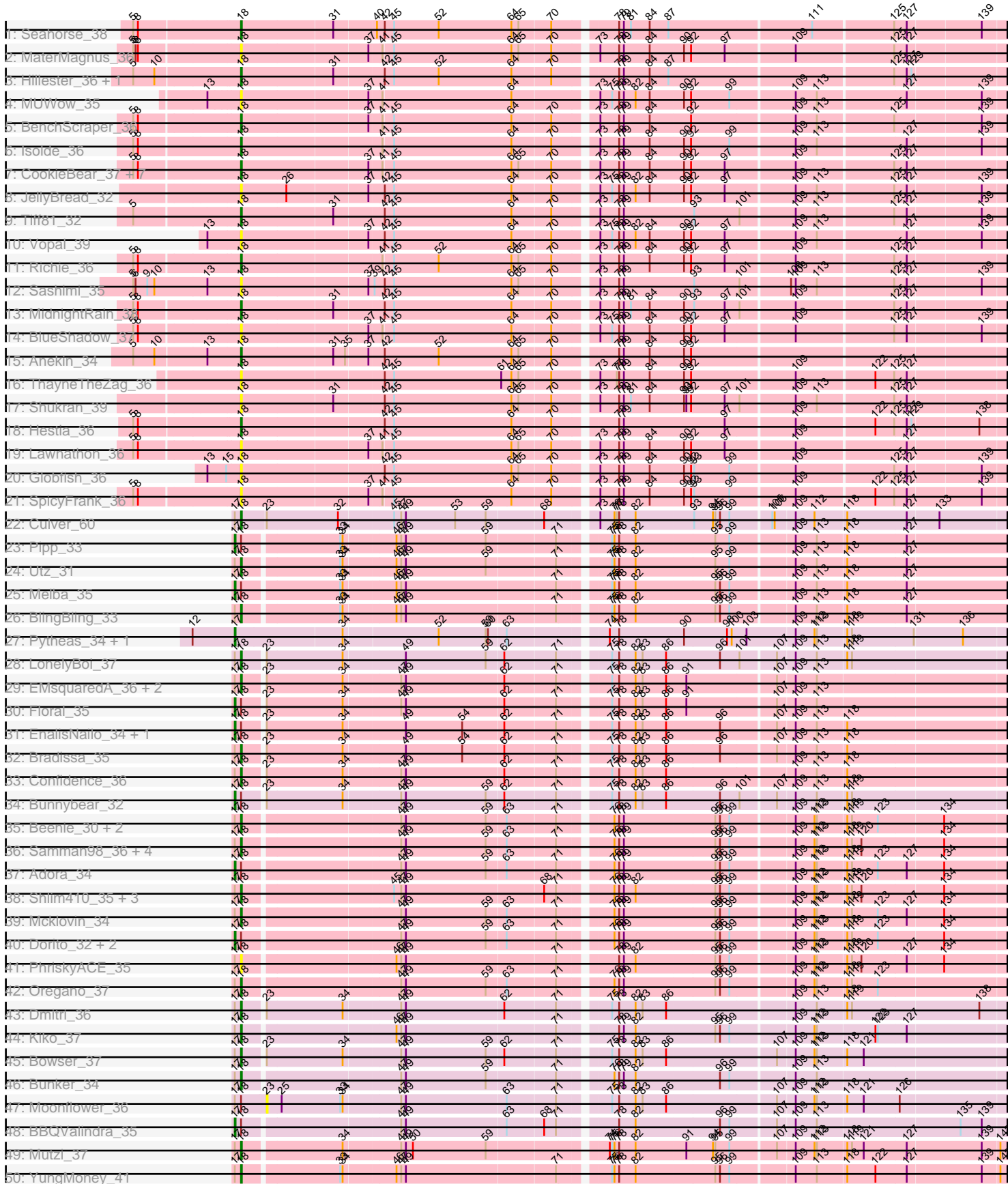
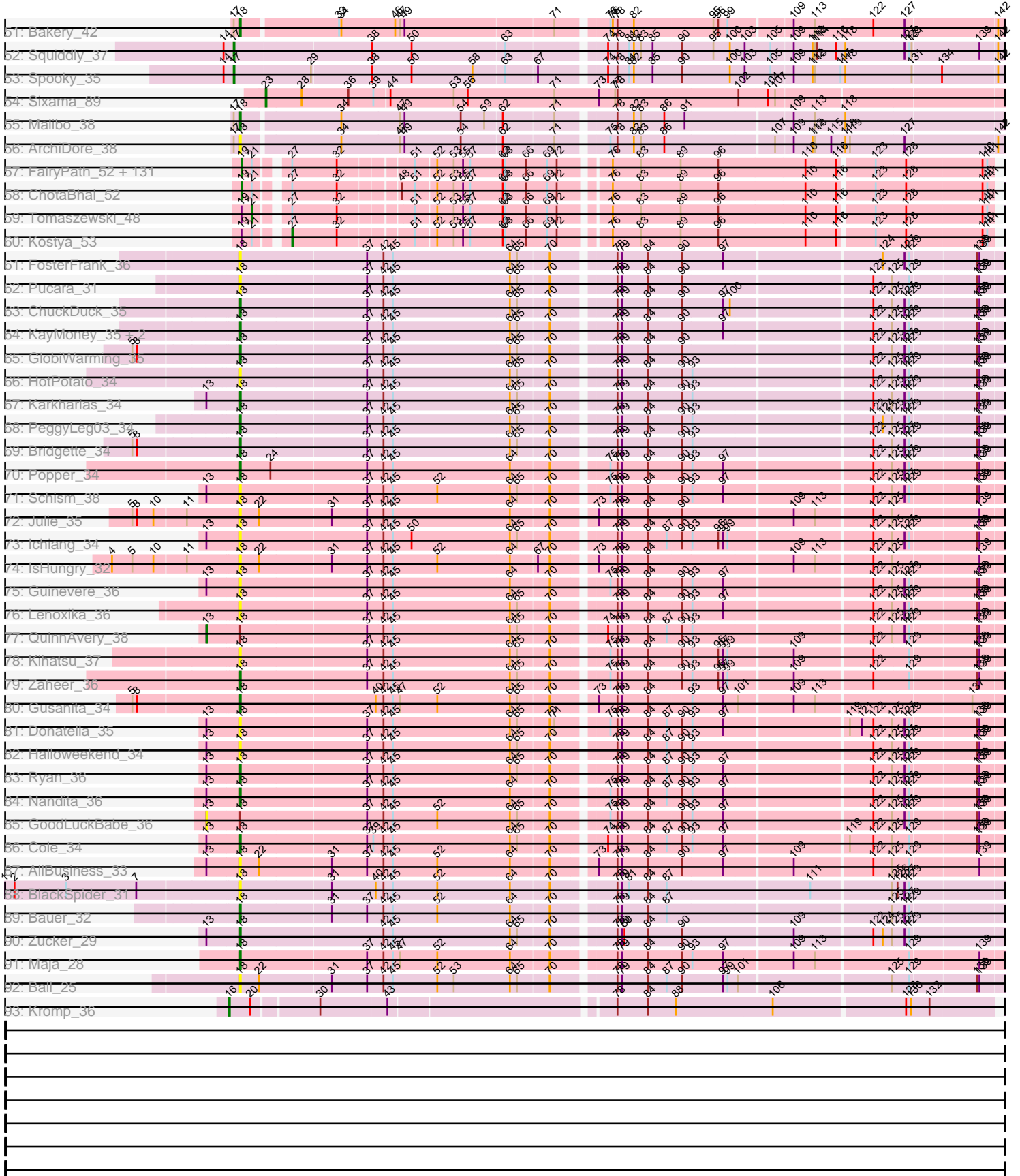


Pham 224259



Pham 224259



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 224259 Report

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

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

Pham number 224259 has 249 members, 46 are drafts.

