 Start: 28375, Stop: 28217, Start Num: 53  
Candidate Starts for Iracema64\_38:  
(Start: 40 @28417 has 3 MA's), (Start: 53 @28375 has 143 MA's), (73, 28270), (75, 28261), (76, 28255), (86, 28234),

Gene: Isca\_38 Start: 27992, Stop: 27828, Start Num: 52  
Candidate Starts for Isca\_38:  
(Start: 40 @28040 has 3 MA's), (Start: 52 @27992 has 161 MA's), (62, 27965), (67, 27950), (75, 27875), (78, 27866), (84, 27848), (86, 27845),

Gene: Iwokeuplikedis\_41 Start: 28186, Stop: 28013, Start Num: 42  
Candidate Starts for Iwokeuplikedis\_41:  
(Start: 42 @28186 has 27 MA's), (64, 28141), (75, 28060), (77, 28051),

Gene: JAWS\_52 Start: 38558, Stop: 38728, Start Num: 45  
Candidate Starts for JAWS\_52:  
(Start: 45 @38558 has 114 MA's), (73, 38672), (75, 38681), (76, 38687), (86, 38711),

Gene: JC27\_46 Start: 35060, Stop: 34935, Start Num: 52  
Candidate Starts for JC27\_46:  
(Start: 52 @35060 has 161 MA's), (55, 35051), (59, 35039), (63, 35027), (71, 34961), (73, 34952),

Gene: JF1\_3 Start: 505, Stop: 645, Start Num: 58  
Candidate Starts for JF1\_3:  
(10, 172), (Start: 45 @478 has 114 MA's), (Start: 58 @505 has 1 MA's), (73, 592), (76, 607), (87, 634),

Gene: JF2\_39 Start: 27743, Stop: 27579, Start Num: 52  
Candidate Starts for JF2\_39:

(Start: 40 @27791 has 3 MA's), (Start: 52 @27743 has 161 MA's), (62, 27716), (67, 27701), (75, 27626), (78, 27617), (84, 27599), (86, 27596),

Gene: JF4\_39 Start: 27743, Stop: 27579, Start Num: 52

Candidate Starts for JF4\_39:

(Start: 40 @27791 has 3 MA's), (Start: 52 @27743 has 161 MA's), (62, 27716), (67, 27701), (75, 27626), (78, 27617), (84, 27599), (86, 27596),

Gene: JHC117\_42 Start: 28864, Stop: 28697, Start Num: 52

Candidate Starts for JHC117\_42:

(23, 29044), (30, 28972), (Start: 52 @28864 has 161 MA's), (65, 28825), (75, 28744), (77, 28735),

Gene: Jabith\_37 Start: 27492, Stop: 27337, Start Num: 50

Candidate Starts for Jabith\_37:

(16, 27762), (27, 27639), (31, 27600), (Start: 50 @27492 has 38 MA's), (75, 27378), (76, 27372), (87, 27348),

Gene: Jarvi\_52 Start: 38684, Stop: 38854, Start Num: 45

Candidate Starts for Jarvi\_52:

(Start: 45 @38684 has 114 MA's), (73, 38798), (75, 38807), (76, 38813), (86, 38837),

Gene: Jasper\_47 Start: 34453, Stop: 34325, Start Num: 52

Candidate Starts for Jasper\_47:

(Start: 52 @34453 has 161 MA's), (55, 34444), (59, 34432), (63, 34420), (71, 34351), (73, 34342),

Gene: Jayhawk\_53 Start: 38567, Stop: 38737, Start Num: 45

Candidate Starts for Jayhawk\_53:

(Start: 45 @38567 has 114 MA's), (73, 38681), (75, 38690), (76, 38696), (86, 38720),

Gene: Jaykayelowell\_36 Start: 28107, Stop: 27955, Start Num: 53

Candidate Starts for Jaykayelowell\_36:

(6, 28398), (Start: 40 @28149 has 3 MA's), (Start: 53 @28107 has 143 MA's), (60, 28086), (65, 28074), (73, 28008), (75, 27999), (76, 27993),

Gene: Jeckyll\_52 Start: 38684, Stop: 38854, Start Num: 45

Candidate Starts for Jeckyll\_52:

(Start: 45 @38684 has 114 MA's), (73, 38798), (75, 38807), (76, 38813), (86, 38837),

Gene: JenCasNa\_43 Start: 28865, Stop: 28698, Start Num: 52

Candidate Starts for JenCasNa\_43:

(23, 29045), (30, 28973), (Start: 52 @28865 has 161 MA's), (65, 28826), (75, 28745), (77, 28736),

Gene: JeppNRM\_43 Start: 28688, Stop: 28521, Start Num: 52

Candidate Starts for JeppNRM\_43:

(Start: 52 @28688 has 161 MA's), (75, 28565), (76, 28559), (83, 28544), (85, 28538),

Gene: Jerm\_40 Start: 28642, Stop: 28469, Start Num: 42

Candidate Starts for Jerm\_40:

(Start: 42 @28642 has 27 MA's), (59, 28612), (68, 28582),

Gene: JetBlade\_37 Start: 28108, Stop: 27956, Start Num: 53

Candidate Starts for JetBlade\_37:

(6, 28399), (Start: 40 @28150 has 3 MA's), (Start: 53 @28108 has 143 MA's), (60, 28087), (65, 28075), (73, 28009), (75, 28000), (76, 27994),

Gene: Jiawan\_66 Start: 41081, Stop: 40926, Start Num: 53

Candidate Starts for Jiawan\_66:

(9, 41405), (Start: 53 @41081 has 143 MA's), (67, 41039), (75, 40973), (77, 40964),

Gene: Jobu08\_41 Start: 28695, Stop: 28528, Start Num: 52

Candidate Starts for Jobu08\_41:

(23, 28878), (30, 28806), (Start: 52 @28695 has 161 MA's), (65, 28656), (75, 28575), (77, 28566),

Gene: JoongJeon\_37 Start: 28111, Stop: 27959, Start Num: 53

Candidate Starts for JoongJeon\_37:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078), (73, 28012), (75, 28003), (76, 27997),

Gene: Jorgensen\_46 Start: 34754, Stop: 34629, Start Num: 52

Candidate Starts for Jorgensen\_46:

(Start: 52 @34754 has 161 MA's), (65, 34715), (71, 34655), (73, 34646),

Gene: Joselito\_37 Start: 27432, Stop: 27277, Start Num: 50

Candidate Starts for Joselito\_37:

(16, 27702), (27, 27579), (31, 27540), (Start: 50 @27432 has 38 MA's), (75, 27318), (76, 27312), (87, 27288),

Gene: JoshKayV\_40 Start: 28605, Stop: 28432, Start Num: 42

Candidate Starts for JoshKayV\_40:

(Start: 42 @28605 has 27 MA's), (59, 28575), (66, 28554), (75, 28479),

Gene: Journey13\_36 Start: 27473, Stop: 27315, Start Num: 46

Candidate Starts for Journey13\_36:

(Start: 46 @27473 has 2 MA's), (75, 27362), (76, 27356), (86, 27332),

Gene: Jovo\_34 Start: 27541, Stop: 27341, Start Num: 40

Candidate Starts for Jovo\_34:

(21, 27691), (Start: 40 @27541 has 3 MA's), (Start: 51 @27499 has 34 MA's), (73, 27394), (75, 27385), (76, 27379),

Gene: Joy99\_52 Start: 38613, Stop: 38783, Start Num: 45

Candidate Starts for Joy99\_52:

(Start: 45 @38613 has 114 MA's), (73, 38727), (75, 38736), (76, 38742), (86, 38766),

Gene: Jsquared\_70 Start: 40783, Stop: 40631, Start Num: 53

Candidate Starts for Jsquared\_70:

(9, 41107), (Start: 53 @40783 has 143 MA's), (73, 40681), (75, 40672), (84, 40651),

Gene: Juliette\_3 Start: 478, Stop: 645, Start Num: 45

Candidate Starts for Juliette\_3:

(10, 172), (Start: 45 @478 has 114 MA's), (Start: 58 @505 has 1 MA's), (73, 592), (76, 607), (87, 634),

Gene: KADY\_42 Start: 28864, Stop: 28697, Start Num: 52

Candidate Starts for KADY\_42:

(23, 29044), (30, 28972), (Start: 52 @28864 has 161 MA's), (81, 28729),

Gene: KFPoly\_37 Start: 28108, Stop: 27956, Start Num: 53

Candidate Starts for KFPoly\_37:

(6, 28399), (Start: 40 @28150 has 3 MA's), (Start: 53 @28108 has 143 MA's), (60, 28087), (65, 28075), (73, 28009), (75, 28000), (76, 27994),

Gene: Kachowdy\_39 Start: 28428, Stop: 28267, Start Num: 52

Candidate Starts for Kachowdy\_39:

(Start: 52 @28428 has 161 MA's), (75, 28314), (78, 28305),

Gene: Kalb97\_43 Start: 28686, Stop: 28522, Start Num: 52

Candidate Starts for Kalb97\_43:

(Start: 52 @28686 has 161 MA's), (75, 28566), (76, 28560), (83, 28545), (85, 28539),

Gene: Kalnoky\_43 Start: 28684, Stop: 28523, Start Num: 52

Candidate Starts for Kalnoky\_43:

(Start: 52 @28684 has 161 MA's), (75, 28567), (76, 28561), (83, 28546), (85, 28540),

Gene: Kalpine\_39 Start: 29026, Stop: 28853, Start Num: 42

Candidate Starts for Kalpine\_39:

(Start: 42 @29026 has 27 MA's), (57, 29002), (66, 28975), (70, 28933),

Gene: Kamy\_37 Start: 28113, Stop: 27955, Start Num: 53

Candidate Starts for Kamy\_37:

(6, 28404), (Start: 40 @28155 has 3 MA's), (Start: 53 @28113 has 143 MA's), (73, 28008), (75, 27999), (76, 27993), (86, 27972),

Gene: Kanely\_46 Start: 35114, Stop: 34992, Start Num: 52

Candidate Starts for Kanely\_46:

(Start: 52 @35114 has 161 MA's), (65, 35075), (71, 35018), (73, 35009),

Gene: Kerberos\_41 Start: 28135, Stop: 27983, Start Num: 50

Candidate Starts for Kerberos\_41:

(Start: 50 @28135 has 38 MA's), (73, 28033), (75, 28024), (86, 28000),

Gene: Keshu\_67 Start: 43220, Stop: 43390, Start Num: 47

Candidate Starts for Keshu\_67:

(Start: 43 @43211 has 1 MA's), (Start: 47 @43220 has 7 MA's), (56, 43244), (75, 43349),

Gene: Kimona\_36 Start: 26496, Stop: 26332, Start Num: 52

Candidate Starts for Kimona\_36:

(Start: 52 @26496 has 161 MA's), (63, 26463), (66, 26454), (73, 26391), (74, 26388), (86, 26349),

Gene: KingCyrus\_41 Start: 30013, Stop: 29840, Start Num: 42

Candidate Starts for KingCyrus\_41:

(Start: 42 @30013 has 27 MA's), (57, 29989), (59, 29983), (75, 29887),

Gene: Kingmustik0402\_37 Start: 28103, Stop: 27951, Start Num: 53

Candidate Starts for Kingmustik0402\_37:

(6, 28394), (Start: 40 @28145 has 3 MA's), (Start: 53 @28103 has 143 MA's), (60, 28082), (73, 28004), (75, 27995), (76, 27989),

Gene: Kinmap\_67 Start: 39769, Stop: 39608, Start Num: 53

Candidate Starts for Kinmap\_67:

(22, 39967), (Start: 53 @39769 has 143 MA's), (73, 39664), (75, 39655), (77, 39646),

Gene: Koan\_36 Start: 28111, Stop: 27959, Start Num: 53

Candidate Starts for Koan\_36:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (73, 28012), (75, 28003), (76, 27997),

Gene: Koduck\_38 Start: 27286, Stop: 27131, Start Num: 51

Candidate Starts for Koduck\_38:

(44, 27298), (Start: 51 @27286 has 34 MA's), (74, 27181), (76, 27169), (82, 27154), (87, 27142), (88, 27139),

