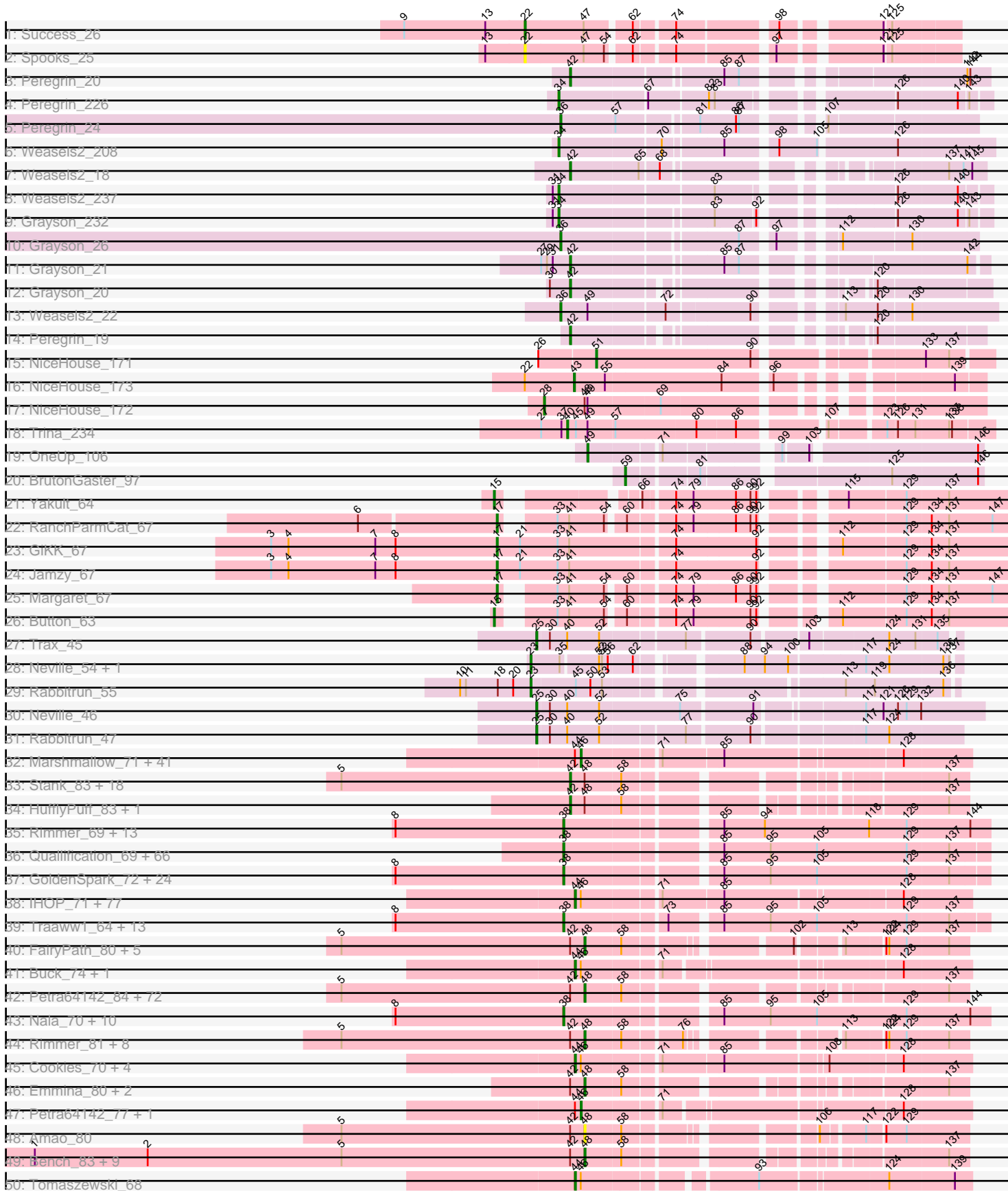
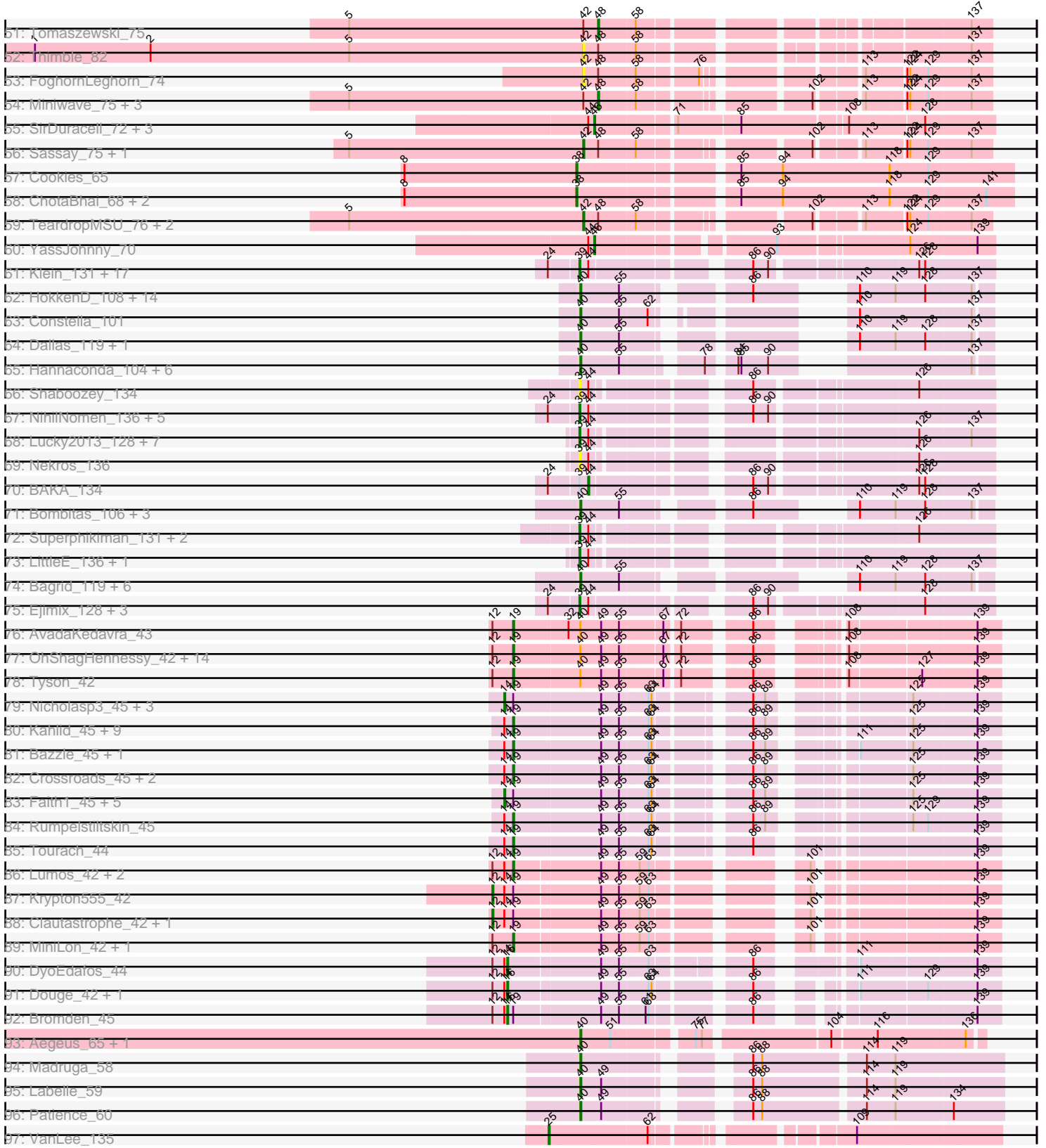


# Pham 215672



Pham 215672



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 215672 Report

This analysis was run 02/22/25 on database version 588.

Pham number 215672 has 579 members, 44 are drafts.

Phages represented in each track:

- Track 1 : Success\_26
- Track 2 : Spooks\_25
- Track 3 : Peregrin\_20
- Track 4 : Peregrin\_226
- Track 5 : Peregrin\_24
- Track 6 : Weasels2\_208
- Track 7 : Weasels2\_18
- Track 8 : Weasels2\_237
- Track 9 : Grayson\_232
- Track 10 : Grayson\_26
- Track 11 : Grayson\_21
- Track 12 : Grayson\_20
- Track 13 : Weasels2\_22
- Track 14 : Peregrin\_19
- Track 15 : NiceHouse\_171
- Track 16 : NiceHouse\_173
- Track 17 : NiceHouse\_172
- Track 18 : Trina\_234
- Track 19 : OneUp\_106
- Track 20 : BrutonGaster\_97
- Track 21 : Yakult\_64
- Track 22 : RanchParmCat\_67
- Track 23 : GiKK\_67
- Track 24 : Jamzy\_67
- Track 25 : Margaret\_67
- Track 26 : Button\_63
- Track 27 : Trax\_45
- Track 28 : Neville\_54, Trax\_53
- Track 29 : Rabbitrun\_55
- Track 30 : Neville\_46
- Track 31 : Rabbitrun\_47
- Track 32 : Marshmallow\_71, Teaspoon\_74, Nala\_75, Sassay\_68, Thresher\_75, Murica\_76, 244\_74, Nimrod\_74, FoghornLeghorn\_67, Becksu\_72, Command613\_75, StellaBean\_71, BilboSwaggins\_72, Kostya\_73, GoldenSpark\_77, Youngblood\_76, Icee\_74, Balomoji\_73, FairyPath\_73, MadamMonkfish\_73, Dumbo\_73, Simpliphy\_72, NelitzaMV\_71, Eureka\_71, Goldilocks\_76, Terminus\_76, CrystalP\_72, Cjw1\_73, BugsBunny\_73, Daikon\_75, Filch\_74, Easy2Say\_74, Porky\_72, Pumpkin\_76,

Amao\_73, Elph10\_73, Murphy\_73, Maxxinista\_75, Wiggin\_75, FireRed\_77, Thimble\_75, Willez\_68

- Track 33 : Stank\_83, Marshmallow\_78, BugsBunny\_80, Kostya\_80, BilboSwaggins\_79, Eureka\_78, Cjw1\_80, Daikon\_82, Elph10\_80, DrDrey\_80, Adnama\_84, NelitzaMV\_78, Goku\_78, Bruin\_77, GoldenSpark\_84, MISSy\_81, Command613\_82, ABCat\_77, Dumbo\_80
- Track 34 : HufflyPuff\_83, Porky\_79
- Track 35 : Rimmer\_69, FoghornLeghorn\_62, Sassay\_63, Harella\_68, Bask21\_68, Petra64142\_72, SirDuracell\_67, YassJohnny\_65, Buck\_69, Glexan\_67, Tomaszewski\_63, DoctorDiddles\_67, StormChicken\_70, Willez\_63
- Track 36 : Quallification\_69, Miniwave\_63, IHOP\_66, Icee\_69, Thresher\_70, Kanye\_65, Murica\_71, Murphy\_68, Pharsalus\_65, StellaBean\_66, BadStone\_65, Gator\_66, HufflyPuff\_71, Stark\_69, Paperbeatsrock\_67, Tarkin\_67, Rakim\_69, ABCat\_65, Hopey\_68, NelitzaMV\_66, Marshmallow\_66, BigBubba\_68, Tuco\_69, Lilpickle\_67, PhatBacter\_72, Goku\_66, Flypotenuse\_64, OrionPax\_67, Lilac\_70, Czyszczonek\_69, RiverMonster\_68, Manda\_68, Phaux\_70, Sotrice96\_69, Ukulele\_63, Cactus\_71, Elph10\_68, Kostya\_68, SophKB\_65, Elite2014\_67, ChosenOne\_68, Balomoji\_68, Dusk\_65, DrDrey\_68, Palpatine\_70, Simpliphy\_67, Policronamos\_71, Saints25\_67, ShereKhan\_67, Highbury\_67, NoSleep\_69, Daikon\_70, TeardropMSU\_64, Dumbo\_68, Pumpkin\_71, xkcd\_71, Eureka\_66, 244\_69, Maxxinista\_70, Phrux\_65, Phaja\_66, Cjw1\_68, HanKaySha\_68, BugsBunny\_68, Myrale\_68, Xandras\_67, Filch\_69
- Track 37 : GoldenSpark\_72, Porky\_67, FairyPath\_68, Gemini\_73, Gage\_70, Emmina\_68, TBrady12\_71, Youngblood\_71, Lilizi\_69, BaboJay\_65, Inca\_65, MadamMonkfish\_68, Argent26\_72, Hoonter\_71, GooberAzure\_71, Goldilocks\_71, Bench\_71, Kimchi\_72, JeTaime\_68, StolenFromERC\_71, AmericanBeauty\_72, Command613\_70, Teaspoon\_69, Holt\_73, Thimble\_70
- Track 38 : IHOP\_71, Traaww1\_69, Miniwave\_68, Highbury\_72, NoSleep\_74, Glexan\_72, Lilizi\_74, Inca\_70, Gemini\_78, MISSy\_74, Moldemort\_76, Gage\_75, Phaja\_71, HanKaySha\_73, Mosby\_69, Manda\_74, SophKB\_70, Elite2014\_72, MPhalcon\_74, Dusk\_70, Quallification\_74, Kanye\_70, Saints25\_72, PhatBacter\_77, JeTaime\_73, BadStone\_70, Lilpickle\_72, Contagion\_69, Palpatine\_75, ShereKhan\_72, Henry\_71, Emmina\_73, Flypotenuse\_69, Stank\_76, Mindy\_72, Hoonter\_76, Lilac\_75, Phaux\_75, Ukulele\_68, Cactus\_76, Adnama\_77, Hopey\_73, GooberAzure\_76, Myrale\_73, TBrady12\_76, Bench\_76, Phrux\_70, BaboJay\_70, Goku\_71, Kimchi\_77, Asriel\_72, Policronamos\_76, Bruin\_70, Argent26\_77, Xandras\_72, Tuco\_74, Barbarian\_72, TeardropMSU\_69, ShamWow\_73, xkcd\_76, StolenFromERC\_76, RiverMonster\_73, Sotrice96\_74, Harella\_73, AmericanBeauty\_77, Czyszczonek\_74, Toto\_71, Pharsalus\_70, Gator\_71, Stark\_74, Misfit\_74, ChosenOne\_73, Tarkin\_72, ABCat\_70, HufflyPuff\_76, DrDrey\_73, Holt\_78, Paperbeatsrock\_72
- Track 39 : Traaww1\_64, Easy2Say\_69, Moldemort\_71, CrystalP\_67, Asriel\_67, Henry\_66, Barbarian\_67, ShamWow\_68, BilboSwaggins\_67, Adnama\_72, Toto\_66, Stank\_71, Mindy\_67, Wiggin\_70
- Track 40 : FairyPath\_80, Phaja\_78, SophKB\_77, ShereKhan\_78, Quallification\_81, Myrale\_80
- Track 41 : Buck\_74, StormChicken\_75
- Track 42 : Petra64142\_84, Highbury\_79, Flypotenuse\_76, Mindy\_79, Filch\_81, Inca\_77, Sotrice96\_81, Moldemort\_83, Dusk\_77, Henry\_78, Becksu\_79, Kanye\_77, StellaBean\_78, AmericanBeauty\_84, Rakim\_81, Misfit\_81, Lilac\_82, Terminus\_83, IHOP\_78, Glexan\_79, Palpatine\_82, Saints25\_79, Cactus\_83, Buck\_81, Simpliphy\_79, GooberAzure\_83, MadamMonkfish\_80, Lilpickle\_79, Holt\_85, JeTaime\_80, Icee\_81, MPhalcon\_81, Kimchi\_84, Czyszczonek\_81, Maxxinista\_82,

Hopey\_80, BadStone\_77, Balomoji\_80, Harella\_80, TBrady12\_83, Stark\_81, RiverMonster\_80, Easy2Say\_81, CrystalP\_79, Ukulele\_75, BaboJay\_77, Asriel\_79, Murphy\_80, HanKaySha\_80, Contagion\_76, Goldilocks\_83, StolenFromERC\_83, Tuco\_81, BigBubba\_80, Traaww1\_76, Mosby\_76, Barbarian\_79, OrionPax\_79, Gage\_82, Thresher\_82, ShamWow\_80, ChosenOne\_80, Phrux\_77, Youngblood\_83, Toto\_78, Manda\_81, Gator\_78, Teaspoon\_81, Elite2014\_79, NoSleep\_81, Wiggins\_82, Argent26\_84, Gemini\_85

- Track 43 : Nala\_70, MPhalcon\_69, Mosby\_64, Bruin\_65, Nimrod\_69, Contagion\_64, MISSy\_69, Becksu\_67, Terminus\_71, Misfit\_69, FireRed\_72
- Track 44 : Rimmer\_81, Cookies\_77, Bask21\_80, ChotaBhai\_80, SirDuracell\_79, Pat3\_78, Phaux\_82, Policronamos\_83, DoctorDiddles\_79
- Track 45 : Cookies\_70, ChotaBhai\_73, Rakim\_74, Pat3\_71, BigBubba\_73
- Track 46 : Emmina\_80, xkcd\_83, Murica\_83
- Track 47 : Petra64142\_77, Rimmer\_74
- Track 48 : Amao\_80
- Track 49 : Bench\_83, 244\_81, Pumpkin\_83, PhatBacter\_84, Lilizi\_81, FireRed\_84, Hoonter\_83, Xandras\_79, Nimrod\_81, Nala\_82
- Track 50 : Tomaszewski\_68
- Track 51 : Tomaszewski\_75
- Track 52 : Thimble\_82
- Track 53 : FoghornLeghorn\_74
- Track 54 : Miniwave\_75, Pharsalus\_77, Tarkin\_79, Paperbeatsrock\_79
- Track 55 : SirDuracell\_72, Bask21\_73, OrionPax\_72, DoctorDiddles\_72
- Track 56 : Sassay\_75, Willez\_75
- Track 57 : Cookies\_65
- Track 58 : ChotaBhai\_68, Amao\_68, Pat3\_66
- Track 59 : TeardropMSU\_76, StormChicken\_82, YassJohnny\_77
- Track 60 : YassJohnny\_70
- Track 61 : Klein\_131, Redno2\_126, Yeet\_128, Wanda\_133, Odette\_138, Hughesyang\_134, ThreeRngTarjay\_130, Dove\_120, Minerva\_133, HokkenD\_126, DmpstrDiver\_134, Constella\_128, Duke13\_129, Schatzie\_130, Bagrid\_135, Phoebus\_135, EricMillard\_126, Zelink\_129
- Track 62 : HokkenD\_108, Ariel\_113, Redno2\_112, Lucky2013\_110, Courthouse\_108, JuicyJay\_115, Phoebus\_119, Porcelain\_113, Squint\_111, Rearden\_107, Beem\_120, Superphikiman\_110, MiaZeal\_113, NihilNomen\_120, Dove\_104
- Track 63 : Constella\_101
- Track 64 : Dallas\_119, Thibault\_99
- Track 65 : Hannaconda\_104, KashFlow\_110, Shaboozey\_111, Nekros\_115, Gonephishing\_107, Omega\_124, LittleE\_118
- Track 66 : Shaboozey\_134
- Track 67 : NihilNomen\_136, Bombitas\_122, JuicyJay\_131, Bobby\_126, Marleymoo\_119, Beem\_136
- Track 68 : Lucky2013\_128, MiaZeal\_133, Rearden\_132, Gonephishing\_128, Hannaconda\_127, KashFlow\_131, Porcelain\_131, Squint\_131
- Track 69 : Nekros\_136
- Track 70 : BAKA\_134
- Track 71 : Bombitas\_106, Schatzie\_113, Yeet\_109, Odette\_120
- Track 72 : Superphikiman\_131, Ariel\_133, Courthouse\_129
- Track 73 : LittleE\_136, Omega\_143
- Track 74 : Bagrid\_119, Halley\_121, Minerva\_116, Hughesyang\_118, Pound\_108, DmpstrDiver\_119, Ejimix\_113
- Track 75 : Ejimix\_128, Halley\_136, Thibault\_119, Dallas\_135

- Track 76 : AvadaKedavra\_43
- Track 77 : OhShagHennessy\_42, Rose5\_42, Zaria\_43, Enceladus\_42, Halena\_42, DirkDirk\_42, JoeDirt\_42, Wyatt2\_43, UPIE\_43, Acquire49\_43, Wamburggrxpress\_43, Silverleaf\_42, LeBron\_43, Appletree2\_42, Calm\_43
- Track 78 : Tyson\_42
- Track 79 : Nicholasp3\_45, Loadrie\_44, GuuelaD\_44, Wigglewiggles\_45
- Track 80 : Kahlid\_45, MkaliMitinis3\_45, Gabriela\_45, BigCheese\_45, Lewan\_45, Vetrix\_45, Netyap\_45, Wilder\_45, DrSeegs\_45, LilDestine\_45
- Track 81 : Bazzle\_45, Archie\_45
- Track 82 : Crossroads\_45, Zakai\_45, Gardann\_45
- Track 83 : Faith1\_45, Itos\_44, Finemlucis\_45, Winky\_45, Breezona\_45, Miley16\_45
- Track 84 : Rumpelstiltskin\_45
- Track 85 : Tourach\_44
- Track 86 : Lumos\_42, Jubie\_42, Whirlwind\_43
- Track 87 : Krypton555\_42
- Track 88 : Clautastrophe\_42, MsGreen\_42
- Track 89 : MiniLon\_42, MiniMac\_42
- Track 90 : DyoEdafos\_44
- Track 91 : Douge\_42, Chaser\_42
- Track 92 : Bromden\_45
- Track 93 : Aegeus\_65, Baudelaire\_65
- Track 94 : Madruga\_58
- Track 95 : Labelle\_59
- Track 96 : Patience\_60
- Track 97 : VanLee\_135

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

The start number called the most often in the published annotations is 38, it was called in 125 of the 535 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 244\_69, ABCat\_65, Adnama\_72, Amao\_68, AmericanBeauty\_72, Argent26\_72, Asriel\_67, BaboJay\_65, BadStone\_65, Balomoji\_68, Barbarian\_67, Bask21\_68, Becksu\_67, Bench\_71, BigBubba\_68, BilboSwaggins\_67, Bruin\_65, Buck\_69, BugsBunny\_68, Cactus\_71, ChosenOne\_68, ChotaBhai\_68, Cjw1\_68, Command613\_70, Contagion\_64, Cookies\_65, CrystalP\_67, Czyszczonek1\_69, Daikon\_70, DoctorDiddles\_67, DrDrey\_68, Dumbo\_68, Dusk\_65, Easy2Say\_69, Elite2014\_67, Elph10\_68, Emmina\_68, Eureka\_66, FairyPath\_68, Filch\_69, FireRed\_72, Flypotenuse\_64, FoghornLeghorn\_62, Gage\_70, Gator\_66, Gemini\_73, Glexan\_67, Goku\_66, GoldenSpark\_72, Goldilocks\_71, GooberAzure\_71, HanKaySha\_68, Harella\_68, Henry\_66, Highbury\_67, Holt\_73, Hoonter\_71, Hopey\_68, HufflyPuff\_71, IHOP\_66, Icee\_69, Inca\_65, JeTaime\_68, Kanye\_65, Kimchi\_72, Kostya\_68, Lilac\_70, Lilizi\_69, Lilpickle\_67, MISSy\_69, MPhalcon\_69, MadamMonkfish\_68, Manda\_68, Marshmallow\_66, Maxxinista\_70, Mindy\_67, Miniwave\_63, Misfit\_69, Moldemort\_71, Mosby\_64, Murica\_71, Murphy\_68, Myrale\_68, Nala\_70, NelitzaMV\_66, Nimrod\_69, NoSleep\_69, OrionPax\_67, Palpatine\_70, Paperbeatsrock\_67, Pat3\_66, Petra64142\_72, Phaja\_66, Pharsalus\_65, PhatBacter\_72, Phaux\_70, Phrux\_65, Policronamos\_71, Porky\_67, Pumpkin\_71, Quallification\_69, Rakim\_69, Rimmer\_69, RiverMonster\_68,

Saints25\_67, Sassay\_63, ShamWow\_68, ShereKhan\_67, Simpliphy\_67, SirDuracell\_67, SophKB\_65, Sotrice96\_69, Stank\_71, Stark\_69, StellaBean\_66, StolenFromERC\_71, StormChicken\_70, TBrady12\_71, Tarkin\_67, TeardropMSU\_64, Teaspoon\_69, Terminus\_71, Thimble\_70, Thresher\_70, Tomaszewski\_63, Toto\_66, Traaww1\_64, Tuco\_69, Ukulele\_63, Wiggin\_70, Willez\_63, Xandras\_67, YassJohnny\_65, Youngblood\_71, xkcd\_71,

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

•

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

• 244\_74, 244\_81, ABCat\_70, ABCat\_77, Acquire49\_43, Adnama\_77, Adnama\_84, Aegeus\_65, Amao\_73, Amao\_80, AmericanBeauty\_77, AmericanBeauty\_84, Appletree2\_42, Archie\_45, Argent26\_77, Argent26\_84, Ariel\_113, Ariel\_133, Asriel\_72, Asriel\_79, AvadaKedavra\_43, BAKA\_134, BaboJay\_70, BaboJay\_77, BadStone\_70, BadStone\_77, Bagrid\_119, Bagrid\_135, Balomoji\_73, Balomoji\_80, Barbarian\_72, Barbarian\_79, Bask21\_73, Bask21\_80, Baudelaire\_65, Bazzle\_45, Becksu\_72, Becksu\_79, Beem\_120, Beem\_136, Bench\_76, Bench\_83, BigBubba\_73, BigBubba\_80, BigCheese\_45, BilboSwaggins\_72, BilboSwaggins\_79, Bobby\_126, Bombitas\_106, Bombitas\_122, Breezona\_45, Bromden\_45, Bruin\_70, Bruin\_77, BrutonGaster\_97, Buck\_74, Buck\_81, BugsBunny\_73, BugsBunny\_80, Button\_63, Cactus\_76, Cactus\_83, Calm\_43, Chaser\_42, ChosenOne\_73, ChosenOne\_80, ChotaBhai\_73, ChotaBhai\_80, Cjw1\_73, Cjw1\_80, Clautastrophe\_42, Command613\_75, Command613\_82, Constella\_101, Constella\_128, Contagion\_69, Contagion\_76, Cookies\_70, Cookies\_77, Courthouse\_108, Courthouse\_129, Crossroads\_45, CrystalP\_72, CrystalP\_79, Czyszczonek1\_74, Czyszczonek1\_81, Daikon\_75, Daikon\_82, Dallas\_119, Dallas\_135, DirkDirk\_42, DmpstrDiver\_119, DmpstrDiver\_134, DoctorDiddles\_72, DoctorDiddles\_79, Douge\_42, Dove\_104, Dove\_120, DrDrey\_73, DrDrey\_80, DrSeegs\_45, Duke13\_129, Dumbo\_73, Dumbo\_80, Dusk\_70, Dusk\_77, DyoEdafos\_44, Easy2Say\_74, Easy2Say\_81, Ejimix\_113, Ejimix\_128, Elite2014\_72, Elite2014\_79, Elph10\_73, Elph10\_80, Emmina\_73, Emmina\_80, Enceladus\_42, EricMillard\_126, Eureka\_71, Eureka\_78, FairyPath\_73, FairyPath\_80, Faith1\_45, Filch\_74, Filch\_81, Finemlucis\_45, FireRed\_77, FireRed\_84, Flypotenuse\_69, Flypotenuse\_76, FoghornLeghorn\_67, FoghornLeghorn\_74, Gabriela\_45, Gage\_75, Gage\_82, Gardann\_45, Gator\_71, Gator\_78, Gemini\_78, Gemini\_85, GiKK\_67, Glexan\_72, Glexan\_79, Goku\_71, Goku\_78, GoldenSpark\_77, GoldenSpark\_84, Goldilocks\_76, Goldilocks\_83, Gonephishing\_107, Gonephishing\_128, GooberAzure\_76, GooberAzure\_83, Grayson\_20, Grayson\_21, Grayson\_232, Grayson\_26, GuuelaD\_44, Halena\_42, Halley\_121, Halley\_136, HanKaySha\_73, HanKaySha\_80, Hannaconda\_104, Hannaconda\_127, Harella\_73, Harella\_80, Henry\_71, Henry\_78, Highbury\_72, Highbury\_79, HokkenD\_108, HokkenD\_126, Holt\_78, Holt\_85, Hoonter\_76, Hoonter\_83, Hopey\_73, Hopey\_80, HuffyPuff\_76, HuffyPuff\_83, Hughesyang\_118, Hughesyang\_134, IHOP\_71, IHOP\_78, Icee\_74, Icee\_81, Inca\_70, Inca\_77, Itos\_44, Jamzy\_67, JeTaime\_73, JeTaime\_80, JoeDirt\_42, Jubie\_42, JuicyJay\_115, JuicyJay\_131, Kahlid\_45, Kanye\_70, Kanye\_77, KashFlow\_110, KashFlow\_131, Kimchi\_77, Kimchi\_84, Klein\_131, Kostya\_73, Kostya\_80, Krypton555\_42, Labelle\_59, LeBron\_43, Lewan\_45, LilDestine\_45, Lilac\_75, Lilac\_82, Lilizi\_74, Lilizi\_81, Lilpickle\_72, Lilpickle\_79, LittleE\_118, LittleE\_136, Loadrie\_44, Lucky2013\_110, Lucky2013\_128, Lumos\_42, MISSy\_74, MISSy\_81, MPhalcon\_74, MPhalcon\_81, MadamMonkfish\_73, MadamMonkfish\_80, Madrugada\_58, Manda\_74, Manda\_81, Margaret\_67, MarleyMoo\_119, Marshmallow\_71, Marshmallow\_78, Maxxinista\_75, Maxxinista\_82,