Phages represented in each track:

- Track 1 : Seahorse\_38
- Track 2 : MaterMagnus\_36
- Track 3 : Hillester\_36, RadFad\_36
- Track 4 : MUWow\_35
- Track 5 : BenchScraper\_36
- Track 6 : Isolde\_36
- Track 7 : CookieBear\_37, Sakai\_36, Aikyam\_33, Auxilium\_34, BillyTP\_37, Raphaella\_36, Gorpy\_37, YoungHarleezy\_36
- Track 8 : JellyBread\_32
- Track 9 : Tiff81\_32
- Track 10 : Vopal\_39
- Track 11 : Richie\_36
- Track 12 : Sashimi\_35
- Track 13 : MidnightRain\_38
- Track 14 : BlueShadow\_37
- Track 15 : Anekin\_34
- Track 16 : ThayneTheZag\_36
- Track 17 : Shukran\_39
- Track 18 : Hestia\_36
- Track 19 : Lawnathon\_36
- Track 20 : Globfish\_36
- Track 21 : SpicyFrank\_36
- Track 22 : Culver\_60
- Track 23 : Pipp\_33
- Track 24 : Utz\_31
- Track 25 : Melba\_35
- Track 26 : BlingBling\_33
- Track 27 : Pytheas\_34, Jablanski\_34
- Track 28 : LonelyBoi\_37
- Track 29 : EMSquaredA\_36, Marteena\_35, Pollux\_37
- Track 30 : Floral\_35
- Track 31 : EnalisNailo\_34, Lilas\_37
- Track 32 : Bradissa\_35

- Track 33 : Confidence\_36
- Track 34 : Bunnybear\_32
- Track 35 : Beenie\_30, Invecetra\_37, MichaelScott\_36
- Track 36 : Samman98\_36, Annalisa\_34, Dolores\_37, Thimann\_34, WinkNick\_38
- Track 37 : Adora\_34
- Track 38 : Shlim410\_35, Howe\_36, Hortense\_36, Twinkle\_35
- Track 39 : Mcklovin\_34
- Track 40 : Dorito\_32, DobbysSock\_30, Clark\_36
- Track 41 : PhriskyACE\_35
- Track 42 : Oregano\_37
- Track 43 : Dmitri\_36
- Track 44 : Kiko\_37
- Track 45 : Bowser\_37
- Track 46 : Bunker\_34
- Track 47 : Moonflower\_36
- Track 48 : BBQValindra\_35
- Track 49 : Mutzi\_37
- Track 50 : YungMoney\_41
- Track 51 : Bakery\_42
- Track 52 : Squiddly\_37
- Track 53 : Spooky\_35
- Track 54 : Sixama\_89
- Track 55 : Malibo\_38
- Track 56 : ArchiDore\_38
- Track 57 : FairyPath\_52, Henry\_51, Phaja\_50, ABCat\_50, Argent26\_55, RiverMonster\_53, SirDuracell\_51, Wiggin\_54, Simpliphy\_51, GooberAzure\_55, SophKB\_49, Xandras\_52, Cjw1\_52, Goldilocks\_54, Holt\_57, StolenFromERC\_55, BugsBunny\_53, Paperbeatsrock\_51, Murica\_54, Filch\_53, Murphy\_54, Moldemort\_55, Policronamos\_55, Nimrod\_55, Contagion\_49, Cookies\_49, BilboSwaggins\_51, MadamMonkfish\_52, Saints25\_53, Bask21\_53, Barbarian\_52, Dumbo\_52, Gator\_50, Phrux\_50, Stank\_56, Elite2014\_52, Flypotenuse\_47, Lilac\_55, Emmina\_52, FoghornLeghorn\_47, DrDrey\_52, JeTaimie\_53, Thimble\_54, MISSy\_52, Miniwave\_49, Phaux\_54, Czyszczonek\_53, Porky\_51, Gage\_55, Buck\_53, Amao\_52, StellaBean\_50, Bruin\_48, NoSleep\_54, Glexan\_50, xkcd\_56, Nala\_53, Asriel\_52, Tarkin\_51, Willez\_46, Adnama\_56, DoctorDiddles\_52, Petra64142\_57, ShamWow\_52, Lilpickle\_52, Pat3\_50, Rimmer\_53, BigBubba\_53, FireRed\_55, Lilizi\_52, Tuco\_53, IHOP\_50, Hopey\_52, GoldenSpark\_55, ShereKhan\_50, 244\_53, HanKaySha\_51, Traaww1\_48, Thresher\_55, OrionPax\_51, Easy2Say\_53, Harella\_52, Youngblood\_54, Becksu\_53, Quallification\_53, Rakim\_54, Palpatine\_55, Terminus\_54, AmericanBeauty\_56, Sassay\_46, Gemini\_56, Bench\_54, Pharsalus\_50, Balomoji\_51, Mosby\_48, Dusk\_50, Pumpkin\_54, StormChicken\_54, Highbury\_53, YassJohnny\_48, CrystalP\_52, Stark\_53, Mindy\_51, Hoonter\_55, Kimchi\_55, Myrale\_52, NelitzaMV\_49, Command613\_54, Misfit\_54, Daikon\_53, TBrady12\_55, Icee\_52, BadStone\_50, MPhalcon\_52, Maxxinista\_55, Marshmallow\_51, TeardropMSU\_48, Toto\_51, Kanye\_48, Elph10\_52, ChosenOne\_53, Teaspoon\_53, Goku\_50, HufflyPuff\_54, Sotrice96\_53, Inca\_49, Manda\_52, Ukulele\_49, BaboJay\_48, Cactus\_54, PhatBacter\_55, Eureka\_50
- Track 58 : ChotaBhai\_52
- Track 59 : Tomaszewski\_48
- Track 60 : Kostya\_53
- Track 61 : FosterFrank\_36
- Track 62 : Pucara\_31
- Track 63 : ChuckDuck\_35

- Track 64 : KayMoney\_35, Constance\_34, Judy\_35
- Track 65 : GlobiWarming\_35
- Track 66 : HotPotato\_34
- Track 67 : Karkharias\_34
- Track 68 : PeggyLeg03\_34
- Track 69 : Bridgette\_34
- Track 70 : Popper\_34
- Track 71 : Schism\_38
- Track 72 : Julie\_35
- Track 73 : Ichiang\_34
- Track 74 : IsHungry\_32
- Track 75 : Guinevere\_36
- Track 76 : Lenoxika\_36
- Track 77 : QuinnAvery\_38
- Track 78 : Kihatsu\_37
- Track 79 : Zaheer\_36
- Track 80 : Gusanita\_34
- Track 81 : Donatella\_35
- Track 82 : Halloweekend\_34
- Track 83 : Ryan\_36
- Track 84 : Nandita\_36
- Track 85 : GoodLuckBabe\_36
- Track 86 : Cole\_34
- Track 87 : AllBusiness\_33
- Track 88 : BlackSpider\_31
- Track 89 : Bauer\_32
- Track 90 : Zucker\_29
- Track 91 : Maja\_28
- Track 92 : Ball\_25
- Track 93 : Kromp\_36

