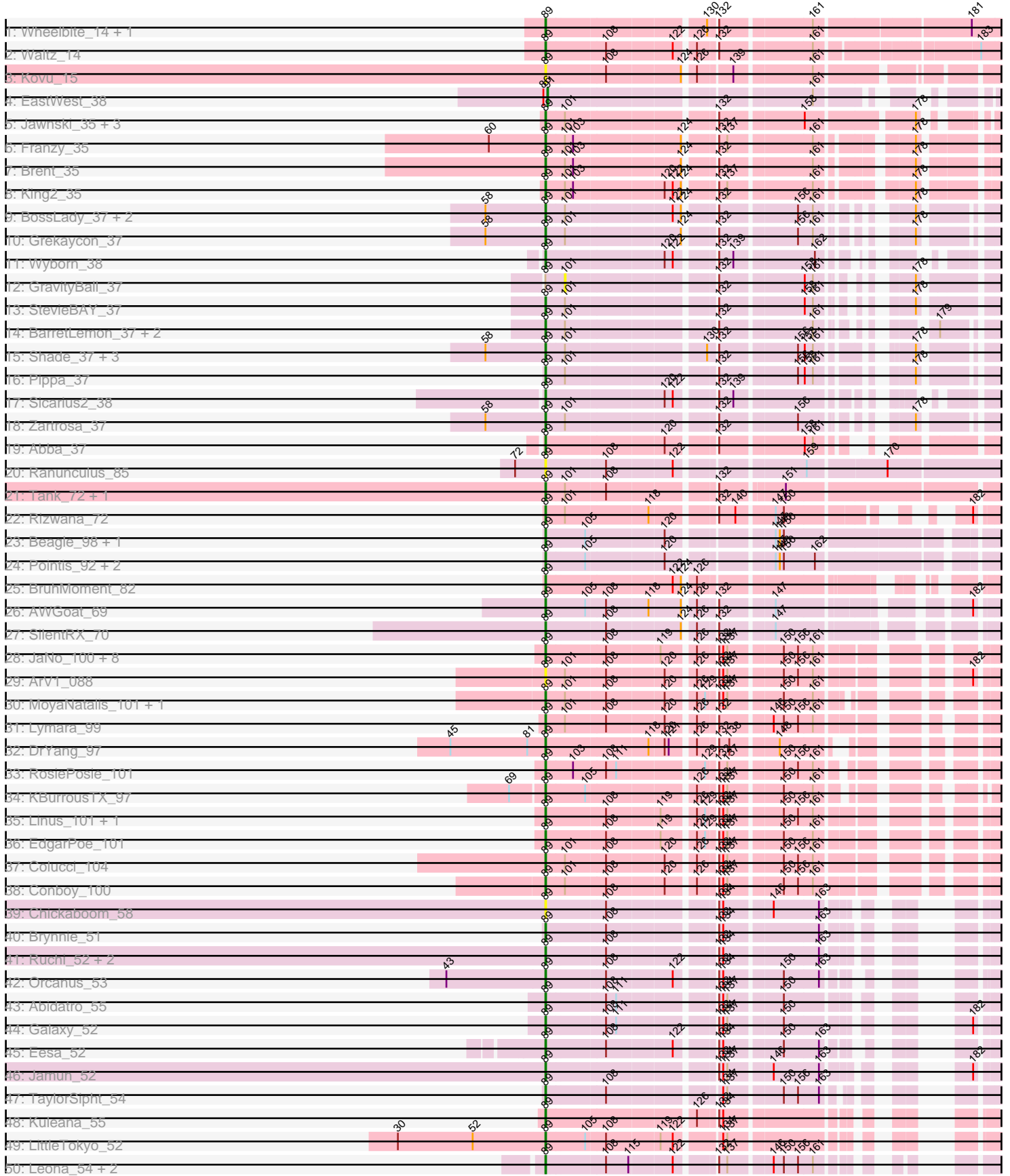
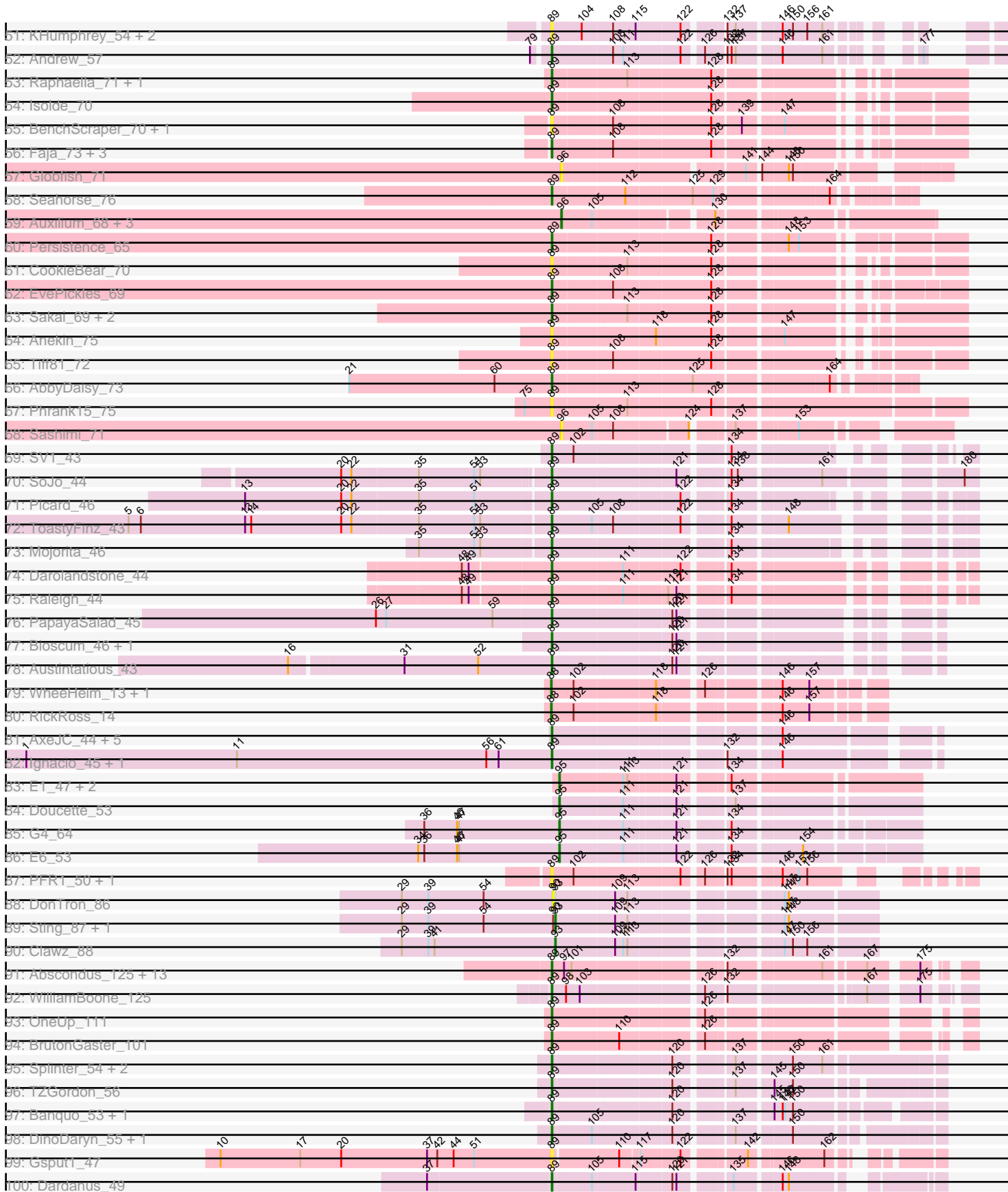


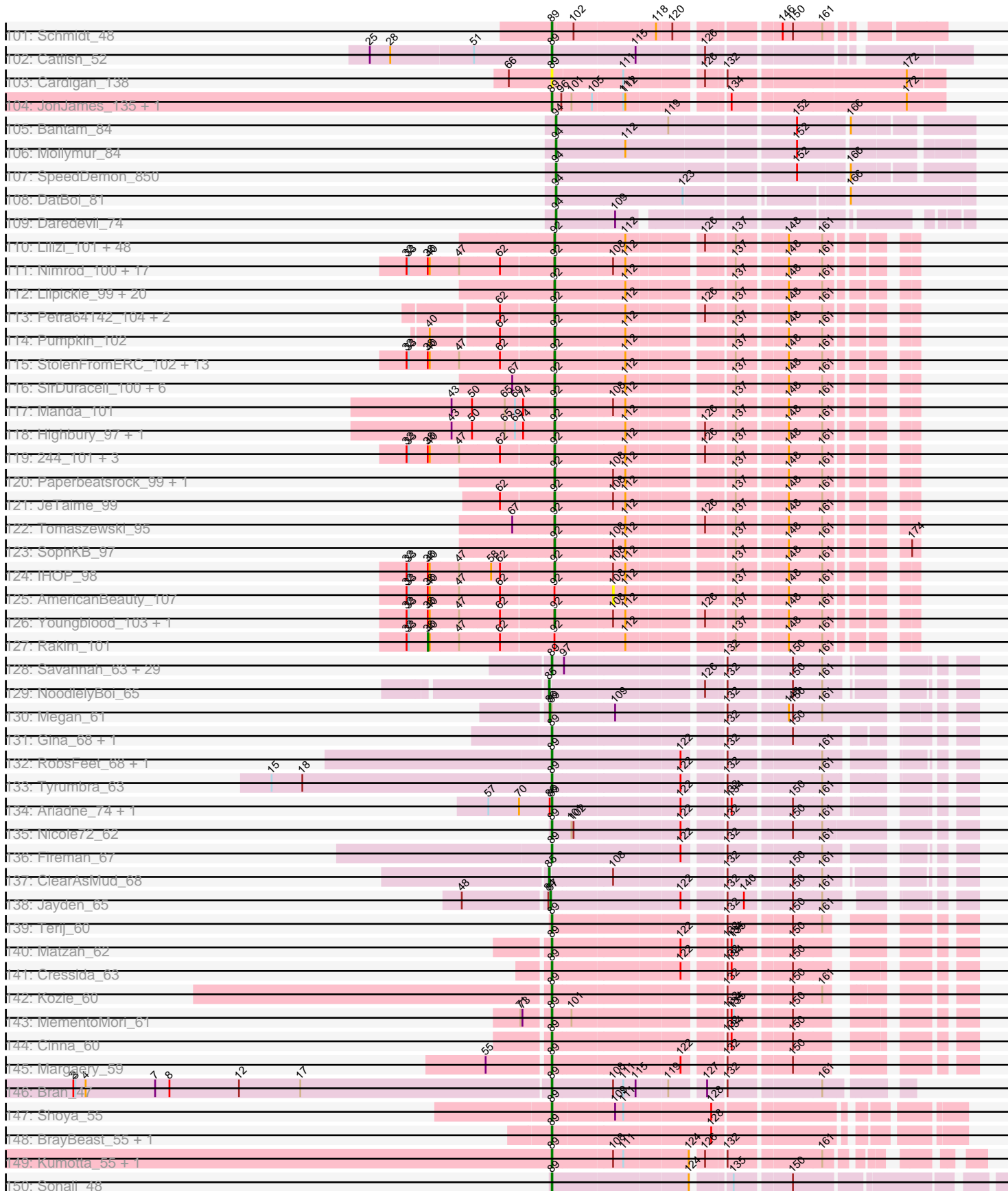
Pham 171100



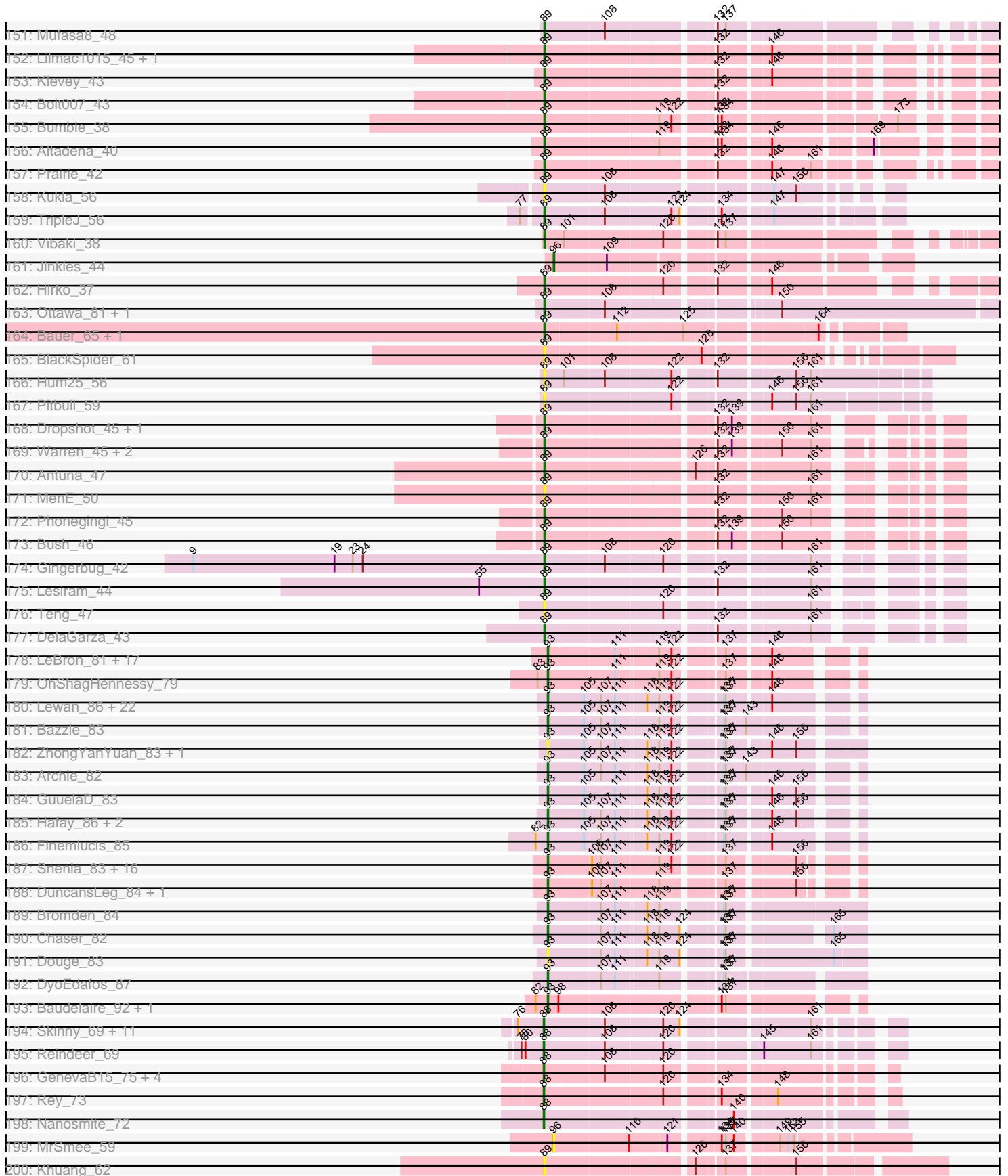
Pham 171100



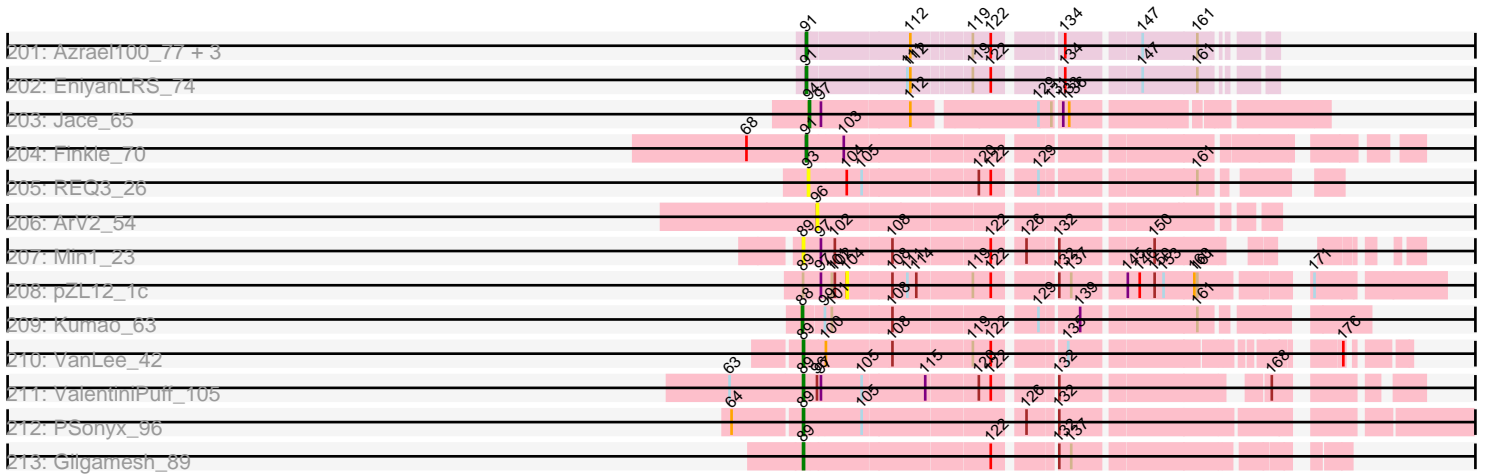
Pham 171100



# Pham 171100



# Pham 171100



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 171100 Report

This analysis was run 07/09/24 on database version 566.

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 171100 has 514 members, 65 are drafts.

Phages represented in each track:

- Track 1 : Wheelbite\_14, Edmundo\_14
- Track 2 : Waltz\_14
- Track 3 : Kovu\_15
- Track 4 : EastWest\_38
- Track 5 : Jawnski\_35, Piccoletto\_35, Beans\_35, NathanVaag\_35
- Track 6 : Franzy\_35
- Track 7 : Brent\_35
- Track 8 : King2\_35
- Track 9 : BossLady\_37, TaeYoung\_37, Martha\_37
- Track 10 : Grekaycon\_37
- Track 11 : Wyborn\_38
- Track 12 : GravityBall\_37
- Track 13 : StevieBAY\_37
- Track 14 : BarretLemon\_37, LeeroyJ\_37, Timinator\_37
- Track 15 : Shade\_37, Jordan\_37, JKerns\_37, Sonny\_37
- Track 16 : Pippa\_37
- Track 17 : Sicarius2\_38
- Track 18 : Zartrosa\_37
- Track 19 : Abba\_37
- Track 20 : Ranunculus\_85
- Track 21 : Tank\_72, Wilde\_74
- Track 22 : Rizwana\_72
- Track 23 : Beagle\_98, MellowYellow\_93
- Track 24 : Pointis\_92, Pureglobe5\_96, Odyssey395\_96
- Track 25 : BruhMoment\_82
- Track 26 : AWGoat\_69
- Track 27 : SilentRX\_70
- Track 28 : JaNo\_100, Mordred\_101, Tophat\_102, Chipper1996\_1020, HumptyDumpty\_101, Chubster\_101, PrincessTrina\_102, Kabreeze\_101, Scavito\_102
- Track 29 : ArV1\_088
- Track 30 : MoyaNatalis\_101, JayCookie\_102
- Track 31 : Lymara\_99
- Track 32 : DrYang\_97

- Track 33 : RosiePosie\_101
- Track 34 : KBurrousTX\_97
- Track 35 : Linus\_101, Chocolat\_101
- Track 36 : EdgarPoe\_101
- Track 37 : Colucci\_104
- Track 38 : Conboy\_100
- Track 39 : Chickaboom\_58
- Track 40 : Brynnie\_51
- Track 41 : Ruchi\_52, Basilisk\_53, Vulpecula\_52
- Track 42 : Orcanus\_53
- Track 43 : Abidatro\_55
- Track 44 : Galaxy\_52
- Track 45 : Eesa\_52
- Track 46 : Jamun\_52
- Track 47 : TaylorSipht\_54
- Track 48 : Kuleana\_55
- Track 49 : LittleTokyo\_52
- Track 50 : Leona\_54, Renna12\_54, RedFox\_55
- Track 51 : KHumphrey\_54, PhluffyCoco\_55, Juno112\_55
- Track 52 : Andrew\_57
- Track 53 : Raphaella\_71, Richie\_74
- Track 54 : Isolde\_70
- Track 55 : BenchScraper\_70, Raqqa\_67
- Track 56 : Faja\_73, BillyTP\_72, Hestia\_64, YoungHarleezy\_70
- Track 57 : Globfish\_71
- Track 58 : Seahorse\_76
- Track 59 : Auxilium\_68, RadFad\_76, Hillester\_76, MidnightRain\_74
- Track 60 : Persistence\_65
- Track 61 : CookieBear\_70
- Track 62 : EvePickles\_69
- Track 63 : Sakai\_69, Gorpy\_70, Aikyam\_70
- Track 64 : Anekin\_75
- Track 65 : Tiff81\_72
- Track 66 : AbbyDaisy\_73
- Track 67 : Phrank15\_75
- Track 68 : Sashimi\_71
- Track 69 : SV1\_43
- Track 70 : SoJo\_44
- Track 71 : Picard\_46
- Track 72 : ToastyFinz\_43
- Track 73 : Mojorita\_46
- Track 74 : Darolandstone\_44
- Track 75 : Raleigh\_44
- Track 76 : PapayaSalad\_45
- Track 77 : Bioscum\_46, Ididsumtinwong\_47
- Track 78 : Austintatious\_43
- Track 79 : WheeHeim\_13, Forthebois\_13
- Track 80 : RickRoss\_14
- Track 81 : AxeJC\_44, Eklok\_45, Cumberbatch\_46, Eastland\_45, Piccadilly\_45, Vondra\_44
- Track 82 : Ignacio\_45, HFrancette\_46
- Track 83 : E1\_47, Anatole\_47, B3\_49
- Track 84 : Doucette\_53

- Track 85 : G4\_64
- Track 86 : E6\_53
- Track 87 : PFR1\_50, PFR2\_52
- Track 88 : DonTron\_86
- Track 89 : Sting\_87, Soos\_82
- Track 90 : Clawz\_88
- Track 91 : Abscondus\_125, Miskis\_125, Toniann\_126, Cucurbita\_127, Culver\_126, Norvs\_125, Aphelion\_126, Dusty\_122, ClubL\_126, Bachita\_129, PhinkBoden\_126, Lozinak\_126, Engineer\_128, Smoothie\_127
- Track 92 : WilliamBoone\_125
- Track 93 : OneUp\_111
- Track 94 : BrutonGaster\_101
- Track 95 : Splinter\_54, Vendetta\_54, Goib\_55
- Track 96 : TZGordon\_56
- Track 97 : Banquo\_53, TinaLin\_53
- Track 98 : DinoDaryn\_55, Huffy\_55
- Track 99 : Gspu1\_47
- Track 100 : Dardanus\_49
- Track 101 : Schmidt\_48
- Track 102 : Catfish\_52
- Track 103 : Cardigan\_138
- Track 104 : JonJames\_135, Yvonnestic\_132
- Track 105 : Bantam\_84
- Track 106 : Mollymur\_84
- Track 107 : SpeedDemon\_850
- Track 108 : DatBoi\_81
- Track 109 : Daredevil\_74
- Track 110 : Lilizi\_101, Moldemort\_103, Emmina\_100, ShamWow\_100, RiverMonster\_100, Mosby\_96, Misfit\_101, CrystalP\_99, Thresher\_102, Hoonter\_103, FireRed\_103, Henry\_97, Simpliphy\_99, BilboSwaggins\_99, Filch\_102, OrionPax\_99, Palpatine\_101, Porky\_99, Tarkin\_99, ShereKhan\_98, Hopey\_101, Nala\_102, Buck\_101, MadamMonkfish\_100, Eureka\_99, Policronamos\_103, Elph10\_100, Contagion\_96, Phrux\_97, Bruin\_97, Stark\_101, Ukulele\_95, Teaspoon\_101, HanKaySha\_101, Maxxinista\_102, Lilac\_102, Quallification\_101, Goku\_99, Cjw1\_101, Toto\_98, NoSleep\_101, Bench\_103, BugsBunny\_99, PhatBacter\_103, Terminus\_103, Sassay\_95, Kanye\_97, Phaux\_102, Willez\_95
- Track 111 : Nimrod\_100, Harella\_100, Glexan\_99, Inca\_97, Xandras\_99, Icee\_101, Marshmallow\_97, Flypotenuse\_96, DoctorDiddles\_99, Gator\_98, YassJohnny\_97, Asriel\_98, Myrale\_100, Phaja\_98, Bask21\_100, xkcd\_103, Barbarian\_99, Traaww1\_96
- Track 112 : Lilpickle\_99, Cactus\_104, DrDrey\_100, Tuco\_101, Dusk\_97, Goldilocks\_103, TeardropMSU\_96, MPhalcon\_101, Murica\_103, Murphy\_100, ABCat\_97, BadStone\_97, MISSy\_101, Pharsalus\_97, StellaBean\_99, ChosenOne\_100, BaboJay\_100, Mindy\_99, Dumbo\_100, Sotrice96\_101, Elite2014\_99
- Track 113 : Petra64142\_104, Daikon\_100, NelitzaMV\_97
- Track 114 : Pumpkin\_102
- Track 115 : StolenFromERC\_102, Easy2Say\_100, GooberAzure\_103, Stank\_102, GoldenSpark\_104, Kimchi\_104, Adnama\_104, Command613\_102, Gage\_102, Argent26\_104, Holt\_105, Gemini\_105, Kostya\_100, Wiggin\_102
- Track 116 : SirDuracell\_100, Amao\_100, ChotaBhai\_100, Rimmer\_98, HuffyPuff\_102, Cookies\_97, Pat3\_97
- Track 117 : Manda\_101