MiaZeal\_113, MiaZeal\_133, Miley16\_45, Mindy\_72, Mindy\_79, Minerva\_116, Minerva\_133, MiniLon\_42, MiniMac\_42, Miniwave\_68, Miniwave\_75, Misfit\_74, Misfit\_81, MkaliMitinis3\_45, Moldemort\_76, Moldemort\_83, Mosby\_69, Mosby\_76, MsGreen\_42, Murica\_76, Murica\_83, Murphy\_73, Murphy\_80, Myrale\_73, Myrale\_80, Nala\_75, Nala\_82, Nekros\_115, Nekros\_136, NelitzaMV\_71, NelitzaMV\_78, Netyap\_45, Neville\_46, Neville\_54, NiceHouse\_171, NiceHouse\_172, NiceHouse\_173, Nicholasp3\_45, NihilNomen\_120, NihilNomen\_136, Nimrod\_74, Nimrod\_81, NoSleep\_74, NoSleep\_81, Odette\_120, Odette\_138, OhShagHennessy\_42, Omega\_124, Omega\_143, OneUp\_106, OrionPax\_72, OrionPax\_79, Palpatine\_75, Palpatine\_82, Paperbeatsrock\_72, Paperbeatsrock\_79, Pat3\_71, Pat3\_78, Patience\_60, Peregrin\_19, Peregrin\_20, Peregrin\_226, Peregrin\_24, Petra64142\_77, Petra64142\_84, Phaja\_71, Phaja\_78, Pharsalus\_70, Pharsalus\_77, PhatBacter\_77, PhatBacter\_84, Phaux\_75, Phaux\_82, Phoebus\_119, Phoebus\_135, Phrux\_70, Phrux\_77, Policronamos\_76, Policronamos\_83, Porcelain\_113, Porcelain\_131, Porky\_72, Porky\_79, Pound\_108, Pumpkin\_76, Pumpkin\_83, Quallification\_74, Quallification\_81, Rabbitrun\_47, Rabbitrun\_55, Rakim\_74, Rakim\_81, RanchParmCat\_67, Rearden\_107, Rearden\_132, Redno2\_112, Redno2\_126, Rimmer\_74, Rimmer\_81, RiverMonster\_73, RiverMonster\_80, Rose5\_42, Rumpelstiltskin\_45, Saints25\_72, Saints25\_79, Sassay\_68, Sassay\_75, Schatzie\_113, Schatzie\_130, Shaboozey\_111, Shaboozey\_134, ShamWow\_73, ShamWow\_80, ShereKhan\_72, ShereKhan\_78, Silverleaf\_42, Simpliphy\_72, Simpliphy\_79, SirDuracell\_72, SirDuracell\_79, SophKB\_70, SophKB\_77, Sotrice96\_74, Sotrice96\_81, Spooks\_25, Squint\_111, Squint\_131, Stank\_76, Stank\_83, Stark\_74, Stark\_81, StellaBean\_71, StellaBean\_78, StolenFromERC\_76, StolenFromERC\_83, StormChicken\_75, StormChicken\_82, Success\_26, Superphikiman\_110, Superphikiman\_131, TBrady12\_76, TBrady12\_83, Tarkin\_72, Tarkin\_79, TeardropMSU\_69, TeardropMSU\_76, Teaspoon\_74, Teaspoon\_81, Terminus\_76, Terminus\_83, Thibault\_119, Thibault\_99, Thimble\_75, Thimble\_82, ThreeRngTarjay\_130, Thresher\_75, Thresher\_82, Tomaszewski\_68, Tomaszewski\_75, Toto\_71, Toto\_78, Tourach\_44, Traaww1\_69, Traaww1\_76, Trax\_45, Trax\_53, Trina\_234, Tuco\_74, Tuco\_81, Tyson\_42, UPIE\_43, Ukulele\_68, Ukulele\_75, VanLee\_135, Vatrix\_45, Wamburgrxpress\_43, Wanda\_133, Weasels2\_18, Weasels2\_208, Weasels2\_22, Weasels2\_237, Whirlwind\_43, Wiggin\_75, Wiggin\_82, Wigglewiggle\_45, Wilder\_45, Willez\_68, Willez\_75, Winky\_45, Wyatt2\_43, Xandras\_72, Xandras\_79, Yakult\_64, YassJohnny\_70, YassJohnny\_77, Yeet\_109, Yeet\_128, Youngblood\_76, Youngblood\_83, Zakai\_45, Zaria\_43, Zelink\_129, xkcd\_76, xkcd\_83,

### Summary by start number:

#### Start 12:

- Found in 29 of 579 ( 5.0% ) of genes in pham
- Manual Annotations of this start: 3 of 535
- Called 10.3% of time when present
- Phage (with cluster) where this start called: Clautastrophe\_42 (L3), Krypton555\_42 (L3), MsGreen\_42 (L3),

#### Start 14:

- Found in 37 of 579 ( 6.4% ) of genes in pham
- Manual Annotations of this start: 10 of 535
- Called 27.0% of time when present
- Phage (with cluster) where this start called: Breezona\_45 (L2), Faith1\_45 (L2), Finemlucis\_45 (L2), GuuelaD\_44 (L2), Itos\_44 (L2), Loadrie\_44 (L2), Miley16\_45



(L2), Nicholasp3\_45 (L2), Wigglewobble\_45 (L2), Winky\_45 (L2),

Start 15:

- Found in 2 of 579 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 2 of 535
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Button\_63 (CT), Yakult\_64 (CT),

Start 16:

- Found in 4 of 579 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 4 of 535
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bromden\_45 (L4), Chaser\_42 (L4), Douge\_42 (L4), DyoEdafos\_44 (L4),

Start 17:

- Found in 4 of 579 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 4 of 535
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GiKK\_67 (CT), Jamzy\_67 (CT), Margaret\_67 (CT), RanchParmCat\_67 (CT),

Start 19:

- Found in 53 of 579 ( 9.2% ) of genes in pham
- Manual Annotations of this start: 39 of 535
- Called 73.6% of time when present
- Phage (with cluster) where this start called: Acquire49\_43 (L1), Appletree2\_42 (L1), Archie\_45 (L2), AvadaKedavra\_43 (L1), Bazzle\_45 (L2), BigCheese\_45 (L2), Calm\_43 (L1), Crossroads\_45 (L2), DirkDirk\_42 (L1), DrSeegs\_45 (L2), Enceladus\_42 (L1), Gabriela\_45 (L2), Gardann\_45 (L2), Halena\_42 (L1), JoeDirt\_42 (L1), Jubie\_42 (L3), Kahlid\_45 (L2), LeBron\_43 (L1), Lewan\_45 (L2), LilDestine\_45 (L2), Lumos\_42 (L3), MiniLon\_42 (L3), MiniMac\_42 (L3), MkaliMitinis3\_45 (L2), Netyap\_45 (L2), OhShagHennessy\_42 (L1), Rose5\_42 (L1), Rumpelstiltskin\_45 (L2), Silverleaf\_42 (L1), Tourach\_44 (L2), Tyson\_42 (L1), UPIE\_43 (L1), Vetric\_45 (L2), Wamburgrxpress\_43 (L1), Whirlwind\_43 (L3), Wilder\_45 (L2), Wyatt2\_43 (L1), Zakai\_45 (L2), Zaria\_43 (L1),

Start 22:

- Found in 3 of 579 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 535
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Spooks\_25 (BT), Success\_26 (BT),

Start 23:

- Found in 3 of 579 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 3 of 535
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Neville\_54 (DU2), Rabbitrun\_55 (DU2), Trax\_53 (DU2),

Start 25:

- Found in 4 of 579 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 4 of 535

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Neville\_46 (DU2), Rabbitrun\_47 (DU2), Trax\_45 (DU2), VanLee\_135 (singleton),

#### Start 28:

- Found in 1 of 579 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 535
- Called 100.0% of time when present
- Phage (with cluster) where this start called: NiceHouse\_172 (CE),

#### Start 34:

- Found in 4 of 579 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 4 of 535
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Grayson\_232 (CB), Peregrin\_226 (CB), Weasels2\_208 (CB), Weasels2\_237 (CB),

#### Start 36:

- Found in 3 of 579 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 3 of 535
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Grayson\_26 (CB), Peregrin\_24 (CB), Weasels2\_22 (CB),

#### Start 38:

- Found in 135 of 579 ( 23.3% ) of genes in pham
- Manual Annotations of this start: 125 of 535
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 244\_69 (E), ABCat\_65 (E), Adnama\_72 (E), Amao\_68 (E), AmericanBeauty\_72 (E), Argent26\_72 (E), Asriel\_67 (E), BaboJay\_65 (E), BadStone\_65 (E), Balomoji\_68 (E), Barbarian\_67 (E), Bask21\_68 (E), Becksu\_67 (E), Bench\_71 (E), BigBubba\_68 (E), BilboSwaggins\_67 (E), Bruin\_65 (E), Buck\_69 (E), BugsBunny\_68 (E), Cactus\_71 (E), ChosenOne\_68 (E), ChotaBhai\_68 (E), Cjw1\_68 (E), Command613\_70 (E), Contagion\_64 (E), Cookies\_65 (E), CrystalP\_67 (E), Czystczon1\_69 (E), Daikon\_70 (E), DoctorDiddles\_67 (E), DrDrey\_68 (E), Dumbo\_68 (E), Dusk\_65 (E), Easy2Say\_69 (E), Elite2014\_67 (E), Elph10\_68 (E), Emmina\_68 (E), Eureka\_66 (E), FairyPath\_68 (E), Filch\_69 (E), FireRed\_72 (E), Flypotenuse\_64 (E), FoghornLeghorn\_62 (E), Gage\_70 (E), Gator\_66 (E), Gemini\_73 (E), Glexan\_67 (E), Goku\_66 (E), GoldenSpark\_72 (E), Goldilocks\_71 (E), GooberAzure\_71 (E), HanKaySha\_68 (E), Harella\_68 (E), Henry\_66 (E), Highbury\_67 (E), Holt\_73 (E), Hoonter\_71 (E), Hopey\_68 (E), HufflyPuff\_71 (E), IHOP\_66 (E), Icee\_69 (E), Inca\_65 (E), JeTaimie\_68 (E), Kanye\_65 (E), Kimchi\_72 (E), Kostya\_68 (E), Lilac\_70 (E), Lilizi\_69 (E), Lilpickle\_67 (E), MISSy\_69 (E), MPhalcon\_69 (E), MadamMonkfish\_68 (E), Manda\_68 (E), Marshmallow\_66 (E), Maxxinista\_70 (E), Mindy\_67 (E), Miniwave\_63 (E), Misfit\_69 (E), Moldemort\_71 (E), Mosby\_64 (E), Murica\_71 (E), Murphy\_68 (E), Myrale\_68 (E), Nala\_70 (E), NelitzaMV\_66 (E), Nimrod\_69 (E), NoSleep\_69 (E), OrionPax\_67 (E), Palpatine\_70 (E), Paperbeatsrock\_67 (E), Pat3\_66 (E), Petra64142\_72 (E), Phaja\_66 (E), Pharsalus\_65 (E), PhatBacter\_72 (E), Phaux\_70 (E), Phrux\_65 (E), Policronamos\_71 (E), Porky\_67 (E), Pumpkin\_71 (E), Quallification\_69 (E), Rakim\_69 (E), Rimmer\_69 (E), RiverMonster\_68 (E), Saints25\_67 (E), Sassay\_63 (E), ShamWow\_68 (E), ShereKhan\_67 (E), Simpliphy\_67 (E), SirDuracell\_67 (E), SophKB\_65 (E), Sotrice96\_69 (E), Stank\_71

(E), Stark\_69 (E), StellaBean\_66 (E), StolenFromERC\_71 (E), StormChicken\_70 (E), TBrady12\_71 (E), Tarkin\_67 (E), TeardropMSU\_64 (E), Teaspoon\_69 (E), Terminus\_71 (E), Thimble\_70 (E), Thresher\_70 (E), Tomaszewski\_63 (E), Toto\_66 (E), Traaww1\_64 (E), Tuco\_69 (E), Ukulele\_63 (E), Wiggin\_70 (E), Willez\_63 (E), Xandras\_67 (E), YassJohnny\_65 (E), Youngblood\_71 (E), xkcd\_71 (E),

Start 39:

- Found in 44 of 579 ( 7.6% ) of genes in pham
- Manual Annotations of this start: 36 of 535
- Called 97.7% of time when present
- Phage (with cluster) where this start called: Ariel\_133 (J), Bagrid\_135 (J), Beem\_136 (J), Bobby\_126 (J), Bombitas\_122 (J), Constella\_128 (J), Courthouse\_129 (J), Dallas\_135 (J), DmpstrDiver\_134 (J), Dove\_120 (J), Duke13\_129 (J), Ejimix\_128 (J), EricMillard\_126 (J), Gonephishing\_128 (J), Halley\_136 (J), Hannaconda\_127 (J), HokkenD\_126 (J), Hughesyang\_134 (J), JuicyJay\_131 (J), KashFlow\_131 (J), Klein\_131 (J), LittleE\_136 (J), Lucky2013\_128 (J), Marleymoo\_119 (J), MiaZeal\_133 (J), Minerva\_133 (J), Nekros\_136 (J), NihilNomen\_136 (J), Odette\_138 (J), Omega\_143 (J), Phoebus\_135 (J), Porcelain\_131 (J), Rearden\_132 (J), Redno2\_126 (J), Schatzie\_130 (J), Shaboozey\_134 (J), Squint\_131 (J), Superphikiman\_131 (J), Thibault\_119 (J), ThreeRngTarjay\_130 (J), Wanda\_133 (J), Yeet\_128 (J), Zelink\_129 (J),

Start 40:

- Found in 62 of 579 ( 10.7% ) of genes in pham
- Manual Annotations of this start: 36 of 535
- Called 67.7% of time when present
- Phage (with cluster) where this start called: Aegeus\_65 (L5), Ariel\_113 (J), Bagrid\_119 (J), Baudelaire\_65 (L5), Beem\_120 (J), Bombitas\_106 (J), Constella\_101 (J), Courthouse\_108 (J), Dallas\_119 (J), DmpstrDiver\_119 (J), Dove\_104 (J), Ejimix\_113 (J), Gonephishing\_107 (J), Halley\_121 (J), Hannaconda\_104 (J), HokkenD\_108 (J), Hughesyang\_118 (J), JuicyJay\_115 (J), KashFlow\_110 (J), Labelle\_59 (U), LittleE\_118 (J), Lucky2013\_110 (J), Madrugua\_58 (U), MiaZeal\_113 (J), Minerva\_116 (J), Nekros\_115 (J), NihilNomen\_120 (J), Odette\_120 (J), Omega\_124 (J), Patience\_60 (U), Phoebus\_119 (J), Porcelain\_113 (J), Pound\_108 (J), Rearden\_107 (J), Redno2\_112 (J), Schatzie\_113 (J), Shaboozey\_111 (J), Squint\_111 (J), Superphikiman\_110 (J), Thibault\_99 (J), Trina\_234 (CE), Yeet\_109 (J),

Start 42:

- Found in 140 of 579 ( 24.2% ) of genes in pham
- Manual Annotations of this start: 27 of 535
- Called 23.6% of time when present
- Phage (with cluster) where this start called: ABCat\_77 (E), Adnama\_84 (E), BilboSwaggins\_79 (E), Bruin\_77 (E), BugsBunny\_80 (E), Cjw1\_80 (E), Command613\_82 (E), Daikon\_82 (E), DrDrey\_80 (E), Dumbo\_80 (E), Elph10\_80 (E), Eureka\_78 (E), FoghornLeghorn\_74 (E), Goku\_78 (E), GoldenSpark\_84 (E), Grayson\_20 (CB), Grayson\_21 (CB), HufflyPuff\_83 (E), Kostya\_80 (E), MISSy\_81 (E), Marshmallow\_78 (E), NelitzaMV\_78 (E), Peregrin\_19 (CB), Peregrin\_20 (CB), Porky\_79 (E), Sassay\_75 (E), Stank\_83 (E), StormChicken\_82 (E), TeardropMSU\_76 (E), Thimble\_82 (E), Weasels2\_18 (CB), Willez\_75 (E), YassJohnny\_77 (E),

Start 43:

- Found in 1 of 579 ( 0.2% ) of genes in pham

- Manual Annotations of this start: 1 of 535
- Called 100.0% of time when present
- Phage (with cluster) where this start called: NiceHouse\_173 (CE),

#### Start 44:

- Found in 179 of 579 ( 30.9% ) of genes in pham
- Manual Annotations of this start: 86 of 535
- Called 48.6% of time when present
- Phage (with cluster) where this start called: ABCat\_70 (E), Adnama\_77 (E), AmericanBeauty\_77 (E), Argent26\_77 (E), Asriel\_72 (E), BAKA\_134 (J), BaboJay\_70 (E), BadStone\_70 (E), Barbarian\_72 (E), Bench\_76 (E), BigBubba\_73 (E), Bruin\_70 (E), Buck\_74 (E), Cactus\_76 (E), ChosenOne\_73 (E), ChotaBhai\_73 (E), Contagion\_69 (E), Cookies\_70 (E), Czyszczonek\_74 (E), DrDrey\_73 (E), Dusk\_70 (E), Elite2014\_72 (E), Emmina\_73 (E), Flypotenuse\_69 (E), Gage\_75 (E), Gator\_71 (E), Gemini\_78 (E), Glexan\_72 (E), Goku\_71 (E), GooberAzure\_76 (E), HanKaySha\_73 (E), Harella\_73 (E), Henry\_71 (E), Highbury\_72 (E), Holt\_78 (E), Hoonter\_76 (E), Hopey\_73 (E), HufflyPuff\_76 (E), IHOP\_71 (E), Inca\_70 (E), JeTaime\_73 (E), Kanye\_70 (E), Kimchi\_77 (E), Lilac\_75 (E), Lilizi\_74 (E), Lilipickle\_72 (E), MISSy\_74 (E), MPhalcon\_74 (E), Manda\_74 (E), Mindy\_72 (E), Miniwave\_68 (E), Misfit\_74 (E), Moldemort\_76 (E), Mosby\_69 (E), Myrale\_73 (E), NoSleep\_74 (E), Palpatine\_75 (E), Paperbeatsrock\_72 (E), Pat3\_71 (E), Phaja\_71 (E), Pharsalus\_70 (E), PhatBacter\_77 (E), Phaux\_75 (E), Phrux\_70 (E), Policronamos\_76 (E), Qualification\_74 (E), Rakim\_74 (E), RiverMonster\_73 (E), Saints25\_72 (E), ShamWow\_73 (E), ShereKhan\_72 (E), SophKB\_70 (E), Sotrice96\_74 (E), Stank\_76 (E), Stark\_74 (E), StolenFromERC\_76 (E), StormChicken\_75 (E), TBrady12\_76 (E), Tarkin\_72 (E), TeardropMSU\_69 (E), Tomaszewski\_68 (E), Toto\_71 (E), Traaww1\_69 (E), Tuco\_74 (E), Ukulele\_68 (E), Xandras\_72 (E), xkcd\_76 (E),

#### Start 46:

- Found in 135 of 579 ( 23.3% ) of genes in pham
- Manual Annotations of this start: 40 of 535
- Called 36.3% of time when present
- Phage (with cluster) where this start called: 244\_74 (E), Amao\_73 (E), Balomoji\_73 (E), Bask21\_73 (E), Becksu\_72 (E), BilboSwaggins\_72 (E), BugsBunny\_73 (E), Cjw1\_73 (E), Command613\_75 (E), CrystalP\_72 (E), Daikon\_75 (E), DoctorDiddles\_72 (E), Dumbo\_73 (E), Easy2Say\_74 (E), Elph10\_73 (E), Eureka\_71 (E), FairyPath\_73 (E), Filch\_74 (E), FireRed\_77 (E), FoghornLeghorn\_67 (E), GoldenSpark\_77 (E), Goldilocks\_76 (E), Icee\_74 (E), Kostya\_73 (E), MadamMonkfish\_73 (E), Marshmallow\_71 (E), Maxxinista\_75 (E), Murica\_76 (E), Murphy\_73 (E), Nala\_75 (E), NelitzaMV\_71 (E), Nimrod\_74 (E), OrionPax\_72 (E), Petra64142\_77 (E), Porky\_72 (E), Pumpkin\_76 (E), Rimmer\_74 (E), Sassay\_68 (E), Simpliphy\_72 (E), SirDuracell\_72 (E), StellaBean\_71 (E), Teaspoon\_74 (E), Terminus\_76 (E), Thimble\_75 (E), Thresher\_75 (E), Wiggin\_75 (E), Willez\_68 (E), YassJohnny\_70 (E), Youngblood\_76 (E),

#### Start 48:

- Found in 136 of 579 ( 23.5% ) of genes in pham
- Manual Annotations of this start: 103 of 535
- Called 78.7% of time when present
- Phage (with cluster) where this start called: 244\_81 (E), Amao\_80 (E), AmericanBeauty\_84 (E), Argent26\_84 (E), Asriel\_79 (E), BaboJay\_77 (E), BadStone\_77 (E), Balomoji\_80 (E), Barbarian\_79 (E), Bask21\_80 (E), Becksu\_79 (E), Bench\_83 (E), BigBubba\_80 (E), Buck\_81 (E), Cactus\_83 (E), ChosenOne\_80 (E),

ChotaBhai\_80 (E), Contagion\_76 (E), Cookies\_77 (E), CrystalP\_79 (E), Czyszczone1\_81 (E), DoctorDiddles\_79 (E), Dusk\_77 (E), Easy2Say\_81 (E), Elite2014\_79 (E), Emmina\_80 (E), FairyPath\_80 (E), Filch\_81 (E), FireRed\_84 (E), Flypotenuse\_76 (E), Gage\_82 (E), Gator\_78 (E), Gemini\_85 (E), Glexan\_79 (E), Goldilocks\_83 (E), GooberAzure\_83 (E), HanKaySha\_80 (E), Harella\_80 (E), Henry\_78 (E), Highbury\_79 (E), Holt\_85 (E), Hoonter\_83 (E), Hopey\_80 (E), IHOP\_78 (E), Icee\_81 (E), Inca\_77 (E), JeTaime\_80 (E), Kanye\_77 (E), Kimchi\_84 (E), Lilac\_82 (E), Lilizi\_81 (E), Lilpickle\_79 (E), MPhalcon\_81 (E), MadamMonkfish\_80 (E), Manda\_81 (E), Maxxinista\_82 (E), Mindy\_79 (E), Miniwave\_75 (E), Misfit\_81 (E), Moldemort\_83 (E), Mosby\_76 (E), Murica\_83 (E), Murphy\_80 (E), Myrale\_80 (E), Nala\_82 (E), Nimrod\_81 (E), NoSleep\_81 (E), OrionPax\_79 (E), Palpatine\_82 (E), Paperbeatsrock\_79 (E), Pat3\_78 (E), Petra64142\_84 (E), Phaja\_78 (E), Pharsalus\_77 (E), PhatBacter\_84 (E), Phaux\_82 (E), Phrux\_77 (E), Policronamos\_83 (E), Pumpkin\_83 (E), Quallification\_81 (E), Rakim\_81 (E), Rimmer\_81 (E), RiverMonster\_80 (E), Saints25\_79 (E), ShamWow\_80 (E), ShereKhan\_78 (E), Simpliphy\_79 (E), SirDuracell\_79 (E), SophKB\_77 (E), Sotrice96\_81 (E), Stark\_81 (E), StellaBean\_78 (E), StolenFromERC\_83 (E), TBrady12\_83 (E), Tarkin\_79 (E), Teaspoon\_81 (E), Terminus\_83 (E), Thresher\_82 (E), Tomaszewski\_75 (E), Toto\_78 (E), Traaww1\_76 (E), Tuco\_81 (E), Ukulele\_75 (E), Wiggin\_82 (E), Xandras\_79 (E), Youngblood\_83 (E), xkcd\_83 (E),

#### Start 49:

- Found in 62 of 579 ( 10.7% ) of genes in pham
- Manual Annotations of this start: 1 of 535
- Called 1.6% of time when present
- Phage (with cluster) where this start called: OneUp\_106 (CQ2),

#### Start 51:

- Found in 3 of 579 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 535
- Called 33.3% of time when present
- Phage (with cluster) where this start called: NiceHouse\_171 (CE),

#### Start 59:

- Found in 9 of 579 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 535
- Called 11.1% of time when present
- Phage (with cluster) where this start called: BrutonGaster\_97 (CQ2),

### Summary by clusters:

There are 15 clusters represented in this pham: singleton, E, CQ2, CB, J, CE, BT, L4, L5, L2, L3, L1, U, DU2, CT,

#### Info for manual annotations of cluster BT:

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

#### Info for manual annotations of cluster CB:

- Start number 34 was manually annotated 4 times for cluster CB.
- Start number 36 was manually annotated 3 times for cluster CB.
- Start number 42 was manually annotated 5 times for cluster CB.

#### Info for manual annotations of cluster CE:

- Start number 28 was manually annotated 1 time for cluster CE.
- Start number 40 was manually annotated 1 time for cluster CE.
- Start number 43 was manually annotated 1 time for cluster CE.
- Start number 51 was manually annotated 1 time for cluster CE.

Info for manual annotations of cluster CQ2:

- Start number 49 was manually annotated 1 time for cluster CQ2.
- Start number 59 was manually annotated 1 time for cluster CQ2.

Info for manual annotations of cluster CT:

- Start number 15 was manually annotated 2 times for cluster CT.
- Start number 17 was manually annotated 4 times for cluster CT.

Info for manual annotations of cluster DU2:

- Start number 23 was manually annotated 3 times for cluster DU2.
- Start number 25 was manually annotated 3 times for cluster DU2.

Info for manual annotations of cluster E:

- Start number 38 was manually annotated 125 times for cluster E.
- Start number 42 was manually annotated 22 times for cluster E.
- Start number 44 was manually annotated 85 times for cluster E.
- Start number 46 was manually annotated 40 times for cluster E.
- Start number 48 was manually annotated 103 times for cluster E.

Info for manual annotations of cluster J:

- Start number 39 was manually annotated 36 times for cluster J.
- Start number 40 was manually annotated 30 times for cluster J.
- Start number 44 was manually annotated 1 time for cluster J.

Info for manual annotations of cluster L1:

- Start number 19 was manually annotated 17 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 14 was manually annotated 10 times for cluster L2.
- Start number 19 was manually annotated 17 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 12 was manually annotated 3 times for cluster L3.
- Start number 19 was manually annotated 5 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 16 was manually annotated 4 times for cluster L4.

Info for manual annotations of cluster L5:

- Start number 40 was manually annotated 2 times for cluster L5.

Info for manual annotations of cluster U:

- Start number 40 was manually annotated 3 times for cluster U.