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

The start number called the most often in the published annotations is 19, it was called in 123 of the 203 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 244\_53, ABCat\_50, Adnama\_56, Amao\_52, AmericanBeauty\_56, Argent26\_55, Asriel\_52, BaboJay\_48, BadStone\_50, Balomoji\_51, Barbarian\_52, Bask21\_53, Becksu\_53, Bench\_54, BigBubba\_53, BilboSwaggins\_51, Bruin\_48, Buck\_53, BugsBunny\_53, Cactus\_54, ChosenOne\_53, ChotaBhai\_52, Cjw1\_52, Command613\_54, Contagion\_49, Cookies\_49, CrystalP\_52, Czystczon1\_53, Daikon\_53, DoctorDiddles\_52, DrDrey\_52, Dumbo\_52, Dusk\_50, Easy2Say\_53, Elite2014\_52, Elph10\_52, Emmina\_52, Eureka\_50, FairyPath\_52, Filch\_53, FireRed\_55, Flypotenuse\_47, FoghornLeghorn\_47, Gage\_55, Gator\_50, Gemini\_56, Glexan\_50, Goku\_50, GoldenSpark\_55, Goldilocks\_54, GooberAzure\_55, HanKaySha\_51, Harella\_52, Henry\_51, Highbury\_53, Holt\_57, Hoonter\_55, Hopey\_52, HufflyPuff\_54, IHOP\_50, Icee\_52, Inca\_49, JeTaime\_53, Kanye\_48, Kimchi\_55, Lilac\_55, Lilizi\_52, Lilpickle\_52, MISSy\_52, MPhalcon\_52, MadamMonkfish\_52, Manda\_52, Marshmallow\_51, Maxxinista\_55, Mindy\_51,

Miniwave\_49, Misfit\_54, Moldemort\_55, Mosby\_48, Murica\_54, Murphy\_54, Myrale\_52, Nala\_53, NelitzaMV\_49, Nimrod\_55, NoSleep\_54, OrionPax\_51, Palpatine\_55, Paperbeatsrock\_51, Pat3\_50, Petra64142\_57, Phaja\_50, Pharsalus\_50, PhatBacter\_55, Phaux\_54, Phrux\_50, Policronamos\_55, Porky\_51, Pumpkin\_54, Quallification\_53, Rakim\_54, Rimmer\_53, RiverMonster\_53, Saints25\_53, Sassay\_46, ShamWow\_52, ShereKhan\_50, Simpliphy\_51, SirDuracell\_51, SophKB\_49, Sotrice96\_53, Stank\_56, Stark\_53, StellaBean\_50, StolenFromERC\_55, StormChicken\_54, TBrady12\_55, Tarkin\_51, TeardropMSU\_48, Teaspoon\_53, Terminus\_54, Thimble\_54, Thresher\_55, Toto\_51, Traaww1\_48, Tuco\_53, Ukulele\_49, Wiggin\_54, Willez\_46, Xandras\_52, YassJohnny\_48, Youngblood\_54, xkcd\_56,

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

- Kostya\_53, Tomaszewski\_48,

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

- Adora\_34, Aikyam\_33, AllBusiness\_33, Anekin\_34, Annalisa\_34, ArchiDore\_38, Auxilium\_34, BBQValindra\_35, Bakery\_42, Ball\_25, Bauer\_32, Beenie\_30, BenchScraper\_36, BillyTP\_37, BlackSpider\_31, BlingBling\_33, BlueShadow\_37, Bowser\_37, Bradissa\_35, Bridgette\_34, Bunker\_34, Bunnybear\_32, ChuckDuck\_35, Clark\_36, Cole\_34, Confidence\_36, Constance\_34, CookieBear\_37, Culver\_60, Dmitri\_36, DobbysSock\_30, Dolores\_37, Donatella\_35, Dorito\_32, EMsquaredA\_36, EnalisNailo\_34, Floral\_35, FosterFrank\_36, Globfish\_36, GlobiWarming\_35, GoodLuckBabe\_36, Gorpy\_37, Guinevere\_36, Gusanita\_34, Halloweekend\_34, Hestia\_36, Hillester\_36, Hortense\_36, HotPotato\_34, Howe\_36, Ichiang\_34, Invectra\_37, IsHungry\_32, Isolde\_36, Jablanski\_34, JellyBread\_32, Judy\_35, Julie\_35, Karkharias\_34, KayMoney\_35, Kihatsu\_37, Kiko\_37, Kromp\_36, Lawnathon\_36, Lenoxika\_36, Lilas\_37, LonelyBoi\_37, MUWow\_35, Maja\_28, Malibo\_38, Marteena\_35, MaterMagnus\_36, Mcklovin\_34, Melba\_35, MichaelScott\_36, MidnightRain\_38, Moonflower\_36, Mutzi\_37, Nandita\_36, Oregano\_37, PeggyLeg03\_34, PhriskyACE\_35, Pipp\_33, Pollux\_37, Popper\_34, Pucara\_31, Pytheas\_34, QuinnAvery\_38, RadFad\_36, Raphaella\_36, Richie\_36, Ryan\_36, Sakai\_36, Samman98\_36, Sashimi\_35, Schism\_38, Seahorse\_38, Shlim410\_35, Shukran\_39, Sixama\_89, SpicyFrank\_36, Spooky\_35, Squiddly\_37, ThayneTheZag\_36, Thimann\_34, Tiff81\_32, Twinkle\_35, Utz\_31, Vopal\_39, WinkNick\_38, YoungHarleezy\_36, YungMoney\_41, Zaheer\_36, Zucker\_29,

### Summary by start number:

Start 13:

- Found in 18 of 249 ( 7.2% ) of genes in pham
- Manual Annotations of this start: 1 of 203
- Called 11.1% of time when present
- Phage (with cluster) where this start called: GoodLuckBabe\_36 (FF), QuinnAvery\_38 (FF),

Start 16:

- Found in 1 of 249 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 203
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kromp\_36 (singleton),

Start 17:

- Found in 49 of 249 ( 19.7% ) of genes in pham
- Manual Annotations of this start: 15 of 203
- Called 30.6% of time when present
- Phage (with cluster) where this start called: Adora\_34 (CZ4), BBQValindra\_35 (DB), Bunnybear\_32 (CZ), Clark\_36 (CZ4), DobbysSock\_30 (CZ4), Dorito\_32 (CZ4), EnalisNailo\_34 (CY1), Floral\_35 (CY1), Jablanski\_34 (CY), Lilas\_37 (CY1), Melba\_35 (CV), Pipp\_33 (CV), Pytheas\_34 (CY), Spooky\_35 (DN2), Squiddly\_37 (DN2),