- Track 118 : Highbury\_97, Saints25\_97
- Track 119 : 244\_101, Balomoji\_100, TBrady12\_103, Czyszczone1\_101
- Track 120 : Paperbeatsrock\_99, Miniwave\_95
- Track 121 : JeTaime\_99
- Track 122 : Tomaszewski\_95
- Track 123 : SophKB\_97
- Track 124 : IHOP\_98
- Track 125 : AmericanBeauty\_107
- Track 126 : Youngblood\_103, BigBubba\_100
- Track 127 : Rakim\_101
- Track 128 : Savannah\_63, Scumberland\_66, Phorgeous\_64, Kowalski\_63, LittleFortune\_66, Cranjjs\_65, KaiHaiDragon\_65, Pulchra\_66, PierreOrion\_64, Hermeonysus\_64, Ganandorf\_63, Jollipop\_65, Onika\_63, Ramiel05\_63, Piperis\_65, Shotgun\_64, Quhwah\_68, Honeyfin\_65, Paschalis\_64, BrazzalePHS\_63, CrazyRich\_63, PiperSansNom\_65, EarickHC\_65, Crisis\_65, Antares\_64, Busephilis\_63, Jefe\_64, Yeti\_64, Selwyn23\_65, Phrancesco\_64
- Track 129 : NoodlelyBoi\_65
- Track 130 : Megan\_61
- Track 131 : Gina\_68, Teamocil\_68
- Track 132 : RobsFeet\_68, Metamorphoo\_67
- Track 133 : Tyrumbra\_63
- Track 134 : Ariadne\_74, Smarties\_74
- Track 135 : Nicole72\_62
- Track 136 : Fireman\_67
- Track 137 : ClearAsMud\_68
- Track 138 : Jayden\_65
- Track 139 : Terij\_60
- Track 140 : Matzah\_62
- Track 141 : Cressida\_63
- Track 142 : Kozie\_60
- Track 143 : MementoMori\_61
- Track 144 : Cinna\_60
- Track 145 : Margaery\_59
- Track 146 : Bran\_47
- Track 147 : Shoya\_55
- Track 148 : BrayBeast\_55, Sarge\_49
- Track 149 : Kumotta\_55, MargaretKali\_51
- Track 150 : Sonali\_48
- Track 151 : Mufasa8\_48
- Track 152 : Lilmac1015\_45, CalWood4100\_45
- Track 153 : Klevey\_43
- Track 154 : Bolt007\_43
- Track 155 : Bumble\_38
- Track 156 : Altadena\_40
- Track 157 : Prairie\_42
- Track 158 : Kukla\_56
- Track 159 : TripleJ\_56
- Track 160 : Vibaki\_38
- Track 161 : Jinkies\_44
- Track 162 : Hirko\_37
- Track 163 : Ottawa\_81, Kharcho\_81
- Track 164 : Bauer\_65, Zucker\_67
- Track 165 : BlackSpider\_61

- Track 166 : Hum25\_56
- Track 167 : Pitbull\_59
- Track 168 : Dropshot\_45, Appa\_45
- Track 169 : Warren\_45, Blett\_45, Pickles13\_44
- Track 170 : Antuna\_47
- Track 171 : MenE\_50
- Track 172 : Phonegingi\_45
- Track 173 : Bush\_46
- Track 174 : Gingerbug\_42
- Track 175 : Lesiram\_44
- Track 176 : Teng\_47
- Track 177 : DelaGarza\_43
- Track 178 : LeBron\_81, Rose5\_83, Enceladus\_79, AvadaKedavra\_82, Silverleaf\_82, DirkDirk\_79, Acquire49\_82, Halena\_80, Appletree2\_81, Zaria\_83, Tyson\_83, JoeDirt\_83, MAckerman\_79, CicholasNage\_79, Wyatt2\_83, Calm\_84, UPIE\_81, Wamburgxpress\_82
- Track 179 : OhShagHennessy\_79
- Track 180 : Lewan\_86, Rumpelstiltskin\_82, Itos\_85, Crossroads\_85, Gabriela\_85, Breezona\_85, Nicholasp3\_85, Gardann\_85, Loadrie\_83, Kahlid\_85, Miley16\_85, Winky\_85, Vetric\_84, Netyap\_86, BobsGarage\_85, LilDestine\_84, Faith1\_85, DrSeegs\_85, Zakai\_86, Wilder\_86, MkaliMitinis3\_86, Wigglewiggle\_84, BigCheese\_85
- Track 181 : Bazzle\_83
- Track 182 : ZhongYanYuan\_83, Baoshan\_83
- Track 183 : Archie\_82
- Track 184 : GuuelaD\_83
- Track 185 : Hafay\_86, Tourach\_84, Claus\_85
- Track 186 : Finemlucis\_85
- Track 187 : Snenia\_83, Finnry\_83, Lolly9\_82, Clautastrophe\_82, Jubie\_83, Nicholas\_81, Samty\_82, MiniMac\_87, Jobypre\_85, MsGreen\_84, Kingsolomon\_81, Moostard\_81, Bellis\_82, Lumos\_84, Whirlwind\_84, Krypton555\_84, MiniLon\_87
- Track 188 : DuncansLeg\_84, Ellson\_83
- Track 189 : Bromden\_84
- Track 190 : Chaser\_82
- Track 191 : Douge\_83
- Track 192 : DyoEdafos\_87
- Track 193 : Baudelaire\_92, Aegeus\_92
- Track 194 : Skinny\_69, Dulcita\_68, Bricole\_66, Auspice\_67, Glaske16\_68, LilhomieP\_66, IPhane7\_67, SlimJimmy\_66, TyDawg\_67, Bongo\_67, PegLeg\_66, Diminimus\_68
- Track 195 : Reindeer\_69
- Track 196 : GenevaB15\_75, MrMagoo\_77, Estes\_75, Aziz\_74, GardenSalsa\_76
- Track 197 : Rey\_73
- Track 198 : Nanosmite\_72
- Track 199 : MrSmee\_59
- Track 200 : Khuang\_62
- Track 201 : Azrael100\_77, Wildcat\_78, Cosmo\_78, MaryV\_78
- Track 202 : EniyanLRS\_74
- Track 203 : Jace\_65
- Track 204 : Finkle\_70
- Track 205 : REQ3\_26
- Track 206 : ArV2\_54
- Track 207 : Min1\_23

- Track 208 : pZL12\_1c
- Track 209 : Kumao\_63
- Track 210 : VanLee\_42
- Track 211 : ValentiniPuff\_105
- Track 212 : PSonyx\_96
- Track 213 : Gilgamesh\_89

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

The start number called the most often in the published annotations is 89, it was called in 207 of the 449 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AWGoat\_69, Abba\_37, AbbyDaisy\_73, Abidatro\_55, Abscondus\_125, Aikyam\_70, Altadena\_40, Andrew\_57, Anekin\_75, Antares\_64, Antuna\_47, Aphelion\_126, Appa\_45, ArV1\_088, Ariadne\_74, Austintatious\_43, AxeJC\_44, Bachita\_129, Banquo\_53, BarretLemon\_37, Basilisk\_53, Bauer\_65, Beagle\_98, Beans\_35, BenchScraper\_70, BillyTP\_72, Bioscum\_46, BlackSpider\_61, Blett\_45, Bolt007\_43, BossLady\_37, Bran\_47, BrayBeast\_55, BrazzalePHS\_63, Brent\_35, BruhMoment\_82, BrutonGaster\_101, Brynnie\_51, Bumble\_38, Busephilis\_63, Bush\_46, CalWood4100\_45, Cardigan\_138, Catfish\_52, Chickaboom\_58, Chipper1996\_1020, Chocolat\_101, Chubster\_101, Cinna\_60, ClubL\_126, Colucci\_104, Conboy\_100, CookieBear\_70, Cranjis\_65, CrazyRich\_63, Cressida\_63, Crisis\_65, Cucurbita\_127, Culver\_126, Cumberbatch\_46, Dardanus\_49, Darolandstone\_44, DelaGarza\_43, DinoDaryn\_55, DrYang\_97, Dropshot\_45, Dusty\_122, EarickHC\_65, Eastland\_45, EdgarPoe\_101, Edmundo\_14, Eesa\_52, Eklok\_45, Engineer\_128, EvePickles\_69, Faja\_73, Fireman\_67, Franzy\_35, Galaxy\_52, Ganandorf\_63, Gilgamesh\_89, Gina\_68, Gingerbug\_42, Goib\_55, Gopy\_70, Grekaycon\_37, Gsput1\_47, HFrancette\_46, Hermeonysus\_64, Hestia\_64, Hirko\_37, Honeyfin\_65, Huffy\_55, Hum25\_56, HumptyDumpty\_101, Ididsumtinwong\_47, Ignacio\_45, Isolde\_70, JKerns\_37, JaNo\_100, Jamun\_52, Jawnski\_35, JayCookie\_102, Jefe\_64, Jollipop\_65, JonJames\_135, Jordan\_37, Juno112\_55, KBurrousTX\_97, KHumphrey\_54, Kabreeze\_101, KaiHaiDragon\_65, Kharcho\_81, Khuang\_62, King2\_35, Klevey\_43, Kovu\_15, Kowalski\_63, Kozi\_60, Kukla\_56, Kuleana\_55, Kumotta\_55, LeeroyJ\_37, Leona\_54, Lesiram\_44, Lilmac1015\_45, Linus\_101, LittleFortune\_66, LittleTokyo\_52, Lozinak\_126, Lymara\_99, Margaery\_59, MargaretKali\_51, Martha\_37, Matzah\_62, MellowYellow\_93, MementoMori\_61, MenE\_50, Metamorphoo\_67, Min1\_23, Miskis\_125, Mojarita\_46, Mordred\_101, MoyaNatalis\_101, Mufasa8\_48, NathanVaag\_35, Nicole72\_62, Norvs\_125, Odyssey395\_96, OneUp\_111, Onika\_63, Orcanus\_53, Ottawa\_81, PFR1\_50, PFR2\_52, PSonyx\_96, PapayaSalad\_45, Paschalis\_64, Persistence\_65, PhinkBoden\_126, PhluffyCoco\_55, Phonegingi\_45, Phorgeous\_64, Phrancesco\_64, Phrank15\_75, Picard\_46, Piccadilly\_45, Piccoletto\_35, Pickles13\_44, PierreOrion\_64, PiperSansNom\_65, Piperis\_65, Pippa\_37, Pitbull\_59, Pointis\_92, Prairie\_42, PrincessTrina\_102, Pulchra\_66, Pureglobe5\_96, Quhwah\_68, Raleigh\_44, Ramiel05\_63, Ranunculus\_85, Raphaella\_71, Raqqa\_67, RedFox\_55, Renna12\_54, Richie\_74, Rizwana\_72, RobsFeet\_68, RosiePosie\_101, Ruchi\_52, SV1\_43, Sakai\_69, Sarge\_49, Savannah\_63, Scavito\_102, Schmidt\_48, Scumberland\_66, Seahorse\_76, Selwyn23\_65, Shade\_37, Shotgun\_64, Shoya\_55, Sicarius2\_38, SilentRX\_70,

Smarties\_74, Smoothie\_127, SoJo\_44, Sonali\_48, Sonny\_37, Splinter\_54, StevieBAY\_37, TZGordon\_56, TaeYoung\_37, Tank\_72, TaylorSipht\_54, Teamocil\_68, Teng\_47, Terij\_60, Tiff81\_72, Timinator\_37, TinaLin\_53, ToastyFinz\_43, Toniann\_126, Tophat\_102, TripleJ\_56, Tyumbra\_63, ValentiniPuff\_105, VanLee\_42, Vendetta\_54, Vibaki\_38, Vondra\_44, Vulpecula\_52, Waltz\_14, Warren\_45, Wheelbite\_14, Wilde\_74, WilliamBoone\_125, Wyborn\_38, Yeti\_64, YoungHarleezy\_70, Yvonnestic\_132, Zartrosa\_37, Zucker\_67,

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

- GravityBall\_37, Megan\_61, pZL12\_1c,

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

- 244\_101, ABCat\_97, Acquire49\_82, Adnama\_104, Aegeus\_92, Amao\_100, AmericanBeauty\_107, Anatole\_47, Appletree2\_81, ArV2\_54, Archie\_82, Argent26\_104, Asriel\_98, Auspice\_67, Auxilium\_68, AvadaKedavra\_82, Aziz\_74, Azrael100\_77, B3\_49, BaboJay\_100, BadStone\_97, Balomoji\_100, Bantam\_84, Baoshan\_83, Barbarian\_99, Bask21\_100, Baudelaire\_92, Bazzle\_83, Bellis\_82, Bench\_103, BigBubba\_100, BigCheese\_85, BilboSwaggins\_99, BobsGarage\_85, Bongo\_67, Breezona\_85, Bricole\_66, Bromden\_84, Bruin\_97, Buck\_101, BugsBunny\_99, Cactus\_104, Calm\_84, Chaser\_82, ChosenOne\_100, ChotaBhai\_100, CicholasNage\_79, Cjw1\_101, Claus\_85, Clautastrophe\_82, Clawz\_88, ClearAsMud\_68, Command613\_102, Contagion\_96, Cookies\_97, Cosmo\_78, Crossroads\_85, CrystalP\_99, Czyszczo1\_101, Daikon\_100, Daredevil\_74, DatBoi\_81, Diminimus\_68, DirkDirk\_79, DoctorDiddles\_99, DonTron\_86, Doucette\_53, Douge\_83, DrDrey\_100, DrSeegs\_85, Dulcita\_68, Dumbo\_100, DuncansLeg\_84, Dusk\_97, DyoEdafos\_87, E1\_47, E6\_53, EastWest\_38, Easy2Say\_100, Elite2014\_99, Ellson\_83, Elph10\_100, Emmina\_100, Enceladus\_79, EniyanLRS\_74, Estes\_75, Eureka\_99, Faith1\_85, Filch\_102, Finemlucis\_85, Finkle\_70, Finnry\_83, FireRed\_103, Flypotenuse\_96, Forthebois\_13, G4\_64, Gabriela\_85, Gage\_102, Gardann\_85, GardenSalsa\_76, Gator\_98, Gemini\_105, GenevaB15\_75, Glaske16\_68, Glexan\_99, Globfish\_71, Goku\_99, GoldenSpark\_104, Goldilocks\_103, GooberAzure\_103, GuuelaD\_83, Hafay\_86, Halena\_80, HanKaySha\_101, Harella\_100, Henry\_97, Highbury\_97, Hillester\_76, Holt\_105, Hoonter\_103, Hopey\_101, HuffyPuff\_102, IHOP\_98, iPhone7\_67, Icee\_101, Inca\_97, Itos\_85, Jace\_65, Jayden\_65, JeTaime\_99, Jinkies\_44, Jobypre\_85, JoeDirt\_83, Jubie\_83, Kahlid\_85, Kanye\_97, Kimchi\_104, Kingsolomon\_81, Kostya\_100, Krypton555\_84, Kumao\_63, LeBron\_81, Lewan\_86, LilDestine\_84, Lilac\_102, LilhomieP\_66, Lilizi\_101, Lilpickle\_99, Loadrie\_83, Lolly9\_82, Lumos\_84, MAckerman\_79, MISSy\_101, MPhalcon\_101, MadamMonkfish\_100, Manda\_101, Marshmallow\_97, MaryV\_78, Maxxinista\_102, MidnightRain\_74, Miley16\_85, Mindy\_99, MiniLon\_87, MiniMac\_87, Miniwave\_95, Misfit\_101, MkaliMitinis3\_86, Moldemort\_103, Mollymur\_84, Moostard\_81, Mosby\_96, MrMagoo\_77, MrSmee\_59, MsGreen\_84, Murica\_103, Murphy\_100, Myrale\_100, Nala\_102, Nanosmite\_72, NelitzaMV\_97, Netyap\_86, Nicholas\_81, Nicholasp3\_85, Nimrod\_100, NoSleep\_101, NoodlelyBoi\_65, OhShagHennessy\_79, OrionPax\_99, Palpatine\_101, Paperbeatsrock\_99, Pat3\_97, PegLeg\_66, Petra64142\_104, Phaja\_98, Pharsalus\_97, PhatBacter\_103, Phaux\_102, Phrux\_97, Policronamos\_103, Porky\_99, Pumpkin\_102, Quallification\_101, REQ3\_26, RadFad\_76, Rakim\_101, Reindeer\_69, Rey\_73, RickRoss\_14, Rimmer\_98, RiverMonster\_100, Rose5\_83, Rumpelstiltskin\_82, Saints25\_97, Samty\_82, Sashimi\_71, Sassay\_95, ShamWow\_100, ShereKhan\_98, Silverleaf\_82, Simpliphy\_99, SirDuracell\_100, Skinny\_69, SlimJimmy\_66, Snenia\_83, Soos\_82, SophKB\_97, Sotrice96\_101, SpeedDemon\_850, Stank\_102, Stark\_101,

StellaBean\_99, Sting\_87, StolenFromERC\_102, TBrady12\_103, Tarkin\_99, TeardropMSU\_96, Teaspoon\_101, Terminus\_103, Thresher\_102, Tomaszewski\_95, Toto\_98, Tourach\_84, Traaww1\_96, Tuco\_101, TyDawg\_67, Tyson\_83, UPIE\_81, Ukulele\_95, Vetrrix\_84, Wamburggrxpress\_82, WheeHeim\_13, Whirlwind\_84, Wiggin\_102, Wigglewiggle\_84, Wildcat\_78, Wilder\_86, Willez\_95, Winky\_85, Wyatt2\_83, Xandras\_99, YassJohnny\_97, Youngblood\_103, Zakai\_86, Zaria\_83, ZhongYanYuan\_83, xkcd\_103,

### Summary by start number:

#### Start 38:

- Found in 41 of 514 ( 8.0% ) of genes in pham
- Manual Annotations of this start: 1 of 449
- Called 2.4% of time when present
- Phage (with cluster) where this start called: Rakim\_101 (E),

#### Start 85:

- Found in 2 of 514 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 2 of 449
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ClearAsMud\_68 (EC), NoodlelyBoi\_65 (EC),

#### Start 86:

- Found in 4 of 514 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 449
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Megan\_61 (EC),

#### Start 87:

- Found in 1 of 514 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 449
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jayden\_65 (EC),

#### Start 88:

- Found in 24 of 514 ( 4.7% ) of genes in pham
- Manual Annotations of this start: 24 of 449
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Auspice\_67 (M1), Aziz\_74 (M2), Bongo\_67 (M1), Bricole\_66 (M1), Diminimus\_68 (M1), Dulcita\_68 (M1), Estes\_75 (M2), Forthebois\_13 (B $\bar{O}$ ), GardenSalsa\_76 (M2), GenevaB15\_75 (M2), Glaske16\_68 (M1), IPhane7\_67 (M1), Kumao\_63 (singleton), LilhomieP\_66 (M1), MrMagoo\_77 (M2), Nanosmite\_72 (M3), PegLeg\_66 (M1), Reindeer\_69 (M1), Rey\_73 (M2), RickRoss\_14 (B $\bar{O}$ ), Skinny\_69 (M1), SlimJimmy\_66 (M1), TyDawg\_67 (M1), WheeHeim\_13 (B $\bar{O}$ ),

#### Start 89:

- Found in 248 of 514 ( 48.2% ) of genes in pham
- Manual Annotations of this start: 207 of 449
- Called 98.8% of time when present
- Phage (with cluster) where this start called: AWGoat\_69 (AP4), Abba\_37 (AO3), AbbyDaisy\_73 (AY), Abidatro\_55 (AS1), Abscondus\_125 (CQ), Aikyam\_70 (AY),

Altadena\_40 (FH), Andrew\_57 (AS3), Anekin\_75 (AY), Antares\_64 (EC), Antuna\_47 (GA), Aphelion\_126 (CQ1), Appa\_45 (GA), ArV1\_088 (AR), Ariadne\_74 (EC), Austintatious\_43 (BC3), AxeJC\_44 (BP), Bachita\_129 (CQ1), Banquo\_53 (CU1), BarretLemon\_37 (AO2), Basilisk\_53 (AS1), Bauer\_65 (FN), Beagle\_98 (AP2), Beans\_35 (AO1), BenchScraper\_70 (AY), BillyTP\_72 (AY), Bioscum\_46 (BC3), BlackSpider\_61 (FN), Blett\_45 (GA), Bolt007\_43 (FH), BossLady\_37 (AO2), Bran\_47 (EP), BrayBeast\_55 (FB), BrazzalePHS\_63 (EC), Brent\_35 (AO1), BruhMoment\_82 (AP3), BrutonGaster\_101 (CQ2), Brynnie\_51 (AS1), Bumble\_38 (FH), Busephillis\_63 (EC), Bush\_46 (GA), CalWood4100\_45 (FH), Cardigan\_138 (DD), Catfish\_52 (CU5), Chickaboom\_58 (AS1), Chipper1996\_1020 (AR), Chocolat\_101 (AR), Chubster\_101 (AR), Cinna\_60 (EI), ClubL\_126 (CQ1), Colucci\_104 (AR), Conboy\_100 (AR), CookieBear\_70 (AY), Cranjis\_65 (EC), CrazyRich\_63 (EC), Cressida\_63 (EI), Crisis\_65 (EC), Cucurbita\_127 (CQ1), Culver\_126 (CQ1), Cumberbatch\_46 (BP), Dardanus\_49 (CU3), Darolandstone\_44 (BC2), DelaGarza\_43 (GF), DinoDaryn\_55 (CU1), DrYang\_97 (AR), Dropshot\_45 (GA), Dusty\_122 (CQ), EarickHC\_65 (EC), Eastland\_45 (BP), EdgarPoe\_101 (AR), Edmundo\_14 (AL), Eesa\_52 (AS1), Eklok\_45 (BP), Engineer\_128 (CQ1), EvePickles\_69 (AY), Faja\_73 (AY), Fireman\_67 (EC), Franzy\_35 (AO1), Galaxy\_52 (AS1), Ganandorf\_63 (EC), Gilgamesh\_89 (singleton), Gina\_68 (EC), Gingerbug\_42 (GF), Goib\_55 (CU1), Gorpy\_70 (AY), Grekaycon\_37 (AO2), Gsput1\_47 (CU2), HFrancette\_46 (BP), Hermeonysus\_64 (EC), Hestia\_64 (AY), Hirko\_37 (FL), Honeyfin\_65 (EC), Huffy\_55 (CU1), Hum25\_56 (FQ), HumptyDumpty\_101 (AR), Ididsumtinwong\_47 (BC3), Ignacio\_45 (BP), Isolde\_70 (AY), JKerns\_37 (AO2), JaNo\_100 (AR), Jamun\_52 (AS1), Jawnski\_35 (AO1), JayCookie\_102 (AR), Jefe\_64 (EC), Jollipop\_65 (EC), JonJames\_135 (DD), Jordan\_37 (AO2), Juno112\_55 (AS3), KBurrousTX\_97 (AR), KHumphrey\_54 (AS3), Kabreeze\_101 (AR), KaiHaiDragon\_65 (EC), Kharcho\_81 (FM), Khuang\_62 (UNK), King2\_35 (AO1), Klevey\_43 (FH), Kovu\_15 (AL), Kowalski\_63 (EC), Kozie\_60 (EI), Kukla\_56 (FJ), Kuleana\_55 (AS2), Kumotta\_55 (FB), LeeroyJ\_37 (AO2), Leona\_54 (AS3), Lesiram\_44 (GF), Lilmac1015\_45 (FH), Linus\_101 (AR), LittleFortune\_66 (EC), LittleTokyo\_52 (AS2), Lozinak\_126 (CQ1), Lymara\_99 (AR), Margaery\_59 (EI), MargaretKali\_51 (FB), Martha\_37 (AO2), Matzah\_62 (EI), MellowYellow\_93 (AP2), MementoMori\_61 (EI), MenE\_50 (GA), Metamorphoo\_67 (EC), Min1\_23 (singleton), Miskis\_125 (CQ), Moajorita\_46 (BC1), Mordred\_101 (AR), MoyaNatalis\_101 (AR), Mufasa8\_48 (FG), NathanVaag\_35 (AO1), Nicole72\_62 (EC), Norvs\_125 (CQ), Odyssey395\_96 (AP2), OneUp\_111 (CQ2), Onika\_63 (EC), Orcanus\_53 (AS1), Ottawa\_81 (FM), PFR1\_50 (BX), PFR2\_52 (BX), PSonyx\_96 (singleton), PapayaSalad\_45 (BC3), Paschalis\_64 (EC), Persistence\_65 (AY), PhinkBoden\_126 (CQ1), PhluffyCoco\_55 (AS3), Phonegingi\_45 (GA), Phorgeous\_64 (EC), Phrancesco\_64 (EC), Phrank15\_75 (AY), Picard\_46 (BC1), Piccadilly\_45 (BP), Piccoletto\_35 (AO1), Pickles13\_44 (GA), PierreOrion\_64 (EC), PiperSansNom\_65 (EC), Piperis\_65 (EC), Pippa\_37 (AO2), Pitbull\_59 (FQ), Pointis\_92 (AP2), Prairie\_42 (FH), PrincessTrina\_102 (AR), Pulchra\_66 (EC), Pureglobe5\_96 (AP2), Quhwah\_68 (EC), Raleigh\_44 (BC2), Ramiel05\_63 (EC), Ranunculus\_85 (AP), Raphaella\_71 (AY), Raqqa\_67 (AY), RedFox\_55 (AS3), Renna12\_54 (AS3), Richie\_74 (AY), Rizwana\_72 (AP1), RobsFeet\_68 (EC), RosiePosie\_101 (AR), Ruchi\_52 (AS1), SV1\_43 (BC1), Sakai\_69 (AY), Sarge\_49 (FB), Savannah\_63 (EC), Scavito\_102 (AR), Schmidt\_48 (CU4), Scumberland\_66 (EC), Seahorse\_76 (AY), Selwyn23\_65 (EC), Shade\_37 (AO2), Shotgun\_64 (EC), Shoya\_55 (FB), Sicarius2\_38 (AO2), SilentRX\_70 (AP4), Smarties\_74 (EC), Smoothie\_127 (CQ1), SoJo\_44 (BC1), Sonali\_48 (FG), Sonny\_37 (AO2), Splinter\_54 (CU1), StevieBAY\_37 (AO2), TZGordon\_56 (CU1), TaeYoung\_37 (AO2), Tank\_72 (AP1), TaylorSipt\_54 (AS1), Teamocil\_68 (EC), Teng\_47 (GF), Terij\_60 (EI), Tiff81\_72 (AY), Timinator\_37 (AO2), TinaLin\_53 (CU1), ToastyFinz\_43 (BC1), Toniann\_126 (CQ1), Tophat\_102 (AR),

TripleJ\_56 (FJ), Tyrumbra\_63 (EC), ValentiniPuff\_105 (singleton), VanLee\_42 (singleton), Vendetta\_54 (CU1), Vibaki\_38 (FL), Vondra\_44 (BP), Vulpecula\_52 (AS1), Waltz\_14 (AL), Warren\_45 (GA), Wheelbite\_14 (AL), Wilde\_74 (AP1), WilliamBoone\_125 (CQ1), Wyborn\_38 (AO2), Yeti\_64 (EC), YoungHarleezy\_70 (AY), Yvonnestic\_132 (DD), Zartrosa\_37 (AO2), Zucker\_67 (FN),

