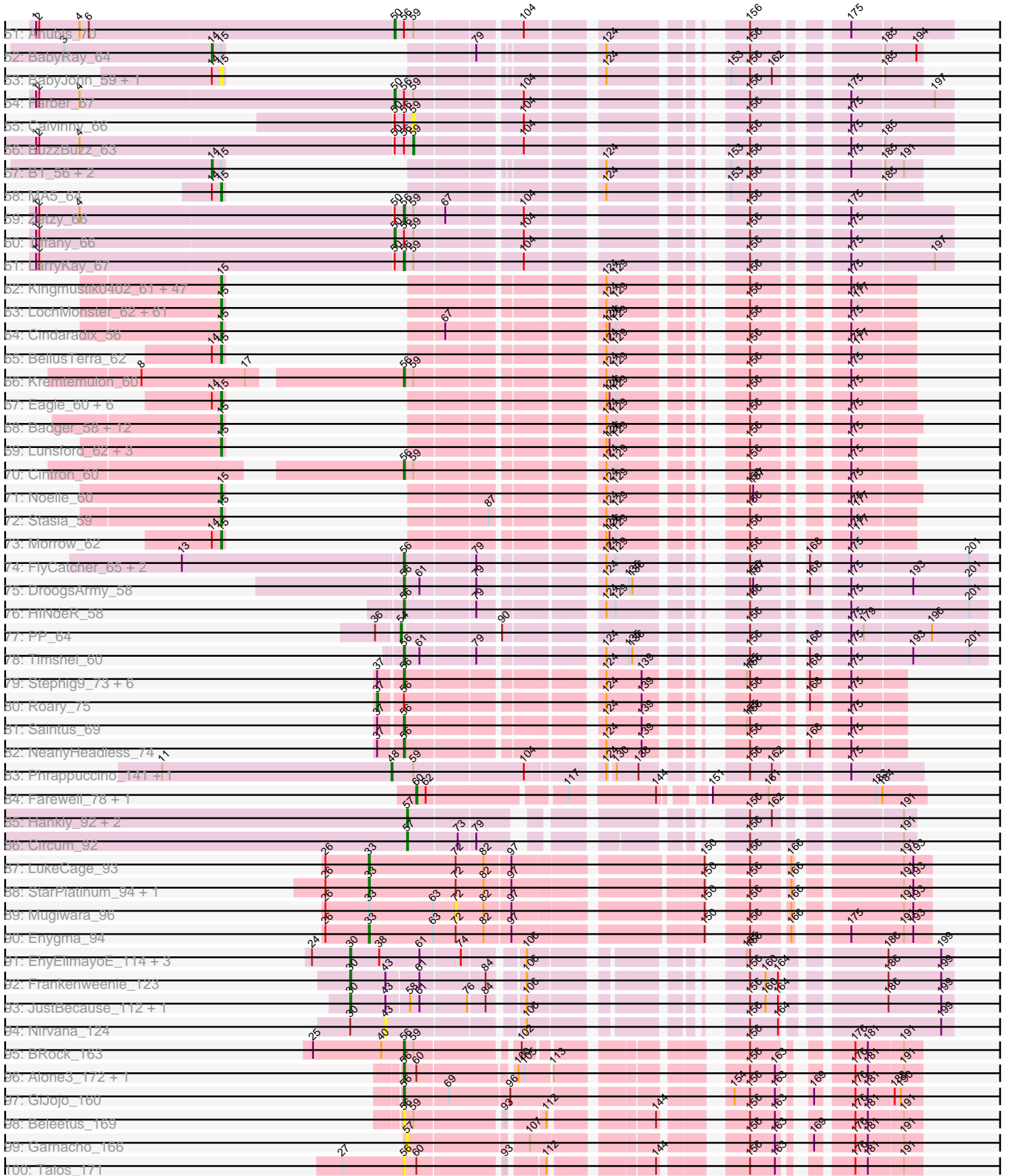
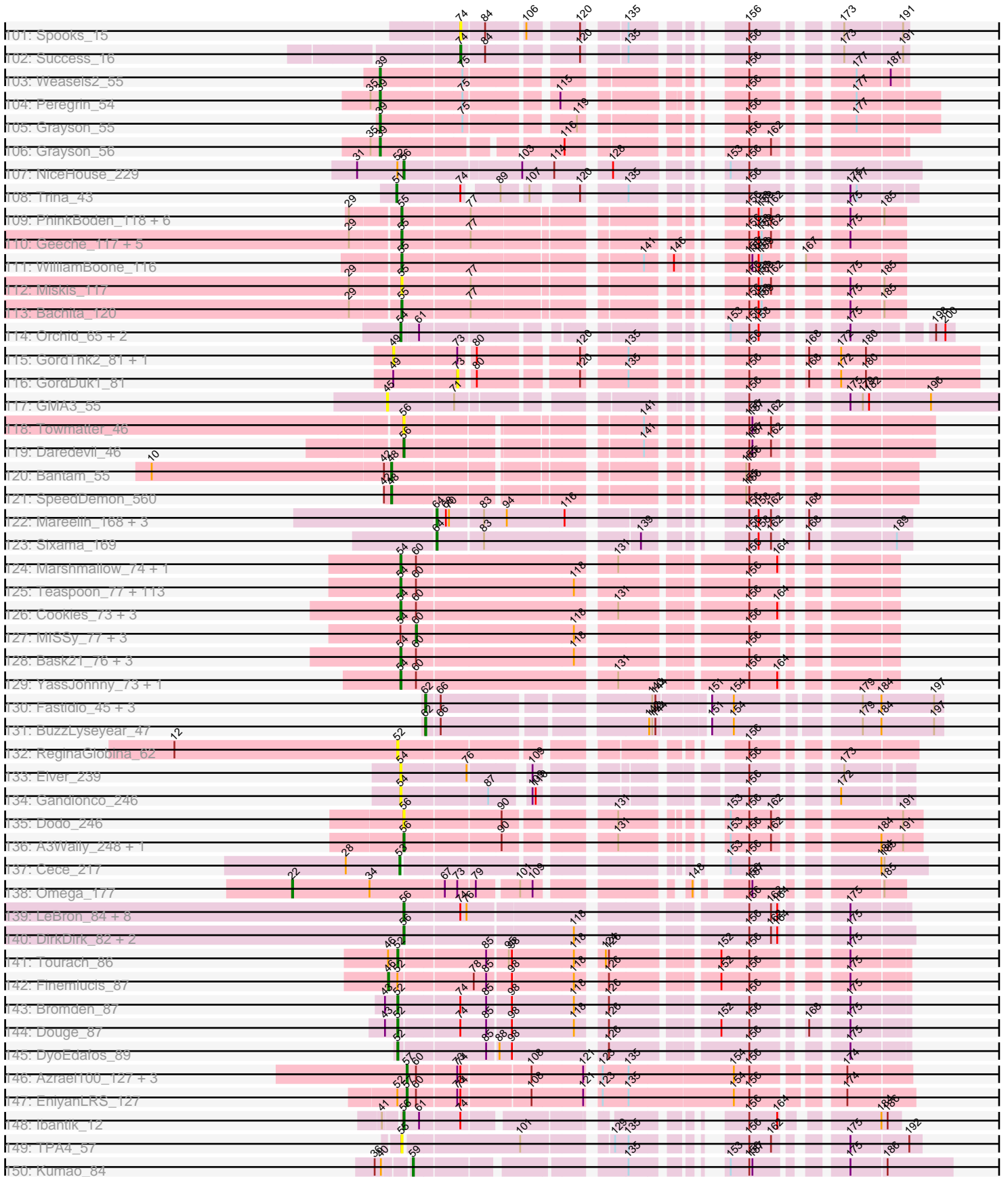




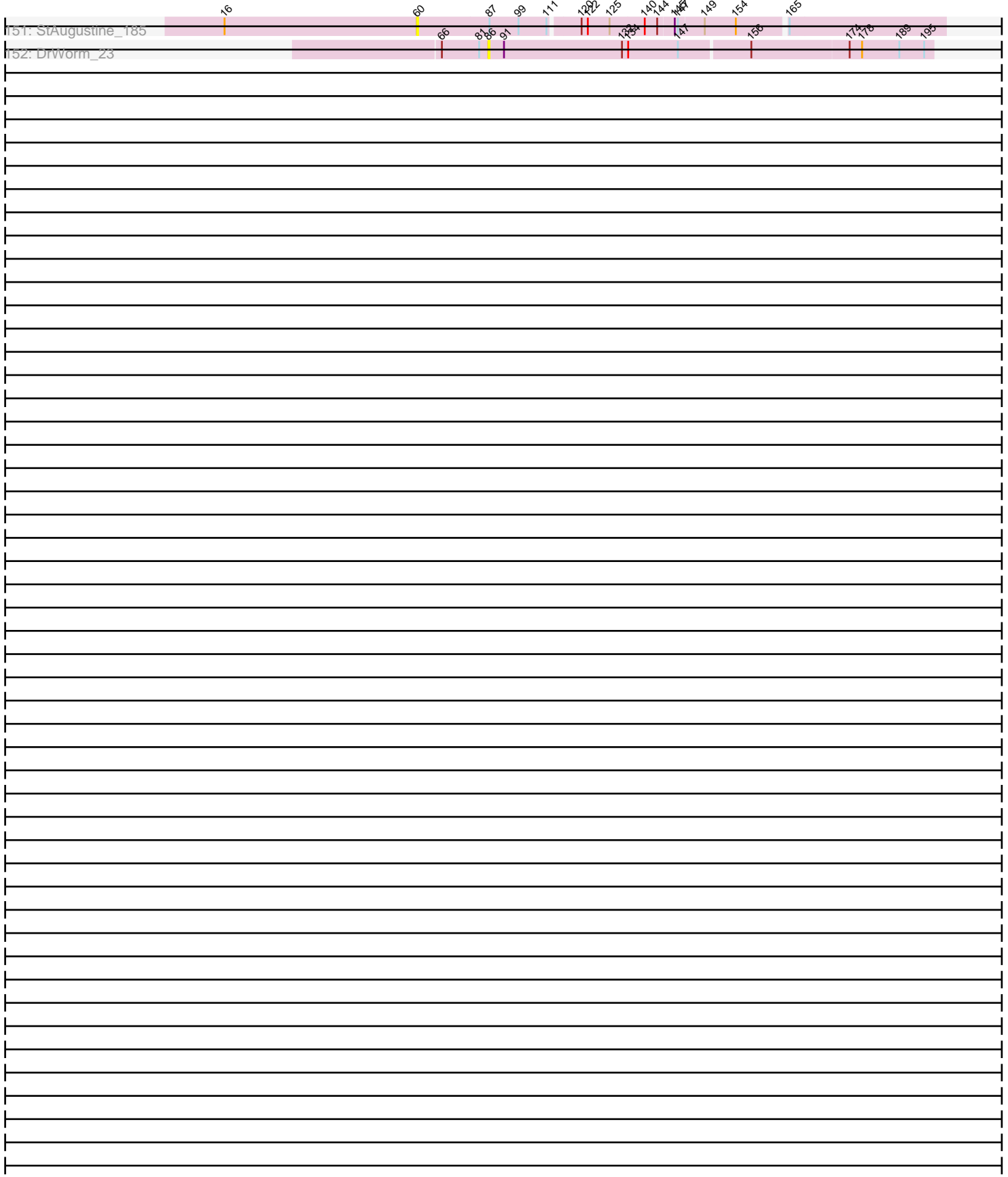
Pham 202551



# Pham 202551



Pham 202551



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 202551 Report

This analysis was run 01/18/25 on database version 583.

Pham number 202551 has 580 members, 57 are drafts.

Phages represented in each track:

- Track 1 : Killigrew\_36
- Track 2 : Gilberta\_64, Timothy\_63, Orange\_62, Mabel\_63, Lucivia\_64, Snape\_63, Bowtie\_64, Flaverint\_64
- Track 3 : Bud\_62, Aneem\_64, Salz\_62, Joselito\_64, Jabith\_64, TinyTimmy\_63, Munch\_63, Et2Brutus\_62, Fibonacci\_63, Mulciber\_62
- Track 4 : Ebony\_63
- Track 5 : Hutc2\_62, Insomnia\_64
- Track 6 : Bachome\_65
- Track 7 : Sham4\_63, Petersenfast\_61
- Track 8 : MaCh\_63
- Track 9 : MyraDee\_63
- Track 10 : Kimona\_58
- Track 11 : AN9\_68, VC3\_67, ANI8\_68, C3\_61
- Track 12 : L5\_61
- Track 13 : Kerberos\_66, Duplo\_66
- Track 14 : DBQu4n\_66, Tomathan\_66, D29\_61, D32\_65, Pomar16\_65, Travvers\_65, Naji\_66
- Track 15 : TipsytheTRex\_62
- Track 16 : Superchunk\_64, Caraxes\_65
- Track 17 : MissWhite\_64
- Track 18 : Ph8s\_66
- Track 19 : Adzzy\_67
- Track 20 : StarStuff\_66
- Track 21 : Serenity\_65
- Track 22 : Koduck\_65
- Track 23 : Jsquared\_66
- Track 24 : Che12\_66
- Track 25 : Quokka\_64, MajorMajor\_64
- Track 26 : Odin\_64
- Track 27 : SwirlSquare\_70
- Track 28 : Bradman\_65
- Track 29 : Anthony\_67
- Track 30 : Kinmap\_64
- Track 31 : JeppNRM\_68, PhishRPhriends\_65, Phranny\_68, ACFishhook\_65, Gemma\_66, Manu\_67, HaveUMetTed\_68, OlanP\_66, Reba\_67, Kalb97\_68
- Track 32 : Pawn\_67
- Track 33 : Heliosoles\_66, Kalnoky\_68, Groupthink\_68, Marius\_68, PurpleHaze\_67

- Track 34 : QuinnKiro\_62, Popcicle\_63, Hookmount\_63, Caviar\_63, Panamaxus\_61, Lambert1\_63, Todacoro\_63, Texage\_61, Pocahontas\_63, Norbert\_60, Noella\_63, ResDef\_62, Veracruz\_61, Margo\_63
- Track 35 : Vix\_65, Penny1\_67, P28Green\_68, MoneyMay\_66, Phoxy\_67, Spike509\_67, LBerry\_68, GtownJaz\_67, Mainiac\_67, Grub\_67, Cullens\_67, Beauxregard13\_66, LugYA\_70, Lilith\_66, PGHhamlin\_69, Dieselweasel\_68, EpicPhail\_68, SoYo\_66, BreSam8\_67, Marie\_65, DaHudson\_66, Phoebe\_68, JHC117\_65, Grum1\_66, Daishi\_66, Grif\_67, Microwolf\_65, Sabinator\_65, Fernando\_67, Hercules11\_67, Colbster\_65, PotatoSplit\_68
- Track 36 : GingkoMaracino\_67, Rummer\_66, StepMih\_66
- Track 37 : Stagni\_66
- Track 38 : Ollie\_67
- Track 39 : HashRod\_68, KADY\_66, Misomonster\_68, TinyPebbles\_65
- Track 40 : Phantastic\_65
- Track 41 : AgronaGT15\_66, Wooldri\_69, Bxz2\_62, Methuselah\_62, Soshari\_69
- Track 42 : Malinsilva\_69, Sabia\_67, Watson\_66, MarQuardt\_67, Snickers\_65, Pembroke\_67, JenCasNa\_68, Taurus\_68
- Track 43 : Jobu08\_65
- Track 44 : MK4\_64, JF4\_62
- Track 45 : Fred313\_62, HelDan\_63, DropBear\_62
- Track 46 : Isca\_62
- Track 47 : Louie6\_66
- Track 48 : Marchesa\_62, Kachowdy\_62, Heathen\_64, Scout\_63
- Track 49 : SoilDragon\_67, Aglet\_68, MadMarie\_67, AugsMagnumOpus\_70, MuchMore\_70
- Track 50 : Bugatti\_64, Giroux\_63, Idleandcovert\_64, SaturnRing\_64, Puppy\_64, Pistachio\_64, TNguyen7\_65, BlueBird\_66
- Track 51 : Anubis\_70
- Track 52 : BabyRay\_64
- Track 53 : BabyJohn\_59, Chiqui\_59
- Track 54 : Farber\_67
- Track 55 : Calvinny\_66
- Track 56 : BuzzBuzz\_63
- Track 57 : B1\_56, Rockstar\_62, JF2\_62
- Track 58 : MA5\_64
- Track 59 : Zetzy\_66
- Track 60 : Tiffany\_66
- Track 61 : LarryKay\_67
- Track 62 : Kingmustik0402\_61, PeterPeter\_61, Pumbaa\_61, Kyee\_61, KFPoly\_60, LHTSCC\_63, ChampagnePapi\_63, Palestino\_60, ICleared\_60, Arturo\_59, Kratak\_60, Caelakin\_60, Miramae\_58, Rosa24\_59, Funston\_60, Phacado\_61, Cerulean\_62, OKaNui\_61, Mazhar510\_61, JoongJeon\_60, Happiness\_60, Peaches\_59, Shaka\_59, Relief\_60, Eris\_60, Maverick\_60, AvatarAhPeg\_58, BangNhom\_60, Cocoaberry\_61, SheldonCooper\_61, Gadost\_61, NotAPhaseMom\_60, Anyyong\_60, Tinybot\_60, Obama12\_62, Stink\_58, Phighter1804\_61, Iracema64\_62, DirtyDunning\_60, Houdini22\_60, Avle17\_61, Wander\_61, Huxley\_59, Bruiser\_60, Mundrea\_59, JetBlade\_61, Nemo27\_60, Shygu2\_59
- Track 63 : LochMonster\_62, Sparxx\_62, Eros\_61, Romney\_60, SenorClean\_57, MeeZee\_60, Eapen\_61, Alberto7\_62, Connomayer\_61, Scamp\_61, LittleB\_61, Wilbur\_61, Druantia\_60, Ulysses\_60, Roosevelt\_59, Chaph\_61, TygerBlood\_61, Holli\_60, Citius\_61, NorthStar\_59, Kampy\_60, Sabertooth\_61, Clarenza\_60, Lemur\_61, LittleGuy\_61, TroyPia\_62, Koan\_57, Taquarus\_60, Deano\_59,

Commander\_60, Bartimeaus\_61, Lorenzo\_61, Baby16\_61, YoSam321\_61, Albee\_61, Maxo\_62, Flux\_61, Skipitt\_60, Blackmoor\_60, TiroTheta9\_60, Medusa\_61, Melvin\_63, Burger\_59, Broseidon\_61, Koreni\_60, Millski\_60, CentreCat\_61, Thanksgivukkah\_60, Jaykayelowell\_58, TinaFeyge\_59, Pipcraft\_58, LappelDuVide\_61, Iceman\_61, BubbleTrouble\_60, Spino\_60, Camperdownii\_59, Nyxis\_60, Ruin\_61, Florean\_61, Bombshell\_61, Dhanush\_61, Polymorphads\_62

- Track 64 : Cindaradix\_56
- Track 65 : BellusTerra\_62
- Track 66 : Kremtemulon\_60
- Track 67 : Eagle\_60, Eurydice\_62, Ohfah\_62, Phelipe\_62, Abdiel\_61, Nebs\_62, LeoAvram\_60
- Track 68 : Badger\_58, Bumblebee11\_58, Xena\_58, Datway\_59, PetiteSangsue\_59, Wile\_59, Katalie136\_59, Achebe\_58, Morpher26\_59, Cici\_59, AbbysRanger\_59, Backyardigan\_57, Perplexer\_59
- Track 69 : Lunsford\_62, Phontbonne\_61, HamSlice\_58, Wizard007\_60
- Track 70 : Cintron\_60
- Track 71 : Noelle\_60
- Track 72 : Stasia\_59
- Track 73 : Morrow\_62
- Track 74 : FlyCatcher\_65, Toro\_63, Sheen\_63
- Track 75 : DroogsArmy\_58
- Track 76 : HINdeR\_58
- Track 77 : PP\_64
- Track 78 : Timshel\_60
- Track 79 : Stephig9\_73, Groundhog\_73, Dixon\_73, Smeadley\_74, Danforth\_74, Astro\_74, Expelliarmus\_71
- Track 80 : Roary\_75
- Track 81 : Saintus\_69
- Track 82 : NearlyHeadless\_74
- Track 83 : Phrappuccino\_141, Settecandela\_141
- Track 84 : Farewell\_78, Sparky\_77
- Track 85 : Hankly\_92, GoCrazy\_87, KeaneyLin\_89
- Track 86 : Circum\_92
- Track 87 : LukeCage\_93
- Track 88 : StarPlatinum\_94, Battuta\_92
- Track 89 : Mugiwara\_96
- Track 90 : Enygma\_94
- Track 91 : EhyElimayoE\_114, Quantum\_112, Kradal\_113, Satis\_113
- Track 92 : Frankenweenie\_123
- Track 93 : JustBecause\_112, Kela\_113
- Track 94 : Nirvana\_124
- Track 95 : BRock\_163
- Track 96 : Alone3\_172, LuckySocke\_170
- Track 97 : GiJojo\_160
- Track 98 : Beleetus\_169
- Track 99 : Garnacho\_166
- Track 100 : Talos\_171
- Track 101 : Spooks\_15
- Track 102 : Success\_16
- Track 103 : Weasels2\_55
- Track 104 : Peregrin\_54
- Track 105 : Grayson\_55
- Track 106 : Grayson\_56

- Track 107 : NiceHouse\_229
- Track 108 : Trina\_43
- Track 109 : PhinkBoden\_118, Toniann\_118, Cucurbita\_119, Culver\_119, Aphelion\_118, Lozinak\_118, Smoothie\_119
- Track 110 : Geeche\_117, Abscondus\_118, Dusty\_115, Norvs\_118, Engineer\_119, ClubL\_119
- Track 111 : WilliamBoone\_116
- Track 112 : Miskis\_117
- Track 113 : Bachita\_120
- Track 114 : Orchid\_65, PatrickStar\_66, Kampe\_66
- Track 115 : GordTnk2\_81, Gmala1\_74
- Track 116 : GordDuk1\_81
- Track 117 : GMA3\_55
- Track 118 : Towmatter\_46
- Track 119 : Daredevil\_46
- Track 120 : Bantam\_55
- Track 121 : SpeedDemon\_560
- Track 122 : Mareelih\_168, BlueNGold\_167, Forza\_171, Boopy\_170
- Track 123 : Sixama\_169
- Track 124 : Marshmallow\_74, FairyPath\_76
- Track 125 : Teaspoon\_77, Buck\_77, Petra64142\_80, Highbury\_75, NoSleep\_77, Glexan\_75, Nala\_78, TeardropMSU\_72, Lilizi\_77, Thresher\_78, Murica\_79, Inca\_73, Policronamos\_80, 244\_77, Moldemort\_79, Nimrod\_77, HufflyPuff\_79, Gage\_78, Phaja\_74, HanKaySha\_76, BilboSwaggins\_75, StellaBean\_74, Myrale\_76, AmericanBeauty\_80, Manda\_77, Ukulele\_71, Rimmer\_77, SophKB\_73, Miniwave\_71, Youngblood\_79, IHOP\_74, MPhalcon\_77, Icee\_77, Qualification\_77, Dusk\_73, Balomoji\_76, Kanye\_73, Saints25\_75, JeTaime\_76, Simpliphy\_75, BadStone\_73, PhatBacter\_80, Lilpickle\_75, Holt\_81, Emmina\_76, Rakim\_77, StolenFromERC\_79, MadamMonkfish\_76, Gemini\_81, Hoonter\_79, Mindy\_75, Dumbo\_76, Mosby\_72, Lilac\_78, Kimchi\_80, Phaux\_78, Cactus\_79, NelitzaMV\_74, FireRed\_80, Eureka\_74, BigBubba\_76, Hopey\_76, GooberAzure\_79, Goldilocks\_79, Terminus\_79, TBrady12\_79, CrystalP\_75, Phrux\_73, Cjw1\_76, BaboJay\_73, Goku\_74, Bench\_79, Asriel\_75, Henry\_74, Bruin\_73, Xandras\_75, Tuco\_77, Contagion\_72, Stank\_79, GoldenSpark\_80, Traaww1\_72, Barbarian\_75, Flypotenuse\_72, Daikon\_78, Filch\_77, Easy2Say\_77, ShamWow\_76, Porky\_75, Sassay\_71, Pumpkin\_79, xkcd\_79, RiverMonster\_76, Czystczon1\_77, Harella\_76, Elph10\_76, Toto\_74, Murphy\_76, Pharsalus\_73, Gator\_74, Command613\_78, Stark\_77, Elite2014\_75, Misfit\_77, Maxxinista\_78, ChosenOne\_76, Tarkin\_75, Argent26\_80, Adnama\_80, Willez\_71, ABCat\_73, Wiggin\_78, DrDrey\_76, Sotrice96\_77, Paperbeatsrock\_75
- Track 126 : Cookies\_73, ChotaBhai\_76, SirDuracell\_75, DoctorDiddles\_75
- Track 127 : MISSy\_77, Kostya\_76, Palpatine\_78, BugsBunny\_76
- Track 128 : Bask21\_76, Pat3\_74, OrionPax\_75, Amao\_76
- Track 129 : YassJohnny\_73, Tomaszewski\_71
- Track 130 : Fastidio\_45, Demsculpinboyz\_49, Marker\_42, DaddyRickover\_42
- Track 131 : BuzzLyseyear\_47
- Track 132 : ReginaGlobina\_62
- Track 133 : Elver\_239
- Track 134 : Gandionco\_246
- Track 135 : Dodo\_246
- Track 136 : A3Wally\_248, PauloDiaboli\_248
- Track 137 : Cece\_217
- Track 138 : Omega\_177



- Track 139 : LeBron\_84, Rose5\_86, AvadaKedavra\_85, Tyson\_86, JoeDirt\_86, Wyatt2\_86, Acquire49\_85, UPIE\_84, CicholasNage\_82
- Track 140 : DirkDirk\_82, Appletree2\_84, Silverleaf\_85
- Track 141 : Tourach\_86
- Track 142 : Finemlucis\_87
- Track 143 : Bromden\_87
- Track 144 : Douge\_87
- Track 145 : DyoEdafos\_89
- Track 146 : Azrael100\_127, Cosmo\_135, Wildcat\_134, MaryV\_120
- Track 147 : EniyanLRS\_127
- Track 148 : Ibantik\_12
- Track 149 : TPA4\_57
- Track 150 : Kumao\_84
- Track 151 : StAugustine\_185
- Track 152 : DrWorm\_23

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

The start number called the most often in the published annotations is 15, it was called in 159 of the 523 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AbbysRanger\_59, Abdiel\_61, Achebe\_58, Albee\_61, Alberto7\_62, Annyong\_60, Arturo\_59, AvatarAhPeg\_58, Avle17\_61, Baby16\_61, BabyJohn\_59, Backyardigan\_57, Badger\_58, BangNhom\_60, Bartimeaus\_61, BellusTerra\_62, Blackmoor\_60, BlueBird\_66, Bombshell\_61, Broseidon\_61, Bruiser\_60, BubbleTrouble\_60, Bugatti\_64, Bumblebee11\_58, Burger\_59, Caelakin\_60, Camperdownii\_59, Caviar\_63, CentreCat\_61, Cerulean\_62, ChampagnePapi\_63, Chaph\_61, Chiqui\_59, Cici\_59, Cindaradix\_56, Citius\_61, Clarenza\_60, Cocoaberry\_61, Commander\_60, Connomayer\_61, Datway\_59, Deano\_59, Dhanush\_61, DirtyDunning\_60, Druantia\_60, Eagle\_60, Eapen\_61, Eris\_60, Eros\_61, Eurydice\_62, Florean\_61, Flux\_61, Funston\_60, Gadost\_61, Giroux\_63, HamSlice\_58, Happiness\_60, Heathen\_64, Holli\_60, Hookmount\_63, Houdini22\_60, Huxley\_59, ICleared\_60, Iceman\_61, Idleandcovert\_64, Iracema64\_62, JF4\_62, Jaykayelowell\_58, JetBlade\_61, JoongJeon\_60, KFPoly\_60, Kachowdy\_62, Kampy\_60, Katalie136\_59, Kingmustik0402\_61, Koan\_57, Koreni\_60, Kratak\_60, Kyee\_61, LHTSCC\_63, Lambert1\_63, LappelDuVide\_61, Lemur\_61, LeoAvram\_60, LittleB\_61, LittleGuy\_61, LochMonster\_62, Lorenzo\_61, Lunsford\_62, MA5\_64, MK4\_64, Marchesa\_62, Margo\_63, Maverick\_60, Maxo\_62, Mazhar510\_61, Medusa\_61, MeeZee\_60, Melvin\_63, Millski\_60, Miramae\_58, Morpher26\_59, Morrow\_62, Mundrea\_59, Nebs\_62, Nemo27\_60, Noella\_63, Noelle\_60, Norbert\_60, NorthStar\_59, NotAPhaseMom\_60, Nyxis\_60, OKaNui\_61, Obama12\_62, Ohfah\_62, Palestino\_60, Panamaxus\_61, Peaches\_59, Perplexer\_59, PeterPeter\_61, PetiteSangsue\_59, Phacado\_61, Phelipe\_62, Phighter1804\_61, Phontbonne\_61, Pipcraft\_58, Pistachio\_64, Pocahontas\_63, Polymorphads\_62, Popcicle\_63, Pumbaa\_61, Puppy\_64, QuinnKiro\_62, Relief\_60, ResDef\_62, Romney\_60, Roosevelt\_59, Rosa24\_59, Ruin\_61, Sabertooth\_61, SaturnRing\_64, Scamp\_61, Scout\_63, SeniorClean\_57, Shaka\_59, SheldonCooper\_61, Shygu2\_59, Skipitt\_60, Sparxx\_62, Spino\_60, Stasia\_59, Stink\_58, TNguyen7\_65, Taquarus\_60, Texage\_61, Thanksgivukkah\_60, TinaFeyge\_59, Tinybot\_60, TiroTheta9\_60,