#### Start 18:

- Found in 108 of 249 ( 43.4% ) of genes in pham
- Manual Annotations of this start: 60 of 203
- Called 87.0% of time when present
- Phage (with cluster) where this start called: Aikyam\_33 (AY), AllBusiness\_33 (FF), Anekin\_34 (AY), Annalisa\_34 (CZ4), ArchiDore\_38 (DW), Auxilium\_34 (AY), Bakery\_42 (DC1), Ball\_25 (singleton), Bauer\_32 (FN), Beenie\_30 (CZ4), BenchScraper\_36 (AY), BillyTP\_37 (AY), BlackSpider\_31 (FN), BlingBling\_33 (CV), BlueShadow\_37 (AY), Bowser\_37 (DB), Bradissa\_35 (CY1), Bridgette\_34 (FA), Bunker\_34 (DB), ChuckDuck\_35 (FA), Cole\_34 (FF), Confidence\_36 (CY1), Constance\_34 (FA), CookieBear\_37 (AY), Culver\_60 (CQ1), Dmitri\_36 (DB), Dolores\_37 (CZ4), Donatella\_35 (FF), EMSquaredA\_36 (CY1), FosterFrank\_36 (FA), Globfish\_36 (AY), GlobiWarming\_35 (FA), Gorpy\_37 (AY), Guinevere\_36 (FF), Gusanita\_34 (FF), Halloween\_34 (FF), Hestia\_36 (AY), Hillester\_36 (AY), Hortense\_36 (CZ4), HotPotato\_34 (FA), Howe\_36 (CZ4), Ichiang\_34 (FF), Invectra\_37 (CZ4), IsHungry\_32 (FF), Isolde\_36 (AY), JellyBread\_32 (AY), Judy\_35 (FA), Julie\_35 (FF), Karkharias\_34 (FA), KayMoney\_35 (FA), Kihatsu\_37 (FF), Kiko\_37 (DB), Lawnathon\_36 (AY), Lenoxika\_36 (FF), LonelyBoi\_37 (CY), MUWow\_35 (AY), Maja\_28 (FO), Malibo\_38 (DW), Marteenaa\_35 (CY1), MaterMagnus\_36 (AY), Mcklovin\_34 (CZ4), MichaelScott\_36 (CZ4), MidnightRain\_38 (AY), Mutzi\_37 (DC1), Nandita\_36 (FF), Oregano\_37 (CZ4), PeggyLeg03\_34 (FA), PhriskyACE\_35 (CZ4), Pollux\_37 (CY1), Popper\_34 (FF), Pucara\_31 (FA), RadFad\_36 (AY), Raphaella\_36 (AY), Richie\_36 (AY), Ryan\_36 (FF), Sakai\_36 (AY), Samman98\_36 (CZ4), Sashimi\_35 (AY), Schism\_38 (FF), Seahorse\_38 (AY), Shlim410\_35 (CZ4), Shukran\_39 (AY), SpicyFrank\_36 (AY), ThayneTheZag\_36 (AY), Thimann\_34 (CZ4), Tiff81\_32 (AY), Twinkle\_35 (CZ4), Utz\_31 (CV), Vopal\_39 (AY), WinkNick\_38 (CZ4), YoungHarleezy\_36 (AY), YungMoney\_41 (DC1), Zaheer\_36 (FF), Zucker\_29 (FN),

#### Start 19:

- Found in 135 of 249 ( 54.2% ) of genes in pham
- Manual Annotations of this start: 123 of 203
- Called 98.5% of time when present
- Phage (with cluster) where this start called: 244\_53 (E), ABCat\_50 (E), Adnama\_56 (E), Amao\_52 (E), AmericanBeauty\_56 (E), Argent26\_55 (E), Asriel\_52 (E), BaboJay\_48 (E), BadStone\_50 (E), Balomoji\_51 (E), Barbarian\_52 (E), Bask21\_53 (E), Becksu\_53 (E), Bench\_54 (E), BigBubba\_53 (E), BilboSwaggins\_51 (E), Bruin\_48 (E), Buck\_53 (E), BugsBunny\_53 (E), Cactus\_54 (E), ChosenOne\_53 (E), ChotaBhai\_52 (E), Cjw1\_52 (E), Command613\_54 (E), Contagion\_49 (E), Cookies\_49 (E), CrystalP\_52 (E), Czczyszczon1\_53 (E), Daikon\_53 (E), DoctorDiddles\_52 (E), DrDrey\_52 (E), Dumbo\_52 (E), Dusk\_50 (E), Easy2Say\_53 (E), Elite2014\_52 (E), Elph10\_52 (E), Emmina\_52 (E), Eureka\_50 (E), FairyPath\_52 (E), Filch\_53 (E), FireRed\_55 (E), Flypotenuse\_47 (E), FoghornLeghorn\_47 (E), Gage\_55 (E), Gator\_50 (E), Gemini\_56 (E), Glexan\_50 (E), Goku\_50 (E), GoldenSpark\_55 (E), Goldilocks\_54 (E), GooberAzure\_55 (E), HanKaySha\_51 (E),

Harella\_52 (E), Henry\_51 (E), Highbury\_53 (E), Holt\_57 (E), Hoonter\_55 (E), Hopey\_52 (E), HuffyPuff\_54 (E), IHOP\_50 (E), Icee\_52 (E), Inca\_49 (E), JeTaimé\_53 (E), Kanye\_48 (E), Kimchi\_55 (E), Lilac\_55 (E), Lilizi\_52 (E), Lilpickle\_52 (E), MISSy\_52 (E), MPhalcon\_52 (E), MadamMonkfish\_52 (E), Manda\_52 (E), Marshmallow\_51 (E), Maxxinista\_55 (E), Mindy\_51 (E), Miniwave\_49 (E), Misfit\_54 (E), Moldemort\_55 (E), Mosby\_48 (E), Murica\_54 (E), Murphy\_54 (E), Myrale\_52 (E), Nala\_53 (E), NelitzaMV\_49 (E), Nimrod\_55 (E), NoSleep\_54 (E), OrionPax\_51 (E), Palpatine\_55 (E), Paperbeatsrock\_51 (E), Pat3\_50 (E), Petra64142\_57 (E), Phaja\_50 (E), Pharsalus\_50 (E), PhatBacter\_55 (E), Phaux\_54 (E), Phrux\_50 (E), Policronamos\_55 (E), Porky\_51 (E), Pumpkin\_54 (E), Quallification\_53 (E), Rakim\_54 (E), Rimmer\_53 (E), RiverMonster\_53 (E), Saints25\_53 (E), Sassay\_46 (E), ShamWow\_52 (E), ShereKhan\_50 (E), Simpliphy\_51 (E), SirDuracell\_51 (E), SophKB\_49 (E), Sotrice96\_53 (E), Stank\_56 (E), Stark\_53 (E), StellaBean\_50 (E), StolenFromERC\_55 (E), StormChicken\_54 (E), TBrady12\_55 (E), Tarkin\_51 (E), TeardropMSU\_48 (E), Teaspoon\_53 (E), Terminus\_54 (E), Thimble\_54 (E), Thresher\_55 (E), Toto\_51 (E), Traaww1\_48 (E), Tuco\_53 (E), Ukulele\_49 (E), Wiggin\_54 (E), Willez\_46 (E), Xandras\_52 (E), YassJohnny\_48 (E), Youngblood\_54 (E), xkcd\_56 (E),

#### Start 21:

- Found in 135 of 249 ( 54.2% ) of genes in pham
- Manual Annotations of this start: 1 of 203
- Called 0.7% of time when present
- Phage (with cluster) where this start called: Tomaszewski\_48 (E),

#### Start 23:

- Found in 15 of 249 ( 6.0% ) of genes in pham
- Manual Annotations of this start: 1 of 203
- Called 13.3% of time when present
- Phage (with cluster) where this start called: Moonflower\_36 (DB), Sixama\_89 (DS),

#### Start 27:

- Found in 135 of 249 ( 54.2% ) of genes in pham
- Manual Annotations of this start: 1 of 203
- Called 0.7% of time when present
- Phage (with cluster) where this start called: Kostya\_53 (E),

### Summary by clusters:

There are 18 clusters represented in this pham: CY1, E, CZ, DB, singleton, CZ4, DS, FA, CY, FF, DN2, AY, DW, CQ1, DC1, CV, FN, FO,

Info for manual annotations of cluster AY:

- Start number 18 was manually annotated 14 times for cluster AY.