Start 90:

- Found in 3 of 514 ( 0.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: DonTron\_86 (CP),

Start 91:

- Found in 7 of 514 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 7 of 449
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Azrael100\_77 (V), Cosmo\_78 (V), EastWest\_38 (AO), EniyanLRS\_74 (V), Finkle\_70 (singleton), MaryV\_78 (V), Wildcat\_78 (V),

Start 92:

- Found in 130 of 514 ( 25.3% ) of genes in pham
- Manual Annotations of this start: 121 of 449
- Called 98.5% of time when present
- Phage (with cluster) where this start called: 244\_101 (E), ABCat\_97 (E), Adnama\_104 (E), Amao\_100 (E), Argent26\_104 (E), Asriel\_98 (E), BaboJay\_100 (E), BadStone\_97 (E), Balomoji\_100 (E), Barbarian\_99 (E), Bask21\_100 (E), Bench\_103 (E), BigBubba\_100 (E), BilboSwaggins\_99 (E), Bruin\_97 (E), Buck\_101 (E), BugsBunny\_99 (E), Cactus\_104 (E), ChosenOne\_100 (E), ChotaBhai\_100 (E), Cjw1\_101 (E), Command613\_102 (E), Contagion\_96 (E), Cookies\_97 (E), CrystalP\_99 (E), Czystczon1\_101 (E), Daikon\_100 (E), DoctorDiddles\_99 (E), DrDrey\_100 (E), Dumbo\_100 (E), Dusk\_97 (E), Easy2Say\_100 (E), Elite2014\_99 (E), Elph10\_100 (E), Emmina\_100 (E), Eureka\_99 (E), Filch\_102 (E), FireRed\_103 (E), Flypotenuse\_96 (E), Gage\_102 (E), Gator\_98 (E), Gemini\_105 (E), Glexan\_99 (E), Goku\_99 (E), GoldenSpark\_104 (E), Goldilocks\_103 (E), GooberAzure\_103 (E), HanKaySha\_101 (E), Harella\_100 (E), Henry\_97 (E), Highbury\_97 (E), Holt\_105 (E), Hoonter\_103 (E), Hopey\_101 (E), HufflyPuff\_102 (E), IHOP\_98 (E), Icee\_101 (E), Inca\_97 (E), JeTaime\_99 (E), Kanye\_97 (E), Kimchi\_104 (E), Kostya\_100 (E), Lilac\_102 (E), Lilizi\_101 (E), Lilpickle\_99 (E), MISSy\_101 (E), MPhalcon\_101 (E), MadamMonkfish\_100 (E), Manda\_101 (E), Marshmallow\_97 (E), Maxxinista\_102 (E), Mindy\_99 (E), Miniwave\_95 (E), Misfit\_101 (E), Moldemort\_103 (E), Mosby\_96 (E), Murica\_103 (E), Murphy\_100 (E), Myrale\_100 (E), Nala\_102 (E), NelitzaMV\_97 (E), Nimrod\_100 (E), NoSleep\_101 (E), OrionPax\_99 (E), Palpatine\_101 (E), Paperbeatsrock\_99 (E), Pat3\_97 (E), Petra64142\_104 (E), Phaja\_98 (E), Pharsalus\_97 (E), PhatBacter\_103 (E), Phaux\_102 (E), Phrux\_97 (E), Policronamos\_103 (E), Porky\_99 (E), Pumpkin\_102 (E), Quallification\_101 (E), Rimmer\_98 (E), RiverMonster\_100 (E), Saints25\_97 (E), Sassay\_95 (E), ShamWow\_100 (E), ShereKhan\_98 (E), Simpliphy\_99 (E), SirDuracell\_100 (E), SophKB\_97 (E), Sotrice96\_101 (E), Stank\_102 (E), Stark\_101 (E), StellaBean\_99 (E), StolenFromERC\_102 (E), TBrady12\_103 (E), Tarkin\_99 (E), TeardropMSU\_96 (E), Teaspoon\_101 (E), Terminus\_103 (E), Thresher\_102 (E), Tomaszewski\_95 (E), Toto\_98 (E), Traaww1\_96 (E), Tuco\_101 (E), Ukulele\_95 (E), Wiggins\_102 (E), Willez\_95 (E), Xandras\_99 (E), YassJohnny\_97 (E), Youngblood\_103 (E), xkcd\_103

(E),

Start 93:

- Found in 81 of 514 ( 15.8% ) of genes in pham
- Manual Annotations of this start: 69 of 449
- Called 98.8% of time when present
- Phage (with cluster) where this start called: Acquire49\_82 (L1), Aegeus\_92 (L5), Appletree2\_81 (L1), Archie\_82 (L2), AvadaKedavra\_82 (L1), Baoshan\_83 (L2), Baudelaire\_92 (L5), Bazzle\_83 (L2), Bellis\_82 (L3), BigCheese\_85 (L2), BobsGarage\_85 (L2), Breezona\_85 (L2), Bromden\_84 (L4), Calm\_84 (L1), Chaser\_82 (L4), CicholasNage\_79 (L1), Claus\_85 (L2), Clautastrophe\_82 (L3), Clawz\_88 (CP), Crossroads\_85 (L2), DirkDirk\_79 (L1), Douge\_83 (L4), DrSeegs\_85 (L2), DuncansLeg\_84 (L3), DyoEdafos\_87 (L4), Ellson\_83 (L3), Enceladus\_79 (L1), Faith1\_85 (L2), Finemlucis\_85 (L2), Finnry\_83 (L3), Gabriela\_85 (L2), Gardann\_85 (L2), GuuelaD\_83 (L2), Hafay\_86 (L2), Halena\_80 (L1), Itos\_85 (L2), Jobypre\_85 (L3), JoeDirt\_83 (L1), Jubie\_83 (L3), Kahlid\_85 (L2), Kingsolomon\_81 (L3), Krypton555\_84 (L3), LeBron\_81 (L1), Lewan\_86 (L2), LilDestine\_84 (L2), Loadrie\_83 (L2), Lolly9\_82 (L3), Lumos\_84 (L3), MAckerman\_79 (L1), Miley16\_85 (L2), MiniLon\_87 (L3), MiniMac\_87 (L3), MkaliMitinis3\_86 (L2), Moostard\_81 (L3), MsGreen\_84 (L3), Netyap\_86 (L2), Nicholas\_81 (L3), Nicholasp3\_85 (L2), OhShagHennessy\_79 (L1), REQ3\_26 (singleton), Rose5\_83 (L1), Rumpelstiltskin\_82 (L2), Samty\_82 (L3), Silverleaf\_82 (L1), Snenia\_83 (L3), Soos\_82 (CP), Sting\_87 (CP), Tourach\_84 (L2), Tyson\_83 (L1), UPIE\_81 (L1), Vetrix\_84 (L2), Wamburgrxpress\_82 (L1), Whirlwind\_84 (L3), Wigglewiggle\_84 (L2), Wilder\_86 (L2), Winky\_85 (L2), Wyatt2\_83 (L1), Zakai\_86 (L2), Zaria\_83 (L1), ZhongYanYuan\_83 (L2),

Start 94:

- Found in 6 of 514 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 6 of 449
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bantam\_84 (DL), Daredevil\_74 (DL), DatBoi\_81 (DL), Jace\_65 (singleton), Mollymur\_84 (DL), SpeedDemon\_850 (DL),

Start 95:

- Found in 6 of 514 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 6 of 449
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anatole\_47 (BV), B3\_49 (BV), Doucette\_53 (BW), E1\_47 (BV), E6\_53 (BW), G4\_64 (BW),

Start 96:

- Found in 12 of 514 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 4 of 449
- Called 75.0% of time when present
- Phage (with cluster) where this start called: ArV2\_54 (singleton), Auxilium\_68 (AY), Globfish\_71 (AY), Hillester\_76 (AY), Jinkies\_44 (FL), MidnightRain\_74 (AY), MrSmeem\_59 (UNK), RadFad\_76 (AY), Sashimi\_71 (AY),

Start 101:

- Found in 53 of 514 ( 10.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 1.9% of time when present



- Phage (with cluster) where this start called: GravityBall\_37 (AO2),

Start 104:

- Found in 5 of 514 ( 1.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 20.0% of time when present
- Phage (with cluster) where this start called: pZL12\_1c (singleton),

Start 108:

- Found in 114 of 514 ( 22.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 0.9% of time when present
- Phage (with cluster) where this start called: AmericanBeauty\_107 (E),

### **Summary by clusters:**

There are 59 clusters represented in this pham: FG, FQ, singleton, GA, AP2, AP3, DD, AP1, DL, AO2, FB, BW, M1, CU4, M3, M2, FH, EI, FJ, V, BX, FM, FN, CU5, CP, CU3, CU2, CU1, FL, BO, CQ2, CQ1, AS3, AS2, AS1, AP4, E, AL, EC, GF, L4, L5, L2, L3, AO1, L1, AY, CQ, UNK, EP, AP, AO, BV, AO3, AR, BP, BC1, BC2, BC3,

Info for manual annotations of cluster AL:

- Start number 89 was manually annotated 3 times for cluster AL.

Info for manual annotations of cluster AO:

- Start number 91 was manually annotated 1 time for cluster AO.

Info for manual annotations of cluster AO1:

- Start number 89 was manually annotated 7 times for cluster AO1.

Info for manual annotations of cluster AO2:

- Start number 89 was manually annotated 16 times for cluster AO2.

Info for manual annotations of cluster AO3:

- Start number 89 was manually annotated 1 time for cluster AO3.

Info for manual annotations of cluster AP1:

- Start number 89 was manually annotated 3 times for cluster AP1.

Info for manual annotations of cluster AP2:

- Start number 89 was manually annotated 3 times for cluster AP2.

Info for manual annotations of cluster AP3:

- Start number 89 was manually annotated 1 time for cluster AP3.

Info for manual annotations of cluster AP4:

- Start number 89 was manually annotated 2 times for cluster AP4.

Info for manual annotations of cluster AR:

- Start number 89 was manually annotated 18 times for cluster AR.

Info for manual annotations of cluster AS1:

- Start number 89 was manually annotated 10 times for cluster AS1.

Info for manual annotations of cluster AS2:

- Start number 89 was manually annotated 2 times for cluster AS2.

Info for manual annotations of cluster AS3:

- Start number 89 was manually annotated 4 times for cluster AS3.

Info for manual annotations of cluster AY:

- Start number 89 was manually annotated 11 times for cluster AY.
- Start number 96 was manually annotated 3 times for cluster AY.

Info for manual annotations of cluster BC1:

- Start number 89 was manually annotated 5 times for cluster BC1.

Info for manual annotations of cluster BC2:

- Start number 89 was manually annotated 2 times for cluster BC2.

Info for manual annotations of cluster BC3:

- Start number 89 was manually annotated 4 times for cluster BC3.

Info for manual annotations of cluster BO:

- Start number 88 was manually annotated 3 times for cluster BO.

Info for manual annotations of cluster BP:

- Start number 89 was manually annotated 8 times for cluster BP.

Info for manual annotations of cluster BV:

- Start number 95 was manually annotated 3 times for cluster BV.

Info for manual annotations of cluster BW:

- Start number 95 was manually annotated 3 times for cluster BW.

Info for manual annotations of cluster CP:

- Start number 93 was manually annotated 2 times for cluster CP.

Info for manual annotations of cluster CQ:

- Start number 89 was manually annotated 1 time for cluster CQ.

Info for manual annotations of cluster CQ1:

- Start number 89 was manually annotated 11 times for cluster CQ1.

Info for manual annotations of cluster CQ2:

- Start number 89 was manually annotated 2 times for cluster CQ2.

Info for manual annotations of cluster CU1:

- Start number 89 was manually annotated 8 times for cluster CU1.

Info for manual annotations of cluster CU3:

- Start number 89 was manually annotated 1 time for cluster CU3.

Info for manual annotations of cluster CU4:

- Start number 89 was manually annotated 1 time for cluster CU4.

Info for manual annotations of cluster CU5:

- Start number 89 was manually annotated 1 time for cluster CU5.

Info for manual annotations of cluster DD:

- Start number 89 was manually annotated 2 times for cluster DD.

Info for manual annotations of cluster DL:

- Start number 94 was manually annotated 5 times for cluster DL.

Info for manual annotations of cluster E:

- Start number 38 was manually annotated 1 time for cluster E.
- Start number 92 was manually annotated 121 times for cluster E.

Info for manual annotations of cluster EC:

- Start number 85 was manually annotated 2 times for cluster EC.
- Start number 86 was manually annotated 1 time for cluster EC.
- Start number 87 was manually annotated 1 time for cluster EC.
- Start number 89 was manually annotated 37 times for cluster EC.

Info for manual annotations of cluster EI:

- Start number 89 was manually annotated 7 times for cluster EI.

Info for manual annotations of cluster EP:

- Start number 89 was manually annotated 1 time for cluster EP.

Info for manual annotations of cluster FB:

- Start number 89 was manually annotated 5 times for cluster FB.

Info for manual annotations of cluster FG:

- Start number 89 was manually annotated 2 times for cluster FG.

Info for manual annotations of cluster FH:

- Start number 89 was manually annotated 6 times for cluster FH.

Info for manual annotations of cluster FJ:

- Start number 89 was manually annotated 1 time for cluster FJ.

Info for manual annotations of cluster FL:

- Start number 89 was manually annotated 2 times for cluster FL.
- Start number 96 was manually annotated 1 time for cluster FL.

Info for manual annotations of cluster FM:

- Start number 89 was manually annotated 2 times for cluster FM.

Info for manual annotations of cluster FN:

- Start number 89 was manually annotated 2 times for cluster FN.

Info for manual annotations of cluster GA:

- Start number 89 was manually annotated 8 times for cluster GA.

Info for manual annotations of cluster GF:

- Start number 89 was manually annotated 3 times for cluster GF.

Info for manual annotations of cluster L1:

- Start number 93 was manually annotated 18 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 93 was manually annotated 28 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 93 was manually annotated 16 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 93 was manually annotated 3 times for cluster L4.

Info for manual annotations of cluster L5:

- Start number 93 was manually annotated 2 times for cluster L5.

Info for manual annotations of cluster M1:

- Start number 88 was manually annotated 13 times for cluster M1.

Info for manual annotations of cluster M2:

- Start number 88 was manually annotated 6 times for cluster M2.

Info for manual annotations of cluster M3:

- Start number 88 was manually annotated 1 time for cluster M3.

Info for manual annotations of cluster V:

- Start number 91 was manually annotated 5 times for cluster V.

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

Gene: 244\_101 Start: 59239, Stop: 59679, Start Num: 92

Candidate Starts for 244\_101:

(32, 59038), (33, 59041), (Start: 38 @59068 has 1 MA's), (40, 59071), (47, 59113), (62, 59167), (Start: 92 @59239 has 121 MA's), (112, 59338), (126, 59434), (137, 59470), (148, 59536), (161, 59584),

Gene: ABCat\_97 Start: 60224, Stop: 60664, Start Num: 92

Candidate Starts for ABCat\_97:

(Start: 92 @60224 has 121 MA's), (112, 60323), (137, 60455), (148, 60521), (161, 60569),

Gene: AWGoat\_69 Start: 49925, Stop: 49359, Start Num: 89

Candidate Starts for AWGoat\_69:

(Start: 89 @49925 has 207 MA's), (105, 49871), (108, 49844), (118, 49784), (124, 49739), (126, 49727), (132, 49703), (147, 49631), (182, 49412),

Gene: Abba\_37 Start: 29639, Stop: 30190, Start Num: 89

Candidate Starts for Abba\_37:

(Start: 89 @29639 has 207 MA's), (120, 29804), (132, 29864), (158, 29978), (161, 29990),

Gene: AbbyDaisy\_73 Start: 38801, Stop: 39268, Start Num: 89  
Candidate Starts for AbbyDaisy\_73:  
(21, 38504), (60, 38717), (Start: 89 @38801 has 207 MA's), (125, 38993), (164, 39170),

Gene: Abidatro\_55 Start: 34615, Stop: 35133, Start Num: 89  
Candidate Starts for Abidatro\_55:  
(Start: 89 @34615 has 207 MA's), (108, 34696), (111, 34711), (132, 34837), (134, 34843), (137, 34849), (150, 34921),

Gene: Abscondus\_125 Start: 71279, Stop: 71788, Start Num: 89  
Candidate Starts for Abscondus\_125:  
(Start: 89 @71279 has 207 MA's), (97, 71294), (101, 71303), (132, 71501), (161, 71627), (167, 71678), (175, 71738),

Gene: Acquire49\_82 Start: 53525, Stop: 53908, Start Num: 93  
Candidate Starts for Acquire49\_82:  
(Start: 93 @53525 has 69 MA's), (111, 53618), (119, 53672), (122, 53690), (137, 53750), (146, 53807),

Gene: Adnama\_104 Start: 59534, Stop: 59974, Start Num: 92  
Candidate Starts for Adnama\_104:  
(32, 59333), (33, 59336), (Start: 38 @59363 has 1 MA's), (40, 59366), (47, 59408), (62, 59462), (Start: 92 @59534 has 121 MA's), (112, 59633), (137, 59765), (148, 59831), (161, 59879),

Gene: Aegeus\_92 Start: 56890, Stop: 57282, Start Num: 93  
Candidate Starts for Aegeus\_92:  
(82, 56872), (Start: 93 @56890 has 69 MA's), (98, 56905), (134, 57115), (137, 57121),

Gene: Aikyam\_70 Start: 36571, Stop: 37089, Start Num: 89  
Candidate Starts for Aikyam\_70:  
(Start: 89 @36571 has 207 MA's), (113, 36673), (128, 36790),

Gene: Altadena\_40 Start: 29404, Stop: 29982, Start Num: 89  
Candidate Starts for Altadena\_40:  
(Start: 89 @29404 has 207 MA's), (119, 29560), (132, 29626), (134, 29632), (146, 29695), (169, 29821),

Gene: Amao\_100 Start: 59648, Stop: 60088, Start Num: 92  
Candidate Starts for Amao\_100:  
(67, 59591), (Start: 92 @59648 has 121 MA's), (112, 59747), (137, 59879), (148, 59945), (161, 59993),

Gene: AmericanBeauty\_107 Start: 59855, Stop: 60214, Start Num: 108  
Candidate Starts for AmericanBeauty\_107:  
(32, 59573), (33, 59576), (Start: 38 @59603 has 1 MA's), (40, 59606), (47, 59648), (62, 59702), (Start: 92 @59774 has 121 MA's), (108, 59855), (112, 59873), (137, 60005), (148, 60071), (161, 60119),

Gene: Anatole\_47 Start: 31132, Stop: 31596, Start Num: 95  
Candidate Starts for Anatole\_47:  
(Start: 95 @31132 has 6 MA's), (111, 31222), (113, 31228), (121, 31291), (134, 31351),

Gene: Andrew\_57 Start: 33845, Stop: 34357, Start Num: 89

Candidate Starts for Andrew\_57:

(79, 33827), (Start: 89 @33845 has 207 MA's), (108, 33926), (111, 33941), (122, 34019), (126, 34043), (132, 34067), (134, 34073), (137, 34079), (146, 34136), (161, 34193), (177, 34271),

Gene: Anekin\_75 Start: 39408, Stop: 39929, Start Num: 89

Candidate Starts for Anekin\_75:

(Start: 89 @39408 has 207 MA's), (118, 39549), (128, 39627), (147, 39714),

Gene: Antares\_64 Start: 40804, Stop: 41310, Start Num: 89

Candidate Starts for Antares\_64:

(Start: 89 @40804 has 207 MA's), (97, 40819), (132, 41026), (150, 41110), (161, 41152),

Gene: Antuna\_47 Start: 28781, Stop: 29272, Start Num: 89

Candidate Starts for Antuna\_47:

(Start: 89 @28781 has 207 MA's), (126, 28979), (132, 29003), (161, 29129),

Gene: Aphelion\_126 Start: 72342, Stop: 72881, Start Num: 89

Candidate Starts for Aphelion\_126:

(Start: 89 @72342 has 207 MA's), (97, 72357), (101, 72366), (132, 72564), (161, 72690), (167, 72741), (175, 72801),

Gene: Appa\_45 Start: 28538, Stop: 29032, Start Num: 89

Candidate Starts for Appa\_45:

(Start: 89 @28538 has 207 MA's), (132, 28760), (139, 28781), (161, 28886),

Gene: Appletree2\_81 Start: 53136, Stop: 53519, Start Num: 93

Candidate Starts for Appletree2\_81:

(Start: 93 @53136 has 69 MA's), (111, 53229), (119, 53283), (122, 53301), (137, 53361), (146, 53418),

Gene: ArV1\_088 Start: 62726, Stop: 63295, Start Num: 89

Candidate Starts for ArV1\_088:

(Start: 89 @62726 has 207 MA's), (101, 62750), (108, 62807), (120, 62888), (126, 62924), (132, 62948), (134, 62954), (137, 62960), (150, 63032), (156, 63053), (161, 63074), (182, 63242),

Gene: ArV2\_54 Start: 30423, Stop: 30827, Start Num: 96

Candidate Starts for ArV2\_54:

(Start: 96 @30423 has 4 MA's),

Gene: Archie\_82 Start: 55052, Stop: 55447, Start Num: 93

Candidate Starts for Archie\_82:

(Start: 93 @55052 has 69 MA's), (105, 55103), (107, 55124), (111, 55145), (118, 55184), (119, 55199), (122, 55217), (135, 55274), (137, 55277), (143, 55307),

Gene: Argent26\_104 Start: 59458, Stop: 59898, Start Num: 92

Candidate Starts for Argent26\_104:

(32, 59257), (33, 59260), (Start: 38 @59287 has 1 MA's), (40, 59290), (47, 59332), (62, 59386), (Start: 92 @59458 has 121 MA's), (112, 59557), (137, 59689), (148, 59755), (161, 59803),

Gene: Ariadne\_74 Start: 42439, Stop: 42945, Start Num: 89

Candidate Starts for Ariadne\_74:

(57, 42349), (70, 42394), (Start: 86 @42436 has 1 MA's), (Start: 89 @42439 has 207 MA's), (122, 42613), (132, 42661), (134, 42667), (150, 42745), (161, 42787),

Gene: Asriel\_98 Start: 57871, Stop: 58311, Start Num: 92

Candidate Starts for Asriel\_98:

(32, 57670), (33, 57673), (Start: 38 @57700 has 1 MA's), (40, 57703), (47, 57745), (62, 57799), (Start: 92 @57871 has 121 MA's), (108, 57952), (112, 57970), (137, 58102), (148, 58168), (161, 58216),

Gene: Auspice\_67 Start: 43863, Stop: 44309, Start Num: 88

Candidate Starts for Auspice\_67:

(76, 43827), (Start: 88 @43863 has 24 MA's), (108, 43947), (120, 44028), (124, 44052), (161, 44211),

Gene: Austintatious\_43 Start: 28177, Stop: 28638, Start Num: 89

Candidate Starts for Austintatious\_43:

(16, 27802), (31, 27961), (52, 28069), (Start: 89 @28177 has 207 MA's), (120, 28339), (121, 28345),

Gene: Auxilium\_68 Start: 35492, Stop: 35971, Start Num: 96

Candidate Starts for Auxilium\_68:

(Start: 96 @35492 has 4 MA's), (105, 35537), (130, 35693),

Gene: AvadaKedavra\_82 Start: 53604, Stop: 53987, Start Num: 93

Candidate Starts for AvadaKedavra\_82:

(Start: 93 @53604 has 69 MA's), (111, 53697), (119, 53751), (122, 53769), (137, 53829), (146, 53886),

Gene: AxeJC\_44 Start: 30398, Stop: 30877, Start Num: 89

Candidate Starts for AxeJC\_44:

(Start: 89 @30398 has 207 MA's), (146, 30689),

Gene: Aziz\_74 Start: 45899, Stop: 46336, Start Num: 88

Candidate Starts for Aziz\_74:

(Start: 88 @45899 has 24 MA's), (108, 45983), (120, 46064),

Gene: Azrael100\_77 Start: 49155, Stop: 49544, Start Num: 91

Candidate Starts for Azrael100\_77:

(Start: 91 @49155 has 7 MA's), (112, 49251), (119, 49302), (122, 49320), (134, 49374), (147, 49440), (161, 49494),

Gene: B3\_49 Start: 31795, Stop: 32259, Start Num: 95

Candidate Starts for B3\_49:

(Start: 95 @31795 has 6 MA's), (111, 31885), (113, 31891), (121, 31954), (134, 32014),

Gene: BaboJay\_100 Start: 60412, Stop: 60852, Start Num: 92

Candidate Starts for BaboJay\_100:

(Start: 92 @60412 has 121 MA's), (112, 60511), (137, 60643), (148, 60709), (161, 60757),

Gene: Bachita\_129 Start: 72298, Stop: 72807, Start Num: 89

Candidate Starts for Bachita\_129:

(Start: 89 @72298 has 207 MA's), (97, 72313), (101, 72322), (132, 72520), (161, 72646), (167, 72697), (175, 72757),

Gene: BadStone\_97 Start: 59793, Stop: 60233, Start Num: 92

Candidate Starts for BadStone\_97:

(Start: 92 @59793 has 121 MA's), (112, 59892), (137, 60024), (148, 60090), (161, 60138),

Gene: Balomoji\_100 Start: 59654, Stop: 60094, Start Num: 92

Candidate Starts for Balomoji\_100:

(32, 59453), (33, 59456), (Start: 38 @59483 has 1 MA's), (40, 59486), (47, 59528), (62, 59582), (Start: 92 @59654 has 121 MA's), (112, 59753), (126, 59849), (137, 59885), (148, 59951), (161, 59999),

Gene: Banquo\_53 Start: 35074, Stop: 35562, Start Num: 89

Candidate Starts for Banquo\_53:

(Start: 89 @35074 has 207 MA's), (120, 35236), (145, 35353), (146, 35365), (147, 35368), (150, 35380),

Gene: Bantam\_84 Start: 57099, Stop: 56536, Start Num: 94

Candidate Starts for Bantam\_84:

(Start: 94 @57099 has 6 MA's), (119, 56937), (152, 56766), (166, 56697),

Gene: Baoshan\_83 Start: 55708, Stop: 56106, Start Num: 93

Candidate Starts for Baoshan\_83:

(Start: 93 @55708 has 69 MA's), (105, 55759), (107, 55780), (111, 55801), (118, 55840), (119, 55855), (122, 55873), (135, 55930), (137, 55933), (146, 55990), (156, 56026),

Gene: Barbarian\_99 Start: 57871, Stop: 58311, Start Num: 92

Candidate Starts for Barbarian\_99:

(32, 57670), (33, 57673), (Start: 38 @57700 has 1 MA's), (40, 57703), (47, 57745), (62, 57799), (Start: 92 @57871 has 121 MA's), (108, 57952), (112, 57970), (137, 58102), (148, 58168), (161, 58216),

Gene: BarretLemon\_37 Start: 30898, Stop: 31434, Start Num: 89

Candidate Starts for BarretLemon\_37:

(Start: 89 @30898 has 207 MA's), (101, 30922), (132, 31120), (161, 31246), (179, 31342),

Gene: Basilisk\_53 Start: 33835, Stop: 34356, Start Num: 89

Candidate Starts for Basilisk\_53:

(Start: 89 @33835 has 207 MA's), (108, 33916), (132, 34057), (134, 34063), (163, 34192),

Gene: Bask21\_100 Start: 58510, Stop: 58950, Start Num: 92

Candidate Starts for Bask21\_100:

(32, 58309), (33, 58312), (Start: 38 @58339 has 1 MA's), (40, 58342), (47, 58384), (62, 58438), (Start: 92 @58510 has 121 MA's), (108, 58591), (112, 58609), (137, 58741), (148, 58807), (161, 58855),

Gene: Baudelaire\_92 Start: 56890, Stop: 57282, Start Num: 93

Candidate Starts for Baudelaire\_92:

(82, 56872), (Start: 93 @56890 has 69 MA's), (98, 56905), (134, 57115), (137, 57121),

Gene: Bauer\_65 Start: 36668, Stop: 37132, Start Num: 89

Candidate Starts for Bauer\_65:

(Start: 89 @36668 has 207 MA's), (112, 36767), (125, 36860), (164, 37037),

Gene: Bazzle\_83 Start: 55608, Stop: 56003, Start Num: 93

Candidate Starts for Bazzle\_83:

(Start: 93 @55608 has 69 MA's), (105, 55659), (107, 55680), (111, 55701), (119, 55755), (122, 55773), (135, 55830), (137, 55833), (143, 55863),

Gene: Beagle\_98 Start: 57722, Stop: 57117, Start Num: 89

Candidate Starts for Beagle\_98:



(Start: 89 @57722 has 207 MA's), (105, 57668), (120, 57560), (147, 57428), (148, 57422), (150, 57416),

Gene: Beans\_35 Start: 30601, Stop: 31176, Start Num: 89

Candidate Starts for Beans\_35:

(Start: 89 @30601 has 207 MA's), (101, 30625), (132, 30823), (158, 30937), (178, 31081),

Gene: Bellis\_82 Start: 55408, Stop: 55791, Start Num: 93

Candidate Starts for Bellis\_82:

(Start: 93 @55408 has 69 MA's), (106, 55468), (107, 55480), (111, 55501), (119, 55561), (122, 55579), (137, 55639), (156, 55729),

Gene: Bench\_103 Start: 60413, Stop: 60853, Start Num: 92

Candidate Starts for Bench\_103:

(Start: 92 @60413 has 121 MA's), (112, 60512), (126, 60608), (137, 60644), (148, 60710), (161, 60758),

Gene: BenchScraper\_70 Start: 37528, Stop: 38034, Start Num: 89

Candidate Starts for BenchScraper\_70:

(Start: 89 @37528 has 207 MA's), (108, 37609), (128, 37747), (139, 37783), (147, 37834),

Gene: BigBubba\_100 Start: 58566, Stop: 59006, Start Num: 92

Candidate Starts for BigBubba\_100:

(32, 58365), (33, 58368), (Start: 38 @58395 has 1 MA's), (40, 58398), (47, 58440), (62, 58494), (Start: 92 @58566 has 121 MA's), (108, 58647), (112, 58665), (126, 58761), (137, 58797), (148, 58863), (161, 58911),

Gene: BigCheese\_85 Start: 55471, Stop: 55857, Start Num: 93

Candidate Starts for BigCheese\_85:

(Start: 93 @55471 has 69 MA's), (105, 55522), (107, 55543), (111, 55564), (118, 55603), (119, 55618), (122, 55636), (135, 55693), (137, 55696), (146, 55753),

Gene: BilboSwaggins\_99 Start: 60193, Stop: 60633, Start Num: 92

Candidate Starts for BilboSwaggins\_99:

(Start: 92 @60193 has 121 MA's), (112, 60292), (126, 60388), (137, 60424), (148, 60490), (161, 60538),

Gene: BillyTP\_72 Start: 39383, Stop: 39889, Start Num: 89

Candidate Starts for BillyTP\_72:

(Start: 89 @39383 has 207 MA's), (108, 39464), (128, 39602),

Gene: Bioscum\_46 Start: 30484, Stop: 30945, Start Num: 89

Candidate Starts for Bioscum\_46:

(Start: 89 @30484 has 207 MA's), (120, 30646), (121, 30652),

Gene: BlackSpider\_61 Start: 35527, Stop: 36036, Start Num: 89

Candidate Starts for BlackSpider\_61:

(Start: 89 @35527 has 207 MA's), (128, 35746),

Gene: Blett\_45 Start: 28732, Stop: 29223, Start Num: 89

Candidate Starts for Blett\_45:

(Start: 89 @28732 has 207 MA's), (132, 28954), (139, 28975), (150, 29038), (161, 29080),

Gene: BobsGarage\_85 Start: 55471, Stop: 55857, Start Num: 93  
Candidate Starts for BobsGarage\_85:  
(Start: 93 @55471 has 69 MA's), (105, 55522), (107, 55543), (111, 55564), (118, 55603), (119, 55618), (122, 55636), (135, 55693), (137, 55696), (146, 55753),

Gene: Bolt007\_43 Start: 32404, Stop: 32961, Start Num: 89  
Candidate Starts for Bolt007\_43:  
(Start: 89 @32404 has 207 MA's), (132, 32626),

Gene: Bongo\_67 Start: 43867, Stop: 44313, Start Num: 88  
Candidate Starts for Bongo\_67:  
(76, 43831), (Start: 88 @43867 has 24 MA's), (108, 43951), (120, 44032), (124, 44056), (161, 44215),

Gene: BossLady\_37 Start: 30876, Stop: 31424, Start Num: 89  
Candidate Starts for BossLady\_37:  
(58, 30789), (Start: 89 @30876 has 207 MA's), (101, 30900), (122, 31050), (124, 31062), (132, 31098), (156, 31203), (161, 31224), (178, 31308),

Gene: Bran\_47 Start: 33745, Stop: 34197, Start Num: 89  
Candidate Starts for Bran\_47:  
(2, 33049), (3, 33052), (4, 33067), (7, 33169), (8, 33190), (12, 33292), (17, 33382), (Start: 89 @33745 has 207 MA's), (108, 33829), (111, 33844), (115, 33862), (119, 33904), (127, 33949), (132, 33970), (161, 34096),

Gene: BrayBeast\_55 Start: 31242, Stop: 31763, Start Num: 89  
Candidate Starts for BrayBeast\_55:  
(Start: 89 @31242 has 207 MA's), (128, 31461),

Gene: BrazzalePHS\_63 Start: 40566, Stop: 41072, Start Num: 89  
Candidate Starts for BrazzalePHS\_63:  
(Start: 89 @40566 has 207 MA's), (97, 40581), (132, 40788), (150, 40872), (161, 40914),

Gene: Breezona\_85 Start: 55471, Stop: 55857, Start Num: 93  
Candidate Starts for Breezona\_85:  
(Start: 93 @55471 has 69 MA's), (105, 55522), (107, 55543), (111, 55564), (118, 55603), (119, 55618), (122, 55636), (135, 55693), (137, 55696), (146, 55753),

Gene: Brent\_35 Start: 30565, Stop: 31143, Start Num: 89  
Candidate Starts for Brent\_35:  
(Start: 89 @30565 has 207 MA's), (101, 30589), (103, 30601), (124, 30751), (132, 30787), (161, 30913), (178, 31024),

Gene: Bricole\_66 Start: 43589, Stop: 44035, Start Num: 88  
Candidate Starts for Bricole\_66:  
(76, 43553), (Start: 88 @43589 has 24 MA's), (108, 43673), (120, 43754), (124, 43778), (161, 43937),

Gene: Bromden\_84 Start: 55234, Stop: 55644, Start Num: 93  
Candidate Starts for Bromden\_84:  
(Start: 93 @55234 has 69 MA's), (107, 55306), (111, 55327), (118, 55366), (119, 55381), (135, 55456), (137, 55459),

Gene: BruhMoment\_82 Start: 54954, Stop: 54415, Start Num: 89  
Candidate Starts for BruhMoment\_82:

(Start: 89 @54954 has 207 MA's), (122, 54780), (124, 54768), (126, 54756),

Gene: Bruin\_97 Start: 58899, Stop: 59339, Start Num: 92

Candidate Starts for Bruin\_97:

(Start: 92 @58899 has 121 MA's), (112, 58998), (126, 59094), (137, 59130), (148, 59196), (161, 59244),

Gene: BrutonGaster\_101 Start: 65631, Stop: 66143, Start Num: 89

Candidate Starts for BrutonGaster\_101:

(Start: 89 @65631 has 207 MA's), (110, 65721), (126, 65829),

Gene: Brynnie\_51 Start: 33460, Stop: 33981, Start Num: 89

Candidate Starts for Brynnie\_51:

(Start: 89 @33460 has 207 MA's), (108, 33541), (132, 33682), (134, 33688), (163, 33817),

Gene: Buck\_101 Start: 60736, Stop: 61176, Start Num: 92

Candidate Starts for Buck\_101:

(Start: 92 @60736 has 121 MA's), (112, 60835), (126, 60931), (137, 60967), (148, 61033), (161, 61081),

Gene: BugsBunny\_99 Start: 60212, Stop: 60652, Start Num: 92

Candidate Starts for BugsBunny\_99:

(Start: 92 @60212 has 121 MA's), (112, 60311), (126, 60407), (137, 60443), (148, 60509), (161, 60557),

Gene: Bumble\_38 Start: 29473, Stop: 30051, Start Num: 89

Candidate Starts for Bumble\_38:

(Start: 89 @29473 has 207 MA's), (119, 29629), (122, 29647), (132, 29695), (134, 29701), (173, 29926),

Gene: Busephilis\_63 Start: 40511, Stop: 41017, Start Num: 89

Candidate Starts for Busephilis\_63:

(Start: 89 @40511 has 207 MA's), (97, 40526), (132, 40733), (150, 40817), (161, 40859),

Gene: Bush\_46 Start: 28681, Stop: 29172, Start Num: 89

Candidate Starts for Bush\_46:

(Start: 89 @28681 has 207 MA's), (132, 28903), (139, 28924), (150, 28987),

Gene: Cactus\_104 Start: 59153, Stop: 59593, Start Num: 92

Candidate Starts for Cactus\_104:

(Start: 92 @59153 has 121 MA's), (112, 59252), (137, 59384), (148, 59450), (161, 59498),

Gene: CalWood4100\_45 Start: 31895, Stop: 32452, Start Num: 89

Candidate Starts for CalWood4100\_45:

(Start: 89 @31895 has 207 MA's), (132, 32117), (146, 32186),

Gene: Calm\_84 Start: 53847, Stop: 54230, Start Num: 93

Candidate Starts for Calm\_84:

(Start: 93 @53847 has 69 MA's), (111, 53940), (119, 53994), (122, 54012), (137, 54072), (146, 54129),

Gene: Cardigan\_138 Start: 77634, Stop: 78149, Start Num: 89

Candidate Starts for Cardigan\_138:

(66, 77571), (Start: 89 @77634 has 207 MA's), (111, 77730), (126, 77832), (132, 77856), (172, 78099),

Gene: Catfish\_52 Start: 36484, Stop: 37020, Start Num: 89

Candidate Starts for Catfish\_52:

(25, 36223), (28, 36253), (51, 36373), (Start: 89 @36484 has 207 MA's), (115, 36601), (126, 36685),

Gene: Chaser\_82 Start: 53878, Stop: 54270, Start Num: 93

Candidate Starts for Chaser\_82:

(Start: 93 @53878 has 69 MA's), (107, 53950), (111, 53971), (118, 54010), (119, 54025), (124, 54055), (135, 54100), (137, 54103), (165, 54226),

Gene: Chickaboom\_58 Start: 34174, Stop: 34692, Start Num: 89

Candidate Starts for Chickaboom\_58:

(Start: 89 @34174 has 207 MA's), (108, 34255), (132, 34396), (134, 34402), (146, 34465), (163, 34531),

Gene: Chipper1996\_1020 Start: 64351, Stop: 64920, Start Num: 89

Candidate Starts for Chipper1996\_1020:

(Start: 89 @64351 has 207 MA's), (108, 64432), (119, 64507), (126, 64549), (132, 64573), (134, 64579), (137, 64585), (150, 64657), (156, 64678), (161, 64699),

Gene: Chocolat\_101 Start: 64058, Stop: 64627, Start Num: 89

Candidate Starts for Chocolat\_101:

(Start: 89 @64058 has 207 MA's), (108, 64139), (119, 64214), (126, 64256), (129, 64268), (132, 64280), (134, 64286), (137, 64292), (150, 64364), (156, 64385), (161, 64406),

Gene: ChosenOne\_100 Start: 59101, Stop: 59541, Start Num: 92

Candidate Starts for ChosenOne\_100:

(Start: 92 @59101 has 121 MA's), (112, 59200), (137, 59332), (148, 59398), (161, 59446),

Gene: ChotaBhai\_100 Start: 59512, Stop: 59952, Start Num: 92

Candidate Starts for ChotaBhai\_100:

(67, 59455), (Start: 92 @59512 has 121 MA's), (112, 59611), (137, 59743), (148, 59809), (161, 59857),

Gene: Chubster\_101 Start: 64298, Stop: 64867, Start Num: 89

Candidate Starts for Chubster\_101:

(Start: 89 @64298 has 207 MA's), (108, 64379), (119, 64454), (126, 64496), (132, 64520), (134, 64526), (137, 64532), (150, 64604), (156, 64625), (161, 64646),

Gene: CicholasNage\_79 Start: 53189, Stop: 53572, Start Num: 93

Candidate Starts for CicholasNage\_79:

(Start: 93 @53189 has 69 MA's), (111, 53282), (119, 53336), (122, 53354), (137, 53414), (146, 53471),

Gene: Cinna\_60 Start: 41333, Stop: 41833, Start Num: 89

Candidate Starts for Cinna\_60:

(Start: 89 @41333 has 207 MA's), (132, 41555), (134, 41561), (150, 41639),

Gene: Cjw1\_101 Start: 61106, Stop: 61546, Start Num: 92

Candidate Starts for Cjw1\_101:

(Start: 92 @61106 has 121 MA's), (112, 61205), (126, 61301), (137, 61337), (148, 61403), (161, 61451),

Gene: Claus\_85 Start: 55406, Stop: 55789, Start Num: 93

Candidate Starts for Claus\_85:

(Start: 93 @55406 has 69 MA's), (105, 55457), (107, 55478), (111, 55499), (118, 55538), (119, 55553), (122, 55571), (135, 55628), (137, 55631), (146, 55688), (156, 55724),

Gene: Clautastrophe\_82 Start: 55406, Stop: 55789, Start Num: 93

Candidate Starts for Clautastrophe\_82:

(Start: 93 @55406 has 69 MA's), (106, 55466), (107, 55478), (111, 55499), (119, 55559), (122, 55577), (137, 55637), (156, 55727),

Gene: Clawz\_88 Start: 56168, Stop: 56587, Start Num: 93

Candidate Starts for Clawz\_88:

(29, 55943), (39, 55982), (41, 55991), (Start: 93 @56168 has 69 MA's), (109, 56252), (111, 56264), (113, 56270), (147, 56462), (150, 56474), (156, 56495),

Gene: ClearAsMud\_68 Start: 41092, Stop: 41592, Start Num: 85

Candidate Starts for ClearAsMud\_68:

(Start: 85 @41092 has 2 MA's), (108, 41173), (132, 41314), (150, 41398), (161, 41440),

Gene: ClubL\_126 Start: 70869, Stop: 71378, Start Num: 89

Candidate Starts for ClubL\_126:

(Start: 89 @70869 has 207 MA's), (97, 70884), (101, 70893), (132, 71091), (161, 71217), (167, 71268), (175, 71328),

Gene: Colucci\_104 Start: 64674, Stop: 65246, Start Num: 89

Candidate Starts for Colucci\_104:

(Start: 89 @64674 has 207 MA's), (101, 64698), (108, 64755), (120, 64836), (126, 64872), (132, 64896), (134, 64902), (137, 64908), (150, 64980), (156, 65001), (161, 65022),

Gene: Command613\_102 Start: 59668, Stop: 60108, Start Num: 92

Candidate Starts for Command613\_102:

(32, 59467), (33, 59470), (Start: 38 @59497 has 1 MA's), (40, 59500), (47, 59542), (62, 59596), (Start: 92 @59668 has 121 MA's), (112, 59767), (137, 59899), (148, 59965), (161, 60013),

Gene: Conboy\_100 Start: 63864, Stop: 64433, Start Num: 89

Candidate Starts for Conboy\_100:

(Start: 89 @63864 has 207 MA's), (101, 63888), (108, 63945), (120, 64026), (126, 64062), (132, 64086), (134, 64092), (137, 64098), (150, 64170), (156, 64191), (161, 64212),

Gene: Contagion\_96 Start: 59261, Stop: 59701, Start Num: 92

Candidate Starts for Contagion\_96:

(Start: 92 @59261 has 121 MA's), (112, 59360), (126, 59456), (137, 59492), (148, 59558), (161, 59606),

Gene: CookieBear\_70 Start: 38002, Stop: 38508, Start Num: 89

Candidate Starts for CookieBear\_70:

(Start: 89 @38002 has 207 MA's), (113, 38104), (128, 38221),

Gene: Cookies\_97 Start: 59438, Stop: 59878, Start Num: 92

Candidate Starts for Cookies\_97:

(67, 59381), (Start: 92 @59438 has 121 MA's), (112, 59537), (137, 59669), (148, 59735), (161, 59783),

Gene: Cosmo\_78 Start: 49156, Stop: 49545, Start Num: 91

Candidate Starts for Cosmo\_78:

(Start: 91 @49156 has 7 MA's), (112, 49252), (119, 49303), (122, 49321), (134, 49375), (147, 49441), (161, 49495),

Gene: Cranjjs\_65 Start: 40759, Stop: 41265, Start Num: 89

Candidate Starts for Cranjjs\_65:

(Start: 89 @40759 has 207 MA's), (97, 40774), (132, 40981), (150, 41065), (161, 41107),

Gene: CrazyRich\_63 Start: 40568, Stop: 41071, Start Num: 89

Candidate Starts for CrazyRich\_63:

(Start: 89 @40568 has 207 MA's), (97, 40583), (132, 40790), (150, 40874), (161, 40916),

Gene: Cressida\_63 Start: 40938, Stop: 41438, Start Num: 89

Candidate Starts for Cressida\_63:

(Start: 89 @40938 has 207 MA's), (122, 41112), (132, 41160), (134, 41166), (150, 41244),

Gene: Crisis\_65 Start: 40574, Stop: 41080, Start Num: 89

Candidate Starts for Crisis\_65:

(Start: 89 @40574 has 207 MA's), (97, 40589), (132, 40796), (150, 40880), (161, 40922),

Gene: Crossroads\_85 Start: 55546, Stop: 55932, Start Num: 93

Candidate Starts for Crossroads\_85:

(Start: 93 @55546 has 69 MA's), (105, 55597), (107, 55618), (111, 55639), (118, 55678), (119, 55693), (122, 55711), (135, 55768), (137, 55771), (146, 55828),

Gene: CrystalP\_99 Start: 60193, Stop: 60633, Start Num: 92

Candidate Starts for CrystalP\_99:

(Start: 92 @60193 has 121 MA's), (112, 60292), (126, 60388), (137, 60424), (148, 60490), (161, 60538),

Gene: Cucurbita\_127 Start: 72611, Stop: 73120, Start Num: 89

Candidate Starts for Cucurbita\_127:

(Start: 89 @72611 has 207 MA's), (97, 72626), (101, 72635), (132, 72833), (161, 72959), (167, 73010), (175, 73070),

Gene: Culver\_126 Start: 70629, Stop: 71138, Start Num: 89

Candidate Starts for Culver\_126:

(Start: 89 @70629 has 207 MA's), (97, 70644), (101, 70653), (132, 70851), (161, 70977), (167, 71028), (175, 71088),

Gene: Cumberbatch\_46 Start: 30696, Stop: 31175, Start Num: 89

Candidate Starts for Cumberbatch\_46:

(Start: 89 @30696 has 207 MA's), (146, 30987),

Gene: Czyszczonek1\_101 Start: 59453, Stop: 59893, Start Num: 92

Candidate Starts for Czyszczonek1\_101:

(32, 59252), (33, 59255), (Start: 38 @59282 has 1 MA's), (40, 59285), (47, 59327), (62, 59381), (Start: 92 @59453 has 121 MA's), (112, 59552), (126, 59648), (137, 59684), (148, 59750), (161, 59798),

Gene: Daikon\_100 Start: 59067, Stop: 59507, Start Num: 92  
Candidate Starts for Daikon\_100:  
(62, 58995), (Start: 92 @59067 has 121 MA's), (112, 59166), (126, 59262), (137, 59298), (148, 59364), (161, 59412),

Gene: Dardanus\_49 Start: 33729, Stop: 34202, Start Num: 89  
Candidate Starts for Dardanus\_49:  
(37, 33552), (Start: 89 @33729 has 207 MA's), (105, 33783), (115, 33843), (120, 33891), (121, 33897), (135, 33960), (146, 34020), (148, 34029),

Gene: Daredevil\_74 Start: 52691, Stop: 52191, Start Num: 94  
Candidate Starts for Daredevil\_74:  
(Start: 94 @52691 has 6 MA's), (109, 52613),

Gene: Darolandstone\_44 Start: 33598, Stop: 34095, Start Num: 89  
Candidate Starts for Darolandstone\_44:  
(48, 33475), (49, 33484), (Start: 89 @33598 has 207 MA's), (111, 33694), (122, 33772), (134, 33826),

Gene: DatBoi\_81 Start: 56811, Stop: 56245, Start Num: 94  
Candidate Starts for DatBoi\_81:  
(Start: 94 @56811 has 6 MA's), (123, 56628), (166, 56424),

Gene: DelaGarza\_43 Start: 26483, Stop: 25980, Start Num: 89  
Candidate Starts for DelaGarza\_43:  
(Start: 89 @26483 has 207 MA's), (132, 26261), (161, 26135),

Gene: Diminimus\_68 Start: 43862, Stop: 44308, Start Num: 88  
Candidate Starts for Diminimus\_68:  
(76, 43826), (Start: 88 @43862 has 24 MA's), (108, 43946), (120, 44027), (124, 44051), (161, 44210),

Gene: DinoDaryn\_55 Start: 35610, Stop: 36101, Start Num: 89  
Candidate Starts for DinoDaryn\_55:  
(Start: 89 @35610 has 207 MA's), (105, 35664), (120, 35772), (137, 35844), (150, 35916),

Gene: DirkDirk\_79 Start: 52716, Stop: 53099, Start Num: 93  
Candidate Starts for DirkDirk\_79:  
(Start: 93 @52716 has 69 MA's), (111, 52809), (119, 52863), (122, 52881), (137, 52941), (146, 52998),

Gene: DoctorDiddles\_99 Start: 58916, Stop: 59356, Start Num: 92  
Candidate Starts for DoctorDiddles\_99:  
(32, 58715), (33, 58718), (Start: 38 @58745 has 1 MA's), (40, 58748), (47, 58790), (62, 58844), (Start: 92 @58916 has 121 MA's), (108, 58997), (112, 59015), (137, 59147), (148, 59213), (161, 59261),

Gene: DonTron\_86 Start: 55825, Stop: 56250, Start Num: 90  
Candidate Starts for DonTron\_86:  
(29, 55603), (39, 55642), (54, 55723), (90, 55825), (Start: 93 @55828 has 69 MA's), (109, 55912), (113, 55930), (147, 56122), (148, 56128),

Gene: Doucette\_53 Start: 34241, Stop: 34705, Start Num: 95  
Candidate Starts for Doucette\_53:  
(Start: 95 @34241 has 6 MA's), (111, 34331), (121, 34400), (137, 34466),

Gene: Douge\_83 Start: 54186, Stop: 54593, Start Num: 93  
Candidate Starts for Douge\_83:  
(Start: 93 @54186 has 69 MA's), (107, 54258), (111, 54279), (118, 54318), (119, 54333), (124, 54363), (135, 54408), (137, 54411), (165, 54552),

Gene: DrDrey\_100 Start: 60931, Stop: 61371, Start Num: 92  
Candidate Starts for DrDrey\_100:  
(Start: 92 @60931 has 121 MA's), (112, 61030), (137, 61162), (148, 61228), (161, 61276),

Gene: DrSeegs\_85 Start: 55471, Stop: 55857, Start Num: 93  
Candidate Starts for DrSeegs\_85:  
(Start: 93 @55471 has 69 MA's), (105, 55522), (107, 55543), (111, 55564), (118, 55603), (119, 55618), (122, 55636), (135, 55693), (137, 55696), (146, 55753),

Gene: DrYang\_97 Start: 63553, Stop: 64098, Start Num: 89  
Candidate Starts for DrYang\_97:  
(45, 63412), (81, 63526), (Start: 89 @63553 has 207 MA's), (118, 63694), (120, 63715), (121, 63721), (126, 63751), (132, 63775), (138, 63790), (148, 63853),

Gene: Dropshot\_45 Start: 28373, Stop: 28867, Start Num: 89  
Candidate Starts for Dropshot\_45:  
(Start: 89 @28373 has 207 MA's), (132, 28595), (139, 28616), (161, 28721),

Gene: Dulcita\_68 Start: 43863, Stop: 44309, Start Num: 88  
Candidate Starts for Dulcita\_68:  
(76, 43827), (Start: 88 @43863 has 24 MA's), (108, 43947), (120, 44028), (124, 44052), (161, 44211),

Gene: Dumbo\_100 Start: 59489, Stop: 59929, Start Num: 92  
Candidate Starts for Dumbo\_100:  
(Start: 92 @59489 has 121 MA's), (112, 59588), (137, 59720), (148, 59786), (161, 59834),