**Gene Information:**

Gene: 244\_74 Start: 47428, Stop: 47793, Start Num: 46

Candidate Starts for 244\_74:

(Start: 44 @47422 has 86 MA's), (Start: 46 @47428 has 40 MA's), (71, 47500), (85, 47554), (128, 47725),

Gene: 244\_81 Start: 49796, Stop: 50131, Start Num: 48

Candidate Starts for 244\_81:

(1, 49226), (2, 49343), (5, 49544), (Start: 42 @49781 has 27 MA's), (Start: 48 @49796 has 103 MA's), (58, 49832), (137, 50111),

Gene: 244\_69 Start: 45158, Stop: 45568, Start Num: 38

Candidate Starts for 244\_69:

(Start: 38 @45158 has 125 MA's), (85, 45299), (95, 45347), (105, 45395), (129, 45488), (137, 45530),

Gene: ABCat\_65 Start: 45505, Stop: 45915, Start Num: 38

Candidate Starts for ABCat\_65:

(Start: 38 @45505 has 125 MA's), (85, 45646), (95, 45694), (105, 45742), (129, 45835), (137, 45877),

Gene: ABCat\_70 Start: 47769, Stop: 48146, Start Num: 44

Candidate Starts for ABCat\_70:

(Start: 44 @47769 has 86 MA's), (Start: 46 @47775 has 40 MA's), (71, 47847), (85, 47907), (128, 48078),

Gene: ABCat\_77 Start: 50134, Stop: 50484, Start Num: 42

Candidate Starts for ABCat\_77:

(5, 49897), (Start: 42 @50134 has 27 MA's), (Start: 48 @50149 has 103 MA's), (58, 50185), (137, 50464),

Gene: Acquire49\_43 Start: 34025, Stop: 34441, Start Num: 19

Candidate Starts for Acquire49\_43:

(Start: 12 @34004 has 3 MA's), (Start: 19 @34025 has 39 MA's), (Start: 40 @34091 has 36 MA's), (Start: 49 @34112 has 1 MA's), (55, 34130), (67, 34169), (72, 34181), (86, 34238), (108, 34298), (139, 34418),

Gene: Adnama\_84 Start: 50160, Stop: 50507, Start Num: 42

Candidate Starts for Adnama\_84:

(5, 49923), (Start: 42 @50160 has 27 MA's), (Start: 48 @50175 has 103 MA's), (58, 50211), (137, 50487),

Gene: Adnama\_72 Start: 45528, Stop: 45938, Start Num: 38

Candidate Starts for Adnama\_72:

(8, 45354), (Start: 38 @45528 has 125 MA's), (73, 45624), (85, 45669), (95, 45717), (105, 45765), (129, 45858), (137, 45900),

Gene: Adnama\_77 Start: 47795, Stop: 48172, Start Num: 44

Candidate Starts for Adnama\_77:

(Start: 44 @47795 has 86 MA's), (Start: 46 @47801 has 40 MA's), (71, 47873), (85, 47933), (128, 48104),

Gene: Aegeus\_65 Start: 44400, Stop: 44765, Start Num: 40

Candidate Starts for Aegeus\_65:

(Start: 40 @44400 has 36 MA's), (Start: 51 @44430 has 1 MA's), (75, 44502), (77, 44508), (104, 44622), (116, 44664), (136, 44751),

Gene: Amao\_80 Start: 49569, Stop: 49901, Start Num: 48

Candidate Starts for Amao\_80:

(5, 49317), (Start: 42 @49554 has 27 MA's), (Start: 48 @49569 has 103 MA's), (58, 49605), (106, 49764), (117, 49803), (122, 49818), (129, 49839),

Gene: Amao\_68 Start: 44913, Stop: 45326, Start Num: 38

Candidate Starts for Amao\_68:

(8, 44739), (Start: 38 @44913 has 125 MA's), (85, 45054), (94, 45096), (118, 45204), (129, 45243), (141, 45300),

Gene: Amao\_73 Start: 47195, Stop: 47566, Start Num: 46

Candidate Starts for Amao\_73:

(Start: 44 @47189 has 86 MA's), (Start: 46 @47195 has 40 MA's), (71, 47267), (85, 47327), (128, 47498),

Gene: AmericanBeauty\_84 Start: 50318, Stop: 50653, Start Num: 48

Candidate Starts for AmericanBeauty\_84:

(5, 50066), (Start: 42 @50303 has 27 MA's), (Start: 48 @50318 has 103 MA's), (58, 50354), (137, 50633),

Gene: AmericanBeauty\_72 Start: 45671, Stop: 46081, Start Num: 38

Candidate Starts for AmericanBeauty\_72:

(8, 45497), (Start: 38 @45671 has 125 MA's), (85, 45812), (95, 45860), (105, 45908), (129, 46001), (137, 46043),

Gene: AmericanBeauty\_77 Start: 47938, Stop: 48315, Start Num: 44

Candidate Starts for AmericanBeauty\_77:

(Start: 44 @47938 has 86 MA's), (Start: 46 @47944 has 40 MA's), (71, 48016), (85, 48076), (128, 48247),

Gene: Appletree2\_42 Start: 33952, Stop: 34368, Start Num: 19

Candidate Starts for Appletree2\_42:

(Start: 12 @33931 has 3 MA's), (Start: 19 @33952 has 39 MA's), (Start: 40 @34018 has 36 MA's), (Start: 49 @34039 has 1 MA's), (55, 34057), (67, 34096), (72, 34108), (86, 34165), (108, 34225), (139, 34345),

Gene: Archie\_45 Start: 35560, Stop: 35976, Start Num: 19

Candidate Starts for Archie\_45:

(Start: 14 @35551 has 10 MA's), (Start: 19 @35560 has 39 MA's), (Start: 49 @35647 has 1 MA's), (55, 35665), (63, 35692), (64, 35695), (86, 35770), (89, 35782), (111, 35842), (125, 35890), (139, 35953),

Gene: Argent26\_72 Start: 45309, Stop: 45719, Start Num: 38

Candidate Starts for Argent26\_72:

(8, 45135), (Start: 38 @45309 has 125 MA's), (85, 45450), (95, 45498), (105, 45546), (129, 45639), (137, 45681),

Gene: Argent26\_77 Start: 47576, Stop: 47953, Start Num: 44

Candidate Starts for Argent26\_77:

(Start: 44 @47576 has 86 MA's), (Start: 46 @47582 has 40 MA's), (71, 47654), (85, 47714), (128, 47885),

Gene: Argent26\_84 Start: 49956, Stop: 50291, Start Num: 48



Candidate Starts for Argent26\_84:

(5, 49704), (Start: 42 @49941 has 27 MA's), (Start: 48 @49956 has 103 MA's), (58, 49992), (137, 50271),

Gene: Ariel\_113 Start: 61833, Stop: 62153, Start Num: 40

Candidate Starts for Ariel\_113:

(Start: 40 @61833 has 36 MA's), (55, 61872), (86, 61971), (110, 62028), (119, 62064), (128, 62094), (137, 62139),

Gene: Ariel\_133 Start: 69964, Stop: 70317, Start Num: 39

Candidate Starts for Ariel\_133:

(Start: 39 @69964 has 36 MA's), (Start: 44 @69973 has 86 MA's), (126, 70243),

Gene: Asriel\_67 Start: 43865, Stop: 44275, Start Num: 38

Candidate Starts for Asriel\_67:

(8, 43691), (Start: 38 @43865 has 125 MA's), (73, 43961), (85, 44006), (95, 44054), (105, 44102), (129, 44195), (137, 44237),

Gene: Asriel\_72 Start: 46132, Stop: 46509, Start Num: 44

Candidate Starts for Asriel\_72:

(Start: 44 @46132 has 86 MA's), (Start: 46 @46138 has 40 MA's), (71, 46210), (85, 46270), (128, 46441),

Gene: Asriel\_79 Start: 48512, Stop: 48844, Start Num: 48

Candidate Starts for Asriel\_79:

(5, 48260), (Start: 42 @48497 has 27 MA's), (Start: 48 @48512 has 103 MA's), (58, 48548), (137, 48824),

Gene: AvadaKedavra\_43 Start: 34034, Stop: 34450, Start Num: 19

Candidate Starts for AvadaKedavra\_43:

(Start: 12 @34013 has 3 MA's), (Start: 19 @34034 has 39 MA's), (32, 34088), (Start: 40 @34100 has 36 MA's), (Start: 49 @34121 has 1 MA's), (55, 34139), (67, 34178), (72, 34190), (86, 34247), (108, 34307), (139, 34427),

Gene: BAKA\_134 Start: 72670, Stop: 73020, Start Num: 44

Candidate Starts for BAKA\_134:

(24, 72634), (Start: 39 @72661 has 36 MA's), (Start: 44 @72670 has 86 MA's), (86, 72802), (90, 72817), (126, 72946), (128, 72952),

Gene: BaboJay\_65 Start: 44702, Stop: 45112, Start Num: 38

Candidate Starts for BaboJay\_65:

(8, 44528), (Start: 38 @44702 has 125 MA's), (85, 44843), (95, 44891), (105, 44939), (129, 45032), (137, 45074),

Gene: BaboJay\_70 Start: 46969, Stop: 47346, Start Num: 44

Candidate Starts for BaboJay\_70:

(Start: 44 @46969 has 86 MA's), (Start: 46 @46975 has 40 MA's), (71, 47047), (85, 47107), (128, 47278),

Gene: BaboJay\_77 Start: 49349, Stop: 49684, Start Num: 48

Candidate Starts for BaboJay\_77:

(5, 49097), (Start: 42 @49334 has 27 MA's), (Start: 48 @49349 has 103 MA's), (58, 49385), (137, 49664),

Gene: BadStone\_65 Start: 45074, Stop: 45484, Start Num: 38

Candidate Starts for BadStone\_65:

(Start: 38 @45074 has 125 MA's), (85, 45215), (95, 45263), (105, 45311), (129, 45404), (137, 45446),

Gene: BadStone\_70 Start: 47338, Stop: 47715, Start Num: 44

Candidate Starts for BadStone\_70:

(Start: 44 @47338 has 86 MA's), (Start: 46 @47344 has 40 MA's), (71, 47416), (85, 47476), (128, 47647),

Gene: BadStone\_77 Start: 49718, Stop: 50053, Start Num: 48

Candidate Starts for BadStone\_77:

(5, 49466), (Start: 42 @49703 has 27 MA's), (Start: 48 @49718 has 103 MA's), (58, 49754), (137, 50033),

Gene: Bagrid\_119 Start: 66108, Stop: 66428, Start Num: 40

Candidate Starts for Bagrid\_119:

(Start: 40 @66108 has 36 MA's), (55, 66147), (110, 66303), (119, 66339), (128, 66369), (137, 66414),

Gene: Bagrid\_135 Start: 72784, Stop: 73143, Start Num: 39

Candidate Starts for Bagrid\_135:

(24, 72757), (Start: 39 @72784 has 36 MA's), (Start: 44 @72793 has 86 MA's), (86, 72925), (90, 72940), (126, 73069), (128, 73075),

Gene: Balomoji\_73 Start: 47905, Stop: 48276, Start Num: 46

Candidate Starts for Balomoji\_73:

(Start: 44 @47899 has 86 MA's), (Start: 46 @47905 has 40 MA's), (71, 47977), (85, 48037), (128, 48208),

Gene: Balomoji\_80 Start: 50279, Stop: 50614, Start Num: 48

Candidate Starts for Balomoji\_80:

(5, 50027), (Start: 42 @50264 has 27 MA's), (Start: 48 @50279 has 103 MA's), (58, 50315), (137, 50594),

Gene: Balomoji\_68 Start: 45635, Stop: 46045, Start Num: 38

Candidate Starts for Balomoji\_68:

(Start: 38 @45635 has 125 MA's), (85, 45776), (95, 45824), (105, 45872), (129, 45965), (137, 46007),

Gene: Barbarian\_67 Start: 43865, Stop: 44275, Start Num: 38

Candidate Starts for Barbarian\_67:

(8, 43691), (Start: 38 @43865 has 125 MA's), (73, 43961), (85, 44006), (95, 44054), (105, 44102), (129, 44195), (137, 44237),

Gene: Barbarian\_72 Start: 46132, Stop: 46509, Start Num: 44

Candidate Starts for Barbarian\_72:

(Start: 44 @46132 has 86 MA's), (Start: 46 @46138 has 40 MA's), (71, 46210), (85, 46270), (128, 46441),

Gene: Barbarian\_79 Start: 48512, Stop: 48844, Start Num: 48

Candidate Starts for Barbarian\_79:

(5, 48260), (Start: 42 @48497 has 27 MA's), (Start: 48 @48512 has 103 MA's), (58, 48548), (137, 48824),

Gene: Bask21\_80 Start: 49132, Stop: 49467, Start Num: 48

Candidate Starts for Bask21\_80:

(5, 48880), (Start: 42 @49117 has 27 MA's), (Start: 48 @49132 has 103 MA's), (58, 49168), (76, 49222), (113, 49348), (122, 49384), (124, 49387), (129, 49405), (137, 49447),

Gene: Bask21\_68 Start: 44476, Stop: 44889, Start Num: 38

Candidate Starts for Bask21\_68:

(8, 44302), (Start: 38 @44476 has 125 MA's), (85, 44617), (94, 44659), (118, 44767), (129, 44806), (144, 44869),

Gene: Bask21\_73 Start: 46758, Stop: 47129, Start Num: 46

Candidate Starts for Bask21\_73:

(Start: 44 @46752 has 86 MA's), (Start: 46 @46758 has 40 MA's), (71, 46830), (85, 46890), (108, 46989), (128, 47061),

Gene: Baudelaire\_65 Start: 44400, Stop: 44765, Start Num: 40

Candidate Starts for Baudelaire\_65:

(Start: 40 @44400 has 36 MA's), (Start: 51 @44430 has 1 MA's), (75, 44502), (77, 44508), (104, 44622), (116, 44664), (136, 44751),

Gene: Bazzle\_45 Start: 35592, Stop: 36008, Start Num: 19

Candidate Starts for Bazzle\_45:

(Start: 14 @35583 has 10 MA's), (Start: 19 @35592 has 39 MA's), (Start: 49 @35679 has 1 MA's), (55, 35697), (63, 35724), (64, 35727), (86, 35802), (89, 35814), (111, 35874), (125, 35922), (139, 35985),

Gene: Becksu\_72 Start: 47977, Stop: 48345, Start Num: 46

Candidate Starts for Becksu\_72:

(Start: 44 @47971 has 86 MA's), (Start: 46 @47977 has 40 MA's), (71, 48049), (85, 48109), (128, 48277),

Gene: Becksu\_79 Start: 50348, Stop: 50683, Start Num: 48

Candidate Starts for Becksu\_79:

(5, 50096), (Start: 42 @50333 has 27 MA's), (Start: 48 @50348 has 103 MA's), (58, 50384), (137, 50663),

Gene: Becksu\_67 Start: 45704, Stop: 46117, Start Num: 38

Candidate Starts for Becksu\_67:

(8, 45530), (Start: 38 @45704 has 125 MA's), (85, 45845), (95, 45893), (105, 45941), (129, 46034), (144, 46097),

Gene: Beem\_120 Start: 67476, Stop: 67796, Start Num: 40

Candidate Starts for Beem\_120:

(Start: 40 @67476 has 36 MA's), (55, 67515), (86, 67614), (110, 67671), (119, 67707), (128, 67737), (137, 67782),

Gene: Beem\_136 Start: 74259, Stop: 74618, Start Num: 39

Candidate Starts for Beem\_136:

(24, 74232), (Start: 39 @74259 has 36 MA's), (Start: 44 @74268 has 86 MA's), (86, 74400), (90, 74415),

Gene: Bench\_83 Start: 49816, Stop: 50148, Start Num: 48

Candidate Starts for Bench\_83:

(1, 49246), (2, 49363), (5, 49564), (Start: 42 @49801 has 27 MA's), (Start: 48 @49816 has 103 MA's), (58, 49852), (137, 50128),

Gene: Bench\_76 Start: 47439, Stop: 47813, Start Num: 44

Candidate Starts for Bench\_76:

(Start: 44 @47439 has 86 MA's), (Start: 46 @47445 has 40 MA's), (71, 47517), (85, 47577), (128, 47745),

Gene: Bench\_71 Start: 45175, Stop: 45585, Start Num: 38

Candidate Starts for Bench\_71:

(8, 45001), (Start: 38 @45175 has 125 MA's), (85, 45316), (95, 45364), (105, 45412), (129, 45505), (137, 45547),

Gene: BigBubba\_68 Start: 44884, Stop: 45294, Start Num: 38

Candidate Starts for BigBubba\_68:

(Start: 38 @44884 has 125 MA's), (85, 45025), (95, 45073), (105, 45121), (129, 45214), (137, 45256),

Gene: BigBubba\_73 Start: 47151, Stop: 47525, Start Num: 44

Candidate Starts for BigBubba\_73:

(Start: 44 @47151 has 86 MA's), (Start: 46 @47157 has 40 MA's), (71, 47229), (85, 47289), (108, 47385), (128, 47457),

Gene: BigBubba\_80 Start: 49528, Stop: 49860, Start Num: 48

Candidate Starts for BigBubba\_80:

(5, 49276), (Start: 42 @49513 has 27 MA's), (Start: 48 @49528 has 103 MA's), (58, 49564), (137, 49840),

Gene: BigCheese\_45 Start: 35356, Stop: 35772, Start Num: 19

Candidate Starts for BigCheese\_45:

(Start: 14 @35347 has 10 MA's), (Start: 19 @35356 has 39 MA's), (Start: 49 @35443 has 1 MA's), (55, 35461), (63, 35488), (64, 35491), (86, 35566), (89, 35578), (125, 35686), (139, 35749),

Gene: BilboSwaggins\_72 Start: 47783, Stop: 48154, Start Num: 46

Candidate Starts for BilboSwaggins\_72:

(Start: 44 @47777 has 86 MA's), (Start: 46 @47783 has 40 MA's), (71, 47855), (85, 47915), (128, 48086),

Gene: BilboSwaggins\_79 Start: 50142, Stop: 50489, Start Num: 42

Candidate Starts for BilboSwaggins\_79:

(5, 49905), (Start: 42 @50142 has 27 MA's), (Start: 48 @50157 has 103 MA's), (58, 50193), (137, 50469),

Gene: BilboSwaggins\_67 Start: 45513, Stop: 45923, Start Num: 38

Candidate Starts for BilboSwaggins\_67:

(8, 45339), (Start: 38 @45513 has 125 MA's), (73, 45609), (85, 45654), (95, 45702), (105, 45750), (129, 45843), (137, 45885),

Gene: Bobby\_126 Start: 74360, Stop: 74719, Start Num: 39

Candidate Starts for Bobby\_126:

(24, 74333), (Start: 39 @74360 has 36 MA's), (Start: 44 @74369 has 86 MA's), (86, 74501), (90, 74516),

Gene: Bombitas\_106 Start: 63398, Stop: 63718, Start Num: 40

Candidate Starts for Bombitas\_106:

(Start: 40 @63398 has 36 MA's), (55, 63437), (86, 63536), (110, 63593), (119, 63629), (128, 63659), (137, 63704),

Gene: Bombitas\_122 Start: 71670, Stop: 72029, Start Num: 39

Candidate Starts for Bombitas\_122:

(24, 71643), (Start: 39 @71670 has 36 MA's), (Start: 44 @71679 has 86 MA's), (86, 71811), (90, 71826),

Gene: Breezona\_45 Start: 35347, Stop: 35772, Start Num: 14

Candidate Starts for Breezona\_45:

(Start: 14 @35347 has 10 MA's), (Start: 19 @35356 has 39 MA's), (Start: 49 @35443 has 1 MA's), (55, 35461), (63, 35488), (64, 35491), (86, 35566), (89, 35578), (125, 35686), (139, 35749),

Gene: Bromden\_45 Start: 35106, Stop: 35519, Start Num: 16

Candidate Starts for Bromden\_45:

(Start: 12 @35091 has 3 MA's), (Start: 14 @35103 has 10 MA's), (Start: 16 @35106 has 4 MA's), (Start: 19 @35112 has 39 MA's), (Start: 49 @35196 has 1 MA's), (55, 35214), (61, 35238), (63, 35241), (86, 35322), (139, 35496),

Gene: Bruin\_65 Start: 44048, Stop: 44461, Start Num: 38

Candidate Starts for Bruin\_65:

(8, 43874), (Start: 38 @44048 has 125 MA's), (85, 44189), (95, 44237), (105, 44285), (129, 44378), (144, 44441),

Gene: Bruin\_77 Start: 48677, Stop: 49027, Start Num: 42

Candidate Starts for Bruin\_77:

(5, 48440), (Start: 42 @48677 has 27 MA's), (Start: 48 @48692 has 103 MA's), (58, 48728), (137, 49007),

Gene: Bruin\_70 Start: 46315, Stop: 46689, Start Num: 44

Candidate Starts for Bruin\_70:

(Start: 44 @46315 has 86 MA's), (Start: 46 @46321 has 40 MA's), (71, 46393), (85, 46453), (128, 46621),

Gene: BrutonGaster\_97 Start: 63227, Stop: 63556, Start Num: 59

Candidate Starts for BrutonGaster\_97:

(Start: 59 @63227 has 1 MA's), (81, 63293), (125, 63464), (146, 63551),

Gene: Buck\_74 Start: 48026, Stop: 48394, Start Num: 44

Candidate Starts for Buck\_74:

(Start: 44 @48026 has 86 MA's), (Start: 46 @48032 has 40 MA's), (71, 48104), (128, 48326),

Gene: Buck\_69 Start: 45756, Stop: 46169, Start Num: 38

Candidate Starts for Buck\_69:

(8, 45582), (Start: 38 @45756 has 125 MA's), (85, 45897), (94, 45939), (118, 46047), (129, 46086), (144, 46149),

Gene: Buck\_81 Start: 50397, Stop: 50732, Start Num: 48

Candidate Starts for Buck\_81:

(5, 50145), (Start: 42 @50382 has 27 MA's), (Start: 48 @50397 has 103 MA's), (58, 50433), (137, 50712),

Gene: BugsBunny\_80 Start: 50209, Stop: 50556, Start Num: 42  
Candidate Starts for BugsBunny\_80:  
(5, 49972), (Start: 42 @50209 has 27 MA's), (Start: 48 @50224 has 103 MA's), (58, 50260), (137, 50536),

Gene: BugsBunny\_73 Start: 47853, Stop: 48221, Start Num: 46  
Candidate Starts for BugsBunny\_73:  
(Start: 44 @47847 has 86 MA's), (Start: 46 @47853 has 40 MA's), (71, 47925), (85, 47985), (128, 48153),

Gene: BugsBunny\_68 Start: 45583, Stop: 45993, Start Num: 38  
Candidate Starts for BugsBunny\_68:  
(Start: 38 @45583 has 125 MA's), (85, 45724), (95, 45772), (105, 45820), (129, 45913), (137, 45955),

Gene: Button\_63 Start: 43199, Stop: 43654, Start Num: 15  
Candidate Starts for Button\_63:  
(Start: 15 @43199 has 2 MA's), (33, 43241), (41, 43253), (54, 43289), (60, 43304), (74, 43346), (79, 43364), (90, 43421), (92, 43427), (112, 43484), (129, 43547), (134, 43571), (137, 43589),

Gene: Cactus\_83 Start: 49173, Stop: 49508, Start Num: 48  
Candidate Starts for Cactus\_83:  
(5, 48921), (Start: 42 @49158 has 27 MA's), (Start: 48 @49173 has 103 MA's), (58, 49209), (137, 49488),

Gene: Cactus\_76 Start: 46793, Stop: 47170, Start Num: 44  
Candidate Starts for Cactus\_76:  
(Start: 44 @46793 has 86 MA's), (Start: 46 @46799 has 40 MA's), (71, 46871), (85, 46931), (128, 47102),

Gene: Cactus\_71 Start: 44529, Stop: 44939, Start Num: 38  
Candidate Starts for Cactus\_71:  
(Start: 38 @44529 has 125 MA's), (85, 44670), (95, 44718), (105, 44766), (129, 44859), (137, 44901),

Gene: Calm\_43 Start: 34040, Stop: 34456, Start Num: 19  
Candidate Starts for Calm\_43:  
(Start: 12 @34019 has 3 MA's), (Start: 19 @34040 has 39 MA's), (Start: 40 @34106 has 36 MA's),  
(Start: 49 @34127 has 1 MA's), (55, 34145), (67, 34184), (72, 34196), (86, 34253), (108, 34313), (139, 34433),

Gene: Chaser\_42 Start: 34097, Stop: 34510, Start Num: 16  
Candidate Starts for Chaser\_42:  
(Start: 12 @34082 has 3 MA's), (Start: 14 @34094 has 10 MA's), (Start: 16 @34097 has 4 MA's),  
(Start: 49 @34187 has 1 MA's), (55, 34205), (63, 34232), (64, 34235), (86, 34313), (111, 34376), (129, 34439), (139, 34487),

Gene: ChosenOne\_68 Start: 44532, Stop: 44942, Start Num: 38  
Candidate Starts for ChosenOne\_68:  
(Start: 38 @44532 has 125 MA's), (85, 44673), (95, 44721), (105, 44769), (129, 44862), (137, 44904),

Gene: ChosenOne\_80 Start: 49173, Stop: 49508, Start Num: 48  
Candidate Starts for ChosenOne\_80:  
(5, 48921), (Start: 42 @49158 has 27 MA's), (Start: 48 @49173 has 103 MA's), (58, 49209), (137, 49488),

Gene: ChosenOne\_73 Start: 46796, Stop: 47170, Start Num: 44  
Candidate Starts for ChosenOne\_73:  
(Start: 44 @46796 has 86 MA's), (Start: 46 @46802 has 40 MA's), (71, 46874), (85, 46934), (128, 47102),

Gene: ChotaBhai\_73 Start: 47117, Stop: 47494, Start Num: 44  
Candidate Starts for ChotaBhai\_73:  
(Start: 44 @47117 has 86 MA's), (Start: 46 @47123 has 40 MA's), (71, 47195), (85, 47255), (108, 47354), (128, 47426),

Gene: ChotaBhai\_80 Start: 49497, Stop: 49832, Start Num: 48  
Candidate Starts for ChotaBhai\_80:  
(5, 49245), (Start: 42 @49482 has 27 MA's), (Start: 48 @49497 has 103 MA's), (58, 49533), (76, 49587), (113, 49713), (122, 49749), (124, 49752), (129, 49770), (137, 49812),

Gene: ChotaBhai\_68 Start: 44844, Stop: 45257, Start Num: 38  
Candidate Starts for ChotaBhai\_68:  
(8, 44670), (Start: 38 @44844 has 125 MA's), (85, 44985), (94, 45027), (118, 45135), (129, 45174), (141, 45231),

Gene: Cjw1\_80 Start: 50855, Stop: 51202, Start Num: 42  
Candidate Starts for Cjw1\_80:  
(5, 50618), (Start: 42 @50855 has 27 MA's), (Start: 48 @50870 has 103 MA's), (58, 50906), (137, 51182),

Gene: Cjw1\_73 Start: 48499, Stop: 48867, Start Num: 46  
Candidate Starts for Cjw1\_73:  
(Start: 44 @48493 has 86 MA's), (Start: 46 @48499 has 40 MA's), (71, 48571), (85, 48631), (128, 48799),

Gene: Cjw1\_68 Start: 46229, Stop: 46639, Start Num: 38  
Candidate Starts for Cjw1\_68:  
(Start: 38 @46229 has 125 MA's), (85, 46370), (95, 46418), (105, 46466), (129, 46559), (137, 46601),

Gene: Clautastrophe\_42 Start: 35625, Stop: 36053, Start Num: 12  
Candidate Starts for Clautastrophe\_42:  
(Start: 12 @35625 has 3 MA's), (Start: 14 @35637 has 10 MA's), (Start: 19 @35646 has 39 MA's), (Start: 49 @35730 has 1 MA's), (55, 35748), (Start: 59 @35766 has 1 MA's), (63, 35775), (101, 35892), (139, 36030),

Gene: Command613\_75 Start: 47838, Stop: 48209, Start Num: 46  
Candidate Starts for Command613\_75:  
(Start: 44 @47832 has 86 MA's), (Start: 46 @47838 has 40 MA's), (71, 47910), (85, 47970), (128, 48141),

Gene: Command613\_82 Start: 50197, Stop: 50547, Start Num: 42  
Candidate Starts for Command613\_82:  
(5, 49960), (Start: 42 @50197 has 27 MA's), (Start: 48 @50212 has 103 MA's), (58, 50248), (137, 50527),

Gene: Command613\_70 Start: 45568, Stop: 45978, Start Num: 38  
Candidate Starts for Command613\_70:

(8, 45394), (Start: 38 @45568 has 125 MA's), (85, 45709), (95, 45757), (105, 45805), (129, 45898), (137, 45940),