Gene: Koreni\_36 Start: 27792, Stop: 27640, Start Num: 53

Candidate Starts for Koreni\_36:

(6, 28083), (8, 28065), (Start: 40 @27834 has 3 MA's), (Start: 53 @27792 has 143 MA's), (60, 27771), (65, 27759), (73, 27693), (75, 27684), (76, 27678),

Gene: Kratark\_37 Start: 28053, Stop: 27901, Start Num: 53

Candidate Starts for Kratark\_37:

(6, 28344), (Start: 40 @28095 has 3 MA's), (Start: 53 @28053 has 143 MA's), (73, 27954), (75, 27945), (76, 27939),

Gene: Kraw\_3 Start: 478, Stop: 645, Start Num: 45

Candidate Starts for Kraw\_3:

(10, 172), (Start: 45 @478 has 114 MA's), (Start: 58 @505 has 1 MA's), (73, 592), (76, 607), (87, 634),

Gene: Kremtemulon\_37 Start: 28065, Stop: 27913, Start Num: 53

Candidate Starts for Kremtemulon\_37:

(6, 28356), (Start: 40 @28107 has 3 MA's), (Start: 53 @28065 has 143 MA's), (73, 27966), (75, 27957), (76, 27951),

Gene: Kristoff\_38 Start: 28447, Stop: 28289, Start Num: 48

Candidate Starts for Kristoff\_38:

(Start: 48 @28447 has 9 MA's), (76, 28327),

Gene: Krueger\_59 Start: 39310, Stop: 39483, Start Num: 45

Candidate Starts for Krueger\_59:

(17, 39079), (20, 39106), (26, 39163), (Start: 45 @39310 has 114 MA's), (59, 39343), (75, 39436), (79, 39451),

Gene: Kyee\_37 Start: 28109, Stop: 27957, Start Num: 53

Candidate Starts for Kyee\_37:

(6, 28400), (Start: 40 @28151 has 3 MA's), (Start: 53 @28109 has 143 MA's), (60, 28088), (65, 28076), (73, 28010), (75, 28001), (76, 27995),

Gene: L5\_38 Start: 27243, Stop: 27091, Start Num: 51

Candidate Starts for L5\_38:

(Start: 51 @27243 has 34 MA's), (74, 27138), (76, 27126), (82, 27111), (87, 27102), (88, 27099),

Gene: LBerry\_43 Start: 28869, Stop: 28699, Start Num: 52

Candidate Starts for LBerry\_43:

(23, 29049), (30, 28977), (Start: 52 @28869 has 161 MA's), (65, 28830), (75, 28746), (77, 28737),

Gene: LHTSCC\_39 Start: 28413, Stop: 28255, Start Num: 53

Candidate Starts for LHTSCC\_39:

(Start: 40 @28455 has 3 MA's), (Start: 53 @28413 has 143 MA's), (73, 28308), (75, 28299), (76, 28293), (86, 28272),

Gene: LadyBird\_40 Start: 28319, Stop: 28134, Start Num: 42

Candidate Starts for LadyBird\_40:

(Start: 42 @28319 has 27 MA's), (61, 28280), (75, 28181), (77, 28172), (84, 28154),

Gene: Lambert1\_38 Start: 28523, Stop: 28356, Start Num: 52

Candidate Starts for Lambert1\_38:

(30, 28631), (Start: 52 @28523 has 161 MA's),

Gene: LappelDuVide\_37 Start: 28110, Stop: 27958, Start Num: 53

Candidate Starts for LappelDuVide\_37:

(6, 28401), (Start: 40 @28152 has 3 MA's), (Start: 53 @28110 has 143 MA's), (60, 28089), (65, 28077), (73, 28011), (75, 28002), (76, 27996),

Gene: LarryKay\_42 Start: 28866, Stop: 28699, Start Num: 52

Candidate Starts for LarryKay\_42:

(23, 29046), (30, 28974), (Start: 52 @28866 has 161 MA's), (81, 28731),

Gene: LastHope\_55 Start: 37751, Stop: 37921, Start Num: 45

Candidate Starts for LastHope\_55:

(Start: 45 @37751 has 114 MA's), (73, 37865), (75, 37874),

Gene: LaterM\_53 Start: 39443, Stop: 39613, Start Num: 45

Candidate Starts for LaterM\_53:

(Start: 45 @39443 has 114 MA's), (73, 39557), (75, 39566),

Gene: Lea83\_66 Start: 43157, Stop: 43327, Start Num: 47

Candidate Starts for Lea83\_66:

(Start: 43 @43148 has 1 MA's), (Start: 47 @43157 has 7 MA's), (56, 43181), (75, 43286), (76, 43292),

Gene: Lebo14\_3 Start: 478, Stop: 645, Start Num: 45

Candidate Starts for Lebo14\_3:

(37, 424), (Start: 45 @478 has 114 MA's), (68, 535), (73, 592), (76, 607), (86, 628), (87, 634),

Gene: Lemur\_37 Start: 28108, Stop: 27956, Start Num: 53

Candidate Starts for Lemur\_37:

(6, 28399), (Start: 40 @28150 has 3 MA's), (Start: 53 @28108 has 143 MA's), (60, 28087), (65, 28075), (73, 28009), (75, 28000), (76, 27994),

Gene: LeoAvram\_37 Start: 28111, Stop: 27953, Start Num: 53

Candidate Starts for LeoAvram\_37:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (73, 28006), (75, 27997), (76, 27991), (86, 27970),

Gene: Lev2\_34 Start: 27131, Stop: 26973, Start Num: 51

Candidate Starts for Lev2\_34:

(21, 27323), (Start: 40 @27173 has 3 MA's), (Start: 51 @27131 has 34 MA's), (73, 27026), (75, 27017), (76, 27011),



Gene: Leviathan\_40 Start: 28698, Stop: 28525, Start Num: 42

Candidate Starts for Leviathan\_40:

(Start: 42 @28698 has 27 MA's), (59, 28668), (68, 28638),

Gene: LilTurb\_39 Start: 28531, Stop: 28358, Start Num: 42

Candidate Starts for LilTurb\_39:

(Start: 42 @28531 has 27 MA's), (59, 28501), (68, 28471),

Gene: Lilith\_43 Start: 28859, Stop: 28692, Start Num: 52

Candidate Starts for Lilith\_43:

(23, 29039), (30, 28967), (Start: 52 @28859 has 161 MA's), (65, 28820), (75, 28739), (77, 28730),

Gene: Lilleskat\_65 Start: 40833, Stop: 40678, Start Num: 53

Candidate Starts for Lilleskat\_65:

(Start: 53 @40833 has 143 MA's), (67, 40791), (75, 40725), (77, 40716),

Gene: LindNT\_51 Start: 38772, Stop: 38942, Start Num: 45

Candidate Starts for LindNT\_51:

(Start: 45 @38772 has 114 MA's), (73, 38886), (75, 38895), (76, 38901), (86, 38925),

Gene: LionsBait\_39 Start: 29438, Stop: 29259, Start Num: 42

Candidate Starts for LionsBait\_39:

(Start: 42 @29438 has 27 MA's), (77, 29297),

Gene: LittleB\_37 Start: 28112, Stop: 27960, Start Num: 53

Candidate Starts for LittleB\_37:

(6, 28403), (Start: 40 @28154 has 3 MA's), (Start: 53 @28112 has 143 MA's), (60, 28091), (65, 28079), (73, 28013), (75, 28004), (76, 27998),

Gene: LittleCherry\_33 Start: 27149, Stop: 26991, Start Num: 51

Candidate Starts for LittleCherry\_33:

(12, 27431), (13, 27425), (Start: 40 @27191 has 3 MA's), (Start: 51 @27149 has 34 MA's), (73, 27044), (75, 27035), (76, 27029),

Gene: LittleGuy\_37 Start: 28010, Stop: 27858, Start Num: 53

Candidate Starts for LittleGuy\_37:

(6, 28301), (Start: 40 @28052 has 3 MA's), (Start: 53 @28010 has 143 MA's), (73, 27911), (75, 27902),

Gene: Llorens\_52 Start: 38684, Stop: 38854, Start Num: 45

Candidate Starts for Llorens\_52:

(Start: 45 @38684 has 114 MA's), (73, 38798), (75, 38807), (76, 38813), (86, 38837),

Gene: LochMonster\_37 Start: 28150, Stop: 27998, Start Num: 53

Candidate Starts for LochMonster\_37:

(6, 28441), (Start: 40 @28192 has 3 MA's), (Start: 53 @28150 has 143 MA's), (60, 28129), (65, 28117), (73, 28051), (75, 28042), (76, 28036),

Gene: Lokk\_62 Start: 40532, Stop: 40368, Start Num: 49

Candidate Starts for Lokk\_62:

(Start: 49 @40532 has 10 MA's), (77, 40406),

Gene: Lorenzo\_37 Start: 28111, Stop: 27959, Start Num: 53

Candidate Starts for Lorenzo\_37:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078), (73, 28012), (75, 28003),

Gene: Loser\_40 Start: 29024, Stop: 28866, Start Num: 53

Candidate Starts for Loser\_40:

(Start: 53 @29024 has 143 MA's), (66, 28985), (75, 28913), (77, 28904), (84, 28886),

Gene: Louie6\_41 Start: 28865, Stop: 28698, Start Num: 52

Candidate Starts for Louie6\_41:

(23, 29045), (30, 28973), (Start: 52 @28865 has 161 MA's), (81, 28730),

Gene: Lowa\_42 Start: 28858, Stop: 28691, Start Num: 52

Candidate Starts for Lowa\_42:

(23, 29038), (30, 28966), (Start: 52 @28858 has 161 MA's), (65, 28819), (75, 28738), (77, 28729),

Gene: Lucivia\_37 Start: 27481, Stop: 27326, Start Num: 50

Candidate Starts for Lucivia\_37:

(16, 27751), (27, 27628), (31, 27589), (Start: 50 @27481 has 38 MA's), (75, 27367), (76, 27361), (87, 27337),

Gene: LugYA\_45 Start: 28866, Stop: 28699, Start Num: 52

Candidate Starts for LugYA\_45:

(23, 29046), (30, 28974), (Start: 52 @28866 has 161 MA's), (65, 28827), (75, 28746), (77, 28737),

Gene: Lunahalos\_52 Start: 38684, Stop: 38854, Start Num: 45

Candidate Starts for Lunahalos\_52:

(Start: 45 @38684 has 114 MA's), (73, 38798), (75, 38807), (76, 38813), (86, 38837),

Gene: Lunsford\_38 Start: 28108, Stop: 27956, Start Num: 53

Candidate Starts for Lunsford\_38:

(6, 28399), (Start: 40 @28150 has 3 MA's), (Start: 53 @28108 has 143 MA's), (60, 28087), (65, 28075), (73, 28009), (75, 28000), (76, 27994),

Gene: MA5\_39 Start: 27872, Stop: 27711, Start Num: 52

Candidate Starts for MA5\_39:

(25, 28025), (30, 27980), (Start: 40 @27920 has 3 MA's), (Start: 52 @27872 has 161 MA's), (62, 27845), (66, 27833), (67, 27830), (78, 27749), (84, 27731), (86, 27728),

Gene: MK4\_39 Start: 27977, Stop: 27813, Start Num: 52

Candidate Starts for MK4\_39:

(Start: 40 @28025 has 3 MA's), (Start: 52 @27977 has 161 MA's), (62, 27950), (67, 27935), (75, 27860), (78, 27851), (84, 27833), (86, 27830),

Gene: MaCh\_37 Start: 27419, Stop: 27264, Start Num: 50

Candidate Starts for MaCh\_37:

(16, 27689), (27, 27566), (31, 27527), (Start: 50 @27419 has 38 MA's), (75, 27305), (76, 27299), (87, 27275),

Gene: Mabel\_37 Start: 27404, Stop: 27249, Start Num: 50

Candidate Starts for Mabel\_37:

(16, 27674), (27, 27551), (31, 27512), (Start: 50 @27404 has 38 MA's), (75, 27290), (76, 27284), (87, 27260),