Gene: DuncansLeg\_84 Start: 55425, Stop: 55808, Start Num: 93  
Candidate Starts for DuncansLeg\_84:  
(Start: 93 @55425 has 69 MA's), (106, 55485), (107, 55497), (111, 55518), (119, 55578), (137, 55656), (156, 55746),

Gene: Dusk\_97 Start: 59453, Stop: 59893, Start Num: 92  
Candidate Starts for Dusk\_97:  
(Start: 92 @59453 has 121 MA's), (112, 59552), (137, 59684), (148, 59750), (161, 59798),

Gene: Dusty\_122 Start: 70841, Stop: 71350, Start Num: 89  
Candidate Starts for Dusty\_122:  
(Start: 89 @70841 has 207 MA's), (97, 70856), (101, 70865), (132, 71063), (161, 71189), (167, 71240), (175, 71300),

Gene: DyoEdafos\_87 Start: 54732, Stop: 55139, Start Num: 93  
Candidate Starts for DyoEdafos\_87:  
(Start: 93 @54732 has 69 MA's), (107, 54804), (111, 54825), (119, 54879), (135, 54954), (137, 54957),

Gene: E1\_47 Start: 31132, Stop: 31596, Start Num: 95  
Candidate Starts for E1\_47:  
(Start: 95 @31132 has 6 MA's), (111, 31222), (113, 31228), (121, 31291), (134, 31351),



Gene: E6\_53 Start: 34060, Stop: 34527, Start Num: 95

Candidate Starts for E6\_53:

(34, 33853), (36, 33862), (46, 33910), (47, 33913), (Start: 95 @34060 has 6 MA's), (111, 34150), (121, 34219), (134, 34279), (154, 34372),

Gene: EarickHC\_65 Start: 40496, Stop: 41002, Start Num: 89

Candidate Starts for EarickHC\_65:

(Start: 89 @40496 has 207 MA's), (97, 40511), (132, 40718), (150, 40802), (161, 40844),

Gene: EastWest\_38 Start: 30167, Stop: 30706, Start Num: 91

Candidate Starts for EastWest\_38:

(Start: 86 @30161 has 1 MA's), (Start: 91 @30167 has 7 MA's), (161, 30512),

Gene: Eastland\_45 Start: 30656, Stop: 31135, Start Num: 89

Candidate Starts for Eastland\_45:

(Start: 89 @30656 has 207 MA's), (146, 30947),

Gene: Easy2Say\_100 Start: 59925, Stop: 60365, Start Num: 92

Candidate Starts for Easy2Say\_100:

(32, 59724), (33, 59727), (Start: 38 @59754 has 1 MA's), (40, 59757), (47, 59799), (62, 59853), (Start: 92 @59925 has 121 MA's), (112, 60024), (137, 60156), (148, 60222), (161, 60270),

Gene: EdgarPoe\_101 Start: 64215, Stop: 64784, Start Num: 89

Candidate Starts for EdgarPoe\_101:

(Start: 89 @64215 has 207 MA's), (108, 64296), (119, 64371), (126, 64413), (129, 64425), (132, 64437), (134, 64443), (137, 64449), (150, 64521), (161, 64563),

Gene: Edmundo\_14 Start: 9885, Stop: 10643, Start Num: 89

Candidate Starts for Edmundo\_14:

(Start: 89 @9885 has 207 MA's), (130, 10098), (132, 10107), (161, 10233), (181, 10446),

Gene: Eesa\_52 Start: 34727, Stop: 35206, Start Num: 89

Candidate Starts for Eesa\_52:

(Start: 89 @34727 has 207 MA's), (108, 34808), (122, 34901), (132, 34949), (134, 34955), (150, 35033), (163, 35084),

Gene: Eklok\_45 Start: 30455, Stop: 30934, Start Num: 89

Candidate Starts for Eklok\_45:

(Start: 89 @30455 has 207 MA's), (146, 30746),

Gene: Elite2014\_99 Start: 59100, Stop: 59540, Start Num: 92

Candidate Starts for Elite2014\_99:

(Start: 92 @59100 has 121 MA's), (112, 59199), (137, 59331), (148, 59397), (161, 59445),

Gene: Ellson\_83 Start: 55740, Stop: 56123, Start Num: 93

Candidate Starts for Ellson\_83:

(Start: 93 @55740 has 69 MA's), (106, 55800), (107, 55812), (111, 55833), (119, 55893), (137, 55971), (156, 56061),

Gene: Elph10\_100 Start: 59135, Stop: 59575, Start Num: 92

Candidate Starts for Elph10\_100:

(Start: 92 @59135 has 121 MA's), (112, 59234), (126, 59330), (137, 59366), (148, 59432), (161, 59480),

Gene: Emmina\_100 Start: 58876, Stop: 59316, Start Num: 92

Candidate Starts for Emmina\_100:

(Start: 92 @58876 has 121 MA's), (112, 58975), (126, 59071), (137, 59107), (148, 59173), (161, 59221),

Gene: Enceladus\_79 Start: 53493, Stop: 53876, Start Num: 93

Candidate Starts for Enceladus\_79:

(Start: 93 @53493 has 69 MA's), (111, 53586), (119, 53640), (122, 53658), (137, 53718), (146, 53775),

Gene: Engineer\_128 Start: 72271, Stop: 72780, Start Num: 89

Candidate Starts for Engineer\_128:

(Start: 89 @72271 has 207 MA's), (97, 72286), (101, 72295), (132, 72493), (161, 72619), (167, 72670), (175, 72730),

Gene: EniyanLRS\_74 Start: 48895, Stop: 49284, Start Num: 91

Candidate Starts for EniyanLRS\_74:

(Start: 91 @48895 has 7 MA's), (111, 48988), (112, 48991), (119, 49042), (122, 49060), (134, 49114), (147, 49180), (161, 49234),

Gene: Estes\_75 Start: 46028, Stop: 46465, Start Num: 88

Candidate Starts for Estes\_75:

(Start: 88 @46028 has 24 MA's), (108, 46112), (120, 46193),

Gene: Eureka\_99 Start: 60064, Stop: 60504, Start Num: 92

Candidate Starts for Eureka\_99:

(Start: 92 @60064 has 121 MA's), (112, 60163), (126, 60259), (137, 60295), (148, 60361), (161, 60409),

Gene: EvePickles\_69 Start: 38354, Stop: 38866, Start Num: 89

Candidate Starts for EvePickles\_69:

(Start: 89 @38354 has 207 MA's), (108, 38435), (128, 38573),

Gene: Faith1\_85 Start: 55471, Stop: 55857, Start Num: 93

Candidate Starts for Faith1\_85:

(Start: 93 @55471 has 69 MA's), (105, 55522), (107, 55543), (111, 55564), (118, 55603), (119, 55618), (122, 55636), (135, 55693), (137, 55696), (146, 55753),

Gene: Faja\_73 Start: 39133, Stop: 39654, Start Num: 89

Candidate Starts for Faja\_73:

(Start: 89 @39133 has 207 MA's), (108, 39214), (128, 39352),

Gene: Filch\_102 Start: 59448, Stop: 59888, Start Num: 92

Candidate Starts for Filch\_102:

(Start: 92 @59448 has 121 MA's), (112, 59547), (126, 59643), (137, 59679), (148, 59745), (161, 59793),

Gene: Finemlucis\_85 Start: 56160, Stop: 56546, Start Num: 93

Candidate Starts for Finemlucis\_85:

(82, 56142), (Start: 93 @56160 has 69 MA's), (105, 56211), (107, 56232), (111, 56253), (118, 56292), (119, 56307), (122, 56325), (135, 56382), (137, 56385), (146, 56442),

Gene: Finkle\_70 Start: 43173, Stop: 43691, Start Num: 91  
Candidate Starts for Finkle\_70:  
(68, 43113), (Start: 91 @43173 has 7 MA's), (103, 43206),

Gene: Finnry\_83 Start: 55427, Stop: 55810, Start Num: 93  
Candidate Starts for Finnry\_83:  
(Start: 93 @55427 has 69 MA's), (106, 55487), (107, 55499), (111, 55520), (119, 55580), (122, 55598), (137, 55658), (156, 55748),

Gene: FireRed\_103 Start: 60340, Stop: 60780, Start Num: 92  
Candidate Starts for FireRed\_103:  
(Start: 92 @60340 has 121 MA's), (112, 60439), (126, 60535), (137, 60571), (148, 60637), (161, 60685),

Gene: Fireman\_67 Start: 42549, Stop: 43052, Start Num: 89  
Candidate Starts for Fireman\_67:  
(Start: 89 @42549 has 207 MA's), (122, 42723), (132, 42771), (161, 42897),

Gene: Flypotenuse\_96 Start: 58525, Stop: 58965, Start Num: 92  
Candidate Starts for Flypotenuse\_96:  
(32, 58324), (33, 58327), (Start: 38 @58354 has 1 MA's), (40, 58357), (47, 58399), (62, 58453), (Start: 92 @58525 has 121 MA's), (108, 58606), (112, 58624), (137, 58756), (148, 58822), (161, 58870),

Gene: Forthebois\_13 Start: 6604, Stop: 6182, Start Num: 88  
Candidate Starts for Forthebois\_13:  
(Start: 88 @6604 has 24 MA's), (102, 6571), (118, 6457), (126, 6400), (146, 6307), (157, 6268),

Gene: Franzy\_35 Start: 30564, Stop: 31142, Start Num: 89  
Candidate Starts for Franzy\_35:  
(60, 30480), (Start: 89 @30564 has 207 MA's), (101, 30588), (103, 30600), (124, 30750), (132, 30786), (137, 30798), (161, 30912), (178, 31023),

Gene: G4\_64 Start: 35908, Stop: 36363, Start Num: 95  
Candidate Starts for G4\_64:  
(36, 35710), (46, 35758), (47, 35761), (Start: 95 @35908 has 6 MA's), (111, 35998), (121, 36067), (134, 36127),

Gene: Gabriela\_85 Start: 54817, Stop: 55203, Start Num: 93  
Candidate Starts for Gabriela\_85:  
(Start: 93 @54817 has 69 MA's), (105, 54868), (107, 54889), (111, 54910), (118, 54949), (119, 54964), (122, 54982), (135, 55039), (137, 55042), (146, 55099),

Gene: Gage\_102 Start: 59596, Stop: 60036, Start Num: 92  
Candidate Starts for Gage\_102:  
(32, 59395), (33, 59398), (Start: 38 @59425 has 1 MA's), (40, 59428), (47, 59470), (62, 59524), (Start: 92 @59596 has 121 MA's), (112, 59695), (137, 59827), (148, 59893), (161, 59941),

Gene: Galaxy\_52 Start: 33030, Stop: 33548, Start Num: 89  
Candidate Starts for Galaxy\_52:

(Start: 89 @33030 has 207 MA's), (108, 33111), (111, 33126), (132, 33252), (134, 33258), (137, 33264), (150, 33336), (182, 33495),

Gene: Ganandorf\_63 Start: 40592, Stop: 41098, Start Num: 89

Candidate Starts for Ganandorf\_63:

(Start: 89 @40592 has 207 MA's), (97, 40607), (132, 40814), (150, 40898), (161, 40940),

Gene: Gardann\_85 Start: 55306, Stop: 55692, Start Num: 93

Candidate Starts for Gardann\_85:

(Start: 93 @55306 has 69 MA's), (105, 55357), (107, 55378), (111, 55399), (118, 55438), (119, 55453), (122, 55471), (135, 55528), (137, 55531), (146, 55588),

Gene: GardenSalsa\_76 Start: 46450, Stop: 46887, Start Num: 88

Candidate Starts for GardenSalsa\_76:

(Start: 88 @46450 has 24 MA's), (108, 46534), (120, 46615),

Gene: Gator\_98 Start: 59381, Stop: 59821, Start Num: 92

Candidate Starts for Gator\_98:

(32, 59180), (33, 59183), (Start: 38 @59210 has 1 MA's), (40, 59213), (47, 59255), (62, 59309), (Start: 92 @59381 has 121 MA's), (108, 59462), (112, 59480), (137, 59612), (148, 59678), (161, 59726),

Gene: Gemini\_105 Start: 59975, Stop: 60415, Start Num: 92

Candidate Starts for Gemini\_105:

(32, 59774), (33, 59777), (Start: 38 @59804 has 1 MA's), (40, 59807), (47, 59849), (62, 59903), (Start: 92 @59975 has 121 MA's), (112, 60074), (137, 60206), (148, 60272), (161, 60320),

Gene: GenevaB15\_75 Start: 45899, Stop: 46336, Start Num: 88

Candidate Starts for GenevaB15\_75:

(Start: 88 @45899 has 24 MA's), (108, 45983), (120, 46064),

Gene: Gilgamesh\_89 Start: 83492, Stop: 83953, Start Num: 89

Candidate Starts for Gilgamesh\_89:

(Start: 89 @83492 has 207 MA's), (122, 83666), (132, 83714), (137, 83726),

Gene: Gina\_68 Start: 40668, Stop: 41171, Start Num: 89

Candidate Starts for Gina\_68:

(Start: 89 @40668 has 207 MA's), (132, 40890), (150, 40974),

Gene: Gingerbug\_42 Start: 27000, Stop: 26503, Start Num: 89

Candidate Starts for Gingerbug\_42:

(9, 27522), (19, 27312), (23, 27285), (24, 27270), (Start: 89 @27000 has 207 MA's), (108, 26919), (120, 26838), (161, 26652),

Gene: Glaske16\_68 Start: 43862, Stop: 44308, Start Num: 88

Candidate Starts for Glaske16\_68:

(76, 43826), (Start: 88 @43862 has 24 MA's), (108, 43946), (120, 44027), (124, 44051), (161, 44210),

Gene: Glexan\_99 Start: 59655, Stop: 60095, Start Num: 92

Candidate Starts for Glexan\_99:

(32, 59454), (33, 59457), (Start: 38 @59484 has 1 MA's), (40, 59487), (47, 59529), (62, 59583), (Start: 92 @59655 has 121 MA's), (108, 59736), (112, 59754), (137, 59886), (148, 59952), (161, 60000),

Gene: Globfish\_71 Start: 37764, Stop: 38243, Start Num: 96

Candidate Starts for Globfish\_71:

(Start: 96 @37764 has 4 MA's), (141, 38007), (144, 38022), (148, 38058), (150, 38064),

Gene: Goib\_55 Start: 36148, Stop: 36654, Start Num: 89

Candidate Starts for Goib\_55:

(Start: 89 @36148 has 207 MA's), (120, 36310), (137, 36382), (150, 36454), (161, 36496),

Gene: Goku\_99 Start: 59793, Stop: 60233, Start Num: 92

Candidate Starts for Goku\_99:

(Start: 92 @59793 has 121 MA's), (112, 59892), (126, 59988), (137, 60024), (148, 60090), (161, 60138),

Gene: GoldenSpark\_104 Start: 59458, Stop: 59898, Start Num: 92

Candidate Starts for GoldenSpark\_104:

(32, 59257), (33, 59260), (Start: 38 @59287 has 1 MA's), (40, 59290), (47, 59332), (62, 59386), (Start: 92 @59458 has 121 MA's), (112, 59557), (137, 59689), (148, 59755), (161, 59803),

Gene: Goldilocks\_103 Start: 59375, Stop: 59815, Start Num: 92

Candidate Starts for Goldilocks\_103:

(Start: 92 @59375 has 121 MA's), (112, 59474), (137, 59606), (148, 59672), (161, 59720),

Gene: GooberAzure\_103 Start: 59458, Stop: 59898, Start Num: 92

Candidate Starts for GooberAzure\_103:

(32, 59257), (33, 59260), (Start: 38 @59287 has 1 MA's), (40, 59290), (47, 59332), (62, 59386), (Start: 92 @59458 has 121 MA's), (112, 59557), (137, 59689), (148, 59755), (161, 59803),

Gene: Gorpy\_70 Start: 38991, Stop: 39509, Start Num: 89

Candidate Starts for Gorpy\_70:

(Start: 89 @38991 has 207 MA's), (113, 39093), (128, 39210),

Gene: GravityBall\_37 Start: 30922, Stop: 31446, Start Num: 101

Candidate Starts for GravityBall\_37:

(Start: 89 @30898 has 207 MA's), (101, 30922), (132, 31120), (158, 31234), (161, 31246), (178, 31324),

Gene: Grekaycon\_37 Start: 30822, Stop: 31370, Start Num: 89

Candidate Starts for Grekaycon\_37:

(58, 30735), (Start: 89 @30822 has 207 MA's), (101, 30846), (124, 31008), (132, 31044), (156, 31149), (161, 31170), (178, 31254),

Gene: Gsput1\_47 Start: 34521, Stop: 34976, Start Num: 89

Candidate Starts for Gsput1\_47:

(10, 34035), (17, 34152), (20, 34212), (37, 34338), (42, 34353), (44, 34377), (51, 34407), (Start: 89 @34521 has 207 MA's), (110, 34608), (117, 34632), (122, 34686), (142, 34764), (162, 34860),

Gene: GuuelaD\_83 Start: 55445, Stop: 55831, Start Num: 93

Candidate Starts for GuuelaD\_83:

(Start: 93 @55445 has 69 MA's), (105, 55496), (111, 55538), (118, 55577), (119, 55592), (122, 55610), (135, 55667), (137, 55670), (146, 55727), (156, 55763),

Gene: HFrancette\_46 Start: 31430, Stop: 31909, Start Num: 89

Candidate Starts for HFrancette\_46:

(1, 30659), (11, 30968), (56, 31334), (61, 31352), (Start: 89 @31430 has 207 MA's), (132, 31652), (146, 31721),

Gene: Hafay\_86 Start: 55401, Stop: 55784, Start Num: 93

Candidate Starts for Hafay\_86:

(Start: 93 @55401 has 69 MA's), (105, 55452), (107, 55473), (111, 55494), (118, 55533), (119, 55548), (122, 55566), (135, 55623), (137, 55626), (146, 55683), (156, 55719),

Gene: Halena\_80 Start: 52763, Stop: 53146, Start Num: 93

Candidate Starts for Halena\_80:

(Start: 93 @52763 has 69 MA's), (111, 52856), (119, 52910), (122, 52928), (137, 52988), (146, 53045),

Gene: HanKaySha\_101 Start: 59845, Stop: 60285, Start Num: 92

Candidate Starts for HanKaySha\_101:

(Start: 92 @59845 has 121 MA's), (112, 59944), (126, 60040), (137, 60076), (148, 60142), (161, 60190),

Gene: Harella\_100 Start: 60171, Stop: 60611, Start Num: 92

Candidate Starts for Harella\_100:

(32, 59970), (33, 59973), (Start: 38 @60000 has 1 MA's), (40, 60003), (47, 60045), (62, 60099), (Start: 92 @60171 has 121 MA's), (108, 60252), (112, 60270), (137, 60402), (148, 60468), (161, 60516),

Gene: Henry\_97 Start: 59498, Stop: 59938, Start Num: 92

Candidate Starts for Henry\_97:

(Start: 92 @59498 has 121 MA's), (112, 59597), (126, 59693), (137, 59729), (148, 59795), (161, 59843),

Gene: Hermeonysus\_64 Start: 40487, Stop: 40993, Start Num: 89

Candidate Starts for Hermeonysus\_64:

(Start: 89 @40487 has 207 MA's), (97, 40502), (132, 40709), (150, 40793), (161, 40835),

Gene: Hestia\_64 Start: 35356, Stop: 35877, Start Num: 89

Candidate Starts for Hestia\_64:

(Start: 89 @35356 has 207 MA's), (108, 35437), (128, 35575),

Gene: Highbury\_97 Start: 58002, Stop: 58442, Start Num: 92

Candidate Starts for Highbury\_97:

(43, 57852), (50, 57882), (65, 57930), (69, 57945), (74, 57957), (Start: 92 @58002 has 121 MA's), (112, 58101), (126, 58197), (137, 58233), (148, 58299), (161, 58347),

Gene: Hillester\_76 Start: 38827, Stop: 39300, Start Num: 96

Candidate Starts for Hillester\_76:

(Start: 96 @38827 has 4 MA's), (105, 38872), (130, 39028),

Gene: Hirko\_37 Start: 32245, Stop: 32802, Start Num: 89

Candidate Starts for Hirko\_37:

(Start: 89 @32245 has 207 MA's), (120, 32407), (132, 32467), (146, 32536),

Gene: Holt\_105 Start: 59872, Stop: 60312, Start Num: 92

Candidate Starts for Holt\_105:

(32, 59671), (33, 59674), (Start: 38 @59701 has 1 MA's), (40, 59704), (47, 59746), (62, 59800), (Start: 92 @59872 has 121 MA's), (112, 59971), (137, 60103), (148, 60169), (161, 60217),

Gene: Honeyfin\_65 Start: 40747, Stop: 41253, Start Num: 89

Candidate Starts for Honeyfin\_65:

(Start: 89 @40747 has 207 MA's), (97, 40762), (132, 40969), (150, 41053), (161, 41095),

Gene: Hoonter\_103 Start: 59949, Stop: 60389, Start Num: 92

Candidate Starts for Hoonter\_103:

(Start: 92 @59949 has 121 MA's), (112, 60048), (126, 60144), (137, 60180), (148, 60246), (161, 60294),

Gene: Hopecy\_101 Start: 60455, Stop: 60895, Start Num: 92

Candidate Starts for Hopecy\_101:

(Start: 92 @60455 has 121 MA's), (112, 60554), (126, 60650), (137, 60686), (148, 60752), (161, 60800),

Gene: HufflyPuff\_102 Start: 60566, Stop: 61006, Start Num: 92

Candidate Starts for HufflyPuff\_102:

(67, 60509), (Start: 92 @60566 has 121 MA's), (112, 60665), (137, 60797), (148, 60863), (161, 60911),

Gene: Huffly\_55 Start: 35610, Stop: 36101, Start Num: 89

Candidate Starts for Huffly\_55:

(Start: 89 @35610 has 207 MA's), (105, 35664), (120, 35772), (137, 35844), (150, 35916),

Gene: Hum25\_56 Start: 35235, Stop: 35735, Start Num: 89

Candidate Starts for Hum25\_56:

(Start: 89 @35235 has 207 MA's), (101, 35259), (108, 35316), (122, 35409), (132, 35457), (156, 35562), (161, 35583),

Gene: HumptyDumpty\_101 Start: 64018, Stop: 64587, Start Num: 89

Candidate Starts for HumptyDumpty\_101:

(Start: 89 @64018 has 207 MA's), (108, 64099), (119, 64174), (126, 64216), (132, 64240), (134, 64246), (137, 64252), (150, 64324), (156, 64345), (161, 64366),

Gene: IHOP\_98 Start: 59174, Stop: 59614, Start Num: 92

Candidate Starts for IHOP\_98:

(32, 58973), (33, 58976), (Start: 38 @59003 has 1 MA's), (40, 59006), (47, 59048), (58, 59090), (62, 59102), (Start: 92 @59174 has 121 MA's), (108, 59255), (112, 59273), (137, 59405), (148, 59471), (161, 59519),

Gene: IPhane7\_67 Start: 43867, Stop: 44313, Start Num: 88

Candidate Starts for IPhane7\_67:

(76, 43831), (Start: 88 @43867 has 24 MA's), (108, 43951), (120, 44032), (124, 44056), (161, 44215),

Gene: Icee\_101 Start: 58982, Stop: 59422, Start Num: 92

Candidate Starts for Icee\_101:

(32, 58781), (33, 58784), (Start: 38 @58811 has 1 MA's), (40, 58814), (47, 58856), (62, 58910), (Start: 92 @58982 has 121 MA's), (108, 59063), (112, 59081), (137, 59213), (148, 59279), (161, 59327),

Gene: Ididsumtinwong\_47 Start: 30484, Stop: 30948, Start Num: 89

Candidate Starts for Ididsumtinwong\_47:

(Start: 89 @30484 has 207 MA's), (120, 30646), (121, 30652),

Gene: Ignacio\_45 Start: 31333, Stop: 31812, Start Num: 89

Candidate Starts for Ignacio\_45:

(1, 30562), (11, 30871), (56, 31237), (61, 31255), (Start: 89 @31333 has 207 MA's), (132, 31555), (146, 31624),

Gene: Inca\_97 Start: 57663, Stop: 58103, Start Num: 92

Candidate Starts for Inca\_97:

(32, 57462), (33, 57465), (Start: 38 @57492 has 1 MA's), (40, 57495), (47, 57537), (62, 57591), (Start: 92 @57663 has 121 MA's), (108, 57744), (112, 57762), (137, 57894), (148, 57960), (161, 58008),

Gene: Isolde\_70 Start: 38113, Stop: 38619, Start Num: 89

Candidate Starts for Isolde\_70:

(Start: 89 @38113 has 207 MA's), (128, 38332),

Gene: Itos\_85 Start: 54377, Stop: 54763, Start Num: 93

Candidate Starts for Itos\_85:

(Start: 93 @54377 has 69 MA's), (105, 54428), (107, 54449), (111, 54470), (118, 54509), (119, 54524), (122, 54542), (135, 54599), (137, 54602), (146, 54659),

Gene: JKerns\_37 Start: 30786, Stop: 31343, Start Num: 89

Candidate Starts for JKerns\_37:

(58, 30699), (Start: 89 @30786 has 207 MA's), (101, 30810), (130, 30999), (132, 31008), (156, 31113), (158, 31122), (161, 31134), (178, 31227),

Gene: JaNo\_100 Start: 63989, Stop: 64558, Start Num: 89

Candidate Starts for JaNo\_100:

(Start: 89 @63989 has 207 MA's), (108, 64070), (119, 64145), (126, 64187), (132, 64211), (134, 64217), (137, 64223), (150, 64295), (156, 64316), (161, 64337),

Gene: Jace\_65 Start: 39601, Stop: 40059, Start Num: 94

Candidate Starts for Jace\_65:

(Start: 94 @39601 has 6 MA's), (97, 39613), (112, 39697), (129, 39811), (131, 39823), (133, 39829), (136, 39835),

Gene: Jamun\_52 Start: 34262, Stop: 34783, Start Num: 89

Candidate Starts for Jamun\_52:

(Start: 89 @34262 has 207 MA's), (132, 34484), (134, 34490), (137, 34496), (146, 34553), (163, 34619), (182, 34730),

Gene: Jawnski\_35 Start: 30570, Stop: 31145, Start Num: 89

Candidate Starts for Jawnski\_35:

(Start: 89 @30570 has 207 MA's), (101, 30594), (132, 30792), (158, 30906), (178, 31050),

Gene: JayCookie\_102 Start: 64608, Stop: 65165, Start Num: 89

Candidate Starts for JayCookie\_102:

(Start: 89 @64608 has 207 MA's), (101, 64632), (108, 64689), (120, 64770), (126, 64806), (129, 64818), (132, 64830), (134, 64836), (137, 64842), (150, 64914), (161, 64956),

Gene: Jayden\_65 Start: 41095, Stop: 41595, Start Num: 87

Candidate Starts for Jayden\_65:

(48, 40975), (84, 41092), (Start: 87 @41095 has 1 MA's), (122, 41269), (132, 41317), (140, 41341), (150, 41401), (161, 41443),



Gene: JeTaime\_99 Start: 59281, Stop: 59721, Start Num: 92  
Candidate Starts for JeTaime\_99:  
(62, 59209), (Start: 92 @59281 has 121 MA's), (108, 59362), (112, 59380), (137, 59512), (148, 59578), (161, 59626),

Gene: Jefe\_64 Start: 40545, Stop: 41048, Start Num: 89  
Candidate Starts for Jefe\_64:  
(Start: 89 @40545 has 207 MA's), (97, 40560), (132, 40767), (150, 40851), (161, 40893),

Gene: Jinkies\_44 Start: 33571, Stop: 34011, Start Num: 96  
Candidate Starts for Jinkies\_44:  
(Start: 96 @33571 has 4 MA's), (109, 33646),

Gene: Jobypre\_85 Start: 55406, Stop: 55789, Start Num: 93  
Candidate Starts for Jobypre\_85:  
(Start: 93 @55406 has 69 MA's), (106, 55466), (107, 55478), (111, 55499), (119, 55559), (122, 55577), (137, 55637), (156, 55727),

Gene: JoeDirt\_83 Start: 54091, Stop: 54474, Start Num: 93  
Candidate Starts for JoeDirt\_83:  
(Start: 93 @54091 has 69 MA's), (111, 54184), (119, 54238), (122, 54256), (137, 54316), (146, 54373),

Gene: Jollipop\_65 Start: 40927, Stop: 41430, Start Num: 89  
Candidate Starts for Jollipop\_65:  
(Start: 89 @40927 has 207 MA's), (97, 40942), (132, 41149), (150, 41233), (161, 41275),

Gene: JonJames\_135 Start: 77869, Stop: 78390, Start Num: 89  
Candidate Starts for JonJames\_135:  
(Start: 89 @77869 has 207 MA's), (Start: 96 @77881 has 4 MA's), (101, 77893), (105, 77923), (111, 77965), (112, 77968), (134, 78097), (172, 78334),

Gene: Jordan\_37 Start: 30836, Stop: 31393, Start Num: 89  
Candidate Starts for Jordan\_37:  
(58, 30749), (Start: 89 @30836 has 207 MA's), (101, 30860), (130, 31049), (132, 31058), (156, 31163), (158, 31172), (161, 31184), (178, 31277),

Gene: Jubie\_83 Start: 55541, Stop: 55924, Start Num: 93  
Candidate Starts for Jubie\_83:  
(Start: 93 @55541 has 69 MA's), (106, 55601), (107, 55613), (111, 55634), (119, 55694), (122, 55712), (137, 55772), (156, 55862),

Gene: Juno112\_55 Start: 33508, Stop: 34017, Start Num: 89  
Candidate Starts for Juno112\_55:  
(Start: 89 @33508 has 207 MA's), (104, 33547), (108, 33589), (115, 33622), (122, 33682), (132, 33730), (137, 33742), (146, 33799), (150, 33814), (156, 33835), (161, 33856),

Gene: KBurrousTX\_97 Start: 64742, Stop: 65284, Start Num: 89  
Candidate Starts for KBurrousTX\_97:  
(69, 64694), (Start: 89 @64742 has 207 MA's), (105, 64796), (126, 64940), (132, 64964), (134, 64970), (137, 64976), (150, 65048), (161, 65090),

Gene: KHumphrey\_54 Start: 33396, Stop: 33905, Start Num: 89

Candidate Starts for KHumphrey\_54:

(Start: 89 @33396 has 207 MA's), (104, 33435), (108, 33477), (115, 33510), (122, 33570), (132, 33618), (137, 33630), (146, 33687), (150, 33702), (156, 33723), (161, 33744),

Gene: Kabreeze\_101 Start: 64075, Stop: 64644, Start Num: 89

Candidate Starts for Kabreeze\_101:

(Start: 89 @64075 has 207 MA's), (108, 64156), (119, 64231), (126, 64273), (132, 64297), (134, 64303), (137, 64309), (150, 64381), (156, 64402), (161, 64423),

Gene: Kahlid\_85 Start: 55257, Stop: 55643, Start Num: 93

Candidate Starts for Kahlid\_85:

(Start: 93 @55257 has 69 MA's), (105, 55308), (107, 55329), (111, 55350), (118, 55389), (119, 55404), (122, 55422), (135, 55479), (137, 55482), (146, 55539),

Gene: KaiHaiDragon\_65 Start: 40496, Stop: 41002, Start Num: 89

Candidate Starts for KaiHaiDragon\_65:

(Start: 89 @40496 has 207 MA's), (97, 40511), (132, 40718), (150, 40802), (161, 40844),

Gene: Kanye\_97 Start: 59707, Stop: 60147, Start Num: 92

Candidate Starts for Kanye\_97:

(Start: 92 @59707 has 121 MA's), (112, 59806), (126, 59902), (137, 59938), (148, 60004), (161, 60052),

Gene: Kharcho\_81 Start: 48261, Stop: 48899, Start Num: 89

Candidate Starts for Kharcho\_81:

(Start: 89 @48261 has 207 MA's), (108, 48342), (150, 48564),

Gene: Khuang\_62 Start: 36400, Stop: 36924, Start Num: 89

Candidate Starts for Khuang\_62:

(Start: 89 @36400 has 207 MA's), (126, 36598), (137, 36634), (156, 36727),

Gene: Kimchi\_104 Start: 59599, Stop: 60039, Start Num: 92

Candidate Starts for Kimchi\_104:

(32, 59398), (33, 59401), (Start: 38 @59428 has 1 MA's), (40, 59431), (47, 59473), (62, 59527), (Start: 92 @59599 has 121 MA's), (112, 59698), (137, 59830), (148, 59896), (161, 59944),

Gene: King2\_35 Start: 30559, Stop: 31137, Start Num: 89

Candidate Starts for King2\_35:

(Start: 89 @30559 has 207 MA's), (101, 30583), (103, 30595), (120, 30721), (122, 30733), (124, 30745), (132, 30781), (137, 30793), (161, 30907), (178, 31018),

Gene: Kingsolomon\_81 Start: 55183, Stop: 55566, Start Num: 93

Candidate Starts for Kingsolomon\_81:

(Start: 93 @55183 has 69 MA's), (106, 55243), (107, 55255), (111, 55276), (119, 55336), (122, 55354), (137, 55414), (156, 55504),

Gene: Klevey\_43 Start: 31378, Stop: 31935, Start Num: 89

Candidate Starts for Klevey\_43:

(Start: 89 @31378 has 207 MA's), (132, 31600), (146, 31669),

Gene: Kostya\_100 Start: 59276, Stop: 59716, Start Num: 92

Candidate Starts for Kostya\_100:

(32, 59075), (33, 59078), (Start: 38 @59105 has 1 MA's), (40, 59108), (47, 59150), (62, 59204), (Start: 92 @59276 has 121 MA's), (112, 59375), (137, 59507), (148, 59573), (161, 59621),

Gene: Kovu\_15 Start: 9876, Stop: 10469, Start Num: 89

Candidate Starts for Kovu\_15:

(Start: 89 @9876 has 207 MA's), (108, 9957), (124, 10062), (126, 10074), (139, 10119), (161, 10224),

Gene: Kowalski\_63 Start: 40561, Stop: 41067, Start Num: 89

Candidate Starts for Kowalski\_63:

(Start: 89 @40561 has 207 MA's), (97, 40576), (132, 40783), (150, 40867), (161, 40909),

Gene: Kozie\_60 Start: 40548, Stop: 41045, Start Num: 89

Candidate Starts for Kozie\_60:

(Start: 89 @40548 has 207 MA's), (132, 40770), (150, 40854), (161, 40896),

Gene: Krypton555\_84 Start: 55452, Stop: 55835, Start Num: 93

Candidate Starts for Krypton555\_84:

(Start: 93 @55452 has 69 MA's), (106, 55512), (107, 55524), (111, 55545), (119, 55605), (122, 55623), (137, 55683), (156, 55773),

Gene: Kukla\_56 Start: 34866, Stop: 35303, Start Num: 89

Candidate Starts for Kukla\_56:

(Start: 89 @34866 has 207 MA's), (108, 34947), (147, 35160), (156, 35193),

Gene: Kuleana\_55 Start: 32730, Stop: 33242, Start Num: 89

Candidate Starts for Kuleana\_55:

(Start: 89 @32730 has 207 MA's), (126, 32928), (132, 32952), (134, 32958),

Gene: Kumao\_63 Start: 44478, Stop: 44960, Start Num: 88

Candidate Starts for Kumao\_63:

(Start: 88 @44478 has 24 MA's), (99, 44496), (101, 44502), (108, 44559), (129, 44688), (139, 44721), (161, 44826),

Gene: Kumotta\_55 Start: 31998, Stop: 32498, Start Num: 89

Candidate Starts for Kumotta\_55:

(Start: 89 @31998 has 207 MA's), (108, 32079), (111, 32094), (124, 32184), (126, 32196), (132, 32220), (161, 32346),

Gene: LeBron\_81 Start: 52762, Stop: 53145, Start Num: 93

Candidate Starts for LeBron\_81:

(Start: 93 @52762 has 69 MA's), (111, 52855), (119, 52909), (122, 52927), (137, 52987), (146, 53044),

Gene: LeeroyJ\_37 Start: 30897, Stop: 31436, Start Num: 89

Candidate Starts for LeeroyJ\_37:

(Start: 89 @30897 has 207 MA's), (101, 30921), (132, 31119), (161, 31245), (179, 31344),

Gene: Leona\_54 Start: 33587, Stop: 34099, Start Num: 89

Candidate Starts for Leona\_54:

(Start: 89 @33587 has 207 MA's), (108, 33668), (115, 33701), (122, 33761), (132, 33809), (137, 33821), (146, 33878), (150, 33893), (156, 33914), (161, 33935),

Gene: Lesiram\_44 Start: 26454, Stop: 25951, Start Num: 89

Candidate Starts for Lesiram\_44:

(55, 26550), (Start: 89 @26454 has 207 MA's), (132, 26232), (161, 26106),

Gene: Lewan\_86 Start: 55312, Stop: 55698, Start Num: 93

Candidate Starts for Lewan\_86:

(Start: 93 @55312 has 69 MA's), (105, 55363), (107, 55384), (111, 55405), (118, 55444), (119, 55459), (122, 55477), (135, 55534), (137, 55537), (146, 55594),

Gene: LilDestine\_84 Start: 55161, Stop: 55547, Start Num: 93

Candidate Starts for LilDestine\_84:

(Start: 93 @55161 has 69 MA's), (105, 55212), (107, 55233), (111, 55254), (118, 55293), (119, 55308), (122, 55326), (135, 55383), (137, 55386), (146, 55443),

Gene: Lilac\_102 Start: 60598, Stop: 61038, Start Num: 92

Candidate Starts for Lilac\_102:

(Start: 92 @60598 has 121 MA's), (112, 60697), (126, 60793), (137, 60829), (148, 60895), (161, 60943),

Gene: LilhomieP\_66 Start: 43867, Stop: 44313, Start Num: 88

Candidate Starts for LilhomieP\_66:

(76, 43831), (Start: 88 @43867 has 24 MA's), (108, 43951), (120, 44032), (124, 44056), (161, 44215),

Gene: Lilizi\_101 Start: 59884, Stop: 60324, Start Num: 92

Candidate Starts for Lilizi\_101:

(Start: 92 @59884 has 121 MA's), (112, 59983), (126, 60079), (137, 60115), (148, 60181), (161, 60229),

Gene: Lilmac1015\_45 Start: 31895, Stop: 32452, Start Num: 89

Candidate Starts for Lilmac1015\_45:

(Start: 89 @31895 has 207 MA's), (132, 32117), (146, 32186),

Gene: Lilpickle\_99 Start: 59100, Stop: 59540, Start Num: 92

Candidate Starts for Lilpickle\_99:

(Start: 92 @59100 has 121 MA's), (112, 59199), (137, 59331), (148, 59397), (161, 59445),

Gene: Linus\_101 Start: 64523, Stop: 65092, Start Num: 89

Candidate Starts for Linus\_101:

(Start: 89 @64523 has 207 MA's), (108, 64604), (119, 64679), (126, 64721), (129, 64733), (132, 64745), (134, 64751), (137, 64757), (150, 64829), (156, 64850), (161, 64871),

Gene: LittleFortune\_66 Start: 40852, Stop: 41358, Start Num: 89

Candidate Starts for LittleFortune\_66:

(Start: 89 @40852 has 207 MA's), (97, 40867), (132, 41074), (150, 41158), (161, 41200),

Gene: LittleTokyo\_52 Start: 31946, Stop: 32464, Start Num: 89

Candidate Starts for LittleTokyo\_52:

(30, 31730), (52, 31841), (Start: 89 @31946 has 207 MA's), (105, 32000), (108, 32027), (119, 32102), (122, 32120), (134, 32177), (137, 32183),

Gene: Loadrie\_83 Start: 55336, Stop: 55722, Start Num: 93

Candidate Starts for Loadrie\_83:

(Start: 93 @55336 has 69 MA's), (105, 55387), (107, 55408), (111, 55429), (118, 55468), (119, 55483), (122, 55501), (135, 55558), (137, 55561), (146, 55618),

Gene: Lolly9\_82 Start: 55259, Stop: 55642, Start Num: 93

Candidate Starts for Lolly9\_82:

(Start: 93 @55259 has 69 MA's), (106, 55319), (107, 55331), (111, 55352), (119, 55412), (122, 55430), (137, 55490), (156, 55580),

Gene: Lozinak\_126 Start: 71932, Stop: 72441, Start Num: 89

Candidate Starts for Lozinak\_126:

(Start: 89 @71932 has 207 MA's), (97, 71947), (101, 71956), (132, 72154), (161, 72280), (167, 72331), (175, 72391),

Gene: Lumos\_84 Start: 55403, Stop: 55786, Start Num: 93

Candidate Starts for Lumos\_84:

(Start: 93 @55403 has 69 MA's), (106, 55463), (107, 55475), (111, 55496), (119, 55556), (122, 55574), (137, 55634), (156, 55724),

Gene: Lymara\_99 Start: 62866, Stop: 63429, Start Num: 89

Candidate Starts for Lymara\_99:

(Start: 89 @62866 has 207 MA's), (101, 62890), (108, 62947), (120, 63028), (126, 63064), (132, 63088), (146, 63157), (150, 63172), (156, 63193), (161, 63214),

Gene: MAckerman\_79 Start: 52756, Stop: 53139, Start Num: 93

Candidate Starts for MAckerman\_79:

(Start: 93 @52756 has 69 MA's), (111, 52849), (119, 52903), (122, 52921), (137, 52981), (146, 53038),

Gene: MISSy\_101 Start: 60384, Stop: 60824, Start Num: 92

Candidate Starts for MISSy\_101:

(Start: 92 @60384 has 121 MA's), (112, 60483), (137, 60615), (148, 60681), (161, 60729),

Gene: MPhalcon\_101 Start: 59801, Stop: 60241, Start Num: 92

Candidate Starts for MPhalcon\_101:

(Start: 92 @59801 has 121 MA's), (112, 59900), (137, 60032), (148, 60098), (161, 60146),

Gene: MadamMonkfish\_100 Start: 59307, Stop: 59747, Start Num: 92

Candidate Starts for MadamMonkfish\_100:

(Start: 92 @59307 has 121 MA's), (112, 59406), (126, 59502), (137, 59538), (148, 59604), (161, 59652),

Gene: Manda\_101 Start: 59838, Stop: 60278, Start Num: 92

Candidate Starts for Manda\_101:

(43, 59691), (50, 59721), (65, 59769), (69, 59784), (74, 59796), (Start: 92 @59838 has 121 MA's), (108, 59919), (112, 59937), (137, 60069), (148, 60135), (161, 60183),

Gene: Margaery\_59 Start: 40552, Stop: 41055, Start Num: 89

Candidate Starts for Margaery\_59:

(55, 40465), (Start: 89 @40552 has 207 MA's), (122, 40726), (132, 40774), (150, 40858),

Gene: MargaretKali\_51 Start: 30616, Stop: 31116, Start Num: 89

Candidate Starts for MargaretKali\_51:

(Start: 89 @30616 has 207 MA's), (108, 30697), (111, 30712), (124, 30802), (126, 30814), (132, 30838), (161, 30964),

Gene: Marshmallow\_97 Start: 59796, Stop: 60236, Start Num: 92  
Candidate Starts for Marshmallow\_97:  
(32, 59595), (33, 59598), (Start: 38 @59625 has 1 MA's), (40, 59628), (47, 59670), (62, 59724), (Start: 92 @59796 has 121 MA's), (108, 59877), (112, 59895), (137, 60027), (148, 60093), (161, 60141),

Gene: Martha\_37 Start: 30823, Stop: 31371, Start Num: 89  
Candidate Starts for Martha\_37:  
(58, 30736), (Start: 89 @30823 has 207 MA's), (101, 30847), (122, 30997), (124, 31009), (132, 31045), (156, 31150), (161, 31171), (178, 31255),

Gene: MaryV\_78 Start: 48977, Stop: 49366, Start Num: 91  
Candidate Starts for MaryV\_78:  
(Start: 91 @48977 has 7 MA's), (112, 49073), (119, 49124), (122, 49142), (134, 49196), (147, 49262), (161, 49316),

Gene: Matzah\_62 Start: 41397, Stop: 41900, Start Num: 89  
Candidate Starts for Matzah\_62:  
(Start: 89 @41397 has 207 MA's), (122, 41571), (132, 41619), (134, 41625), (135, 41628), (150, 41703),

Gene: Maxxinista\_102 Start: 59784, Stop: 60224, Start Num: 92  
Candidate Starts for Maxxinista\_102:  
(Start: 92 @59784 has 121 MA's), (112, 59883), (126, 59979), (137, 60015), (148, 60081), (161, 60129),

Gene: Megan\_61 Start: 44759, Stop: 45289, Start Num: 86  
Candidate Starts for Megan\_61:  
(Start: 86 @44759 has 1 MA's), (Start: 89 @44762 has 207 MA's), (109, 44846), (132, 44984), (148, 45062), (150, 45068), (161, 45110),

Gene: MellowYellow\_93 Start: 57337, Stop: 56732, Start Num: 89  
Candidate Starts for MellowYellow\_93:  
(Start: 89 @57337 has 207 MA's), (105, 57283), (120, 57175), (147, 57043), (148, 57037), (150, 57031),

Gene: MementoMori\_61 Start: 40995, Stop: 41495, Start Num: 89  
Candidate Starts for MementoMori\_61:  
(71, 40959), (73, 40962), (Start: 89 @40995 has 207 MA's), (101, 41019), (132, 41217), (134, 41223), (135, 41226), (150, 41301),

Gene: MenE\_50 Start: 28803, Stop: 29294, Start Num: 89  
Candidate Starts for MenE\_50:  
(Start: 89 @28803 has 207 MA's), (132, 29025), (161, 29151),

Gene: Metamorphoo\_67 Start: 41843, Stop: 42346, Start Num: 89  
Candidate Starts for Metamorphoo\_67:  
(Start: 89 @41843 has 207 MA's), (122, 42017), (132, 42065), (161, 42191),

Gene: MidnightRain\_74 Start: 38613, Stop: 39080, Start Num: 96  
Candidate Starts for MidnightRain\_74:  
(Start: 96 @38613 has 4 MA's), (105, 38658), (130, 38814),

Gene: Miley16\_85 Start: 55471, Stop: 55857, Start Num: 93

Candidate Starts for Miley16\_85:

(Start: 93 @55471 has 69 MA's), (105, 55522), (107, 55543), (111, 55564), (118, 55603), (119, 55618), (122, 55636), (135, 55693), (137, 55696), (146, 55753),

Gene: Min1\_23 Start: 11006, Stop: 11470, Start Num: 89

Candidate Starts for Min1\_23:

(Start: 89 @11006 has 207 MA's), (97, 11021), (102, 11033), (108, 11087), (122, 11180), (126, 11204), (132, 11228), (150, 11312),

Gene: Mindy\_99 Start: 59117, Stop: 59557, Start Num: 92

Candidate Starts for Mindy\_99:

(Start: 92 @59117 has 121 MA's), (112, 59216), (137, 59348), (148, 59414), (161, 59462),

Gene: MiniLon\_87 Start: 55260, Stop: 55643, Start Num: 93

Candidate Starts for MiniLon\_87:

(Start: 93 @55260 has 69 MA's), (106, 55320), (107, 55332), (111, 55353), (119, 55413), (122, 55431), (137, 55491), (156, 55581),

Gene: MiniMac\_87 Start: 55255, Stop: 55638, Start Num: 93

Candidate Starts for MiniMac\_87:

(Start: 93 @55255 has 69 MA's), (106, 55315), (107, 55327), (111, 55348), (119, 55408), (122, 55426), (137, 55486), (156, 55576),

Gene: Miniwave\_95 Start: 59294, Stop: 59734, Start Num: 92

Candidate Starts for Miniwave\_95:

(Start: 92 @59294 has 121 MA's), (108, 59375), (112, 59393), (137, 59525), (148, 59591), (161, 59639),

Gene: Misfit\_101 Start: 60897, Stop: 61337, Start Num: 92

Candidate Starts for Misfit\_101:

(Start: 92 @60897 has 121 MA's), (112, 60996), (126, 61092), (137, 61128), (148, 61194), (161, 61242),

Gene: Miskis\_125 Start: 71364, Stop: 71873, Start Num: 89

Candidate Starts for Miskis\_125:

(Start: 89 @71364 has 207 MA's), (97, 71379), (101, 71388), (132, 71586), (161, 71712), (167, 71763), (175, 71823),

Gene: MkaliMitinis3\_86 Start: 55320, Stop: 55706, Start Num: 93

Candidate Starts for MkaliMitinis3\_86:

(Start: 93 @55320 has 69 MA's), (105, 55371), (107, 55392), (111, 55413), (118, 55452), (119, 55467), (122, 55485), (135, 55542), (137, 55545), (146, 55602),

Gene: Mojarita\_46 Start: 31281, Stop: 31766, Start Num: 89

Candidate Starts for Mojarita\_46:

(35, 31095), (51, 31176), (53, 31185), (Start: 89 @31281 has 207 MA's), (134, 31509),

Gene: Moldemort\_103 Start: 59765, Stop: 60205, Start Num: 92

Candidate Starts for Moldemort\_103:

(Start: 92 @59765 has 121 MA's), (112, 59864), (126, 59960), (137, 59996), (148, 60062), (161, 60110),

Gene: Mollymur\_84 Start: 57822, Stop: 57259, Start Num: 94

Candidate Starts for Mollymur\_84:

(Start: 94 @57822 has 6 MA's), (112, 57723), (152, 57489),

Gene: Moostard\_81 Start: 55178, Stop: 55561, Start Num: 93

Candidate Starts for Moostard\_81:

(Start: 93 @55178 has 69 MA's), (106, 55238), (107, 55250), (111, 55271), (119, 55331), (122, 55349), (137, 55409), (156, 55499),

Gene: Mordred\_101 Start: 64114, Stop: 64683, Start Num: 89

Candidate Starts for Mordred\_101:

(Start: 89 @64114 has 207 MA's), (108, 64195), (119, 64270), (126, 64312), (132, 64336), (134, 64342), (137, 64348), (150, 64420), (156, 64441), (161, 64462),

Gene: Mosby\_96 Start: 59261, Stop: 59701, Start Num: 92

Candidate Starts for Mosby\_96:

(Start: 92 @59261 has 121 MA's), (112, 59360), (126, 59456), (137, 59492), (148, 59558), (161, 59606),

Gene: MoyaNatalis\_101 Start: 64054, Stop: 64611, Start Num: 89

Candidate Starts for MoyaNatalis\_101:

(Start: 89 @64054 has 207 MA's), (101, 64078), (108, 64135), (120, 64216), (126, 64252), (129, 64264), (132, 64276), (134, 64282), (137, 64288), (150, 64360), (161, 64402),

Gene: MrMagoo\_77 Start: 46450, Stop: 46887, Start Num: 88

Candidate Starts for MrMagoo\_77:

(Start: 88 @46450 has 24 MA's), (108, 46534), (120, 46615),

Gene: MrSmee\_59 Start: 34937, Stop: 35392, Start Num: 96

Candidate Starts for MrSmee\_59:

(Start: 96 @34937 has 4 MA's), (116, 35042), (121, 35093), (134, 35156), (135, 35159), (137, 35162), (140, 35174), (149, 35228), (153, 35240), (155, 35249),

Gene: MsGreen\_84 Start: 55405, Stop: 55788, Start Num: 93

Candidate Starts for MsGreen\_84:

(Start: 93 @55405 has 69 MA's), (106, 55465), (107, 55477), (111, 55498), (119, 55558), (122, 55576), (137, 55636), (156, 55726),

Gene: Mufasa8\_48 Start: 36302, Stop: 36853, Start Num: 89

Candidate Starts for Mufasa8\_48:

(Start: 89 @36302 has 207 MA's), (108, 36383), (132, 36524), (137, 36536),

Gene: Murica\_103 Start: 61600, Stop: 62040, Start Num: 92

Candidate Starts for Murica\_103:

(Start: 92 @61600 has 121 MA's), (112, 61699), (137, 61831), (148, 61897), (161, 61945),

Gene: Murphy\_100 Start: 60156, Stop: 60596, Start Num: 92

Candidate Starts for Murphy\_100:

(Start: 92 @60156 has 121 MA's), (112, 60255), (137, 60387), (148, 60453), (161, 60501),

Gene: Myrale\_100 Start: 59956, Stop: 60396, Start Num: 92

Candidate Starts for Myrale\_100:

(32, 59755), (33, 59758), (Start: 38 @59785 has 1 MA's), (40, 59788), (47, 59830), (62, 59884), (Start: 92 @59956 has 121 MA's), (108, 60037), (112, 60055), (137, 60187), (148, 60253), (161, 60301),



Gene: Nala\_102 Start: 60310, Stop: 60750, Start Num: 92  
Candidate Starts for Nala\_102:  
(Start: 92 @60310 has 121 MA's), (112, 60409), (126, 60505), (137, 60541), (148, 60607), (161, 60655),