Gene: Constella\_101 Start: 60252, Stop: 60566, Start Num: 40

Candidate Starts for Constella\_101:

(Start: 40 @60252 has 36 MA's), (55, 60291), (62, 60318), (110, 60441), (137, 60552),

Gene: Constella\_128 Start: 72912, Stop: 73271, Start Num: 39

Candidate Starts for Constella\_128:

(24, 72885), (Start: 39 @72912 has 36 MA's), (Start: 44 @72921 has 86 MA's), (86, 73053), (90, 73068), (126, 73197), (128, 73203),

Gene: Contagion\_69 Start: 46596, Stop: 46970, Start Num: 44

Candidate Starts for Contagion\_69:

(Start: 44 @46596 has 86 MA's), (Start: 46 @46602 has 40 MA's), (71, 46674), (85, 46734), (128, 46902),

Gene: Contagion\_64 Start: 44329, Stop: 44742, Start Num: 38

Candidate Starts for Contagion\_64:

(8, 44155), (Start: 38 @44329 has 125 MA's), (85, 44470), (95, 44518), (105, 44566), (129, 44659), (144, 44722),

Gene: Contagion\_76 Start: 48973, Stop: 49308, Start Num: 48

Candidate Starts for Contagion\_76:

(5, 48721), (Start: 42 @48958 has 27 MA's), (Start: 48 @48973 has 103 MA's), (58, 49009), (137, 49288),

Gene: Cookies\_77 Start: 49354, Stop: 49689, Start Num: 48

Candidate Starts for Cookies\_77:

(5, 49102), (Start: 42 @49339 has 27 MA's), (Start: 48 @49354 has 103 MA's), (58, 49390), (76, 49444), (113, 49570), (122, 49606), (124, 49609), (129, 49627), (137, 49669),

Gene: Cookies\_70 Start: 46974, Stop: 47351, Start Num: 44

Candidate Starts for Cookies\_70:

(Start: 44 @46974 has 86 MA's), (Start: 46 @46980 has 40 MA's), (71, 47052), (85, 47112), (108, 47211), (128, 47283),

Gene: Cookies\_65 Start: 44698, Stop: 45111, Start Num: 38

Candidate Starts for Cookies\_65:

(8, 44524), (Start: 38 @44698 has 125 MA's), (85, 44839), (94, 44881), (118, 44989), (129, 45028),

Gene: Courthouse\_108 Start: 61433, Stop: 61753, Start Num: 40

Candidate Starts for Courthouse\_108:

(Start: 40 @61433 has 36 MA's), (55, 61472), (86, 61571), (110, 61628), (119, 61664), (128, 61694), (137, 61739),

Gene: Courthouse\_129 Start: 69822, Stop: 70175, Start Num: 39

Candidate Starts for Courthouse\_129:

(Start: 39 @69822 has 36 MA's), (Start: 44 @69831 has 86 MA's), (126, 70101),

Gene: Crossroads\_45 Start: 35358, Stop: 35774, Start Num: 19

Candidate Starts for Crossroads\_45:



(Start: 14 @35349 has 10 MA's), (Start: 19 @35358 has 39 MA's), (Start: 49 @35445 has 1 MA's), (55, 35463), (63, 35490), (64, 35493), (86, 35568), (89, 35580), (125, 35688), (139, 35751),

Gene: CrystalP\_67 Start: 45513, Stop: 45923, Start Num: 38

Candidate Starts for CrystalP\_67:

(8, 45339), (Start: 38 @45513 has 125 MA's), (73, 45609), (85, 45654), (95, 45702), (105, 45750), (129, 45843), (137, 45885),

Gene: CrystalP\_72 Start: 47783, Stop: 48154, Start Num: 46

Candidate Starts for CrystalP\_72:

(Start: 44 @47777 has 86 MA's), (Start: 46 @47783 has 40 MA's), (71, 47855), (85, 47915), (128, 48086),

Gene: CrystalP\_79 Start: 50157, Stop: 50489, Start Num: 48

Candidate Starts for CrystalP\_79:

(5, 49905), (Start: 42 @50142 has 27 MA's), (Start: 48 @50157 has 103 MA's), (58, 50193), (137, 50469),

Gene: Czyszczone1\_69 Start: 45038, Stop: 45448, Start Num: 38

Candidate Starts for Czyszczone1\_69:

(Start: 38 @45038 has 125 MA's), (85, 45179), (95, 45227), (105, 45275), (129, 45368), (137, 45410),

Gene: Czyszczone1\_81 Start: 49679, Stop: 50011, Start Num: 48

Candidate Starts for Czyszczone1\_81:

(5, 49427), (Start: 42 @49664 has 27 MA's), (Start: 48 @49679 has 103 MA's), (58, 49715), (137, 49991),

Gene: Czyszczone1\_74 Start: 47302, Stop: 47676, Start Num: 44

Candidate Starts for Czyszczone1\_74:

(Start: 44 @47302 has 86 MA's), (Start: 46 @47308 has 40 MA's), (71, 47380), (85, 47440), (128, 47608),

Gene: Daikon\_82 Start: 50285, Stop: 50635, Start Num: 42

Candidate Starts for Daikon\_82:

(5, 50048), (Start: 42 @50285 has 27 MA's), (Start: 48 @50300 has 103 MA's), (58, 50336), (137, 50615),

Gene: Daikon\_75 Start: 47926, Stop: 48297, Start Num: 46

Candidate Starts for Daikon\_75:

(Start: 44 @47920 has 86 MA's), (Start: 46 @47926 has 40 MA's), (71, 47998), (85, 48058), (128, 48229),

Gene: Daikon\_70 Start: 45656, Stop: 46066, Start Num: 38

Candidate Starts for Daikon\_70:

(Start: 38 @45656 has 125 MA's), (85, 45797), (95, 45845), (105, 45893), (129, 45986), (137, 46028),

Gene: Dallas\_119 Start: 66991, Stop: 67311, Start Num: 40

Candidate Starts for Dallas\_119:

(Start: 40 @66991 has 36 MA's), (55, 67030), (110, 67186), (119, 67222), (128, 67252), (137, 67297),

Gene: Dallas\_135 Start: 73726, Stop: 74085, Start Num: 39

Candidate Starts for Dallas\_135:

(24, 73699), (Start: 39 @73726 has 36 MA's), (Start: 44 @73735 has 86 MA's), (86, 73867), (90, 73882), (128, 74017),

Gene: DirkDirk\_42 Start: 34012, Stop: 34428, Start Num: 19

Candidate Starts for DirkDirk\_42:

(Start: 12 @33991 has 3 MA's), (Start: 19 @34012 has 39 MA's), (Start: 40 @34078 has 36 MA's), (Start: 49 @34099 has 1 MA's), (55, 34117), (67, 34156), (72, 34168), (86, 34225), (108, 34285), (139, 34405),

Gene: DmpstrDiver\_134 Start: 73073, Stop: 73432, Start Num: 39

Candidate Starts for DmpstrDiver\_134:

(24, 73046), (Start: 39 @73073 has 36 MA's), (Start: 44 @73082 has 86 MA's), (86, 73214), (90, 73229), (126, 73358), (128, 73364),

Gene: DmpstrDiver\_119 Start: 66397, Stop: 66717, Start Num: 40

Candidate Starts for DmpstrDiver\_119:

(Start: 40 @66397 has 36 MA's), (55, 66436), (110, 66592), (119, 66628), (128, 66658), (137, 66703),

Gene: DoctorDiddles\_67 Start: 44888, Stop: 45301, Start Num: 38

Candidate Starts for DoctorDiddles\_67:

(8, 44714), (Start: 38 @44888 has 125 MA's), (85, 45029), (94, 45071), (118, 45179), (129, 45218), (144, 45281),

Gene: DoctorDiddles\_72 Start: 47167, Stop: 47538, Start Num: 46

Candidate Starts for DoctorDiddles\_72:

(Start: 44 @47161 has 86 MA's), (Start: 46 @47167 has 40 MA's), (71, 47239), (85, 47299), (108, 47398), (128, 47470),

Gene: DoctorDiddles\_79 Start: 49541, Stop: 49876, Start Num: 48

Candidate Starts for DoctorDiddles\_79:

(5, 49289), (Start: 42 @49526 has 27 MA's), (Start: 48 @49541 has 103 MA's), (58, 49577), (76, 49631), (113, 49757), (122, 49793), (124, 49796), (129, 49814), (137, 49856),

Gene: Douge\_42 Start: 34035, Stop: 34448, Start Num: 16

Candidate Starts for Douge\_42:

(Start: 12 @34020 has 3 MA's), (Start: 14 @34032 has 10 MA's), (Start: 16 @34035 has 4 MA's), (Start: 49 @34125 has 1 MA's), (55, 34143), (63, 34170), (64, 34173), (86, 34251), (111, 34314), (129, 34377), (139, 34425),

Gene: Dove\_120 Start: 68672, Stop: 69031, Start Num: 39

Candidate Starts for Dove\_120:

(24, 68645), (Start: 39 @68672 has 36 MA's), (Start: 44 @68681 has 86 MA's), (86, 68813), (90, 68828), (126, 68957), (128, 68963),

Gene: Dove\_104 Start: 61905, Stop: 62225, Start Num: 40

Candidate Starts for Dove\_104:

(Start: 40 @61905 has 36 MA's), (55, 61944), (86, 62043), (110, 62100), (119, 62136), (128, 62166), (137, 62211),

Gene: DrDrey\_80 Start: 50583, Stop: 50930, Start Num: 42

Candidate Starts for DrDrey\_80:

(5, 50346), (Start: 42 @50583 has 27 MA's), (Start: 48 @50598 has 103 MA's), (58, 50634), (137, 50910),

Gene: DrDrey\_68 Start: 45954, Stop: 46364, Start Num: 38

Candidate Starts for DrDrey\_68:

(Start: 38 @45954 has 125 MA's), (85, 46095), (95, 46143), (105, 46191), (129, 46284), (137, 46326),

Gene: DrDrey\_73 Start: 48218, Stop: 48595, Start Num: 44

Candidate Starts for DrDrey\_73:

(Start: 44 @48218 has 86 MA's), (Start: 46 @48224 has 40 MA's), (71, 48296), (85, 48356), (128, 48527),

Gene: DrSeegs\_45 Start: 35356, Stop: 35772, Start Num: 19

Candidate Starts for DrSeegs\_45:

(Start: 14 @35347 has 10 MA's), (Start: 19 @35356 has 39 MA's), (Start: 49 @35443 has 1 MA's), (55, 35461), (63, 35488), (64, 35491), (86, 35566), (89, 35578), (125, 35686), (139, 35749),

Gene: Duke13\_129 Start: 70374, Stop: 70733, Start Num: 39

Candidate Starts for Duke13\_129:

(24, 70347), (Start: 39 @70374 has 36 MA's), (Start: 44 @70383 has 86 MA's), (86, 70515), (90, 70530), (126, 70659), (128, 70665),

Gene: Dumbo\_73 Start: 46707, Stop: 47075, Start Num: 46

Candidate Starts for Dumbo\_73:

(Start: 44 @46701 has 86 MA's), (Start: 46 @46707 has 40 MA's), (71, 46779), (85, 46839), (128, 47007),

Gene: Dumbo\_68 Start: 44437, Stop: 44847, Start Num: 38

Candidate Starts for Dumbo\_68:

(Start: 38 @44437 has 125 MA's), (85, 44578), (95, 44626), (105, 44674), (129, 44767), (137, 44809),

Gene: Dumbo\_80 Start: 49063, Stop: 49413, Start Num: 42

Candidate Starts for Dumbo\_80:

(5, 48826), (Start: 42 @49063 has 27 MA's), (Start: 48 @49078 has 103 MA's), (58, 49114), (137, 49393),

Gene: Dusk\_77 Start: 49378, Stop: 49713, Start Num: 48

Candidate Starts for Dusk\_77:

(5, 49126), (Start: 42 @49363 has 27 MA's), (Start: 48 @49378 has 103 MA's), (58, 49414), (137, 49693),

Gene: Dusk\_70 Start: 46998, Stop: 47375, Start Num: 44

Candidate Starts for Dusk\_70:

(Start: 44 @46998 has 86 MA's), (Start: 46 @47004 has 40 MA's), (71, 47076), (85, 47136), (128, 47307),

Gene: Dusk\_65 Start: 44734, Stop: 45144, Start Num: 38

Candidate Starts for Dusk\_65:

(Start: 38 @44734 has 125 MA's), (85, 44875), (95, 44923), (105, 44971), (129, 45064), (137, 45106),

Gene: DyoEdafos\_44 Start: 34357, Stop: 34776, Start Num: 16

Candidate Starts for DyoEdafos\_44:

(Start: 12 @34342 has 3 MA's), (Start: 14 @34354 has 10 MA's), (Start: 16 @34357 has 4 MA's), (Start: 49 @34447 has 1 MA's), (55, 34465), (63, 34492), (86, 34570), (111, 34642), (139, 34753),

Gene: Easy2Say\_69 Start: 45975, Stop: 46385, Start Num: 38  
Candidate Starts for Easy2Say\_69:  
(8, 45801), (Start: 38 @45975 has 125 MA's), (73, 46071), (85, 46116), (95, 46164), (105, 46212),  
(129, 46305), (137, 46347),

Gene: Easy2Say\_81 Start: 50622, Stop: 50954, Start Num: 48  
Candidate Starts for Easy2Say\_81:  
(5, 50370), (Start: 42 @50607 has 27 MA's), (Start: 48 @50622 has 103 MA's), (58, 50658), (137,  
50934),

Gene: Easy2Say\_74 Start: 48248, Stop: 48619, Start Num: 46  
Candidate Starts for Easy2Say\_74:  
(Start: 44 @48242 has 86 MA's), (Start: 46 @48248 has 40 MA's), (71, 48320), (85, 48380), (128,  
48551),

Gene: Ejimix\_128 Start: 73794, Stop: 74153, Start Num: 39  
Candidate Starts for Ejimix\_128:  
(24, 73767), (Start: 39 @73794 has 36 MA's), (Start: 44 @73803 has 86 MA's), (86, 73935), (90,  
73950), (128, 74085),

Gene: Ejimix\_113 Start: 67525, Stop: 67845, Start Num: 40  
Candidate Starts for Ejimix\_113:  
(Start: 40 @67525 has 36 MA's), (55, 67564), (110, 67720), (119, 67756), (128, 67786), (137, 67831),

Gene: Elite2014\_72 Start: 46795, Stop: 47169, Start Num: 44  
Candidate Starts for Elite2014\_72:  
(Start: 44 @46795 has 86 MA's), (Start: 46 @46801 has 40 MA's), (71, 46873), (85, 46933), (128,  
47101),

Gene: Elite2014\_67 Start: 44531, Stop: 44941, Start Num: 38  
Candidate Starts for Elite2014\_67:  
(Start: 38 @44531 has 125 MA's), (85, 44672), (95, 44720), (105, 44768), (129, 44861), (137, 44903),

Gene: Elite2014\_79 Start: 49172, Stop: 49507, Start Num: 48  
Candidate Starts for Elite2014\_79:  
(5, 48920), (Start: 42 @49157 has 27 MA's), (Start: 48 @49172 has 103 MA's), (58, 49208), (137,  
49487),

Gene: Elph10\_80 Start: 49162, Stop: 49509, Start Num: 42  
Candidate Starts for Elph10\_80:  
(5, 48925), (Start: 42 @49162 has 27 MA's), (Start: 48 @49177 has 103 MA's), (58, 49213), (137,  
49489),

Gene: Elph10\_68 Start: 44536, Stop: 44946, Start Num: 38  
Candidate Starts for Elph10\_68:  
(Start: 38 @44536 has 125 MA's), (85, 44677), (95, 44725), (105, 44773), (129, 44866), (137, 44908),

Gene: Elph10\_73 Start: 46806, Stop: 47174, Start Num: 46  
Candidate Starts for Elph10\_73:  
(Start: 44 @46800 has 86 MA's), (Start: 46 @46806 has 40 MA's), (71, 46878), (85, 46938), (128,  
47106),

Gene: Emmina\_80 Start: 49079, Stop: 49411, Start Num: 48

Candidate Starts for Emmina\_80:

(Start: 42 @49064 has 27 MA's), (Start: 48 @49079 has 103 MA's), (58, 49115), (137, 49391),

Gene: Emmina\_68 Start: 44438, Stop: 44848, Start Num: 38

Candidate Starts for Emmina\_68:

(8, 44264), (Start: 38 @44438 has 125 MA's), (85, 44579), (95, 44627), (105, 44675), (129, 44768), (137, 44810),

Gene: Emmina\_73 Start: 46702, Stop: 47076, Start Num: 44

Candidate Starts for Emmina\_73:

(Start: 44 @46702 has 86 MA's), (Start: 46 @46708 has 40 MA's), (71, 46780), (85, 46840), (128, 47008),

Gene: Enceladus\_42 Start: 33995, Stop: 34411, Start Num: 19

Candidate Starts for Enceladus\_42:

(Start: 12 @33974 has 3 MA's), (Start: 19 @33995 has 39 MA's), (Start: 40 @34061 has 36 MA's), (Start: 49 @34082 has 1 MA's), (55, 34100), (67, 34139), (72, 34151), (86, 34208), (108, 34268), (139, 34388),

Gene: EricMillard\_126 Start: 72298, Stop: 72657, Start Num: 39

Candidate Starts for EricMillard\_126:

(24, 72271), (Start: 39 @72298 has 36 MA's), (Start: 44 @72307 has 86 MA's), (86, 72439), (90, 72454), (126, 72583), (128, 72589),

Gene: Eureka\_78 Start: 49628, Stop: 49975, Start Num: 42

Candidate Starts for Eureka\_78:

(5, 49391), (Start: 42 @49628 has 27 MA's), (Start: 48 @49643 has 103 MA's), (58, 49679), (137, 49955),

Gene: Eureka\_71 Start: 47272, Stop: 47640, Start Num: 46

Candidate Starts for Eureka\_71:

(Start: 44 @47266 has 86 MA's), (Start: 46 @47272 has 40 MA's), (71, 47344), (85, 47404), (128, 47572),

Gene: Eureka\_66 Start: 45002, Stop: 45412, Start Num: 38

Candidate Starts for Eureka\_66:

(Start: 38 @45002 has 125 MA's), (85, 45143), (95, 45191), (105, 45239), (129, 45332), (137, 45374),

Gene: FairyPath\_80 Start: 50291, Stop: 50626, Start Num: 48

Candidate Starts for FairyPath\_80:

(5, 50039), (Start: 42 @50276 has 27 MA's), (Start: 48 @50291 has 103 MA's), (58, 50327), (102, 50468), (113, 50507), (122, 50543), (124, 50546), (129, 50564), (137, 50606),

Gene: FairyPath\_68 Start: 45647, Stop: 46057, Start Num: 38

Candidate Starts for FairyPath\_68:

(8, 45473), (Start: 38 @45647 has 125 MA's), (85, 45788), (95, 45836), (105, 45884), (129, 45977), (137, 46019),

Gene: FairyPath\_73 Start: 47917, Stop: 48288, Start Num: 46

Candidate Starts for FairyPath\_73:

(Start: 44 @47911 has 86 MA's), (Start: 46 @47917 has 40 MA's), (71, 47989), (85, 48049), (128, 48220),

Gene: Faith1\_45 Start: 35347, Stop: 35772, Start Num: 14

Candidate Starts for Faith1\_45:

(Start: 14 @35347 has 10 MA's), (Start: 19 @35356 has 39 MA's), (Start: 49 @35443 has 1 MA's), (55, 35461), (63, 35488), (64, 35491), (86, 35566), (89, 35578), (125, 35686), (139, 35749),

Gene: Filch\_81 Start: 49104, Stop: 49436, Start Num: 48

Candidate Starts for Filch\_81:

(5, 48852), (Start: 42 @49089 has 27 MA's), (Start: 48 @49104 has 103 MA's), (58, 49140), (137, 49416),

Gene: Filch\_74 Start: 46733, Stop: 47101, Start Num: 46

Candidate Starts for Filch\_74:

(Start: 44 @46727 has 86 MA's), (Start: 46 @46733 has 40 MA's), (71, 46805), (85, 46865), (128, 47033),

Gene: Filch\_69 Start: 44463, Stop: 44873, Start Num: 38

Candidate Starts for Filch\_69:

(Start: 38 @44463 has 125 MA's), (85, 44604), (95, 44652), (105, 44700), (129, 44793), (137, 44835),

Gene: Finemlucis\_45 Start: 35623, Stop: 36048, Start Num: 14

Candidate Starts for Finemlucis\_45:

(Start: 14 @35623 has 10 MA's), (Start: 19 @35632 has 39 MA's), (Start: 49 @35719 has 1 MA's), (55, 35737), (63, 35764), (64, 35767), (86, 35842), (89, 35854), (125, 35962), (139, 36025),

Gene: FireRed\_84 Start: 50666, Stop: 51001, Start Num: 48

Candidate Starts for FireRed\_84:

(1, 50096), (2, 50213), (5, 50414), (Start: 42 @50651 has 27 MA's), (Start: 48 @50666 has 103 MA's), (58, 50702), (137, 50981),

Gene: FireRed\_72 Start: 46025, Stop: 46438, Start Num: 38

Candidate Starts for FireRed\_72:

(8, 45851), (Start: 38 @46025 has 125 MA's), (85, 46166), (95, 46214), (105, 46262), (129, 46355), (144, 46418),

Gene: FireRed\_77 Start: 48298, Stop: 48663, Start Num: 46

Candidate Starts for FireRed\_77:

(Start: 44 @48292 has 86 MA's), (Start: 46 @48298 has 40 MA's), (71, 48370), (85, 48424), (128, 48595),

Gene: Flypotenuse\_76 Start: 49163, Stop: 49498, Start Num: 48

Candidate Starts for Flypotenuse\_76:

(5, 48911), (Start: 42 @49148 has 27 MA's), (Start: 48 @49163 has 103 MA's), (58, 49199), (137, 49478),

Gene: Flypotenuse\_69 Start: 46783, Stop: 47160, Start Num: 44

Candidate Starts for Flypotenuse\_69:

(Start: 44 @46783 has 86 MA's), (Start: 46 @46789 has 40 MA's), (71, 46861), (85, 46921), (128, 47092),

Gene: Flypotenuse\_64 Start: 44519, Stop: 44929, Start Num: 38

Candidate Starts for Flypotenuse\_64:

(Start: 38 @44519 has 125 MA's), (85, 44660), (95, 44708), (105, 44756), (129, 44849), (137, 44891),

Gene: FoghornLeghorn\_62 Start: 43529, Stop: 43942, Start Num: 38  
Candidate Starts for FoghornLeghorn\_62:  
(8, 43355), (Start: 38 @43529 has 125 MA's), (85, 43670), (94, 43712), (118, 43820), (129, 43859),  
(144, 43922),

Gene: FoghornLeghorn\_67 Start: 45805, Stop: 46173, Start Num: 46  
Candidate Starts for FoghornLeghorn\_67:  
(Start: 44 @45799 has 86 MA's), (Start: 46 @45805 has 40 MA's), (71, 45877), (85, 45937), (128,  
46105),

Gene: FoghornLeghorn\_74 Start: 48161, Stop: 48511, Start Num: 42  
Candidate Starts for FoghornLeghorn\_74:  
(Start: 42 @48161 has 27 MA's), (Start: 48 @48176 has 103 MA's), (58, 48212), (76, 48266), (113,  
48392), (122, 48428), (124, 48431), (129, 48449), (137, 48491),

Gene: Gabriela\_45 Start: 35618, Stop: 36034, Start Num: 19  
Candidate Starts for Gabriela\_45:  
(Start: 14 @35609 has 10 MA's), (Start: 19 @35618 has 39 MA's), (Start: 49 @35705 has 1 MA's), (55,  
35723), (63, 35750), (64, 35753), (86, 35828), (89, 35840), (125, 35948), (139, 36011),

Gene: Gage\_75 Start: 47576, Stop: 47953, Start Num: 44  
Candidate Starts for Gage\_75:  
(Start: 44 @47576 has 86 MA's), (Start: 46 @47582 has 40 MA's), (71, 47654), (85, 47714), (128,  
47885),

Gene: Gage\_70 Start: 45309, Stop: 45719, Start Num: 38  
Candidate Starts for Gage\_70:  
(8, 45135), (Start: 38 @45309 has 125 MA's), (85, 45450), (95, 45498), (105, 45546), (129, 45639),  
(137, 45681),

Gene: Gage\_82 Start: 49956, Stop: 50291, Start Num: 48  
Candidate Starts for Gage\_82:  
(5, 49704), (Start: 42 @49941 has 27 MA's), (Start: 48 @49956 has 103 MA's), (58, 49992), (137,  
50271),

Gene: Gardann\_45 Start: 35357, Stop: 35773, Start Num: 19  
Candidate Starts for Gardann\_45:  
(Start: 14 @35348 has 10 MA's), (Start: 19 @35357 has 39 MA's), (Start: 49 @35444 has 1 MA's), (55,  
35462), (63, 35489), (64, 35492), (86, 35567), (89, 35579), (125, 35687), (139, 35750),

Gene: Gator\_66 Start: 45365, Stop: 45775, Start Num: 38  
Candidate Starts for Gator\_66:  
(Start: 38 @45365 has 125 MA's), (85, 45506), (95, 45554), (105, 45602), (129, 45695), (137, 45737),

Gene: Gator\_71 Start: 47629, Stop: 48006, Start Num: 44  
Candidate Starts for Gator\_71:  
(Start: 44 @47629 has 86 MA's), (Start: 46 @47635 has 40 MA's), (71, 47707), (85, 47767), (128,  
47938),

Gene: Gator\_78 Start: 50009, Stop: 50341, Start Num: 48  
Candidate Starts for Gator\_78:  
(5, 49757), (Start: 42 @49994 has 27 MA's), (Start: 48 @50009 has 103 MA's), (58, 50045), (137,  
50321),

Gene: Gemini\_73 Start: 45826, Stop: 46236, Start Num: 38

Candidate Starts for Gemini\_73:

(8, 45652), (Start: 38 @45826 has 125 MA's), (85, 45967), (95, 46015), (105, 46063), (129, 46156), (137, 46198),

Gene: Gemini\_78 Start: 48093, Stop: 48470, Start Num: 44

Candidate Starts for Gemini\_78:

(Start: 44 @48093 has 86 MA's), (Start: 46 @48099 has 40 MA's), (71, 48171), (85, 48231), (128, 48402),

Gene: Gemini\_85 Start: 50473, Stop: 50808, Start Num: 48

Candidate Starts for Gemini\_85:

(5, 50221), (Start: 42 @50458 has 27 MA's), (Start: 48 @50473 has 103 MA's), (58, 50509), (137, 50788),

Gene: GiKK\_67 Start: 44458, Stop: 44943, Start Num: 17

Candidate Starts for GiKK\_67:

(3, 44224), (4, 44242), (7, 44332), (8, 44353), (Start: 17 @44458 has 4 MA's), (21, 44482), (33, 44521), (41, 44533), (74, 44635), (92, 44716), (112, 44773), (129, 44836), (134, 44860), (137, 44878),

Gene: Glexan\_72 Start: 47913, Stop: 48290, Start Num: 44

Candidate Starts for Glexan\_72:

(Start: 44 @47913 has 86 MA's), (Start: 46 @47919 has 40 MA's), (71, 47991), (85, 48051), (128, 48222),

Gene: Glexan\_67 Start: 45646, Stop: 46059, Start Num: 38

Candidate Starts for Glexan\_67:

(8, 45472), (Start: 38 @45646 has 125 MA's), (85, 45787), (94, 45829), (118, 45937), (129, 45976), (144, 46039),

Gene: Glexan\_79 Start: 50293, Stop: 50628, Start Num: 48

Candidate Starts for Glexan\_79:

(5, 50041), (Start: 42 @50278 has 27 MA's), (Start: 48 @50293 has 103 MA's), (58, 50329), (137, 50608),

Gene: Goku\_66 Start: 44731, Stop: 45141, Start Num: 38

Candidate Starts for Goku\_66:

(Start: 38 @44731 has 125 MA's), (85, 44872), (95, 44920), (105, 44968), (129, 45061), (137, 45103),

Gene: Goku\_78 Start: 49357, Stop: 49704, Start Num: 42

Candidate Starts for Goku\_78:

(5, 49120), (Start: 42 @49357 has 27 MA's), (Start: 48 @49372 has 103 MA's), (58, 49408), (137, 49684),