Gene: MacKat\_47 Start: 34030, Stop: 34203, Start Num: 45

Candidate Starts for MacKat\_47:

(Start: 45 @34030 has 114 MA's), (73, 34144),

Gene: MacnCheese\_67 Start: 43739, Stop: 43909, Start Num: 47

Candidate Starts for MacnCheese\_67:

(Start: 43 @43730 has 1 MA's), (Start: 47 @43739 has 7 MA's), (56, 43763), (75, 43868), (76, 43874),

Gene: MadMarie\_42 Start: 28868, Stop: 28701, Start Num: 52

Candidate Starts for MadMarie\_42:

(23, 29048), (30, 28976), (Start: 52 @28868 has 161 MA's), (65, 28829), (75, 28748), (77, 28739),

Gene: Mainiac\_42 Start: 28859, Stop: 28692, Start Num: 52

Candidate Starts for Mainiac\_42:

(23, 29039), (30, 28967), (Start: 52 @28859 has 161 MA's), (65, 28820), (75, 28739), (77, 28730),

Gene: MajorMajor\_68 Start: 40626, Stop: 40474, Start Num: 53

Candidate Starts for MajorMajor\_68:

(9, 40950), (Start: 53 @40626 has 143 MA's), (73, 40524), (75, 40515), (84, 40494),

Gene: Malinsilva\_44 Start: 28858, Stop: 28691, Start Num: 52

Candidate Starts for Malinsilva\_44:

(23, 29038), (30, 28966), (Start: 52 @28858 has 161 MA's), (65, 28819), (75, 28738), (77, 28729),

Gene: Malthus\_3 Start: 478, Stop: 645, Start Num: 45

Candidate Starts for Malthus\_3:

(10, 172), (Start: 45 @478 has 114 MA's), (Start: 58 @505 has 1 MA's), (73, 592), (76, 607), (87, 634),

Gene: Maminiaina\_68 Start: 41013, Stop: 40855, Start Num: 53

Candidate Starts for Maminiaina\_68:

(22, 41214), (Start: 53 @41013 has 143 MA's), (67, 40971), (75, 40902), (77, 40893),

Gene: Manu\_42 Start: 28687, Stop: 28523, Start Num: 52

Candidate Starts for Manu\_42:

(Start: 52 @28687 has 161 MA's), (75, 28567), (76, 28561), (83, 28546), (85, 28540),

Gene: MarQuardt\_42 Start: 28867, Stop: 28700, Start Num: 52

Candidate Starts for MarQuardt\_42:

(23, 29047), (30, 28975), (Start: 52 @28867 has 161 MA's), (65, 28828), (75, 28747), (77, 28738),

Gene: Marchesa\_39 Start: 28426, Stop: 28265, Start Num: 52

Candidate Starts for Marchesa\_39:

(Start: 52 @28426 has 161 MA's), (75, 28312), (78, 28303),

Gene: Margo\_38 Start: 28549, Stop: 28382, Start Num: 52

Candidate Starts for Margo\_38:

(30, 28657), (Start: 52 @28549 has 161 MA's),

Gene: Marie\_42 Start: 28865, Stop: 28698, Start Num: 52

Candidate Starts for Marie\_42:

(23, 29045), (30, 28973), (Start: 52 @28865 has 161 MA's), (65, 28826), (75, 28745), (77, 28736),

Gene: Marius\_43 Start: 28684, Stop: 28523, Start Num: 52  
Candidate Starts for Marius\_43:  
(Start: 52 @28684 has 161 MA's), (75, 28567), (76, 28561), (83, 28546), (85, 28540),

Gene: MarysWell\_32 Start: 27197, Stop: 27039, Start Num: 51  
Candidate Starts for MarysWell\_32:  
(Start: 40 @27239 has 3 MA's), (Start: 51 @27197 has 34 MA's), (73, 27092), (75, 27083), (76, 27077),

Gene: Maverick\_37 Start: 28111, Stop: 27959, Start Num: 53  
Candidate Starts for Maverick\_37:  
(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078),  
(73, 28012), (75, 28003), (76, 27997),

Gene: Maxo\_38 Start: 28113, Stop: 27955, Start Num: 53  
Candidate Starts for Maxo\_38:  
(6, 28404), (Start: 40 @28155 has 3 MA's), (Start: 53 @28113 has 143 MA's), (73, 28008), (75, 27999),  
(76, 27993), (86, 27972),

Gene: Mayonnaise\_38 Start: 28111, Stop: 27959, Start Num: 53  
Candidate Starts for Mayonnaise\_38:  
(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078),  
(73, 28012), (75, 28003), (76, 27997),

Gene: Mazhar510\_37 Start: 28112, Stop: 27960, Start Num: 53  
Candidate Starts for Mazhar510\_37:  
(6, 28403), (Start: 40 @28154 has 3 MA's), (Start: 53 @28112 has 143 MA's), (60, 28091), (65, 28079),  
(73, 28013), (75, 28004), (76, 27998),

Gene: McGuire\_46 Start: 34548, Stop: 34423, Start Num: 52  
Candidate Starts for McGuire\_46:  
(Start: 52 @34548 has 161 MA's), (65, 34509), (71, 34449), (73, 34440),

Gene: McMater\_55 Start: 39264, Stop: 39437, Start Num: 45  
Candidate Starts for McMater\_55:  
(Start: 45 @39264 has 114 MA's), (Start: 52 @39276 has 161 MA's), (61, 39303), (73, 39378), (79,  
39402),

Gene: MeaningOfLife\_53 Start: 39439, Stop: 39609, Start Num: 45  
Candidate Starts for MeaningOfLife\_53:  
(Start: 45 @39439 has 114 MA's), (73, 39553), (75, 39562), (76, 39568), (86, 39592),

Gene: Medusa\_37 Start: 28110, Stop: 27958, Start Num: 53  
Candidate Starts for Medusa\_37:  
(6, 28401), (Start: 40 @28152 has 3 MA's), (Start: 53 @28110 has 143 MA's), (73, 28011), (75, 28002),

Gene: MeeZee\_37 Start: 28111, Stop: 27959, Start Num: 53  
Candidate Starts for MeeZee\_37:  
(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078),  
(73, 28012), (75, 28003), (76, 27997),

Gene: Megsy\_54 Start: 38837, Stop: 39010, Start Num: 45  
Candidate Starts for Megsy\_54:  
(Start: 45 @38837 has 114 MA's), (55, 38858), (73, 38951),

Gene: Melvin\_39 Start: 28109, Stop: 27957, Start Num: 53

Candidate Starts for Melvin\_39:

(6, 28400), (Start: 40 @28151 has 3 MA's), (Start: 53 @28109 has 143 MA's), (73, 28010), (75, 28001), (76, 27995),

Gene: Methuselah\_40 Start: 28860, Stop: 28693, Start Num: 52

Candidate Starts for Methuselah\_40:

(23, 29040), (30, 28968), (Start: 52 @28860 has 161 MA's), (81, 28725),

Gene: Micasa\_35 Start: 27470, Stop: 27312, Start Num: 51

Candidate Starts for Micasa\_35:

(12, 27758), (13, 27752), (Start: 40 @27512 has 3 MA's), (Start: 51 @27470 has 34 MA's), (73, 27365), (75, 27356), (76, 27350),

Gene: Microwolf\_42 Start: 28867, Stop: 28700, Start Num: 52

Candidate Starts for Microwolf\_42:

(23, 29047), (30, 28975), (Start: 52 @28867 has 161 MA's), (65, 28828), (75, 28747), (77, 28738),

Gene: Midas2\_33 Start: 27188, Stop: 27030, Start Num: 51

Candidate Starts for Midas2\_33:

(12, 27476), (13, 27470), (Start: 40 @27230 has 3 MA's), (Start: 51 @27188 has 34 MA's), (73, 27083), (75, 27074), (76, 27068),

Gene: Miko\_62 Start: 41310, Stop: 41146, Start Num: 49

Candidate Starts for Miko\_62:

(Start: 49 @41310 has 10 MA's), (77, 41184),

Gene: Milcery\_33 Start: 27153, Stop: 26995, Start Num: 51

Candidate Starts for Milcery\_33:

(12, 27435), (13, 27429), (Start: 40 @27195 has 3 MA's), (Start: 51 @27153 has 34 MA's), (73, 27048), (75, 27039), (76, 27033),

Gene: Millski\_36 Start: 28115, Stop: 27963, Start Num: 53

Candidate Starts for Millski\_36:

(6, 28406), (Start: 40 @28157 has 3 MA's), (Start: 53 @28115 has 143 MA's), (60, 28094), (65, 28082), (73, 28016), (75, 28007), (76, 28001),

Gene: Misomonster\_43 Start: 28863, Stop: 28696, Start Num: 52

Candidate Starts for Misomonster\_43:

(23, 29043), (30, 28971), (Start: 52 @28863 has 161 MA's), (81, 28728),

Gene: MissDaisy\_3 Start: 424, Stop: 591, Start Num: 45

Candidate Starts for MissDaisy\_3:

(7, 163), (37, 370), (Start: 45 @424 has 114 MA's), (68, 481), (73, 538), (76, 553), (86, 574), (87, 580),

Gene: MissWhite\_36 Start: 26565, Stop: 26407, Start Num: 46

Candidate Starts for MissWhite\_36:

(Start: 46 @26565 has 2 MA's), (75, 26451), (76, 26445),

Gene: Mitti\_3 Start: 478, Stop: 645, Start Num: 45

Candidate Starts for Mitti\_3:

(7, 163), (37, 424), (Start: 45 @478 has 114 MA's), (68, 535), (73, 592), (76, 607), (86, 628), (87, 634),

Gene: Molly\_46 Start: 34148, Stop: 34023, Start Num: 52

Candidate Starts for Molly\_46:

(Start: 52 @34148 has 161 MA's), (65, 34109), (71, 34049), (73, 34040),

Gene: MoneyMay\_42 Start: 28865, Stop: 28698, Start Num: 52

Candidate Starts for MoneyMay\_42:

(23, 29045), (30, 28973), (Start: 52 @28865 has 161 MA's), (65, 28826), (75, 28745), (77, 28736),

Gene: Moose\_45 Start: 34645, Stop: 34520, Start Num: 52

Candidate Starts for Moose\_45:

(Start: 52 @34645 has 161 MA's), (55, 34636), (59, 34624), (63, 34612), (71, 34546), (73, 34537),

Gene: Morrow\_38 Start: 28117, Stop: 27959, Start Num: 53

Candidate Starts for Morrow\_38:

(6, 28408), (Start: 40 @28159 has 3 MA's), (Start: 53 @28117 has 143 MA's), (73, 28012), (75, 28003), (76, 27997), (86, 27976),

Gene: Mryolo\_43 Start: 34123, Stop: 33995, Start Num: 52

Candidate Starts for Mryolo\_43:

(Start: 52 @34123 has 161 MA's), (55, 34114), (59, 34102), (63, 34090), (71, 34021), (73, 34012),

Gene: MuchMore\_45 Start: 28858, Stop: 28691, Start Num: 52

Candidate Starts for MuchMore\_45:

(23, 29038), (30, 28966), (Start: 52 @28858 has 161 MA's), (65, 28819), (75, 28738), (77, 28729),

Gene: Mulciber\_36 Start: 26983, Stop: 26828, Start Num: 50

Candidate Starts for Mulciber\_36:

(16, 27253), (27, 27130), (31, 27091), (Start: 50 @26983 has 38 MA's), (75, 26869), (76, 26863), (87, 26839),

Gene: Munch\_37 Start: 27432, Stop: 27277, Start Num: 50

Candidate Starts for Munch\_37:

(16, 27702), (27, 27579), (31, 27540), (Start: 50 @27432 has 38 MA's), (75, 27318), (76, 27312), (87, 27288),

Gene: Murucutumbu\_53 Start: 39542, Stop: 39712, Start Num: 45

Candidate Starts for Murucutumbu\_53:

(Start: 45 @39542 has 114 MA's), (73, 39656), (75, 39665),

Gene: Mynx\_53 Start: 38888, Stop: 39058, Start Num: 45

Candidate Starts for Mynx\_53:

(Start: 45 @38888 has 114 MA's), (73, 39002), (75, 39011), (76, 39017), (86, 39041),

Gene: Myxus\_69 Start: 41049, Stop: 40894, Start Num: 53

Candidate Starts for Myxus\_69:

(9, 41373), (Start: 53 @41049 has 143 MA's), (67, 41007), (75, 40941), (77, 40932),

Gene: Naira\_47 Start: 36661, Stop: 36533, Start Num: 52

Candidate Starts for Naira\_47:

(Start: 52 @36661 has 161 MA's), (55, 36652), (59, 36640), (63, 36628), (71, 36559), (73, 36550),

Gene: Naji\_41 Start: 28135, Stop: 27983, Start Num: 50

Candidate Starts for Naji\_41:

(15, 28402), (19, 28360), (Start: 50 @28135 has 38 MA's), (73, 28033), (75, 28024), (86, 28000),

Gene: Nebs\_38 Start: 28111, Stop: 27953, Start Num: 53

Candidate Starts for Nebs\_38:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (73, 28006), (75, 27997), (76, 27991), (86, 27970),

Gene: Nemo27\_37 Start: 28110, Stop: 27958, Start Num: 53

Candidate Starts for Nemo27\_37:

(6, 28401), (Start: 40 @28152 has 3 MA's), (Start: 53 @28110 has 143 MA's), (60, 28089), (65, 28077), (73, 28011), (75, 28002), (76, 27996),

Gene: Nhonho\_46 Start: 35237, Stop: 35112, Start Num: 52

Candidate Starts for Nhonho\_46:

(Start: 52 @35237 has 161 MA's), (65, 35198), (71, 35138), (73, 35129),

Gene: Niklas\_55 Start: 39325, Stop: 39498, Start Num: 45

Candidate Starts for Niklas\_55:

(Start: 45 @39325 has 114 MA's), (Start: 52 @39337 has 161 MA's), (61, 39364), (73, 39439), (79, 39463),

Gene: Noella\_38 Start: 28524, Stop: 28357, Start Num: 52

Candidate Starts for Noella\_38:

(30, 28632), (Start: 52 @28524 has 161 MA's),

Gene: Noelle\_37 Start: 28170, Stop: 28018, Start Num: 53

Candidate Starts for Noelle\_37:

(Start: 40 @28212 has 3 MA's), (Start: 53 @28170 has 143 MA's), (73, 28071), (75, 28062),

Gene: Norbert\_37 Start: 28523, Stop: 28356, Start Num: 52

Candidate Starts for Norbert\_37:

(30, 28631), (Start: 52 @28523 has 161 MA's),

Gene: NorthStar\_36 Start: 28111, Stop: 27959, Start Num: 53

Candidate Starts for NorthStar\_36:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078), (73, 28012), (75, 28003), (76, 27997),

Gene: NotAPhaseMom\_37 Start: 28115, Stop: 27963, Start Num: 53

Candidate Starts for NotAPhaseMom\_37:

(6, 28406), (Start: 40 @28157 has 3 MA's), (Start: 53 @28115 has 143 MA's), (60, 28094), (65, 28082), (73, 28016), (75, 28007), (76, 28001),

Gene: Nyxis\_37 Start: 28004, Stop: 27852, Start Num: 53

Candidate Starts for Nyxis\_37:

(6, 28295), (Start: 40 @28046 has 3 MA's), (Start: 53 @28004 has 143 MA's), (73, 27905), (75, 27896),

Gene: OKCentral2016\_37 Start: 27782, Stop: 27624, Start Num: 48

Candidate Starts for OKCentral2016\_37:

(Start: 48 @27782 has 9 MA's), (76, 27662),

Gene: OKaNui\_38 Start: 28164, Stop: 28012, Start Num: 53

Candidate Starts for OKaNui\_38:

(6, 28455), (Start: 40 @28206 has 3 MA's), (Start: 53 @28164 has 143 MA's), (73, 28065), (75, 28056), (76, 28050),

Gene: Obama12\_38 Start: 28415, Stop: 28257, Start Num: 53

Candidate Starts for Obama12\_38:

(Start: 40 @28457 has 3 MA's), (Start: 53 @28415 has 143 MA's), (73, 28310), (75, 28301), (76, 28295), (86, 28274),

Gene: Odin\_37 Start: 26764, Stop: 26603, Start Num: 51

Candidate Starts for Odin\_37:

(Start: 51 @26764 has 34 MA's), (74, 26656), (76, 26644), (87, 26614), (88, 26611),

Gene: Ohfah\_38 Start: 28111, Stop: 27953, Start Num: 53

Candidate Starts for Ohfah\_38:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (73, 28006), (75, 27997), (76, 27991), (86, 27970),

Gene: OlanP\_41 Start: 28869, Stop: 28705, Start Num: 52

Candidate Starts for OlanP\_41:

(Start: 52 @28869 has 161 MA's), (75, 28752), (77, 28743),

Gene: Ollie\_42 Start: 28737, Stop: 28570, Start Num: 52

Candidate Starts for Ollie\_42:

(23, 28917), (30, 28845), (Start: 52 @28737 has 161 MA's), (65, 28698), (75, 28617), (77, 28608),

Gene: OmniCritical\_3 Start: 478, Stop: 645, Start Num: 45

Candidate Starts for OmniCritical\_3:

(7, 163), (37, 424), (Start: 45 @478 has 114 MA's), (68, 535), (73, 592), (76, 607), (87, 634),

Gene: Omnicron\_36 Start: 29081, Stop: 29239, Start Num: 45

Candidate Starts for Omnicron\_36:

(Start: 45 @29081 has 114 MA's), (63, 29114), (73, 29186), (76, 29201), (87, 29228),

Gene: Onglai\_67 Start: 39253, Stop: 39098, Start Num: 53

Candidate Starts for Onglai\_67:

(9, 39577), (Start: 53 @39253 has 143 MA's), (67, 39211), (75, 39145), (77, 39136),

Gene: Orange\_36 Start: 26981, Stop: 26826, Start Num: 50

Candidate Starts for Orange\_36:

(16, 27251), (27, 27128), (31, 27089), (Start: 50 @26981 has 38 MA's), (75, 26867), (76, 26861), (87, 26837),

Gene: P28Green\_43 Start: 28868, Stop: 28701, Start Num: 52

Candidate Starts for P28Green\_43:

(23, 29048), (30, 28976), (Start: 52 @28868 has 161 MA's), (65, 28829), (75, 28748), (77, 28739),

Gene: PGHhamlin\_44 Start: 28858, Stop: 28691, Start Num: 52

Candidate Starts for PGHhamlin\_44:

(23, 29038), (30, 28966), (Start: 52 @28858 has 161 MA's), (65, 28819), (75, 28738), (77, 28729),

Gene: PSullivan\_45 Start: 34113, Stop: 33988, Start Num: 52

Candidate Starts for PSullivan\_45:



(Start: 52 @34113 has 161 MA's), (65, 34074), (71, 34014), (73, 34005),

Gene: PackMan\_68 Start: 40924, Stop: 40769, Start Num: 53

Candidate Starts for PackMan\_68:

(9, 41248), (Start: 53 @40924 has 143 MA's), (67, 40882), (75, 40816), (77, 40807),

Gene: Padfoot\_52 Start: 38881, Stop: 39051, Start Num: 45

Candidate Starts for Padfoot\_52:

(Start: 45 @38881 has 114 MA's), (73, 38995), (75, 39004), (76, 39010), (86, 39034),

Gene: Padpat\_54 Start: 38563, Stop: 38733, Start Num: 45

Candidate Starts for Padpat\_54:

(Start: 45 @38563 has 114 MA's), (73, 38677), (75, 38686), (76, 38692), (86, 38716),

Gene: Palestino\_36 Start: 28111, Stop: 27959, Start Num: 53

Candidate Starts for Palestino\_36:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078), (73, 28012), (75, 28003), (76, 27997),

Gene: Panamaxus\_36 Start: 28523, Stop: 28356, Start Num: 52

Candidate Starts for Panamaxus\_36:

(30, 28631), (Start: 52 @28523 has 161 MA's),

Gene: PascalRango\_46 Start: 34612, Stop: 34487, Start Num: 52

Candidate Starts for PascalRango\_46:

(Start: 52 @34612 has 161 MA's), (65, 34573), (71, 34513), (73, 34504),

Gene: Patt\_3 Start: 478, Stop: 645, Start Num: 45

Candidate Starts for Patt\_3:

(7, 163), (37, 424), (Start: 45 @478 has 114 MA's), (68, 535), (73, 592), (76, 607), (86, 628), (87, 634),

Gene: PattyP\_46 Start: 34495, Stop: 34370, Start Num: 52

Candidate Starts for PattyP\_46:

(Start: 52 @34495 has 161 MA's), (65, 34456), (71, 34396), (73, 34387),

Gene: Pawn\_42 Start: 28691, Stop: 28524, Start Num: 52

Candidate Starts for Pawn\_42:

(Start: 52 @28691 has 161 MA's), (75, 28568), (76, 28562), (83, 28547), (85, 28541),

Gene: Peaches\_37 Start: 28110, Stop: 27958, Start Num: 53

Candidate Starts for Peaches\_37:

(6, 28401), (Start: 40 @28152 has 3 MA's), (Start: 53 @28110 has 143 MA's), (60, 28089), (65, 28077), (73, 28011), (75, 28002), (76, 27996),

Gene: Peanam\_55 Start: 39283, Stop: 39456, Start Num: 45

Candidate Starts for Peanam\_55:

(Start: 45 @39283 has 114 MA's), (Start: 52 @39295 has 161 MA's), (61, 39322), (73, 39397), (79, 39421),

Gene: Peel\_52 Start: 38686, Stop: 38856, Start Num: 45

Candidate Starts for Peel\_52:

(Start: 45 @38686 has 114 MA's), (73, 38800), (75, 38809), (76, 38815), (86, 38839),

Gene: Pembroke\_42 Start: 28867, Stop: 28700, Start Num: 52  
Candidate Starts for Pembroke\_42:  
(23, 29047), (30, 28975), (Start: 52 @28867 has 161 MA's), (65, 28828), (75, 28747), (77, 28738),

Gene: Penny1\_43 Start: 28869, Stop: 28699, Start Num: 52  
Candidate Starts for Penny1\_43:  
(23, 29049), (30, 28977), (Start: 52 @28869 has 161 MA's), (65, 28830), (75, 28746), (77, 28737),

Gene: Peregrin\_249 Start: 119772, Stop: 119921, Start Num: 52  
Candidate Starts for Peregrin\_249:  
(Start: 49 @119766 has 10 MA's), (Start: 52 @119772 has 161 MA's), (63, 119805), (86, 119904),

Gene: PeterPeter\_37 Start: 28111, Stop: 27959, Start Num: 53  
Candidate Starts for PeterPeter\_37:  
(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078),  
(73, 28012), (75, 28003), (76, 27997),

Gene: Petersenfast\_35 Start: 26988, Stop: 26833, Start Num: 50  
Candidate Starts for Petersenfast\_35:  
(16, 27258), (27, 27135), (31, 27096), (Start: 50 @26988 has 38 MA's), (75, 26874), (76, 26868), (87,  
26844),

Gene: Petp2012\_46 Start: 35107, Stop: 34982, Start Num: 52  
Candidate Starts for Petp2012\_46:  
(Start: 52 @35107 has 161 MA's), (65, 35068), (71, 35008), (73, 34999),

Gene: Ph8s\_40 Start: 27348, Stop: 27193, Start Num: 51  
Candidate Starts for Ph8s\_40:  
(Start: 51 @27348 has 34 MA's), (75, 27240), (76, 27234), (84, 27213), (87, 27204), (88, 27201),

Gene: Phacado\_37 Start: 28110, Stop: 27958, Start Num: 53  
Candidate Starts for Phacado\_37:  
(6, 28401), (Start: 40 @28152 has 3 MA's), (Start: 53 @28110 has 143 MA's), (60, 28089), (65, 28077),  
(73, 28011), (75, 28002), (76, 27996),