Gene: Nanosmite\_72 Start: 45490, Stop: 45942, Start Num: 88  
Candidate Starts for Nanosmite\_72:  
(Start: 88 @45490 has 24 MA's), (140, 45739),

Gene: NathanVaag\_35 Start: 30573, Stop: 31163, Start Num: 89  
Candidate Starts for NathanVaag\_35:  
(Start: 89 @30573 has 207 MA's), (101, 30597), (132, 30795), (158, 30909), (178, 31044),

Gene: NelitzaMV\_97 Start: 58304, Stop: 58744, Start Num: 92  
Candidate Starts for NelitzaMV\_97:  
(62, 58232), (Start: 92 @58304 has 121 MA's), (112, 58403), (126, 58499), (137, 58535), (148, 58601), (161, 58649),

Gene: Netyap\_86 Start: 55472, Stop: 55858, Start Num: 93  
Candidate Starts for Netyap\_86:  
(Start: 93 @55472 has 69 MA's), (105, 55523), (107, 55544), (111, 55565), (118, 55604), (119, 55619), (122, 55637), (135, 55694), (137, 55697), (146, 55754),

Gene: Nicholas\_81 Start: 55183, Stop: 55566, Start Num: 93  
Candidate Starts for Nicholas\_81:  
(Start: 93 @55183 has 69 MA's), (106, 55243), (107, 55255), (111, 55276), (119, 55336), (122, 55354), (137, 55414), (156, 55504),

Gene: Nicholasp3\_85 Start: 55306, Stop: 55692, Start Num: 93  
Candidate Starts for Nicholasp3\_85:  
(Start: 93 @55306 has 69 MA's), (105, 55357), (107, 55378), (111, 55399), (118, 55438), (119, 55453), (122, 55471), (135, 55528), (137, 55531), (146, 55588),

Gene: Nicole72\_62 Start: 45253, Stop: 45780, Start Num: 89  
Candidate Starts for Nicole72\_62:  
(Start: 89 @45253 has 207 MA's), (101, 45277), (102, 45280), (122, 45427), (132, 45475), (150, 45559), (161, 45601),

Gene: Nimrod\_100 Start: 59923, Stop: 60363, Start Num: 92  
Candidate Starts for Nimrod\_100:  
(32, 59722), (33, 59725), (Start: 38 @59752 has 1 MA's), (40, 59755), (47, 59797), (62, 59851), (Start: 92 @59923 has 121 MA's), (108, 60004), (112, 60022), (137, 60154), (148, 60220), (161, 60268),

Gene: NoSleep\_101 Start: 59317, Stop: 59757, Start Num: 92  
Candidate Starts for NoSleep\_101:  
(Start: 92 @59317 has 121 MA's), (112, 59416), (126, 59512), (137, 59548), (148, 59614), (161, 59662),

Gene: NoodlelyBoi\_65 Start: 41341, Stop: 41841, Start Num: 85  
Candidate Starts for NoodlelyBoi\_65:  
(Start: 85 @41341 has 2 MA's), (126, 41539), (132, 41563), (150, 41647), (161, 41689),

Gene: Norvs\_125 Start: 71351, Stop: 71860, Start Num: 89

Candidate Starts for Norvs\_125:

(Start: 89 @71351 has 207 MA's), (97, 71366), (101, 71375), (132, 71573), (161, 71699), (167, 71750), (175, 71810),

Gene: Odyssey395\_96 Start: 57117, Stop: 56512, Start Num: 89

Candidate Starts for Odyssey395\_96:

(Start: 89 @57117 has 207 MA's), (105, 57063), (120, 56955), (147, 56823), (148, 56817), (150, 56811), (162, 56766),

Gene: OhShagHennessy\_79 Start: 53016, Stop: 53399, Start Num: 93

Candidate Starts for OhShagHennessy\_79:

(83, 53001), (Start: 93 @53016 has 69 MA's), (111, 53109), (119, 53163), (122, 53181), (137, 53241), (146, 53298),

Gene: OneUp\_111 Start: 69624, Stop: 70130, Start Num: 89

Candidate Starts for OneUp\_111:

(Start: 89 @69624 has 207 MA's), (126, 69822),

Gene: Onika\_63 Start: 40570, Stop: 41076, Start Num: 89

Candidate Starts for Onika\_63:

(Start: 89 @40570 has 207 MA's), (97, 40585), (132, 40792), (150, 40876), (161, 40918),

Gene: Orcanus\_53 Start: 34413, Stop: 34919, Start Num: 89

Candidate Starts for Orcanus\_53:

(43, 34269), (Start: 89 @34413 has 207 MA's), (108, 34494), (122, 34587), (132, 34635), (134, 34641), (150, 34719), (163, 34770),

Gene: OrionPax\_99 Start: 59389, Stop: 59829, Start Num: 92

Candidate Starts for OrionPax\_99:

(Start: 92 @59389 has 121 MA's), (112, 59488), (126, 59584), (137, 59620), (148, 59686), (161, 59734),

Gene: Ottawa\_81 Start: 48211, Stop: 48849, Start Num: 89

Candidate Starts for Ottawa\_81:

(Start: 89 @48211 has 207 MA's), (108, 48292), (150, 48514),

Gene: PFR1\_50 Start: 34850, Stop: 35323, Start Num: 89

Candidate Starts for PFR1\_50:

(Start: 89 @34850 has 207 MA's), (102, 34877), (122, 35024), (126, 35048), (132, 35072), (134, 35078), (146, 35141), (153, 35165), (156, 35177),

Gene: PFR2\_52 Start: 36419, Stop: 36892, Start Num: 89

Candidate Starts for PFR2\_52:

(Start: 89 @36419 has 207 MA's), (102, 36446), (122, 36593), (126, 36617), (132, 36641), (134, 36647), (146, 36710), (153, 36734), (156, 36746),

Gene: PSonyx\_96 Start: 53094, Stop: 52513, Start Num: 89

Candidate Starts for PSonyx\_96:

(64, 53160), (Start: 89 @53094 has 207 MA's), (105, 53040), (126, 52896), (132, 52872),

Gene: Palpatine\_101 Start: 60595, Stop: 61035, Start Num: 92

Candidate Starts for Palpatine\_101:

(Start: 92 @60595 has 121 MA's), (112, 60694), (126, 60790), (137, 60826), (148, 60892), (161, 60940),

Gene: PapayaSalad\_45 Start: 30774, Stop: 31235, Start Num: 89

Candidate Starts for PapayaSalad\_45:

(26, 30519), (27, 30534), (59, 30690), (Start: 89 @30774 has 207 MA's), (120, 30936), (121, 30942),

Gene: Paperbeatsrock\_99 Start: 59972, Stop: 60412, Start Num: 92

Candidate Starts for Paperbeatsrock\_99:

(Start: 92 @59972 has 121 MA's), (108, 60053), (112, 60071), (137, 60203), (148, 60269), (161, 60317),

Gene: Paschalis\_64 Start: 40592, Stop: 41095, Start Num: 89

Candidate Starts for Paschalis\_64:

(Start: 89 @40592 has 207 MA's), (97, 40607), (132, 40814), (150, 40898), (161, 40940),

Gene: Pat3\_97 Start: 58489, Stop: 58929, Start Num: 92

Candidate Starts for Pat3\_97:

(67, 58432), (Start: 92 @58489 has 121 MA's), (112, 58588), (137, 58720), (148, 58786), (161, 58834),

Gene: PegLeg\_66 Start: 43606, Stop: 44052, Start Num: 88

Candidate Starts for PegLeg\_66:

(76, 43570), (Start: 88 @43606 has 24 MA's), (108, 43690), (120, 43771), (124, 43795), (161, 43954),

Gene: Persistence\_65 Start: 36167, Stop: 36694, Start Num: 89

Candidate Starts for Persistence\_65:

(Start: 89 @36167 has 207 MA's), (128, 36386), (148, 36479), (153, 36494),

Gene: Petra64142\_104 Start: 60461, Stop: 60901, Start Num: 92

Candidate Starts for Petra64142\_104:

(62, 60389), (Start: 92 @60461 has 121 MA's), (112, 60560), (126, 60656), (137, 60692), (148, 60758), (161, 60806),

Gene: Phaja\_98 Start: 59176, Stop: 59616, Start Num: 92

Candidate Starts for Phaja\_98:

(32, 58975), (33, 58978), (Start: 38 @59005 has 1 MA's), (40, 59008), (47, 59050), (62, 59104), (Start: 92 @59176 has 121 MA's), (108, 59257), (112, 59275), (137, 59407), (148, 59473), (161, 59521),

Gene: Pharsalus\_97 Start: 59671, Stop: 60111, Start Num: 92

Candidate Starts for Pharsalus\_97:

(Start: 92 @59671 has 121 MA's), (112, 59770), (137, 59902), (148, 59968), (161, 60016),

Gene: PhatBacter\_103 Start: 60340, Stop: 60780, Start Num: 92

Candidate Starts for PhatBacter\_103:

(Start: 92 @60340 has 121 MA's), (112, 60439), (126, 60535), (137, 60571), (148, 60637), (161, 60685),

Gene: Phaux\_102 Start: 60900, Stop: 61340, Start Num: 92

Candidate Starts for Phaux\_102:

(Start: 92 @60900 has 121 MA's), (112, 60999), (126, 61095), (137, 61131), (148, 61197), (161, 61245),

Gene: PhinkBoden\_126 Start: 72216, Stop: 72725, Start Num: 89  
Candidate Starts for PhinkBoden\_126:  
(Start: 89 @72216 has 207 MA's), (97, 72231), (101, 72240), (132, 72438), (161, 72564), (167, 72615), (175, 72675),

Gene: PhluffyCoco\_55 Start: 33606, Stop: 34115, Start Num: 89  
Candidate Starts for PhluffyCoco\_55:  
(Start: 89 @33606 has 207 MA's), (104, 33645), (108, 33687), (115, 33720), (122, 33780), (132, 33828), (137, 33840), (146, 33897), (150, 33912), (156, 33933), (161, 33954),

Gene: Phonegingi\_45 Start: 28583, Stop: 29074, Start Num: 89  
Candidate Starts for Phonegingi\_45:  
(Start: 89 @28583 has 207 MA's), (132, 28805), (150, 28889), (161, 28931),

Gene: Phorgeous\_64 Start: 40378, Stop: 40884, Start Num: 89  
Candidate Starts for Phorgeous\_64:  
(Start: 89 @40378 has 207 MA's), (97, 40393), (132, 40600), (150, 40684), (161, 40726),

Gene: Phrancesco\_64 Start: 40701, Stop: 41207, Start Num: 89  
Candidate Starts for Phrancesco\_64:  
(Start: 89 @40701 has 207 MA's), (97, 40716), (132, 40923), (150, 41007), (161, 41049),

Gene: Phrank15\_75 Start: 38031, Stop: 38585, Start Num: 89  
Candidate Starts for Phrank15\_75:  
(75, 37992), (Start: 89 @38031 has 207 MA's), (113, 38133), (128, 38250),

Gene: Phrux\_97 Start: 59176, Stop: 59616, Start Num: 92  
Candidate Starts for Phrux\_97:  
(Start: 92 @59176 has 121 MA's), (112, 59275), (126, 59371), (137, 59407), (148, 59473), (161, 59521),

Gene: Picard\_46 Start: 31479, Stop: 31958, Start Num: 89  
Candidate Starts for Picard\_46:  
(13, 31044), (20, 31185), (22, 31200), (35, 31293), (51, 31374), (Start: 89 @31479 has 207 MA's), (122, 31653), (134, 31707),

Gene: Piccadilly\_45 Start: 30655, Stop: 31134, Start Num: 89  
Candidate Starts for Piccadilly\_45:  
(Start: 89 @30655 has 207 MA's), (146, 30946),

Gene: Piccoletto\_35 Start: 30574, Stop: 31161, Start Num: 89  
Candidate Starts for Piccoletto\_35:  
(Start: 89 @30574 has 207 MA's), (101, 30598), (132, 30796), (158, 30910), (178, 31045),

Gene: Pickles13\_44 Start: 28847, Stop: 29341, Start Num: 89  
Candidate Starts for Pickles13\_44:  
(Start: 89 @28847 has 207 MA's), (132, 29069), (139, 29090), (150, 29153), (161, 29195),

Gene: PierreOrion\_64 Start: 40801, Stop: 41307, Start Num: 89  
Candidate Starts for PierreOrion\_64:  
(Start: 89 @40801 has 207 MA's), (97, 40816), (132, 41023), (150, 41107), (161, 41149),

Gene: PiperSansNom\_65 Start: 40883, Stop: 41386, Start Num: 89

Candidate Starts for PiperSansNom\_65:

(Start: 89 @40883 has 207 MA's), (97, 40898), (132, 41105), (150, 41189), (161, 41231),

Gene: Piperis\_65 Start: 40503, Stop: 41009, Start Num: 89

Candidate Starts for Piperis\_65:

(Start: 89 @40503 has 207 MA's), (97, 40518), (132, 40725), (150, 40809), (161, 40851),

Gene: Pippa\_37 Start: 30966, Stop: 31526, Start Num: 89

Candidate Starts for Pippa\_37:

(Start: 89 @30966 has 207 MA's), (101, 30990), (132, 31188), (156, 31293), (158, 31302), (161, 31314), (178, 31410),

Gene: Pitbull\_59 Start: 34082, Stop: 34579, Start Num: 89

Candidate Starts for Pitbull\_59:

(Start: 89 @34082 has 207 MA's), (122, 34256), (146, 34373), (156, 34409), (161, 34430),

Gene: Pointis\_92 Start: 57013, Stop: 56408, Start Num: 89

Candidate Starts for Pointis\_92:

(Start: 89 @57013 has 207 MA's), (105, 56959), (120, 56851), (147, 56719), (148, 56713), (150, 56707), (162, 56662),

Gene: Policronamos\_103 Start: 60604, Stop: 61044, Start Num: 92

Candidate Starts for Policronamos\_103:

(Start: 92 @60604 has 121 MA's), (112, 60703), (126, 60799), (137, 60835), (148, 60901), (161, 60949),

Gene: Porky\_99 Start: 58920, Stop: 59360, Start Num: 92

Candidate Starts for Porky\_99:

(Start: 92 @58920 has 121 MA's), (112, 59019), (126, 59115), (137, 59151), (148, 59217), (161, 59265),

Gene: Prairie\_42 Start: 31210, Stop: 31767, Start Num: 89

Candidate Starts for Prairie\_42:

(Start: 89 @31210 has 207 MA's), (132, 31432), (146, 31501), (161, 31558),

Gene: PrincessTrina\_102 Start: 64305, Stop: 64874, Start Num: 89

Candidate Starts for PrincessTrina\_102:

(Start: 89 @64305 has 207 MA's), (108, 64386), (119, 64461), (126, 64503), (132, 64527), (134, 64533), (137, 64539), (150, 64611), (156, 64632), (161, 64653),

Gene: Pulchra\_66 Start: 40899, Stop: 41405, Start Num: 89

Candidate Starts for Pulchra\_66:

(Start: 89 @40899 has 207 MA's), (97, 40914), (132, 41121), (150, 41205), (161, 41247),

Gene: Pumpkin\_102 Start: 59517, Stop: 59957, Start Num: 92

Candidate Starts for Pumpkin\_102:

(40, 59355), (62, 59445), (Start: 92 @59517 has 121 MA's), (112, 59616), (137, 59748), (148, 59814), (161, 59862),

Gene: Pureglobe5\_96 Start: 57675, Stop: 57070, Start Num: 89

Candidate Starts for Pureglobe5\_96:

(Start: 89 @57675 has 207 MA's), (105, 57621), (120, 57513), (147, 57381), (148, 57375), (150, 57369), (162, 57324),

Gene: Quallification\_101 Start: 60386, Stop: 60826, Start Num: 92  
Candidate Starts for Quallification\_101:  
(Start: 92 @60386 has 121 MA's), (112, 60485), (126, 60581), (137, 60617), (148, 60683), (161, 60731),

Gene: Quhwah\_68 Start: 41191, Stop: 41694, Start Num: 89  
Candidate Starts for Quhwah\_68:  
(Start: 89 @41191 has 207 MA's), (97, 41206), (132, 41413), (150, 41497), (161, 41539),

Gene: REQ3\_26 Start: 12169, Stop: 12615, Start Num: 93  
Candidate Starts for REQ3\_26:  
(Start: 93 @12169 has 69 MA's), (104, 12205), (105, 12220), (120, 12328), (122, 12340), (129, 12376), (161, 12514),

Gene: RadFad\_76 Start: 38827, Stop: 39300, Start Num: 96  
Candidate Starts for RadFad\_76:  
(Start: 96 @38827 has 4 MA's), (105, 38872), (130, 39028),

Gene: Rakim\_101 Start: 59237, Stop: 59848, Start Num: 38  
Candidate Starts for Rakim\_101:  
(32, 59207), (33, 59210), (Start: 38 @59237 has 1 MA's), (40, 59240), (47, 59282), (62, 59336), (Start: 92 @59408 has 121 MA's), (112, 59507), (137, 59639), (148, 59705), (161, 59753),

Gene: Raleigh\_44 Start: 33967, Stop: 34464, Start Num: 89  
Candidate Starts for Raleigh\_44:  
(48, 33844), (49, 33853), (Start: 89 @33967 has 207 MA's), (111, 34063), (119, 34123), (121, 34135), (134, 34195),

Gene: Ramiel05\_63 Start: 40561, Stop: 41067, Start Num: 89  
Candidate Starts for Ramiel05\_63:  
(Start: 89 @40561 has 207 MA's), (97, 40576), (132, 40783), (150, 40867), (161, 40909),

Gene: Ranunculus\_85 Start: 57963, Stop: 57334, Start Num: 89  
Candidate Starts for Ranunculus\_85:  
(72, 58008), (Start: 89 @57963 has 207 MA's), (108, 57882), (122, 57789), (159, 57624), (170, 57519),

Gene: Raphaella\_71 Start: 37149, Stop: 37670, Start Num: 89  
Candidate Starts for Raphaella\_71:  
(Start: 89 @37149 has 207 MA's), (113, 37251), (128, 37368),

Gene: Raqqa\_67 Start: 35948, Stop: 36466, Start Num: 89  
Candidate Starts for Raqqa\_67:  
(Start: 89 @35948 has 207 MA's), (108, 36029), (128, 36167), (139, 36203), (147, 36254),

Gene: RedFox\_55 Start: 33605, Stop: 34114, Start Num: 89  
Candidate Starts for RedFox\_55:  
(Start: 89 @33605 has 207 MA's), (108, 33686), (115, 33719), (122, 33779), (132, 33827), (137, 33839), (146, 33896), (150, 33911), (156, 33932), (161, 33953),

Gene: Reindeer\_69 Start: 45000, Stop: 45446, Start Num: 88  
Candidate Starts for Reindeer\_69:

(78, 44970), (80, 44976), (Start: 88 @45000 has 24 MA's), (108, 45084), (120, 45165), (145, 45279), (161, 45348),

Gene: Renna12\_54 Start: 33458, Stop: 33970, Start Num: 89

Candidate Starts for Renna12\_54:

(Start: 89 @33458 has 207 MA's), (108, 33539), (115, 33572), (122, 33632), (132, 33680), (137, 33692), (146, 33749), (150, 33764), (156, 33785), (161, 33806),

Gene: Rey\_73 Start: 45977, Stop: 46417, Start Num: 88

Candidate Starts for Rey\_73:

(Start: 88 @45977 has 24 MA's), (120, 46142), (134, 46208), (148, 46280),

Gene: Richie\_74 Start: 38954, Stop: 39472, Start Num: 89

Candidate Starts for Richie\_74:

(Start: 89 @38954 has 207 MA's), (113, 39056), (128, 39173),

Gene: RickRoss\_14 Start: 6690, Stop: 6268, Start Num: 88

Candidate Starts for RickRoss\_14:

(Start: 88 @6690 has 24 MA's), (102, 6657), (118, 6543), (146, 6393), (157, 6354),

Gene: Rimmer\_98 Start: 59798, Stop: 60238, Start Num: 92

Candidate Starts for Rimmer\_98:

(67, 59741), (Start: 92 @59798 has 121 MA's), (112, 59897), (137, 60029), (148, 60095), (161, 60143),

Gene: RiverMonster\_100 Start: 60072, Stop: 60512, Start Num: 92

Candidate Starts for RiverMonster\_100:

(Start: 92 @60072 has 121 MA's), (112, 60171), (126, 60267), (137, 60303), (148, 60369), (161, 60417),

Gene: Rizwana\_72 Start: 51720, Stop: 51190, Start Num: 89

Candidate Starts for Rizwana\_72:

(Start: 89 @51720 has 207 MA's), (101, 51696), (118, 51579), (132, 51498), (140, 51474), (147, 51423), (150, 51411), (182, 51243),

Gene: RobsFeet\_68 Start: 42128, Stop: 42631, Start Num: 89

Candidate Starts for RobsFeet\_68:

(Start: 89 @42128 has 207 MA's), (122, 42302), (132, 42350), (161, 42476),

Gene: Rose5\_83 Start: 53936, Stop: 54319, Start Num: 93

Candidate Starts for Rose5\_83:

(Start: 93 @53936 has 69 MA's), (111, 54029), (119, 54083), (122, 54101), (137, 54161), (146, 54218),

Gene: RosiePosie\_101 Start: 64170, Stop: 64727, Start Num: 89

Candidate Starts for RosiePosie\_101:

(Start: 89 @64170 has 207 MA's), (103, 64206), (108, 64251), (111, 64266), (129, 64380), (132, 64392), (137, 64404), (150, 64476), (156, 64497), (161, 64518),

Gene: Ruchi\_52 Start: 33757, Stop: 34278, Start Num: 89

Candidate Starts for Ruchi\_52:

(Start: 89 @33757 has 207 MA's), (108, 33838), (132, 33979), (134, 33985), (163, 34114),

Gene: Rumpelstiltskin\_82 Start: 55099, Stop: 55485, Start Num: 93

Candidate Starts for Rumpelstiltskin\_82:

(Start: 93 @55099 has 69 MA's), (105, 55150), (107, 55171), (111, 55192), (118, 55231), (119, 55246), (122, 55264), (135, 55321), (137, 55324), (146, 55381),

Gene: SV1\_43 Start: 30169, Stop: 30636, Start Num: 89

Candidate Starts for SV1\_43:

(Start: 89 @30169 has 207 MA's), (102, 30196), (134, 30397),

Gene: Saints25\_97 Start: 58002, Stop: 58442, Start Num: 92

Candidate Starts for Saints25\_97:

(43, 57852), (50, 57882), (65, 57930), (69, 57945), (74, 57957), (Start: 92 @58002 has 121 MA's), (112, 58101), (126, 58197), (137, 58233), (148, 58299), (161, 58347),

Gene: Sakai\_69 Start: 37702, Stop: 38220, Start Num: 89

Candidate Starts for Sakai\_69:

(Start: 89 @37702 has 207 MA's), (113, 37804), (128, 37921),

Gene: Samty\_82 Start: 55171, Stop: 55554, Start Num: 93

Candidate Starts for Samty\_82:

(Start: 93 @55171 has 69 MA's), (106, 55231), (107, 55243), (111, 55264), (119, 55324), (122, 55342), (137, 55402), (156, 55492),

Gene: Sarge\_49 Start: 28989, Stop: 29513, Start Num: 89

Candidate Starts for Sarge\_49:

(Start: 89 @28989 has 207 MA's), (128, 29208),

Gene: Sashimi\_71 Start: 38075, Stop: 38557, Start Num: 96

Candidate Starts for Sashimi\_71:

(Start: 96 @38075 has 4 MA's), (105, 38120), (108, 38147), (124, 38249), (137, 38297), (153, 38375),

Gene: Sassay\_95 Start: 58223, Stop: 58663, Start Num: 92

Candidate Starts for Sassay\_95:

(Start: 92 @58223 has 121 MA's), (112, 58322), (126, 58418), (137, 58454), (148, 58520), (161, 58568),

Gene: Savannah\_63 Start: 40621, Stop: 41124, Start Num: 89

Candidate Starts for Savannah\_63:

(Start: 89 @40621 has 207 MA's), (97, 40636), (132, 40843), (150, 40927), (161, 40969),

Gene: Scavito\_102 Start: 64163, Stop: 64732, Start Num: 89

Candidate Starts for Scavito\_102:

(Start: 89 @64163 has 207 MA's), (108, 64244), (119, 64319), (126, 64361), (132, 64385), (134, 64391), (137, 64397), (150, 64469), (156, 64490), (161, 64511),

Gene: Schmidt\_48 Start: 32790, Stop: 33275, Start Num: 89

Candidate Starts for Schmidt\_48:

(Start: 89 @32790 has 207 MA's), (102, 32817), (118, 32931), (120, 32952), (146, 33081), (150, 33096), (161, 33138),

Gene: Scumberland\_66 Start: 40816, Stop: 41319, Start Num: 89

Candidate Starts for Scumberland\_66:

(Start: 89 @40816 has 207 MA's), (97, 40831), (132, 41038), (150, 41122), (161, 41164),



Gene: Seahorse\_76 Start: 40120, Stop: 40581, Start Num: 89  
Candidate Starts for Seahorse\_76:  
(Start: 89 @40120 has 207 MA's), (112, 40219), (125, 40312), (129, 40342), (164, 40489),

Gene: Selwyn23\_65 Start: 40733, Stop: 41236, Start Num: 89  
Candidate Starts for Selwyn23\_65:  
(Start: 89 @40733 has 207 MA's), (97, 40748), (132, 40955), (150, 41039), (161, 41081),

Gene: Shade\_37 Start: 30810, Stop: 31367, Start Num: 89  
Candidate Starts for Shade\_37:  
(58, 30723), (Start: 89 @30810 has 207 MA's), (101, 30834), (130, 31023), (132, 31032), (156, 31137), (158, 31146), (161, 31158), (178, 31251),

Gene: ShamWow\_100 Start: 60193, Stop: 60633, Start Num: 92  
Candidate Starts for ShamWow\_100:  
(Start: 92 @60193 has 121 MA's), (112, 60292), (126, 60388), (137, 60424), (148, 60490), (161, 60538),

Gene: ShereKhan\_98 Start: 60632, Stop: 61072, Start Num: 92  
Candidate Starts for ShereKhan\_98:  
(Start: 92 @60632 has 121 MA's), (112, 60731), (126, 60827), (137, 60863), (148, 60929), (161, 60977),