Gene: Goku\_71 Start: 46995, Stop: 47369, Start Num: 44

Candidate Starts for Goku\_71:

(Start: 44 @46995 has 86 MA's), (Start: 46 @47001 has 40 MA's), (71, 47073), (85, 47133), (128, 47301),

Gene: GoldenSpark\_72 Start: 45309, Stop: 45719, Start Num: 38

Candidate Starts for GoldenSpark\_72:



(8, 45135), (Start: 38 @45309 has 125 MA's), (85, 45450), (95, 45498), (105, 45546), (129, 45639), (137, 45681),

Gene: GoldenSpark\_77 Start: 47582, Stop: 47953, Start Num: 46

Candidate Starts for GoldenSpark\_77:

(Start: 44 @47576 has 86 MA's), (Start: 46 @47582 has 40 MA's), (71, 47654), (85, 47714), (128, 47885),

Gene: GoldenSpark\_84 Start: 49941, Stop: 50291, Start Num: 42

Candidate Starts for GoldenSpark\_84:

(5, 49704), (Start: 42 @49941 has 27 MA's), (Start: 48 @49956 has 103 MA's), (58, 49992), (137, 50271),

Gene: Goldilocks\_76 Start: 47080, Stop: 47451, Start Num: 46

Candidate Starts for Goldilocks\_76:

(Start: 44 @47074 has 86 MA's), (Start: 46 @47080 has 40 MA's), (71, 47152), (85, 47212), (128, 47383),

Gene: Goldilocks\_71 Start: 44810, Stop: 45220, Start Num: 38

Candidate Starts for Goldilocks\_71:

(8, 44636), (Start: 38 @44810 has 125 MA's), (85, 44951), (95, 44999), (105, 45047), (129, 45140), (137, 45182),

Gene: Goldilocks\_83 Start: 49454, Stop: 49786, Start Num: 48

Candidate Starts for Goldilocks\_83:

(5, 49202), (Start: 42 @49439 has 27 MA's), (Start: 48 @49454 has 103 MA's), (58, 49490), (137, 49766),

Gene: Gonephishing\_128 Start: 69464, Stop: 69817, Start Num: 39

Candidate Starts for Gonephishing\_128:

(Start: 39 @69464 has 36 MA's), (Start: 44 @69473 has 86 MA's), (126, 69743), (137, 69794),

Gene: Gonephishing\_107 Start: 60857, Stop: 61180, Start Num: 40

Candidate Starts for Gonephishing\_107:

(Start: 40 @60857 has 36 MA's), (55, 60896), (78, 60962), (84, 60983), (85, 60986), (90, 61013), (137, 61166),

Gene: GooberAzure\_83 Start: 49956, Stop: 50291, Start Num: 48

Candidate Starts for GooberAzure\_83:

(5, 49704), (Start: 42 @49941 has 27 MA's), (Start: 48 @49956 has 103 MA's), (58, 49992), (137, 50271),

Gene: GooberAzure\_71 Start: 45309, Stop: 45719, Start Num: 38

Candidate Starts for GooberAzure\_71:

(8, 45135), (Start: 38 @45309 has 125 MA's), (85, 45450), (95, 45498), (105, 45546), (129, 45639), (137, 45681),

Gene: GooberAzure\_76 Start: 47576, Stop: 47953, Start Num: 44

Candidate Starts for GooberAzure\_76:

(Start: 44 @47576 has 86 MA's), (Start: 46 @47582 has 40 MA's), (71, 47654), (85, 47714), (128, 47885),

Gene: Grayson\_232 Start: 113102, Stop: 113485, Start Num: 34

Candidate Starts for Grayson\_232:

(31, 113096), (Start: 34 @113102 has 4 MA's), (83, 113249), (92, 113288), (126, 113396), (140, 113456), (143, 113465),

Gene: Grayson\_26 Start: 7449, Stop: 7075, Start Num: 36

Candidate Starts for Grayson\_26:

(Start: 36 @7449 has 3 MA's), (87, 7281), (97, 7254), (112, 7209), (130, 7140),

Gene: Grayson\_21 Start: 6068, Stop: 5700, Start Num: 42

Candidate Starts for Grayson\_21:

(27, 6098), (29, 6092), (31, 6086), (Start: 42 @6068 has 27 MA's), (85, 5924), (87, 5909), (142, 5717),

Gene: Grayson\_20 Start: 5707, Stop: 5357, Start Num: 42

Candidate Starts for Grayson\_20:

(30, 5728), (Start: 42 @5707 has 27 MA's), (120, 5467),

Gene: GuuelaD\_44 Start: 35386, Stop: 35811, Start Num: 14

Candidate Starts for GuuelaD\_44:

(Start: 14 @35386 has 10 MA's), (Start: 19 @35395 has 39 MA's), (Start: 49 @35482 has 1 MA's), (55, 35500), (63, 35527), (64, 35530), (86, 35605), (89, 35617), (125, 35725), (139, 35788),

Gene: Halena\_42 Start: 34036, Stop: 34452, Start Num: 19

Candidate Starts for Halena\_42:

(Start: 12 @34015 has 3 MA's), (Start: 19 @34036 has 39 MA's), (Start: 40 @34102 has 36 MA's), (Start: 49 @34123 has 1 MA's), (55, 34141), (67, 34180), (72, 34192), (86, 34249), (108, 34309), (139, 34429),

Gene: Halley\_121 Start: 67841, Stop: 68161, Start Num: 40

Candidate Starts for Halley\_121:

(Start: 40 @67841 has 36 MA's), (55, 67880), (110, 68036), (119, 68072), (128, 68102), (137, 68147),

Gene: Halley\_136 Start: 74110, Stop: 74469, Start Num: 39

Candidate Starts for Halley\_136:

(24, 74083), (Start: 39 @74110 has 36 MA's), (Start: 44 @74119 has 86 MA's), (86, 74251), (90, 74266), (128, 74401),

Gene: HanKaySha\_73 Start: 46880, Stop: 47254, Start Num: 44

Candidate Starts for HanKaySha\_73:

(Start: 44 @46880 has 86 MA's), (Start: 46 @46886 has 40 MA's), (71, 46958), (85, 47018), (128, 47186),

Gene: HanKaySha\_80 Start: 49257, Stop: 49589, Start Num: 48

Candidate Starts for HanKaySha\_80:

(5, 49005), (Start: 42 @49242 has 27 MA's), (Start: 48 @49257 has 103 MA's), (58, 49293), (137, 49569),

Gene: HanKaySha\_68 Start: 44616, Stop: 45026, Start Num: 38

Candidate Starts for HanKaySha\_68:

(Start: 38 @44616 has 125 MA's), (85, 44757), (95, 44805), (105, 44853), (129, 44946), (137, 44988),

Gene: Hannaconda\_104 Start: 59803, Stop: 60126, Start Num: 40

Candidate Starts for Hannaconda\_104:

(Start: 40 @59803 has 36 MA's), (55, 59842), (78, 59908), (84, 59929), (85, 59932), (90, 59959), (137, 60112),

Gene: Hannaconda\_127 Start: 70117, Stop: 70470, Start Num: 39

Candidate Starts for Hannaconda\_127:

(Start: 39 @70117 has 36 MA's), (Start: 44 @70126 has 86 MA's), (126, 70396), (137, 70447),

Gene: Harella\_68 Start: 46162, Stop: 46575, Start Num: 38

Candidate Starts for Harella\_68:

(8, 45988), (Start: 38 @46162 has 125 MA's), (85, 46303), (94, 46345), (118, 46453), (129, 46492), (144, 46555),

Gene: Harella\_80 Start: 50809, Stop: 51144, Start Num: 48

Candidate Starts for Harella\_80:

(5, 50557), (Start: 42 @50794 has 27 MA's), (Start: 48 @50809 has 103 MA's), (58, 50845), (137, 51124),

Gene: Harella\_73 Start: 48429, Stop: 48806, Start Num: 44

Candidate Starts for Harella\_73:

(Start: 44 @48429 has 86 MA's), (Start: 46 @48435 has 40 MA's), (71, 48507), (85, 48567), (128, 48738),

Gene: Henry\_78 Start: 49597, Stop: 49929, Start Num: 48

Candidate Starts for Henry\_78:

(5, 49345), (Start: 42 @49582 has 27 MA's), (Start: 48 @49597 has 103 MA's), (58, 49633), (137, 49909),

Gene: Henry\_66 Start: 44953, Stop: 45363, Start Num: 38

Candidate Starts for Henry\_66:

(8, 44779), (Start: 38 @44953 has 125 MA's), (73, 45049), (85, 45094), (95, 45142), (105, 45190), (129, 45283), (137, 45325),

Gene: Henry\_71 Start: 47217, Stop: 47594, Start Num: 44

Candidate Starts for Henry\_71:

(Start: 44 @47217 has 86 MA's), (Start: 46 @47223 has 40 MA's), (71, 47295), (85, 47355), (128, 47526),

Gene: Highbury\_72 Start: 46868, Stop: 47242, Start Num: 44

Candidate Starts for Highbury\_72:

(Start: 44 @46868 has 86 MA's), (Start: 46 @46874 has 40 MA's), (71, 46946), (85, 47006), (128, 47174),

Gene: Highbury\_79 Start: 49245, Stop: 49580, Start Num: 48

Candidate Starts for Highbury\_79:

(5, 48993), (Start: 42 @49230 has 27 MA's), (Start: 48 @49245 has 103 MA's), (58, 49281), (137, 49560),

Gene: Highbury\_67 Start: 44604, Stop: 45014, Start Num: 38

Candidate Starts for Highbury\_67:

(Start: 38 @44604 has 125 MA's), (85, 44745), (95, 44793), (105, 44841), (129, 44934), (137, 44976),

Gene: HokkenD\_108 Start: 64913, Stop: 65233, Start Num: 40

Candidate Starts for HokkenD\_108:

(Start: 40 @64913 has 36 MA's), (55, 64952), (86, 65051), (110, 65108), (119, 65144), (128, 65174), (137, 65219),

Gene: HokkenD\_126 Start: 72994, Stop: 73353, Start Num: 39

Candidate Starts for HokkenD\_126:

(24, 72967), (Start: 39 @72994 has 36 MA's), (Start: 44 @73003 has 86 MA's), (86, 73135), (90, 73150), (126, 73279), (128, 73285),

Gene: Holt\_85 Start: 50370, Stop: 50705, Start Num: 48

Candidate Starts for Holt\_85:

(5, 50118), (Start: 42 @50355 has 27 MA's), (Start: 48 @50370 has 103 MA's), (58, 50406), (137, 50685),

Gene: Holt\_78 Start: 47990, Stop: 48367, Start Num: 44

Candidate Starts for Holt\_78:

(Start: 44 @47990 has 86 MA's), (Start: 46 @47996 has 40 MA's), (71, 48068), (85, 48128), (128, 48299),

Gene: Holt\_73 Start: 45723, Stop: 46133, Start Num: 38

Candidate Starts for Holt\_73:

(8, 45549), (Start: 38 @45723 has 125 MA's), (85, 45864), (95, 45912), (105, 45960), (129, 46053), (137, 46095),

Gene: Hoonter\_71 Start: 45309, Stop: 45719, Start Num: 38

Candidate Starts for Hoonter\_71:

(8, 45135), (Start: 38 @45309 has 125 MA's), (85, 45450), (95, 45498), (105, 45546), (129, 45639), (137, 45681),

Gene: Hoonter\_76 Start: 47576, Stop: 47953, Start Num: 44

Candidate Starts for Hoonter\_76:

(Start: 44 @47576 has 86 MA's), (Start: 46 @47582 has 40 MA's), (71, 47654), (85, 47714), (128, 47885),

Gene: Hoonter\_83 Start: 49956, Stop: 50288, Start Num: 48

Candidate Starts for Hoonter\_83:

(1, 49386), (2, 49503), (5, 49704), (Start: 42 @49941 has 27 MA's), (Start: 48 @49956 has 103 MA's), (58, 49992), (137, 50268),

Gene: Hokey\_68 Start: 45148, Stop: 45558, Start Num: 38

Candidate Starts for Hokey\_68:

(Start: 38 @45148 has 125 MA's), (85, 45289), (95, 45337), (105, 45385), (129, 45478), (137, 45520),

Gene: Hokey\_80 Start: 49789, Stop: 50121, Start Num: 48

Candidate Starts for Hokey\_80:

(5, 49537), (Start: 42 @49774 has 27 MA's), (Start: 48 @49789 has 103 MA's), (58, 49825), (137, 50101),

Gene: Hokey\_73 Start: 47412, Stop: 47786, Start Num: 44

Candidate Starts for Hokey\_73:

(Start: 44 @47412 has 86 MA's), (Start: 46 @47418 has 40 MA's), (71, 47490), (85, 47550), (128, 47718),

Gene: HufflyPuff\_83 Start: 50607, Stop: 50954, Start Num: 42

Candidate Starts for HufflyPuff\_83:

(Start: 42 @50607 has 27 MA's), (Start: 48 @50622 has 103 MA's), (58, 50658), (137, 50934),

Gene: HufflyPuff\_71 Start: 45981, Stop: 46391, Start Num: 38

Candidate Starts for HufflyPuff\_71:

(Start: 38 @45981 has 125 MA's), (85, 46122), (95, 46170), (105, 46218), (129, 46311), (137, 46353),

Gene: HufflyPuff\_76 Start: 48245, Stop: 48619, Start Num: 44

Candidate Starts for HufflyPuff\_76:

(Start: 44 @48245 has 86 MA's), (Start: 46 @48251 has 40 MA's), (71, 48323), (85, 48383), (128, 48551),

Gene: Hughesyang\_134 Start: 73880, Stop: 74239, Start Num: 39

Candidate Starts for Hughesyang\_134:

(24, 73853), (Start: 39 @73880 has 36 MA's), (Start: 44 @73889 has 86 MA's), (86, 74021), (90, 74036), (126, 74165), (128, 74171),

Gene: Hughesyang\_118 Start: 67297, Stop: 67617, Start Num: 40

Candidate Starts for Hughesyang\_118:

(Start: 40 @67297 has 36 MA's), (55, 67336), (110, 67492), (119, 67528), (128, 67558), (137, 67603),

Gene: IHOP\_71 Start: 47341, Stop: 47718, Start Num: 44

Candidate Starts for IHOP\_71:

(Start: 44 @47341 has 86 MA's), (Start: 46 @47347 has 40 MA's), (71, 47419), (85, 47479), (128, 47650),

Gene: IHOP\_66 Start: 45077, Stop: 45487, Start Num: 38

Candidate Starts for IHOP\_66:

(Start: 38 @45077 has 125 MA's), (85, 45218), (95, 45266), (105, 45314), (129, 45407), (137, 45449),

Gene: IHOP\_78 Start: 49721, Stop: 50053, Start Num: 48

Candidate Starts for IHOP\_78:

(5, 49469), (Start: 42 @49706 has 27 MA's), (Start: 48 @49721 has 103 MA's), (58, 49757), (137, 50033),

Gene: Icee\_69 Start: 44976, Stop: 45386, Start Num: 38

Candidate Starts for Icee\_69:

(Start: 38 @44976 has 125 MA's), (85, 45117), (95, 45165), (105, 45213), (129, 45306), (137, 45348),

Gene: Icee\_74 Start: 47246, Stop: 47617, Start Num: 46

Candidate Starts for Icee\_74:

(Start: 44 @47240 has 86 MA's), (Start: 46 @47246 has 40 MA's), (71, 47318), (85, 47378), (128, 47549),

Gene: Icee\_81 Start: 49620, Stop: 49955, Start Num: 48

Candidate Starts for Icee\_81:

(5, 49368), (Start: 42 @49605 has 27 MA's), (Start: 48 @49620 has 103 MA's), (58, 49656), (137, 49935),

Gene: Inca\_70 Start: 45869, Stop: 46243, Start Num: 44

Candidate Starts for Inca\_70:

(Start: 44 @45869 has 86 MA's), (Start: 46 @45875 has 40 MA's), (71, 45947), (85, 46007), (128, 46175),

Gene: Inca\_77 Start: 48246, Stop: 48581, Start Num: 48

Candidate Starts for Inca\_77:

(5, 47994), (Start: 42 @48231 has 27 MA's), (Start: 48 @48246 has 103 MA's), (58, 48282), (137, 48561),

Gene: Inca\_65 Start: 43602, Stop: 44012, Start Num: 38

Candidate Starts for Inca\_65:

(8, 43428), (Start: 38 @43602 has 125 MA's), (85, 43743), (95, 43791), (105, 43839), (129, 43932), (137, 43974),

Gene: Itos\_44 Start: 34253, Stop: 34678, Start Num: 14

Candidate Starts for Itos\_44:

(Start: 14 @34253 has 10 MA's), (Start: 19 @34262 has 39 MA's), (Start: 49 @34349 has 1 MA's), (55, 34367), (63, 34394), (64, 34397), (86, 34472), (89, 34484), (125, 34592), (139, 34655),

Gene: Jamzy\_67 Start: 44194, Stop: 44679, Start Num: 17

Candidate Starts for Jamzy\_67:

(3, 43960), (4, 43978), (7, 44068), (8, 44089), (Start: 17 @44194 has 4 MA's), (21, 44218), (33, 44257), (41, 44269), (74, 44371), (92, 44452), (129, 44572), (134, 44596), (137, 44614),

Gene: JeTaime\_73 Start: 48064, Stop: 48435, Start Num: 44

Candidate Starts for JeTaime\_73:

(Start: 44 @48064 has 86 MA's), (Start: 46 @48070 has 40 MA's), (71, 48142), (85, 48196), (128, 48367),

Gene: JeTaime\_80 Start: 50438, Stop: 50770, Start Num: 48

Candidate Starts for JeTaime\_80:

(5, 50186), (Start: 42 @50423 has 27 MA's), (Start: 48 @50438 has 103 MA's), (58, 50474), (137, 50750),

Gene: JeTaime\_68 Start: 45800, Stop: 46210, Start Num: 38

Candidate Starts for JeTaime\_68:

(8, 45626), (Start: 38 @45800 has 125 MA's), (85, 45941), (95, 45989), (105, 46037), (129, 46130), (137, 46172),

Gene: JoeDirt\_42 Start: 33993, Stop: 34409, Start Num: 19

Candidate Starts for JoeDirt\_42:

(Start: 12 @33972 has 3 MA's), (Start: 19 @33993 has 39 MA's), (Start: 40 @34059 has 36 MA's), (Start: 49 @34080 has 1 MA's), (55, 34098), (67, 34137), (72, 34149), (86, 34206), (108, 34266), (139, 34386),

Gene: Jubie\_42 Start: 35647, Stop: 36054, Start Num: 19

Candidate Starts for Jubie\_42:

(Start: 12 @35626 has 3 MA's), (Start: 14 @35638 has 10 MA's), (Start: 19 @35647 has 39 MA's), (Start: 49 @35731 has 1 MA's), (55, 35749), (Start: 59 @35767 has 1 MA's), (63, 35776), (101, 35893), (139, 36031),

Gene: JuicyJay\_115 Start: 68611, Stop: 68931, Start Num: 40

Candidate Starts for JuicyJay\_115:

(Start: 40 @68611 has 36 MA's), (55, 68650), (86, 68749), (110, 68806), (119, 68842), (128, 68872), (137, 68917),

Gene: JuicyJay\_131 Start: 75395, Stop: 75754, Start Num: 39

Candidate Starts for JuicyJay\_131:

(24, 75368), (Start: 39 @75395 has 36 MA's), (Start: 44 @75404 has 86 MA's), (86, 75536), (90, 75551),

Gene: Kahlid\_45 Start: 35362, Stop: 35778, Start Num: 19

Candidate Starts for Kahlid\_45:

(Start: 14 @35353 has 10 MA's), (Start: 19 @35362 has 39 MA's), (Start: 49 @35449 has 1 MA's), (55, 35467), (63, 35494), (64, 35497), (86, 35572), (89, 35584), (125, 35692), (139, 35755),

Gene: Kanye\_65 Start: 44658, Stop: 45068, Start Num: 38

Candidate Starts for Kanye\_65:

(Start: 38 @44658 has 125 MA's), (85, 44799), (95, 44847), (105, 44895), (129, 44988), (137, 45030),

Gene: Kanye\_77 Start: 49302, Stop: 49637, Start Num: 48

Candidate Starts for Kanye\_77:

(5, 49050), (Start: 42 @49287 has 27 MA's), (Start: 48 @49302 has 103 MA's), (58, 49338), (137, 49617),

Gene: Kanye\_70 Start: 46922, Stop: 47299, Start Num: 44

Candidate Starts for Kanye\_70:

(Start: 44 @46922 has 86 MA's), (Start: 46 @46928 has 40 MA's), (71, 47000), (85, 47060), (128, 47231),

Gene: KashFlow\_110 Start: 62308, Stop: 62631, Start Num: 40

Candidate Starts for KashFlow\_110:

(Start: 40 @62308 has 36 MA's), (55, 62347), (78, 62413), (84, 62434), (85, 62437), (90, 62464), (137, 62617),

Gene: KashFlow\_131 Start: 71552, Stop: 71905, Start Num: 39

Candidate Starts for KashFlow\_131:

(Start: 39 @71552 has 36 MA's), (Start: 44 @71561 has 86 MA's), (126, 71831), (137, 71882),

Gene: Kimchi\_84 Start: 49959, Stop: 50294, Start Num: 48

Candidate Starts for Kimchi\_84:

(5, 49707), (Start: 42 @49944 has 27 MA's), (Start: 48 @49959 has 103 MA's), (58, 49995), (137, 50274),

Gene: Kimchi\_77 Start: 47579, Stop: 47956, Start Num: 44

Candidate Starts for Kimchi\_77:

(Start: 44 @47579 has 86 MA's), (Start: 46 @47585 has 40 MA's), (71, 47657), (85, 47717), (128, 47888),

Gene: Kimchi\_72 Start: 45312, Stop: 45722, Start Num: 38

Candidate Starts for Kimchi\_72:

(8, 45138), (Start: 38 @45312 has 125 MA's), (85, 45453), (95, 45501), (105, 45549), (129, 45642), (137, 45684),

Gene: Klein\_131 Start: 71031, Stop: 71390, Start Num: 39

Candidate Starts for Klein\_131:

(24, 71004), (Start: 39 @71031 has 36 MA's), (Start: 44 @71040 has 86 MA's), (86, 71172), (90, 71187), (126, 71316), (128, 71322),

Gene: Kostya\_80 Start: 49805, Stop: 50155, Start Num: 42  
Candidate Starts for Kostya\_80:  
(5, 49568), (Start: 42 @49805 has 27 MA's), (Start: 48 @49820 has 103 MA's), (58, 49856), (137, 50135),

Gene: Kostya\_73 Start: 47446, Stop: 47817, Start Num: 46  
Candidate Starts for Kostya\_73:  
(Start: 44 @47440 has 86 MA's), (Start: 46 @47446 has 40 MA's), (71, 47518), (85, 47578), (128, 47749),

Gene: Kostya\_68 Start: 45176, Stop: 45586, Start Num: 38  
Candidate Starts for Kostya\_68:  
(Start: 38 @45176 has 125 MA's), (85, 45317), (95, 45365), (105, 45413), (129, 45506), (137, 45548),

Gene: Krypton555\_42 Start: 35542, Stop: 35970, Start Num: 12  
Candidate Starts for Krypton555\_42:  
(Start: 12 @35542 has 3 MA's), (Start: 14 @35554 has 10 MA's), (Start: 19 @35563 has 39 MA's),  
(Start: 49 @35647 has 1 MA's), (55, 35665), (Start: 59 @35683 has 1 MA's), (63, 35692), (101, 35809), (139, 35947),

Gene: Labelle\_59 Start: 43035, Stop: 43403, Start Num: 40  
Candidate Starts for Labelle\_59:  
(Start: 40 @43035 has 36 MA's), (Start: 49 @43056 has 1 MA's), (86, 43164), (88, 43173), (114, 43269), (119, 43296),

Gene: LeBron\_43 Start: 34037, Stop: 34453, Start Num: 19  
Candidate Starts for LeBron\_43:  
(Start: 12 @34016 has 3 MA's), (Start: 19 @34037 has 39 MA's), (Start: 40 @34103 has 36 MA's),  
(Start: 49 @34124 has 1 MA's), (55, 34142), (67, 34181), (72, 34193), (86, 34250), (108, 34310), (139, 34430),

Gene: Lewan\_45 Start: 35349, Stop: 35765, Start Num: 19  
Candidate Starts for Lewan\_45:  
(Start: 14 @35340 has 10 MA's), (Start: 19 @35349 has 39 MA's), (Start: 49 @35436 has 1 MA's), (55, 35454), (63, 35481), (64, 35484), (86, 35559), (89, 35571), (125, 35679), (139, 35742),

Gene: LilDestine\_45 Start: 35354, Stop: 35770, Start Num: 19  
Candidate Starts for LilDestine\_45:  
(Start: 14 @35345 has 10 MA's), (Start: 19 @35354 has 39 MA's), (Start: 49 @35441 has 1 MA's), (55, 35459), (63, 35486), (64, 35489), (86, 35564), (89, 35576), (125, 35684), (139, 35747),

Gene: Lilac\_82 Start: 49574, Stop: 49906, Start Num: 48  
Candidate Starts for Lilac\_82:  
(5, 49322), (Start: 42 @49559 has 27 MA's), (Start: 48 @49574 has 103 MA's), (58, 49610), (137, 49886),

Gene: Lilac\_75 Start: 47197, Stop: 47571, Start Num: 44  
Candidate Starts for Lilac\_75:  
(Start: 44 @47197 has 86 MA's), (Start: 46 @47203 has 40 MA's), (71, 47275), (85, 47335), (128, 47503),

Gene: Lilac\_70 Start: 44933, Stop: 45343, Start Num: 38  
Candidate Starts for Lilac\_70:



(Start: 38 @44933 has 125 MA's), (85, 45074), (95, 45122), (105, 45170), (129, 45263), (137, 45305),

Gene: Lilizi\_74 Start: 46910, Stop: 47284, Start Num: 44

Candidate Starts for Lilizi\_74:

(Start: 44 @46910 has 86 MA's), (Start: 46 @46916 has 40 MA's), (71, 46988), (85, 47048), (128, 47216),

Gene: Lilizi\_69 Start: 44646, Stop: 45056, Start Num: 38

Candidate Starts for Lilizi\_69:

(8, 44472), (Start: 38 @44646 has 125 MA's), (85, 44787), (95, 44835), (105, 44883), (129, 44976), (137, 45018),

Gene: Lilizi\_81 Start: 49287, Stop: 49619, Start Num: 48

Candidate Starts for Lilizi\_81:

(1, 48717), (2, 48834), (5, 49035), (Start: 42 @49272 has 27 MA's), (Start: 48 @49287 has 103 MA's), (58, 49323), (137, 49599),

Gene: Lilpickle\_67 Start: 44531, Stop: 44941, Start Num: 38

Candidate Starts for Lilpickle\_67:

(Start: 38 @44531 has 125 MA's), (85, 44672), (95, 44720), (105, 44768), (129, 44861), (137, 44903),

Gene: Lilpickle\_72 Start: 46795, Stop: 47169, Start Num: 44

Candidate Starts for Lilpickle\_72:

(Start: 44 @46795 has 86 MA's), (Start: 46 @46801 has 40 MA's), (71, 46873), (85, 46933), (128, 47101),

Gene: Lilpickle\_79 Start: 49172, Stop: 49507, Start Num: 48

Candidate Starts for Lilpickle\_79:

(5, 48920), (Start: 42 @49157 has 27 MA's), (Start: 48 @49172 has 103 MA's), (58, 49208), (137, 49487),

Gene: LittleE\_136 Start: 72806, Stop: 73159, Start Num: 39

Candidate Starts for LittleE\_136:

(Start: 39 @72806 has 36 MA's), (Start: 44 @72815 has 86 MA's),

Gene: LittleE\_118 Start: 65723, Stop: 66046, Start Num: 40

Candidate Starts for LittleE\_118:

(Start: 40 @65723 has 36 MA's), (55, 65762), (78, 65828), (84, 65849), (85, 65852), (90, 65879), (137, 66032),

Gene: Loadrie\_44 Start: 35379, Stop: 35804, Start Num: 14

Candidate Starts for Loadrie\_44:

(Start: 14 @35379 has 10 MA's), (Start: 19 @35388 has 39 MA's), (Start: 49 @35475 has 1 MA's), (55, 35493), (63, 35520), (64, 35523), (86, 35598), (89, 35610), (125, 35718), (139, 35781),