Gene: Phaeder\_69 Start: 40924, Stop: 40769, Start Num: 53  
Candidate Starts for Phaeder\_69:  
(9, 41248), (Start: 53 @40924 has 143 MA's), (67, 40882), (75, 40816), (77, 40807),

Gene: Phantastic\_39 Start: 28008, Stop: 27844, Start Num: 52  
Candidate Starts for Phantastic\_39:  
(Start: 40 @28056 has 3 MA's), (Start: 52 @28008 has 161 MA's), (62, 27981), (67, 27966), (73,  
27900), (75, 27891), (78, 27882), (84, 27864),

Gene: Pharb\_64 Start: 42469, Stop: 42639, Start Num: 47  
Candidate Starts for Pharb\_64:  
(Start: 43 @42460 has 1 MA's), (Start: 47 @42469 has 7 MA's), (75, 42598), (76, 42604),

Gene: Phelipe\_38 Start: 28111, Stop: 27959, Start Num: 53  
Candidate Starts for Phelipe\_38:  
(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (73, 28012), (75, 28003),

Gene: PherrisBueller\_45 Start: 34086, Stop: 33958, Start Num: 52

Candidate Starts for PherrisBueller\_45:

(Start: 52 @34086 has 161 MA's), (55, 34077), (59, 34065), (63, 34053), (71, 33984), (73, 33975),

Gene: Phighter1804\_37 Start: 28153, Stop: 28001, Start Num: 53

Candidate Starts for Phighter1804\_37:

(6, 28444), (Start: 40 @28195 has 3 MA's), (Start: 53 @28153 has 143 MA's), (60, 28132), (65, 28120), (73, 28054), (75, 28045), (76, 28039),

Gene: PhishRPhriends\_40 Start: 27865, Stop: 27701, Start Num: 52

Candidate Starts for PhishRPhriends\_40:

(Start: 52 @27865 has 161 MA's), (75, 27745), (76, 27739), (83, 27724), (85, 27718),

Gene: Phlorence\_34 Start: 27418, Stop: 27260, Start Num: 51

Candidate Starts for Phlorence\_34:

(21, 27610), (Start: 40 @27460 has 3 MA's), (Start: 51 @27418 has 34 MA's), (73, 27313), (75, 27304), (76, 27298),

Gene: Phoebe\_43 Start: 28858, Stop: 28691, Start Num: 52

Candidate Starts for Phoebe\_43:

(23, 29038), (30, 28966), (Start: 52 @28858 has 161 MA's), (65, 28819), (75, 28738), (77, 28729),

Gene: Phontbonne\_37 Start: 28005, Stop: 27853, Start Num: 53

Candidate Starts for Phontbonne\_37:

(6, 28296), (Start: 40 @28047 has 3 MA's), (Start: 53 @28005 has 143 MA's), (73, 27906), (75, 27897),

Gene: Phoxy\_42 Start: 28861, Stop: 28694, Start Num: 52

Candidate Starts for Phoxy\_42:

(23, 29041), (30, 28969), (Start: 52 @28861 has 161 MA's), (81, 28726),

Gene: Phrank\_56 Start: 38309, Stop: 38482, Start Num: 45

Candidate Starts for Phrank\_56:

(17, 38078), (20, 38105), (26, 38162), (Start: 45 @38309 has 114 MA's), (59, 38342), (75, 38435), (79, 38450),

Gene: Phranny\_43 Start: 28673, Stop: 28509, Start Num: 52

Candidate Starts for Phranny\_43:

(Start: 52 @28673 has 161 MA's), (75, 28553), (76, 28547), (83, 28532), (85, 28526),

Gene: Piatt\_52 Start: 38881, Stop: 39051, Start Num: 45

Candidate Starts for Piatt\_52:

(Start: 45 @38881 has 114 MA's), (73, 38995), (75, 39004), (76, 39010), (86, 39034),

Gene: PickleBack\_34 Start: 27132, Stop: 26974, Start Num: 51

Candidate Starts for PickleBack\_34:

(21, 27324), (Start: 40 @27174 has 3 MA's), (Start: 51 @27132 has 34 MA's), (73, 27027), (75, 27018), (76, 27012),

Gene: PinkPlastic\_44 Start: 34317, Stop: 34192, Start Num: 52

Candidate Starts for PinkPlastic\_44:

(Start: 52 @34317 has 161 MA's), (65, 34278), (71, 34218), (73, 34209),

Gene: Pistachio\_40 Start: 27915, Stop: 27754, Start Num: 52

Candidate Starts for Pistachio\_40:

(Start: 52 @27915 has 161 MA's), (75, 27801), (78, 27792),

Gene: Pita2\_48 Start: 35610, Stop: 35485, Start Num: 52

Candidate Starts for Pita2\_48:

(Start: 52 @35610 has 161 MA's), (65, 35571), (71, 35511), (73, 35502),

Gene: Pixie\_64 Start: 42642, Stop: 42812, Start Num: 47

Candidate Starts for Pixie\_64:

(Start: 43 @42633 has 1 MA's), (Start: 47 @42642 has 7 MA's), (56, 42666), (75, 42771), (76, 42777),

Gene: Pocahontas\_38 Start: 28520, Stop: 28353, Start Num: 52

Candidate Starts for Pocahontas\_38:

(30, 28628), (Start: 52 @28520 has 161 MA's),

Gene: Pokerus\_51 Start: 38616, Stop: 38786, Start Num: 45

Candidate Starts for Pokerus\_51:

(Start: 45 @38616 has 114 MA's), (73, 38730), (75, 38739), (76, 38745), (86, 38769),

Gene: Polymorphads\_38 Start: 28104, Stop: 27952, Start Num: 53

Candidate Starts for Polymorphads\_38:

(6, 28395), (Start: 40 @28146 has 3 MA's), (Start: 53 @28104 has 143 MA's), (73, 28005), (75, 27996), (76, 27990),

Gene: Pomar16\_41 Start: 28176, Stop: 28024, Start Num: 50

Candidate Starts for Pomar16\_41:

(15, 28443), (19, 28401), (Start: 50 @28176 has 38 MA's), (73, 28074), (75, 28065), (86, 28041),

Gene: Popcicle\_38 Start: 28520, Stop: 28353, Start Num: 52

Candidate Starts for Popcicle\_38:

(30, 28628), (Start: 52 @28520 has 161 MA's),

Gene: PotatoSplit\_44 Start: 28869, Stop: 28699, Start Num: 52

Candidate Starts for PotatoSplit\_44:

(23, 29049), (28, 29001), (30, 28977), (Start: 52 @28869 has 161 MA's), (65, 28830), (75, 28746), (77, 28737),

Gene: Power\_37 Start: 28131, Stop: 27958, Start Num: 42

Candidate Starts for Power\_37:

(Start: 42 @28131 has 27 MA's), (57, 28107), (59, 28101), (75, 28005),

Gene: Prinashe11\_34 Start: 27116, Stop: 26958, Start Num: 51

Candidate Starts for Prinashe11\_34:

(12, 27398), (13, 27392), (Start: 40 @27158 has 3 MA's), (Start: 51 @27116 has 34 MA's), (73, 27011), (75, 27002), (76, 26996),

Gene: Prithvi\_53 Start: 38772, Stop: 38942, Start Num: 45

Candidate Starts for Prithvi\_53:

(Start: 45 @38772 has 114 MA's), (73, 38886), (75, 38895), (76, 38901), (86, 38925),

Gene: Priya\_67 Start: 40720, Stop: 40565, Start Num: 53

Candidate Starts for Priya\_67:

(Start: 53 @40720 has 143 MA's), (67, 40678), (75, 40612), (77, 40603),

Gene: ProMouse\_46 Start: 35318, Stop: 35193, Start Num: 52  
Candidate Starts for ProMouse\_46:  
(Start: 52 @35318 has 161 MA's), (65, 35279), (71, 35219), (73, 35210),

Gene: Pumbaa\_37 Start: 28056, Stop: 27904, Start Num: 53  
Candidate Starts for Pumbaa\_37:  
(6, 28347), (Start: 40 @28098 has 3 MA's), (Start: 53 @28056 has 143 MA's), (73, 27957), (75, 27948),

Gene: Puppy\_40 Start: 27988, Stop: 27824, Start Num: 52  
Candidate Starts for Puppy\_40:  
(Start: 52 @27988 has 161 MA's), (62, 27961), (67, 27946), (75, 27871), (78, 27862),

Gene: PurpleHaze\_42 Start: 28686, Stop: 28522, Start Num: 52  
Candidate Starts for PurpleHaze\_42:  
(Start: 52 @28686 has 161 MA's), (75, 28566), (76, 28560), (83, 28545), (85, 28539),

Gene: Qobbit\_67 Start: 40682, Stop: 40527, Start Num: 53  
Candidate Starts for Qobbit\_67:  
(Start: 53 @40682 has 143 MA's), (67, 40640), (75, 40574), (77, 40565),

Gene: QueenB2\_66 Start: 41649, Stop: 41476, Start Num: 49  
Candidate Starts for QueenB2\_66:  
(Start: 49 @41649 has 10 MA's), (75, 41523), (77, 41514),

Gene: QueenBeesly\_38 Start: 28078, Stop: 27905, Start Num: 42  
Candidate Starts for QueenBeesly\_38:  
(Start: 42 @28078 has 27 MA's), (57, 28054), (59, 28048), (75, 27952),

Gene: QuincyRose\_51 Start: 38945, Stop: 39115, Start Num: 45  
Candidate Starts for QuincyRose\_51:  
(Start: 45 @38945 has 114 MA's), (73, 39059), (75, 39068), (76, 39074), (86, 39098),

Gene: QuinnKiro\_37 Start: 28523, Stop: 28356, Start Num: 52  
Candidate Starts for QuinnKiro\_37:  
(30, 28631), (Start: 52 @28523 has 161 MA's),

Gene: Quokka\_68 Start: 40626, Stop: 40474, Start Num: 53  
Candidate Starts for Quokka\_68:  
(9, 40950), (Start: 53 @40626 has 143 MA's), (73, 40524), (75, 40515), (84, 40494),

Gene: Rachaly\_64 Start: 41455, Stop: 41291, Start Num: 49  
Candidate Starts for Rachaly\_64:  
(Start: 49 @41455 has 10 MA's), (77, 41329),

Gene: Rahalelujah\_67 Start: 40476, Stop: 40318, Start Num: 53  
Candidate Starts for Rahalelujah\_67:  
(1, 41289), (2, 41157), (Start: 53 @40476 has 143 MA's), (67, 40434), (75, 40365), (87, 40329),

Gene: Raid\_46 Start: 34895, Stop: 34770, Start Num: 52  
Candidate Starts for Raid\_46:  
(Start: 52 @34895 has 161 MA's), (65, 34856), (71, 34796), (73, 34787),

Gene: Ramen\_53 Start: 38571, Stop: 38741, Start Num: 45

Candidate Starts for Ramen\_53:

(Start: 45 @38571 has 114 MA's), (73, 38685), (75, 38694), (76, 38700), (86, 38724),

Gene: Rando14\_36 Start: 29035, Stop: 29193, Start Num: 45

Candidate Starts for Rando14\_36:

(Start: 45 @29035 has 114 MA's), (63, 29068), (64, 29071), (73, 29140), (76, 29155), (87, 29182),

Gene: Rapunzel97\_53 Start: 38567, Stop: 38737, Start Num: 45

Candidate Starts for Rapunzel97\_53:

(Start: 45 @38567 has 114 MA's), (73, 38681), (75, 38690), (76, 38696), (86, 38720),

Gene: Reba\_42 Start: 28346, Stop: 28182, Start Num: 52

Candidate Starts for Reba\_42:

(Start: 52 @28346 has 161 MA's), (75, 28226), (76, 28220), (83, 28205), (85, 28199),

Gene: Rebeuca\_38 Start: 28448, Stop: 28290, Start Num: 48

Candidate Starts for Rebeuca\_38:

(Start: 48 @28448 has 9 MA's), (76, 28328),

Gene: RedRock\_40 Start: 29240, Stop: 29082, Start Num: 53

Candidate Starts for RedRock\_40:

(Start: 53 @29240 has 143 MA's), (66, 29201), (75, 29129), (77, 29120), (84, 29102),

Gene: Relief\_36 Start: 28111, Stop: 27959, Start Num: 53

Candidate Starts for Relief\_36:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078), (73, 28012), (75, 28003), (76, 27997),

Gene: Reptar3000\_3 Start: 477, Stop: 644, Start Num: 45

Candidate Starts for Reptar3000\_3:

(7, 162), (37, 423), (Start: 45 @477 has 114 MA's), (68, 534), (73, 591), (76, 606), (86, 627), (87, 633),

Gene: ResDef\_38 Start: 28523, Stop: 28356, Start Num: 52

Candidate Starts for ResDef\_38:

(30, 28631), (Start: 52 @28523 has 161 MA's),

Gene: Retro23\_68 Start: 41863, Stop: 41690, Start Num: 49

Candidate Starts for Retro23\_68:

(Start: 49 @41863 has 10 MA's), (75, 41737), (77, 41728),

Gene: RhynO\_38 Start: 27966, Stop: 27805, Start Num: 51

Candidate Starts for RhynO\_38:

(Start: 48 @27969 has 9 MA's), (Start: 51 @27966 has 34 MA's), (73, 27858), (75, 27849), (76, 27843),

Gene: Richo\_55 Start: 39264, Stop: 39437, Start Num: 45

Candidate Starts for Richo\_55:

(Start: 45 @39264 has 114 MA's), (Start: 52 @39276 has 161 MA's), (61, 39303), (73, 39378), (79, 39402),

Gene: RidgeCB\_45 Start: 34456, Stop: 34328, Start Num: 52

Candidate Starts for RidgeCB\_45:

(Start: 52 @34456 has 161 MA's), (55, 34447), (59, 34435), (63, 34423), (71, 34354), (73, 34345),

Gene: Rockstar\_39 Start: 27984, Stop: 27820, Start Num: 52

Candidate Starts for Rockstar\_39:

(Start: 40 @28032 has 3 MA's), (Start: 52 @27984 has 161 MA's), (62, 27957), (67, 27942), (75, 27867), (78, 27858), (84, 27840), (86, 27837),

Gene: Romney\_37 Start: 28111, Stop: 27959, Start Num: 53

Candidate Starts for Romney\_37:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (73, 28012), (75, 28003), (76, 27997),

Gene: Roosevelt\_36 Start: 28113, Stop: 27961, Start Num: 53

Candidate Starts for Roosevelt\_36:

(6, 28404), (Start: 40 @28155 has 3 MA's), (Start: 53 @28113 has 143 MA's), (60, 28092), (65, 28080), (73, 28014), (75, 28005), (76, 27999),

Gene: Rosa24\_37 Start: 28145, Stop: 27987, Start Num: 53

Candidate Starts for Rosa24\_37:

(6, 28436), (Start: 40 @28187 has 3 MA's), (Start: 53 @28145 has 143 MA's), (73, 28040), (75, 28031), (76, 28025),

Gene: Rosmarinus\_52 Start: 38672, Stop: 38842, Start Num: 45

Candidate Starts for Rosmarinus\_52:

(Start: 45 @38672 has 114 MA's), (73, 38786), (75, 38795), (76, 38801), (86, 38825),

Gene: Rowdy\_41 Start: 27874, Stop: 27713, Start Num: 51

Candidate Starts for Rowdy\_41:

(Start: 48 @27877 has 9 MA's), (Start: 51 @27874 has 34 MA's), (73, 27766), (75, 27757),

Gene: Ruin\_37 Start: 28107, Stop: 27955, Start Num: 53

Candidate Starts for Ruin\_37:

(6, 28398), (Start: 40 @28149 has 3 MA's), (Start: 53 @28107 has 143 MA's), (60, 28086), (65, 28074), (73, 28008), (75, 27999), (76, 27993),

Gene: Rummer\_41 Start: 28864, Stop: 28694, Start Num: 52

Candidate Starts for Rummer\_41:

(23, 29044), (30, 28972), (Start: 52 @28864 has 161 MA's), (81, 28726),

Gene: Ruthiejr\_3 Start: 478, Stop: 645, Start Num: 45

Candidate Starts for Ruthiejr\_3:

(10, 172), (Start: 45 @478 has 114 MA's), (Start: 58 @505 has 1 MA's), (73, 592), (76, 607), (87, 634),

Gene: Sabertooth\_37 Start: 28110, Stop: 27958, Start Num: 53

Candidate Starts for Sabertooth\_37:

(6, 28401), (Start: 40 @28152 has 3 MA's), (Start: 53 @28110 has 143 MA's), (60, 28089), (65, 28077), (73, 28011), (75, 28002), (76, 27996),

Gene: Sabia\_42 Start: 28859, Stop: 28692, Start Num: 52

Candidate Starts for Sabia\_42:

(23, 29039), (30, 28967), (Start: 52 @28859 has 161 MA's), (65, 28820), (75, 28739), (77, 28730),

Gene: Sabinator\_41 Start: 28864, Stop: 28697, Start Num: 52

Candidate Starts for Sabinator\_41:

(23, 29044), (30, 28972), (Start: 52 @28864 has 161 MA's), (65, 28825), (75, 28744), (77, 28735),

Gene: Sachima\_65 Start: 40950, Stop: 40795, Start Num: 53  
Candidate Starts for Sachima\_65:  
(Start: 53 @40950 has 143 MA's), (67, 40908), (75, 40842), (77, 40833),

Gene: SamuelLPlaqson\_53 Start: 39464, Stop: 39634, Start Num: 45  
Candidate Starts for SamuelLPlaqson\_53:  
(Start: 45 @39464 has 114 MA's), (73, 39578), (79, 39602),

Gene: SaturnRing\_39 Start: 28368, Stop: 28207, Start Num: 52  
Candidate Starts for SaturnRing\_39:  
(Start: 52 @28368 has 161 MA's), (75, 28254), (78, 28245),

Gene: Scamp\_37 Start: 28113, Stop: 27961, Start Num: 53  
Candidate Starts for Scamp\_37:  
(6, 28404), (Start: 40 @28155 has 3 MA's), (Start: 53 @28113 has 143 MA's), (60, 28092), (73, 28014),  
(75, 28005),

Gene: Scout\_39 Start: 27675, Stop: 27514, Start Num: 52  
Candidate Starts for Scout\_39:  
(Start: 52 @27675 has 161 MA's), (75, 27561), (78, 27552),

Gene: Scowl\_46 Start: 35390, Stop: 35262, Start Num: 52  
Candidate Starts for Scowl\_46:  
(Start: 52 @35390 has 161 MA's), (55, 35381), (59, 35369), (63, 35357), (71, 35288), (73, 35279),

Gene: SemperFi\_39 Start: 28346, Stop: 28173, Start Num: 42  
Candidate Starts for SemperFi\_39:  
(Start: 42 @28346 has 27 MA's), (57, 28322), (59, 28316), (75, 28220),

Gene: SenorClean\_36 Start: 28111, Stop: 27959, Start Num: 53  
Candidate Starts for SenorClean\_36:  
(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078),  
(73, 28012), (75, 28003), (76, 27997),

Gene: Serenity\_70 Start: 40850, Stop: 40698, Start Num: 53  
Candidate Starts for Serenity\_70:  
(9, 41174), (Start: 53 @40850 has 143 MA's), (73, 40748), (75, 40739), (84, 40718),

Gene: Shadow1\_58 Start: 39153, Stop: 39326, Start Num: 45  
Candidate Starts for Shadow1\_58:  
(Start: 45 @39153 has 114 MA's), (75, 39279), (79, 39294),

Gene: Shaka\_37 Start: 28111, Stop: 27959, Start Num: 53  
Candidate Starts for Shaka\_37:  
(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078),  
(73, 28012), (75, 28003), (76, 27997),

Gene: Sham4\_36 Start: 26987, Stop: 26832, Start Num: 50  
Candidate Starts for Sham4\_36:  
(16, 27257), (27, 27134), (31, 27095), (Start: 50 @26987 has 38 MA's), (75, 26873), (76, 26867), (87,  
26843),



Gene: Shaobing\_55 Start: 39301, Stop: 39474, Start Num: 45  
Candidate Starts for Shaobing\_55:  
(Start: 45 @39301 has 114 MA's), (Start: 52 @39313 has 161 MA's), (61, 39340), (73, 39415), (79, 39439),

Gene: Shapes\_41 Start: 27874, Stop: 27713, Start Num: 51  
Candidate Starts for Shapes\_41:  
(Start: 48 @27877 has 9 MA's), (Start: 51 @27874 has 34 MA's), (73, 27766), (75, 27757),

Gene: ShedlockHolmes\_66 Start: 43161, Stop: 43331, Start Num: 47  
Candidate Starts for ShedlockHolmes\_66:  
(Start: 43 @43152 has 1 MA's), (Start: 47 @43161 has 7 MA's), (56, 43185), (75, 43290), (76, 43296),

Gene: SheldonCooper\_39 Start: 28414, Stop: 28256, Start Num: 53  
Candidate Starts for SheldonCooper\_39:  
(Start: 40 @28456 has 3 MA's), (Start: 53 @28414 has 143 MA's), (73, 28309), (75, 28300), (76, 28294), (86, 28273),

Gene: ShiaSurprise\_53 Start: 38881, Stop: 39051, Start Num: 45  
Candidate Starts for ShiaSurprise\_53:  
(Start: 45 @38881 has 114 MA's), (73, 38995), (75, 39004), (76, 39010), (86, 39034),

Gene: Sibs6\_46 Start: 33745, Stop: 33620, Start Num: 52  
Candidate Starts for Sibs6\_46:  
(Start: 52 @33745 has 161 MA's), (65, 33706), (71, 33646), (73, 33637),

Gene: SkiPole\_48 Start: 35478, Stop: 35353, Start Num: 52  
Candidate Starts for SkiPole\_48:  
(Start: 52 @35478 has 161 MA's), (65, 35439), (71, 35379), (73, 35370),

Gene: Skipitt\_36 Start: 28108, Stop: 27956, Start Num: 53  
Candidate Starts for Skipitt\_36:  
(6, 28399), (Start: 40 @28150 has 3 MA's), (Start: 53 @28108 has 143 MA's), (60, 28087), (65, 28075), (73, 28009), (75, 28000), (76, 27994),

Gene: Slarp\_3 Start: 478, Stop: 645, Start Num: 45  
Candidate Starts for Slarp\_3:  
(7, 163), (37, 424), (Start: 45 @478 has 114 MA's), (68, 535), (73, 592), (76, 607), (86, 628), (87, 634),

Gene: Slimphazie\_52 Start: 38567, Stop: 38737, Start Num: 45  
Candidate Starts for Slimphazie\_52:  
(Start: 45 @38567 has 114 MA's), (73, 38681), (75, 38690), (76, 38696), (86, 38720),

Gene: Smeagan\_41 Start: 28785, Stop: 28612, Start Num: 42  
Candidate Starts for Smeagan\_41:  
(Start: 42 @28785 has 27 MA's), (59, 28755), (68, 28725),

Gene: SnapTap\_38 Start: 28157, Stop: 27984, Start Num: 42  
Candidate Starts for SnapTap\_38:  
(Start: 42 @28157 has 27 MA's), (57, 28133), (59, 28127), (75, 28031),

Gene: Snape\_36 Start: 26985, Stop: 26830, Start Num: 50  
Candidate Starts for Snape\_36:

(16, 27255), (27, 27132), (31, 27093), (Start: 50 @26985 has 38 MA's), (75, 26871), (76, 26865), (87, 26841),

Gene: Snazzy\_43 Start: 34169, Stop: 34044, Start Num: 52

Candidate Starts for Snazzy\_43:

(Start: 52 @34169 has 161 MA's), (65, 34130), (71, 34070), (73, 34061),

Gene: Snickers\_42 Start: 28839, Stop: 28672, Start Num: 52

Candidate Starts for Snickers\_42:

(23, 29019), (30, 28947), (Start: 52 @28839 has 161 MA's), (65, 28800), (75, 28719), (77, 28710),

Gene: SoYo\_42 Start: 28777, Stop: 28610, Start Num: 52

Candidate Starts for SoYo\_42:

(23, 28957), (30, 28885), (Start: 52 @28777 has 161 MA's), (65, 28738), (75, 28657), (77, 28648),

Gene: SoilDragon\_42 Start: 28311, Stop: 28144, Start Num: 52

Candidate Starts for SoilDragon\_42:

(23, 28494), (30, 28422), (Start: 52 @28311 has 161 MA's), (65, 28272), (75, 28191), (77, 28182),

Gene: Soshari\_44 Start: 28860, Stop: 28693, Start Num: 52

Candidate Starts for Soshari\_44:

(23, 29040), (30, 28968), (Start: 52 @28860 has 161 MA's), (81, 28725),

Gene: Sparxx\_38 Start: 28106, Stop: 27954, Start Num: 53

Candidate Starts for Sparxx\_38:

(6, 28397), (Start: 40 @28148 has 3 MA's), (Start: 53 @28106 has 143 MA's), (60, 28085), (73, 28007), (75, 27998), (76, 27992),

Gene: Spike509\_42 Start: 28861, Stop: 28694, Start Num: 52

Candidate Starts for Spike509\_42:

(23, 29041), (30, 28969), (Start: 52 @28861 has 161 MA's), (81, 28726),

Gene: Spino\_37 Start: 28111, Stop: 27959, Start Num: 53

Candidate Starts for Spino\_37:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078), (73, 28012), (75, 28003), (76, 27997),

Gene: Spock\_52 Start: 38685, Stop: 38855, Start Num: 45

Candidate Starts for Spock\_52:

(Start: 45 @38685 has 114 MA's), (73, 38799), (75, 38808), (76, 38814), (86, 38838),

Gene: Spouty\_67 Start: 40719, Stop: 40564, Start Num: 53

Candidate Starts for Spouty\_67:

(Start: 53 @40719 has 143 MA's), (67, 40677), (75, 40611), (77, 40602),

Gene: Stagni\_42 Start: 28868, Stop: 28701, Start Num: 52

Candidate Starts for Stagni\_42:

(23, 29048), (30, 28976), (Start: 52 @28868 has 161 MA's), (65, 28829), (75, 28748), (77, 28739),

Gene: StarStuff\_41 Start: 28138, Stop: 27986, Start Num: 50

Candidate Starts for StarStuff\_41:

(15, 28405), (19, 28363), (Start: 50 @28138 has 38 MA's), (73, 28036), (75, 28027), (86, 28003),

Gene: StepMih\_42 Start: 28859, Stop: 28692, Start Num: 52  
Candidate Starts for StepMih\_42:  
(23, 29039), (30, 28967), (Start: 52 @28859 has 161 MA's), (65, 28820), (75, 28739), (77, 28730),

Gene: Stinson\_53 Start: 39065, Stop: 39235, Start Num: 45  
Candidate Starts for Stinson\_53:  
(Start: 45 @39065 has 114 MA's), (73, 39179), (75, 39188),

Gene: Sulley\_52 Start: 38730, Stop: 38900, Start Num: 45  
Candidate Starts for Sulley\_52:  
(Start: 45 @38730 has 114 MA's), (73, 38844), (75, 38853), (76, 38859), (86, 38883),

Gene: Sunflower1121\_59 Start: 39299, Stop: 39472, Start Num: 45  
Candidate Starts for Sunflower1121\_59:  
(Start: 45 @39299 has 114 MA's), (79, 39440),

Gene: Superchunk\_37 Start: 26594, Stop: 26436, Start Num: 51  
Candidate Starts for Superchunk\_37:  
(Start: 51 @26594 has 34 MA's), (67, 26549), (76, 26477), (87, 26447), (88, 26444),

Gene: SweetiePie\_38 Start: 28157, Stop: 27984, Start Num: 42  
Candidate Starts for SweetiePie\_38:  
(Start: 42 @28157 has 27 MA's), (57, 28133), (59, 28127), (75, 28031),

Gene: SwirlSquare\_41 Start: 26961, Stop: 26803, Start Num: 51  
Candidate Starts for SwirlSquare\_41:  
(Start: 51 @26961 has 34 MA's), (72, 26859), (74, 26853), (76, 26841), (82, 26826), (87, 26814), (88, 26811),

Gene: Swirley\_35 Start: 27480, Stop: 27319, Start Num: 51  
Candidate Starts for Swirley\_35:  
(12, 27762), (13, 27756), (Start: 40 @27522 has 3 MA's), (Start: 51 @27480 has 34 MA's), (73, 27372), (75, 27363), (76, 27357),

Gene: SwissCheese\_47 Start: 35145, Stop: 35020, Start Num: 52  
Candidate Starts for SwissCheese\_47:  
(Start: 52 @35145 has 161 MA's), (55, 35136), (59, 35124), (63, 35112), (71, 35046), (73, 35037),

Gene: SydNat\_35 Start: 27756, Stop: 27598, Start Num: 51  
Candidate Starts for SydNat\_35:  
(Start: 40 @27798 has 3 MA's), (Start: 51 @27756 has 34 MA's), (73, 27651), (75, 27642), (76, 27636),

Gene: Syra333\_58 Start: 39319, Stop: 39492, Start Num: 45  
Candidate Starts for Syra333\_58:  
(17, 39088), (20, 39115), (26, 39172), (Start: 45 @39319 has 114 MA's), (59, 39352), (75, 39445), (79, 39460),

Gene: TBond007\_61 Start: 42632, Stop: 42811, Start Num: 43  
Candidate Starts for TBond007\_61:  
(Start: 43 @42632 has 1 MA's), (Start: 47 @42641 has 7 MA's), (56, 42665), (75, 42770), (76, 42776),

Gene: TClif\_65 Start: 42755, Stop: 42907, Start Num: 45  
Candidate Starts for TClif\_65:

(Start: 43 @42749 has 1 MA's), (Start: 45 @42755 has 114 MA's), (Start: 58 @42788 has 1 MA's), (72, 42860), (75, 42872), (76, 42878), (84, 42893), (86, 42896),

Gene: TNguyen7\_39 Start: 28335, Stop: 28171, Start Num: 52

Candidate Starts for TNguyen7\_39:

(Start: 52 @28335 has 161 MA's), (62, 28308), (67, 28293), (75, 28218), (78, 28209),

Gene: Tachez\_52 Start: 38529, Stop: 38699, Start Num: 45

Candidate Starts for Tachez\_52:

(Start: 45 @38529 has 114 MA's), (73, 38643), (75, 38652), (76, 38658), (86, 38682),

Gene: TaiwanKao\_54 Start: 38828, Stop: 39001, Start Num: 45

Candidate Starts for TaiwanKao\_54:

(Start: 45 @38828 has 114 MA's), (73, 38942),

Gene: Taquarus\_37 Start: 28114, Stop: 27962, Start Num: 53

Candidate Starts for Taquarus\_37:

(6, 28405), (Start: 40 @28156 has 3 MA's), (Start: 53 @28114 has 143 MA's), (60, 28093), (65, 28081), (73, 28015), (75, 28006), (76, 28000),

Gene: Target\_46 Start: 33718, Stop: 33593, Start Num: 52

Candidate Starts for Target\_46:

(Start: 52 @33718 has 161 MA's), (55, 33709), (59, 33697), (63, 33685), (71, 33619), (73, 33610),

Gene: Tarynearal\_32 Start: 27146, Stop: 26988, Start Num: 51

Candidate Starts for Tarynearal\_32:

(12, 27428), (13, 27422), (Start: 40 @27188 has 3 MA's), (Start: 51 @27146 has 34 MA's), (73, 27041), (75, 27032), (76, 27026),

Gene: Taurus\_43 Start: 28865, Stop: 28698, Start Num: 52

Candidate Starts for Taurus\_43:

(23, 29045), (30, 28973), (Start: 52 @28865 has 161 MA's), (65, 28826), (75, 28745), (77, 28736),

Gene: Texage\_37 Start: 28524, Stop: 28357, Start Num: 52

Candidate Starts for Texage\_37:

(30, 28632), (Start: 52 @28524 has 161 MA's),

Gene: Thanksgivukkah\_37 Start: 28112, Stop: 27960, Start Num: 53

Candidate Starts for Thanksgivukkah\_37:

(6, 28403), (Start: 40 @28154 has 3 MA's), (Start: 53 @28112 has 143 MA's), (60, 28091), (65, 28079), (73, 28013), (75, 28004), (76, 27998),

Gene: Theia\_31 Start: 27170, Stop: 27012, Start Num: 51

Candidate Starts for Theia\_31:

(12, 27452), (13, 27446), (Start: 40 @27212 has 3 MA's), (Start: 51 @27170 has 34 MA's), (73, 27065), (75, 27056), (76, 27050),

Gene: Tierra\_56 Start: 39120, Stop: 39293, Start Num: 45

Candidate Starts for Tierra\_56:

(17, 38889), (20, 38916), (26, 38973), (Start: 45 @39120 has 114 MA's), (59, 39153), (75, 39246), (79, 39261),

Gene: Tiffany\_42 Start: 28751, Stop: 28584, Start Num: 52

Candidate Starts for Tiffany\_42:  
(23, 28931), (30, 28859), (Start: 52 @28751 has 161 MA's), (65, 28712), (75, 28631), (77, 28622),

Gene: Tiger\_34 Start: 27209, Stop: 27051, Start Num: 51  
Candidate Starts for Tiger\_34:  
(21, 27401), (Start: 40 @27251 has 3 MA's), (Start: 51 @27209 has 34 MA's), (73, 27104), (75, 27095),  
(76, 27089),

Gene: Timothy\_37 Start: 27345, Stop: 27190, Start Num: 50  
Candidate Starts for Timothy\_37:  
(14, 27627), (16, 27615), (27, 27492), (31, 27453), (Start: 50 @27345 has 38 MA's), (75, 27231), (76,  
27225), (87, 27201),

Gene: TinaFeyge\_38 Start: 28106, Stop: 27954, Start Num: 53  
Candidate Starts for TinaFeyge\_38:  
(6, 28397), (Start: 40 @28148 has 3 MA's), (Start: 53 @28106 has 143 MA's), (73, 28007), (75, 27998),  
(76, 27992),

Gene: TingHuaYa\_53 Start: 37613, Stop: 37783, Start Num: 45  
Candidate Starts for TingHuaYa\_53:  
(Start: 45 @37613 has 114 MA's), (73, 37727), (75, 37736), (86, 37766),

Gene: TiniBug\_53 Start: 39460, Stop: 39630, Start Num: 45  
Candidate Starts for TiniBug\_53:  
(Start: 45 @39460 has 114 MA's), (73, 39574),

Gene: TinyPebbles\_41 Start: 28866, Stop: 28699, Start Num: 52  
Candidate Starts for TinyPebbles\_41:  
(23, 29046), (30, 28974), (Start: 52 @28866 has 161 MA's), (81, 28731),

Gene: TinyTimmy\_37 Start: 27388, Stop: 27233, Start Num: 50  
Candidate Starts for TinyTimmy\_37:  
(16, 27658), (27, 27535), (31, 27496), (Start: 50 @27388 has 38 MA's), (75, 27274), (76, 27268), (87,  
27244),

Gene: Tinybot\_36 Start: 28141, Stop: 27989, Start Num: 53  
Candidate Starts for Tinybot\_36:  
(6, 28432), (Start: 40 @28183 has 3 MA's), (Start: 53 @28141 has 143 MA's), (73, 28042), (75, 28033),

Gene: TipsytheTRex\_66 Start: 40825, Stop: 40673, Start Num: 53  
Candidate Starts for TipsytheTRex\_66:  
(9, 41149), (Start: 53 @40825 has 143 MA's), (73, 40723), (75, 40714), (84, 40693),