Info for manual annotations of cluster CQ1:

- Start number 18 was manually annotated 1 time for cluster CQ1.

Info for manual annotations of cluster CV:

- Start number 17 was manually annotated 2 times for cluster CV.
- Start number 18 was manually annotated 2 times for cluster CV.

Info for manual annotations of cluster CY:



- Start number 17 was manually annotated 2 times for cluster CY.
- Start number 18 was manually annotated 1 time for cluster CY.

Info for manual annotations of cluster CY1:

- Start number 17 was manually annotated 3 times for cluster CY1.
- Start number 18 was manually annotated 5 times for cluster CY1.

Info for manual annotations of cluster CZ:

- Start number 17 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ4:

- Start number 17 was manually annotated 4 times for cluster CZ4.
- Start number 18 was manually annotated 13 times for cluster CZ4.

Info for manual annotations of cluster DB:

- Start number 17 was manually annotated 1 time for cluster DB.
- Start number 18 was manually annotated 4 times for cluster DB.

Info for manual annotations of cluster DC1:

- Start number 18 was manually annotated 3 times for cluster DC1.

Info for manual annotations of cluster DN2:

- Start number 17 was manually annotated 2 times for cluster DN2.

Info for manual annotations of cluster DS:

- Start number 23 was manually annotated 1 time for cluster DS.

Info for manual annotations of cluster DW:

- Start number 18 was manually annotated 1 time for cluster DW.

Info for manual annotations of cluster E:

- Start number 19 was manually annotated 123 times for cluster E.
- Start number 21 was manually annotated 1 time for cluster E.
- Start number 27 was manually annotated 1 time for cluster E.

Info for manual annotations of cluster FA:

- Start number 18 was manually annotated 7 times for cluster FA.

Info for manual annotations of cluster FF:

- Start number 13 was manually annotated 1 time for cluster FF.
- Start number 18 was manually annotated 6 times for cluster FF.

Info for manual annotations of cluster FN:

- Start number 18 was manually annotated 2 times for cluster FN.

Info for manual annotations of cluster FO:

- Start number 18 was manually annotated 1 time for cluster FO.

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

Gene: 244\_53 Start: 37711, Stop: 38592, Start Num: 19

Candidate Starts for 244\_53:

(Start: 19 @37711 has 123 MA's), (Start: 21 @37723 has 1 MA's), (Start: 27 @37753 has 1 MA's), (32, 37810), (51, 37891), (52, 37915), (53, 37936), (55, 37948), (57, 37957), (62, 37996), (63, 37999), (66, 38026), (69, 38053), (72, 38065), (76, 38119), (83, 38155), (89, 38206), (96, 38254), (110, 38362), (116, 38401), (123, 38443), (128, 38482), (140, 38578), (141, 38584),

Gene: ABCat\_50 Start: 38357, Stop: 39238, Start Num: 19

Candidate Starts for ABCat\_50:

(Start: 19 @38357 has 123 MA's), (Start: 21 @38369 has 1 MA's), (Start: 27 @38399 has 1 MA's), (32, 38456), (51, 38537), (52, 38561), (53, 38582), (55, 38594), (57, 38603), (62, 38642), (63, 38645), (66, 38672), (69, 38699), (72, 38711), (76, 38765), (83, 38801), (89, 38852), (96, 38900), (110, 39008), (116, 39047), (123, 39089), (128, 39128), (140, 39224), (141, 39230),

Gene: Adnama\_56 Start: 38380, Stop: 39261, Start Num: 19

Candidate Starts for Adnama\_56:

(Start: 19 @38380 has 123 MA's), (Start: 21 @38392 has 1 MA's), (Start: 27 @38422 has 1 MA's), (32, 38479), (51, 38560), (52, 38584), (53, 38605), (55, 38617), (57, 38626), (62, 38665), (63, 38668), (66, 38695), (69, 38722), (72, 38734), (76, 38788), (83, 38824), (89, 38875), (96, 38923), (110, 39031), (116, 39070), (123, 39112), (128, 39151), (140, 39247), (141, 39253),

Gene: Adora\_34 Start: 29404, Stop: 30327, Start Num: 17

Candidate Starts for Adora\_34:

(Start: 17 @29404 has 15 MA's), (Start: 18 @29410 has 60 MA's), (47, 29599), (49, 29605), (59, 29707), (63, 29731), (71, 29791), (76, 29848), (78, 29854), (79, 29860), (95, 29974), (96, 29980), (99, 29992), (109, 30067), (112, 30091), (113, 30094), (118, 30130), (119, 30136), (123, 30169), (127, 30205), (134, 30250),

Gene: Aikyam\_33 Start: 22410, Stop: 23327, Start Num: 18

Candidate Starts for Aikyam\_33:

(5, 22281), (8, 22287), (Start: 18 @22410 has 60 MA's), (37, 22566), (41, 22581), (45, 22593), (64, 22740), (65, 22749), (70, 22788), (73, 22833), (78, 22857), (79, 22863), (84, 22896), (90, 22938), (92, 22947), (97, 22989), (109, 23073), (125, 23193), (127, 23208),

Gene: AllBusiness\_33 Start: 27251, Stop: 28171, Start Num: 18

Candidate Starts for AllBusiness\_33:

(Start: 13 @27209 has 1 MA's), (Start: 18 @27251 has 60 MA's), (22, 27275), (31, 27365), (37, 27407), (42, 27425), (45, 27437), (52, 27494), (64, 27584), (70, 27632), (73, 27677), (78, 27701), (79, 27707), (84, 27740), (90, 27782), (97, 27833), (109, 27917), (122, 28013), (125, 28037), (129, 28058), (139, 28142),

Gene: Amao\_52 Start: 37475, Stop: 38356, Start Num: 19

Candidate Starts for Amao\_52:

(Start: 19 @37475 has 123 MA's), (Start: 21 @37487 has 1 MA's), (Start: 27 @37517 has 1 MA's), (32, 37574), (51, 37655), (52, 37679), (53, 37700), (55, 37712), (57, 37721), (62, 37760), (63, 37763), (66, 37790), (69, 37817), (72, 37829), (76, 37883), (83, 37919), (89, 37970), (96, 38018), (110, 38126), (116, 38165), (123, 38207), (128, 38246), (140, 38342), (141, 38348),

Gene: AmericanBeauty\_56 Start: 38225, Stop: 39106, Start Num: 19

Candidate Starts for AmericanBeauty\_56:

(Start: 19 @38225 has 123 MA's), (Start: 21 @38237 has 1 MA's), (Start: 27 @38267 has 1 MA's), (32, 38324), (51, 38405), (52, 38429), (53, 38450), (55, 38462), (57, 38471), (62, 38510), (63, 38513), (66, 38540), (69, 38567), (72, 38579), (76, 38633), (83, 38669), (89, 38720), (96, 38768), (110, 38876), (116, 38915), (123, 38957), (128, 38996), (140, 39092), (141, 39098),

Gene: Anekin\_34 Start: 24275, Stop: 25195, Start Num: 18

Candidate Starts for Anekin\_34:

(5, 24146), (10, 24173), (Start: 13 @24233 has 1 MA's), (Start: 18 @24275 has 60 MA's), (31, 24389), (35, 24404), (37, 24431), (42, 24449), (52, 24518), (64, 24608), (65, 24617), (70, 24656), (78, 24725), (79, 24731), (84, 24764), (90, 24806), (92, 24815),