Gene: Lucky2013\_128 Start: 69682, Stop: 70035, Start Num: 39

Candidate Starts for Lucky2013\_128:

(Start: 39 @69682 has 36 MA's), (Start: 44 @69691 has 86 MA's), (126, 69961), (137, 70012),

Gene: Lucky2013\_110 Start: 61874, Stop: 62194, Start Num: 40

Candidate Starts for Lucky2013\_110:

(Start: 40 @61874 has 36 MA's), (55, 61913), (86, 62012), (110, 62069), (119, 62105), (128, 62135), (137, 62180),

Gene: Lumos\_42 Start: 35643, Stop: 36050, Start Num: 19

Candidate Starts for Lumos\_42:

(Start: 12 @35622 has 3 MA's), (Start: 14 @35634 has 10 MA's), (Start: 19 @35643 has 39 MA's), (Start: 49 @35727 has 1 MA's), (55, 35745), (Start: 59 @35763 has 1 MA's), (63, 35772), (101, 35889), (139, 36027),

Gene: MISSy\_74 Start: 47301, Stop: 47675, Start Num: 44

Candidate Starts for MISSy\_74:

(Start: 44 @47301 has 86 MA's), (Start: 46 @47307 has 40 MA's), (71, 47379), (85, 47439), (128, 47607),

Gene: MISSy\_69 Start: 45034, Stop: 45447, Start Num: 38

Candidate Starts for MISSy\_69:

(8, 44860), (Start: 38 @45034 has 125 MA's), (85, 45175), (95, 45223), (105, 45271), (129, 45364), (144, 45427),

Gene: MISSy\_81 Start: 49663, Stop: 50013, Start Num: 42

Candidate Starts for MISSy\_81:

(5, 49426), (Start: 42 @49663 has 27 MA's), (Start: 48 @49678 has 103 MA's), (58, 49714), (137, 49993),

Gene: MPhalcon\_69 Start: 45027, Stop: 45440, Start Num: 38

Candidate Starts for MPhalcon\_69:

(8, 44853), (Start: 38 @45027 has 125 MA's), (85, 45168), (95, 45216), (105, 45264), (129, 45357), (144, 45420),

Gene: MPhalcon\_74 Start: 47294, Stop: 47668, Start Num: 44

Candidate Starts for MPhalcon\_74:

(Start: 44 @47294 has 86 MA's), (Start: 46 @47300 has 40 MA's), (71, 47372), (85, 47432), (128, 47600),

Gene: MPhalcon\_81 Start: 49671, Stop: 50006, Start Num: 48

Candidate Starts for MPhalcon\_81:

(5, 49419), (Start: 42 @49656 has 27 MA's), (Start: 48 @49671 has 103 MA's), (58, 49707), (137, 49986),

Gene: MadamMonkfish\_68 Start: 44255, Stop: 44665, Start Num: 38

Candidate Starts for MadamMonkfish\_68:

(8, 44081), (Start: 38 @44255 has 125 MA's), (85, 44396), (95, 44444), (105, 44492), (129, 44585), (137, 44627),

Gene: MadamMonkfish\_80 Start: 48896, Stop: 49234, Start Num: 48

Candidate Starts for MadamMonkfish\_80:

(5, 48644), (Start: 42 @48881 has 27 MA's), (Start: 48 @48896 has 103 MA's), (58, 48932), (137, 49214),

Gene: MadamMonkfish\_73 Start: 46525, Stop: 46893, Start Num: 46

Candidate Starts for MadamMonkfish\_73:

(Start: 44 @46519 has 86 MA's), (Start: 46 @46525 has 40 MA's), (71, 46597), (85, 46657), (128, 46825),

Gene: Madruga\_58 Start: 42688, Stop: 43056, Start Num: 40

Candidate Starts for Madruga\_58:

(Start: 40 @42688 has 36 MA's), (86, 42817), (88, 42826), (114, 42922), (119, 42949),

Gene: Manda\_74 Start: 48378, Stop: 48755, Start Num: 44

Candidate Starts for Manda\_74:

(Start: 44 @48378 has 86 MA's), (Start: 46 @48384 has 40 MA's), (71, 48456), (85, 48516), (128, 48687),

Gene: Manda\_68 Start: 45536, Stop: 45946, Start Num: 38

Candidate Starts for Manda\_68:

(Start: 38 @45536 has 125 MA's), (85, 45677), (95, 45725), (105, 45773), (129, 45866), (137, 45908),

Gene: Manda\_81 Start: 50758, Stop: 51093, Start Num: 48

Candidate Starts for Manda\_81:

(5, 50506), (Start: 42 @50743 has 27 MA's), (Start: 48 @50758 has 103 MA's), (58, 50794), (137, 51073),

Gene: Margaret\_67 Start: 43929, Stop: 44381, Start Num: 17

Candidate Starts for Margaret\_67:

(Start: 17 @43929 has 4 MA's), (33, 43968), (41, 43980), (54, 44016), (60, 44031), (74, 44073), (79, 44091), (86, 44133), (90, 44148), (92, 44154), (129, 44274), (134, 44298), (137, 44316), (147, 44361),

Gene: Marleymoo\_119 Start: 70106, Stop: 70465, Start Num: 39

Candidate Starts for Marleymoo\_119:

(24, 70079), (Start: 39 @70106 has 36 MA's), (Start: 44 @70115 has 86 MA's), (86, 70247), (90, 70262),

Gene: Marshmallow\_71 Start: 48077, Stop: 48448, Start Num: 46

Candidate Starts for Marshmallow\_71:

(Start: 44 @48071 has 86 MA's), (Start: 46 @48077 has 40 MA's), (71, 48149), (85, 48209), (128, 48380),

Gene: Marshmallow\_78 Start: 50436, Stop: 50783, Start Num: 42

Candidate Starts for Marshmallow\_78:

(5, 50199), (Start: 42 @50436 has 27 MA's), (Start: 48 @50451 has 103 MA's), (58, 50487), (137, 50763),

Gene: Marshmallow\_66 Start: 45804, Stop: 46214, Start Num: 38

Candidate Starts for Marshmallow\_66:

(Start: 38 @45804 has 125 MA's), (85, 45945), (95, 45993), (105, 46041), (129, 46134), (137, 46176),

Gene: Maxxinista\_82 Start: 49547, Stop: 49879, Start Num: 48

Candidate Starts for Maxxinista\_82:

(5, 49295), (Start: 42 @49532 has 27 MA's), (Start: 48 @49547 has 103 MA's), (58, 49583), (137, 49859),

Gene: Maxxinista\_70 Start: 44906, Stop: 45316, Start Num: 38

Candidate Starts for Maxxinista\_70:

(Start: 38 @44906 has 125 MA's), (85, 45047), (95, 45095), (105, 45143), (129, 45236), (137, 45278),

Gene: Maxxinista\_75 Start: 47176, Stop: 47544, Start Num: 46

Candidate Starts for Maxxinista\_75:

(Start: 44 @47170 has 86 MA's), (Start: 46 @47176 has 40 MA's), (71, 47248), (85, 47308), (128, 47476),

Gene: MiaZeal\_133 Start: 70821, Stop: 71174, Start Num: 39

Candidate Starts for MiaZeal\_133:

(Start: 39 @70821 has 36 MA's), (Start: 44 @70830 has 86 MA's), (126, 71100), (137, 71151),

Gene: MiaZeal\_113 Start: 62505, Stop: 62825, Start Num: 40

Candidate Starts for MiaZeal\_113:

(Start: 40 @62505 has 36 MA's), (55, 62544), (86, 62643), (110, 62700), (119, 62736), (128, 62766), (137, 62811),

Gene: Miley16\_45 Start: 35347, Stop: 35772, Start Num: 14

Candidate Starts for Miley16\_45:

(Start: 14 @35347 has 10 MA's), (Start: 19 @35356 has 39 MA's), (Start: 49 @35443 has 1 MA's), (55, 35461), (63, 35488), (64, 35491), (86, 35566), (89, 35578), (125, 35686), (139, 35749),

Gene: Mindy\_79 Start: 48763, Stop: 49095, Start Num: 48

Candidate Starts for Mindy\_79:

(5, 48511), (Start: 42 @48748 has 27 MA's), (Start: 48 @48763 has 103 MA's), (58, 48799), (137, 49075),

Gene: Mindy\_72 Start: 46383, Stop: 46760, Start Num: 44

Candidate Starts for Mindy\_72:

(Start: 44 @46383 has 86 MA's), (Start: 46 @46389 has 40 MA's), (71, 46461), (85, 46521), (128, 46692),

Gene: Mindy\_67 Start: 44119, Stop: 44529, Start Num: 38

Candidate Starts for Mindy\_67:

(8, 43945), (Start: 38 @44119 has 125 MA's), (73, 44215), (85, 44260), (95, 44308), (105, 44356), (129, 44449), (137, 44491),

Gene: Minerva\_133 Start: 72481, Stop: 72840, Start Num: 39

Candidate Starts for Minerva\_133:

(24, 72454), (Start: 39 @72481 has 36 MA's), (Start: 44 @72490 has 86 MA's), (86, 72622), (90, 72637), (126, 72766), (128, 72772),

Gene: Minerva\_116 Start: 65898, Stop: 66218, Start Num: 40

Candidate Starts for Minerva\_116:

(Start: 40 @65898 has 36 MA's), (55, 65937), (110, 66093), (119, 66129), (128, 66159), (137, 66204),

Gene: MiniLon\_42 Start: 35458, Stop: 35865, Start Num: 19

Candidate Starts for MiniLon\_42:

(Start: 12 @35437 has 3 MA's), (Start: 19 @35458 has 39 MA's), (Start: 49 @35542 has 1 MA's), (55, 35560), (Start: 59 @35578 has 1 MA's), (63, 35587), (101, 35704), (139, 35842),

Gene: MiniMac\_42 Start: 35455, Stop: 35862, Start Num: 19

Candidate Starts for MiniMac\_42:

(Start: 12 @35434 has 3 MA's), (Start: 19 @35455 has 39 MA's), (Start: 49 @35539 has 1 MA's), (55, 35557), (Start: 59 @35575 has 1 MA's), (63, 35584), (101, 35701), (139, 35839),

Gene: Miniwave\_63 Start: 44572, Stop: 44982, Start Num: 38

Candidate Starts for Miniwave\_63:

(Start: 38 @44572 has 125 MA's), (85, 44713), (95, 44761), (105, 44809), (129, 44902), (137, 44944),

Gene: Miniwave\_68 Start: 46836, Stop: 47213, Start Num: 44

Candidate Starts for Miniwave\_68:

(Start: 44 @46836 has 86 MA's), (Start: 46 @46842 has 40 MA's), (71, 46914), (85, 46974), (128, 47145),

Gene: Miniwave\_75 Start: 49216, Stop: 49551, Start Num: 48

Candidate Starts for Miniwave\_75:

(5, 48964), (Start: 42 @49201 has 27 MA's), (Start: 48 @49216 has 103 MA's), (58, 49252), (102, 49393), (113, 49432), (122, 49468), (124, 49471), (129, 49489), (137, 49531),

Gene: Misfit\_81 Start: 50690, Stop: 51025, Start Num: 48

Candidate Starts for Misfit\_81:

(5, 50438), (Start: 42 @50675 has 27 MA's), (Start: 48 @50690 has 103 MA's), (58, 50726), (137, 51005),

Gene: Misfit\_69 Start: 46046, Stop: 46459, Start Num: 38

Candidate Starts for Misfit\_69:

(8, 45872), (Start: 38 @46046 has 125 MA's), (85, 46187), (95, 46235), (105, 46283), (129, 46376), (144, 46439),

Gene: Misfit\_74 Start: 48313, Stop: 48687, Start Num: 44

Candidate Starts for Misfit\_74:

(Start: 44 @48313 has 86 MA's), (Start: 46 @48319 has 40 MA's), (71, 48391), (85, 48451), (128, 48619),

Gene: MkaliMitinis3\_45 Start: 35358, Stop: 35774, Start Num: 19

Candidate Starts for MkaliMitinis3\_45:

(Start: 14 @35349 has 10 MA's), (Start: 19 @35358 has 39 MA's), (Start: 49 @35445 has 1 MA's), (55, 35463), (63, 35490), (64, 35493), (86, 35568), (89, 35580), (125, 35688), (139, 35751),

Gene: Moldemort\_76 Start: 47395, Stop: 47772, Start Num: 44

Candidate Starts for Moldemort\_76:

(Start: 44 @47395 has 86 MA's), (Start: 46 @47401 has 40 MA's), (71, 47473), (85, 47533), (128, 47704),

Gene: Moldemort\_71 Start: 45128, Stop: 45538, Start Num: 38

Candidate Starts for Moldemort\_71:

(8, 44954), (Start: 38 @45128 has 125 MA's), (73, 45224), (85, 45269), (95, 45317), (105, 45365), (129, 45458), (137, 45500),

Gene: Moldemort\_83 Start: 49775, Stop: 50107, Start Num: 48

Candidate Starts for Moldemort\_83:

(5, 49523), (Start: 42 @49760 has 27 MA's), (Start: 48 @49775 has 103 MA's), (58, 49811), (137, 50087),

Gene: Mosby\_64 Start: 44329, Stop: 44742, Start Num: 38

Candidate Starts for Mosby\_64:

(8, 44155), (Start: 38 @44329 has 125 MA's), (85, 44470), (95, 44518), (105, 44566), (129, 44659), (144, 44722),

Gene: Mosby\_69 Start: 46596, Stop: 46970, Start Num: 44

Candidate Starts for Mosby\_69:

(Start: 44 @46596 has 86 MA's), (Start: 46 @46602 has 40 MA's), (71, 46674), (85, 46734), (128, 46902),

Gene: Mosby\_76 Start: 48973, Stop: 49308, Start Num: 48

Candidate Starts for Mosby\_76:

(5, 48721), (Start: 42 @48958 has 27 MA's), (Start: 48 @48973 has 103 MA's), (58, 49009), (137, 49288),

Gene: MsGreen\_42 Start: 35625, Stop: 36053, Start Num: 12

Candidate Starts for MsGreen\_42:

(Start: 12 @35625 has 3 MA's), (Start: 14 @35637 has 10 MA's), (Start: 19 @35646 has 39 MA's), (Start: 49 @35730 has 1 MA's), (55, 35748), (Start: 59 @35766 has 1 MA's), (63, 35775), (101, 35892), (139, 36030),

Gene: Murica\_76 Start: 48251, Stop: 48619, Start Num: 46

Candidate Starts for Murica\_76:

(Start: 44 @48245 has 86 MA's), (Start: 46 @48251 has 40 MA's), (71, 48323), (85, 48383), (128, 48551),

Gene: Murica\_71 Start: 45981, Stop: 46391, Start Num: 38

Candidate Starts for Murica\_71:

(Start: 38 @45981 has 125 MA's), (85, 46122), (95, 46170), (105, 46218), (129, 46311), (137, 46353),

Gene: Murica\_83 Start: 50622, Stop: 50954, Start Num: 48

Candidate Starts for Murica\_83:

(Start: 42 @50607 has 27 MA's), (Start: 48 @50622 has 103 MA's), (58, 50658), (137, 50934),

Gene: Murphy\_68 Start: 45418, Stop: 45828, Start Num: 38

Candidate Starts for Murphy\_68:

(Start: 38 @45418 has 125 MA's), (85, 45559), (95, 45607), (105, 45655), (129, 45748), (137, 45790),

Gene: Murphy\_80 Start: 50059, Stop: 50391, Start Num: 48

Candidate Starts for Murphy\_80:

(5, 49807), (Start: 42 @50044 has 27 MA's), (Start: 48 @50059 has 103 MA's), (58, 50095), (137, 50371),

Gene: Murphy\_73 Start: 47688, Stop: 48056, Start Num: 46

Candidate Starts for Murphy\_73:

(Start: 44 @47682 has 86 MA's), (Start: 46 @47688 has 40 MA's), (71, 47760), (85, 47820), (128, 47988),

Gene: Myrale\_73 Start: 47936, Stop: 48313, Start Num: 44

Candidate Starts for Myrale\_73:

(Start: 44 @47936 has 86 MA's), (Start: 46 @47942 has 40 MA's), (71, 48014), (85, 48074), (128, 48245),

Gene: Myrale\_80 Start: 50316, Stop: 50651, Start Num: 48

Candidate Starts for Myrale\_80:

(5, 50064), (Start: 42 @50301 has 27 MA's), (Start: 48 @50316 has 103 MA's), (58, 50352), (102, 50493), (113, 50532), (122, 50568), (124, 50571), (129, 50589), (137, 50631),

Gene: Myrale\_68 Start: 45669, Stop: 46079, Start Num: 38

Candidate Starts for Myrale\_68:

(Start: 38 @45669 has 125 MA's), (85, 45810), (95, 45858), (105, 45906), (129, 45999), (137, 46041),

Gene: Nala\_75 Start: 47812, Stop: 48177, Start Num: 46

Candidate Starts for Nala\_75:

(Start: 44 @47806 has 86 MA's), (Start: 46 @47812 has 40 MA's), (71, 47884), (85, 47938), (128, 48109),

Gene: Nala\_70 Start: 45539, Stop: 45952, Start Num: 38

Candidate Starts for Nala\_70:

(8, 45365), (Start: 38 @45539 has 125 MA's), (85, 45680), (95, 45728), (105, 45776), (129, 45869), (144, 45932),

Gene: Nala\_82 Start: 50180, Stop: 50515, Start Num: 48

Candidate Starts for Nala\_82:

(1, 49610), (2, 49727), (5, 49928), (Start: 42 @50165 has 27 MA's), (Start: 48 @50180 has 103 MA's), (58, 50216), (137, 50495),

Gene: Nekros\_136 Start: 74272, Stop: 74625, Start Num: 39

Candidate Starts for Nekros\_136:

(Start: 39 @74272 has 36 MA's), (Start: 44 @74281 has 86 MA's), (126, 74551),

Gene: Nekros\_115 Start: 65028, Stop: 65351, Start Num: 40

Candidate Starts for Nekros\_115:

(Start: 40 @65028 has 36 MA's), (55, 65067), (78, 65133), (84, 65154), (85, 65157), (90, 65184), (137, 65337),

Gene: NelitzaMV\_66 Start: 44618, Stop: 45028, Start Num: 38

Candidate Starts for NelitzaMV\_66:

(Start: 38 @44618 has 125 MA's), (85, 44759), (95, 44807), (105, 44855), (129, 44948), (137, 44990),

Gene: NelitzaMV\_78 Start: 49247, Stop: 49597, Start Num: 42

Candidate Starts for NelitzaMV\_78:

(5, 49010), (Start: 42 @49247 has 27 MA's), (Start: 48 @49262 has 103 MA's), (58, 49298), (137, 49577),

Gene: NelitzaMV\_71 Start: 46888, Stop: 47259, Start Num: 46

Candidate Starts for NelitzaMV\_71:

(Start: 44 @46882 has 86 MA's), (Start: 46 @46888 has 40 MA's), (71, 46960), (85, 47020), (128, 47191),

Gene: Netyap\_45 Start: 35356, Stop: 35772, Start Num: 19

Candidate Starts for Netyap\_45:

(Start: 14 @35347 has 10 MA's), (Start: 19 @35356 has 39 MA's), (Start: 49 @35443 has 1 MA's), (55, 35461), (63, 35488), (64, 35491), (86, 35566), (89, 35578), (125, 35686), (139, 35749),

Gene: Neville\_54 Start: 37372, Stop: 37770, Start Num: 23

Candidate Starts for Neville\_54:

(Start: 23 @37372 has 3 MA's), (35, 37402), (52, 37438), (53, 37441), (56, 37447), (62, 37471), (88, 37558), (94, 37579), (100, 37603), (117, 37678), (124, 37702), (136, 37756), (137, 37762),

Gene: Neville\_46 Start: 34837, Stop: 35271, Start Num: 25

Candidate Starts for Neville\_46:

(Start: 25 @34837 has 4 MA's), (30, 34849), (Start: 40 @34867 has 36 MA's), (52, 34900), (75, 34981), (91, 35050), (117, 35149), (121, 35167), (126, 35182), (129, 35191), (132, 35206),

Gene: NiceHouse\_171 Start: 97963, Stop: 98331, Start Num: 51

Candidate Starts for NiceHouse\_171:

(26, 97906), (Start: 51 @97963 has 1 MA's), (90, 98119), (133, 98266), (137, 98290),

Gene: NiceHouse\_173 Start: 98723, Stop: 99082, Start Num: 43

Candidate Starts for NiceHouse\_173:

(Start: 22 @98672 has 1 MA's), (Start: 43 @98723 has 1 MA's), (55, 98753), (84, 98870), (96, 98912), (139, 99053),

Gene: NiceHouse\_172 Start: 98331, Stop: 98723, Start Num: 28

Candidate Starts for NiceHouse\_172:

(Start: 28 @98331 has 1 MA's), (Start: 48 @98373 has 103 MA's), (Start: 49 @98376 has 1 MA's), (69, 98448),

Gene: Nicholasp3\_45 Start: 35348, Stop: 35773, Start Num: 14

Candidate Starts for Nicholasp3\_45:

(Start: 14 @35348 has 10 MA's), (Start: 19 @35357 has 39 MA's), (Start: 49 @35444 has 1 MA's), (55, 35462), (63, 35489), (64, 35492), (86, 35567), (89, 35579), (125, 35687), (139, 35750),

Gene: NihilNomen\_136 Start: 73340, Stop: 73699, Start Num: 39

Candidate Starts for NihilNomen\_136:

(24, 73313), (Start: 39 @73340 has 36 MA's), (Start: 44 @73349 has 86 MA's), (86, 73481), (90, 73496),

Gene: NihilNomen\_120 Start: 66563, Stop: 66883, Start Num: 40

Candidate Starts for NihilNomen\_120:

(Start: 40 @66563 has 36 MA's), (55, 66602), (86, 66701), (110, 66758), (119, 66794), (128, 66824), (137, 66869),

Gene: Nimrod\_74 Start: 48509, Stop: 48880, Start Num: 46

Candidate Starts for Nimrod\_74:

(Start: 44 @48503 has 86 MA's), (Start: 46 @48509 has 40 MA's), (71, 48581), (85, 48641), (128, 48812),

Gene: Nimrod\_69 Start: 46236, Stop: 46649, Start Num: 38

Candidate Starts for Nimrod\_69:

(8, 46062), (Start: 38 @46236 has 125 MA's), (85, 46377), (95, 46425), (105, 46473), (129, 46566), (144, 46629),

Gene: Nimrod\_81 Start: 50883, Stop: 51218, Start Num: 48

Candidate Starts for Nimrod\_81:

(1, 50313), (2, 50430), (5, 50631), (Start: 42 @50868 has 27 MA's), (Start: 48 @50883 has 103 MA's), (58, 50919), (137, 51198),

Gene: NoSleep\_74 Start: 47140, Stop: 47514, Start Num: 44

Candidate Starts for NoSleep\_74:

(Start: 44 @47140 has 86 MA's), (Start: 46 @47146 has 40 MA's), (71, 47218), (85, 47278), (128, 47446),

Gene: NoSleep\_69 Start: 44876, Stop: 45286, Start Num: 38



Candidate Starts for NoSleep\_69:

(Start: 38 @44876 has 125 MA's), (85, 45017), (95, 45065), (105, 45113), (129, 45206), (137, 45248),

Gene: NoSleep\_81 Start: 49517, Stop: 49852, Start Num: 48

Candidate Starts for NoSleep\_81:

(5, 49265), (Start: 42 @49502 has 27 MA's), (Start: 48 @49517 has 103 MA's), (58, 49553), (137, 49832),

Gene: Odette\_138 Start: 74911, Stop: 75270, Start Num: 39

Candidate Starts for Odette\_138:

(24, 74884), (Start: 39 @74911 has 36 MA's), (Start: 44 @74920 has 86 MA's), (86, 75052), (90, 75067), (126, 75196), (128, 75202),

Gene: Odette\_120 Start: 66457, Stop: 66777, Start Num: 40

Candidate Starts for Odette\_120:

(Start: 40 @66457 has 36 MA's), (55, 66496), (86, 66595), (110, 66652), (119, 66688), (128, 66718), (137, 66763),

Gene: OhShagHennessy\_42 Start: 33983, Stop: 34399, Start Num: 19

Candidate Starts for OhShagHennessy\_42:

(Start: 12 @33962 has 3 MA's), (Start: 19 @33983 has 39 MA's), (Start: 40 @34049 has 36 MA's), (Start: 49 @34070 has 1 MA's), (55, 34088), (67, 34127), (72, 34139), (86, 34196), (108, 34256), (139, 34376),

Gene: Omega\_143 Start: 74487, Stop: 74840, Start Num: 39

Candidate Starts for Omega\_143:

(Start: 39 @74487 has 36 MA's), (Start: 44 @74496 has 86 MA's),

Gene: Omega\_124 Start: 66872, Stop: 67195, Start Num: 40

Candidate Starts for Omega\_124:

(Start: 40 @66872 has 36 MA's), (55, 66911), (78, 66977), (84, 66998), (85, 67001), (90, 67028), (137, 67181),

Gene: OneUp\_106 Start: 66594, Stop: 66947, Start Num: 49

Candidate Starts for OneUp\_106:

(Start: 49 @66594 has 1 MA's), (71, 66660), (99, 66759), (103, 66783), (146, 66942),

Gene: OrionPax\_67 Start: 44624, Stop: 45034, Start Num: 38

Candidate Starts for OrionPax\_67:

(Start: 38 @44624 has 125 MA's), (85, 44765), (95, 44813), (105, 44861), (129, 44954), (137, 44996),

Gene: OrionPax\_72 Start: 46894, Stop: 47265, Start Num: 46

Candidate Starts for OrionPax\_72:

(Start: 44 @46888 has 86 MA's), (Start: 46 @46894 has 40 MA's), (71, 46966), (85, 47026), (108, 47125), (128, 47197),

Gene: OrionPax\_79 Start: 49268, Stop: 49603, Start Num: 48

Candidate Starts for OrionPax\_79:

(5, 49016), (Start: 42 @49253 has 27 MA's), (Start: 48 @49268 has 103 MA's), (58, 49304), (137, 49583),

Gene: Palpatine\_82 Start: 50649, Stop: 50981, Start Num: 48

Candidate Starts for Palpatine\_82:

(5, 50397), (Start: 42 @50634 has 27 MA's), (Start: 48 @50649 has 103 MA's), (58, 50685), (137, 50961),

Gene: Palpatine\_75 Start: 48272, Stop: 48646, Start Num: 44

Candidate Starts for Palpatine\_75:

(Start: 44 @48272 has 86 MA's), (Start: 46 @48278 has 40 MA's), (71, 48350), (85, 48410), (128, 48578),

Gene: Palpatine\_70 Start: 46008, Stop: 46418, Start Num: 38

Candidate Starts for Palpatine\_70:

(Start: 38 @46008 has 125 MA's), (85, 46149), (95, 46197), (105, 46245), (129, 46338), (137, 46380),

Gene: Paperbeatsrock\_67 Start: 45250, Stop: 45660, Start Num: 38

Candidate Starts for Paperbeatsrock\_67:

(Start: 38 @45250 has 125 MA's), (85, 45391), (95, 45439), (105, 45487), (129, 45580), (137, 45622),

Gene: Paperbeatsrock\_72 Start: 47514, Stop: 47891, Start Num: 44

Candidate Starts for Paperbeatsrock\_72:

(Start: 44 @47514 has 86 MA's), (Start: 46 @47520 has 40 MA's), (71, 47592), (85, 47652), (128, 47823),

Gene: Paperbeatsrock\_79 Start: 49894, Stop: 50229, Start Num: 48

Candidate Starts for Paperbeatsrock\_79:

(5, 49642), (Start: 42 @49879 has 27 MA's), (Start: 48 @49894 has 103 MA's), (58, 49930), (102, 50071), (113, 50110), (122, 50146), (124, 50149), (129, 50167), (137, 50209),

Gene: Pat3\_78 Start: 48426, Stop: 48761, Start Num: 48

Candidate Starts for Pat3\_78:

(5, 48174), (Start: 42 @48411 has 27 MA's), (Start: 48 @48426 has 103 MA's), (58, 48462), (76, 48516), (113, 48642), (122, 48678), (124, 48681), (129, 48699), (137, 48741),

Gene: Pat3\_71 Start: 46046, Stop: 46423, Start Num: 44

Candidate Starts for Pat3\_71:

(Start: 44 @46046 has 86 MA's), (Start: 46 @46052 has 40 MA's), (71, 46124), (85, 46184), (108, 46283), (128, 46355),

Gene: Pat3\_66 Start: 43773, Stop: 44186, Start Num: 38

Candidate Starts for Pat3\_66:

(8, 43599), (Start: 38 @43773 has 125 MA's), (85, 43914), (94, 43956), (118, 44064), (129, 44103), (141, 44160),

Gene: Patience\_60 Start: 43583, Stop: 43951, Start Num: 40

Candidate Starts for Patience\_60:

(Start: 40 @43583 has 36 MA's), (Start: 49 @43604 has 1 MA's), (86, 43712), (88, 43721), (114, 43817), (119, 43844), (134, 43901),

Gene: Peregrin\_20 Start: 5906, Stop: 5532, Start Num: 42

Candidate Starts for Peregrin\_20:

(Start: 42 @5906 has 27 MA's), (85, 5762), (87, 5747), (142, 5555), (144, 5552),

Gene: Peregrin\_226 Start: 113095, Stop: 113481, Start Num: 34

Candidate Starts for Peregrin\_226:

(Start: 34 @113095 has 4 MA's), (67, 113182), (82, 113239), (83, 113245), (126, 113392), (140, 113452), (143, 113461),

Gene: Peregrin\_24 Start: 6762, Stop: 6388, Start Num: 36

Candidate Starts for Peregrin\_24:

(Start: 36 @6762 has 3 MA's), (57, 6708), (81, 6633), (86, 6597), (87, 6594), (107, 6534),

Gene: Peregrin\_19 Start: 5539, Stop: 5195, Start Num: 42

Candidate Starts for Peregrin\_19:

(Start: 42 @5539 has 27 MA's), (120, 5299),

Gene: Petra64142\_84 Start: 51113, Stop: 51448, Start Num: 48

Candidate Starts for Petra64142\_84:

(5, 50861), (Start: 42 @51098 has 27 MA's), (Start: 48 @51113 has 103 MA's), (58, 51149), (137, 51428),

Gene: Petra64142\_72 Start: 46472, Stop: 46885, Start Num: 38

Candidate Starts for Petra64142\_72:

(8, 46298), (Start: 38 @46472 has 125 MA's), (85, 46613), (94, 46655), (118, 46763), (129, 46802), (144, 46865),

Gene: Petra64142\_77 Start: 48748, Stop: 49110, Start Num: 46

Candidate Starts for Petra64142\_77:

(Start: 44 @48742 has 86 MA's), (Start: 46 @48748 has 40 MA's), (71, 48820), (128, 49042),

Gene: Phaja\_71 Start: 47340, Stop: 47717, Start Num: 44

Candidate Starts for Phaja\_71:

(Start: 44 @47340 has 86 MA's), (Start: 46 @47346 has 40 MA's), (71, 47418), (85, 47478), (128, 47649),

Gene: Phaja\_78 Start: 49720, Stop: 50055, Start Num: 48

Candidate Starts for Phaja\_78:

(5, 49468), (Start: 42 @49705 has 27 MA's), (Start: 48 @49720 has 103 MA's), (58, 49756), (102, 49897), (113, 49936), (122, 49972), (124, 49975), (129, 49993), (137, 50035),

Gene: Phaja\_66 Start: 45076, Stop: 45486, Start Num: 38

Candidate Starts for Phaja\_66:

(Start: 38 @45076 has 125 MA's), (85, 45217), (95, 45265), (105, 45313), (129, 45406), (137, 45448),

Gene: Pharsalus\_65 Start: 45050, Stop: 45460, Start Num: 38

Candidate Starts for Pharsalus\_65:

(Start: 38 @45050 has 125 MA's), (85, 45191), (95, 45239), (105, 45287), (129, 45380), (137, 45422),

Gene: Pharsalus\_70 Start: 47314, Stop: 47691, Start Num: 44

Candidate Starts for Pharsalus\_70:

(Start: 44 @47314 has 86 MA's), (Start: 46 @47320 has 40 MA's), (71, 47392), (85, 47452), (128, 47623),

Gene: Pharsalus\_77 Start: 49694, Stop: 50029, Start Num: 48

Candidate Starts for Pharsalus\_77:

(5, 49442), (Start: 42 @49679 has 27 MA's), (Start: 48 @49694 has 103 MA's), (58, 49730), (102, 49871), (113, 49910), (122, 49946), (124, 49949), (129, 49967), (137, 50009),

Gene: PhatBacter\_72 Start: 46025, Stop: 46435, Start Num: 38  
Candidate Starts for PhatBacter\_72:  
(Start: 38 @46025 has 125 MA's), (85, 46166), (95, 46214), (105, 46262), (129, 46355), (137, 46397),

Gene: PhatBacter\_77 Start: 48289, Stop: 48663, Start Num: 44  
Candidate Starts for PhatBacter\_77:  
(Start: 44 @48289 has 86 MA's), (Start: 46 @48295 has 40 MA's), (71, 48367), (85, 48427), (128, 48595),

Gene: PhatBacter\_84 Start: 50666, Stop: 51001, Start Num: 48  
Candidate Starts for PhatBacter\_84:  
(1, 50096), (2, 50213), (5, 50414), (Start: 42 @50651 has 27 MA's), (Start: 48 @50666 has 103 MA's), (58, 50702), (137, 50981),

Gene: Phaux\_75 Start: 48284, Stop: 48658, Start Num: 44  
Candidate Starts for Phaux\_75:  
(Start: 44 @48284 has 86 MA's), (Start: 46 @48290 has 40 MA's), (71, 48362), (85, 48422), (128, 48590),

Gene: Phaux\_70 Start: 46020, Stop: 46430, Start Num: 38  
Candidate Starts for Phaux\_70:  
(Start: 38 @46020 has 125 MA's), (85, 46161), (95, 46209), (105, 46257), (129, 46350), (137, 46392),

Gene: Phaux\_82 Start: 50661, Stop: 50996, Start Num: 48  
Candidate Starts for Phaux\_82:  
(5, 50409), (Start: 42 @50646 has 27 MA's), (Start: 48 @50661 has 103 MA's), (58, 50697), (76, 50751), (113, 50877), (122, 50913), (124, 50916), (129, 50934), (137, 50976),

Gene: Phoebus\_119 Start: 68421, Stop: 68741, Start Num: 40  
Candidate Starts for Phoebus\_119:  
(Start: 40 @68421 has 36 MA's), (55, 68460), (86, 68559), (110, 68616), (119, 68652), (128, 68682), (137, 68727),

Gene: Phoebus\_135 Start: 75234, Stop: 75593, Start Num: 39  
Candidate Starts for Phoebus\_135:  
(24, 75207), (Start: 39 @75234 has 36 MA's), (Start: 44 @75243 has 86 MA's), (86, 75375), (90, 75390), (126, 75519), (128, 75525),

Gene: Phrux\_70 Start: 46880, Stop: 47254, Start Num: 44  
Candidate Starts for Phrux\_70:  
(Start: 44 @46880 has 86 MA's), (Start: 46 @46886 has 40 MA's), (71, 46958), (85, 47018), (128, 47186),

Gene: Phrux\_77 Start: 49257, Stop: 49589, Start Num: 48  
Candidate Starts for Phrux\_77:  
(5, 49005), (Start: 42 @49242 has 27 MA's), (Start: 48 @49257 has 103 MA's), (58, 49293), (137, 49569),

Gene: Phrux\_65 Start: 44616, Stop: 45026, Start Num: 38  
Candidate Starts for Phrux\_65:  
(Start: 38 @44616 has 125 MA's), (85, 44757), (95, 44805), (105, 44853), (129, 44946), (137, 44988),

Gene: Policronamos\_71 Start: 46020, Stop: 46430, Start Num: 38

Candidate Starts for Policronamos\_71:

(Start: 38 @46020 has 125 MA's), (85, 46161), (95, 46209), (105, 46257), (129, 46350), (137, 46392),

Gene: Policronamos\_76 Start: 48284, Stop: 48658, Start Num: 44

Candidate Starts for Policronamos\_76:

(Start: 44 @48284 has 86 MA's), (Start: 46 @48290 has 40 MA's), (71, 48362), (85, 48422), (128, 48590),

Gene: Policronamos\_83 Start: 50661, Stop: 50996, Start Num: 48

Candidate Starts for Policronamos\_83:

(5, 50409), (Start: 42 @50646 has 27 MA's), (Start: 48 @50661 has 103 MA's), (58, 50697), (76, 50751), (113, 50877), (122, 50913), (124, 50916), (129, 50934), (137, 50976),

Gene: Porcelain\_113 Start: 62820, Stop: 63140, Start Num: 40

Candidate Starts for Porcelain\_113:

(Start: 40 @62820 has 36 MA's), (55, 62859), (86, 62958), (110, 63015), (119, 63051), (128, 63081), (137, 63126),

Gene: Porcelain\_131 Start: 70628, Stop: 70981, Start Num: 39

Candidate Starts for Porcelain\_131:

(Start: 39 @70628 has 36 MA's), (Start: 44 @70637 has 86 MA's), (126, 70907), (137, 70958),

Gene: Porky\_67 Start: 44446, Stop: 44856, Start Num: 38

Candidate Starts for Porky\_67:

(8, 44272), (Start: 38 @44446 has 125 MA's), (85, 44587), (95, 44635), (105, 44683), (129, 44776), (137, 44818),

Gene: Porky\_72 Start: 46716, Stop: 47084, Start Num: 46

Candidate Starts for Porky\_72:

(Start: 44 @46710 has 86 MA's), (Start: 46 @46716 has 40 MA's), (71, 46788), (85, 46848), (128, 47016),

Gene: Porky\_79 Start: 49072, Stop: 49419, Start Num: 42

Candidate Starts for Porky\_79:

(Start: 42 @49072 has 27 MA's), (Start: 48 @49087 has 103 MA's), (58, 49123), (137, 49399),

Gene: Pound\_108 Start: 64917, Stop: 65237, Start Num: 40

Candidate Starts for Pound\_108:

(Start: 40 @64917 has 36 MA's), (55, 64956), (110, 65112), (119, 65148), (128, 65178), (137, 65223),

Gene: Pumpkin\_83 Start: 50315, Stop: 50647, Start Num: 48

Candidate Starts for Pumpkin\_83:

(1, 49745), (2, 49862), (5, 50063), (Start: 42 @50300 has 27 MA's), (Start: 48 @50315 has 103 MA's), (58, 50351), (137, 50627),

Gene: Pumpkin\_76 Start: 47944, Stop: 48312, Start Num: 46

Candidate Starts for Pumpkin\_76:

(Start: 44 @47938 has 86 MA's), (Start: 46 @47944 has 40 MA's), (71, 48016), (85, 48076), (128, 48244),

Gene: Pumpkin\_71 Start: 45674, Stop: 46084, Start Num: 38

Candidate Starts for Pumpkin\_71:

(Start: 38 @45674 has 125 MA's), (85, 45815), (95, 45863), (105, 45911), (129, 46004), (137, 46046),

Gene: Quallification\_69 Start: 45658, Stop: 46068, Start Num: 38  
Candidate Starts for Quallification\_69:  
(Start: 38 @45658 has 125 MA's), (85, 45799), (95, 45847), (105, 45895), (129, 45988), (137, 46030),

Gene: Quallification\_74 Start: 47922, Stop: 48299, Start Num: 44  
Candidate Starts for Quallification\_74:  
(Start: 44 @47922 has 86 MA's), (Start: 46 @47928 has 40 MA's), (71, 48000), (85, 48060), (128, 48231),

Gene: Quallification\_81 Start: 50302, Stop: 50637, Start Num: 48  
Candidate Starts for Quallification\_81:  
(5, 50050), (Start: 42 @50287 has 27 MA's), (Start: 48 @50302 has 103 MA's), (58, 50338), (102, 50479), (113, 50518), (122, 50554), (124, 50557), (129, 50575), (137, 50617),

Gene: Rabbitrun\_55 Start: 37898, Stop: 38293, Start Num: 23  
Candidate Starts for Rabbitrun\_55:  
(10, 37826), (11, 37832), (18, 37865), (20, 37880), (Start: 23 @37898 has 3 MA's), (45, 37943), (50, 37958), (53, 37970), (113, 38183), (119, 38213), (136, 38282),

Gene: Rabbitrun\_47 Start: 35261, Stop: 35668, Start Num: 25  
Candidate Starts for Rabbitrun\_47:  
(Start: 25 @35261 has 4 MA's), (30, 35273), (Start: 40 @35291 has 36 MA's), (52, 35324), (77, 35405), (90, 35465), (117, 35570), (124, 35594),

Gene: Rakim\_69 Start: 45127, Stop: 45537, Start Num: 38  
Candidate Starts for Rakim\_69:  
(Start: 38 @45127 has 125 MA's), (85, 45268), (95, 45316), (105, 45364), (129, 45457), (137, 45499),

Gene: Rakim\_81 Start: 49771, Stop: 50103, Start Num: 48  
Candidate Starts for Rakim\_81:  
(5, 49519), (Start: 42 @49756 has 27 MA's), (Start: 48 @49771 has 103 MA's), (58, 49807), (137, 50083),

Gene: Rakim\_74 Start: 47394, Stop: 47768, Start Num: 44  
Candidate Starts for Rakim\_74:  
(Start: 44 @47394 has 86 MA's), (Start: 46 @47400 has 40 MA's), (71, 47472), (85, 47532), (108, 47628), (128, 47700),

Gene: RanchParmCat\_67 Start: 44221, Stop: 44673, Start Num: 17  
Candidate Starts for RanchParmCat\_67:  
(6, 44083), (Start: 17 @44221 has 4 MA's), (33, 44260), (41, 44272), (54, 44308), (60, 44323), (74, 44365), (79, 44383), (86, 44425), (90, 44440), (92, 44446), (129, 44566), (134, 44590), (137, 44608), (147, 44653),

Gene: Rearden\_132 Start: 71022, Stop: 71375, Start Num: 39  
Candidate Starts for Rearden\_132:  
(Start: 39 @71022 has 36 MA's), (Start: 44 @71031 has 86 MA's), (126, 71301), (137, 71352),

Gene: Rearden\_107 Start: 62553, Stop: 62873, Start Num: 40  
Candidate Starts for Rearden\_107:  
(Start: 40 @62553 has 36 MA's), (55, 62592), (86, 62691), (110, 62748), (119, 62784), (128, 62814), (137, 62859),

Gene: Redno2\_126 Start: 70622, Stop: 70981, Start Num: 39

Candidate Starts for Redno2\_126:

(24, 70595), (Start: 39 @70622 has 36 MA's), (Start: 44 @70631 has 86 MA's), (86, 70763), (90, 70778), (126, 70907), (128, 70913),

Gene: Redno2\_112 Start: 64353, Stop: 64673, Start Num: 40

Candidate Starts for Redno2\_112:

(Start: 40 @64353 has 36 MA's), (55, 64392), (86, 64491), (110, 64548), (119, 64584), (128, 64614), (137, 64659),

Gene: Rimmer\_69 Start: 45366, Stop: 45779, Start Num: 38

Candidate Starts for Rimmer\_69:

(8, 45192), (Start: 38 @45366 has 125 MA's), (85, 45507), (94, 45549), (118, 45657), (129, 45696), (144, 45759),

Gene: Rimmer\_81 Start: 50007, Stop: 50342, Start Num: 48

Candidate Starts for Rimmer\_81:

(5, 49755), (Start: 42 @49992 has 27 MA's), (Start: 48 @50007 has 103 MA's), (58, 50043), (76, 50097), (113, 50223), (122, 50259), (124, 50262), (129, 50280), (137, 50322),

Gene: Rimmer\_74 Start: 47642, Stop: 48004, Start Num: 46

Candidate Starts for Rimmer\_74:

(Start: 44 @47636 has 86 MA's), (Start: 46 @47642 has 40 MA's), (71, 47714), (128, 47936),

Gene: RiverMonster\_68 Start: 45194, Stop: 45604, Start Num: 38

Candidate Starts for RiverMonster\_68:

(Start: 38 @45194 has 125 MA's), (85, 45335), (95, 45383), (105, 45431), (129, 45524), (137, 45566),

Gene: RiverMonster\_80 Start: 49835, Stop: 50167, Start Num: 48

Candidate Starts for RiverMonster\_80:

(5, 49583), (Start: 42 @49820 has 27 MA's), (Start: 48 @49835 has 103 MA's), (58, 49871), (137, 50147),

Gene: RiverMonster\_73 Start: 47458, Stop: 47832, Start Num: 44

Candidate Starts for RiverMonster\_73:

(Start: 44 @47458 has 86 MA's), (Start: 46 @47464 has 40 MA's), (71, 47536), (85, 47596), (128, 47764),

Gene: Rose5\_42 Start: 34025, Stop: 34441, Start Num: 19

Candidate Starts for Rose5\_42:

(Start: 12 @34004 has 3 MA's), (Start: 19 @34025 has 39 MA's), (Start: 40 @34091 has 36 MA's), (Start: 49 @34112 has 1 MA's), (55, 34130), (67, 34169), (72, 34181), (86, 34238), (108, 34298), (139, 34418),

Gene: Rumpelstiltskin\_45 Start: 35623, Stop: 36039, Start Num: 19

Candidate Starts for Rumpelstiltskin\_45:

(Start: 14 @35614 has 10 MA's), (Start: 19 @35623 has 39 MA's), (Start: 49 @35710 has 1 MA's), (55, 35728), (63, 35755), (64, 35758), (86, 35833), (89, 35845), (125, 35953), (129, 35968), (139, 36016),

Gene: Saints25\_72 Start: 46868, Stop: 47242, Start Num: 44

Candidate Starts for Saints25\_72:

(Start: 44 @46868 has 86 MA's), (Start: 46 @46874 has 40 MA's), (71, 46946), (85, 47006), (128, 47174),

Gene: Saints25\_79 Start: 49245, Stop: 49580, Start Num: 48

Candidate Starts for Saints25\_79:

(5, 48993), (Start: 42 @49230 has 27 MA's), (Start: 48 @49245 has 103 MA's), (58, 49281), (137, 49560),

Gene: Saints25\_67 Start: 44604, Stop: 45014, Start Num: 38

Candidate Starts for Saints25\_67:

(Start: 38 @44604 has 125 MA's), (85, 44745), (95, 44793), (105, 44841), (129, 44934), (137, 44976),

Gene: Sassay\_68 Start: 45564, Stop: 45932, Start Num: 46

Candidate Starts for Sassay\_68:

(Start: 44 @45558 has 86 MA's), (Start: 46 @45564 has 40 MA's), (71, 45636), (85, 45696), (128, 45864),

Gene: Sassay\_63 Start: 43291, Stop: 43704, Start Num: 38

Candidate Starts for Sassay\_63:

(8, 43117), (Start: 38 @43291 has 125 MA's), (85, 43432), (94, 43474), (118, 43582), (129, 43621), (144, 43684),

Gene: Sassay\_75 Start: 47920, Stop: 48270, Start Num: 42

Candidate Starts for Sassay\_75:

(5, 47683), (Start: 42 @47920 has 27 MA's), (Start: 48 @47935 has 103 MA's), (58, 47971), (102, 48112), (113, 48151), (122, 48187), (124, 48190), (129, 48208), (137, 48250),

Gene: Schatzie\_113 Start: 65339, Stop: 65659, Start Num: 40

Candidate Starts for Schatzie\_113:

(Start: 40 @65339 has 36 MA's), (55, 65378), (86, 65477), (110, 65534), (119, 65570), (128, 65600), (137, 65645),

Gene: Schatzie\_130 Start: 73330, Stop: 73689, Start Num: 39

Candidate Starts for Schatzie\_130:

(24, 73303), (Start: 39 @73330 has 36 MA's), (Start: 44 @73339 has 86 MA's), (86, 73471), (90, 73486), (126, 73615), (128, 73621),

Gene: Shaboozey\_134 Start: 71250, Stop: 71603, Start Num: 39

Candidate Starts for Shaboozey\_134:

(Start: 39 @71250 has 36 MA's), (Start: 44 @71259 has 86 MA's), (86, 71385), (126, 71529),

Gene: Shaboozey\_111 Start: 62340, Stop: 62663, Start Num: 40

Candidate Starts for Shaboozey\_111:

(Start: 40 @62340 has 36 MA's), (55, 62379), (78, 62445), (84, 62466), (85, 62469), (90, 62496), (137, 62649),

Gene: ShamWow\_68 Start: 45513, Stop: 45923, Start Num: 38

Candidate Starts for ShamWow\_68:

(8, 45339), (Start: 38 @45513 has 125 MA's), (73, 45609), (85, 45654), (95, 45702), (105, 45750), (129, 45843), (137, 45885),

Gene: ShamWow\_73 Start: 47777, Stop: 48154, Start Num: 44

Candidate Starts for ShamWow\_73:



(Start: 44 @47777 has 86 MA's), (Start: 46 @47783 has 40 MA's), (71, 47855), (85, 47915), (128, 48086),

Gene: ShamWow\_80 Start: 50157, Stop: 50489, Start Num: 48

Candidate Starts for ShamWow\_80:

(5, 49905), (Start: 42 @50142 has 27 MA's), (Start: 48 @50157 has 103 MA's), (58, 50193), (137, 50469),

Gene: ShereKhan\_72 Start: 47846, Stop: 48223, Start Num: 44

Candidate Starts for ShereKhan\_72:

(Start: 44 @47846 has 86 MA's), (Start: 46 @47852 has 40 MA's), (71, 47924), (85, 47984), (128, 48155),

Gene: ShereKhan\_78 Start: 50227, Stop: 50562, Start Num: 48

Candidate Starts for ShereKhan\_78:

(5, 49975), (Start: 42 @50212 has 27 MA's), (Start: 48 @50227 has 103 MA's), (58, 50263), (102, 50404), (113, 50443), (122, 50479), (124, 50482), (129, 50500), (137, 50542),

Gene: ShereKhan\_67 Start: 45582, Stop: 45992, Start Num: 38

Candidate Starts for ShereKhan\_67:

(Start: 38 @45582 has 125 MA's), (85, 45723), (95, 45771), (105, 45819), (129, 45912), (137, 45954),

Gene: Silverleaf\_42 Start: 34025, Stop: 34441, Start Num: 19

Candidate Starts for Silverleaf\_42:

(Start: 12 @34004 has 3 MA's), (Start: 19 @34025 has 39 MA's), (Start: 40 @34091 has 36 MA's), (Start: 49 @34112 has 1 MA's), (55, 34130), (67, 34169), (72, 34181), (86, 34238), (108, 34298), (139, 34418),

Gene: Simpliphy\_79 Start: 49235, Stop: 49570, Start Num: 48

Candidate Starts for Simpliphy\_79:

(5, 48983), (Start: 42 @49220 has 27 MA's), (Start: 48 @49235 has 103 MA's), (58, 49271), (137, 49550),

Gene: Simpliphy\_72 Start: 46864, Stop: 47232, Start Num: 46

Candidate Starts for Simpliphy\_72:

(Start: 44 @46858 has 86 MA's), (Start: 46 @46864 has 40 MA's), (71, 46936), (85, 46996), (128, 47164),

Gene: Simpliphy\_67 Start: 44594, Stop: 45004, Start Num: 38

Candidate Starts for Simpliphy\_67:

(Start: 38 @44594 has 125 MA's), (85, 44735), (95, 44783), (105, 44831), (129, 44924), (137, 44966),

Gene: SirDuracell\_67 Start: 43865, Stop: 44278, Start Num: 38

Candidate Starts for SirDuracell\_67:

(8, 43691), (Start: 38 @43865 has 125 MA's), (85, 44006), (94, 44048), (118, 44156), (129, 44195), (144, 44258),

Gene: SirDuracell\_79 Start: 48521, Stop: 48856, Start Num: 48

Candidate Starts for SirDuracell\_79:

(5, 48269), (Start: 42 @48506 has 27 MA's), (Start: 48 @48521 has 103 MA's), (58, 48557), (76, 48611), (113, 48737), (122, 48773), (124, 48776), (129, 48794), (137, 48836),

Gene: SirDuracell\_72 Start: 46147, Stop: 46518, Start Num: 46

Candidate Starts for SirDuracell\_72:

(Start: 44 @46141 has 86 MA's), (Start: 46 @46147 has 40 MA's), (71, 46219), (85, 46279), (108, 46378), (128, 46450),

Gene: SophKB\_70 Start: 46533, Stop: 46910, Start Num: 44

Candidate Starts for SophKB\_70:

(Start: 44 @46533 has 86 MA's), (Start: 46 @46539 has 40 MA's), (71, 46611), (85, 46671), (128, 46842),

Gene: SophKB\_77 Start: 48913, Stop: 49248, Start Num: 48

Candidate Starts for SophKB\_77:

(5, 48661), (Start: 42 @48898 has 27 MA's), (Start: 48 @48913 has 103 MA's), (58, 48949), (102, 49090), (113, 49129), (122, 49165), (124, 49168), (129, 49186), (137, 49228),

Gene: SophKB\_65 Start: 44269, Stop: 44679, Start Num: 38

Candidate Starts for SophKB\_65:

(Start: 38 @44269 has 125 MA's), (85, 44410), (95, 44458), (105, 44506), (129, 44599), (137, 44641),

Gene: Sotrice96\_81 Start: 49916, Stop: 50251, Start Num: 48

Candidate Starts for Sotrice96\_81:

(5, 49664), (Start: 42 @49901 has 27 MA's), (Start: 48 @49916 has 103 MA's), (58, 49952), (137, 50231),

Gene: Sotrice96\_69 Start: 45272, Stop: 45682, Start Num: 38

Candidate Starts for Sotrice96\_69:

(Start: 38 @45272 has 125 MA's), (85, 45413), (95, 45461), (105, 45509), (129, 45602), (137, 45644),

Gene: Sotrice96\_74 Start: 47536, Stop: 47913, Start Num: 44

Candidate Starts for Sotrice96\_74:

(Start: 44 @47536 has 86 MA's), (Start: 46 @47542 has 40 MA's), (71, 47614), (85, 47674), (128, 47845),

Gene: Spooks\_25 Start: 18379, Stop: 17993, Start Num: 22

Candidate Starts for Spooks\_25:

(13, 18403), (Start: 22 @18379 has 1 MA's), (47, 18319), (54, 18298), (62, 18277), (74, 18241), (97, 18154), (121, 18064), (125, 18058),

Gene: Squint\_111 Start: 62624, Stop: 62944, Start Num: 40

Candidate Starts for Squint\_111:

(Start: 40 @62624 has 36 MA's), (55, 62663), (86, 62762), (110, 62819), (119, 62855), (128, 62885), (137, 62930),

Gene: Squint\_131 Start: 70888, Stop: 71241, Start Num: 39

Candidate Starts for Squint\_131:

(Start: 39 @70888 has 36 MA's), (Start: 44 @70897 has 86 MA's), (126, 71167), (137, 71218),

Gene: Stank\_83 Start: 50159, Stop: 50509, Start Num: 42

Candidate Starts for Stank\_83:

(5, 49922), (Start: 42 @50159 has 27 MA's), (Start: 48 @50174 has 103 MA's), (58, 50210), (137, 50489),

Gene: Stank\_76 Start: 47794, Stop: 48171, Start Num: 44

Candidate Starts for Stank\_76:

(Start: 44 @47794 has 86 MA's), (Start: 46 @47800 has 40 MA's), (71, 47872), (85, 47932), (128, 48103),

Gene: Stank\_71 Start: 45527, Stop: 45937, Start Num: 38

Candidate Starts for Stank\_71:

(8, 45353), (Start: 38 @45527 has 125 MA's), (73, 45623), (85, 45668), (95, 45716), (105, 45764), (129, 45857), (137, 45899),

Gene: Stark\_69 Start: 45077, Stop: 45487, Start Num: 38

Candidate Starts for Stark\_69:

(Start: 38 @45077 has 125 MA's), (85, 45218), (95, 45266), (105, 45314), (129, 45407), (137, 45449),

Gene: Stark\_81 Start: 49718, Stop: 50050, Start Num: 48

Candidate Starts for Stark\_81:

(5, 49466), (Start: 42 @49703 has 27 MA's), (Start: 48 @49718 has 103 MA's), (58, 49754), (137, 50030),

Gene: Stark\_74 Start: 47341, Stop: 47715, Start Num: 44

Candidate Starts for Stark\_74:

(Start: 44 @47341 has 86 MA's), (Start: 46 @47347 has 40 MA's), (71, 47419), (85, 47479), (128, 47647),