Gene: Tiri\_53 Start: 38859, Stop: 39029, Start Num: 45  
Candidate Starts for Tiri\_53:  
(Start: 45 @38859 has 114 MA's), (73, 38973), (75, 38982), (76, 38988), (86, 39012),

Gene: TiroTheta9\_37 Start: 28108, Stop: 27956, Start Num: 53  
Candidate Starts for TiroTheta9\_37:  
(6, 28399), (Start: 40 @28150 has 3 MA's), (Start: 53 @28108 has 143 MA's), (60, 28087), (65, 28075),  
(73, 28009), (75, 28000), (76, 27994),

Gene: Todacoro\_38 Start: 28523, Stop: 28356, Start Num: 52

Candidate Starts for Todacoro\_38:  
(30, 28631), (Start: 52 @28523 has 161 MA's),

Gene: Tomathan\_41 Start: 28135, Stop: 27983, Start Num: 50  
Candidate Starts for Tomathan\_41:  
(Start: 50 @28135 has 38 MA's), (73, 28033), (75, 28024), (86, 28000),

Gene: Topanga\_37 Start: 28285, Stop: 28127, Start Num: 48  
Candidate Starts for Topanga\_37:  
(36, 28348), (Start: 48 @28285 has 9 MA's), (65, 28249), (73, 28180), (75, 28171), (76, 28165),

Gene: Topper\_52 Start: 38684, Stop: 38854, Start Num: 45  
Candidate Starts for Topper\_52:  
(Start: 45 @38684 has 114 MA's), (73, 38798), (75, 38807), (76, 38813), (86, 38837),

Gene: Travvers\_41 Start: 28135, Stop: 27983, Start Num: 50  
Candidate Starts for Travvers\_41:  
(15, 28402), (19, 28360), (Start: 50 @28135 has 38 MA's), (73, 28033), (75, 28024), (86, 28000),

Gene: TreyKay\_53 Start: 38772, Stop: 38942, Start Num: 45  
Candidate Starts for TreyKay\_53:  
(Start: 45 @38772 has 114 MA's), (73, 38886), (75, 38895), (76, 38901), (86, 38925),

Gene: TribbleTrouble\_65 Start: 43641, Stop: 43811, Start Num: 47  
Candidate Starts for TribbleTrouble\_65:  
(Start: 43 @43632 has 1 MA's), (Start: 47 @43641 has 7 MA's), (56, 43665), (75, 43770), (76, 43776),

Gene: Trixie\_39 Start: 28891, Stop: 28718, Start Num: 42  
Candidate Starts for Trixie\_39:  
(Start: 42 @28891 has 27 MA's), (57, 28867), (66, 28840), (70, 28798),

Gene: Trooper\_67 Start: 41763, Stop: 41599, Start Num: 49  
Candidate Starts for Trooper\_67:  
(Start: 49 @41763 has 10 MA's), (67, 41721), (75, 41646), (77, 41637), (84, 41619),

Gene: TroyPia\_38 Start: 28109, Stop: 27957, Start Num: 53  
Candidate Starts for TroyPia\_38:  
(6, 28400), (Start: 40 @28151 has 3 MA's), (Start: 53 @28109 has 143 MA's), (73, 28010), (75, 28001),

Gene: TruffulaTree\_52 Start: 38563, Stop: 38733, Start Num: 45  
Candidate Starts for TruffulaTree\_52:  
(Start: 45 @38563 has 114 MA's), (73, 38677), (75, 38686), (76, 38692), (86, 38716),

Gene: Tubs\_69 Start: 40924, Stop: 40769, Start Num: 53  
Candidate Starts for Tubs\_69:  
(9, 41248), (Start: 53 @40924 has 143 MA's), (67, 40882), (75, 40816), (77, 40807),

Gene: Turbido\_39 Start: 28525, Stop: 28352, Start Num: 42  
Candidate Starts for Turbido\_39:  
(Start: 42 @28525 has 27 MA's), (59, 28495), (68, 28465),

Gene: Twigg\_33 Start: 27119, Stop: 26961, Start Num: 51  
Candidate Starts for Twigg\_33:

(12, 27401), (13, 27395), (Start: 40 @27161 has 3 MA's), (Start: 51 @27119 has 34 MA's), (73, 27014), (75, 27005), (76, 26999),

Gene: Twister\_37 Start: 28196, Stop: 28038, Start Num: 48

Candidate Starts for Twister\_37:

(36, 28259), (Start: 48 @28196 has 9 MA's), (65, 28160), (73, 28091), (75, 28082), (76, 28076),

Gene: Twitch\_52 Start: 38686, Stop: 38856, Start Num: 45

Candidate Starts for Twitch\_52:

(Start: 45 @38686 has 114 MA's), (73, 38800), (75, 38809), (76, 38815), (86, 38839),

Gene: TwoPeat\_46 Start: 34905, Stop: 34780, Start Num: 52

Candidate Starts for TwoPeat\_46:

(Start: 52 @34905 has 161 MA's), (65, 34866), (71, 34806), (73, 34797),

Gene: TygerBlood\_37 Start: 28111, Stop: 27959, Start Num: 53

Candidate Starts for TygerBlood\_37:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078), (73, 28012), (75, 28003), (76, 27997),

Gene: Ulysses\_36 Start: 27791, Stop: 27639, Start Num: 53

Candidate Starts for Ulysses\_36:

(6, 28082), (Start: 40 @27833 has 3 MA's), (Start: 53 @27791 has 143 MA's), (73, 27692), (75, 27683),

Gene: Urkel\_53 Start: 39464, Stop: 39634, Start Num: 45

Candidate Starts for Urkel\_53:

(Start: 45 @39464 has 114 MA's), (73, 39578), (79, 39602),

Gene: VA6\_38 Start: 28246, Stop: 28094, Start Num: 50

Candidate Starts for VA6\_38:

(15, 28513), (19, 28471), (Start: 50 @28246 has 38 MA's), (73, 28144), (75, 28135), (86, 28111),

Gene: VC3\_41 Start: 28234, Stop: 28082, Start Num: 50

Candidate Starts for VC3\_41:

(15, 28501), (19, 28459), (Start: 50 @28234 has 38 MA's), (73, 28132), (75, 28123), (86, 28099),

Gene: Validus\_57 Start: 39481, Stop: 39654, Start Num: 45

Candidate Starts for Validus\_57:

(Start: 45 @39481 has 114 MA's), (73, 39595),

Gene: Veliki\_53 Start: 38549, Stop: 38719, Start Num: 45

Candidate Starts for Veliki\_53:

(Start: 45 @38549 has 114 MA's), (73, 38663), (75, 38672), (76, 38678), (86, 38702),

Gene: Veracruz\_37 Start: 28523, Stop: 28356, Start Num: 52

Candidate Starts for Veracruz\_37:

(30, 28631), (Start: 52 @28523 has 161 MA's),

Gene: Vix\_42 Start: 28948, Stop: 28781, Start Num: 52

Candidate Starts for Vix\_42:

(23, 29128), (30, 29056), (Start: 52 @28948 has 161 MA's), (65, 28909), (75, 28828), (77, 28819),

Gene: WalterMcMickey\_37 Start: 28196, Stop: 28038, Start Num: 48

Candidate Starts for WalterMcMickey\_37:

(36, 28259), (Start: 48 @28196 has 9 MA's), (65, 28160), (73, 28091), (75, 28082), (76, 28076),

Gene: Wander\_37 Start: 28111, Stop: 27959, Start Num: 53

Candidate Starts for Wander\_37:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (65, 28078), (73, 28012), (75, 28003), (76, 27997),

Gene: Watson\_42 Start: 28858, Stop: 28691, Start Num: 52

Candidate Starts for Watson\_42:

(23, 29038), (30, 28966), (Start: 52 @28858 has 161 MA's), (65, 28819), (75, 28738), (77, 28729),

Gene: Whabigail7\_39 Start: 28513, Stop: 28340, Start Num: 42

Candidate Starts for Whabigail7\_39:

(Start: 42 @28513 has 27 MA's), (59, 28483), (68, 28453),

Gene: Wilbur\_37 Start: 28111, Stop: 27959, Start Num: 53

Candidate Starts for Wilbur\_37:

(6, 28402), (Start: 40 @28153 has 3 MA's), (Start: 53 @28111 has 143 MA's), (60, 28090), (73, 28012), (75, 28003), (76, 27997),

Gene: Wintermute\_3 Start: 477, Stop: 644, Start Num: 45

Candidate Starts for Wintermute\_3:

(10, 171), (Start: 45 @477 has 114 MA's), (Start: 58 @504 has 1 MA's), (73, 591), (76, 606), (87, 633),

Gene: Wizard007\_37 Start: 28116, Stop: 27964, Start Num: 53

Candidate Starts for Wizard007\_37:

(6, 28407), (Start: 40 @28158 has 3 MA's), (Start: 53 @28116 has 143 MA's), (60, 28095), (65, 28083), (73, 28017), (75, 28008), (76, 28002),

Gene: Wooldri\_44 Start: 28777, Stop: 28610, Start Num: 52

Candidate Starts for Wooldri\_44:

(23, 28957), (30, 28885), (Start: 52 @28777 has 161 MA's), (65, 28738), (75, 28657), (77, 28648),

Gene: Ximenita\_59 Start: 39319, Stop: 39489, Start Num: 45

Candidate Starts for Ximenita\_59:

(Start: 45 @39319 has 114 MA's), (56, 39343), (75, 39442), (79, 39457),

Gene: Y10\_03 Start: 478, Stop: 645, Start Num: 45

Candidate Starts for Y10\_03:

(10, 172), (Start: 45 @478 has 114 MA's), (Start: 58 @505 has 1 MA's), (73, 592), (76, 607), (87, 634),

Gene: Y2\_03 Start: 478, Stop: 645, Start Num: 45

Candidate Starts for Y2\_03:

(10, 172), (Start: 45 @478 has 114 MA's), (Start: 58 @505 has 1 MA's), (73, 592), (76, 607), (87, 634),

Gene: Yecey3\_70 Start: 40900, Stop: 40739, Start Num: 53

Candidate Starts for Yecey3\_70:

(24, 41071), (35, 40972), (41, 40924), (Start: 53 @40900 has 143 MA's), (67, 40858), (69, 40834), (77, 40777),

Gene: YoSam321\_37 Start: 28108, Stop: 27956, Start Num: 53

Candidate Starts for YoSam321\_37:



(6, 28399), (Start: 40 @28150 has 3 MA's), (Start: 53 @28108 has 143 MA's), (60, 28087), (65, 28075), (73, 28009), (75, 28000), (76, 27994),

Gene: YoureAdopted\_51 Start: 38687, Stop: 38857, Start Num: 45

Candidate Starts for YoureAdopted\_51:

(Start: 45 @38687 has 114 MA's), (Start: 58 @38717 has 1 MA's), (73, 38801), (75, 38810), (76, 38816), (86, 38840),

Gene: Zabiza\_47 Start: 34874, Stop: 35044, Start Num: 45

Candidate Starts for Zabiza\_47:

(Start: 45 @34874 has 114 MA's), (73, 34988), (75, 34997), (76, 35003), (86, 35027),

Gene: Zavala\_54 Start: 38848, Stop: 39018, Start Num: 45

Candidate Starts for Zavala\_54:

(Start: 45 @38848 has 114 MA's), (73, 38962), (75, 38971), (76, 38977), (86, 39001),

Gene: Zephyr\_45 Start: 34728, Stop: 34600, Start Num: 52

Candidate Starts for Zephyr\_45:

(Start: 52 @34728 has 161 MA's), (55, 34719), (59, 34707), (63, 34695), (71, 34626), (73, 34617),

Gene: Zetzy\_41 Start: 28429, Stop: 28262, Start Num: 52

Candidate Starts for Zetzy\_41:

(23, 28609), (30, 28537), (Start: 52 @28429 has 161 MA's), (65, 28390), (75, 28309), (77, 28300),

Gene: Zolita\_34 Start: 27760, Stop: 27602, Start Num: 51

Candidate Starts for Zolita\_34:

(Start: 40 @27802 has 3 MA's), (Start: 51 @27760 has 34 MA's), (73, 27655), (75, 27646), (76, 27640),