Todacoro\_63, TroyPia\_62, TygerBlood\_61, Ulysses\_60, Veracruz\_61, Wander\_61, Wilbur\_61, Wile\_59, Wizard007\_60, Xena\_58, YoSam321\_61,

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

• B1\_56, BabyRay\_64, DropBear\_62, Fred313\_62, HelDan\_63, Isca\_62, JF2\_62, Phantastic\_65, Rockstar\_62,

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

• 244\_77, A3Wally\_248, ABCat\_73, ACFishhook\_65, AN9\_68, ANI8\_68, Abscondus\_118, Acquire49\_85, Adnama\_80, Adzzy\_67, Aglet\_68, AgronaGT15\_66, Alone3\_172, Amao\_76, AmericanBeauty\_80, Aneem\_64, Anthony\_67, Anubis\_70, Aphelion\_118, Appletree2\_84, Argent26\_80, Asriel\_75, Astro\_74, AugsMagnumOpus\_70, AvadaKedavra\_85, Azrael100\_127, BRock\_163, BaboJay\_73, Bachita\_120, Bachome\_65, BadStone\_73, Balomoji\_76, Bantam\_55, Barbarian\_75, Bask21\_76, Battuta\_92, Beauxregard13\_66, Beleetus\_169, Bench\_79, BigBubba\_76, BilboSwaggins\_75, BlueNGold\_167, Boopy\_170, Bowtie\_64, Bradman\_65, BreSam8\_67, Bromden\_87, Bruin\_73, Buck\_77, Bud\_62, BugsBunny\_76, BuzzBuzz\_63, BuzzLyseyear\_47, Bxz2\_62, C3\_61, Cactus\_79, Calvinny\_66, Caraxes\_65, Cece\_217, Che12\_66, ChosenOne\_76, ChotaBhai\_76, CicholasNage\_82, Cintron\_60, Circum\_92, Cjw1\_76, ClubL\_119, Colbster\_65, Command613\_78, Contagion\_72, Cookies\_73, Cosmo\_135, CrystalP\_75, Cucurbita\_119, Cullens\_67, Culver\_119, Czyszczo1\_77, D29\_61, D32\_65, DBQu4n\_66, DaHudson\_66, DaddyRickover\_42, Daikon\_78, Daishi\_66, Danforth\_74, Daredevil\_46, Demsculpinboyz\_49, Dieselweasel\_68, DirkDirk\_82, Dixon\_73, DoctorDiddles\_75, Dodo\_246, Douge\_87, DrDrey\_76, DrWorm\_23, DroogsArmy\_58, Dumbo\_76, Duplo\_66, Dusk\_73, Dusty\_115, DyoEdafos\_89, Easy2Say\_77, Ebony\_63, EhyElimayoE\_114, Elite2014\_75, Elph10\_76, Elver\_239, Emmina\_76, Engineer\_119, EniyanLRS\_127, Enygma\_94, EpicPhail\_68, Et2Brutus\_62, Eureka\_74, Expelliarmus\_71, FairyPath\_76, Farber\_67, Farewell\_78, Fastidio\_45, Fernando\_67, Fibonacci\_63, Filch\_77, Finemlucis\_87, FireRed\_80, Flaverint\_64, FlyCatcher\_65, Flypotenuse\_72, Forza\_171, Frankenweenie\_123, GMA3\_55, Gage\_78, Gandionco\_246, Garnacho\_166, Gator\_74, Geeche\_117, Gemini\_81, Gemma\_66, GiJojo\_160, Gilberta\_64, GingkoMaracino\_67, Glexan\_75, Gmala1\_74, GoCrazy\_87, Goku\_74, GoldenSpark\_80, Goldilocks\_79, GooberAzure\_79, GordDuk1\_81, GordTnk2\_81, Grayson\_55, Grayson\_56, Grif\_67, Groundhog\_73, Groupthink\_68, Grub\_67, Grum1\_66, GtownJaz\_67, HINdeR\_58, HanKaySha\_76, Hankly\_92, Harella\_76, HashRod\_68, HaveUMetTed\_68, Heliosoles\_66, Henry\_74, Hercules11\_67, Highbury\_75, Holt\_81, Hoonter\_79, Hopey\_76, HufflyPuff\_79, Hutc2\_62, IHOP\_74, Ibantik\_12, Icee\_77, Inca\_73, Insomnia\_64, JHC117\_65, Jabith\_64, JeTaimie\_76, JenCasNa\_68, JeppNRM\_68, Jobu08\_65, JoeDirt\_86, Joselito\_64, Jsquared\_66, JustBecause\_112, KADY\_66, Kalb97\_68, Kalnoky\_68, Kampe\_66, Kanye\_73, KeaneyLin\_89, Kela\_113, Kerberos\_66, Killigrew\_36, Kimchi\_80, Kimona\_58, Kinmap\_64, Koduck\_65, Kostya\_76, Kradal\_113, Kremtemulon\_60, Kumao\_84, L5\_61, LBerry\_68, LarryKay\_67, LeBron\_84, Lilac\_78, Lilith\_66, Lilizi\_77, Lilpickle\_75, Louie6\_66, Lozinak\_118, Lucivia\_64, LuckySocke\_170, LugYA\_70, LukeCage\_93, MISSy\_77, MPhalcon\_77, MaCh\_63, Mabel\_63, MadMarie\_67, MadamMonkfish\_76, Mainiac\_67, MajorMajor\_64, Malinsilva\_69, Manda\_77, Manu\_67, MarQuardt\_67, Mareelih\_168, Marie\_65, Marius\_68, Marker\_42, Marshmallow\_74, MaryV\_120, Maxxinista\_78, Methuselah\_62, Microwolf\_65, Mindy\_75, Miniwave\_71, Misfit\_77, Miskis\_117, Misomonster\_68, MissWhite\_64, Moldemort\_79, MoneyMay\_66, Mosby\_72, MuchMore\_70, Mugiwara\_96, Mulciber\_62, Munch\_63, Murica\_79, Murphy\_76, MyraDee\_63, Myrale\_76, Naji\_66, Nala\_78, NearlyHeadless\_74,

NelitzaMV\_74, NiceHouse\_229, Nimrod\_77, Nirvana\_124, NoSleep\_77, Norvs\_118, Odin\_64, OlanP\_66, Ollie\_67, Omega\_177, Orange\_62, Orchid\_65, OrionPax\_75, P28Green\_68, PGHhamlin\_69, PP\_64, Palpatine\_78, Paperbeatsrock\_75, Pat3\_74, PatrickStar\_66, PauloDiaboli\_248, Pawn\_67, Pembroke\_67, Penny1\_67, Peregrin\_54, Petersenfast\_61, Petra64142\_80, Ph8s\_66, Phaja\_74, Pharsalus\_73, PhatBacter\_80, Phaux\_78, PhinkBoden\_118, PhishRPhriends\_65, Phoebe\_68, Phoxy\_67, Phranny\_68, Phrappuccino\_141, Phrux\_73, Policronamos\_80, Pomar16\_65, Porky\_75, PotatoSplit\_68, Pumpkin\_79, PurpleHaze\_67, Quallification\_77, Quantum\_112, Quokka\_64, Rakim\_77, Reba\_67, ReginaGlobina\_62, Rimmer\_77, RiverMonster\_76, Roary\_75, Rose5\_86, Rummer\_66, Sabia\_67, Sabinator\_65, Saints25\_75, Saintus\_69, Salz\_62, Sassay\_71, Satis\_113, Serenity\_65, Settecandela\_141, Sham4\_63, ShamWow\_76, Sheen\_63, Silverleaf\_85, Simpliphy\_75, SirDuracell\_75, Sixama\_169, Smeadley\_74, Smoothie\_119, Snape\_63, Snickers\_65, SoYo\_66, SoilDragon\_67, SophKB\_73, Soshari\_69, Sotrice96\_77, Sparky\_77, SpeedDemon\_560, Spike509\_67, Spooks\_15, StAugustine\_185, Stagni\_66, Stank\_79, StarPlatinum\_94, StarStuff\_66, Stark\_77, StellaBean\_74, StepMih\_66, Stephig9\_73, StolenFromERC\_79, Success\_16, Superchunk\_64, SwirlSquare\_70, TBrady12\_79, TPA4\_57, Talos\_171, Tarkin\_75, Taurus\_68, TeardropMSU\_72, Teaspoon\_77, Terminus\_79, Thresher\_78, Tiffany\_66, Timothy\_63, Timshel\_60, TinyPebbles\_65, TinyTimmy\_63, TipsytheTRex\_62, Tomaszewski\_71, Tomathan\_66, Toniann\_118, Toro\_63, Toto\_74, Tourach\_86, Towmatter\_46, Traaww1\_72, Travvers\_65, Trina\_43, Tuco\_77, Tyson\_86, UPIE\_84, Ukulele\_71, VC3\_67, Vix\_65, Watson\_66, Weasels2\_55, Wiggins\_78, Wildcat\_134, Willez\_71, WilliamBoone\_116, Wooldri\_69, Wyatt2\_86, Xandras\_75, YassJohnny\_73, Youngblood\_79, Zetzy\_66, xkcd\_79,

### Summary by start number:

#### Start 14:

- Found in 49 of 580 ( 8.4% ) of genes in pham
- Manual Annotations of this start: 8 of 523
- Called 18.4% of time when present
- Phage (with cluster) where this start called: B1\_56 (A3), BabyRay\_64 (A3), DropBear\_62 (A3), Fred313\_62 (A3), HelDan\_63 (A3), Isca\_62 (A3), JF2\_62 (A3), Phantastic\_65 (A3), Rockstar\_62 (A3),

#### Start 15:

- Found in 179 of 580 ( 30.9% ) of genes in pham
- Manual Annotations of this start: 159 of 523
- Called 95.0% of time when present
- Phage (with cluster) where this start called: AbbysRanger\_59 (A4), Abdiel\_61 (A4), Achebe\_58 (A4), Albee\_61 (A4), Alberto7\_62 (A4), Annyong\_60 (A4), Arturo\_59 (A4), AvatarAhPeg\_58 (A4), Avle17\_61 (A4), Baby16\_61 (A4), BabyJohn\_59 (A3), Backyardigan\_57 (A4), Badger\_58 (A4), BangNhom\_60 (A4), Bartimeaus\_61 (A4), BellusTerra\_62 (A4), Blackmoor\_60 (A4), BlueBird\_66 (A3), Bombshell\_61 (A4), Broseidon\_61 (A4), Bruiser\_60 (A4), BubbleTrouble\_60 (A4), Bugatti\_64 (A3), Bumblebee11\_58 (A4), Burger\_59 (A4), Caelakin\_60 (A4), Camperdownii\_59 (A4), Caviar\_63 (A3), CentreCat\_61 (A4), Cerulean\_62 (A4), ChampagnePapi\_63 (A4), Chaph\_61 (A4), Chiqui\_59 (A3), Cici\_59 (A4), Cindaradix\_56 (A4), Citius\_61 (A4), Clarenza\_60 (A4), Cocoaberry\_61 (A4), Commander\_60 (A4), Connomayer\_61 (A4), Datway\_59 (A4), Deano\_59 (A4), Dhanush\_61 (A4), DirtyDunning\_60 (A4), Druantia\_60 (A4), Eagle\_60 (A4), Eapen\_61 (A4), Eris\_60 (A4), Eros\_61 (A4), Eurydice\_62 (A4), Florean\_61 (A4), Flux\_61 (A4), Funston\_60 (A4), Gadost\_61 (A4),

Giroux\_63 (A3), HamSlice\_58 (A4), Happiness\_60 (A4), Heathen\_64 (A3), Holli\_60 (A4), Hookmount\_63 (A3), Houdini22\_60 (A4), Huxley\_59 (A4), ICleared\_60 (A4), Iceman\_61 (A4), Idleandcovert\_64 (A3), Iracema64\_62 (A4), JF4\_62 (A3), Jaykayelowell\_58 (A4), JetBlade\_61 (A4), JoongJeon\_60 (A4), KFPoly\_60 (A4), Kachowdy\_62 (A3), Kampy\_60 (A4), Katalie136\_59 (A4), Kingmustik0402\_61 (A4), Koan\_57 (A4), Koreni\_60 (A4), Kratak\_60 (A4), Kyee\_61 (A4), LHTSCC\_63 (A4), Lambert1\_63 (A3), LappelDuVide\_61 (A4), Lemur\_61 (A4), LeoAvram\_60 (A4), LittleB\_61 (A4), LittleGuy\_61 (A4), LochMonster\_62 (A4), Lorenzo\_61 (A4), Lunsford\_62 (A4), MA5\_64 (A3), MK4\_64 (A3), Marchesa\_62 (A3), Margo\_63 (A3), Maverick\_60 (A4), Maxo\_62 (A4), Mazhar510\_61 (A4), Medusa\_61 (A4), MeeZee\_60 (A4), Melvin\_63 (A4), Millski\_60 (A4), Miramae\_58 (A4), Morpher26\_59 (A4), Morrow\_62 (A4), Mundrea\_59 (A4), Nebs\_62 (A4), Nemo27\_60 (A4), Noella\_63 (A3), Noelle\_60 (A4), Norbert\_60 (A3), NorthStar\_59 (A4), NotAPhaseMom\_60 (A4), Nyxis\_60 (A4), OKaNui\_61 (A4), Obama12\_62 (A4), Ohfah\_62 (A4), Palestino\_60 (A4), Panamaxus\_61 (A3), Peaches\_59 (A4), Perplexer\_59 (A4), PeterPeter\_61 (A4), PetiteSangsue\_59 (A4), Phacado\_61 (A4), Phelipe\_62 (A4), Phighter1804\_61 (A4), Phontbonne\_61 (A4), Pipcraft\_58 (A4), Pistachio\_64 (A3), Pocahontas\_63 (A3), Polymorphads\_62 (A4), Popcicle\_63 (A3), Pumbaa\_61 (A4), Puppy\_64 (A3), QuinnKiro\_62 (A3), Relief\_60 (A4), ResDef\_62 (A3), Romney\_60 (A4), Roosevelt\_59 (A4), Rosa24\_59 (A4), Ruin\_61 (A4), Sabertooth\_61 (A4), SaturnRing\_64 (A3), Scamp\_61 (A4), Scout\_63 (A3), SenorClean\_57 (A4), Shaka\_59 (A4), SheldonCooper\_61 (A4), Shygu2\_59 (A4), Skipitt\_60 (A4), Sparxx\_62 (A4), Spino\_60 (A4), Stasia\_59 (A4), Stink\_58 (A4), TNguyen7\_65 (A3), Taquarus\_60 (A4), Texage\_61 (A3), Thanksgivukkah\_60 (A4), TinaFeyge\_59 (A4), Tinybot\_60 (A4), TiroTheta9\_60 (A4), Todacoro\_63 (A3), TroyPia\_62 (A4), TygerBlood\_61 (A4), Ulysses\_60 (A4), Veracruz\_61 (A3), Wander\_61 (A4), Wilbur\_61 (A4), Wile\_59 (A4), Wizard007\_60 (A4), Xena\_58 (A4), YoSam321\_61 (A4),

#### Start 22:

- Found in 1 of 580 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 523
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Omega\_177 (J),

#### Start 30:

- Found in 8 of 580 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 7 of 523
- Called 87.5% of time when present
- Phage (with cluster) where this start called: EhyElimayoE\_114 (BM), Frankenweenie\_123 (BM), JustBecause\_112 (BM), Kela\_113 (BM), Kradal\_113 (BM), Quantum\_112 (BM), Satis\_113 (BM),

#### Start 33:

- Found in 5 of 580 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 4 of 523
- Called 80.0% of time when present
- Phage (with cluster) where this start called: Battuta\_92 (BE2), Enygma\_94 (BE2), LukeCage\_93 (BE2), StarPlatinum\_94 (BE2),

#### Start 37:

- Found in 10 of 580 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 523
- Called 10.0% of time when present

- Phage (with cluster) where this start called: Roary\_75 (A8),

Start 39:

- Found in 4 of 580 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 4 of 523
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Grayson\_55 (CB), Grayson\_56 (CB), Peregrin\_54 (CB), Weasels2\_55 (CB),

Start 41:

- Found in 2 of 580 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 523
- Called 50.0% of time when present
- Phage (with cluster) where this start called: MyraDee\_63 (A18),

Start 43:

- Found in 6 of 580 ( 1.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Nirvana\_124 (BM),

Start 45:

- Found in 1 of 580 ( 0.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA3\_55 (DF2),

Start 46:

- Found in 2 of 580 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 523
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Finemlucis\_87 (L2),

Start 48:

- Found in 29 of 580 ( 5.0% ) of genes in pham
- Manual Annotations of this start: 9 of 523
- Called 34.5% of time when present
- Phage (with cluster) where this start called: Bachome\_65 (A11), Bantam\_55 (DL), Ebony\_63 (A11), Hutc2\_62 (A11), Insomnia\_64 (A11), Petersenfast\_61 (A11), Phrappuccino\_141 (AA), Settecandela\_141 (AA), Sham4\_63 (A11), SpeedDemon\_560 (DL),

Start 49:

- Found in 3 of 580 ( 0.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Gmala1\_74 (DF1), GordTnk2\_81 (DF1),

Start 50:

- Found in 85 of 580 ( 14.7% ) of genes in pham
- Manual Annotations of this start: 5 of 523
- Called 5.9% of time when present

- Phage (with cluster) where this start called: Anthony\_67 (A20), Anubis\_70 (A3), Farber\_67 (A3), Jobu08\_65 (A3), Tiffany\_66 (A3),

#### Start 51:

- Found in 1 of 580 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 523
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Trina\_43 (CE),

#### Start 52:

- Found in 8 of 580 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 4 of 523
- Called 62.5% of time when present
- Phage (with cluster) where this start called: Bromden\_87 (L4), Douge\_87 (L4), DyoEdafos\_89 (L4), ReginaGlobina\_62 (FC), Tourach\_86 (L2),

#### Start 53:

- Found in 1 of 580 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 523
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cece\_217 (GD3),

#### Start 54:

- Found in 136 of 580 ( 23.4% ) of genes in pham
- Manual Annotations of this start: 124 of 523
- Called 97.1% of time when present
- Phage (with cluster) where this start called: 244\_77 (E), ABCat\_73 (E), Adnama\_80 (E), Amao\_76 (E), AmericanBeauty\_80 (E), Argent26\_80 (E), Asriel\_75 (E), BaboJay\_73 (E), BadStone\_73 (E), Balomoji\_76 (E), Barbarian\_75 (E), Bask21\_76 (E), Bench\_79 (E), BigBubba\_76 (E), BilboSwaggins\_75 (E), Bruin\_73 (E), Buck\_77 (E), Cactus\_79 (E), ChosenOne\_76 (E), ChotaBhai\_76 (E), Cjw1\_76 (E), Command613\_78 (E), Contagion\_72 (E), Cookies\_73 (E), CrystalP\_75 (E), Czyszczon1\_77 (E), Daikon\_78 (E), DoctorDiddles\_75 (E), DrDrey\_76 (E), Dumbo\_76 (E), Dusk\_73 (E), Easy2Say\_77 (E), Elite2014\_75 (E), Elph10\_76 (E), Elver\_239 (FK), Emmina\_76 (E), Eureka\_74 (E), FairyPath\_76 (E), Filch\_77 (E), FireRed\_80 (E), Flypotenuse\_72 (E), Gage\_78 (E), Gandionco\_246 (FK), Gator\_74 (E), Gemini\_81 (E), Glexan\_75 (E), Goku\_74 (E), GoldenSpark\_80 (E), Goldilocks\_79 (E), GooberAzure\_79 (E), HanKaySha\_76 (E), Harella\_76 (E), Henry\_74 (E), Highbury\_75 (E), Holt\_81 (E), Hoonter\_79 (E), Hopey\_76 (E), HuffyPuff\_79 (E), IHOP\_74 (E), Icee\_77 (E), Inca\_73 (E), JeTaime\_76 (E), Kampe\_66 (CX), Kanye\_73 (E), Kimchi\_80 (E), Lilac\_78 (E), Lilizi\_77 (E), Lilpickle\_75 (E), MPhalcon\_77 (E), MadamMonkfish\_76 (E), Manda\_77 (E), Marshmallow\_74 (E), Maxxinista\_78 (E), Mindy\_75 (E), Miniwave\_71 (E), Misfit\_77 (E), Moldemort\_79 (E), Mosby\_72 (E), Murica\_79 (E), Murphy\_76 (E), Myrale\_76 (E), Nala\_78 (E), NelitzaMV\_74 (E), Nimrod\_77 (E), NoSleep\_77 (E), Orchid\_65 (CX), OrionPax\_75 (E), PP\_64 (A7), Paperbeatsrock\_75 (E), Pat3\_74 (E), PatrickStar\_66 (CX), Petra64142\_80 (E), Phaja\_74 (E), Pharsalus\_73 (E), PhatBacter\_80 (E), Phaux\_78 (E), Phrux\_73 (E), Policronamos\_80 (E), Porky\_75 (E), Pumpkin\_79 (E), Quallification\_77 (E), Rakim\_77 (E), Rimmer\_77 (E), RiverMonster\_76 (E), Saints25\_75 (E), Sassay\_71 (E), ShamWow\_76 (E), Simpliphy\_75 (E), SirDuracell\_75 (E), SophKB\_73 (E), Sotrice96\_77 (E), Stank\_79 (E), Stark\_77 (E), StellaBean\_74 (E), StolenFromERC\_79 (E), TBrady12\_79 (E), Tarkin\_75 (E), TeardropMSU\_72 (E), Teaspoon\_77 (E), Terminus\_79 (E), Thresher\_78 (E), Tomaszewski\_71 (E), Toto\_74

(E), Traaww1\_72 (E), Tuco\_77 (E), Ukulele\_71 (E), Wiggin\_78 (E), Willez\_71 (E), Xandras\_75 (E), YassJohnny\_73 (E), Youngblood\_79 (E), xkcd\_79 (E),

Start 55:

- Found in 17 of 580 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 12 of 523
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abscondus\_118 (CQ1), Aphelion\_118 (CQ1), Bachita\_120 (CQ1), ClubL\_119 (CQ1), Cucurbita\_119 (CQ1), Culver\_119 (CQ1), Dusty\_115 (CQ1), Engineer\_119 (CQ1), Geeche\_117 (CQ1), Lozinak\_118 (CQ1), Miskis\_117 (CQ1), Norvs\_118 (CQ1), PhinkBoden\_118 (CQ1), Smoothie\_119 (CQ1), TPA4\_57 (singleton), Toniann\_118 (CQ1), WilliamBoone\_116 (CQ1),

Start 56:

- Found in 184 of 580 ( 31.7% ) of genes in pham
- Manual Annotations of this start: 143 of 523
- Called 84.8% of time when present
- Phage (with cluster) where this start called: A3Wally\_248 (GD1), ACFishhook\_65 (A3), AN9\_68 (A2), ANI8\_68 (A2), Acquire49\_85 (L1), Adzzy\_67 (A2), Aglet\_68 (A3), AgronaGT15\_66 (A3), Alone3\_172 (BS), Aneem\_64 (A11), Appletree2\_84 (L1), Astro\_74 (A8), AugsMagnumOpus\_70 (A3), AvadaKedavra\_85 (L1), BRock\_163 (BS), Beauxregard13\_66 (A3), Beleetus\_169 (BS), Bowtie\_64 (A11), BreSam8\_67 (A3), Bud\_62 (A11), Bxz2\_62 (A3), C3\_61 (A2), Caraxes\_65 (A2), Che12\_66 (A2), CicholasNage\_82 (L1), Cintron\_60 (A4), Colbster\_65 (A3), Cullens\_67 (A3), D29\_61 (A2), D32\_65 (A2), DBQu4n\_66 (A2), DaHudson\_66 (A3), Daishi\_66 (A3), Danforth\_74 (A8), Daredevil\_46 (DL), Dieselweasel\_68 (A3), DirkDirk\_82 (L1), Dixon\_73 (A8), Dodo\_246 (GD1), DroogsArmy\_58 (A7), Duplo\_66 (A2), EpicPhail\_68 (A3), Et2Brutus\_62 (A11), Expelliarmus\_71 (A8), Fernando\_67 (A3), Fibonacci\_63 (A11), Flaverint\_64 (A11), FlyCatcher\_65 (A7), Gemma\_66 (A3), GiJojo\_160 (BS), Gilberta\_64 (A11), Grif\_67 (A3), Groundhog\_73 (A8), Groupthink\_68 (A3), Grub\_67 (A3), Grum1\_66 (A3), GtownJaz\_67 (A3), HINdeR\_58 (A7), HashRod\_68 (A3), HaveUMetTed\_68 (A3), Heliosoles\_66 (A3), Hercules11\_67 (A3), Ibantik\_12 (singleton), JHC117\_65 (A3), Jabith\_64 (A11), JeppNRM\_68 (A3), JoeDirt\_86 (L1), Joselito\_64 (A11), Jsquared\_66 (A2), KADY\_66 (A3), Kalb97\_68 (A3), Kalnoky\_68 (A3), Kerberos\_66 (A2), Kimona\_58 (A19), Koduck\_65 (A2), Kremtemulon\_60 (A4), L5\_61 (A2), LBerry\_68 (A3), LarryKay\_67 (A3), LeBron\_84 (L1), Lilith\_66 (A3), Louie6\_66 (A3), Lucivia\_64 (A11), LuckySocke\_170 (BS), LugYA\_70 (A3), MaCh\_63 (A11), Mabel\_63 (A11), MadMarie\_67 (A3), Mainiac\_67 (A3), MajorMajor\_64 (A2), Manu\_67 (A3), Marie\_65 (A3), Marius\_68 (A3), Methuselah\_62 (A3), Microwolf\_65 (A3), Misomonster\_68 (A3), MissWhite\_64 (A2), MoneyMay\_66 (A3), MuchMore\_70 (A3), Mulciber\_62 (A11), Munch\_63 (A11), Naji\_66 (A2), NearlyHeadless\_74 (A8), NiceHouse\_229 (CE), OlanP\_66 (A3), Ollie\_67 (A3), Orange\_62 (A11), P28Green\_68 (A3), PGHhamlin\_69 (A3), PauloDiaboli\_248 (GD1), Pawn\_67 (A3), Penny1\_67 (A3), Ph8s\_66 (A2), PhishRPhriends\_65 (A3), Phoebe\_68 (A3), Phoxy\_67 (A3), Phranny\_68 (A3), Pomar16\_65 (A2), PotatoSplit\_68 (A3), PurpleHaze\_67 (A3), Quokka\_64 (A2), Reba\_67 (A3), Rose5\_86 (L1), Sabinator\_65 (A3), Saintus\_69 (A8), Salz\_62 (A11), Serenity\_65 (A2), Sheen\_63 (A7), Silverleaf\_85 (L1), Smeadley\_74 (A8), Snape\_63 (A11), SoYo\_66 (A3), SoilDragon\_67 (A3), Soshari\_69 (A3), Spike509\_67 (A3), StarStuff\_66 (A2), Stepbig9\_73 (A8), Superchunk\_64 (A2), SwirlSquare\_70 (A2), Talos\_171 (BS), Timothy\_63 (A11), Timshel\_60 (A7), TinyPebbles\_65 (A3), TinyTimmy\_63 (A11), TopsytheTRex\_62 (A2), Tomathan\_66 (A2), Toro\_63 (A7), Towmatter\_46 (DL), Travvers\_65 (A2), Tyson\_86 (L1), UPIE\_84 (L1), VC3\_67 (A2), Vix\_65 (A3), Wooldri\_69 (A3), Wyatt2\_86 (L1), Zetzy\_66 (A3),

Start 57:

- Found in 10 of 580 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 9 of 523
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Azrael100\_127 (V), Circum\_92 (AM), Cosmo\_135 (V), EniyanLRS\_127 (V), Garnacho\_166 (BS), GoCrazy\_87 (AM), Hankly\_92 (AM), KeaneyLin\_89 (AM), MaryV\_120 (V), Wildcat\_134 (V),

Start 59:

- Found in 103 of 580 ( 17.8% ) of genes in pham
- Manual Annotations of this start: 14 of 523
- Called 16.5% of time when present
- Phage (with cluster) where this start called: BuzzBuzz\_63 (A3), Calvinny\_66 (A3), GingkoMaracino\_67 (A3), JenCasNa\_68 (A3), Kinmap\_64 (A21), Kumao\_84 (singleton), Malinsilva\_69 (A3), MarQuardt\_67 (A3), Odin\_64 (A2), Pembroke\_67 (A3), Rummer\_66 (A3), Sabia\_67 (A3), Snickers\_65 (A3), Stagni\_66 (A3), StepMih\_66 (A3), Taurus\_68 (A3), Watson\_66 (A3),

Start 60:

- Found in 147 of 580 ( 25.3% ) of genes in pham
- Manual Annotations of this start: 4 of 523
- Called 5.4% of time when present
- Phage (with cluster) where this start called: Bradman\_65 (A2), BugsBunny\_76 (E), Farewell\_78 (AF), Kostya\_76 (E), MISSy\_77 (E), Palpatine\_78 (E), Sparky\_77 (AF), StAugustine\_185 (singleton),

Start 62:

- Found in 8 of 580 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 5 of 523
- Called 75.0% of time when present
- Phage (with cluster) where this start called: BuzzLyseyear\_47 (F1), DaddyRickover\_42 (F1), Demsculpinboyz\_49 (F2), Fastidio\_45 (F1), Killigrew\_36 (A1), Marker\_42 (F1),

Start 64:

- Found in 5 of 580 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 5 of 523
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BlueNGold\_167 (DS), Boopy\_170 (DS), Forza\_171 (DS), Mareelih\_168 (DS), Sixama\_169 (DS),

Start 72:

- Found in 5 of 580 ( 0.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Mugiwara\_96 (BE2),

Start 73:

- Found in 17 of 580 ( 2.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 5.9% of time when present
- Phage (with cluster) where this start called: GordDuk1\_81 (DF1),



Start 74:

- Found in 35 of 580 ( 6.0% ) of genes in pham
- Manual Annotations of this start: 1 of 523
- Called 5.7% of time when present
- Phage (with cluster) where this start called: Spooks\_15 (BT), Success\_16 (BT),

Start 86:

- Found in 1 of 580 ( 0.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DrWorm\_23 (singleton),

**Summary by clusters:**

There are 39 clusters represented in this pham: GD1, singleton, GD3, BM, L1, DL, A21, BT, FC, BS, FK, DS, A11, DF1, A18, DF2, A1, A3, A2, A4, A7, A8, CQ1, AA, E, AF, CB, J, AM, CE, L4, CX, L2, V, A20, F1, F2, A19, BE2,

Info for manual annotations of cluster A1:

- Start number 62 was manually annotated 1 time for cluster A1.