Gene: Annalisa\_34 Start: 27182, Stop: 28099, Start Num: 18

Candidate Starts for Annalisa\_34:

(Start: 17 @27176 has 15 MA's), (Start: 18 @27182 has 60 MA's), (47, 27371), (49, 27377), (59, 27479), (63, 27503), (71, 27563), (76, 27620), (78, 27626), (79, 27632), (95, 27746), (96, 27752), (99, 27764), (109, 27839), (112, 27863), (113, 27866), (118, 27902), (119, 27908), (120, 27920), (134, 28022),

Gene: ArchiDore\_38 Start: 30835, Stop: 31752, Start Num: 18

Candidate Starts for ArchiDore\_38:

(Start: 17 @30829 has 15 MA's), (Start: 18 @30835 has 60 MA's), (34, 30955), (47, 31024), (49, 31030), (54, 31102), (62, 31153), (71, 31216), (75, 31270), (78, 31279), (82, 31300), (83, 31309), (86, 31339), (107, 31471), (109, 31492), (112, 31516), (113, 31519), (115, 31540), (118, 31555), (119, 31561), (127, 31630), (142, 31744),

Gene: Argent26\_55 Start: 37863, Stop: 38744, Start Num: 19

Candidate Starts for Argent26\_55:

(Start: 19 @37863 has 123 MA's), (Start: 21 @37875 has 1 MA's), (Start: 27 @37905 has 1 MA's), (32, 37962), (51, 38043), (52, 38067), (53, 38088), (55, 38100), (57, 38109), (62, 38148), (63, 38151), (66, 38178), (69, 38205), (72, 38217), (76, 38271), (83, 38307), (89, 38358), (96, 38406), (110, 38514), (116, 38553), (123, 38595), (128, 38634), (140, 38730), (141, 38736),

Gene: Asriel\_52 Start: 36717, Stop: 37598, Start Num: 19

Candidate Starts for Asriel\_52:

(Start: 19 @36717 has 123 MA's), (Start: 21 @36729 has 1 MA's), (Start: 27 @36759 has 1 MA's), (32, 36816), (51, 36897), (52, 36921), (53, 36942), (55, 36954), (57, 36963), (62, 37002), (63, 37005), (66, 37032), (69, 37059), (72, 37071), (76, 37125), (83, 37161), (89, 37212), (96, 37260), (110, 37368), (116, 37407), (123, 37449), (128, 37488), (140, 37584), (141, 37590),

Gene: Auxilium\_34 Start: 22112, Stop: 23029, Start Num: 18

Candidate Starts for Auxilium\_34:

(5, 21983), (8, 21989), (Start: 18 @22112 has 60 MA's), (37, 22268), (41, 22283), (45, 22295), (64, 22442), (65, 22451), (70, 22490), (73, 22535), (78, 22559), (79, 22565), (84, 22598), (90, 22640), (92, 22649), (97, 22691), (109, 22775), (125, 22895), (127, 22910),

Gene: BBQValindra\_35 Start: 29573, Stop: 30496, Start Num: 17

Candidate Starts for BBQValindra\_35:

(Start: 17 @29573 has 15 MA's), (Start: 18 @29579 has 60 MA's), (47, 29768), (49, 29774), (63, 29900), (68, 29945), (71, 29960), (78, 30023), (82, 30044), (96, 30149), (99, 30161), (107, 30215), (109, 30236), (113, 30263), (135, 30440), (139, 30467),

Gene: BaboJay\_48 Start: 37263, Stop: 38144, Start Num: 19

Candidate Starts for BaboJay\_48:

(Start: 19 @37263 has 123 MA's), (Start: 21 @37275 has 1 MA's), (Start: 27 @37305 has 1 MA's), (32, 37362), (51, 37443), (52, 37467), (53, 37488), (55, 37500), (57, 37509), (62, 37548), (63, 37551), (66, 37578), (69, 37605), (72, 37617), (76, 37671), (83, 37707), (89, 37758), (96, 37806), (110, 37914), (116, 37953), (123, 37995), (128, 38034), (140, 38130), (141, 38136),

Gene: BadStone\_50 Start: 37926, Stop: 38807, Start Num: 19

Candidate Starts for BadStone\_50:

(Start: 19 @37926 has 123 MA's), (Start: 21 @37938 has 1 MA's), (Start: 27 @37968 has 1 MA's), (32, 38025), (51, 38106), (52, 38130), (53, 38151), (55, 38163), (57, 38172), (62, 38211), (63, 38214), (66, 38241), (69, 38268), (72, 38280), (76, 38334), (83, 38370), (89, 38421), (96, 38469), (110, 38577), (116, 38616), (123, 38658), (128, 38697), (140, 38793), (141, 38799),

Gene: Bakery\_42 Start: 33465, Stop: 34382, Start Num: 18

Candidate Starts for Bakery\_42:

(Start: 17 @33459 has 15 MA's), (Start: 18 @33465 has 60 MA's), (33, 33582), (34, 33585), (46, 33648), (47, 33654), (49, 33660), (71, 33846), (75, 33900), (76, 33903), (78, 33909), (82, 33930), (95, 34029), (96, 34035), (99, 34047), (109, 34122), (113, 34149), (122, 34221), (127, 34260), (142, 34374),

Gene: Ball\_25 Start: 21363, Stop: 22283, Start Num: 18

Candidate Starts for Ball\_25:

(Start: 18 @21363 has 60 MA's), (22, 21387), (31, 21477), (37, 21519), (42, 21537), (45, 21549), (52, 21606), (53, 21627), (64, 21696), (65, 21705), (70, 21744), (78, 21813), (79, 21819), (84, 21852), (87, 21876), (90, 21894), (97, 21945), (99, 21951), (101, 21963), (125, 22149), (129, 22170), (138, 22251), (139, 22254),

Gene: Balomoji\_51 Start: 38194, Stop: 39075, Start Num: 19

Candidate Starts for Balomoji\_51:

(Start: 19 @38194 has 123 MA's), (Start: 21 @38206 has 1 MA's), (Start: 27 @38236 has 1 MA's), (32, 38293), (51, 38374), (52, 38398), (53, 38419), (55, 38431), (57, 38440), (62, 38479), (63, 38482), (66, 38509), (69, 38536), (72, 38548), (76, 38602), (83, 38638), (89, 38689), (96, 38737), (110, 38845), (116, 38884), (123, 38926), (128, 38965), (140, 39061), (141, 39067),

Gene: Barbarian\_52 Start: 36717, Stop: 37598, Start Num: 19

Candidate Starts for Barbarian\_52:

(Start: 19 @36717 has 123 MA's), (Start: 21 @36729 has 1 MA's), (Start: 27 @36759 has 1 MA's), (32, 36816), (51, 36897), (52, 36921), (53, 36942), (55, 36954), (57, 36963), (62, 37002), (63, 37005), (66, 37032), (69, 37059), (72, 37071), (76, 37125), (83, 37161), (89, 37212), (96, 37260), (110, 37368), (116, 37407), (123, 37449), (128, 37488), (140, 37584), (141, 37590),

Gene: Bask21\_53 Start: 37051, Stop: 37932, Start Num: 19

Candidate Starts for Bask21\_53:

(Start: 19 @37051 has 123 MA's), (Start: 21 @37063 has 1 MA's), (Start: 27 @37093 has 1 MA's), (32, 37150), (51, 37231), (52, 37255), (53, 37276), (55, 37288), (57, 37297), (62, 37336), (63, 37339), (66, 37366), (69, 37393), (72, 37405), (76, 37459), (83, 37495), (89, 37546), (96, 37594), (110, 37702), (116, 37741), (123, 37783), (128, 37822), (140, 37918), (141, 37924),

Gene: Bauer\_32 Start: 24145, Stop: 25065, Start Num: 18

Candidate Starts for Bauer\_32:

(Start: 18 @24145 has 60 MA's), (31, 24259), (37, 24301), (42, 24319), (45, 24331), (52, 24388), (64, 24478), (70, 24526), (78, 24595), (79, 24601), (84, 24634), (87, 24658), (125, 24931), (127, 24946), (129, 24952),

Gene: Becksu\_53 Start: 38260, Stop: 39141, Start Num: 19

Candidate Starts for Becksu\_53:

(Start: 19 @38260 has 123 MA's), (Start: 21 @38272 has 1 MA's), (Start: 27 @38302 has 1 MA's), (32, 38359), (51, 38440), (52, 38464), (53, 38485), (55, 38497), (57, 38506), (62, 38545), (63, 38548), (66,

38575), (69, 38602), (72, 38614), (76, 38668), (83, 38704), (89, 38755), (96, 38803), (110, 38911), (116, 38950), (123, 38992), (128, 39031), (140, 39127), (141, 39133),

Gene: Beenie\_30 Start: 27395, Stop: 28312, Start Num: 18

Candidate Starts for Beenie\_30:

(Start: 17 @27389 has 15 MA's), (Start: 18 @27395 has 60 MA's), (47, 27584), (49, 27590), (59, 27692), (63, 27716), (71, 27776), (76, 27833), (78, 27839), (79, 27845), (95, 27959), (96, 27965), (99, 27977), (109, 28052), (112, 28076), (113, 28079), (118, 28115), (119, 28121), (123, 28154), (134, 28235),

Gene: Bench\_54 Start: 37695, Stop: 38576, Start Num: 19

Candidate Starts for Bench\_54:

(Start: 19 @37695 has 123 MA's), (Start: 21 @37707 has 1 MA's), (Start: 27 @37737 has 1 MA's), (32, 37794), (51, 37875), (52, 37899), (53, 37920), (55, 37932), (57, 37941), (62, 37980), (63, 37983), (66, 38010), (69, 38037), (72, 38049), (76, 38103), (83, 38139), (89, 38190), (96, 38238), (110, 38346), (116, 38385), (123, 38427), (128, 38466), (140, 38562), (141, 38568),

Gene: BenchScraper\_36 Start: 24587, Stop: 25504, Start Num: 18

Candidate Starts for BenchScraper\_36:

(5, 24458), (8, 24464), (Start: 18 @24587 has 60 MA's), (37, 24743), (41, 24758), (45, 24770), (64, 24917), (70, 24965), (73, 25010), (78, 25034), (79, 25040), (84, 25073), (92, 25124), (109, 25250), (113, 25277), (125, 25370), (139, 25475),

Gene: BigBubba\_53 Start: 37736, Stop: 38617, Start Num: 19

Candidate Starts for BigBubba\_53:

(Start: 19 @37736 has 123 MA's), (Start: 21 @37748 has 1 MA's), (Start: 27 @37778 has 1 MA's), (32, 37835), (51, 37916), (52, 37940), (53, 37961), (55, 37973), (57, 37982), (62, 38021), (63, 38024), (66, 38051), (69, 38078), (72, 38090), (76, 38144), (83, 38180), (89, 38231), (96, 38279), (110, 38387), (116, 38426), (123, 38468), (128, 38507), (140, 38603), (141, 38609),

Gene: BilboSwaggins\_51 Start: 38365, Stop: 39246, Start Num: 19

Candidate Starts for BilboSwaggins\_51:

(Start: 19 @38365 has 123 MA's), (Start: 21 @38377 has 1 MA's), (Start: 27 @38407 has 1 MA's), (32, 38464), (51, 38545), (52, 38569), (53, 38590), (55, 38602), (57, 38611), (62, 38650), (63, 38653), (66, 38680), (69, 38707), (72, 38719), (76, 38773), (83, 38809), (89, 38860), (96, 38908), (110, 39016), (116, 39055), (123, 39097), (128, 39136), (140, 39232), (141, 39238),

Gene: BillyTP\_37 Start: 25308, Stop: 26225, Start Num: 18

Candidate Starts for BillyTP\_37:

(5, 25179), (8, 25185), (Start: 18 @25308 has 60 MA's), (37, 25464), (41, 25479), (45, 25491), (64, 25638), (65, 25647), (70, 25686), (73, 25731), (78, 25755), (79, 25761), (84, 25794), (90, 25836), (92, 25845), (97, 25887), (109, 25971), (125, 26091), (127, 26106),

Gene: BlackSpider\_31 Start: 24033, Stop: 24953, Start Num: 18

Candidate Starts for BlackSpider\_31:

(1, 23742), (2, 23754), (3, 23820), (7, 23910), (Start: 18 @24033 has 60 MA's), (31, 24147), (40, 24198), (42, 24207), (45, 24219), (52, 24276), (64, 24366), (70, 24414), (78, 24483), (79, 24489), (81, 24498), (84, 24522), (87, 24546), (111, 24720), (125, 24819), (126, 24825), (127, 24834), (129, 24840),

Gene: BlingBling\_33 Start: 29081, Stop: 30001, Start Num: 18

Candidate Starts for BlingBling\_33:

(Start: 17 @29075 has 15 MA's), (Start: 18 @29081 has 60 MA's), (33, 29198), (34, 29201), (46, 29264), (47, 29270), (49, 29276), (71, 29462), (75, 29516), (76, 29519), (78, 29525), (82, 29546), (95, 29645), (96, 29651), (99, 29663), (109, 29738), (113, 29765), (118, 29801), (127, 29876),

Gene: BlueShadow\_37 Start: 24572, Stop: 25489, Start Num: 18

Candidate Starts for BlueShadow\_37:

(5, 24443), (8, 24449), (Start: 18 @24572 has 60 MA's), (37, 24728), (41, 24743), (45, 24755), (64, 24902), (70, 24950), (73, 24995), (75, 25010), (78, 25019), (79, 25025), (84, 25058), (90, 25100), (92, 25109), (97, 25151), (109, 25235), (125, 25355), (127, 25370), (139, 25460),

Gene: Bowser\_37 Start: 29401, Stop: 30318, Start Num: 18

Candidate Starts for Bowser\_37:

(Start: 17 @29395 has 15 MA's), (Start: 18 @29401 has 60 MA's), (Start: 23 @29425 has 1 MA's), (34, 29521), (47, 29590), (49, 29596), (59, 29698), (62, 29719), (71, 29782), (75, 29836), (78, 29845), (82, 29866), (83, 29875), (86, 29905), (107, 30037), (109, 30058), (112, 30082), (113, 30085), (118, 30121), (121, 30142),

Gene: Bradissa\_35 Start: 30283, Stop: 31200, Start Num: 18

Candidate Starts for Bradissa\_35:

(Start: 17 @30277 has 15 MA's), (Start: 18 @30283 has 60 MA's), (Start: 23 @30307 has 1 MA's), (34, 30403), (49, 30478), (54, 30550), (62, 30601), (71, 30664), (75, 30718), (78, 30727), (82, 30748), (83, 30757), (86, 30787), (96, 30853), (107, 30919), (109, 30940), (113, 30967), (118, 31003),