Gene: StellaBean\_66 Start: 44837, Stop: 45247, Start Num: 38

Candidate Starts for StellaBean\_66:

(Start: 38 @44837 has 125 MA's), (85, 44978), (95, 45026), (105, 45074), (129, 45167), (137, 45209),

Gene: StellaBean\_71 Start: 47107, Stop: 47478, Start Num: 46

Candidate Starts for StellaBean\_71:

(Start: 44 @47101 has 86 MA's), (Start: 46 @47107 has 40 MA's), (71, 47179), (85, 47239), (128, 47410),

Gene: StellaBean\_78 Start: 49481, Stop: 49813, Start Num: 48

Candidate Starts for StellaBean\_78:

(5, 49229), (Start: 42 @49466 has 27 MA's), (Start: 48 @49481 has 103 MA's), (58, 49517), (137, 49793),

Gene: StolenFromERC\_83 Start: 49956, Stop: 50291, Start Num: 48

Candidate Starts for StolenFromERC\_83:

(5, 49704), (Start: 42 @49941 has 27 MA's), (Start: 48 @49956 has 103 MA's), (58, 49992), (137, 50271),

Gene: StolenFromERC\_76 Start: 47576, Stop: 47953, Start Num: 44

Candidate Starts for StolenFromERC\_76:

(Start: 44 @47576 has 86 MA's), (Start: 46 @47582 has 40 MA's), (71, 47654), (85, 47714), (128, 47885),

Gene: StolenFromERC\_71 Start: 45309, Stop: 45719, Start Num: 38

Candidate Starts for StolenFromERC\_71:

(8, 45135), (Start: 38 @45309 has 125 MA's), (85, 45450), (95, 45498), (105, 45546), (129, 45639), (137, 45681),

Gene: StormChicken\_82 Start: 50599, Stop: 50949, Start Num: 42

Candidate Starts for StormChicken\_82:

(5, 50362), (Start: 42 @50599 has 27 MA's), (Start: 48 @50614 has 103 MA's), (58, 50650), (102, 50791), (113, 50830), (122, 50866), (124, 50869), (129, 50887), (137, 50929),

Gene: StormChicken\_70 Start: 45973, Stop: 46386, Start Num: 38

Candidate Starts for StormChicken\_70:

(8, 45799), (Start: 38 @45973 has 125 MA's), (85, 46114), (94, 46156), (118, 46264), (129, 46303), (144, 46366),

Gene: StormChicken\_75 Start: 48243, Stop: 48611, Start Num: 44

Candidate Starts for StormChicken\_75:

(Start: 44 @48243 has 86 MA's), (Start: 46 @48249 has 40 MA's), (71, 48321), (128, 48543),

Gene: Success\_26 Start: 17594, Stop: 17208, Start Num: 22

Candidate Starts for Success\_26:

(9, 17702), (13, 17618), (Start: 22 @17594 has 1 MA's), (47, 17534), (62, 17492), (74, 17456), (98, 17366), (121, 17279), (125, 17273),

Gene: Superphikiman\_131 Start: 70104, Stop: 70457, Start Num: 39

Candidate Starts for Superphikiman\_131:

(Start: 39 @70104 has 36 MA's), (Start: 44 @70113 has 86 MA's), (126, 70383),

Gene: Superphikiman\_110 Start: 61715, Stop: 62035, Start Num: 40

Candidate Starts for Superphikiman\_110:

(Start: 40 @61715 has 36 MA's), (55, 61754), (86, 61853), (110, 61910), (119, 61946), (128, 61976), (137, 62021),

Gene: TBrady12\_71 Start: 45011, Stop: 45421, Start Num: 38

Candidate Starts for TBrady12\_71:

(8, 44837), (Start: 38 @45011 has 125 MA's), (85, 45152), (95, 45200), (105, 45248), (129, 45341), (137, 45383),

Gene: TBrady12\_83 Start: 49655, Stop: 49990, Start Num: 48

Candidate Starts for TBrady12\_83:

(5, 49403), (Start: 42 @49640 has 27 MA's), (Start: 48 @49655 has 103 MA's), (58, 49691), (137, 49970),

Gene: TBrady12\_76 Start: 47275, Stop: 47652, Start Num: 44

Candidate Starts for TBrady12\_76:

(Start: 44 @47275 has 86 MA's), (Start: 46 @47281 has 40 MA's), (71, 47353), (85, 47413), (128, 47584),

Gene: Tarkin\_67 Start: 45259, Stop: 45669, Start Num: 38

Candidate Starts for Tarkin\_67:

(Start: 38 @45259 has 125 MA's), (85, 45400), (95, 45448), (105, 45496), (129, 45589), (137, 45631),

Gene: Tarkin\_72 Start: 47523, Stop: 47900, Start Num: 44

Candidate Starts for Tarkin\_72:

(Start: 44 @47523 has 86 MA's), (Start: 46 @47529 has 40 MA's), (71, 47601), (85, 47661), (128, 47832),

Gene: Tarkin\_79 Start: 49903, Stop: 50238, Start Num: 48

Candidate Starts for Tarkin\_79:

(5, 49651), (Start: 42 @49888 has 27 MA's), (Start: 48 @49903 has 103 MA's), (58, 49939), (102, 50080), (113, 50119), (122, 50155), (124, 50158), (129, 50176), (137, 50218),

Gene: TeardropMSU\_76 Start: 48888, Stop: 49238, Start Num: 42

Candidate Starts for TeardropMSU\_76:

(5, 48651), (Start: 42 @48888 has 27 MA's), (Start: 48 @48903 has 103 MA's), (58, 48939), (102, 49080), (113, 49119), (122, 49155), (124, 49158), (129, 49176), (137, 49218),

Gene: TeardropMSU\_69 Start: 46523, Stop: 46900, Start Num: 44

Candidate Starts for TeardropMSU\_69:

(Start: 44 @46523 has 86 MA's), (Start: 46 @46529 has 40 MA's), (71, 46601), (85, 46661), (128, 46832),

Gene: TeardropMSU\_64 Start: 44259, Stop: 44669, Start Num: 38

Candidate Starts for TeardropMSU\_64:

(Start: 38 @44259 has 125 MA's), (85, 44400), (95, 44448), (105, 44496), (129, 44589), (137, 44631),

Gene: Teaspoon\_74 Start: 47423, Stop: 47794, Start Num: 46

Candidate Starts for Teaspoon\_74:

(Start: 44 @47417 has 86 MA's), (Start: 46 @47423 has 40 MA's), (71, 47495), (85, 47555), (128, 47726),

Gene: Teaspoon\_81 Start: 49797, Stop: 50132, Start Num: 48

Candidate Starts for Teaspoon\_81:

(5, 49545), (Start: 42 @49782 has 27 MA's), (Start: 48 @49797 has 103 MA's), (58, 49833), (137, 50112),

Gene: Teaspoon\_69 Start: 45153, Stop: 45563, Start Num: 38

Candidate Starts for Teaspoon\_69:

(8, 44979), (Start: 38 @45153 has 125 MA's), (85, 45294), (95, 45342), (105, 45390), (129, 45483), (137, 45525),

Gene: Terminus\_83 Start: 50690, Stop: 51025, Start Num: 48

Candidate Starts for Terminus\_83:

(5, 50438), (Start: 42 @50675 has 27 MA's), (Start: 48 @50690 has 103 MA's), (58, 50726), (137, 51005),

Gene: Terminus\_76 Start: 48319, Stop: 48687, Start Num: 46

Candidate Starts for Terminus\_76:

(Start: 44 @48313 has 86 MA's), (Start: 46 @48319 has 40 MA's), (71, 48391), (85, 48451), (128, 48619),

Gene: Terminus\_71 Start: 46046, Stop: 46459, Start Num: 38

Candidate Starts for Terminus\_71:

(8, 45872), (Start: 38 @46046 has 125 MA's), (85, 46187), (95, 46235), (105, 46283), (129, 46376), (144, 46439),

Gene: Thibault\_99 Start: 60528, Stop: 60848, Start Num: 40

Candidate Starts for Thibault\_99:

(Start: 40 @60528 has 36 MA's), (55, 60567), (110, 60723), (119, 60759), (128, 60789), (137, 60834),

Gene: Thibault\_119 Start: 70544, Stop: 70903, Start Num: 39

Candidate Starts for Thibault\_119:

(24, 70517), (Start: 39 @70544 has 36 MA's), (Start: 44 @70553 has 86 MA's), (86, 70685), (90, 70700), (128, 70835),

Gene: Thimble\_82 Start: 49123, Stop: 49470, Start Num: 42

Candidate Starts for Thimble\_82:

(1, 48568), (2, 48685), (5, 48886), (Start: 42 @49123 has 27 MA's), (Start: 48 @49138 has 103 MA's), (58, 49174), (137, 49450),

Gene: Thimble\_75 Start: 46764, Stop: 47135, Start Num: 46

Candidate Starts for Thimble\_75:

(Start: 44 @46758 has 86 MA's), (Start: 46 @46764 has 40 MA's), (71, 46836), (85, 46896), (128, 47067),

Gene: Thimble\_70 Start: 44491, Stop: 44901, Start Num: 38

Candidate Starts for Thimble\_70:

(8, 44317), (Start: 38 @44491 has 125 MA's), (85, 44632), (95, 44680), (105, 44728), (129, 44821), (137, 44863),

Gene: ThreeRngTarjay\_130 Start: 73825, Stop: 74184, Start Num: 39

Candidate Starts for ThreeRngTarjay\_130:

(24, 73798), (Start: 39 @73825 has 36 MA's), (Start: 44 @73834 has 86 MA's), (86, 73966), (90, 73981), (126, 74110), (128, 74116),

Gene: Thresher\_75 Start: 48406, Stop: 48774, Start Num: 46

Candidate Starts for Thresher\_75:

(Start: 44 @48400 has 86 MA's), (Start: 46 @48406 has 40 MA's), (71, 48478), (85, 48538), (128, 48706),

Gene: Thresher\_70 Start: 46136, Stop: 46546, Start Num: 38

Candidate Starts for Thresher\_70:

(Start: 38 @46136 has 125 MA's), (85, 46277), (95, 46325), (105, 46373), (129, 46466), (137, 46508),

Gene: Thresher\_82 Start: 50777, Stop: 51109, Start Num: 48

Candidate Starts for Thresher\_82:

(5, 50525), (Start: 42 @50762 has 27 MA's), (Start: 48 @50777 has 103 MA's), (58, 50813), (137, 51089),

Gene: Tomaszewski\_68 Start: 46695, Stop: 47063, Start Num: 44

Candidate Starts for Tomaszewski\_68:

(Start: 44 @46695 has 86 MA's), (Start: 46 @46701 has 40 MA's), (93, 46857), (124, 46980), (139, 47046),

Gene: Tomaszewski\_75 Start: 49066, Stop: 49401, Start Num: 48

Candidate Starts for Tomaszewski\_75:

(5, 48814), (Start: 42 @49051 has 27 MA's), (Start: 48 @49066 has 103 MA's), (58, 49102), (137, 49381),

Gene: Tomaszewski\_63 Start: 44425, Stop: 44838, Start Num: 38

Candidate Starts for Tomaszewski\_63:

(8, 44251), (Start: 38 @44425 has 125 MA's), (85, 44566), (94, 44608), (118, 44716), (129, 44755), (144, 44818),

Gene: Toto\_66 Start: 45513, Stop: 45923, Start Num: 38

Candidate Starts for Toto\_66:

(8, 45339), (Start: 38 @45513 has 125 MA's), (73, 45609), (85, 45654), (95, 45702), (105, 45750), (129, 45843), (137, 45885),

Gene: Toto\_71 Start: 47777, Stop: 48154, Start Num: 44

Candidate Starts for Toto\_71:

(Start: 44 @47777 has 86 MA's), (Start: 46 @47783 has 40 MA's), (71, 47855), (85, 47915), (128, 48086),

Gene: Toto\_78 Start: 50157, Stop: 50489, Start Num: 48

Candidate Starts for Toto\_78:

(5, 49905), (Start: 42 @50142 has 27 MA's), (Start: 48 @50157 has 103 MA's), (58, 50193), (137, 50469),

Gene: Tourach\_44 Start: 35371, Stop: 35784, Start Num: 19

Candidate Starts for Tourach\_44:

(Start: 14 @35362 has 10 MA's), (Start: 19 @35371 has 39 MA's), (Start: 49 @35458 has 1 MA's), (55, 35476), (63, 35503), (64, 35506), (86, 35581), (139, 35761),

Gene: Traaww1\_64 Start: 44694, Stop: 45104, Start Num: 38

Candidate Starts for Traaww1\_64:

(8, 44520), (Start: 38 @44694 has 125 MA's), (73, 44790), (85, 44835), (95, 44883), (105, 44931), (129, 45024), (137, 45066),

Gene: Traaww1\_69 Start: 46961, Stop: 47338, Start Num: 44

Candidate Starts for Traaww1\_69:

(Start: 44 @46961 has 86 MA's), (Start: 46 @46967 has 40 MA's), (71, 47039), (85, 47099), (128, 47270),

Gene: Traaww1\_76 Start: 49341, Stop: 49673, Start Num: 48

Candidate Starts for Traaww1\_76:

(5, 49089), (Start: 42 @49326 has 27 MA's), (Start: 48 @49341 has 103 MA's), (58, 49377), (137, 49653),

Gene: Trax\_45 Start: 35143, Stop: 35541, Start Num: 25

Candidate Starts for Trax\_45:

(Start: 25 @35143 has 4 MA's), (30, 35155), (Start: 40 @35173 has 36 MA's), (52, 35206), (77, 35287), (90, 35347), (103, 35398), (124, 35476), (131, 35503), (135, 35524),

Gene: Trax\_53 Start: 37657, Stop: 38055, Start Num: 23

Candidate Starts for Trax\_53:

(Start: 23 @37657 has 3 MA's), (35, 37687), (52, 37723), (53, 37726), (56, 37732), (62, 37756), (88, 37843), (94, 37864), (100, 37888), (117, 37963), (124, 37987), (136, 38041), (137, 38047),

Gene: Trina\_234 Start: 121206, Stop: 121604, Start Num: 40

Candidate Starts for Trina\_234:

(27, 121179), (37, 121200), (Start: 40 @121206 has 36 MA's), (45, 121215), (Start: 49 @121227 has 1 MA's), (57, 121254), (80, 121335), (86, 121374), (107, 121449), (123, 121500), (126, 121509), (131, 121527), (137, 121560), (138, 121563),

Gene: Tuco\_69 Start: 46021, Stop: 46431, Start Num: 38

Candidate Starts for Tuco\_69:

(Start: 38 @46021 has 125 MA's), (85, 46162), (95, 46210), (105, 46258), (129, 46351), (137, 46393),

Gene: Tuco\_74 Start: 48285, Stop: 48662, Start Num: 44

Candidate Starts for Tuco\_74:

(Start: 44 @48285 has 86 MA's), (Start: 46 @48291 has 40 MA's), (71, 48363), (85, 48423), (128, 48594),

Gene: Tuco\_81 Start: 50665, Stop: 50997, Start Num: 48

Candidate Starts for Tuco\_81:

(5, 50413), (Start: 42 @50650 has 27 MA's), (Start: 48 @50665 has 103 MA's), (58, 50701), (137, 50977),

Gene: Tyson\_42 Start: 34026, Stop: 34442, Start Num: 19

Candidate Starts for Tyson\_42:

(Start: 12 @34005 has 3 MA's), (Start: 19 @34026 has 39 MA's), (Start: 40 @34092 has 36 MA's), (Start: 49 @34113 has 1 MA's), (55, 34131), (67, 34170), (72, 34182), (86, 34239), (108, 34299), (127, 34365), (139, 34419),

Gene: UPIE\_43 Start: 34009, Stop: 34425, Start Num: 19

Candidate Starts for UPIE\_43:

(Start: 12 @33988 has 3 MA's), (Start: 19 @34009 has 39 MA's), (Start: 40 @34075 has 36 MA's), (Start: 49 @34096 has 1 MA's), (55, 34114), (67, 34153), (72, 34165), (86, 34222), (108, 34282), (139, 34402),

Gene: Ukulele\_68 Start: 46671, Stop: 47045, Start Num: 44

Candidate Starts for Ukulele\_68:

(Start: 44 @46671 has 86 MA's), (Start: 46 @46677 has 40 MA's), (71, 46749), (85, 46809), (128, 46977),

Gene: Ukulele\_63 Start: 44407, Stop: 44817, Start Num: 38

Candidate Starts for Ukulele\_63:

(Start: 38 @44407 has 125 MA's), (85, 44548), (95, 44596), (105, 44644), (129, 44737), (137, 44779),

Gene: Ukulele\_75 Start: 49048, Stop: 49383, Start Num: 48

Candidate Starts for Ukulele\_75:

(5, 48796), (Start: 42 @49033 has 27 MA's), (Start: 48 @49048 has 103 MA's), (58, 49084), (137, 49363),

Gene: VanLee\_135 Start: 73104, Stop: 72706, Start Num: 25

Candidate Starts for VanLee\_135:

(Start: 25 @73104 has 4 MA's), (62, 73008), (109, 72846),

Gene: Vetric\_45 Start: 35363, Stop: 35779, Start Num: 19

Candidate Starts for Vetric\_45:

(Start: 14 @35354 has 10 MA's), (Start: 19 @35363 has 39 MA's), (Start: 49 @35450 has 1 MA's), (55, 35468), (63, 35495), (64, 35498), (86, 35573), (89, 35585), (125, 35693), (139, 35756),

Gene: Wamburgexpress\_43 Start: 34024, Stop: 34440, Start Num: 19

Candidate Starts for Wamburgexpress\_43:

(Start: 12 @34003 has 3 MA's), (Start: 19 @34024 has 39 MA's), (Start: 40 @34090 has 36 MA's), (Start: 49 @34111 has 1 MA's), (55, 34129), (67, 34168), (72, 34180), (86, 34237), (108, 34297), (139, 34417),

Gene: Wanda\_133 Start: 70960, Stop: 71319, Start Num: 39



Candidate Starts for Wanda\_133:

(24, 70933), (Start: 39 @70960 has 36 MA's), (Start: 44 @70969 has 86 MA's), (86, 71101), (90, 71116), (126, 71245), (128, 71251),

Gene: Weasels2\_208 Start: 107565, Stop: 107978, Start Num: 34

Candidate Starts for Weasels2\_208:

(Start: 34 @107565 has 4 MA's), (70, 107664), (85, 107721), (98, 107766), (105, 107805), (126, 107880),

Gene: Weasels2\_18 Start: 5542, Stop: 5186, Start Num: 42

Candidate Starts for Weasels2\_18:

(Start: 42 @5542 has 27 MA's), (65, 5473), (68, 5455), (137, 5224), (141, 5209), (145, 5200),

Gene: Weasels2\_237 Start: 116136, Stop: 116522, Start Num: 34

Candidate Starts for Weasels2\_237:

(31, 116130), (Start: 34 @116136 has 4 MA's), (83, 116286), (126, 116433), (140, 116493),

Gene: Weasels2\_22 Start: 6969, Stop: 6571, Start Num: 36

Candidate Starts for Weasels2\_22:

(Start: 36 @6969 has 3 MA's), (Start: 49 @6942 has 1 MA's), (72, 6867), (90, 6786), (113, 6723), (120, 6690), (130, 6657),

Gene: Whirlwind\_43 Start: 35405, Stop: 35812, Start Num: 19

Candidate Starts for Whirlwind\_43:

(Start: 12 @35384 has 3 MA's), (Start: 14 @35396 has 10 MA's), (Start: 19 @35405 has 39 MA's), (Start: 49 @35489 has 1 MA's), (55, 35507), (Start: 59 @35525 has 1 MA's), (63, 35534), (101, 35651), (139, 35789),

Gene: Wiggin\_82 Start: 49742, Stop: 50074, Start Num: 48

Candidate Starts for Wiggin\_82:

(5, 49490), (Start: 42 @49727 has 27 MA's), (Start: 48 @49742 has 103 MA's), (58, 49778), (137, 50054),

Gene: Wiggin\_70 Start: 45095, Stop: 45505, Start Num: 38

Candidate Starts for Wiggin\_70:

(8, 44921), (Start: 38 @45095 has 125 MA's), (73, 45191), (85, 45236), (95, 45284), (105, 45332), (129, 45425), (137, 45467),

Gene: Wiggin\_75 Start: 47368, Stop: 47739, Start Num: 46

Candidate Starts for Wiggin\_75:

(Start: 44 @47362 has 86 MA's), (Start: 46 @47368 has 40 MA's), (71, 47440), (85, 47500), (128, 47671),

Gene: Wigglewiggles\_45 Start: 35380, Stop: 35805, Start Num: 14

Candidate Starts for Wigglewiggles\_45:

(Start: 14 @35380 has 10 MA's), (Start: 19 @35389 has 39 MA's), (Start: 49 @35476 has 1 MA's), (55, 35494), (63, 35521), (64, 35524), (86, 35599), (89, 35611), (125, 35719), (139, 35782),

Gene: Wilder\_45 Start: 35362, Stop: 35778, Start Num: 19

Candidate Starts for Wilder\_45:

(Start: 14 @35353 has 10 MA's), (Start: 19 @35362 has 39 MA's), (Start: 49 @35449 has 1 MA's), (55, 35467), (63, 35494), (64, 35497), (86, 35572), (89, 35584), (125, 35692), (139, 35755),

Gene: Willez\_75 Start: 47920, Stop: 48270, Start Num: 42

Candidate Starts for Willez\_75:

(5, 47683), (Start: 42 @47920 has 27 MA's), (Start: 48 @47935 has 103 MA's), (58, 47971), (102, 48112), (113, 48151), (122, 48187), (124, 48190), (129, 48208), (137, 48250),

Gene: Willez\_68 Start: 45564, Stop: 45932, Start Num: 46

Candidate Starts for Willez\_68:

(Start: 44 @45558 has 86 MA's), (Start: 46 @45564 has 40 MA's), (71, 45636), (85, 45696), (128, 45864),

Gene: Willez\_63 Start: 43291, Stop: 43704, Start Num: 38

Candidate Starts for Willez\_63:

(8, 43117), (Start: 38 @43291 has 125 MA's), (85, 43432), (94, 43474), (118, 43582), (129, 43621), (144, 43684),

Gene: Winky\_45 Start: 35347, Stop: 35772, Start Num: 14

Candidate Starts for Winky\_45:

(Start: 14 @35347 has 10 MA's), (Start: 19 @35356 has 39 MA's), (Start: 49 @35443 has 1 MA's), (55, 35461), (63, 35488), (64, 35491), (86, 35566), (89, 35578), (125, 35686), (139, 35749),

Gene: Wyatt2\_43 Start: 34025, Stop: 34441, Start Num: 19

Candidate Starts for Wyatt2\_43:

(Start: 12 @34004 has 3 MA's), (Start: 19 @34025 has 39 MA's), (Start: 40 @34091 has 36 MA's), (Start: 49 @34112 has 1 MA's), (55, 34130), (67, 34169), (72, 34181), (86, 34238), (108, 34298), (139, 34418),

Gene: Xandras\_72 Start: 46773, Stop: 47147, Start Num: 44

Candidate Starts for Xandras\_72:

(Start: 44 @46773 has 86 MA's), (Start: 46 @46779 has 40 MA's), (71, 46851), (85, 46911), (128, 47079),

Gene: Xandras\_79 Start: 49150, Stop: 49482, Start Num: 48

Candidate Starts for Xandras\_79:

(1, 48580), (2, 48697), (5, 48898), (Start: 42 @49135 has 27 MA's), (Start: 48 @49150 has 103 MA's), (58, 49186), (137, 49462),

Gene: Xandras\_67 Start: 44506, Stop: 44916, Start Num: 38

Candidate Starts for Xandras\_67:

(Start: 38 @44506 has 125 MA's), (85, 44647), (95, 44695), (105, 44743), (129, 44836), (137, 44878),

Gene: Yakult\_64 Start: 44046, Stop: 44489, Start Num: 15

Candidate Starts for Yakult\_64:

(Start: 15 @44046 has 2 MA's), (66, 44154), (74, 44181), (79, 44199), (86, 44241), (90, 44256), (92, 44262), (115, 44325), (129, 44382), (137, 44424),

Gene: YassJohnny\_65 Start: 44464, Stop: 44877, Start Num: 38

Candidate Starts for YassJohnny\_65:

(8, 44290), (Start: 38 @44464 has 125 MA's), (85, 44605), (94, 44647), (118, 44755), (129, 44794), (144, 44857),

Gene: YassJohnny\_77 Start: 49090, Stop: 49440, Start Num: 42

Candidate Starts for YassJohnny\_77:

(5, 48853), (Start: 42 @49090 has 27 MA's), (Start: 48 @49105 has 103 MA's), (58, 49141), (102, 49282), (113, 49321), (122, 49357), (124, 49360), (129, 49378), (137, 49420),

Gene: YassJohnny\_70 Start: 46740, Stop: 47102, Start Num: 46

Candidate Starts for YassJohnny\_70:

(Start: 44 @46734 has 86 MA's), (Start: 46 @46740 has 40 MA's), (93, 46896), (124, 47019), (139, 47085),

Gene: Yeet\_128 Start: 73023, Stop: 73382, Start Num: 39

Candidate Starts for Yeet\_128:

(24, 72996), (Start: 39 @73023 has 36 MA's), (Start: 44 @73032 has 86 MA's), (86, 73164), (90, 73179), (126, 73308), (128, 73314),

Gene: Yeet\_109 Start: 64277, Stop: 64597, Start Num: 40

Candidate Starts for Yeet\_109:

(Start: 40 @64277 has 36 MA's), (55, 64316), (86, 64415), (110, 64472), (119, 64508), (128, 64538), (137, 64583),

Gene: Youngblood\_71 Start: 45976, Stop: 46386, Start Num: 38

Candidate Starts for Youngblood\_71:

(8, 45802), (Start: 38 @45976 has 125 MA's), (85, 46117), (95, 46165), (105, 46213), (129, 46306), (137, 46348),

Gene: Youngblood\_76 Start: 48246, Stop: 48614, Start Num: 46

Candidate Starts for Youngblood\_76:

(Start: 44 @48240 has 86 MA's), (Start: 46 @48246 has 40 MA's), (71, 48318), (85, 48378), (128, 48546),

Gene: Youngblood\_83 Start: 50617, Stop: 50952, Start Num: 48

Candidate Starts for Youngblood\_83:

(5, 50365), (Start: 42 @50602 has 27 MA's), (Start: 48 @50617 has 103 MA's), (58, 50653), (137, 50932),

Gene: Zakai\_45 Start: 35614, Stop: 36030, Start Num: 19

Candidate Starts for Zakai\_45:

(Start: 14 @35605 has 10 MA's), (Start: 19 @35614 has 39 MA's), (Start: 49 @35701 has 1 MA's), (55, 35719), (63, 35746), (64, 35749), (86, 35824), (89, 35836), (125, 35944), (139, 36007),

Gene: Zaria\_43 Start: 34040, Stop: 34456, Start Num: 19

Candidate Starts for Zaria\_43:

(Start: 12 @34019 has 3 MA's), (Start: 19 @34040 has 39 MA's), (Start: 40 @34106 has 36 MA's), (Start: 49 @34127 has 1 MA's), (55, 34145), (67, 34184), (72, 34196), (86, 34253), (108, 34313), (139, 34433),

Gene: Zelink\_129 Start: 73772, Stop: 74131, Start Num: 39

Candidate Starts for Zelink\_129:

(24, 73745), (Start: 39 @73772 has 36 MA's), (Start: 44 @73781 has 86 MA's), (86, 73913), (90, 73928), (126, 74057), (128, 74063),

Gene: xkcd\_83 Start: 50807, Stop: 51139, Start Num: 48

Candidate Starts for xkcd\_83:

(Start: 42 @50792 has 27 MA's), (Start: 48 @50807 has 103 MA's), (58, 50843), (137, 51119),

Gene: xkcd\_71 Start: 46166, Stop: 46576, Start Num: 38

Candidate Starts for xkcd\_71:

(Start: 38 @46166 has 125 MA's), (85, 46307), (95, 46355), (105, 46403), (129, 46496), (137, 46538),

Gene: xkcd\_76 Start: 48430, Stop: 48804, Start Num: 44

Candidate Starts for xkcd\_76:

(Start: 44 @48430 has 86 MA's), (Start: 46 @48436 has 40 MA's), (71, 48508), (85, 48568), (128, 48736),