Info for manual annotations of cluster A11:

- Start number 48 was manually annotated 5 times for cluster A11.
- Start number 56 was manually annotated 19 times for cluster A11.

Info for manual annotations of cluster A18:

- Start number 41 was manually annotated 1 time for cluster A18.

Info for manual annotations of cluster A19:

- Start number 56 was manually annotated 1 time for cluster A19.

Info for manual annotations of cluster A2:

- Start number 56 was manually annotated 22 times for cluster A2.
- Start number 59 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster A20:

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

Info for manual annotations of cluster A3:

- Start number 14 was manually annotated 8 times for cluster A3.
- Start number 15 was manually annotated 24 times for cluster A3.
- Start number 50 was manually annotated 4 times for cluster A3.
- Start number 56 was manually annotated 65 times for cluster A3.
- Start number 59 was manually annotated 12 times for cluster A3.

Info for manual annotations of cluster A4:

- Start number 15 was manually annotated 135 times for cluster A4.
- Start number 56 was manually annotated 2 times for cluster A4.

Info for manual annotations of cluster A7:

- Start number 54 was manually annotated 1 time for cluster A7.

- Start number 56 was manually annotated 4 times for cluster A7.

Info for manual annotations of cluster A8:

- Start number 37 was manually annotated 1 time for cluster A8.
- Start number 56 was manually annotated 9 times for cluster A8.

Info for manual annotations of cluster AA:

- Start number 48 was manually annotated 2 times for cluster AA.

Info for manual annotations of cluster AF:

- Start number 60 was manually annotated 2 times for cluster AF.

Info for manual annotations of cluster AM:

- Start number 57 was manually annotated 4 times for cluster AM.

Info for manual annotations of cluster BE2:

- Start number 33 was manually annotated 4 times for cluster BE2.

Info for manual annotations of cluster BM:

- Start number 30 was manually annotated 7 times for cluster BM.

Info for manual annotations of cluster BS:

- Start number 56 was manually annotated 4 times for cluster BS.

Info for manual annotations of cluster BT:

- Start number 74 was manually annotated 1 time for cluster BT.

Info for manual annotations of cluster CB:

- Start number 39 was manually annotated 4 times for cluster CB.

Info for manual annotations of cluster CE:

- Start number 51 was manually annotated 1 time for cluster CE.
- Start number 56 was manually annotated 1 time for cluster CE.

Info for manual annotations of cluster CQ1:

- Start number 55 was manually annotated 12 times for cluster CQ1.

Info for manual annotations of cluster CX:

- Start number 54 was manually annotated 3 times for cluster CX.

Info for manual annotations of cluster DL:

- Start number 48 was manually annotated 2 times for cluster DL.
- Start number 56 was manually annotated 1 time for cluster DL.

Info for manual annotations of cluster DS:

- Start number 64 was manually annotated 5 times for cluster DS.

Info for manual annotations of cluster E:

- Start number 54 was manually annotated 120 times for cluster E.
- Start number 60 was manually annotated 2 times for cluster E.

Info for manual annotations of cluster F1:

- Start number 62 was manually annotated 3 times for cluster F1.

Info for manual annotations of cluster F2:

- Start number 62 was manually annotated 1 time for cluster F2.

Info for manual annotations of cluster GD1:

- Start number 56 was manually annotated 2 times for cluster GD1.

Info for manual annotations of cluster GD3:

- Start number 53 was manually annotated 1 time for cluster GD3.

Info for manual annotations of cluster J:

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

Info for manual annotations of cluster L1:

- Start number 56 was manually annotated 12 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 46 was manually annotated 1 time for cluster L2.
- Start number 52 was manually annotated 1 time for cluster L2.

Info for manual annotations of cluster L4:

- Start number 52 was manually annotated 3 times for cluster L4.

Info for manual annotations of cluster V:

- Start number 57 was manually annotated 5 times for cluster V.

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

Gene: 244\_77 Start: 48199, Stop: 48612, Start Num: 54

Candidate Starts for 244\_77:

(Start: 54 @48199 has 124 MA's), (Start: 60 @48214 has 4 MA's), (118, 48361), (156, 48499),

Gene: A3Wally\_248 Start: 138625, Stop: 139011, Start Num: 56

Candidate Starts for A3Wally\_248:

(Start: 56 @138625 has 143 MA's), (90, 138712), (131, 138796), (153, 138856), (156, 138874), (162, 138895), (184, 138973), (191, 138994),

Gene: ABCat\_73 Start: 48552, Stop: 48965, Start Num: 54

Candidate Starts for ABCat\_73:

(Start: 54 @48552 has 124 MA's), (Start: 60 @48567 has 4 MA's), (118, 48714), (156, 48852),

Gene: ACFishhook\_65 Start: 40901, Stop: 40482, Start Num: 56

Candidate Starts for ACFishhook\_65:

(7, 41156), (Start: 50 @40910 has 5 MA's), (Start: 56 @40901 has 143 MA's), (Start: 59 @40892 has 14 MA's), (104, 40799), (156, 40646), (175, 40577),

Gene: AN9\_68 Start: 40889, Stop: 40512, Start Num: 56

Candidate Starts for AN9\_68:

(19, 41003), (Start: 56 @40889 has 143 MA's), (Start: 59 @40880 has 14 MA's), (65, 40859), (73, 40841), (79, 40826), (156, 40637), (164, 40610), (171, 40586), (175, 40568),

Gene: ANI8\_68 Start: 40889, Stop: 40512, Start Num: 56

Candidate Starts for ANI8\_68:

(19, 41003), (Start: 56 @40889 has 143 MA's), (Start: 59 @40880 has 14 MA's), (65, 40859), (73, 40841), (79, 40826), (156, 40637), (164, 40610), (171, 40586), (175, 40568),

Gene: AbbysRanger\_59 Start: 40097, Stop: 39711, Start Num: 15

Candidate Starts for AbbysRanger\_59:

(Start: 15 @40097 has 159 MA's), (124, 39938), (129, 39929), (156, 39845), (175, 39776),

Gene: Abdiel\_61 Start: 40247, Stop: 39867, Start Num: 15

Candidate Starts for Abdiel\_61:

(Start: 14 @40256 has 8 MA's), (Start: 15 @40247 has 159 MA's), (124, 40088), (126, 40085), (129, 40079), (156, 39995), (175, 39926),

Gene: Abscondus\_118 Start: 67747, Stop: 68124, Start Num: 55

Candidate Starts for Abscondus\_118:

(29, 67702), (Start: 55 @67747 has 12 MA's), (77, 67807), (156, 68005), (158, 68014), (159, 68017), (162, 68026), (175, 68074),

Gene: Achebe\_58 Start: 40080, Stop: 39694, Start Num: 15

Candidate Starts for Achebe\_58:

(Start: 15 @40080 has 159 MA's), (124, 39921), (129, 39912), (156, 39828), (175, 39759),

Gene: Acquire49\_85 Start: 54457, Stop: 54870, Start Num: 56

Candidate Starts for Acquire49\_85:

(Start: 56 @54457 has 143 MA's), (Start: 74 @54508 has 1 MA's), (76, 54514), (156, 54748), (162, 54769), (164, 54775), (175, 54817),

Gene: Adnama\_80 Start: 48578, Stop: 48991, Start Num: 54

Candidate Starts for Adnama\_80:

(Start: 54 @48578 has 124 MA's), (Start: 60 @48593 has 4 MA's), (118, 48740), (156, 48878),

Gene: Adzzy\_67 Start: 39457, Stop: 39080, Start Num: 56

Candidate Starts for Adzzy\_67:

(44, 39472), (Start: 56 @39457 has 143 MA's), (Start: 59 @39448 has 14 MA's), (65, 39427), (101, 39361), (124, 39298), (156, 39205), (175, 39136),

Gene: Aglet\_68 Start: 40944, Stop: 40525, Start Num: 56

Candidate Starts for Aglet\_68:

(1, 41292), (2, 41289), (4, 41250), (Start: 50 @40953 has 5 MA's), (Start: 56 @40944 has 143 MA's), (Start: 59 @40935 has 14 MA's), (104, 40842), (156, 40689), (175, 40620),

Gene: AgronaGT15\_66 Start: 40792, Stop: 40373, Start Num: 56

Candidate Starts for AgronaGT15\_66:

(1, 41140), (2, 41137), (4, 41098), (Start: 50 @40801 has 5 MA's), (Start: 56 @40792 has 143 MA's), (Start: 59 @40783 has 14 MA's), (104, 40690), (156, 40537), (175, 40468), (197, 40390),

Gene: Albee\_61 Start: 40243, Stop: 39863, Start Num: 15

Candidate Starts for Albee\_61:

(Start: 15 @40243 has 159 MA's), (124, 40084), (129, 40075), (156, 39991), (175, 39922), (177, 39916),

Gene: Alberto7\_62 Start: 40580, Stop: 40200, Start Num: 15

Candidate Starts for Alberto7\_62:

(Start: 15 @40580 has 159 MA's), (124, 40421), (129, 40412), (156, 40328), (175, 40259), (177, 40253),

Gene: Alone3\_172 Start: 89660, Stop: 90058, Start Num: 56

Candidate Starts for Alone3\_172:

(Start: 56 @89660 has 143 MA's), (Start: 60 @89672 has 4 MA's), (100, 89756), (105, 89762), (113, 89786), (156, 89927), (163, 89951), (176, 89996), (181, 90008), (191, 90041),

Gene: Amao\_76 Start: 47972, Stop: 48385, Start Num: 54

Candidate Starts for Amao\_76:

(Start: 54 @47972 has 124 MA's), (Start: 60 @47987 has 4 MA's), (118, 48134), (156, 48272),

Gene: AmericanBeauty\_80 Start: 48721, Stop: 49134, Start Num: 54

Candidate Starts for AmericanBeauty\_80:

(Start: 54 @48721 has 124 MA's), (Start: 60 @48736 has 4 MA's), (118, 48883), (156, 49021),

Gene: Aneem\_64 Start: 39830, Stop: 39456, Start Num: 56

Candidate Starts for Aneem\_64:

(1, 40166), (5, 40118), (9, 40061), (21, 39938), (23, 39911), (Start: 48 @39842 has 9 MA's), (Start: 56 @39830 has 143 MA's), (101, 39734), (124, 39671), (129, 39662), (135, 39650), (153, 39596), (156, 39578), (175, 39509),

Gene: Annyong\_60 Start: 40288, Stop: 39908, Start Num: 15

Candidate Starts for Annyong\_60:

(Start: 15 @40288 has 159 MA's), (124, 40129), (129, 40120), (156, 40036), (175, 39967),

Gene: Anthony\_67 Start: 41229, Stop: 40837, Start Num: 50

Candidate Starts for Anthony\_67:

(32, 41259), (Start: 50 @41229 has 5 MA's), (Start: 74 @41169 has 1 MA's), (156, 40971), (175, 40902),

Gene: Anubis\_70 Start: 40839, Stop: 40411, Start Num: 50

Candidate Starts for Anubis\_70:

(1, 41178), (2, 41175), (4, 41136), (6, 41127), (Start: 50 @40839 has 5 MA's), (Start: 56 @40830 has 143 MA's), (Start: 59 @40821 has 14 MA's), (104, 40728), (156, 40575), (175, 40506),

Gene: Aphelion\_118 Start: 68628, Stop: 69005, Start Num: 55

Candidate Starts for Aphelion\_118:

(29, 68583), (Start: 55 @68628 has 12 MA's), (77, 68688), (156, 68886), (158, 68895), (159, 68898), (162, 68907), (175, 68955), (185, 68985),

Gene: Appletree2\_84 Start: 54041, Stop: 54460, Start Num: 56

Candidate Starts for Appletree2\_84:

(Start: 56 @54041 has 143 MA's), (118, 54194), (156, 54332), (162, 54353), (164, 54359), (175, 54401),

Gene: Argent26\_80 Start: 48359, Stop: 48772, Start Num: 54

Candidate Starts for Argent26\_80:

(Start: 54 @48359 has 124 MA's), (Start: 60 @48374 has 4 MA's), (118, 48521), (156, 48659),

Gene: Arturo\_59 Start: 40358, Stop: 39978, Start Num: 15

Candidate Starts for Arturo\_59:

(Start: 15 @40358 has 159 MA's), (124, 40199), (129, 40190), (156, 40106), (175, 40037),

Gene: Asriel\_75 Start: 46915, Stop: 47328, Start Num: 54

Candidate Starts for Asriel\_75:

(Start: 54 @46915 has 124 MA's), (Start: 60 @46930 has 4 MA's), (118, 47077), (156, 47215),

Gene: Astro\_74 Start: 41340, Stop: 40969, Start Num: 56

Candidate Starts for Astro\_74:

(Start: 37 @41361 has 1 MA's), (Start: 56 @41340 has 143 MA's), (124, 41181), (139, 41148), (155, 41091), (156, 41088), (168, 41049), (175, 41019),

Gene: AugsMagnumOpus\_70 Start: 40935, Stop: 40516, Start Num: 56

Candidate Starts for AugsMagnumOpus\_70:

(1, 41283), (2, 41280), (4, 41241), (Start: 50 @40944 has 5 MA's), (Start: 56 @40935 has 143 MA's), (Start: 59 @40926 has 14 MA's), (104, 40833), (156, 40680), (175, 40611),

Gene: AvadaKedavra\_85 Start: 54536, Stop: 54949, Start Num: 56

Candidate Starts for AvadaKedavra\_85:

(Start: 56 @54536 has 143 MA's), (Start: 74 @54587 has 1 MA's), (76, 54593), (156, 54827), (162, 54848), (164, 54854), (175, 54896),

Gene: AvatarAhPeg\_58 Start: 39870, Stop: 39484, Start Num: 15

Candidate Starts for AvatarAhPeg\_58:

(Start: 15 @39870 has 159 MA's), (124, 39711), (129, 39702), (156, 39618), (175, 39549),

Gene: Avle17\_61 Start: 40240, Stop: 39860, Start Num: 15

Candidate Starts for Avle17\_61:

(Start: 15 @40240 has 159 MA's), (124, 40081), (129, 40072), (156, 39988), (175, 39919),

Gene: Azrael100\_127 Start: 63905, Stop: 64339, Start Num: 57

Candidate Starts for Azrael100\_127:

(Start: 57 @63905 has 9 MA's), (Start: 60 @63914 has 4 MA's), (73, 63950), (Start: 74 @63953 has 1 MA's), (108, 64016), (121, 64064), (123, 64070), (135, 64094), (154, 64193), (156, 64208), (174, 64280),

Gene: B1\_56 Start: 38826, Stop: 38434, Start Num: 14

Candidate Starts for B1\_56:

(Start: 14 @38826 has 8 MA's), (Start: 15 @38817 has 159 MA's), (124, 38661), (153, 38586), (156, 38568), (175, 38499), (185, 38469), (191, 38451),

Gene: BRock\_163 Start: 85073, Stop: 85462, Start Num: 56

Candidate Starts for BRock\_163:

(25, 84986), (40, 85052), (Start: 56 @85073 has 143 MA's), (Start: 59 @85082 has 14 MA's), (102, 85169), (156, 85331), (176, 85400), (181, 85412), (191, 85445),

Gene: BaboJay\_73 Start: 47752, Stop: 48165, Start Num: 54

Candidate Starts for BaboJay\_73:

(Start: 54 @47752 has 124 MA's), (Start: 60 @47767 has 4 MA's), (118, 47914), (156, 48052),

Gene: Baby16\_61 Start: 40254, Stop: 39874, Start Num: 15  
Candidate Starts for Baby16\_61:  
(Start: 15 @40254 has 159 MA's), (124, 40095), (129, 40086), (156, 40002), (175, 39933), (177, 39927),

Gene: BabyJohn\_59 Start: 40644, Stop: 40261, Start Num: 15  
Candidate Starts for BabyJohn\_59:  
(Start: 14 @40653 has 8 MA's), (Start: 15 @40644 has 159 MA's), (124, 40488), (153, 40413), (156, 40395), (162, 40374), (185, 40296),

Gene: BabyRay\_64 Start: 40631, Stop: 40239, Start Num: 14  
Candidate Starts for BabyRay\_64:  
(3, 40772), (Start: 14 @40631 has 8 MA's), (Start: 15 @40622 has 159 MA's), (79, 40559), (124, 40466), (156, 40373), (185, 40274), (194, 40244),

Gene: Bachita\_120 Start: 68407, Stop: 68784, Start Num: 55  
Candidate Starts for Bachita\_120:  
(29, 68362), (Start: 55 @68407 has 12 MA's), (77, 68467), (156, 68665), (158, 68674), (159, 68677), (175, 68734), (185, 68764),

Gene: Bachome\_65 Start: 39822, Stop: 39436, Start Num: 48  
Candidate Starts for Bachome\_65:  
(1, 40146), (5, 40098), (9, 40041), (21, 39918), (Start: 48 @39822 has 9 MA's), (Start: 56 @39810 has 143 MA's), (101, 39714), (124, 39651), (129, 39642), (135, 39630), (153, 39576), (156, 39558), (175, 39489),

Gene: Backyardigan\_57 Start: 40113, Stop: 39727, Start Num: 15  
Candidate Starts for Backyardigan\_57:  
(Start: 15 @40113 has 159 MA's), (124, 39954), (129, 39945), (156, 39861), (175, 39792),

Gene: BadStone\_73 Start: 48121, Stop: 48534, Start Num: 54  
Candidate Starts for BadStone\_73:  
(Start: 54 @48121 has 124 MA's), (Start: 60 @48136 has 4 MA's), (118, 48283), (156, 48421),

Gene: Badger\_58 Start: 40081, Stop: 39695, Start Num: 15  
Candidate Starts for Badger\_58:  
(Start: 15 @40081 has 159 MA's), (124, 39922), (129, 39913), (156, 39829), (175, 39760),

Gene: Balomoji\_76 Start: 48682, Stop: 49095, Start Num: 54  
Candidate Starts for Balomoji\_76:  
(Start: 54 @48682 has 124 MA's), (Start: 60 @48697 has 4 MA's), (118, 48844), (156, 48982),

Gene: BangNhom\_60 Start: 40646, Stop: 40266, Start Num: 15  
Candidate Starts for BangNhom\_60:  
(Start: 15 @40646 has 159 MA's), (124, 40487), (129, 40478), (156, 40394), (175, 40325),

Gene: Bantam\_55 Start: 44365, Stop: 44757, Start Num: 48  
Candidate Starts for Bantam\_55:  
(10, 44140), (42, 44362), (Start: 48 @44365 has 9 MA's), (155, 44623), (156, 44626),

Gene: Barbarian\_75 Start: 46915, Stop: 47328, Start Num: 54  
Candidate Starts for Barbarian\_75:  
(Start: 54 @46915 has 124 MA's), (Start: 60 @46930 has 4 MA's), (118, 47077), (156, 47215),

Gene: Bartimeaus\_61 Start: 40245, Stop: 39865, Start Num: 15

Candidate Starts for Bartimeaus\_61:

(Start: 15 @40245 has 159 MA's), (124, 40086), (129, 40077), (156, 39993), (175, 39924), (177, 39918),

Gene: Bask21\_76 Start: 47535, Stop: 47948, Start Num: 54

Candidate Starts for Bask21\_76:

(Start: 54 @47535 has 124 MA's), (Start: 60 @47550 has 4 MA's), (118, 47697), (156, 47835),

Gene: Battuta\_92 Start: 66300, Stop: 66764, Start Num: 33

Candidate Starts for Battuta\_92:

(26, 66258), (Start: 33 @66300 has 4 MA's), (72, 66381), (82, 66408), (97, 66432), (150, 66594), (156, 66618), (166, 66651), (191, 66738), (193, 66747),

Gene: Beauxregard13\_66 Start: 40947, Stop: 40528, Start Num: 56

Candidate Starts for Beauxregard13\_66:

(1, 41295), (2, 41292), (Start: 50 @40956 has 5 MA's), (Start: 56 @40947 has 143 MA's), (Start: 59 @40938 has 14 MA's), (104, 40845), (156, 40692), (175, 40623),

Gene: Beleetus\_169 Start: 88129, Stop: 88518, Start Num: 56

Candidate Starts for Beleetus\_169:

(Start: 56 @88129 has 143 MA's), (Start: 59 @88138 has 14 MA's), (93, 88216), (112, 88246), (144, 88327), (156, 88387), (163, 88411), (176, 88456), (181, 88468), (191, 88501),

Gene: BellusTerra\_62 Start: 40247, Stop: 39867, Start Num: 15

Candidate Starts for BellusTerra\_62:

(Start: 14 @40256 has 8 MA's), (Start: 15 @40247 has 159 MA's), (124, 40088), (129, 40079), (156, 39995), (175, 39926), (177, 39920),

Gene: Bench\_79 Start: 48219, Stop: 48632, Start Num: 54

Candidate Starts for Bench\_79:

(Start: 54 @48219 has 124 MA's), (Start: 60 @48234 has 4 MA's), (118, 48381), (156, 48519),

Gene: BigBubba\_76 Start: 47931, Stop: 48344, Start Num: 54

Candidate Starts for BigBubba\_76:

(Start: 54 @47931 has 124 MA's), (Start: 60 @47946 has 4 MA's), (118, 48093), (156, 48231),

Gene: BilboSwaggins\_75 Start: 48560, Stop: 48973, Start Num: 54

Candidate Starts for BilboSwaggins\_75:

(Start: 54 @48560 has 124 MA's), (Start: 60 @48575 has 4 MA's), (118, 48722), (156, 48860),

Gene: Blackmoor\_60 Start: 40245, Stop: 39865, Start Num: 15

Candidate Starts for Blackmoor\_60:

(Start: 15 @40245 has 159 MA's), (124, 40086), (129, 40077), (156, 39993), (175, 39924), (177, 39918),

Gene: BlueBird\_66 Start: 40669, Stop: 40286, Start Num: 15

Candidate Starts for BlueBird\_66:

(3, 40819), (Start: 14 @40678 has 8 MA's), (Start: 15 @40669 has 159 MA's), (124, 40513), (137, 40486), (153, 40438), (156, 40420), (185, 40321), (194, 40291),

Gene: BlueNGold\_167 Start: 97256, Stop: 96897, Start Num: 64



Candidate Starts for BlueNGold\_167:

(Start: 64 @97256 has 5 MA's), (68, 97247), (70, 97244), (83, 97214), (94, 97193), (116, 97139), (156, 97022), (158, 97013), (162, 97001), (168, 96983),

Gene: Bombshell\_61 Start: 40240, Stop: 39860, Start Num: 15

Candidate Starts for Bombshell\_61:

(Start: 15 @40240 has 159 MA's), (124, 40081), (129, 40072), (156, 39988), (175, 39919), (177, 39913),

Gene: Boopy\_170 Start: 97267, Stop: 96908, Start Num: 64

Candidate Starts for Boopy\_170:

(Start: 64 @97267 has 5 MA's), (68, 97258), (70, 97255), (83, 97225), (94, 97204), (116, 97150), (156, 97033), (158, 97024), (162, 97012), (168, 96994),

Gene: Bowtie\_64 Start: 39837, Stop: 39463, Start Num: 56

Candidate Starts for Bowtie\_64:

(1, 40173), (5, 40125), (9, 40068), (21, 39945), (Start: 48 @39849 has 9 MA's), (Start: 56 @39837 has 143 MA's), (124, 39678), (129, 39669), (153, 39603), (156, 39585), (175, 39516),

Gene: Bradman\_65 Start: 39794, Stop: 39429, Start Num: 60

Candidate Starts for Bradman\_65:

(19, 39920), (44, 39821), (Start: 56 @39806 has 143 MA's), (Start: 60 @39794 has 4 MA's), (79, 39743), (124, 39647), (156, 39554), (175, 39485),

Gene: BreSam8\_67 Start: 40937, Stop: 40518, Start Num: 56

Candidate Starts for BreSam8\_67:

(1, 41285), (2, 41282), (Start: 50 @40946 has 5 MA's), (Start: 56 @40937 has 143 MA's), (Start: 59 @40928 has 14 MA's), (104, 40835), (156, 40682), (175, 40613),

Gene: Bromden\_87 Start: 56046, Stop: 56465, Start Num: 52

Candidate Starts for Bromden\_87:

(43, 56034), (Start: 52 @56046 has 4 MA's), (Start: 74 @56103 has 1 MA's), (85, 56127), (98, 56148), (118, 56205), (126, 56226), (156, 56343), (175, 56412),

Gene: Broseidon\_61 Start: 40245, Stop: 39865, Start Num: 15

Candidate Starts for Broseidon\_61:

(Start: 15 @40245 has 159 MA's), (124, 40086), (129, 40077), (156, 39993), (175, 39924), (177, 39918),

Gene: Bruin\_73 Start: 47095, Stop: 47508, Start Num: 54

Candidate Starts for Bruin\_73:

(Start: 54 @47095 has 124 MA's), (Start: 60 @47110 has 4 MA's), (118, 47257), (156, 47395),

Gene: Bruiser\_60 Start: 40243, Stop: 39863, Start Num: 15

Candidate Starts for Bruiser\_60:

(Start: 15 @40243 has 159 MA's), (124, 40084), (129, 40075), (156, 39991), (175, 39922),

Gene: BubbleTrouble\_60 Start: 40243, Stop: 39863, Start Num: 15

Candidate Starts for BubbleTrouble\_60:

(Start: 15 @40243 has 159 MA's), (124, 40084), (129, 40075), (156, 39991), (175, 39922), (177, 39916),

Gene: Buck\_77 Start: 48800, Stop: 49213, Start Num: 54

Candidate Starts for Buck\_77:

(Start: 54 @48800 has 124 MA's), (Start: 60 @48815 has 4 MA's), (118, 48962), (156, 49100),

Gene: Bud\_62 Start: 39384, Stop: 39010, Start Num: 56

Candidate Starts for Bud\_62:

(1, 39720), (5, 39672), (9, 39615), (21, 39492), (23, 39465), (Start: 48 @39396 has 9 MA's), (Start: 56 @39384 has 143 MA's), (101, 39288), (124, 39225), (129, 39216), (135, 39204), (153, 39150), (156, 39132), (175, 39063),

Gene: Bugatti\_64 Start: 40669, Stop: 40286, Start Num: 15

Candidate Starts for Bugatti\_64:

(3, 40819), (Start: 14 @40678 has 8 MA's), (Start: 15 @40669 has 159 MA's), (124, 40513), (137, 40486), (153, 40438), (156, 40420), (185, 40321), (194, 40291),

Gene: BugsBunny\_76 Start: 48642, Stop: 49040, Start Num: 60

Candidate Starts for BugsBunny\_76:

(Start: 54 @48627 has 124 MA's), (Start: 60 @48642 has 4 MA's), (118, 48789), (156, 48927),

Gene: Bumblebee11\_58 Start: 40083, Stop: 39697, Start Num: 15

Candidate Starts for Bumblebee11\_58:

(Start: 15 @40083 has 159 MA's), (124, 39924), (129, 39915), (156, 39831), (175, 39762),

Gene: Burger\_59 Start: 40243, Stop: 39863, Start Num: 15

Candidate Starts for Burger\_59:

(Start: 15 @40243 has 159 MA's), (124, 40084), (129, 40075), (156, 39991), (175, 39922), (177, 39916),

Gene: BuzzBuzz\_63 Start: 40962, Stop: 40552, Start Num: 59

Candidate Starts for BuzzBuzz\_63:

(1, 41319), (2, 41316), (4, 41277), (Start: 50 @40980 has 5 MA's), (Start: 56 @40971 has 143 MA's), (Start: 59 @40962 has 14 MA's), (104, 40869), (156, 40716), (175, 40647), (185, 40617),

Gene: BuzzLyseyear\_47 Start: 33161, Stop: 32727, Start Num: 62

Candidate Starts for BuzzLyseyear\_47:

(Start: 62 @33161 has 5 MA's), (66, 33149), (142, 32975), (143, 32972), (144, 32969), (151, 32927), (154, 32906), (179, 32804), (184, 32786), (197, 32735),

Gene: Bxz2\_62 Start: 40978, Stop: 40559, Start Num: 56

Candidate Starts for Bxz2\_62:

(1, 41326), (2, 41323), (4, 41284), (Start: 50 @40987 has 5 MA's), (Start: 56 @40978 has 143 MA's), (Start: 59 @40969 has 14 MA's), (104, 40876), (156, 40723), (175, 40654), (197, 40576),

Gene: C3\_61 Start: 40889, Stop: 40512, Start Num: 56

Candidate Starts for C3\_61:

(19, 41003), (Start: 56 @40889 has 143 MA's), (Start: 59 @40880 has 14 MA's), (65, 40859), (73, 40841), (79, 40826), (156, 40637), (164, 40610), (171, 40586), (175, 40568),

Gene: Cactus\_79 Start: 47576, Stop: 47989, Start Num: 54

Candidate Starts for Cactus\_79:

(Start: 54 @47576 has 124 MA's), (Start: 60 @47591 has 4 MA's), (118, 47738), (156, 47876),

Gene: Caelakin\_60 Start: 40243, Stop: 39863, Start Num: 15

Candidate Starts for Caelakin\_60:

(Start: 15 @40243 has 159 MA's), (124, 40084), (129, 40075), (156, 39991), (175, 39922),