Gene: Shotgun\_64 Start: 40497, Stop: 41003, Start Num: 89  
Candidate Starts for Shotgun\_64:  
(Start: 89 @40497 has 207 MA's), (97, 40512), (132, 40719), (150, 40803), (161, 40845),

Gene: Shoya\_55 Start: 31189, Stop: 31710, Start Num: 89  
Candidate Starts for Shoya\_55:  
(Start: 89 @31189 has 207 MA's), (109, 31273), (111, 31285), (128, 31408),

Gene: Sicarius2\_38 Start: 30424, Stop: 30954, Start Num: 89  
Candidate Starts for Sicarius2\_38:  
(Start: 89 @30424 has 207 MA's), (120, 30586), (122, 30598), (132, 30646), (139, 30667),

Gene: SilentRX\_70 Start: 50764, Stop: 50189, Start Num: 89  
Candidate Starts for SilentRX\_70:  
(Start: 89 @50764 has 207 MA's), (108, 50683), (124, 50578), (126, 50566), (132, 50542), (147, 50470),

Gene: Silverleaf\_82 Start: 53392, Stop: 53775, Start Num: 93  
Candidate Starts for Silverleaf\_82:  
(Start: 93 @53392 has 69 MA's), (111, 53485), (119, 53539), (122, 53557), (137, 53617), (146, 53674),

Gene: Simpliphy\_99 Start: 59643, Stop: 60083, Start Num: 92  
Candidate Starts for Simpliphy\_99:  
(Start: 92 @59643 has 121 MA's), (112, 59742), (126, 59838), (137, 59874), (148, 59940), (161, 59988),

Gene: SirDuracell\_100 Start: 59010, Stop: 59450, Start Num: 92  
Candidate Starts for SirDuracell\_100:

(67, 58953), (Start: 92 @59010 has 121 MA's), (112, 59109), (137, 59241), (148, 59307), (161, 59355),

Gene: Skinny\_69 Start: 44296, Stop: 44742, Start Num: 88

Candidate Starts for Skinny\_69:

(76, 44260), (Start: 88 @44296 has 24 MA's), (108, 44380), (120, 44461), (124, 44485), (161, 44644),

Gene: SlimJimmy\_66 Start: 43851, Stop: 44297, Start Num: 88

Candidate Starts for SlimJimmy\_66:

(76, 43815), (Start: 88 @43851 has 24 MA's), (108, 43935), (120, 44016), (124, 44040), (161, 44199),

Gene: Smarties\_74 Start: 42439, Stop: 42945, Start Num: 89

Candidate Starts for Smarties\_74:

(57, 42349), (70, 42394), (Start: 86 @42436 has 1 MA's), (Start: 89 @42439 has 207 MA's), (122, 42613), (132, 42661), (134, 42667), (150, 42745), (161, 42787),

Gene: Smoothie\_127 Start: 71932, Stop: 72441, Start Num: 89

Candidate Starts for Smoothie\_127:

(Start: 89 @71932 has 207 MA's), (97, 71947), (101, 71956), (132, 72154), (161, 72280), (167, 72331), (175, 72391),

Gene: Snenia\_83 Start: 55407, Stop: 55790, Start Num: 93

Candidate Starts for Snenia\_83:

(Start: 93 @55407 has 69 MA's), (106, 55467), (107, 55479), (111, 55500), (119, 55560), (122, 55578), (137, 55638), (156, 55728),

Gene: SoJo\_44 Start: 31978, Stop: 32505, Start Num: 89

Candidate Starts for SoJo\_44:

(20, 31687), (22, 31702), (35, 31795), (51, 31876), (53, 31885), (Start: 89 @31978 has 207 MA's), (121, 32146), (134, 32206), (138, 32215), (161, 32323), (180, 32485),

Gene: Sonali\_48 Start: 38621, Stop: 39217, Start Num: 89

Candidate Starts for Sonali\_48:

(Start: 89 @38621 has 207 MA's), (124, 38807), (135, 38852), (150, 38927),

Gene: Sonny\_37 Start: 30840, Stop: 31397, Start Num: 89

Candidate Starts for Sonny\_37:

(58, 30753), (Start: 89 @30840 has 207 MA's), (101, 30864), (130, 31053), (132, 31062), (156, 31167), (158, 31176), (161, 31188), (178, 31281),

Gene: Soos\_82 Start: 55154, Stop: 55576, Start Num: 93

Candidate Starts for Soos\_82:

(29, 54929), (39, 54968), (54, 55049), (90, 55151), (Start: 93 @55154 has 69 MA's), (109, 55238), (113, 55256), (147, 55448), (148, 55454),

Gene: SophKB\_97 Start: 58991, Stop: 59434, Start Num: 92

Candidate Starts for SophKB\_97:

(Start: 92 @58991 has 121 MA's), (108, 59072), (112, 59090), (137, 59222), (148, 59288), (161, 59336), (174, 59423),

Gene: Sotrice96\_101 Start: 59897, Stop: 60337, Start Num: 92

Candidate Starts for Sotrice96\_101:

(Start: 92 @59897 has 121 MA's), (112, 59996), (137, 60128), (148, 60194), (161, 60242),

Gene: SpeedDemon\_850 Start: 59020, Stop: 58460, Start Num: 94

Candidate Starts for SpeedDemon\_850:

(Start: 94 @59020 has 6 MA's), (152, 58687), (166, 58621),

Gene: Splinter\_54 Start: 36171, Stop: 36677, Start Num: 89

Candidate Starts for Splinter\_54:

(Start: 89 @36171 has 207 MA's), (120, 36333), (137, 36405), (150, 36477), (161, 36519),

Gene: Stank\_102 Start: 59671, Stop: 60111, Start Num: 92

Candidate Starts for Stank\_102:

(32, 59470), (33, 59473), (Start: 38 @59500 has 1 MA's), (40, 59503), (47, 59545), (62, 59599), (Start: 92 @59671 has 121 MA's), (112, 59770), (137, 59902), (148, 59968), (161, 60016),

Gene: Stark\_101 Start: 59955, Stop: 60395, Start Num: 92

Candidate Starts for Stark\_101:

(Start: 92 @59955 has 121 MA's), (112, 60054), (126, 60150), (137, 60186), (148, 60252), (161, 60300),

Gene: StellaBean\_99 Start: 60033, Stop: 60473, Start Num: 92

Candidate Starts for StellaBean\_99:

(Start: 92 @60033 has 121 MA's), (112, 60132), (137, 60264), (148, 60330), (161, 60378),

Gene: StevieBAY\_37 Start: 30898, Stop: 31446, Start Num: 89

Candidate Starts for StevieBAY\_37:

(Start: 89 @30898 has 207 MA's), (101, 30922), (132, 31120), (158, 31234), (161, 31246), (178, 31324),

Gene: Sting\_87 Start: 55593, Stop: 56015, Start Num: 93

Candidate Starts for Sting\_87:

(29, 55368), (39, 55407), (54, 55488), (90, 55590), (Start: 93 @55593 has 69 MA's), (109, 55677), (113, 55695), (147, 55887), (148, 55893),

Gene: StolenFromERC\_102 Start: 59596, Stop: 60036, Start Num: 92

Candidate Starts for StolenFromERC\_102:

(32, 59395), (33, 59398), (Start: 38 @59425 has 1 MA's), (40, 59428), (47, 59470), (62, 59524), (Start: 92 @59596 has 121 MA's), (112, 59695), (137, 59827), (148, 59893), (161, 59941),

Gene: TBrady12\_103 Start: 59111, Stop: 59551, Start Num: 92

Candidate Starts for TBrady12\_103:

(32, 58910), (33, 58913), (Start: 38 @58940 has 1 MA's), (40, 58943), (47, 58985), (62, 59039), (Start: 92 @59111 has 121 MA's), (112, 59210), (126, 59306), (137, 59342), (148, 59408), (161, 59456),

Gene: TZGordon\_56 Start: 35517, Stop: 36008, Start Num: 89

Candidate Starts for TZGordon\_56:

(Start: 89 @35517 has 207 MA's), (120, 35679), (137, 35751), (145, 35796), (150, 35823),

Gene: TaeYoung\_37 Start: 30823, Stop: 31371, Start Num: 89

Candidate Starts for TaeYoung\_37:

(58, 30736), (Start: 89 @30823 has 207 MA's), (101, 30847), (122, 30997), (124, 31009), (132, 31045), (156, 31150), (161, 31171), (178, 31255),

Gene: Tank\_72 Start: 51819, Stop: 51199, Start Num: 89

Candidate Starts for Tank\_72:

(Start: 89 @51819 has 207 MA's), (101, 51795), (108, 51738), (132, 51597), (151, 51513),

Gene: Tarkin\_99 Start: 60497, Stop: 60937, Start Num: 92

Candidate Starts for Tarkin\_99:

(Start: 92 @60497 has 121 MA's), (112, 60596), (126, 60692), (137, 60728), (148, 60794), (161, 60842),

Gene: TaylorSipht\_54 Start: 34187, Stop: 34702, Start Num: 89

Candidate Starts for TaylorSipht\_54:

(Start: 89 @34187 has 207 MA's), (108, 34268), (134, 34415), (137, 34421), (150, 34493), (156, 34514), (163, 34544),

Gene: Teamocil\_68 Start: 40761, Stop: 41264, Start Num: 89

Candidate Starts for Teamocil\_68:

(Start: 89 @40761 has 207 MA's), (132, 40983), (150, 41067),

Gene: TeardropMSU\_96 Start: 58978, Stop: 59418, Start Num: 92

Candidate Starts for TeardropMSU\_96:

(Start: 92 @58978 has 121 MA's), (112, 59077), (137, 59209), (148, 59275), (161, 59323),

Gene: Teaspoon\_101 Start: 59854, Stop: 60294, Start Num: 92

Candidate Starts for Teaspoon\_101:

(Start: 92 @59854 has 121 MA's), (112, 59953), (126, 60049), (137, 60085), (148, 60151), (161, 60199),

Gene: Teng\_47 Start: 26473, Stop: 25979, Start Num: 89

Candidate Starts for Teng\_47:

(Start: 89 @26473 has 207 MA's), (120, 26311), (161, 26125),

Gene: Terij\_60 Start: 39794, Stop: 40297, Start Num: 89

Candidate Starts for Terij\_60:

(Start: 89 @39794 has 207 MA's), (132, 40016), (150, 40100), (161, 40142),

Gene: Terminus\_103 Start: 60897, Stop: 61337, Start Num: 92

Candidate Starts for Terminus\_103:

(Start: 92 @60897 has 121 MA's), (112, 60996), (126, 61092), (137, 61128), (148, 61194), (161, 61242),

Gene: Thresher\_102 Start: 60735, Stop: 61175, Start Num: 92

Candidate Starts for Thresher\_102:

(Start: 92 @60735 has 121 MA's), (112, 60834), (126, 60930), (137, 60966), (148, 61032), (161, 61080),

Gene: Tiff81\_72 Start: 36649, Stop: 37155, Start Num: 89

Candidate Starts for Tiff81\_72:

(Start: 89 @36649 has 207 MA's), (108, 36730), (128, 36868),

Gene: Timinator\_37 Start: 30897, Stop: 31436, Start Num: 89

Candidate Starts for Timinator\_37:

(Start: 89 @30897 has 207 MA's), (101, 30921), (132, 31119), (161, 31245), (179, 31344),

Gene: TinaLin\_53 Start: 34968, Stop: 35471, Start Num: 89

Candidate Starts for TinaLin\_53:

(Start: 89 @34968 has 207 MA's), (120, 35130), (145, 35247), (146, 35259), (147, 35262), (150, 35274),

Gene: ToastyFinz\_43 Start: 32811, Stop: 33314, Start Num: 89

Candidate Starts for ToastyFinz\_43:

(5, 32205), (6, 32223), (13, 32376), (14, 32385), (20, 32517), (22, 32532), (35, 32625), (51, 32706), (53, 32715), (Start: 89 @32811 has 207 MA's), (105, 32865), (108, 32892), (122, 32985), (134, 33039), (148, 33108),

Gene: Tomaszewski\_95 Start: 59435, Stop: 59875, Start Num: 92

Candidate Starts for Tomaszewski\_95:

(67, 59378), (Start: 92 @59435 has 121 MA's), (112, 59534), (126, 59630), (137, 59666), (148, 59732), (161, 59780),

Gene: Toniann\_126 Start: 71461, Stop: 71970, Start Num: 89

Candidate Starts for Toniann\_126:

(Start: 89 @71461 has 207 MA's), (97, 71476), (101, 71485), (132, 71683), (161, 71809), (167, 71860), (175, 71920),

Gene: Tophat\_102 Start: 64352, Stop: 64921, Start Num: 89

Candidate Starts for Tophat\_102:

(Start: 89 @64352 has 207 MA's), (108, 64433), (119, 64508), (126, 64550), (132, 64574), (134, 64580), (137, 64586), (150, 64658), (156, 64679), (161, 64700),

Gene: Toto\_98 Start: 60193, Stop: 60633, Start Num: 92

Candidate Starts for Toto\_98:

(Start: 92 @60193 has 121 MA's), (112, 60292), (126, 60388), (137, 60424), (148, 60490), (161, 60538),

Gene: Tourach\_84 Start: 55589, Stop: 55975, Start Num: 93

Candidate Starts for Tourach\_84:

(Start: 93 @55589 has 69 MA's), (105, 55640), (107, 55661), (111, 55682), (118, 55721), (119, 55736), (122, 55754), (135, 55811), (137, 55814), (146, 55871), (156, 55907),

Gene: Traaww1\_96 Start: 58700, Stop: 59140, Start Num: 92

Candidate Starts for Traaww1\_96:

(32, 58499), (33, 58502), (Start: 38 @58529 has 1 MA's), (40, 58532), (47, 58574), (62, 58628), (Start: 92 @58700 has 121 MA's), (108, 58781), (112, 58799), (137, 58931), (148, 58997), (161, 59045),

Gene: TripleJ\_56 Start: 34802, Stop: 35257, Start Num: 89

Candidate Starts for TripleJ\_56:

(77, 34775), (Start: 89 @34802 has 207 MA's), (108, 34883), (122, 34976), (124, 34988), (134, 35030), (147, 35096),

Gene: Tuco\_101 Start: 61058, Stop: 61498, Start Num: 92

Candidate Starts for Tuco\_101:

(Start: 92 @61058 has 121 MA's), (112, 61157), (137, 61289), (148, 61355), (161, 61403),

Gene: TyDawg\_67 Start: 43867, Stop: 44313, Start Num: 88

Candidate Starts for TyDawg\_67:

(76, 43831), (Start: 88 @43867 has 24 MA's), (108, 43951), (120, 44032), (124, 44056), (161, 44215),

Gene: Tyrumbra\_63 Start: 41408, Stop: 41914, Start Num: 89  
Candidate Starts for Tyrumbra\_63:  
(15, 41000), (18, 41045), (Start: 89 @41408 has 207 MA's), (122, 41582), (132, 41630), (161, 41756),

Gene: Tyson\_83 Start: 53862, Stop: 54245, Start Num: 93  
Candidate Starts for Tyson\_83:  
(Start: 93 @53862 has 69 MA's), (111, 53955), (119, 54009), (122, 54027), (137, 54087), (146, 54144),

Gene: UPIE\_81 Start: 53458, Stop: 53841, Start Num: 93  
Candidate Starts for UPIE\_81:  
(Start: 93 @53458 has 69 MA's), (111, 53551), (119, 53605), (122, 53623), (137, 53683), (146, 53740),

Gene: Ukulele\_95 Start: 59455, Stop: 59895, Start Num: 92  
Candidate Starts for Ukulele\_95:  
(Start: 92 @59455 has 121 MA's), (112, 59554), (126, 59650), (137, 59686), (148, 59752), (161, 59800),

Gene: ValentiniPuff\_105 Start: 59002, Stop: 59508, Start Num: 89  
Candidate Starts for ValentiniPuff\_105:  
(63, 58930), (Start: 89 @59002 has 207 MA's), (Start: 96 @59014 has 4 MA's), (97, 59017), (105, 59056), (115, 59116), (120, 59164), (122, 59176), (132, 59224), (168, 59398),

Gene: VanLee\_42 Start: 32268, Stop: 32756, Start Num: 89  
Candidate Starts for VanLee\_42:  
(Start: 89 @32268 has 207 MA's), (100, 32286), (108, 32349), (119, 32424), (122, 32442), (135, 32499), (176, 32712),

Gene: Vendetta\_54 Start: 36171, Stop: 36677, Start Num: 89  
Candidate Starts for Vendetta\_54:  
(Start: 89 @36171 has 207 MA's), (120, 36333), (137, 36405), (150, 36477), (161, 36519),

Gene: Vetric\_84 Start: 55168, Stop: 55554, Start Num: 93  
Candidate Starts for Vetric\_84:  
(Start: 93 @55168 has 69 MA's), (105, 55219), (107, 55240), (111, 55261), (118, 55300), (119, 55315), (122, 55333), (135, 55390), (137, 55393), (146, 55450),

Gene: Vibaki\_38 Start: 32552, Stop: 33103, Start Num: 89  
Candidate Starts for Vibaki\_38:  
(Start: 89 @32552 has 207 MA's), (101, 32576), (120, 32714), (132, 32774), (137, 32786),

Gene: Vondra\_44 Start: 30507, Stop: 30950, Start Num: 89  
Candidate Starts for Vondra\_44:  
(Start: 89 @30507 has 207 MA's), (146, 30798),

Gene: Vulpecula\_52 Start: 33417, Stop: 33938, Start Num: 89  
Candidate Starts for Vulpecula\_52:  
(Start: 89 @33417 has 207 MA's), (108, 33498), (132, 33639), (134, 33645), (163, 33774),

Gene: Waltz\_14 Start: 9797, Stop: 10513, Start Num: 89  
Candidate Starts for Waltz\_14:

(Start: 89 @9797 has 207 MA's), (108, 9878), (122, 9971), (126, 9995), (132, 10019), (161, 10145), (183, 10352),

Gene: Wamburgexpress\_82 Start: 53897, Stop: 54280, Start Num: 93

Candidate Starts for Wamburgexpress\_82:

(Start: 93 @53897 has 69 MA's), (111, 53990), (119, 54044), (122, 54062), (137, 54122), (146, 54179),

Gene: Warren\_45 Start: 28593, Stop: 29075, Start Num: 89

Candidate Starts for Warren\_45:

(Start: 89 @28593 has 207 MA's), (132, 28815), (139, 28836), (150, 28899), (161, 28941),

Gene: WheeHeim\_13 Start: 6628, Stop: 6206, Start Num: 88

Candidate Starts for WheeHeim\_13:

(Start: 88 @6628 has 24 MA's), (102, 6595), (118, 6481), (126, 6424), (146, 6331), (157, 6292),

Gene: Wheelbite\_14 Start: 9719, Stop: 10477, Start Num: 89

Candidate Starts for Wheelbite\_14:

(Start: 89 @9719 has 207 MA's), (130, 9932), (132, 9941), (161, 10067), (181, 10280),

Gene: Whirlwind\_84 Start: 55415, Stop: 55798, Start Num: 93

Candidate Starts for Whirlwind\_84:

(Start: 93 @55415 has 69 MA's), (106, 55475), (107, 55487), (111, 55508), (119, 55568), (122, 55586), (137, 55646), (156, 55736),

Gene: Wiggin\_102 Start: 59101, Stop: 59541, Start Num: 92

Candidate Starts for Wiggin\_102:

(32, 58900), (33, 58903), (Start: 38 @58930 has 1 MA's), (40, 58933), (47, 58975), (62, 59029), (Start: 92 @59101 has 121 MA's), (112, 59200), (137, 59332), (148, 59398), (161, 59446),

Gene: Wigglewigggle\_84 Start: 55113, Stop: 55499, Start Num: 93

Candidate Starts for Wigglewigggle\_84:

(Start: 93 @55113 has 69 MA's), (105, 55164), (107, 55185), (111, 55206), (118, 55245), (119, 55260), (122, 55278), (135, 55335), (137, 55338), (146, 55395),

Gene: Wildcat\_78 Start: 48987, Stop: 49376, Start Num: 91

Candidate Starts for Wildcat\_78:

(Start: 91 @48987 has 7 MA's), (112, 49083), (119, 49134), (122, 49152), (134, 49206), (147, 49272), (161, 49326),

Gene: Wilde\_74 Start: 52160, Stop: 51552, Start Num: 89

Candidate Starts for Wilde\_74:

(Start: 89 @52160 has 207 MA's), (101, 52136), (108, 52079), (132, 51938), (151, 51854),

Gene: Wilder\_86 Start: 55257, Stop: 55643, Start Num: 93

Candidate Starts for Wilder\_86:

(Start: 93 @55257 has 69 MA's), (105, 55308), (107, 55329), (111, 55350), (118, 55389), (119, 55404), (122, 55422), (135, 55479), (137, 55482), (146, 55539),

Gene: Willez\_95 Start: 58223, Stop: 58663, Start Num: 92

Candidate Starts for Willez\_95:

(Start: 92 @58223 has 121 MA's), (112, 58322), (126, 58418), (137, 58454), (148, 58520), (161, 58568),

Gene: WilliamBoone\_125 Start: 69149, Stop: 69661, Start Num: 89  
Candidate Starts for WilliamBoone\_125:  
(Start: 89 @69149 has 207 MA's), (98, 69167), (103, 69185), (126, 69347), (132, 69371), (167, 69545), (175, 69605),

Gene: Winky\_85 Start: 55471, Stop: 55857, Start Num: 93  
Candidate Starts for Winky\_85:  
(Start: 93 @55471 has 69 MA's), (105, 55522), (107, 55543), (111, 55564), (118, 55603), (119, 55618), (122, 55636), (135, 55693), (137, 55696), (146, 55753),

Gene: Wyatt2\_83 Start: 53860, Stop: 54243, Start Num: 93  
Candidate Starts for Wyatt2\_83:  
(Start: 93 @53860 has 69 MA's), (111, 53953), (119, 54007), (122, 54025), (137, 54085), (146, 54142),

Gene: Wyborn\_38 Start: 31062, Stop: 31586, Start Num: 89  
Candidate Starts for Wyborn\_38:  
(Start: 89 @31062 has 207 MA's), (120, 31224), (122, 31236), (132, 31284), (139, 31305), (162, 31413),

Gene: Xandras\_99 Start: 58924, Stop: 59364, Start Num: 92  
Candidate Starts for Xandras\_99:  
(32, 58723), (33, 58726), (Start: 38 @58753 has 1 MA's), (40, 58756), (47, 58798), (62, 58852), (Start: 92 @58924 has 121 MA's), (108, 59005), (112, 59023), (137, 59155), (148, 59221), (161, 59269),

Gene: YassJohnny\_97 Start: 58244, Stop: 58684, Start Num: 92  
Candidate Starts for YassJohnny\_97:  
(32, 58043), (33, 58046), (Start: 38 @58073 has 1 MA's), (40, 58076), (47, 58118), (62, 58172), (Start: 92 @58244 has 121 MA's), (108, 58325), (112, 58343), (137, 58475), (148, 58541), (161, 58589),

Gene: Yeti\_64 Start: 40535, Stop: 41041, Start Num: 89  
Candidate Starts for Yeti\_64:  
(Start: 89 @40535 has 207 MA's), (97, 40550), (132, 40757), (150, 40841), (161, 40883),

Gene: YoungHarleezy\_70 Start: 37838, Stop: 38341, Start Num: 89  
Candidate Starts for YoungHarleezy\_70:  
(Start: 89 @37838 has 207 MA's), (108, 37919), (128, 38057),

Gene: Youngblood\_103 Start: 60394, Stop: 60834, Start Num: 92  
Candidate Starts for Youngblood\_103:  
(32, 60193), (33, 60196), (Start: 38 @60223 has 1 MA's), (40, 60226), (47, 60268), (62, 60322), (Start: 92 @60394 has 121 MA's), (108, 60475), (112, 60493), (126, 60589), (137, 60625), (148, 60691), (161, 60739),

Gene: Yvonnetastic\_132 Start: 74503, Stop: 75024, Start Num: 89  
Candidate Starts for Yvonnetastic\_132:  
(Start: 89 @74503 has 207 MA's), (Start: 96 @74515 has 4 MA's), (101, 74527), (105, 74557), (111, 74599), (112, 74602), (134, 74731), (172, 74968),

Gene: Zakai\_86 Start: 55577, Stop: 55963, Start Num: 93  
Candidate Starts for Zakai\_86:



(Start: 93 @55577 has 69 MA's), (105, 55628), (107, 55649), (111, 55670), (118, 55709), (119, 55724), (122, 55742), (135, 55799), (137, 55802), (146, 55859),

Gene: Zaria\_83 Start: 53312, Stop: 53695, Start Num: 93

Candidate Starts for Zaria\_83:

(Start: 93 @53312 has 69 MA's), (111, 53405), (119, 53459), (122, 53477), (137, 53537), (146, 53594),

Gene: Zartrosa\_37 Start: 30749, Stop: 31297, Start Num: 89

Candidate Starts for Zartrosa\_37:

(58, 30662), (Start: 89 @30749 has 207 MA's), (101, 30773), (132, 30971), (156, 31076), (178, 31181),

Gene: ZhongYanYuan\_83 Start: 55291, Stop: 55689, Start Num: 93

Candidate Starts for ZhongYanYuan\_83:

(Start: 93 @55291 has 69 MA's), (105, 55342), (107, 55363), (111, 55384), (118, 55423), (119, 55438), (122, 55456), (135, 55513), (137, 55516), (146, 55573), (156, 55609),

Gene: Zucker\_67 Start: 38807, Stop: 39271, Start Num: 89

Candidate Starts for Zucker\_67:

(Start: 89 @38807 has 207 MA's), (112, 38906), (125, 38999), (164, 39176),

Gene: pZL12\_1c Start: 1177, Stop: 662, Start Num: 104

Candidate Starts for pZL12\_1c:

(Start: 89 @1216 has 207 MA's), (97, 1201), (101, 1192), (102, 1189), (104, 1177), (108, 1135), (111, 1120), (114, 1111), (119, 1057), (122, 1039), (132, 991), (137, 979), (145, 934), (146, 922), (150, 907), (153, 898), (160, 868), (161, 865), (171, 781),

Gene: xkcd\_103 Start: 60578, Stop: 61018, Start Num: 92

Candidate Starts for xkcd\_103:

(32, 60377), (33, 60380), (Start: 38 @60407 has 1 MA's), (40, 60410), (47, 60452), (62, 60506), (Start: 92 @60578 has 121 MA's), (108, 60659), (112, 60677), (137, 60809), (148, 60875), (161, 60923),