Gene: Calvinny\_66 Start: 40820, Stop: 40410, Start Num: 59

Candidate Starts for Calvinny\_66:

(Start: 50 @40838 has 5 MA's), (Start: 56 @40829 has 143 MA's), (Start: 59 @40820 has 14 MA's), (104, 40727), (156, 40574), (175, 40505),

Gene: Camperdownii\_59 Start: 39917, Stop: 39537, Start Num: 15

Candidate Starts for Camperdownii\_59:

(Start: 15 @39917 has 159 MA's), (124, 39758), (129, 39749), (156, 39665), (175, 39596), (177, 39590),

Gene: Caraxes\_65 Start: 39205, Stop: 38822, Start Num: 56

Candidate Starts for Caraxes\_65:

(19, 39319), (44, 39220), (Start: 56 @39205 has 143 MA's), (73, 39157), (106, 39103), (124, 39040), (156, 38947), (162, 38926), (175, 38878),

Gene: Caviar\_63 Start: 40646, Stop: 40263, Start Num: 15

Candidate Starts for Caviar\_63:

(Start: 14 @40655 has 8 MA's), (Start: 15 @40646 has 159 MA's), (104, 40550), (124, 40490), (156, 40397), (185, 40298), (186, 40295), (194, 40268),

Gene: Cece\_217 Start: 133054, Stop: 133446, Start Num: 53

Candidate Starts for Cece\_217:

(28, 133003), (Start: 53 @133054 has 1 MA's), (153, 133285), (156, 133303), (184, 133402), (185, 133405),

Gene: CentreCat\_61 Start: 40246, Stop: 39866, Start Num: 15

Candidate Starts for CentreCat\_61:

(Start: 15 @40246 has 159 MA's), (124, 40087), (129, 40078), (156, 39994), (175, 39925), (177, 39919),

Gene: Cerulean\_62 Start: 40647, Stop: 40267, Start Num: 15

Candidate Starts for Cerulean\_62:

(Start: 15 @40647 has 159 MA's), (124, 40488), (129, 40479), (156, 40395), (175, 40326),

Gene: ChampagnePapi\_63 Start: 40646, Stop: 40266, Start Num: 15

Candidate Starts for ChampagnePapi\_63:

(Start: 15 @40646 has 159 MA's), (124, 40487), (129, 40478), (156, 40394), (175, 40325),

Gene: Chaph\_61 Start: 40254, Stop: 39874, Start Num: 15

Candidate Starts for Chaph\_61:

(Start: 15 @40254 has 159 MA's), (124, 40095), (129, 40086), (156, 40002), (175, 39933), (177, 39927),

Gene: Che12\_66 Start: 39418, Stop: 39041, Start Num: 56

Candidate Starts for Che12\_66:

(44, 39433), (Start: 56 @39418 has 143 MA's), (Start: 59 @39409 has 14 MA's), (65, 39388), (101, 39322), (124, 39259), (156, 39166), (171, 39115), (175, 39097), (185, 39067),

Gene: Chiqui\_59 Start: 40653, Stop: 40270, Start Num: 15

Candidate Starts for Chiqui\_59:

(Start: 14 @40662 has 8 MA's), (Start: 15 @40653 has 159 MA's), (124, 40497), (153, 40422), (156, 40404), (162, 40383), (185, 40305),

Gene: ChosenOne\_76 Start: 47576, Stop: 47989, Start Num: 54

Candidate Starts for ChosenOne\_76:

(Start: 54 @47576 has 124 MA's), (Start: 60 @47591 has 4 MA's), (118, 47738), (156, 47876),

Gene: ChotaBhai\_76 Start: 47900, Stop: 48313, Start Num: 54

Candidate Starts for ChotaBhai\_76:

(Start: 54 @47900 has 124 MA's), (Start: 60 @47915 has 4 MA's), (131, 48092), (156, 48200), (164, 48227),

Gene: CicholasNage\_82 Start: 54121, Stop: 54534, Start Num: 56

Candidate Starts for CicholasNage\_82:

(Start: 56 @54121 has 143 MA's), (Start: 74 @54172 has 1 MA's), (76, 54178), (156, 54412), (162, 54433), (164, 54439), (175, 54481),

Gene: Cici\_59 Start: 40098, Stop: 39712, Start Num: 15

Candidate Starts for Cici\_59:

(Start: 15 @40098 has 159 MA's), (124, 39939), (129, 39930), (156, 39846), (175, 39777),

Gene: Cindaradix\_56 Start: 39716, Stop: 39336, Start Num: 15

Candidate Starts for Cindaradix\_56:

(Start: 15 @39716 has 159 MA's), (67, 39680), (124, 39557), (126, 39554), (129, 39548), (156, 39464), (175, 39395),

Gene: Cintron\_60 Start: 40223, Stop: 39843, Start Num: 56

Candidate Starts for Cintron\_60:

(Start: 56 @40223 has 143 MA's), (Start: 59 @40214 has 14 MA's), (124, 40064), (129, 40055), (156, 39971), (175, 39902),

Gene: Circum\_92 Start: 52997, Stop: 53359, Start Num: 57

Candidate Starts for Circum\_92:

(Start: 57 @52997 has 9 MA's), (73, 53042), (79, 53057), (156, 53231), (191, 53348),

Gene: Citius\_61 Start: 40264, Stop: 39884, Start Num: 15

Candidate Starts for Citius\_61:

(Start: 15 @40264 has 159 MA's), (124, 40105), (129, 40096), (156, 40012), (175, 39943), (177, 39937),

Gene: Cjw1\_76 Start: 49273, Stop: 49686, Start Num: 54

Candidate Starts for Cjw1\_76:

(Start: 54 @49273 has 124 MA's), (Start: 60 @49288 has 4 MA's), (118, 49435), (156, 49573),

Gene: Clarenza\_60 Start: 40240, Stop: 39860, Start Num: 15

Candidate Starts for Clarenza\_60:

(Start: 15 @40240 has 159 MA's), (124, 40081), (129, 40072), (156, 39988), (175, 39919), (177, 39913),

Gene: ClubL\_119 Start: 67337, Stop: 67714, Start Num: 55

Candidate Starts for ClubL\_119:

(29, 67292), (Start: 55 @67337 has 12 MA's), (77, 67397), (156, 67595), (158, 67604), (159, 67607), (162, 67616), (175, 67664),

Gene: Cocoaberry\_61 Start: 40247, Stop: 39867, Start Num: 15

Candidate Starts for Cocoaberry\_61:

(Start: 15 @40247 has 159 MA's), (124, 40088), (129, 40079), (156, 39995), (175, 39926),

Gene: Colbster\_65 Start: 40947, Stop: 40528, Start Num: 56

Candidate Starts for Colbster\_65:

(1, 41295), (2, 41292), (Start: 50 @40956 has 5 MA's), (Start: 56 @40947 has 143 MA's), (Start: 59 @40938 has 14 MA's), (104, 40845), (156, 40692), (175, 40623),

Gene: Command613\_78 Start: 48615, Stop: 49028, Start Num: 54

Candidate Starts for Command613\_78:

(Start: 54 @48615 has 124 MA's), (Start: 60 @48630 has 4 MA's), (118, 48777), (156, 48915),

Gene: Commander\_60 Start: 40242, Stop: 39862, Start Num: 15

Candidate Starts for Commander\_60:

(Start: 15 @40242 has 159 MA's), (124, 40083), (129, 40074), (156, 39990), (175, 39921), (177, 39915),

Gene: Connomayer\_61 Start: 40243, Stop: 39863, Start Num: 15

Candidate Starts for Connomayer\_61:

(Start: 15 @40243 has 159 MA's), (124, 40084), (129, 40075), (156, 39991), (175, 39922), (177, 39916),

Gene: Contagion\_72 Start: 47376, Stop: 47789, Start Num: 54

Candidate Starts for Contagion\_72:

(Start: 54 @47376 has 124 MA's), (Start: 60 @47391 has 4 MA's), (118, 47538), (156, 47676),

Gene: Cookies\_73 Start: 47757, Stop: 48170, Start Num: 54

Candidate Starts for Cookies\_73:

(Start: 54 @47757 has 124 MA's), (Start: 60 @47772 has 4 MA's), (131, 47949), (156, 48057), (164, 48084),

Gene: Cosmo\_135 Start: 64335, Stop: 64769, Start Num: 57

Candidate Starts for Cosmo\_135:

(Start: 57 @64335 has 9 MA's), (Start: 60 @64344 has 4 MA's), (73, 64380), (Start: 74 @64383 has 1 MA's), (108, 64446), (121, 64494), (123, 64500), (135, 64524), (154, 64623), (156, 64638), (174, 64710),

Gene: CrystalP\_75 Start: 48560, Stop: 48973, Start Num: 54

Candidate Starts for CrystalP\_75:

(Start: 54 @48560 has 124 MA's), (Start: 60 @48575 has 4 MA's), (118, 48722), (156, 48860),

Gene: Cucurbita\_119 Start: 68902, Stop: 69279, Start Num: 55

Candidate Starts for Cucurbita\_119:

(29, 68857), (Start: 55 @68902 has 12 MA's), (77, 68962), (156, 69160), (158, 69169), (159, 69172), (162, 69181), (175, 69229), (185, 69259),

Gene: Cullens\_67 Start: 40943, Stop: 40524, Start Num: 56

Candidate Starts for Cullens\_67:

(1, 41291), (2, 41288), (Start: 50 @40952 has 5 MA's), (Start: 56 @40943 has 143 MA's), (Start: 59 @40934 has 14 MA's), (104, 40841), (156, 40688), (175, 40619),

Gene: Culver\_119 Start: 67097, Stop: 67474, Start Num: 55

Candidate Starts for Culver\_119:

(29, 67052), (Start: 55 @67097 has 12 MA's), (77, 67157), (156, 67355), (158, 67364), (159, 67367), (162, 67376), (175, 67424), (185, 67454),

Gene: Czyszczone1\_77 Start: 48082, Stop: 48495, Start Num: 54

Candidate Starts for Czyszczone1\_77:

(Start: 54 @48082 has 124 MA's), (Start: 60 @48097 has 4 MA's), (118, 48244), (156, 48382),

Gene: D29\_61 Start: 40913, Stop: 40536, Start Num: 56

Candidate Starts for D29\_61:

(19, 41027), (44, 40928), (Start: 56 @40913 has 143 MA's), (Start: 74 @40862 has 1 MA's), (104, 40814), (106, 40811), (124, 40754), (156, 40661), (157, 40658), (175, 40592),

Gene: D32\_65 Start: 40913, Stop: 40536, Start Num: 56

Candidate Starts for D32\_65:

(19, 41027), (44, 40928), (Start: 56 @40913 has 143 MA's), (Start: 74 @40862 has 1 MA's), (104, 40814), (106, 40811), (124, 40754), (156, 40661), (157, 40658), (175, 40592),

Gene: DBQu4n\_66 Start: 40894, Stop: 40517, Start Num: 56

Candidate Starts for DBQu4n\_66:

(19, 41008), (44, 40909), (Start: 56 @40894 has 143 MA's), (Start: 74 @40843 has 1 MA's), (104, 40795), (106, 40792), (124, 40735), (156, 40642), (157, 40639), (175, 40573),

Gene: DaHudson\_66 Start: 40936, Stop: 40517, Start Num: 56

Candidate Starts for DaHudson\_66:

(1, 41284), (2, 41281), (Start: 50 @40945 has 5 MA's), (Start: 56 @40936 has 143 MA's), (Start: 59 @40927 has 14 MA's), (104, 40834), (156, 40681), (175, 40612),

Gene: DaddyRickover\_42 Start: 31755, Stop: 31321, Start Num: 62

Candidate Starts for DaddyRickover\_42:

(Start: 62 @31755 has 5 MA's), (66, 31743), (143, 31566), (144, 31563), (151, 31521), (154, 31500), (179, 31398), (184, 31380), (197, 31329),

Gene: Daikon\_78 Start: 48703, Stop: 49116, Start Num: 54

Candidate Starts for Daikon\_78:

(Start: 54 @48703 has 124 MA's), (Start: 60 @48718 has 4 MA's), (118, 48865), (156, 49003),

Gene: Daishi\_66 Start: 39812, Stop: 39393, Start Num: 56

Candidate Starts for Daishi\_66:

(1, 40160), (2, 40157), (Start: 50 @39821 has 5 MA's), (Start: 56 @39812 has 143 MA's), (Start: 59 @39803 has 14 MA's), (104, 39710), (156, 39557), (175, 39488),

Gene: Danforth\_74 Start: 41388, Stop: 41017, Start Num: 56

Candidate Starts for Danforth\_74:

(Start: 37 @41409 has 1 MA's), (Start: 56 @41388 has 143 MA's), (124, 41229), (139, 41196), (155, 41139), (156, 41136), (168, 41097), (175, 41067),

Gene: Daredevil\_46 Start: 39668, Stop: 40063, Start Num: 56

Candidate Starts for Daredevil\_46:

(Start: 56 @39668 has 143 MA's), (141, 39860), (156, 39917), (157, 39920), (162, 39938),

Gene: Datway\_59 Start: 40069, Stop: 39683, Start Num: 15

Candidate Starts for Datway\_59:

(Start: 15 @40069 has 159 MA's), (124, 39910), (129, 39901), (156, 39817), (175, 39748),

Gene: Deano\_59 Start: 40251, Stop: 39871, Start Num: 15

Candidate Starts for Deano\_59:

(Start: 15 @40251 has 159 MA's), (124, 40092), (129, 40083), (156, 39999), (175, 39930), (177, 39924),

Gene: Demsculpinboyz\_49 Start: 31194, Stop: 30760, Start Num: 62

Candidate Starts for Demsculpinboyz\_49:

(Start: 62 @31194 has 5 MA's), (66, 31182), (143, 31005), (144, 31002), (151, 30960), (154, 30939), (179, 30837), (184, 30819), (197, 30768),

Gene: Dhanush\_61 Start: 40246, Stop: 39866, Start Num: 15

Candidate Starts for Dhanush\_61:

(Start: 15 @40246 has 159 MA's), (124, 40087), (129, 40078), (156, 39994), (175, 39925), (177, 39919),

Gene: Dieselweasel\_68 Start: 40946, Stop: 40527, Start Num: 56

Candidate Starts for Dieselweasel\_68:

(1, 41294), (2, 41291), (Start: 50 @40955 has 5 MA's), (Start: 56 @40946 has 143 MA's), (Start: 59 @40937 has 14 MA's), (104, 40844), (156, 40691), (175, 40622),

Gene: DirkDirk\_82 Start: 53621, Stop: 54040, Start Num: 56

Candidate Starts for DirkDirk\_82:

(Start: 56 @53621 has 143 MA's), (118, 53774), (156, 53912), (162, 53933), (164, 53939), (175, 53981),

Gene: DirtyDunning\_60 Start: 40258, Stop: 39878, Start Num: 15

Candidate Starts for DirtyDunning\_60:

(Start: 15 @40258 has 159 MA's), (124, 40099), (129, 40090), (156, 40006), (175, 39937),

Gene: Dixon\_73 Start: 40908, Stop: 40537, Start Num: 56

Candidate Starts for Dixon\_73:

(Start: 37 @40929 has 1 MA's), (Start: 56 @40908 has 143 MA's), (124, 40749), (139, 40716), (155, 40659), (156, 40656), (168, 40617), (175, 40587),

Gene: DoctorDiddles\_75 Start: 47944, Stop: 48357, Start Num: 54

Candidate Starts for DoctorDiddles\_75:

(Start: 54 @47944 has 124 MA's), (Start: 60 @47959 has 4 MA's), (131, 48136), (156, 48244), (164, 48271),

Gene: Dodo\_246 Start: 138309, Stop: 138695, Start Num: 56

Candidate Starts for Dodo\_246:

(Start: 56 @138309 has 143 MA's), (90, 138396), (131, 138480), (153, 138540), (156, 138558), (162, 138579), (191, 138678),

Gene: Douge\_87 Start: 54998, Stop: 55414, Start Num: 52

Candidate Starts for Douge\_87:

(43, 54986), (Start: 52 @54998 has 4 MA's), (Start: 74 @55052 has 1 MA's), (85, 55076), (98, 55097), (118, 55154), (126, 55175), (152, 55265), (156, 55292), (168, 55331), (175, 55361),

Gene: DrDrey\_76 Start: 49001, Stop: 49414, Start Num: 54

Candidate Starts for DrDrey\_76:

(Start: 54 @49001 has 124 MA's), (Start: 60 @49016 has 4 MA's), (118, 49163), (156, 49301),

Gene: DrWorm\_23 Start: 15744, Stop: 16166, Start Num: 86

Candidate Starts for DrWorm\_23:

(66, 15699), (81, 15735), (86, 15744), (91, 15759), (132, 15873), (134, 15879), (147, 15927), (156, 15993), (174, 16086), (178, 16098), (189, 16134), (195, 16158),

Gene: DroogsArmy\_58 Start: 42717, Stop: 42268, Start Num: 56

Candidate Starts for DroogsArmy\_58:

(Start: 56 @42717 has 143 MA's), (61, 42702), (79, 42654), (124, 42558), (135, 42537), (136, 42534), (156, 42465), (157, 42462), (168, 42426), (175, 42396), (193, 42339), (201, 42285),

Gene: DropBear\_62 Start: 40580, Stop: 40188, Start Num: 14

Candidate Starts for DropBear\_62:

(3, 40721), (Start: 14 @40580 has 8 MA's), (Start: 15 @40571 has 159 MA's), (124, 40415), (153, 40340), (156, 40322), (185, 40223),

Gene: Druantia\_60 Start: 40246, Stop: 39866, Start Num: 15

Candidate Starts for Druantia\_60:

(Start: 15 @40246 has 159 MA's), (124, 40087), (129, 40078), (156, 39994), (175, 39925), (177, 39919),

Gene: Dumbo\_76 Start: 47481, Stop: 47894, Start Num: 54

Candidate Starts for Dumbo\_76:

(Start: 54 @47481 has 124 MA's), (Start: 60 @47496 has 4 MA's), (118, 47643), (156, 47781),

Gene: Duplo\_66 Start: 40950, Stop: 40573, Start Num: 56

Candidate Starts for Duplo\_66:

(19, 41064), (Start: 56 @40950 has 143 MA's), (Start: 74 @40899 has 1 MA's), (104, 40851), (106, 40848), (124, 40791), (156, 40698), (157, 40695), (175, 40629),

Gene: Dusk\_73 Start: 47781, Stop: 48194, Start Num: 54

Candidate Starts for Dusk\_73:

(Start: 54 @47781 has 124 MA's), (Start: 60 @47796 has 4 MA's), (118, 47943), (156, 48081),

Gene: Dusty\_115 Start: 67309, Stop: 67686, Start Num: 55

Candidate Starts for Dusty\_115:

(29, 67264), (Start: 55 @67309 has 12 MA's), (77, 67369), (156, 67567), (158, 67576), (159, 67579), (162, 67588), (175, 67636),

Gene: DyoEdafos\_89 Start: 55386, Stop: 55802, Start Num: 52

Candidate Starts for DyoEdafos\_89:

(Start: 52 @55386 has 4 MA's), (85, 55464), (88, 55473), (98, 55485), (126, 55563), (156, 55680), (175, 55749),

Gene: Eagle\_60 Start: 40268, Stop: 39888, Start Num: 15

Candidate Starts for Eagle\_60:

(Start: 14 @40277 has 8 MA's), (Start: 15 @40268 has 159 MA's), (124, 40109), (126, 40106), (129, 40100), (156, 40016), (175, 39947),

Gene: Eapen\_61 Start: 40238, Stop: 39858, Start Num: 15

Candidate Starts for Eapen\_61:



(Start: 15 @40238 has 159 MA's), (124, 40079), (129, 40070), (156, 39986), (175, 39917), (177, 39911),

Gene: Easy2Say\_77 Start: 49025, Stop: 49438, Start Num: 54

Candidate Starts for Easy2Say\_77:

(Start: 54 @49025 has 124 MA's), (Start: 60 @49040 has 4 MA's), (118, 49187), (156, 49325),

Gene: Ebony\_63 Start: 39413, Stop: 39027, Start Num: 48

Candidate Starts for Ebony\_63:

(1, 39737), (5, 39689), (9, 39632), (18, 39527), (21, 39509), (23, 39482), (Start: 48 @39413 has 9 MA's), (Start: 56 @39401 has 143 MA's), (101, 39305), (124, 39242), (127, 39236), (129, 39233), (135, 39221), (153, 39167), (156, 39149), (175, 39080),

Gene: EhyElimayoE\_114 Start: 75438, Stop: 74971, Start Num: 30

Candidate Starts for EhyElimayoE\_114:

(24, 75474), (Start: 30 @75438 has 7 MA's), (38, 75411), (61, 75372), (Start: 74 @75336 has 1 MA's), (106, 75288), (155, 75144), (156, 75141), (186, 75033), (199, 74982),

Gene: Elite2014\_75 Start: 47575, Stop: 47988, Start Num: 54

Candidate Starts for Elite2014\_75:

(Start: 54 @47575 has 124 MA's), (Start: 60 @47590 has 4 MA's), (118, 47737), (156, 47875),

Gene: Elph10\_76 Start: 47580, Stop: 47993, Start Num: 54

Candidate Starts for Elph10\_76:

(Start: 54 @47580 has 124 MA's), (Start: 60 @47595 has 4 MA's), (118, 47742), (156, 47880),

Gene: Elver\_239 Start: 108033, Stop: 108416, Start Num: 54

Candidate Starts for Elver\_239:

(Start: 54 @108033 has 124 MA's), (76, 108093), (109, 108141), (156, 108294), (173, 108357),

Gene: Emmina\_76 Start: 47482, Stop: 47895, Start Num: 54

Candidate Starts for Emmina\_76:

(Start: 54 @47482 has 124 MA's), (Start: 60 @47497 has 4 MA's), (118, 47644), (156, 47782),

Gene: Engineer\_119 Start: 68380, Stop: 68757, Start Num: 55

Candidate Starts for Engineer\_119:

(29, 68335), (Start: 55 @68380 has 12 MA's), (77, 68440), (156, 68638), (158, 68647), (159, 68650), (162, 68659), (175, 68707),

Gene: EniyanLRS\_127 Start: 63903, Stop: 64340, Start Num: 57

Candidate Starts for EniyanLRS\_127:

(Start: 52 @63894 has 4 MA's), (Start: 57 @63903 has 9 MA's), (Start: 60 @63912 has 4 MA's), (73, 63948), (Start: 74 @63951 has 1 MA's), (108, 64014), (121, 64062), (123, 64068), (135, 64092), (154, 64191), (156, 64206), (174, 64278),

Gene: Enygma\_94 Start: 68111, Stop: 68575, Start Num: 33

Candidate Starts for Enygma\_94:

(26, 68069), (Start: 33 @68111 has 4 MA's), (63, 68171), (72, 68192), (82, 68219), (97, 68243), (150, 68405), (156, 68429), (166, 68462), (175, 68498), (191, 68549), (193, 68558),

Gene: EpicPhail\_68 Start: 40947, Stop: 40528, Start Num: 56

Candidate Starts for EpicPhail\_68:

(1, 41295), (2, 41292), (Start: 50 @40956 has 5 MA's), (Start: 56 @40947 has 143 MA's), (Start: 59 @40938 has 14 MA's), (104, 40845), (156, 40692), (175, 40623),

Gene: Eris\_60 Start: 40258, Stop: 39878, Start Num: 15

Candidate Starts for Eris\_60:

(Start: 15 @40258 has 159 MA's), (124, 40099), (129, 40090), (156, 40006), (175, 39937),

Gene: Eros\_61 Start: 40245, Stop: 39865, Start Num: 15

Candidate Starts for Eros\_61:

(Start: 15 @40245 has 159 MA's), (124, 40086), (129, 40077), (156, 39993), (175, 39924), (177, 39918),

Gene: Et2Brutus\_62 Start: 39364, Stop: 38990, Start Num: 56

Candidate Starts for Et2Brutus\_62:

(1, 39700), (5, 39652), (9, 39595), (21, 39472), (23, 39445), (Start: 48 @39376 has 9 MA's), (Start: 56 @39364 has 143 MA's), (101, 39268), (124, 39205), (129, 39196), (135, 39184), (153, 39130), (156, 39112), (175, 39043),

Gene: Eureka\_74 Start: 48046, Stop: 48459, Start Num: 54

Candidate Starts for Eureka\_74:

(Start: 54 @48046 has 124 MA's), (Start: 60 @48061 has 4 MA's), (118, 48208), (156, 48346),

Gene: Eurydice\_62 Start: 40243, Stop: 39863, Start Num: 15

Candidate Starts for Eurydice\_62:

(Start: 14 @40252 has 8 MA's), (Start: 15 @40243 has 159 MA's), (124, 40084), (126, 40081), (129, 40075), (156, 39991), (175, 39922),

Gene: Expelliarmus\_71 Start: 41112, Stop: 40741, Start Num: 56

Candidate Starts for Expelliarmus\_71:

(Start: 37 @41133 has 1 MA's), (Start: 56 @41112 has 143 MA's), (124, 40953), (139, 40920), (155, 40863), (156, 40860), (168, 40821), (175, 40791),

Gene: FairyPath\_76 Start: 48694, Stop: 49107, Start Num: 54

Candidate Starts for FairyPath\_76:

(Start: 54 @48694 has 124 MA's), (Start: 60 @48709 has 4 MA's), (131, 48886), (156, 48994), (164, 49021),

Gene: Farber\_67 Start: 40942, Stop: 40514, Start Num: 50

Candidate Starts for Farber\_67:

(1, 41281), (2, 41278), (4, 41239), (Start: 50 @40942 has 5 MA's), (Start: 56 @40933 has 143 MA's), (Start: 59 @40924 has 14 MA's), (104, 40831), (156, 40678), (175, 40609), (197, 40531),

Gene: Farewell\_78 Start: 51653, Stop: 52063, Start Num: 60

Candidate Starts for Farewell\_78:

(Start: 60 @51653 has 4 MA's), (Start: 62 @51662 has 5 MA's), (117, 51782), (144, 51854), (151, 51881), (161, 51935), (183, 52016), (184, 52022),

Gene: Fastidio\_45 Start: 32251, Stop: 31817, Start Num: 62

Candidate Starts for Fastidio\_45:

(Start: 62 @32251 has 5 MA's), (66, 32239), (143, 32062), (144, 32059), (151, 32017), (154, 31996), (179, 31894), (184, 31876), (197, 31825),

Gene: Fernando\_67 Start: 40943, Stop: 40524, Start Num: 56

Candidate Starts for Fernando\_67:

(1, 41291), (2, 41288), (Start: 50 @40952 has 5 MA's), (Start: 56 @40943 has 143 MA's), (Start: 59 @40934 has 14 MA's), (104, 40841), (156, 40688), (175, 40619),

Gene: Fibonacci\_63 Start: 39370, Stop: 38996, Start Num: 56

Candidate Starts for Fibonacci\_63:

(1, 39706), (5, 39658), (9, 39601), (21, 39478), (23, 39451), (Start: 48 @39382 has 9 MA's), (Start: 56 @39370 has 143 MA's), (101, 39274), (124, 39211), (129, 39202), (135, 39190), (153, 39136), (156, 39118), (175, 39049),

Gene: Filch\_77 Start: 47507, Stop: 47920, Start Num: 54

Candidate Starts for Filch\_77:

(Start: 54 @47507 has 124 MA's), (Start: 60 @47522 has 4 MA's), (118, 47669), (156, 47807),

Gene: Finemlucis\_87 Start: 56813, Stop: 57238, Start Num: 46

Candidate Starts for Finemlucis\_87:

(Start: 46 @56813 has 1 MA's), (Start: 52 @56822 has 4 MA's), (78, 56888), (85, 56900), (98, 56921), (118, 56978), (126, 56999), (152, 57089), (156, 57116), (175, 57185),

Gene: FireRed\_80 Start: 49069, Stop: 49482, Start Num: 54

Candidate Starts for FireRed\_80:

(Start: 54 @49069 has 124 MA's), (Start: 60 @49084 has 4 MA's), (118, 49231), (156, 49369),

Gene: Flaverint\_64 Start: 39828, Stop: 39454, Start Num: 56

Candidate Starts for Flaverint\_64:

(1, 40164), (5, 40116), (9, 40059), (21, 39936), (Start: 48 @39840 has 9 MA's), (Start: 56 @39828 has 143 MA's), (124, 39669), (129, 39660), (153, 39594), (156, 39576), (175, 39507),

Gene: Florean\_61 Start: 40242, Stop: 39862, Start Num: 15

Candidate Starts for Florean\_61:

(Start: 15 @40242 has 159 MA's), (124, 40083), (129, 40074), (156, 39990), (175, 39921), (177, 39915),

Gene: Flux\_61 Start: 40242, Stop: 39862, Start Num: 15

Candidate Starts for Flux\_61:

(Start: 15 @40242 has 159 MA's), (124, 40083), (129, 40074), (156, 39990), (175, 39921), (177, 39915),

Gene: FlyCatcher\_65 Start: 43633, Stop: 43184, Start Num: 56

Candidate Starts for FlyCatcher\_65:

(13, 43837), (Start: 56 @43633 has 143 MA's), (79, 43570), (124, 43474), (129, 43465), (156, 43381), (168, 43342), (175, 43312), (201, 43201),

Gene: Flypotenuse\_72 Start: 47566, Stop: 47979, Start Num: 54

Candidate Starts for Flypotenuse\_72:

(Start: 54 @47566 has 124 MA's), (Start: 60 @47581 has 4 MA's), (118, 47728), (156, 47866),

Gene: Forza\_171 Start: 97184, Stop: 96825, Start Num: 64

Candidate Starts for Forza\_171:

(Start: 64 @97184 has 5 MA's), (68, 97175), (70, 97172), (83, 97142), (94, 97121), (116, 97067), (156, 96950), (158, 96941), (162, 96929), (168, 96911),

Gene: Frankenweenie\_123 Start: 80415, Stop: 79951, Start Num: 30

Candidate Starts for Frankenweenie\_123:

(Start: 30 @80415 has 7 MA's), (43, 80382), (61, 80352), (84, 80295), (106, 80268), (156, 80121), (160, 80106), (164, 80094), (186, 80013), (199, 79962),

Gene: Fred313\_62 Start: 40274, Stop: 39882, Start Num: 14

Candidate Starts for Fred313\_62:

(3, 40415), (Start: 14 @40274 has 8 MA's), (Start: 15 @40265 has 159 MA's), (124, 40109), (153, 40034), (156, 40016), (185, 39917),

Gene: Funston\_60 Start: 40243, Stop: 39863, Start Num: 15

Candidate Starts for Funston\_60:

(Start: 15 @40243 has 159 MA's), (124, 40084), (129, 40075), (156, 39991), (175, 39922),

Gene: GMA3\_55 Start: 48480, Stop: 48010, Start Num: 45

Candidate Starts for GMA3\_55:

(45, 48480), (71, 48420), (156, 48225), (175, 48156), (179, 48144), (182, 48138), (196, 48081),

Gene: Gadost\_61 Start: 40247, Stop: 39867, Start Num: 15

Candidate Starts for Gadost\_61:

(Start: 15 @40247 has 159 MA's), (124, 40088), (129, 40079), (156, 39995), (175, 39926),

Gene: Gage\_78 Start: 48359, Stop: 48772, Start Num: 54

Candidate Starts for Gage\_78:

(Start: 54 @48359 has 124 MA's), (Start: 60 @48374 has 4 MA's), (118, 48521), (156, 48659),

Gene: Gandionco\_246 Start: 108817, Stop: 109200, Start Num: 54

Candidate Starts for Gandionco\_246:

(Start: 54 @108817 has 124 MA's), (87, 108895), (109, 108925), (110, 108928), (156, 109078), (172, 109138),

Gene: Garnacho\_166 Start: 87772, Stop: 88170, Start Num: 57

Candidate Starts for Garnacho\_166:

(Start: 57 @87772 has 9 MA's), (107, 87877), (156, 88039), (163, 88063), (169, 88078), (176, 88108), (181, 88120), (191, 88153),

Gene: Gator\_74 Start: 48412, Stop: 48825, Start Num: 54

Candidate Starts for Gator\_74:

(Start: 54 @48412 has 124 MA's), (Start: 60 @48427 has 4 MA's), (118, 48574), (156, 48712),

Gene: Geeche\_117 Start: 67532, Stop: 67909, Start Num: 55

Candidate Starts for Geeche\_117:

(29, 67487), (Start: 55 @67532 has 12 MA's), (77, 67592), (156, 67790), (158, 67799), (159, 67802), (162, 67811), (175, 67859),

Gene: Gemini\_81 Start: 48876, Stop: 49289, Start Num: 54

Candidate Starts for Gemini\_81:

(Start: 54 @48876 has 124 MA's), (Start: 60 @48891 has 4 MA's), (118, 49038), (156, 49176),

Gene: Gemma\_66 Start: 40825, Stop: 40406, Start Num: 56

Candidate Starts for Gemma\_66:

(7, 41080), (Start: 50 @40834 has 5 MA's), (Start: 56 @40825 has 143 MA's), (Start: 59 @40816 has 14 MA's), (104, 40723), (156, 40570), (175, 40501),

Gene: GiJojo\_160 Start: 88793, Stop: 89200, Start Num: 56

Candidate Starts for GiJojo\_160:

(Start: 56 @88793 has 143 MA's), (69, 88832), (96, 88889), (154, 89054), (156, 89069), (163, 89093), (169, 89108), (176, 89138), (181, 89150), (188, 89174), (190, 89180),

Gene: Gilberta\_64 Start: 39821, Stop: 39447, Start Num: 56

Candidate Starts for Gilberta\_64:

(1, 40157), (5, 40109), (9, 40052), (21, 39929), (Start: 48 @39833 has 9 MA's), (Start: 56 @39821 has 143 MA's), (124, 39662), (129, 39653), (153, 39587), (156, 39569), (175, 39500),

Gene: GingkoMaracino\_67 Start: 40820, Stop: 40410, Start Num: 59

Candidate Starts for GingkoMaracino\_67:

(1, 41177), (2, 41174), (4, 41135), (6, 41126), (Start: 50 @40838 has 5 MA's), (Start: 56 @40829 has 143 MA's), (Start: 59 @40820 has 14 MA's), (104, 40727), (156, 40574), (175, 40505),

Gene: Giroux\_63 Start: 40668, Stop: 40285, Start Num: 15

Candidate Starts for Giroux\_63:

(3, 40818), (Start: 14 @40677 has 8 MA's), (Start: 15 @40668 has 159 MA's), (124, 40512), (137, 40485), (153, 40437), (156, 40419), (185, 40320), (194, 40290),

Gene: Glexan\_75 Start: 48696, Stop: 49109, Start Num: 54

Candidate Starts for Glexan\_75:

(Start: 54 @48696 has 124 MA's), (Start: 60 @48711 has 4 MA's), (118, 48858), (156, 48996),

Gene: Gmala1\_74 Start: 58542, Stop: 58096, Start Num: 49

Candidate Starts for Gmala1\_74:

(49, 58542), (73, 58485), (80, 58473), (120, 58389), (135, 58356), (156, 58284), (168, 58245), (172, 58224), (180, 58200),

Gene: GoCrazy\_87 Start: 51181, Stop: 51546, Start Num: 57

Candidate Starts for GoCrazy\_87:

(Start: 57 @51181 has 9 MA's), (156, 51418), (162, 51439), (191, 51535),

Gene: Goku\_74 Start: 47775, Stop: 48188, Start Num: 54

Candidate Starts for Goku\_74:

(Start: 54 @47775 has 124 MA's), (Start: 60 @47790 has 4 MA's), (118, 47937), (156, 48075),

Gene: GoldenSpark\_80 Start: 48359, Stop: 48772, Start Num: 54

Candidate Starts for GoldenSpark\_80:

(Start: 54 @48359 has 124 MA's), (Start: 60 @48374 has 4 MA's), (118, 48521), (156, 48659),

Gene: Goldilocks\_79 Start: 47857, Stop: 48270, Start Num: 54

Candidate Starts for Goldilocks\_79:

(Start: 54 @47857 has 124 MA's), (Start: 60 @47872 has 4 MA's), (118, 48019), (156, 48157),

Gene: GooberAzure\_79 Start: 48359, Stop: 48772, Start Num: 54

Candidate Starts for GooberAzure\_79:

(Start: 54 @48359 has 124 MA's), (Start: 60 @48374 has 4 MA's), (118, 48521), (156, 48659),

Gene: GordDuk1\_81 Start: 59275, Stop: 58886, Start Num: 73

Candidate Starts for GordDuk1\_81:

(49, 59332), (73, 59275), (80, 59263), (120, 59179), (135, 59146), (156, 59074), (168, 59035), (172, 59014), (180, 58990),

Gene: GordTnk2\_81 Start: 59262, Stop: 58816, Start Num: 49

Candidate Starts for GordTnk2\_81:

(49, 59262), (73, 59205), (80, 59193), (120, 59109), (135, 59076), (156, 59004), (168, 58965), (172, 58944), (180, 58920),

Gene: Grayson\_55 Start: 20751, Stop: 20332, Start Num: 39

Candidate Starts for Grayson\_55:

(Start: 39 @20751 has 4 MA's), (75, 20676), (119, 20586), (156, 20481), (177, 20406),

Gene: Grayson\_56 Start: 21137, Stop: 20748, Start Num: 39

Candidate Starts for Grayson\_56:

(35, 21146), (Start: 39 @21137 has 4 MA's), (116, 20984), (156, 20867), (162, 20846),

Gene: Grif\_67 Start: 41018, Stop: 40599, Start Num: 56

Candidate Starts for Grif\_67:

(1, 41366), (2, 41363), (Start: 50 @41027 has 5 MA's), (Start: 56 @41018 has 143 MA's), (Start: 59 @41009 has 14 MA's), (104, 40916), (156, 40763), (175, 40694),

Gene: Groundhog\_73 Start: 41318, Stop: 40947, Start Num: 56

Candidate Starts for Groundhog\_73:

(Start: 37 @41339 has 1 MA's), (Start: 56 @41318 has 143 MA's), (124, 41159), (139, 41126), (155, 41069), (156, 41066), (168, 41027), (175, 40997),

Gene: Groupthink\_68 Start: 40829, Stop: 40410, Start Num: 56

Candidate Starts for Groupthink\_68:

(Start: 50 @40838 has 5 MA's), (Start: 56 @40829 has 143 MA's), (Start: 59 @40820 has 14 MA's), (104, 40727), (156, 40574), (175, 40505),

Gene: Grub\_67 Start: 40935, Stop: 40516, Start Num: 56

Candidate Starts for Grub\_67:

(1, 41283), (2, 41280), (Start: 50 @40944 has 5 MA's), (Start: 56 @40935 has 143 MA's), (Start: 59 @40926 has 14 MA's), (104, 40833), (156, 40680), (175, 40611),

Gene: Grum1\_66 Start: 40943, Stop: 40524, Start Num: 56

Candidate Starts for Grum1\_66:

(1, 41291), (2, 41288), (Start: 50 @40952 has 5 MA's), (Start: 56 @40943 has 143 MA's), (Start: 59 @40934 has 14 MA's), (104, 40841), (156, 40688), (175, 40619),

Gene: GtownJaz\_67 Start: 40945, Stop: 40526, Start Num: 56

Candidate Starts for GtownJaz\_67:

(1, 41293), (2, 41290), (Start: 50 @40954 has 5 MA's), (Start: 56 @40945 has 143 MA's), (Start: 59 @40936 has 14 MA's), (104, 40843), (156, 40690), (175, 40621),

Gene: HINdeR\_58 Start: 42418, Stop: 41969, Start Num: 56

Candidate Starts for HINdeR\_58:

(Start: 56 @42418 has 143 MA's), (79, 42355), (124, 42259), (129, 42250), (156, 42166), (175, 42097), (201, 41986),

Gene: HamSlice\_58 Start: 40241, Stop: 39861, Start Num: 15

Candidate Starts for HamSlice\_58:

(Start: 15 @40241 has 159 MA's), (124, 40082), (126, 40079), (129, 40073), (156, 39989), (175, 39920),

Gene: HanKaySha\_76 Start: 47660, Stop: 48073, Start Num: 54  
Candidate Starts for HanKaySha\_76:  
(Start: 54 @47660 has 124 MA's), (Start: 60 @47675 has 4 MA's), (118, 47822), (156, 47960),

Gene: Hankly\_92 Start: 52366, Stop: 52731, Start Num: 57  
Candidate Starts for Hankly\_92:  
(Start: 57 @52366 has 9 MA's), (156, 52603), (162, 52624), (191, 52720),

Gene: Happiness\_60 Start: 40229, Stop: 39849, Start Num: 15  
Candidate Starts for Happiness\_60:  
(Start: 15 @40229 has 159 MA's), (124, 40070), (129, 40061), (156, 39977), (175, 39908),

Gene: Harella\_76 Start: 49212, Stop: 49625, Start Num: 54  
Candidate Starts for Harella\_76:  
(Start: 54 @49212 has 124 MA's), (Start: 60 @49227 has 4 MA's), (118, 49374), (156, 49512),

Gene: HashRod\_68 Start: 40971, Stop: 40552, Start Num: 56  
Candidate Starts for HashRod\_68:  
(1, 41319), (2, 41316), (4, 41277), (Start: 50 @40980 has 5 MA's), (Start: 56 @40971 has 143 MA's),  
(Start: 59 @40962 has 14 MA's), (104, 40869), (156, 40716), (175, 40647), (185, 40617),

Gene: HaveUMetTed\_68 Start: 40814, Stop: 40395, Start Num: 56  
Candidate Starts for HaveUMetTed\_68:  
(7, 41069), (Start: 50 @40823 has 5 MA's), (Start: 56 @40814 has 143 MA's), (Start: 59 @40805 has  
14 MA's), (104, 40712), (156, 40559), (175, 40490),

Gene: Heathen\_64 Start: 40360, Stop: 39977, Start Num: 15  
Candidate Starts for Heathen\_64:  
(3, 40510), (Start: 14 @40369 has 8 MA's), (Start: 15 @40360 has 159 MA's), (124, 40204), (153,  
40129), (156, 40111), (185, 40012),

Gene: HelDan\_63 Start: 40585, Stop: 40193, Start Num: 14  
Candidate Starts for HelDan\_63:  
(3, 40726), (Start: 14 @40585 has 8 MA's), (Start: 15 @40576 has 159 MA's), (124, 40420), (153,  
40345), (156, 40327), (185, 40228),

Gene: Heliosoles\_66 Start: 40832, Stop: 40413, Start Num: 56  
Candidate Starts for Heliosoles\_66:  
(Start: 50 @40841 has 5 MA's), (Start: 56 @40832 has 143 MA's), (Start: 59 @40823 has 14 MA's),  
(104, 40730), (156, 40577), (175, 40508),

Gene: Henry\_74 Start: 48000, Stop: 48413, Start Num: 54  
Candidate Starts for Henry\_74:  
(Start: 54 @48000 has 124 MA's), (Start: 60 @48015 has 4 MA's), (118, 48162), (156, 48300),

Gene: Hercules11\_67 Start: 40952, Stop: 40533, Start Num: 56  
Candidate Starts for Hercules11\_67:  
(1, 41300), (2, 41297), (Start: 50 @40961 has 5 MA's), (Start: 56 @40952 has 143 MA's), (Start: 59  
@40943 has 14 MA's), (104, 40850), (156, 40697), (175, 40628),

Gene: Highbury\_75 Start: 47648, Stop: 48061, Start Num: 54  
Candidate Starts for Highbury\_75:

(Start: 54 @47648 has 124 MA's), (Start: 60 @47663 has 4 MA's), (118, 47810), (156, 47948),

Gene: Holli\_60 Start: 40033, Stop: 39653, Start Num: 15

Candidate Starts for Holli\_60:

(Start: 15 @40033 has 159 MA's), (124, 39874), (129, 39865), (156, 39781), (175, 39712), (177, 39706),

Gene: Holt\_81 Start: 48773, Stop: 49186, Start Num: 54

Candidate Starts for Holt\_81:

(Start: 54 @48773 has 124 MA's), (Start: 60 @48788 has 4 MA's), (118, 48935), (156, 49073),

Gene: Hookmount\_63 Start: 40647, Stop: 40264, Start Num: 15

Candidate Starts for Hookmount\_63:

(Start: 14 @40656 has 8 MA's), (Start: 15 @40647 has 159 MA's), (104, 40551), (124, 40491), (156, 40398), (185, 40299), (186, 40296), (194, 40269),

Gene: Hoonter\_79 Start: 48359, Stop: 48772, Start Num: 54

Candidate Starts for Hoonter\_79:

(Start: 54 @48359 has 124 MA's), (Start: 60 @48374 has 4 MA's), (118, 48521), (156, 48659),

Gene: Hokey\_76 Start: 48192, Stop: 48605, Start Num: 54

Candidate Starts for Hokey\_76:

(Start: 54 @48192 has 124 MA's), (Start: 60 @48207 has 4 MA's), (118, 48354), (156, 48492),

Gene: Houdini22\_60 Start: 40247, Stop: 39867, Start Num: 15

Candidate Starts for Houdini22\_60:

(Start: 15 @40247 has 159 MA's), (124, 40088), (129, 40079), (156, 39995), (175, 39926),

Gene: HufflyPuff\_79 Start: 49025, Stop: 49438, Start Num: 54

Candidate Starts for HufflyPuff\_79:

(Start: 54 @49025 has 124 MA's), (Start: 60 @49040 has 4 MA's), (118, 49187), (156, 49325),

Gene: Hutc2\_62 Start: 39382, Stop: 38996, Start Num: 48

Candidate Starts for Hutc2\_62:

(1, 39706), (5, 39658), (9, 39601), (21, 39478), (23, 39451), (Start: 48 @39382 has 9 MA's), (Start: 56 @39370 has 143 MA's), (101, 39274), (124, 39211), (129, 39202), (135, 39190), (153, 39136), (156, 39118), (175, 39049),

Gene: Huxley\_59 Start: 40307, Stop: 39927, Start Num: 15

Candidate Starts for Huxley\_59:

(Start: 15 @40307 has 159 MA's), (124, 40148), (129, 40139), (156, 40055), (175, 39986),

Gene: ICleared\_60 Start: 40275, Stop: 39895, Start Num: 15

Candidate Starts for ICleared\_60:

(Start: 15 @40275 has 159 MA's), (124, 40116), (129, 40107), (156, 40023), (175, 39954),

Gene: IHOP\_74 Start: 48124, Stop: 48537, Start Num: 54

Candidate Starts for IHOP\_74:

(Start: 54 @48124 has 124 MA's), (Start: 60 @48139 has 4 MA's), (118, 48286), (156, 48424),

Gene: Ibantik\_12 Start: 5154, Stop: 4792, Start Num: 56

Candidate Starts for Ibantik\_12:



(Start: 41 @5169 has 1 MA's), (Start: 56 @5154 has 143 MA's), (61, 5139), (Start: 74 @5103 has 1 MA's), (156, 4908), (164, 4881), (184, 4809), (186, 4803),

Gene: Icee\_77 Start: 48023, Stop: 48436, Start Num: 54

Candidate Starts for Icee\_77:

(Start: 54 @48023 has 124 MA's), (Start: 60 @48038 has 4 MA's), (118, 48185), (156, 48323),

Gene: Iceman\_61 Start: 40532, Stop: 40152, Start Num: 15

Candidate Starts for Iceman\_61:

(Start: 15 @40532 has 159 MA's), (124, 40373), (129, 40364), (156, 40280), (175, 40211), (177, 40205),

Gene: Idleandcovert\_64 Start: 40669, Stop: 40286, Start Num: 15

Candidate Starts for Idleandcovert\_64:

(3, 40819), (Start: 14 @40678 has 8 MA's), (Start: 15 @40669 has 159 MA's), (124, 40513), (137, 40486), (153, 40438), (156, 40420), (185, 40321), (194, 40291),

Gene: Inca\_73 Start: 46649, Stop: 47062, Start Num: 54

Candidate Starts for Inca\_73:

(Start: 54 @46649 has 124 MA's), (Start: 60 @46664 has 4 MA's), (118, 46811), (156, 46949),

Gene: Insomnia\_64 Start: 39893, Stop: 39507, Start Num: 48

Candidate Starts for Insomnia\_64:

(1, 40217), (5, 40169), (9, 40112), (21, 39989), (23, 39962), (Start: 48 @39893 has 9 MA's), (Start: 56 @39881 has 143 MA's), (101, 39785), (124, 39722), (129, 39713), (135, 39701), (153, 39647), (156, 39629), (175, 39560),

Gene: Iracema64\_62 Start: 40510, Stop: 40130, Start Num: 15

Candidate Starts for Iracema64\_62:

(Start: 15 @40510 has 159 MA's), (124, 40351), (129, 40342), (156, 40258), (175, 40189),

Gene: Isca\_62 Start: 40131, Stop: 39739, Start Num: 14

Candidate Starts for Isca\_62:

(Start: 14 @40131 has 8 MA's), (Start: 15 @40122 has 159 MA's), (124, 39966), (153, 39891), (156, 39873), (185, 39774),

Gene: JF2\_62 Start: 38826, Stop: 38434, Start Num: 14

Candidate Starts for JF2\_62:

(Start: 14 @38826 has 8 MA's), (Start: 15 @38817 has 159 MA's), (124, 38661), (153, 38586), (156, 38568), (175, 38499), (185, 38469), (191, 38451),

Gene: JF4\_62 Start: 38817, Stop: 38434, Start Num: 15

Candidate Starts for JF4\_62:

(Start: 14 @38826 has 8 MA's), (Start: 15 @38817 has 159 MA's), (124, 38661), (153, 38586), (156, 38568), (175, 38499), (185, 38469), (191, 38451),

Gene: JHC117\_65 Start: 40942, Stop: 40523, Start Num: 56

Candidate Starts for JHC117\_65:

(1, 41290), (2, 41287), (Start: 50 @40951 has 5 MA's), (Start: 56 @40942 has 143 MA's), (Start: 59 @40933 has 14 MA's), (104, 40840), (156, 40687), (175, 40618),

Gene: Jabith\_64 Start: 39882, Stop: 39508, Start Num: 56

Candidate Starts for Jabith\_64:

(1, 40218), (5, 40170), (9, 40113), (21, 39990), (23, 39963), (Start: 48 @39894 has 9 MA's), (Start: 56 @39882 has 143 MA's), (101, 39786), (124, 39723), (129, 39714), (135, 39702), (153, 39648), (156, 39630), (175, 39561),

Gene: Jaykayelowell\_58 Start: 40236, Stop: 39856, Start Num: 15

Candidate Starts for Jaykayelowell\_58:

(Start: 15 @40236 has 159 MA's), (124, 40077), (129, 40068), (156, 39984), (175, 39915), (177, 39909),

Gene: JeTaime\_76 Start: 48841, Stop: 49254, Start Num: 54

Candidate Starts for JeTaime\_76:

(Start: 54 @48841 has 124 MA's), (Start: 60 @48856 has 4 MA's), (118, 49003), (156, 49141),

Gene: JenCasNa\_68 Start: 40934, Stop: 40524, Start Num: 59

Candidate Starts for JenCasNa\_68:

(1, 41291), (2, 41288), (Start: 50 @40952 has 5 MA's), (Start: 56 @40943 has 143 MA's), (Start: 59 @40934 has 14 MA's), (104, 40841), (156, 40688), (175, 40619),

Gene: JeppNRM\_68 Start: 40830, Stop: 40411, Start Num: 56

Candidate Starts for JeppNRM\_68:

(7, 41085), (Start: 50 @40839 has 5 MA's), (Start: 56 @40830 has 143 MA's), (Start: 59 @40821 has 14 MA's), (104, 40728), (156, 40575), (175, 40506),

Gene: JetBlade\_61 Start: 40237, Stop: 39857, Start Num: 15

Candidate Starts for JetBlade\_61:

(Start: 15 @40237 has 159 MA's), (124, 40078), (129, 40069), (156, 39985), (175, 39916),

Gene: Jobu08\_65 Start: 40784, Stop: 40356, Start Num: 50

Candidate Starts for Jobu08\_65:

(1, 41123), (2, 41120), (4, 41081), (Start: 50 @40784 has 5 MA's), (Start: 56 @40775 has 143 MA's), (Start: 59 @40766 has 14 MA's), (104, 40673), (156, 40520), (175, 40451),

Gene: JoeDirt\_86 Start: 55023, Stop: 55436, Start Num: 56

Candidate Starts for JoeDirt\_86:

(Start: 56 @55023 has 143 MA's), (Start: 74 @55074 has 1 MA's), (76, 55080), (156, 55314), (162, 55335), (164, 55341), (175, 55383),

Gene: JoongJeon\_60 Start: 40240, Stop: 39860, Start Num: 15

Candidate Starts for JoongJeon\_60:

(Start: 15 @40240 has 159 MA's), (124, 40081), (129, 40072), (156, 39988), (175, 39919),

Gene: Joselito\_64 Start: 39830, Stop: 39456, Start Num: 56

Candidate Starts for Joselito\_64:

(1, 40166), (5, 40118), (9, 40061), (21, 39938), (23, 39911), (Start: 48 @39842 has 9 MA's), (Start: 56 @39830 has 143 MA's), (101, 39734), (124, 39671), (129, 39662), (135, 39650), (153, 39596), (156, 39578), (175, 39509),

Gene: Jsquared\_66 Start: 39964, Stop: 39587, Start Num: 56

Candidate Starts for Jsquared\_66:

(44, 39979), (Start: 56 @39964 has 143 MA's), (Start: 60 @39952 has 4 MA's), (65, 39934), (79, 39901), (124, 39805), (156, 39712), (170, 39667), (175, 39643),

Gene: JustBecause\_112 Start: 74626, Stop: 74162, Start Num: 30

Candidate Starts for JustBecause\_112:

(Start: 30 @74626 has 7 MA's), (43, 74593), (58, 74572), (61, 74563), (76, 74521), (84, 74506), (106, 74479), (156, 74332), (160, 74317), (164, 74305), (186, 74224), (199, 74173),

Gene: KADY\_66 Start: 40971, Stop: 40552, Start Num: 56

Candidate Starts for KADY\_66:

(1, 41319), (2, 41316), (4, 41277), (Start: 50 @40980 has 5 MA's), (Start: 56 @40971 has 143 MA's), (Start: 59 @40962 has 14 MA's), (104, 40869), (156, 40716), (175, 40647), (185, 40617),

Gene: KFPoly\_60 Start: 40237, Stop: 39857, Start Num: 15

Candidate Starts for KFPoly\_60:

(Start: 15 @40237 has 159 MA's), (124, 40078), (129, 40069), (156, 39985), (175, 39916),

Gene: Kachowdy\_62 Start: 40612, Stop: 40229, Start Num: 15

Candidate Starts for Kachowdy\_62:

(3, 40762), (Start: 14 @40621 has 8 MA's), (Start: 15 @40612 has 159 MA's), (124, 40456), (153, 40381), (156, 40363), (185, 40264),

Gene: Kalb97\_68 Start: 40828, Stop: 40409, Start Num: 56

Candidate Starts for Kalb97\_68:

(7, 41083), (Start: 50 @40837 has 5 MA's), (Start: 56 @40828 has 143 MA's), (Start: 59 @40819 has 14 MA's), (104, 40726), (156, 40573), (175, 40504),

Gene: Kalnoky\_68 Start: 40826, Stop: 40407, Start Num: 56

Candidate Starts for Kalnoky\_68:

(Start: 50 @40835 has 5 MA's), (Start: 56 @40826 has 143 MA's), (Start: 59 @40817 has 14 MA's), (104, 40724), (156, 40571), (175, 40502),

Gene: Kampe\_66 Start: 55077, Stop: 54682, Start Num: 54

Candidate Starts for Kampe\_66:

(Start: 54 @55077 has 124 MA's), (61, 55062), (153, 54852), (156, 54834), (158, 54825), (175, 54765), (198, 54699), (200, 54690),

Gene: Kampy\_60 Start: 40245, Stop: 39865, Start Num: 15

Candidate Starts for Kampy\_60:

(Start: 15 @40245 has 159 MA's), (124, 40086), (129, 40077), (156, 39993), (175, 39924), (177, 39918),

Gene: Kanye\_73 Start: 47705, Stop: 48118, Start Num: 54

Candidate Starts for Kanye\_73:

(Start: 54 @47705 has 124 MA's), (Start: 60 @47720 has 4 MA's), (118, 47867), (156, 48005),

Gene: Katalie136\_59 Start: 40083, Stop: 39697, Start Num: 15

Candidate Starts for Katalie136\_59:

(Start: 15 @40083 has 159 MA's), (124, 39924), (129, 39915), (156, 39831), (175, 39762),

Gene: KeaneyLin\_89 Start: 52219, Stop: 52584, Start Num: 57

Candidate Starts for KeaneyLin\_89:

(Start: 57 @52219 has 9 MA's), (156, 52456), (162, 52477), (191, 52573),

Gene: Kela\_113 Start: 74506, Stop: 74042, Start Num: 30

Candidate Starts for Kela\_113:

(Start: 30 @74506 has 7 MA's), (43, 74473), (58, 74452), (61, 74443), (76, 74401), (84, 74386), (106, 74359), (156, 74212), (160, 74197), (164, 74185), (186, 74104), (199, 74053),

Gene: Kerberos\_66 Start: 40912, Stop: 40535, Start Num: 56

Candidate Starts for Kerberos\_66:

(19, 41026), (Start: 56 @40912 has 143 MA's), (Start: 74 @40861 has 1 MA's), (104, 40813), (106, 40810), (124, 40753), (156, 40660), (157, 40657), (175, 40591),

Gene: Killigrew\_36 Start: 30926, Stop: 30498, Start Num: 62

Candidate Starts for Killigrew\_36:

(Start: 62 @30926 has 5 MA's), (106, 30839), (143, 30737), (144, 30734), (149, 30695), (163, 30632),

Gene: Kimchi\_80 Start: 48362, Stop: 48775, Start Num: 54

Candidate Starts for Kimchi\_80:

(Start: 54 @48362 has 124 MA's), (Start: 60 @48377 has 4 MA's), (118, 48524), (156, 48662),

Gene: Kimona\_58 Start: 38659, Stop: 38276, Start Num: 56

Candidate Starts for Kimona\_58:

(20, 38791), (Start: 56 @38659 has 143 MA's), (79, 38596), (106, 38557), (124, 38500), (129, 38491), (153, 38425), (156, 38407), (162, 38386), (175, 38338),

Gene: Kingmustik0402\_61 Start: 40232, Stop: 39852, Start Num: 15

Candidate Starts for Kingmustik0402\_61:

(Start: 15 @40232 has 159 MA's), (124, 40073), (129, 40064), (156, 39980), (175, 39911),

Gene: Kinmap\_64 Start: 39098, Stop: 38730, Start Num: 59

Candidate Starts for Kinmap\_64:

(Start: 56 @39107 has 143 MA's), (Start: 59 @39098 has 14 MA's), (92, 39026), (156, 38858), (157, 38855), (175, 38789),

Gene: Koan\_57 Start: 40243, Stop: 39863, Start Num: 15

Candidate Starts for Koan\_57:

(Start: 15 @40243 has 159 MA's), (124, 40084), (129, 40075), (156, 39991), (175, 39922), (177, 39916),

Gene: Koduck\_65 Start: 39809, Stop: 39432, Start Num: 56

Candidate Starts for Koduck\_65:

(44, 39824), (Start: 56 @39809 has 143 MA's), (Start: 59 @39800 has 14 MA's), (Start: 60 @39797 has 4 MA's), (79, 39746), (124, 39650), (135, 39629), (156, 39557), (164, 39530), (175, 39488),

Gene: Koreni\_60 Start: 39924, Stop: 39544, Start Num: 15

Candidate Starts for Koreni\_60:

(Start: 15 @39924 has 159 MA's), (124, 39765), (129, 39756), (156, 39672), (175, 39603), (177, 39597),

Gene: Kostya\_76 Start: 48238, Stop: 48636, Start Num: 60

Candidate Starts for Kostya\_76:

(Start: 54 @48223 has 124 MA's), (Start: 60 @48238 has 4 MA's), (118, 48385), (156, 48523),

Gene: Kradal\_113 Start: 75438, Stop: 74971, Start Num: 30

Candidate Starts for Kradal\_113:

(24, 75474), (Start: 30 @75438 has 7 MA's), (38, 75411), (61, 75372), (Start: 74 @75336 has 1 MA's), (106, 75288), (155, 75144), (156, 75141), (186, 75033), (199, 74982),

Gene: Kratak\_60 Start: 40241, Stop: 39861, Start Num: 15

Candidate Starts for Kratak\_60:

(Start: 15 @40241 has 159 MA's), (124, 40082), (129, 40073), (156, 39989), (175, 39920),

Gene: Kremtemulon\_60 Start: 40191, Stop: 39811, Start Num: 56

Candidate Starts for Kremtemulon\_60:

(8, 40425), (17, 40326), (Start: 56 @40191 has 143 MA's), (Start: 59 @40182 has 14 MA's), (124, 40032), (129, 40023), (156, 39939), (175, 39870),

Gene: Kumao\_84 Start: 54374, Stop: 54781, Start Num: 59

Candidate Starts for Kumao\_84:

(36, 54347), (40, 54353), (Start: 59 @54374 has 14 MA's), (135, 54545), (153, 54599), (156, 54617), (157, 54620), (175, 54686), (186, 54719),

Gene: Kyee\_61 Start: 40241, Stop: 39861, Start Num: 15

Candidate Starts for Kyee\_61:

(Start: 15 @40241 has 159 MA's), (124, 40082), (129, 40073), (156, 39989), (175, 39920),

Gene: L5\_61 Start: 39896, Stop: 39519, Start Num: 56

Candidate Starts for L5\_61:

(19, 40010), (44, 39911), (Start: 56 @39896 has 143 MA's), (79, 39833), (124, 39737), (135, 39716), (156, 39644), (175, 39575),

Gene: LBerry\_68 Start: 40947, Stop: 40528, Start Num: 56

Candidate Starts for LBerry\_68:

(1, 41295), (2, 41292), (Start: 50 @40956 has 5 MA's), (Start: 56 @40947 has 143 MA's), (Start: 59 @40938 has 14 MA's), (104, 40845), (156, 40692), (175, 40623),

Gene: LHTSCC\_63 Start: 40646, Stop: 40266, Start Num: 15

Candidate Starts for LHTSCC\_63:

(Start: 15 @40646 has 159 MA's), (124, 40487), (129, 40478), (156, 40394), (175, 40325),

Gene: Lambert1\_63 Start: 40646, Stop: 40263, Start Num: 15

Candidate Starts for Lambert1\_63:

(Start: 14 @40655 has 8 MA's), (Start: 15 @40646 has 159 MA's), (104, 40550), (124, 40490), (156, 40397), (185, 40298), (186, 40295), (194, 40268),

Gene: LappelDuVide\_61 Start: 40242, Stop: 39862, Start Num: 15

Candidate Starts for LappelDuVide\_61:

(Start: 15 @40242 has 159 MA's), (124, 40083), (129, 40074), (156, 39990), (175, 39921), (177, 39915),

Gene: LarryKay\_67 Start: 40973, Stop: 40554, Start Num: 56

Candidate Starts for LarryKay\_67:

(1, 41321), (2, 41318), (Start: 50 @40982 has 5 MA's), (Start: 56 @40973 has 143 MA's), (Start: 59 @40964 has 14 MA's), (104, 40871), (156, 40718), (175, 40649), (197, 40571),

Gene: LeBron\_84 Start: 53694, Stop: 54107, Start Num: 56

Candidate Starts for LeBron\_84:

(Start: 56 @53694 has 143 MA's), (Start: 74 @53745 has 1 MA's), (76, 53751), (156, 53985), (162, 54006), (164, 54012), (175, 54054),

Gene: Lemur\_61 Start: 40240, Stop: 39860, Start Num: 15

Candidate Starts for Lemur\_61:

(Start: 15 @40240 has 159 MA's), (124, 40081), (129, 40072), (156, 39988), (175, 39919), (177, 39913),

Gene: LeoAvram\_60 Start: 40246, Stop: 39866, Start Num: 15

Candidate Starts for LeoAvram\_60:

(Start: 14 @40255 has 8 MA's), (Start: 15 @40246 has 159 MA's), (124, 40087), (126, 40084), (129, 40078), (156, 39994), (175, 39925),

Gene: Lilac\_78 Start: 47977, Stop: 48390, Start Num: 54

Candidate Starts for Lilac\_78:

(Start: 54 @47977 has 124 MA's), (Start: 60 @47992 has 4 MA's), (118, 48139), (156, 48277),

Gene: Lilith\_66 Start: 40936, Stop: 40517, Start Num: 56

Candidate Starts for Lilith\_66:

(1, 41284), (2, 41281), (Start: 50 @40945 has 5 MA's), (Start: 56 @40936 has 143 MA's), (Start: 59 @40927 has 14 MA's), (104, 40834), (156, 40681), (175, 40612),

Gene: Lilizi\_77 Start: 47690, Stop: 48103, Start Num: 54

Candidate Starts for Lilizi\_77:

(Start: 54 @47690 has 124 MA's), (Start: 60 @47705 has 4 MA's), (118, 47852), (156, 47990),

Gene: Lilpickle\_75 Start: 47575, Stop: 47988, Start Num: 54

Candidate Starts for Lilpickle\_75:

(Start: 54 @47575 has 124 MA's), (Start: 60 @47590 has 4 MA's), (118, 47737), (156, 47875),

Gene: LittleB\_61 Start: 40244, Stop: 39864, Start Num: 15

Candidate Starts for LittleB\_61:

(Start: 15 @40244 has 159 MA's), (124, 40085), (129, 40076), (156, 39992), (175, 39923), (177, 39917),

Gene: LittleGuy\_61 Start: 40139, Stop: 39759, Start Num: 15

Candidate Starts for LittleGuy\_61:

(Start: 15 @40139 has 159 MA's), (124, 39980), (129, 39971), (156, 39887), (175, 39818), (177, 39812),

Gene: LochMonster\_62 Start: 40482, Stop: 40102, Start Num: 15

Candidate Starts for LochMonster\_62:

(Start: 15 @40482 has 159 MA's), (124, 40323), (129, 40314), (156, 40230), (175, 40161), (177, 40155),

Gene: Lorenzo\_61 Start: 40243, Stop: 39863, Start Num: 15

Candidate Starts for Lorenzo\_61:

(Start: 15 @40243 has 159 MA's), (124, 40084), (129, 40075), (156, 39991), (175, 39922), (177, 39916),

Gene: Louie6\_66 Start: 40972, Stop: 40553, Start Num: 56

Candidate Starts for Louie6\_66:

(Start: 50 @40981 has 5 MA's), (Start: 56 @40972 has 143 MA's), (Start: 59 @40963 has 14 MA's), (104, 40870), (156, 40717), (175, 40648), (185, 40618),

Gene: Lozinak\_118 Start: 68218, Stop: 68595, Start Num: 55

Candidate Starts for Lozinak\_118:

(29, 68173), (Start: 55 @68218 has 12 MA's), (77, 68278), (156, 68476), (158, 68485), (159, 68488), (162, 68497), (175, 68545), (185, 68575),

Gene: Lucivia\_64 Start: 39879, Stop: 39505, Start Num: 56

Candidate Starts for Lucivia\_64:

(1, 40215), (5, 40167), (9, 40110), (21, 39987), (Start: 48 @39891 has 9 MA's), (Start: 56 @39879 has 143 MA's), (124, 39720), (129, 39711), (153, 39645), (156, 39627), (175, 39558),

Gene: LuckySocke\_170 Start: 88165, Stop: 88563, Start Num: 56

Candidate Starts for LuckySocke\_170:

(Start: 56 @88165 has 143 MA's), (Start: 60 @88177 has 4 MA's), (100, 88261), (105, 88267), (113, 88291), (156, 88432), (163, 88456), (176, 88501), (181, 88513), (191, 88546),

Gene: LugYA\_70 Start: 40944, Stop: 40525, Start Num: 56

Candidate Starts for LugYA\_70:

(1, 41292), (2, 41289), (Start: 50 @40953 has 5 MA's), (Start: 56 @40944 has 143 MA's), (Start: 59 @40935 has 14 MA's), (104, 40842), (156, 40689), (175, 40620),

Gene: LukeCage\_93 Start: 66189, Stop: 66653, Start Num: 33

Candidate Starts for LukeCage\_93:

(26, 66147), (Start: 33 @66189 has 4 MA's), (72, 66270), (82, 66297), (97, 66321), (150, 66483), (156, 66507), (166, 66540), (191, 66627), (193, 66636),

Gene: Lunsford\_62 Start: 40237, Stop: 39857, Start Num: 15

Candidate Starts for Lunsford\_62:

(Start: 15 @40237 has 159 MA's), (124, 40078), (126, 40075), (129, 40069), (156, 39985), (175, 39916),

Gene: MA5\_64 Start: 40026, Stop: 39643, Start Num: 15

Candidate Starts for MA5\_64:

(Start: 14 @40035 has 8 MA's), (Start: 15 @40026 has 159 MA's), (124, 39870), (153, 39795), (156, 39777), (185, 39678),

Gene: MISSy\_77 Start: 48096, Stop: 48494, Start Num: 60

Candidate Starts for MISSy\_77:

(Start: 54 @48081 has 124 MA's), (Start: 60 @48096 has 4 MA's), (118, 48243), (156, 48381),

Gene: MK4\_64 Start: 40101, Stop: 39718, Start Num: 15

Candidate Starts for MK4\_64:

(Start: 14 @40110 has 8 MA's), (Start: 15 @40101 has 159 MA's), (124, 39945), (153, 39870), (156, 39852), (175, 39783), (185, 39753), (191, 39735),

Gene: MPhalcon\_77 Start: 48074, Stop: 48487, Start Num: 54

Candidate Starts for MPhalcon\_77:

(Start: 54 @48074 has 124 MA's), (Start: 60 @48089 has 4 MA's), (118, 48236), (156, 48374),

Gene: MaCh\_63 Start: 39809, Stop: 39435, Start Num: 56

Candidate Starts for MaCh\_63:

(1, 40145), (5, 40097), (9, 40040), (21, 39917), (Start: 48 @39821 has 9 MA's), (Start: 56 @39809 has 143 MA's), (101, 39713), (124, 39650), (129, 39641), (135, 39629), (153, 39575), (156, 39557), (175, 39488),

Gene: Mabel\_63 Start: 39826, Stop: 39452, Start Num: 56

Candidate Starts for Mabel\_63:

(1, 40162), (5, 40114), (9, 40057), (21, 39934), (Start: 48 @39838 has 9 MA's), (Start: 56 @39826 has 143 MA's), (124, 39667), (129, 39658), (153, 39592), (156, 39574), (175, 39505),

Gene: MadMarie\_67 Start: 40945, Stop: 40526, Start Num: 56

Candidate Starts for MadMarie\_67:

(1, 41293), (2, 41290), (4, 41251), (Start: 50 @40954 has 5 MA's), (Start: 56 @40945 has 143 MA's), (Start: 59 @40936 has 14 MA's), (104, 40843), (156, 40690), (175, 40621),

Gene: MadamMonkfish\_76 Start: 47299, Stop: 47712, Start Num: 54

Candidate Starts for MadamMonkfish\_76:

(Start: 54 @47299 has 124 MA's), (Start: 60 @47314 has 4 MA's), (118, 47461), (156, 47599),

Gene: Mainiac\_67 Start: 40937, Stop: 40518, Start Num: 56

Candidate Starts for Mainiac\_67:

(1, 41285), (2, 41282), (Start: 50 @40946 has 5 MA's), (Start: 56 @40937 has 143 MA's), (Start: 59 @40928 has 14 MA's), (104, 40835), (156, 40682), (175, 40613),

Gene: MajorMajor\_64 Start: 39806, Stop: 39429, Start Num: 56

Candidate Starts for MajorMajor\_64:

(19, 39920), (44, 39821), (Start: 56 @39806 has 143 MA's), (Start: 60 @39794 has 4 MA's), (79, 39743), (124, 39647), (156, 39554), (175, 39485),

Gene: Malinsilva\_69 Start: 40926, Stop: 40516, Start Num: 59

Candidate Starts for Malinsilva\_69:

(1, 41283), (2, 41280), (Start: 50 @40944 has 5 MA's), (Start: 56 @40935 has 143 MA's), (Start: 59 @40926 has 14 MA's), (104, 40833), (156, 40680), (175, 40611),

Gene: Manda\_77 Start: 49161, Stop: 49574, Start Num: 54

Candidate Starts for Manda\_77:

(Start: 54 @49161 has 124 MA's), (Start: 60 @49176 has 4 MA's), (118, 49323), (156, 49461),

Gene: Manu\_67 Start: 40829, Stop: 40410, Start Num: 56

Candidate Starts for Manu\_67:

(7, 41084), (Start: 50 @40838 has 5 MA's), (Start: 56 @40829 has 143 MA's), (Start: 59 @40820 has 14 MA's), (104, 40727), (156, 40574), (175, 40505),

Gene: MarQuardt\_67 Start: 40936, Stop: 40526, Start Num: 59

Candidate Starts for MarQuardt\_67:

(1, 41293), (2, 41290), (Start: 50 @40954 has 5 MA's), (Start: 56 @40945 has 143 MA's), (Start: 59 @40936 has 14 MA's), (104, 40843), (156, 40690), (175, 40621),

Gene: Marchesa\_62 Start: 40562, Stop: 40179, Start Num: 15

Candidate Starts for Marchesa\_62:

(3, 40712), (Start: 14 @40571 has 8 MA's), (Start: 15 @40562 has 159 MA's), (124, 40406), (153, 40331), (156, 40313), (185, 40214),

Gene: Mareelih\_168 Start: 96702, Stop: 96343, Start Num: 64

Candidate Starts for Mareelih\_168:

(Start: 64 @96702 has 5 MA's), (68, 96693), (70, 96690), (83, 96660), (94, 96639), (116, 96585), (156, 96468), (158, 96459), (162, 96447), (168, 96429),



Gene: Margo\_63 Start: 40672, Stop: 40289, Start Num: 15

Candidate Starts for Margo\_63:

(Start: 14 @40681 has 8 MA's), (Start: 15 @40672 has 159 MA's), (104, 40576), (124, 40516), (156, 40423), (185, 40324), (186, 40321), (194, 40294),

Gene: Marie\_65 Start: 40943, Stop: 40524, Start Num: 56

Candidate Starts for Marie\_65:

(1, 41291), (2, 41288), (Start: 50 @40952 has 5 MA's), (Start: 56 @40943 has 143 MA's), (Start: 59 @40934 has 14 MA's), (104, 40841), (156, 40688), (175, 40619),

Gene: Marius\_68 Start: 40826, Stop: 40407, Start Num: 56

Candidate Starts for Marius\_68:

(Start: 50 @40835 has 5 MA's), (Start: 56 @40826 has 143 MA's), (Start: 59 @40817 has 14 MA's), (104, 40724), (156, 40571), (175, 40502),

Gene: Marker\_42 Start: 31554, Stop: 31120, Start Num: 62

Candidate Starts for Marker\_42:

(Start: 62 @31554 has 5 MA's), (66, 31542), (143, 31365), (144, 31362), (151, 31320), (154, 31299), (179, 31197), (184, 31179), (197, 31128),

Gene: Marshmallow\_74 Start: 48854, Stop: 49267, Start Num: 54

Candidate Starts for Marshmallow\_74:

(Start: 54 @48854 has 124 MA's), (Start: 60 @48869 has 4 MA's), (131, 49046), (156, 49154), (164, 49181),

Gene: MaryV\_120 Start: 62395, Stop: 62829, Start Num: 57

Candidate Starts for MaryV\_120:

(Start: 57 @62395 has 9 MA's), (Start: 60 @62404 has 4 MA's), (73, 62440), (Start: 74 @62443 has 1 MA's), (108, 62506), (121, 62554), (123, 62560), (135, 62584), (154, 62683), (156, 62698), (174, 62770),

Gene: Maverick\_60 Start: 40243, Stop: 39863, Start Num: 15

Candidate Starts for Maverick\_60:

(Start: 15 @40243 has 159 MA's), (124, 40084), (129, 40075), (156, 39991), (175, 39922),

Gene: Maxo\_62 Start: 40245, Stop: 39865, Start Num: 15

Candidate Starts for Maxo\_62:

(Start: 15 @40245 has 159 MA's), (124, 40086), (129, 40077), (156, 39993), (175, 39924), (177, 39918),

Gene: Maxxinista\_78 Start: 47950, Stop: 48363, Start Num: 54

Candidate Starts for Maxxinista\_78:

(Start: 54 @47950 has 124 MA's), (Start: 60 @47965 has 4 MA's), (118, 48112), (156, 48250),

Gene: Mazhar510\_61 Start: 40244, Stop: 39864, Start Num: 15

Candidate Starts for Mazhar510\_61:

(Start: 15 @40244 has 159 MA's), (124, 40085), (129, 40076), (156, 39992), (175, 39923),

Gene: Medusa\_61 Start: 40257, Stop: 39877, Start Num: 15

Candidate Starts for Medusa\_61:

(Start: 15 @40257 has 159 MA's), (124, 40098), (129, 40089), (156, 40005), (175, 39936), (177, 39930),

Gene: MeeZee\_60 Start: 40240, Stop: 39860, Start Num: 15  
Candidate Starts for MeeZee\_60:  
(Start: 15 @40240 has 159 MA's), (124, 40081), (129, 40072), (156, 39988), (175, 39919), (177, 39913),

Gene: Melvin\_63 Start: 40238, Stop: 39858, Start Num: 15  
Candidate Starts for Melvin\_63:  
(Start: 15 @40238 has 159 MA's), (124, 40079), (129, 40070), (156, 39986), (175, 39917), (177, 39911),

Gene: Methuselah\_62 Start: 40967, Stop: 40548, Start Num: 56  
Candidate Starts for Methuselah\_62:  
(1, 41315), (2, 41312), (4, 41273), (Start: 50 @40976 has 5 MA's), (Start: 56 @40967 has 143 MA's), (Start: 59 @40958 has 14 MA's), (104, 40865), (156, 40712), (175, 40643), (197, 40565),

Gene: Microwolf\_65 Start: 40959, Stop: 40540, Start Num: 56  
Candidate Starts for Microwolf\_65:  
(1, 41307), (2, 41304), (Start: 50 @40968 has 5 MA's), (Start: 56 @40959 has 143 MA's), (Start: 59 @40950 has 14 MA's), (104, 40857), (156, 40704), (175, 40635),

Gene: Millski\_60 Start: 40244, Stop: 39864, Start Num: 15  
Candidate Starts for Millski\_60:  
(Start: 15 @40244 has 159 MA's), (124, 40085), (129, 40076), (156, 39992), (175, 39923), (177, 39917),

Gene: Mindy\_75 Start: 47166, Stop: 47579, Start Num: 54  
Candidate Starts for Mindy\_75:  
(Start: 54 @47166 has 124 MA's), (Start: 60 @47181 has 4 MA's), (118, 47328), (156, 47466),

Gene: Miniwave\_71 Start: 47619, Stop: 48032, Start Num: 54  
Candidate Starts for Miniwave\_71:  
(Start: 54 @47619 has 124 MA's), (Start: 60 @47634 has 4 MA's), (118, 47781), (156, 47919),

Gene: Miramae\_58 Start: 39532, Stop: 39146, Start Num: 15  
Candidate Starts for Miramae\_58:  
(Start: 15 @39532 has 159 MA's), (124, 39373), (129, 39364), (156, 39280), (175, 39211),

Gene: Misfit\_77 Start: 49093, Stop: 49506, Start Num: 54  
Candidate Starts for Misfit\_77:  
(Start: 54 @49093 has 124 MA's), (Start: 60 @49108 has 4 MA's), (118, 49255), (156, 49393),

Gene: Miskis\_117 Start: 67235, Stop: 67612, Start Num: 55  
Candidate Starts for Miskis\_117:  
(29, 67190), (Start: 55 @67235 has 12 MA's), (77, 67295), (156, 67493), (158, 67502), (159, 67505), (162, 67514), (175, 67562), (185, 67592),

Gene: Misomonster\_68 Start: 40970, Stop: 40551, Start Num: 56  
Candidate Starts for Misomonster\_68:  
(1, 41318), (2, 41315), (4, 41276), (Start: 50 @40979 has 5 MA's), (Start: 56 @40970 has 143 MA's), (Start: 59 @40961 has 14 MA's), (104, 40868), (156, 40715), (175, 40646), (185, 40616),

Gene: MissWhite\_64 Start: 39952, Stop: 39575, Start Num: 56  
Candidate Starts for MissWhite\_64:

(19, 40063), (47, 39964), (Start: 56 @39952 has 143 MA's), (Start: 59 @39943 has 14 MA's), (Start: 60 @39940 has 4 MA's), (65, 39922), (79, 39889), (124, 39793), (156, 39700), (164, 39673), (175, 39631),

Gene: Moldemort\_79 Start: 48178, Stop: 48591, Start Num: 54

Candidate Starts for Moldemort\_79:

(Start: 54 @48178 has 124 MA's), (Start: 60 @48193 has 4 MA's), (118, 48340), (156, 48478),

Gene: MoneyMay\_66 Start: 40943, Stop: 40524, Start Num: 56

Candidate Starts for MoneyMay\_66:

(1, 41291), (2, 41288), (Start: 50 @40952 has 5 MA's), (Start: 56 @40943 has 143 MA's), (Start: 59 @40934 has 14 MA's), (104, 40841), (156, 40688), (175, 40619),

Gene: Morpher26\_59 Start: 40104, Stop: 39718, Start Num: 15

Candidate Starts for Morpher26\_59:

(Start: 15 @40104 has 159 MA's), (124, 39945), (129, 39936), (156, 39852), (175, 39783),

Gene: Morrow\_62 Start: 40249, Stop: 39869, Start Num: 15

Candidate Starts for Morrow\_62:

(Start: 14 @40258 has 8 MA's), (Start: 15 @40249 has 159 MA's), (124, 40090), (126, 40087), (129, 40081), (156, 39997), (175, 39928), (177, 39922),

Gene: Mosby\_72 Start: 47376, Stop: 47789, Start Num: 54

Candidate Starts for Mosby\_72:

(Start: 54 @47376 has 124 MA's), (Start: 60 @47391 has 4 MA's), (118, 47538), (156, 47676),

Gene: MuchMore\_70 Start: 40935, Stop: 40516, Start Num: 56

Candidate Starts for MuchMore\_70:

(1, 41283), (2, 41280), (4, 41241), (Start: 50 @40944 has 5 MA's), (Start: 56 @40935 has 143 MA's), (Start: 59 @40926 has 14 MA's), (104, 40833), (156, 40680), (175, 40611),

Gene: Mugiwara\_96 Start: 66769, Stop: 67152, Start Num: 72

Candidate Starts for Mugiwara\_96:

(26, 66646), (Start: 33 @66688 has 4 MA's), (63, 66748), (72, 66769), (82, 66796), (97, 66820), (150, 66982), (156, 67006), (166, 67039), (191, 67126), (193, 67135),

Gene: Mulciber\_62 Start: 39367, Stop: 38993, Start Num: 56

Candidate Starts for Mulciber\_62:

(1, 39703), (5, 39655), (9, 39598), (21, 39475), (23, 39448), (Start: 48 @39379 has 9 MA's), (Start: 56 @39367 has 143 MA's), (101, 39271), (124, 39208), (129, 39199), (135, 39187), (153, 39133), (156, 39115), (175, 39046),

Gene: Munch\_63 Start: 39830, Stop: 39456, Start Num: 56

Candidate Starts for Munch\_63:

(1, 40166), (5, 40118), (9, 40061), (21, 39938), (23, 39911), (Start: 48 @39842 has 9 MA's), (Start: 56 @39830 has 143 MA's), (101, 39734), (124, 39671), (129, 39662), (135, 39650), (153, 39596), (156, 39578), (175, 39509),

Gene: Mundrea\_59 Start: 40096, Stop: 39716, Start Num: 15

Candidate Starts for Mundrea\_59:

(Start: 15 @40096 has 159 MA's), (124, 39937), (129, 39928), (156, 39844), (175, 39775),

Gene: Murica\_79 Start: 49025, Stop: 49438, Start Num: 54

Candidate Starts for Murica\_79:

(Start: 54 @49025 has 124 MA's), (Start: 60 @49040 has 4 MA's), (118, 49187), (156, 49325),

Gene: Murphy\_76 Start: 48462, Stop: 48875, Start Num: 54

Candidate Starts for Murphy\_76:

(Start: 54 @48462 has 124 MA's), (Start: 60 @48477 has 4 MA's), (118, 48624), (156, 48762),

Gene: MyraDee\_63 Start: 37799, Stop: 37377, Start Num: 41

Candidate Starts for MyraDee\_63:

(Start: 41 @37799 has 1 MA's), (67, 37754), (124, 37634), (135, 37613), (153, 37559), (156, 37541), (175, 37472), (179, 37460), (197, 37394),

Gene: Myrale\_76 Start: 48719, Stop: 49132, Start Num: 54

Candidate Starts for Myrale\_76:

(Start: 54 @48719 has 124 MA's), (Start: 60 @48734 has 4 MA's), (118, 48881), (156, 49019),

Gene: Naji\_66 Start: 40913, Stop: 40536, Start Num: 56

Candidate Starts for Naji\_66:

(19, 41027), (44, 40928), (Start: 56 @40913 has 143 MA's), (Start: 74 @40862 has 1 MA's), (104, 40814), (106, 40811), (124, 40754), (156, 40661), (157, 40658), (175, 40592),

Gene: Nala\_78 Start: 48583, Stop: 48996, Start Num: 54

Candidate Starts for Nala\_78:

(Start: 54 @48583 has 124 MA's), (Start: 60 @48598 has 4 MA's), (118, 48745), (156, 48883),

Gene: NearlyHeadless\_74 Start: 41154, Stop: 40783, Start Num: 56

Candidate Starts for NearlyHeadless\_74:

(Start: 37 @41175 has 1 MA's), (Start: 56 @41154 has 143 MA's), (124, 40995), (139, 40962), (156, 40902), (168, 40863), (175, 40833),

Gene: Nebs\_62 Start: 40246, Stop: 39866, Start Num: 15

Candidate Starts for Nebs\_62:

(Start: 14 @40255 has 8 MA's), (Start: 15 @40246 has 159 MA's), (124, 40087), (126, 40084), (129, 40078), (156, 39994), (175, 39925),

Gene: NelitzaMV\_74 Start: 47665, Stop: 48078, Start Num: 54

Candidate Starts for NelitzaMV\_74:

(Start: 54 @47665 has 124 MA's), (Start: 60 @47680 has 4 MA's), (118, 47827), (156, 47965),

Gene: Nemo27\_60 Start: 40242, Stop: 39862, Start Num: 15

Candidate Starts for Nemo27\_60:

(Start: 15 @40242 has 159 MA's), (124, 40083), (129, 40074), (156, 39990), (175, 39921),

Gene: NiceHouse\_229 Start: 121776, Stop: 122174, Start Num: 56

Candidate Starts for NiceHouse\_229:

(31, 121731), (Start: 52 @121770 has 4 MA's), (Start: 56 @121776 has 143 MA's), (103, 121881), (114, 121911), (128, 121953), (153, 122022), (156, 122040),

Gene: Nimrod\_77 Start: 49286, Stop: 49699, Start Num: 54

Candidate Starts for Nimrod\_77:

(Start: 54 @49286 has 124 MA's), (Start: 60 @49301 has 4 MA's), (118, 49448), (156, 49586),

Gene: Nirvana\_124 Start: 78772, Stop: 78338, Start Num: 43

Candidate Starts for Nirvana\_124:

(Start: 30 @78805 has 7 MA's), (43, 78772), (106, 78655), (156, 78508), (164, 78481), (199, 78349),

Gene: NoSleep\_77 Start: 47920, Stop: 48333, Start Num: 54

Candidate Starts for NoSleep\_77:

(Start: 54 @47920 has 124 MA's), (Start: 60 @47935 has 4 MA's), (118, 48082), (156, 48220),

Gene: Noella\_63 Start: 40647, Stop: 40264, Start Num: 15

Candidate Starts for Noella\_63:

(Start: 14 @40656 has 8 MA's), (Start: 15 @40647 has 159 MA's), (104, 40551), (124, 40491), (156, 40398), (185, 40299), (186, 40296), (194, 40269),

Gene: Noelle\_60 Start: 40405, Stop: 40019, Start Num: 15

Candidate Starts for Noelle\_60:

(Start: 15 @40405 has 159 MA's), (124, 40246), (129, 40237), (156, 40153), (157, 40150), (175, 40084),

Gene: Norbert\_60 Start: 40646, Stop: 40263, Start Num: 15

Candidate Starts for Norbert\_60:

(Start: 14 @40655 has 8 MA's), (Start: 15 @40646 has 159 MA's), (104, 40550), (124, 40490), (156, 40397), (185, 40298), (186, 40295), (194, 40268),

Gene: NorthStar\_59 Start: 40243, Stop: 39863, Start Num: 15

Candidate Starts for NorthStar\_59:

(Start: 15 @40243 has 159 MA's), (124, 40084), (129, 40075), (156, 39991), (175, 39922), (177, 39916),

Gene: Norvs\_118 Start: 67819, Stop: 68196, Start Num: 55

Candidate Starts for Norvs\_118:

(29, 67774), (Start: 55 @67819 has 12 MA's), (77, 67879), (156, 68077), (158, 68086), (159, 68089), (162, 68098), (175, 68146),

Gene: NotAPhaseMom\_60 Start: 40247, Stop: 39867, Start Num: 15

Candidate Starts for NotAPhaseMom\_60:

(Start: 15 @40247 has 159 MA's), (124, 40088), (129, 40079), (156, 39995), (175, 39926),

Gene: Nyxis\_60 Start: 40133, Stop: 39753, Start Num: 15

Candidate Starts for Nyxis\_60:

(Start: 15 @40133 has 159 MA's), (124, 39974), (129, 39965), (156, 39881), (175, 39812), (177, 39806),

Gene: OKaNui\_61 Start: 40293, Stop: 39913, Start Num: 15

Candidate Starts for OKaNui\_61:

(Start: 15 @40293 has 159 MA's), (124, 40134), (129, 40125), (156, 40041), (175, 39972),

Gene: Obama12\_62 Start: 40630, Stop: 40250, Start Num: 15

Candidate Starts for Obama12\_62:

(Start: 15 @40630 has 159 MA's), (124, 40471), (129, 40462), (156, 40378), (175, 40309),

Gene: Odin\_64 Start: 39580, Stop: 39206, Start Num: 59

Candidate Starts for Odin\_64:

(19, 39706), (44, 39604), (Start: 56 @39589 has 143 MA's), (Start: 59 @39580 has 14 MA's), (73, 39541), (87, 39514), (124, 39424), (156, 39331), (162, 39310), (170, 39286), (175, 39262),

Gene: Ohfah\_62 Start: 40246, Stop: 39866, Start Num: 15

Candidate Starts for Ohfah\_62:

(Start: 14 @40255 has 8 MA's), (Start: 15 @40246 has 159 MA's), (124, 40087), (126, 40084), (129, 40078), (156, 39994), (175, 39925),

Gene: OlanP\_66 Start: 41002, Stop: 40583, Start Num: 56

Candidate Starts for OlanP\_66:

(7, 41257), (Start: 50 @41011 has 5 MA's), (Start: 56 @41002 has 143 MA's), (Start: 59 @40993 has 14 MA's), (104, 40900), (156, 40747), (175, 40678),

Gene: Ollie\_67 Start: 40814, Stop: 40395, Start Num: 56

Candidate Starts for Ollie\_67:

(1, 41162), (2, 41159), (4, 41120), (6, 41111), (Start: 50 @40823 has 5 MA's), (Start: 56 @40814 has 143 MA's), (Start: 59 @40805 has 14 MA's), (104, 40712), (156, 40559), (175, 40490),

Gene: Omega\_177 Start: 91771, Stop: 92247, Start Num: 22

Candidate Starts for Omega\_177:

(Start: 22 @91771 has 1 MA's), (34, 91846), (67, 91915), (73, 91927), (79, 91942), (101, 91978), (109, 91990), (148, 92098), (156, 92128), (157, 92131), (185, 92227),

Gene: Orange\_62 Start: 39379, Stop: 39005, Start Num: 56

Candidate Starts for Orange\_62:

(1, 39715), (5, 39667), (9, 39610), (21, 39487), (Start: 48 @39391 has 9 MA's), (Start: 56 @39379 has 143 MA's), (124, 39220), (129, 39211), (153, 39145), (156, 39127), (175, 39058),

Gene: Orchid\_65 Start: 55078, Stop: 54683, Start Num: 54

Candidate Starts for Orchid\_65:

(Start: 54 @55078 has 124 MA's), (61, 55063), (153, 54853), (156, 54835), (158, 54826), (175, 54766), (198, 54700), (200, 54691),

Gene: OrionPax\_75 Start: 47671, Stop: 48084, Start Num: 54

Candidate Starts for OrionPax\_75:

(Start: 54 @47671 has 124 MA's), (Start: 60 @47686 has 4 MA's), (118, 47833), (156, 47971),

Gene: P28Green\_68 Start: 40946, Stop: 40527, Start Num: 56

Candidate Starts for P28Green\_68:

(1, 41294), (2, 41291), (Start: 50 @40955 has 5 MA's), (Start: 56 @40946 has 143 MA's), (Start: 59 @40937 has 14 MA's), (104, 40844), (156, 40691), (175, 40622),

Gene: PGHhamlin\_69 Start: 40935, Stop: 40516, Start Num: 56

Candidate Starts for PGHhamlin\_69:

(1, 41283), (2, 41280), (Start: 50 @40944 has 5 MA's), (Start: 56 @40935 has 143 MA's), (Start: 59 @40926 has 14 MA's), (104, 40833), (156, 40680), (175, 40611),

Gene: PP\_64 Start: 44619, Stop: 44173, Start Num: 54

Candidate Starts for PP\_64:

(36, 44637), (Start: 54 @44619 has 124 MA's), (90, 44538), (156, 44370), (175, 44301), (179, 44289), (196, 44226),

Gene: Palestino\_60 Start: 40243, Stop: 39863, Start Num: 15

Candidate Starts for Palestino\_60:

(Start: 15 @40243 has 159 MA's), (124, 40084), (129, 40075), (156, 39991), (175, 39922),

Gene: Palpatine\_78 Start: 49067, Stop: 49465, Start Num: 60

Candidate Starts for Palpatine\_78:

(Start: 54 @49052 has 124 MA's), (Start: 60 @49067 has 4 MA's), (118, 49214), (156, 49352),

Gene: Panamaxus\_61 Start: 40646, Stop: 40263, Start Num: 15

Candidate Starts for Panamaxus\_61:

(Start: 14 @40655 has 8 MA's), (Start: 15 @40646 has 159 MA's), (104, 40550), (124, 40490), (156, 40397), (185, 40298), (186, 40295), (194, 40268),

Gene: Paperbeatsrock\_75 Start: 48297, Stop: 48710, Start Num: 54

Candidate Starts for Paperbeatsrock\_75:

(Start: 54 @48297 has 124 MA's), (Start: 60 @48312 has 4 MA's), (118, 48459), (156, 48597),

Gene: Pat3\_74 Start: 46829, Stop: 47242, Start Num: 54

Candidate Starts for Pat3\_74:

(Start: 54 @46829 has 124 MA's), (Start: 60 @46844 has 4 MA's), (118, 46991), (156, 47129),

Gene: PatrickStar\_66 Start: 55077, Stop: 54682, Start Num: 54

Candidate Starts for PatrickStar\_66:

(Start: 54 @55077 has 124 MA's), (61, 55062), (153, 54852), (156, 54834), (158, 54825), (175, 54765), (198, 54699), (200, 54690),

Gene: PauloDiaboli\_248 Start: 135825, Stop: 136211, Start Num: 56

Candidate Starts for PauloDiaboli\_248:

(Start: 56 @135825 has 143 MA's), (90, 135912), (131, 135996), (153, 136056), (156, 136074), (162, 136095), (184, 136173), (191, 136194),

Gene: Pawn\_67 Start: 40833, Stop: 40414, Start Num: 56

Candidate Starts for Pawn\_67:

(7, 41088), (17, 40983), (Start: 50 @40842 has 5 MA's), (Start: 56 @40833 has 143 MA's), (Start: 59 @40824 has 14 MA's), (104, 40731), (156, 40578), (175, 40509),

Gene: Peaches\_59 Start: 40242, Stop: 39862, Start Num: 15

Candidate Starts for Peaches\_59:

(Start: 15 @40242 has 159 MA's), (124, 40083), (129, 40074), (156, 39990), (175, 39921),

Gene: Pembroke\_67 Start: 40935, Stop: 40525, Start Num: 59

Candidate Starts for Pembroke\_67:

(1, 41292), (2, 41289), (Start: 50 @40953 has 5 MA's), (Start: 56 @40944 has 143 MA's), (Start: 59 @40935 has 14 MA's), (104, 40842), (156, 40689), (175, 40620),

Gene: Penny1\_67 Start: 40947, Stop: 40528, Start Num: 56

Candidate Starts for Penny1\_67:

(1, 41295), (2, 41292), (Start: 50 @40956 has 5 MA's), (Start: 56 @40947 has 143 MA's), (Start: 59 @40938 has 14 MA's), (104, 40845), (156, 40692), (175, 40623),

Gene: Peregrin\_54 Start: 20303, Stop: 19884, Start Num: 39

Candidate Starts for Peregrin\_54:

(35, 20312), (Start: 39 @20303 has 4 MA's), (75, 20228), (115, 20153), (156, 20033), (177, 19958),

Gene: Perplexer\_59 Start: 40080, Stop: 39694, Start Num: 15

Candidate Starts for Perplexer\_59:

(Start: 15 @40080 has 159 MA's), (124, 39921), (129, 39912), (156, 39828), (175, 39759),

Gene: PeterPeter\_61 Start: 40240, Stop: 39860, Start Num: 15

Candidate Starts for PeterPeter\_61:

(Start: 15 @40240 has 159 MA's), (124, 40081), (129, 40072), (156, 39988), (175, 39919),

Gene: Petersenfast\_61 Start: 39390, Stop: 39004, Start Num: 48

Candidate Starts for Petersenfast\_61:

(1, 39714), (5, 39666), (9, 39609), (21, 39486), (Start: 48 @39390 has 9 MA's), (Start: 56 @39378 has 143 MA's), (124, 39219), (129, 39210), (153, 39144), (156, 39126), (175, 39057),

Gene: PetiteSangsue\_59 Start: 40083, Stop: 39697, Start Num: 15

Candidate Starts for PetiteSangsue\_59:

(Start: 15 @40083 has 159 MA's), (124, 39924), (129, 39915), (156, 39831), (175, 39762),

Gene: Petra64142\_80 Start: 49516, Stop: 49929, Start Num: 54

Candidate Starts for Petra64142\_80:

(Start: 54 @49516 has 124 MA's), (Start: 60 @49531 has 4 MA's), (118, 49678), (156, 49816),

Gene: Ph8s\_66 Start: 39754, Stop: 39380, Start Num: 56

Candidate Starts for Ph8s\_66:

(19, 39868), (44, 39769), (Start: 56 @39754 has 143 MA's), (Start: 59 @39745 has 14 MA's), (79, 39691), (101, 39658), (124, 39595), (135, 39577), (156, 39505), (171, 39454), (175, 39436),

Gene: Phacado\_61 Start: 40242, Stop: 39862, Start Num: 15

Candidate Starts for Phacado\_61:

(Start: 15 @40242 has 159 MA's), (124, 40083), (129, 40074), (156, 39990), (175, 39921),

Gene: Phaja\_74 Start: 48123, Stop: 48536, Start Num: 54

Candidate Starts for Phaja\_74:

(Start: 54 @48123 has 124 MA's), (Start: 60 @48138 has 4 MA's), (118, 48285), (156, 48423),

Gene: Phantastic\_65 Start: 40293, Stop: 39901, Start Num: 14

Candidate Starts for Phantastic\_65:

(3, 40434), (Start: 14 @40293 has 8 MA's), (Start: 15 @40284 has 159 MA's), (124, 40128), (153, 40053), (156, 40035), (185, 39936),

Gene: Pharsalus\_73 Start: 48097, Stop: 48510, Start Num: 54

Candidate Starts for Pharsalus\_73:

(Start: 54 @48097 has 124 MA's), (Start: 60 @48112 has 4 MA's), (118, 48259), (156, 48397),

Gene: PhatBacter\_80 Start: 49069, Stop: 49482, Start Num: 54

Candidate Starts for PhatBacter\_80:

(Start: 54 @49069 has 124 MA's), (Start: 60 @49084 has 4 MA's), (118, 49231), (156, 49369),

Gene: Phaux\_78 Start: 49064, Stop: 49477, Start Num: 54

Candidate Starts for Phaux\_78:

(Start: 54 @49064 has 124 MA's), (Start: 60 @49079 has 4 MA's), (118, 49226), (156, 49364),

Gene: Phelipe\_62 Start: 40246, Stop: 39866, Start Num: 15

Candidate Starts for Phelipe\_62:

(Start: 14 @40255 has 8 MA's), (Start: 15 @40246 has 159 MA's), (124, 40087), (126, 40084), (129, 40078), (156, 39994), (175, 39925),



Gene: Phighter1804\_61 Start: 40307, Stop: 39927, Start Num: 15  
Candidate Starts for Phighter1804\_61:  
(Start: 15 @40307 has 159 MA's), (124, 40148), (129, 40139), (156, 40055), (175, 39986),

Gene: PhinkBoden\_118 Start: 68507, Stop: 68884, Start Num: 55  
Candidate Starts for PhinkBoden\_118:  
(29, 68462), (Start: 55 @68507 has 12 MA's), (77, 68567), (156, 68765), (158, 68774), (159, 68777),  
(162, 68786), (175, 68834), (185, 68864),

Gene: PhishRPhriends\_65 Start: 40010, Stop: 39591, Start Num: 56  
Candidate Starts for PhishRPhriends\_65:  
(7, 40265), (Start: 50 @40019 has 5 MA's), (Start: 56 @40010 has 143 MA's), (Start: 59 @40001 has  
14 MA's), (104, 39908), (156, 39755), (175, 39686),

Gene: Phoebe\_68 Start: 40936, Stop: 40517, Start Num: 56  
Candidate Starts for Phoebe\_68:  
(1, 41284), (2, 41281), (Start: 50 @40945 has 5 MA's), (Start: 56 @40936 has 143 MA's), (Start: 59  
@40927 has 14 MA's), (104, 40834), (156, 40681), (175, 40612),

Gene: Phontbonne\_61 Start: 40149, Stop: 39769, Start Num: 15  
Candidate Starts for Phontbonne\_61:  
(Start: 15 @40149 has 159 MA's), (124, 39990), (126, 39987), (129, 39981), (156, 39897), (175,  
39828),

Gene: Phoxy\_67 Start: 40968, Stop: 40549, Start Num: 56  
Candidate Starts for Phoxy\_67:  
(1, 41316), (2, 41313), (Start: 50 @40977 has 5 MA's), (Start: 56 @40968 has 143 MA's), (Start: 59  
@40959 has 14 MA's), (104, 40866), (156, 40713), (175, 40644),

Gene: Phranny\_68 Start: 40815, Stop: 40396, Start Num: 56  
Candidate Starts for Phranny\_68:  
(7, 41070), (Start: 50 @40824 has 5 MA's), (Start: 56 @40815 has 143 MA's), (Start: 59 @40806 has  
14 MA's), (104, 40713), (156, 40560), (175, 40491),

Gene: Phrappuccino\_141 Start: 99435, Stop: 99845, Start Num: 48  
Candidate Starts for Phrappuccino\_141:  
(11, 99213), (Start: 48 @99435 has 9 MA's), (Start: 59 @99456 has 14 MA's), (104, 99555), (124,  
99615), (130, 99621), (138, 99639), (156, 99702), (162, 99723), (175, 99780),

Gene: Phrux\_73 Start: 47660, Stop: 48073, Start Num: 54  
Candidate Starts for Phrux\_73:  
(Start: 54 @47660 has 124 MA's), (Start: 60 @47675 has 4 MA's), (118, 47822), (156, 47960),

Gene: Pipcraft\_58 Start: 40243, Stop: 39863, Start Num: 15  
Candidate Starts for Pipcraft\_58:  
(Start: 15 @40243 has 159 MA's), (124, 40084), (129, 40075), (156, 39991), (175, 39922), (177,  
39916),

Gene: Pistachio\_64 Start: 40216, Stop: 39833, Start Num: 15  
Candidate Starts for Pistachio\_64:  
(3, 40366), (Start: 14 @40225 has 8 MA's), (Start: 15 @40216 has 159 MA's), (124, 40060), (137,  
40033), (153, 39985), (156, 39967), (185, 39868), (194, 39838),

Gene: Pocahontas\_63 Start: 40643, Stop: 40260, Start Num: 15

Candidate Starts for Pocahontas\_63:

(Start: 14 @40652 has 8 MA's), (Start: 15 @40643 has 159 MA's), (104, 40547), (124, 40487), (156, 40394), (185, 40295), (186, 40292), (194, 40265),

Gene: Policronamos\_80 Start: 49064, Stop: 49477, Start Num: 54

Candidate Starts for Policronamos\_80:

(Start: 54 @49064 has 124 MA's), (Start: 60 @49079 has 4 MA's), (118, 49226), (156, 49364),

Gene: Polymorphads\_62 Start: 40236, Stop: 39856, Start Num: 15

Candidate Starts for Polymorphads\_62:

(Start: 15 @40236 has 159 MA's), (124, 40077), (129, 40068), (156, 39984), (175, 39915), (177, 39909),

Gene: Pomar16\_65 Start: 40953, Stop: 40576, Start Num: 56

Candidate Starts for Pomar16\_65:

(19, 41067), (44, 40968), (Start: 56 @40953 has 143 MA's), (Start: 74 @40902 has 1 MA's), (104, 40854), (106, 40851), (124, 40794), (156, 40701), (157, 40698), (175, 40632),

Gene: Popcicle\_63 Start: 40643, Stop: 40260, Start Num: 15

Candidate Starts for Popcicle\_63:

(Start: 14 @40652 has 8 MA's), (Start: 15 @40643 has 159 MA's), (104, 40547), (124, 40487), (156, 40394), (185, 40295), (186, 40292), (194, 40265),

Gene: Porky\_75 Start: 47490, Stop: 47903, Start Num: 54

Candidate Starts for Porky\_75:

(Start: 54 @47490 has 124 MA's), (Start: 60 @47505 has 4 MA's), (118, 47652), (156, 47790),

Gene: PotatoSplit\_68 Start: 40947, Stop: 40528, Start Num: 56

Candidate Starts for PotatoSplit\_68:

(1, 41295), (2, 41292), (Start: 50 @40956 has 5 MA's), (Start: 56 @40947 has 143 MA's), (Start: 59 @40938 has 14 MA's), (104, 40845), (156, 40692), (175, 40623),

Gene: Pumbaa\_61 Start: 40188, Stop: 39808, Start Num: 15

Candidate Starts for Pumbaa\_61:

(Start: 15 @40188 has 159 MA's), (124, 40029), (129, 40020), (156, 39936), (175, 39867),

Gene: Pumpkin\_79 Start: 48718, Stop: 49131, Start Num: 54

Candidate Starts for Pumpkin\_79:

(Start: 54 @48718 has 124 MA's), (Start: 60 @48733 has 4 MA's), (118, 48880), (156, 49018),

Gene: Puppy\_64 Start: 40288, Stop: 39905, Start Num: 15

Candidate Starts for Puppy\_64:

(3, 40438), (Start: 14 @40297 has 8 MA's), (Start: 15 @40288 has 159 MA's), (124, 40132), (137, 40105), (153, 40057), (156, 40039), (185, 39940), (194, 39910),

Gene: PurpleHaze\_67 Start: 40828, Stop: 40409, Start Num: 56

Candidate Starts for PurpleHaze\_67:

(Start: 50 @40837 has 5 MA's), (Start: 56 @40828 has 143 MA's), (Start: 59 @40819 has 14 MA's), (104, 40726), (156, 40573), (175, 40504),

Gene: Quallification\_77 Start: 48705, Stop: 49118, Start Num: 54

Candidate Starts for Quallification\_77:

(Start: 54 @48705 has 124 MA's), (Start: 60 @48720 has 4 MA's), (118, 48867), (156, 49005),

Gene: Quantum\_112 Start: 75438, Stop: 74971, Start Num: 30

Candidate Starts for Quantum\_112:

(24, 75474), (Start: 30 @75438 has 7 MA's), (38, 75411), (61, 75372), (Start: 74 @75336 has 1 MA's), (106, 75288), (155, 75144), (156, 75141), (186, 75033), (199, 74982),

Gene: QuinnKiro\_62 Start: 40646, Stop: 40263, Start Num: 15

Candidate Starts for QuinnKiro\_62:

(Start: 14 @40655 has 8 MA's), (Start: 15 @40646 has 159 MA's), (104, 40550), (124, 40490), (156, 40397), (185, 40298), (186, 40295), (194, 40268),

Gene: Quokka\_64 Start: 39806, Stop: 39429, Start Num: 56

Candidate Starts for Quokka\_64:

(19, 39920), (44, 39821), (Start: 56 @39806 has 143 MA's), (Start: 60 @39794 has 4 MA's), (79, 39743), (124, 39647), (156, 39554), (175, 39485),

Gene: Rakim\_77 Start: 48174, Stop: 48587, Start Num: 54

Candidate Starts for Rakim\_77:

(Start: 54 @48174 has 124 MA's), (Start: 60 @48189 has 4 MA's), (118, 48336), (156, 48474),

Gene: Reba\_67 Start: 40488, Stop: 40069, Start Num: 56

Candidate Starts for Reba\_67:

(7, 40743), (Start: 50 @40497 has 5 MA's), (Start: 56 @40488 has 143 MA's), (Start: 59 @40479 has 14 MA's), (104, 40386), (156, 40233), (175, 40164),

Gene: ReginaGlobina\_62 Start: 25464, Stop: 25847, Start Num: 52

Candidate Starts for ReginaGlobina\_62:

(12, 25248), (Start: 52 @25464 has 4 MA's), (156, 25716),

Gene: Relief\_60 Start: 40240, Stop: 39860, Start Num: 15

Candidate Starts for Relief\_60:

(Start: 15 @40240 has 159 MA's), (124, 40081), (129, 40072), (156, 39988), (175, 39919),

Gene: ResDef\_62 Start: 40646, Stop: 40263, Start Num: 15

Candidate Starts for ResDef\_62:

(Start: 14 @40655 has 8 MA's), (Start: 15 @40646 has 159 MA's), (104, 40550), (124, 40490), (156, 40397), (185, 40298), (186, 40295), (194, 40268),

Gene: Rimmer\_77 Start: 48410, Stop: 48823, Start Num: 54

Candidate Starts for Rimmer\_77:

(Start: 54 @48410 has 124 MA's), (Start: 60 @48425 has 4 MA's), (118, 48572), (156, 48710),

Gene: RiverMonster\_76 Start: 48238, Stop: 48651, Start Num: 54

Candidate Starts for RiverMonster\_76:

(Start: 54 @48238 has 124 MA's), (Start: 60 @48253 has 4 MA's), (118, 48400), (156, 48538),

Gene: Roary\_75 Start: 41394, Stop: 41002, Start Num: 37

Candidate Starts for Roary\_75:

(Start: 37 @41394 has 1 MA's), (Start: 56 @41373 has 143 MA's), (124, 41214), (139, 41181), (156, 41121), (168, 41082), (175, 41052),

Gene: Rockstar\_62 Start: 40119, Stop: 39727, Start Num: 14

Candidate Starts for Rockstar\_62:

(Start: 14 @40119 has 8 MA's), (Start: 15 @40110 has 159 MA's), (124, 39954), (153, 39879), (156, 39861), (175, 39792), (185, 39762), (191, 39744),

Gene: Romney\_60 Start: 40240, Stop: 39860, Start Num: 15

Candidate Starts for Romney\_60:

(Start: 15 @40240 has 159 MA's), (124, 40081), (129, 40072), (156, 39988), (175, 39919), (177, 39913),

Gene: Roosevelt\_59 Start: 40245, Stop: 39865, Start Num: 15

Candidate Starts for Roosevelt\_59:

(Start: 15 @40245 has 159 MA's), (124, 40086), (129, 40077), (156, 39993), (175, 39924), (177, 39918),

Gene: Rosa24\_59 Start: 40274, Stop: 39894, Start Num: 15

Candidate Starts for Rosa24\_59:

(Start: 15 @40274 has 159 MA's), (124, 40115), (129, 40106), (156, 40022), (175, 39953),

Gene: Rose5\_86 Start: 54868, Stop: 55281, Start Num: 56

Candidate Starts for Rose5\_86:

(Start: 56 @54868 has 143 MA's), (Start: 74 @54919 has 1 MA's), (76, 54925), (156, 55159), (162, 55180), (164, 55186), (175, 55228),

Gene: Ruin\_61 Start: 40236, Stop: 39856, Start Num: 15

Candidate Starts for Ruin\_61:

(Start: 15 @40236 has 159 MA's), (124, 40077), (129, 40068), (156, 39984), (175, 39915), (177, 39909),

Gene: Rummer\_66 Start: 40962, Stop: 40552, Start Num: 59

Candidate Starts for Rummer\_66:

(1, 41319), (2, 41316), (4, 41277), (6, 41268), (Start: 50 @40980 has 5 MA's), (Start: 56 @40971 has 143 MA's), (Start: 59 @40962 has 14 MA's), (104, 40869), (156, 40716), (175, 40647),

Gene: Sabertooth\_61 Start: 40245, Stop: 39865, Start Num: 15

Candidate Starts for Sabertooth\_61:

(Start: 15 @40245 has 159 MA's), (124, 40086), (129, 40077), (156, 39993), (175, 39924), (177, 39918),

Gene: Sabia\_67 Start: 40943, Stop: 40533, Start Num: 59

Candidate Starts for Sabia\_67:

(1, 41300), (2, 41297), (Start: 50 @40961 has 5 MA's), (Start: 56 @40952 has 143 MA's), (Start: 59 @40943 has 14 MA's), (104, 40850), (156, 40697), (175, 40628),

Gene: Sabinator\_65 Start: 40942, Stop: 40523, Start Num: 56

Candidate Starts for Sabinator\_65:

(1, 41290), (2, 41287), (Start: 50 @40951 has 5 MA's), (Start: 56 @40942 has 143 MA's), (Start: 59 @40933 has 14 MA's), (104, 40840), (156, 40687), (175, 40618),

Gene: Saints25\_75 Start: 47648, Stop: 48061, Start Num: 54

Candidate Starts for Saints25\_75:

(Start: 54 @47648 has 124 MA's), (Start: 60 @47663 has 4 MA's), (118, 47810), (156, 47948),

Gene: Saintus\_69 Start: 38038, Stop: 37667, Start Num: 56

Candidate Starts for Saintus\_69:

(Start: 37 @38059 has 1 MA's), (Start: 56 @38038 has 143 MA's), (124, 37879), (139, 37846), (155, 37789), (156, 37786), (175, 37717),

Gene: Salz\_62 Start: 39349, Stop: 38975, Start Num: 56

Candidate Starts for Salz\_62:

(1, 39685), (5, 39637), (9, 39580), (21, 39457), (23, 39430), (Start: 48 @39361 has 9 MA's), (Start: 56 @39349 has 143 MA's), (101, 39253), (124, 39190), (129, 39181), (135, 39169), (153, 39115), (156, 39097), (175, 39028),

Gene: Sassay\_71 Start: 46338, Stop: 46751, Start Num: 54

Candidate Starts for Sassay\_71:

(Start: 54 @46338 has 124 MA's), (Start: 60 @46353 has 4 MA's), (118, 46500), (156, 46638),

Gene: Satis\_113 Start: 75434, Stop: 74967, Start Num: 30

Candidate Starts for Satis\_113:

(24, 75470), (Start: 30 @75434 has 7 MA's), (38, 75407), (61, 75368), (Start: 74 @75332 has 1 MA's), (106, 75284), (155, 75140), (156, 75137), (186, 75029), (199, 74978),

Gene: SaturnRing\_64 Start: 40669, Stop: 40286, Start Num: 15

Candidate Starts for SaturnRing\_64:

(3, 40819), (Start: 14 @40678 has 8 MA's), (Start: 15 @40669 has 159 MA's), (124, 40513), (137, 40486), (153, 40438), (156, 40420), (185, 40321), (194, 40291),

Gene: Scamp\_61 Start: 40245, Stop: 39865, Start Num: 15

Candidate Starts for Scamp\_61:

(Start: 15 @40245 has 159 MA's), (124, 40086), (129, 40077), (156, 39993), (175, 39924), (177, 39918),

Gene: Scout\_63 Start: 39823, Stop: 39440, Start Num: 15

Candidate Starts for Scout\_63:

(3, 39973), (Start: 14 @39832 has 8 MA's), (Start: 15 @39823 has 159 MA's), (124, 39667), (153, 39592), (156, 39574), (185, 39475),

Gene: SenorClean\_57 Start: 40243, Stop: 39863, Start Num: 15

Candidate Starts for SenorClean\_57:

(Start: 15 @40243 has 159 MA's), (124, 40084), (129, 40075), (156, 39991), (175, 39922), (177, 39916),

Gene: Serenity\_65 Start: 39936, Stop: 39559, Start Num: 56

Candidate Starts for Serenity\_65:

(44, 39951), (Start: 56 @39936 has 143 MA's), (124, 39777), (156, 39684), (164, 39657), (170, 39639), (175, 39615),

Gene: Settecandela\_141 Start: 99435, Stop: 99845, Start Num: 48

Candidate Starts for Settecandela\_141:

(11, 99213), (Start: 48 @99435 has 9 MA's), (Start: 59 @99456 has 14 MA's), (104, 99555), (124, 99615), (130, 99621), (138, 99639), (156, 99702), (162, 99723), (175, 99780),

Gene: Shaka\_59 Start: 40240, Stop: 39860, Start Num: 15

Candidate Starts for Shaka\_59:

(Start: 15 @40240 has 159 MA's), (124, 40081), (129, 40072), (156, 39988), (175, 39919),

Gene: Sham4\_63 Start: 39389, Stop: 39003, Start Num: 48

Candidate Starts for Sham4\_63:

(1, 39713), (5, 39665), (9, 39608), (21, 39485), (Start: 48 @39389 has 9 MA's), (Start: 56 @39377 has 143 MA's), (124, 39218), (129, 39209), (153, 39143), (156, 39125), (175, 39056),

Gene: ShamWow\_76 Start: 48560, Stop: 48973, Start Num: 54

Candidate Starts for ShamWow\_76:

(Start: 54 @48560 has 124 MA's), (Start: 60 @48575 has 4 MA's), (118, 48722), (156, 48860),

Gene: Sheen\_63 Start: 43521, Stop: 43072, Start Num: 56

Candidate Starts for Sheen\_63:

(13, 43725), (Start: 56 @43521 has 143 MA's), (79, 43458), (124, 43362), (129, 43353), (156, 43269), (168, 43230), (175, 43200), (201, 43089),

Gene: SheldonCooper\_61 Start: 40647, Stop: 40267, Start Num: 15

Candidate Starts for SheldonCooper\_61:

(Start: 15 @40647 has 159 MA's), (124, 40488), (129, 40479), (156, 40395), (175, 40326),

Gene: Shygu2\_59 Start: 40134, Stop: 39754, Start Num: 15

Candidate Starts for Shygu2\_59:

(Start: 15 @40134 has 159 MA's), (124, 39975), (129, 39966), (156, 39882), (175, 39813),

Gene: Silverleaf\_85 Start: 54367, Stop: 54780, Start Num: 56

Candidate Starts for Silverleaf\_85:

(Start: 56 @54367 has 143 MA's), (118, 54520), (156, 54658), (162, 54679), (164, 54685), (175, 54727),

Gene: Simpliphy\_75 Start: 47638, Stop: 48051, Start Num: 54

Candidate Starts for Simpliphy\_75:

(Start: 54 @47638 has 124 MA's), (Start: 60 @47653 has 4 MA's), (118, 47800), (156, 47938),

Gene: SirDuracell\_75 Start: 46924, Stop: 47337, Start Num: 54

Candidate Starts for SirDuracell\_75:

(Start: 54 @46924 has 124 MA's), (Start: 60 @46939 has 4 MA's), (131, 47116), (156, 47224), (164, 47251),

Gene: Sixama\_169 Start: 96671, Stop: 96312, Start Num: 64

Candidate Starts for Sixama\_169:

(Start: 64 @96671 has 5 MA's), (83, 96629), (139, 96497), (156, 96437), (158, 96428), (162, 96416), (168, 96398), (189, 96326),

Gene: Skipitt\_60 Start: 40237, Stop: 39857, Start Num: 15

Candidate Starts for Skipitt\_60:

(Start: 15 @40237 has 159 MA's), (124, 40078), (129, 40069), (156, 39985), (175, 39916), (177, 39910),

Gene: Smeadley\_74 Start: 41234, Stop: 40863, Start Num: 56

Candidate Starts for Smeadley\_74:

(Start: 37 @41255 has 1 MA's), (Start: 56 @41234 has 143 MA's), (124, 41075), (139, 41042), (155, 40985), (156, 40982), (168, 40943), (175, 40913),

Gene: Smoothie\_119 Start: 68218, Stop: 68595, Start Num: 55

Candidate Starts for Smoothie\_119:

(29, 68173), (Start: 55 @68218 has 12 MA's), (77, 68278), (156, 68476), (158, 68485), (159, 68488), (162, 68497), (175, 68545), (185, 68575),

Gene: Snape\_63 Start: 39369, Stop: 38995, Start Num: 56

Candidate Starts for Snape\_63:

(1, 39705), (5, 39657), (9, 39600), (21, 39477), (Start: 48 @39381 has 9 MA's), (Start: 56 @39369 has 143 MA's), (124, 39210), (129, 39201), (153, 39135), (156, 39117), (175, 39048),

Gene: Snickers\_65 Start: 40908, Stop: 40498, Start Num: 59

Candidate Starts for Snickers\_65:

(1, 41265), (2, 41262), (Start: 50 @40926 has 5 MA's), (Start: 56 @40917 has 143 MA's), (Start: 59 @40908 has 14 MA's), (104, 40815), (156, 40662), (175, 40593),

Gene: SoYo\_66 Start: 40855, Stop: 40436, Start Num: 56

Candidate Starts for SoYo\_66:

(1, 41203), (2, 41200), (Start: 50 @40864 has 5 MA's), (Start: 56 @40855 has 143 MA's), (Start: 59 @40846 has 14 MA's), (104, 40753), (156, 40600), (175, 40531),

Gene: SoilDragon\_67 Start: 40391, Stop: 39972, Start Num: 56

Candidate Starts for SoilDragon\_67:

(1, 40739), (2, 40736), (4, 40697), (Start: 50 @40400 has 5 MA's), (Start: 56 @40391 has 143 MA's), (Start: 59 @40382 has 14 MA's), (104, 40289), (156, 40136), (175, 40067),

Gene: SophKB\_73 Start: 47316, Stop: 47729, Start Num: 54

Candidate Starts for SophKB\_73:

(Start: 54 @47316 has 124 MA's), (Start: 60 @47331 has 4 MA's), (118, 47478), (156, 47616),

Gene: Soshari\_69 Start: 40967, Stop: 40548, Start Num: 56

Candidate Starts for Soshari\_69:

(1, 41315), (2, 41312), (4, 41273), (Start: 50 @40976 has 5 MA's), (Start: 56 @40967 has 143 MA's), (Start: 59 @40958 has 14 MA's), (104, 40865), (156, 40712), (175, 40643), (197, 40565),

Gene: Sotrice96\_77 Start: 48319, Stop: 48732, Start Num: 54

Candidate Starts for Sotrice96\_77:

(Start: 54 @48319 has 124 MA's), (Start: 60 @48334 has 4 MA's), (118, 48481), (156, 48619),

Gene: Sparky\_77 Start: 53247, Stop: 53657, Start Num: 60

Candidate Starts for Sparky\_77:

(Start: 60 @53247 has 4 MA's), (Start: 62 @53256 has 5 MA's), (117, 53376), (144, 53448), (151, 53475), (161, 53529), (183, 53610), (184, 53616),

Gene: Sparxx\_62 Start: 40238, Stop: 39858, Start Num: 15

Candidate Starts for Sparxx\_62:

(Start: 15 @40238 has 159 MA's), (124, 40079), (129, 40070), (156, 39986), (175, 39917), (177, 39911),

Gene: SpeedDemon\_560 Start: 46149, Stop: 46541, Start Num: 48

Candidate Starts for SpeedDemon\_560:

(42, 46146), (Start: 48 @46149 has 9 MA's), (155, 46407), (156, 46410),

Gene: Spike509\_67 Start: 40968, Stop: 40549, Start Num: 56

Candidate Starts for Spike509\_67:

(1, 41316), (2, 41313), (Start: 50 @40977 has 5 MA's), (Start: 56 @40968 has 143 MA's), (Start: 59 @40959 has 14 MA's), (104, 40866), (156, 40713), (175, 40644),

Gene: Spino\_60 Start: 40246, Stop: 39866, Start Num: 15

Candidate Starts for Spino\_60:

(Start: 15 @40246 has 159 MA's), (124, 40087), (129, 40078), (156, 39994), (175, 39925), (177, 39919),

Gene: Spooks\_15 Start: 10305, Stop: 9985, Start Num: 74

Candidate Starts for Spooks\_15:

(Start: 74 @10305 has 1 MA's), (84, 10284), (106, 10251), (120, 10209), (135, 10179), (156, 10107), (173, 10044), (191, 9990),

Gene: StAugustine\_185 Start: 97616, Stop: 97128, Start Num: 60

Candidate Starts for StAugustine\_185:

(16, 97802), (Start: 60 @97616 has 4 MA's), (87, 97547), (99, 97520), (111, 97493), (120, 97466), (122, 97460), (125, 97439), (140, 97406), (144, 97394), (145, 97379), (147, 97376), (149, 97352), (154, 97322), (165, 97277),

Gene: Stagni\_66 Start: 40937, Stop: 40527, Start Num: 59

Candidate Starts for Stagni\_66:

(1, 41294), (2, 41291), (4, 41252), (Start: 50 @40955 has 5 MA's), (Start: 56 @40946 has 143 MA's), (Start: 59 @40937 has 14 MA's), (104, 40844), (156, 40691), (175, 40622),

Gene: Stank\_79 Start: 48577, Stop: 48990, Start Num: 54

Candidate Starts for Stank\_79:

(Start: 54 @48577 has 124 MA's), (Start: 60 @48592 has 4 MA's), (118, 48739), (156, 48877),

Gene: StarPlatinum\_94 Start: 66834, Stop: 67298, Start Num: 33

Candidate Starts for StarPlatinum\_94:

(26, 66792), (Start: 33 @66834 has 4 MA's), (72, 66915), (82, 66942), (97, 66966), (150, 67128), (156, 67152), (166, 67185), (191, 67272), (193, 67281),

Gene: StarStuff\_66 Start: 40915, Stop: 40538, Start Num: 56

Candidate Starts for StarStuff\_66:

(19, 41029), (Start: 56 @40915 has 143 MA's), (Start: 74 @40864 has 1 MA's), (79, 40852), (104, 40816), (106, 40813), (124, 40756), (156, 40663), (157, 40660), (175, 40594),

Gene: Stark\_77 Start: 48121, Stop: 48534, Start Num: 54

Candidate Starts for Stark\_77:

(Start: 54 @48121 has 124 MA's), (Start: 60 @48136 has 4 MA's), (118, 48283), (156, 48421),

Gene: Stasia\_59 Start: 40011, Stop: 39631, Start Num: 15

Candidate Starts for Stasia\_59:

(Start: 15 @40011 has 159 MA's), (87, 39936), (124, 39852), (129, 39843), (156, 39759), (175, 39690), (177, 39684),

Gene: StellaBean\_74 Start: 47884, Stop: 48297, Start Num: 54

Candidate Starts for StellaBean\_74:

(Start: 54 @47884 has 124 MA's), (Start: 60 @47899 has 4 MA's), (118, 48046), (156, 48184),

Gene: StepMih\_66 Start: 40928, Stop: 40518, Start Num: 59

Candidate Starts for StepMih\_66:



(1, 41285), (2, 41282), (4, 41243), (6, 41234), (Start: 50 @40946 has 5 MA's), (Start: 56 @40937 has 143 MA's), (Start: 59 @40928 has 14 MA's), (104, 40835), (156, 40682), (175, 40613),

Gene: Stephig9\_73 Start: 41171, Stop: 40800, Start Num: 56

Candidate Starts for Stephig9\_73:

(Start: 37 @41192 has 1 MA's), (Start: 56 @41171 has 143 MA's), (124, 41012), (139, 40979), (155, 40922), (156, 40919), (168, 40880), (175, 40850),

Gene: Stink\_58 Start: 39812, Stop: 39426, Start Num: 15

Candidate Starts for Stink\_58:

(Start: 15 @39812 has 159 MA's), (124, 39653), (129, 39644), (156, 39560), (175, 39491),

Gene: StolenFromERC\_79 Start: 48359, Stop: 48772, Start Num: 54

Candidate Starts for StolenFromERC\_79:

(Start: 54 @48359 has 124 MA's), (Start: 60 @48374 has 4 MA's), (118, 48521), (156, 48659),

Gene: Success\_16 Start: 9522, Stop: 9202, Start Num: 74

Candidate Starts for Success\_16:

(Start: 74 @9522 has 1 MA's), (84, 9501), (120, 9426), (135, 9396), (156, 9324), (173, 9261), (191, 9207),

Gene: Superchunk\_64 Start: 39205, Stop: 38822, Start Num: 56

Candidate Starts for Superchunk\_64:

(19, 39319), (44, 39220), (Start: 56 @39205 has 143 MA's), (73, 39157), (106, 39103), (124, 39040), (156, 38947), (162, 38926), (175, 38878),

Gene: SwirlSquare\_70 Start: 40121, Stop: 39744, Start Num: 56

Candidate Starts for SwirlSquare\_70:

(19, 40235), (Start: 56 @40121 has 143 MA's), (Start: 59 @40112 has 14 MA's), (101, 40025), (124, 39962), (133, 39947), (139, 39929), (156, 39869), (171, 39818), (175, 39800),

Gene: TBrady12\_79 Start: 48058, Stop: 48471, Start Num: 54

Candidate Starts for TBrady12\_79:

(Start: 54 @48058 has 124 MA's), (Start: 60 @48073 has 4 MA's), (118, 48220), (156, 48358),

Gene: TNguyen7\_65 Start: 40635, Stop: 40252, Start Num: 15

Candidate Starts for TNguyen7\_65:

(3, 40785), (Start: 14 @40644 has 8 MA's), (Start: 15 @40635 has 159 MA's), (124, 40479), (137, 40452), (153, 40404), (156, 40386), (185, 40287), (194, 40257),

Gene: TPA4\_57 Start: 41159, Stop: 41554, Start Num: 55

Candidate Starts for TPA4\_57:

(Start: 55 @41159 has 12 MA's), (101, 41264), (129, 41336), (135, 41348), (156, 41420), (162, 41441), (175, 41489), (192, 41543),

Gene: Talos\_171 Start: 87963, Stop: 88352, Start Num: 56

Candidate Starts for Talos\_171:

(27, 87903), (Start: 56 @87963 has 143 MA's), (Start: 60 @87975 has 4 MA's), (93, 88050), (112, 88080), (144, 88161), (156, 88221), (163, 88245), (176, 88290), (181, 88302), (191, 88335),

Gene: Taquarus\_60 Start: 40246, Stop: 39866, Start Num: 15

Candidate Starts for Taquarus\_60:

(Start: 15 @40246 has 159 MA's), (124, 40087), (129, 40078), (156, 39994), (175, 39925), (177, 39919),

Gene: Tarkin\_75 Start: 48306, Stop: 48719, Start Num: 54

Candidate Starts for Tarkin\_75:

(Start: 54 @48306 has 124 MA's), (Start: 60 @48321 has 4 MA's), (118, 48468), (156, 48606),

Gene: Taurus\_68 Start: 40934, Stop: 40524, Start Num: 59

Candidate Starts for Taurus\_68:

(1, 41291), (2, 41288), (Start: 50 @40952 has 5 MA's), (Start: 56 @40943 has 143 MA's), (Start: 59 @40934 has 14 MA's), (104, 40841), (156, 40688), (175, 40619),

Gene: TeardropMSU\_72 Start: 47306, Stop: 47719, Start Num: 54

Candidate Starts for TeardropMSU\_72:

(Start: 54 @47306 has 124 MA's), (Start: 60 @47321 has 4 MA's), (118, 47468), (156, 47606),

Gene: Teaspoon\_77 Start: 48200, Stop: 48613, Start Num: 54

Candidate Starts for Teaspoon\_77:

(Start: 54 @48200 has 124 MA's), (Start: 60 @48215 has 4 MA's), (118, 48362), (156, 48500),

Gene: Terminus\_79 Start: 49093, Stop: 49506, Start Num: 54

Candidate Starts for Terminus\_79:

(Start: 54 @49093 has 124 MA's), (Start: 60 @49108 has 4 MA's), (118, 49255), (156, 49393),

Gene: Texage\_61 Start: 40647, Stop: 40264, Start Num: 15

Candidate Starts for Texage\_61:

(Start: 14 @40656 has 8 MA's), (Start: 15 @40647 has 159 MA's), (104, 40551), (124, 40491), (156, 40398), (185, 40299), (186, 40296), (194, 40269),

Gene: Thanksgivukkah\_60 Start: 40241, Stop: 39861, Start Num: 15

Candidate Starts for Thanksgivukkah\_60:

(Start: 15 @40241 has 159 MA's), (124, 40082), (129, 40073), (156, 39989), (175, 39920), (177, 39914),

Gene: Thresher\_78 Start: 49180, Stop: 49593, Start Num: 54

Candidate Starts for Thresher\_78:

(Start: 54 @49180 has 124 MA's), (Start: 60 @49195 has 4 MA's), (118, 49342), (156, 49480),

Gene: Tiffany\_66 Start: 40838, Stop: 40410, Start Num: 50

Candidate Starts for Tiffany\_66:

(1, 41177), (2, 41174), (Start: 50 @40838 has 5 MA's), (Start: 56 @40829 has 143 MA's), (Start: 59 @40820 has 14 MA's), (104, 40727), (156, 40574), (175, 40505),

Gene: Timothy\_63 Start: 39346, Stop: 38972, Start Num: 56

Candidate Starts for Timothy\_63:

(1, 39682), (5, 39634), (9, 39577), (21, 39454), (Start: 48 @39358 has 9 MA's), (Start: 56 @39346 has 143 MA's), (124, 39187), (129, 39178), (153, 39112), (156, 39094), (175, 39025),

Gene: Timshel\_60 Start: 42789, Stop: 42340, Start Num: 56

Candidate Starts for Timshel\_60:

(Start: 56 @42789 has 143 MA's), (61, 42774), (79, 42726), (124, 42630), (135, 42609), (136, 42606), (156, 42537), (168, 42498), (175, 42468), (193, 42411), (201, 42357),

Gene: TinaFeyge\_59 Start: 40238, Stop: 39858, Start Num: 15

Candidate Starts for TinaFeyge\_59:

(Start: 15 @40238 has 159 MA's), (124, 40079), (129, 40070), (156, 39986), (175, 39917), (177, 39911),

Gene: TinyPebbles\_65 Start: 40973, Stop: 40554, Start Num: 56

Candidate Starts for TinyPebbles\_65:

(1, 41321), (2, 41318), (4, 41279), (Start: 50 @40982 has 5 MA's), (Start: 56 @40973 has 143 MA's), (Start: 59 @40964 has 14 MA's), (104, 40871), (156, 40718), (175, 40649), (185, 40619),

Gene: TinyTimmy\_63 Start: 39395, Stop: 39021, Start Num: 56

Candidate Starts for TinyTimmy\_63:

(1, 39731), (5, 39683), (9, 39626), (21, 39503), (23, 39476), (Start: 48 @39407 has 9 MA's), (Start: 56 @39395 has 143 MA's), (101, 39299), (124, 39236), (129, 39227), (135, 39215), (153, 39161), (156, 39143), (175, 39074),

Gene: Tinybot\_60 Start: 40273, Stop: 39893, Start Num: 15

Candidate Starts for Tinybot\_60:

(Start: 15 @40273 has 159 MA's), (124, 40114), (129, 40105), (156, 40021), (175, 39952),

Gene: TipsytheTRex\_62 Start: 40006, Stop: 39629, Start Num: 56

Candidate Starts for TipsytheTRex\_62:

(44, 40021), (Start: 56 @40006 has 143 MA's), (106, 39904), (124, 39847), (156, 39754), (170, 39709), (175, 39685),

Gene: TiroTheta9\_60 Start: 40237, Stop: 39857, Start Num: 15

Candidate Starts for TiroTheta9\_60:

(Start: 15 @40237 has 159 MA's), (124, 40078), (129, 40069), (156, 39985), (175, 39916), (177, 39910),

Gene: Todacoro\_63 Start: 40646, Stop: 40263, Start Num: 15

Candidate Starts for Todacoro\_63:

(Start: 14 @40655 has 8 MA's), (Start: 15 @40646 has 159 MA's), (104, 40550), (124, 40490), (156, 40397), (185, 40298), (186, 40295), (194, 40268),

Gene: Tomaszewski\_71 Start: 47469, Stop: 47882, Start Num: 54

Candidate Starts for Tomaszewski\_71:

(Start: 54 @47469 has 124 MA's), (Start: 60 @47484 has 4 MA's), (131, 47661), (156, 47769), (164, 47796),

Gene: Tomathan\_66 Start: 40962, Stop: 40585, Start Num: 56

Candidate Starts for Tomathan\_66:

(19, 41076), (44, 40977), (Start: 56 @40962 has 143 MA's), (Start: 74 @40911 has 1 MA's), (104, 40863), (106, 40860), (124, 40803), (156, 40710), (157, 40707), (175, 40641),

Gene: Toniann\_118 Start: 67752, Stop: 68129, Start Num: 55

Candidate Starts for Toniann\_118:

(29, 67707), (Start: 55 @67752 has 12 MA's), (77, 67812), (156, 68010), (158, 68019), (159, 68022), (162, 68031), (175, 68079), (185, 68109),

Gene: Toro\_63 Start: 43633, Stop: 43184, Start Num: 56

Candidate Starts for Toro\_63:

(13, 43837), (Start: 56 @43633 has 143 MA's), (79, 43570), (124, 43474), (129, 43465), (156, 43381), (168, 43342), (175, 43312), (201, 43201),

Gene: Toto\_74 Start: 48560, Stop: 48973, Start Num: 54

Candidate Starts for Toto\_74:

(Start: 54 @48560 has 124 MA's), (Start: 60 @48575 has 4 MA's), (118, 48722), (156, 48860),

Gene: Tourach\_86 Start: 56255, Stop: 56671, Start Num: 52

Candidate Starts for Tourach\_86:

(Start: 46 @56246 has 1 MA's), (Start: 52 @56255 has 4 MA's), (85, 56333), (95, 56351), (98, 56354), (118, 56411), (124, 56429), (126, 56432), (152, 56522), (156, 56549), (175, 56618),

Gene: Towmatter\_46 Start: 39505, Stop: 39900, Start Num: 56

Candidate Starts for Towmatter\_46:

(Start: 56 @39505 has 143 MA's), (141, 39697), (156, 39754), (157, 39757), (162, 39775),

Gene: Traaww1\_72 Start: 47744, Stop: 48157, Start Num: 54

Candidate Starts for Traaww1\_72:

(Start: 54 @47744 has 124 MA's), (Start: 60 @47759 has 4 MA's), (118, 47906), (156, 48044),

Gene: Travvers\_65 Start: 40912, Stop: 40535, Start Num: 56

Candidate Starts for Travvers\_65:

(19, 41026), (44, 40927), (Start: 56 @40912 has 143 MA's), (Start: 74 @40861 has 1 MA's), (104, 40813), (106, 40810), (124, 40753), (156, 40660), (157, 40657), (175, 40591),

Gene: Trina\_43 Start: 16818, Stop: 16444, Start Num: 51

Candidate Starts for Trina\_43:

(Start: 51 @16818 has 1 MA's), (Start: 74 @16761 has 1 MA's), (89, 16734), (107, 16713), (120, 16677), (135, 16644), (156, 16572), (175, 16503), (177, 16497),

Gene: TroyPia\_62 Start: 40241, Stop: 39861, Start Num: 15

Candidate Starts for TroyPia\_62:

(Start: 15 @40241 has 159 MA's), (124, 40082), (129, 40073), (156, 39989), (175, 39920), (177, 39914),

Gene: Tuco\_77 Start: 49068, Stop: 49481, Start Num: 54

Candidate Starts for Tuco\_77:

(Start: 54 @49068 has 124 MA's), (Start: 60 @49083 has 4 MA's), (118, 49230), (156, 49368),

Gene: TygerBlood\_61 Start: 40243, Stop: 39863, Start Num: 15

Candidate Starts for TygerBlood\_61:

(Start: 15 @40243 has 159 MA's), (124, 40084), (129, 40075), (156, 39991), (175, 39922), (177, 39916),

Gene: Tyson\_86 Start: 54794, Stop: 55207, Start Num: 56

Candidate Starts for Tyson\_86:

(Start: 56 @54794 has 143 MA's), (Start: 74 @54845 has 1 MA's), (76, 54851), (156, 55085), (162, 55106), (164, 55112), (175, 55154),

Gene: UPIE\_84 Start: 54390, Stop: 54803, Start Num: 56

Candidate Starts for UPIE\_84:

(Start: 56 @54390 has 143 MA's), (Start: 74 @54441 has 1 MA's), (76, 54447), (156, 54681), (162, 54702), (164, 54708), (175, 54750),

Gene: Ukulele\_71 Start: 47451, Stop: 47864, Start Num: 54

Candidate Starts for Ukulele\_71:

(Start: 54 @47451 has 124 MA's), (Start: 60 @47466 has 4 MA's), (118, 47613), (156, 47751),

Gene: Ulysses\_60 Start: 39923, Stop: 39543, Start Num: 15

Candidate Starts for Ulysses\_60:

(Start: 15 @39923 has 159 MA's), (124, 39764), (129, 39755), (156, 39671), (175, 39602), (177, 39596),

Gene: VC3\_67 Start: 40889, Stop: 40512, Start Num: 56

Candidate Starts for VC3\_67:

(19, 41003), (Start: 56 @40889 has 143 MA's), (Start: 59 @40880 has 14 MA's), (65, 40859), (73, 40841), (79, 40826), (156, 40637), (164, 40610), (171, 40586), (175, 40568),

Gene: Veracruz\_61 Start: 40646, Stop: 40263, Start Num: 15

Candidate Starts for Veracruz\_61:

(Start: 14 @40655 has 8 MA's), (Start: 15 @40646 has 159 MA's), (104, 40550), (124, 40490), (156, 40397), (185, 40298), (186, 40295), (194, 40268),

Gene: Vix\_65 Start: 41026, Stop: 40607, Start Num: 56

Candidate Starts for Vix\_65:

(1, 41374), (2, 41371), (Start: 50 @41035 has 5 MA's), (Start: 56 @41026 has 143 MA's), (Start: 59 @41017 has 14 MA's), (104, 40924), (156, 40771), (175, 40702),

Gene: Wander\_61 Start: 40240, Stop: 39860, Start Num: 15

Candidate Starts for Wander\_61:

(Start: 15 @40240 has 159 MA's), (124, 40081), (129, 40072), (156, 39988), (175, 39919),

Gene: Watson\_66 Start: 40926, Stop: 40516, Start Num: 59

Candidate Starts for Watson\_66:

(1, 41283), (2, 41280), (Start: 50 @40944 has 5 MA's), (Start: 56 @40935 has 143 MA's), (Start: 59 @40926 has 14 MA's), (104, 40833), (156, 40680), (175, 40611),

Gene: Weasels2\_55 Start: 20844, Stop: 20455, Start Num: 39

Candidate Starts for Weasels2\_55:

(Start: 39 @20844 has 4 MA's), (75, 20769), (156, 20574), (177, 20499), (187, 20469),

Gene: Wiggin\_78 Start: 48145, Stop: 48558, Start Num: 54

Candidate Starts for Wiggin\_78:

(Start: 54 @48145 has 124 MA's), (Start: 60 @48160 has 4 MA's), (118, 48307), (156, 48445),

Gene: Wilbur\_61 Start: 40240, Stop: 39860, Start Num: 15

Candidate Starts for Wilbur\_61:

(Start: 15 @40240 has 159 MA's), (124, 40081), (129, 40072), (156, 39988), (175, 39919), (177, 39913),

Gene: Wildcat\_134 Start: 64288, Stop: 64722, Start Num: 57

Candidate Starts for Wildcat\_134:

(Start: 57 @64288 has 9 MA's), (Start: 60 @64297 has 4 MA's), (73, 64333), (Start: 74 @64336 has 1 MA's), (108, 64399), (121, 64447), (123, 64453), (135, 64477), (154, 64576), (156, 64591), (174, 64663),

Gene: Wile\_59 Start: 40114, Stop: 39728, Start Num: 15

Candidate Starts for Wile\_59:

(Start: 15 @40114 has 159 MA's), (124, 39955), (129, 39946), (156, 39862), (175, 39793),

Gene: Willez\_71 Start: 46338, Stop: 46751, Start Num: 54

Candidate Starts for Willez\_71:

(Start: 54 @46338 has 124 MA's), (Start: 60 @46353 has 4 MA's), (118, 46500), (156, 46638),

Gene: WilliamBoone\_116 Start: 65070, Stop: 65447, Start Num: 55

Candidate Starts for WilliamBoone\_116:

(Start: 55 @65070 has 12 MA's), (141, 65271), (146, 65289), (156, 65328), (157, 65331), (158, 65337), (159, 65340), (167, 65364),

Gene: Wizard007\_60 Start: 40248, Stop: 39868, Start Num: 15

Candidate Starts for Wizard007\_60:

(Start: 15 @40248 has 159 MA's), (124, 40089), (126, 40086), (129, 40080), (156, 39996), (175, 39927),

Gene: Wooldri\_69 Start: 40855, Stop: 40436, Start Num: 56

Candidate Starts for Wooldri\_69:

(1, 41203), (2, 41200), (4, 41161), (Start: 50 @40864 has 5 MA's), (Start: 56 @40855 has 143 MA's), (Start: 59 @40846 has 14 MA's), (104, 40753), (156, 40600), (175, 40531), (197, 40453),

Gene: Wyatt2\_86 Start: 54792, Stop: 55205, Start Num: 56

Candidate Starts for Wyatt2\_86:

(Start: 56 @54792 has 143 MA's), (Start: 74 @54843 has 1 MA's), (76, 54849), (156, 55083), (162, 55104), (164, 55110), (175, 55152),

Gene: Xandras\_75 Start: 47553, Stop: 47966, Start Num: 54

Candidate Starts for Xandras\_75:

(Start: 54 @47553 has 124 MA's), (Start: 60 @47568 has 4 MA's), (118, 47715), (156, 47853),

Gene: Xena\_58 Start: 40080, Stop: 39694, Start Num: 15

Candidate Starts for Xena\_58:

(Start: 15 @40080 has 159 MA's), (124, 39921), (129, 39912), (156, 39828), (175, 39759),

Gene: YassJohnny\_73 Start: 47508, Stop: 47921, Start Num: 54

Candidate Starts for YassJohnny\_73:

(Start: 54 @47508 has 124 MA's), (Start: 60 @47523 has 4 MA's), (131, 47700), (156, 47808), (164, 47835),

Gene: YoSam321\_61 Start: 40237, Stop: 39857, Start Num: 15

Candidate Starts for YoSam321\_61:

(Start: 15 @40237 has 159 MA's), (124, 40078), (129, 40069), (156, 39985), (175, 39916), (177, 39910),

Gene: Youngblood\_79 Start: 49020, Stop: 49433, Start Num: 54

Candidate Starts for Youngblood\_79:

(Start: 54 @49020 has 124 MA's), (Start: 60 @49035 has 4 MA's), (118, 49182), (156, 49320),

Gene: Zetzy\_66 Start: 40506, Stop: 40087, Start Num: 56

Candidate Starts for Zetzy\_66:

(1, 40854), (2, 40851), (4, 40812), (Start: 50 @40515 has 5 MA's), (Start: 56 @40506 has 143 MA's),  
(Start: 59 @40497 has 14 MA's), (67, 40470), (104, 40404), (156, 40251), (175, 40182),

Gene: xkcd\_79 Start: 49210, Stop: 49623, Start Num: 54

Candidate Starts for xkcd\_79:

(Start: 54 @49210 has 124 MA's), (Start: 60 @49225 has 4 MA's), (118, 49372), (156, 49510),