Gene: Bridgette\_34 Start: 24627, Stop: 25547, Start Num: 18

Candidate Starts for Bridgette\_34:

(5, 24498), (8, 24504), (Start: 18 @24627 has 60 MA's), (37, 24783), (42, 24801), (45, 24813), (64, 24960), (65, 24969), (70, 25008), (78, 25077), (79, 25083), (84, 25116), (90, 25158), (93, 25170), (122, 25389), (125, 25413), (127, 25428), (129, 25434), (138, 25515), (139, 25518),

Gene: Bruin\_48 Start: 36604, Stop: 37485, Start Num: 19

Candidate Starts for Bruin\_48:

(Start: 19 @36604 has 123 MA's), (Start: 21 @36616 has 1 MA's), (Start: 27 @36646 has 1 MA's), (32, 36703), (51, 36784), (52, 36808), (53, 36829), (55, 36841), (57, 36850), (62, 36889), (63, 36892), (66, 36919), (69, 36946), (72, 36958), (76, 37012), (83, 37048), (89, 37099), (96, 37147), (110, 37255), (116, 37294), (123, 37336), (128, 37375), (140, 37471), (141, 37477),

Gene: Buck\_53 Start: 38311, Stop: 39192, Start Num: 19

Candidate Starts for Buck\_53:

(Start: 19 @38311 has 123 MA's), (Start: 21 @38323 has 1 MA's), (Start: 27 @38353 has 1 MA's), (32, 38410), (51, 38491), (52, 38515), (53, 38536), (55, 38548), (57, 38557), (62, 38596), (63, 38599), (66, 38626), (69, 38653), (72, 38665), (76, 38719), (83, 38755), (89, 38806), (96, 38854), (110, 38962), (116, 39001), (123, 39043), (128, 39082), (140, 39178), (141, 39184),

Gene: BugsBunny\_53 Start: 38142, Stop: 39023, Start Num: 19

Candidate Starts for BugsBunny\_53:

(Start: 19 @38142 has 123 MA's), (Start: 21 @38154 has 1 MA's), (Start: 27 @38184 has 1 MA's), (32, 38241), (51, 38322), (52, 38346), (53, 38367), (55, 38379), (57, 38388), (62, 38427), (63, 38430), (66, 38457), (69, 38484), (72, 38496), (76, 38550), (83, 38586), (89, 38637), (96, 38685), (110, 38793), (116, 38832), (123, 38874), (128, 38913), (140, 39009), (141, 39015),

Gene: Bunker\_34 Start: 28706, Stop: 29623, Start Num: 18

Candidate Starts for Bunker\_34:

(Start: 17 @28700 has 15 MA's), (Start: 18 @28706 has 60 MA's), (47, 28895), (49, 28901), (59, 29003), (71, 29087), (76, 29144), (78, 29150), (79, 29156), (82, 29171), (96, 29276), (99, 29288), (109, 29363), (113, 29390),

Gene: Bunnybear\_32 Start: 28492, Stop: 29415, Start Num: 17

Candidate Starts for Bunnybear\_32:

(Start: 17 @28492 has 15 MA's), (Start: 18 @28498 has 60 MA's), (Start: 23 @28522 has 1 MA's), (34, 28618), (47, 28687), (49, 28693), (59, 28795), (62, 28816), (71, 28879), (75, 28933), (78, 28942), (82, 28963), (83, 28972), (86, 29002), (96, 29068), (101, 29092), (107, 29134), (109, 29155), (113, 29182), (118, 29218), (119, 29224),

Gene: Cactus\_54 Start: 37084, Stop: 37965, Start Num: 19

Candidate Starts for Cactus\_54:

(Start: 19 @37084 has 123 MA's), (Start: 21 @37096 has 1 MA's), (Start: 27 @37126 has 1 MA's), (32, 37183), (51, 37264), (52, 37288), (53, 37309), (55, 37321), (57, 37330), (62, 37369), (63, 37372), (66, 37399), (69, 37426), (72, 37438), (76, 37492), (83, 37528), (89, 37579), (96, 37627), (110, 37735), (116, 37774), (123, 37816), (128, 37855), (140, 37951), (141, 37957),

Gene: ChosenOne\_53 Start: 37384, Stop: 38265, Start Num: 19

Candidate Starts for ChosenOne\_53:

(Start: 19 @37384 has 123 MA's), (Start: 21 @37396 has 1 MA's), (Start: 27 @37426 has 1 MA's), (32, 37483), (51, 37564), (52, 37588), (53, 37609), (55, 37621), (57, 37630), (62, 37669), (63, 37672), (66, 37699), (69, 37726), (72, 37738), (76, 37792), (83, 37828), (89, 37879), (96, 37927), (110, 38035), (116, 38074), (123, 38116), (128, 38155), (140, 38251), (141, 38257),

Gene: ChotaBhai\_52 Start: 37406, Stop: 38287, Start Num: 19

Candidate Starts for ChotaBhai\_52:

(Start: 19 @37406 has 123 MA's), (Start: 21 @37418 has 1 MA's), (Start: 27 @37448 has 1 MA's), (32, 37505), (48, 37571), (51, 37586), (52, 37610), (53, 37631), (55, 37643), (57, 37652), (62, 37691), (63, 37694), (66, 37721), (69, 37748), (72, 37760), (76, 37814), (83, 37850), (89, 37901), (96, 37949), (110, 38057), (116, 38096), (123, 38138), (128, 38177), (140, 38273), (141, 38279),

Gene: ChuckDuck\_35 Start: 24394, Stop: 25314, Start Num: 18

Candidate Starts for ChuckDuck\_35:

(Start: 18 @24394 has 60 MA's), (37, 24550), (42, 24568), (45, 24580), (64, 24727), (65, 24736), (70, 24775), (78, 24844), (79, 24850), (84, 24883), (90, 24925), (97, 24976), (100, 24985), (122, 25156), (125, 25180), (127, 25195), (129, 25201), (138, 25282), (139, 25285),

Gene: Cjw1\_52 Start: 38785, Stop: 39666, Start Num: 19

Candidate Starts for Cjw1\_52:

(Start: 19 @38785 has 123 MA's), (Start: 21 @38797 has 1 MA's), (Start: 27 @38827 has 1 MA's), (32, 38884), (51, 38965), (52, 38989), (53, 39010), (55, 39022), (57, 39031), (62, 39070), (63, 39073), (66, 39100), (69, 39127), (72, 39139), (76, 39193), (83, 39229), (89, 39280), (96, 39328), (110, 39436), (116, 39475), (123, 39517), (128, 39556), (140, 39652), (141, 39658),

Gene: Clark\_36 Start: 27206, Stop: 28129, Start Num: 17

Candidate Starts for Clark\_36:

(Start: 17 @27206 has 15 MA's), (Start: 18 @27212 has 60 MA's), (47, 27401), (49, 27407), (59, 27509), (63, 27533), (71, 27593), (76, 27650), (78, 27656), (79, 27662), (95, 27776), (96, 27782), (99, 27794), (109, 27869), (112, 27893), (113, 27896), (118, 27932), (119, 27938), (123, 27971), (134, 28052),

Gene: Cole\_34 Start: 26120, Stop: 27040, Start Num: 18

Candidate Starts for Cole\_34:

(Start: 13 @26078 has 1 MA's), (Start: 18 @26120 has 60 MA's), (37, 26276), (39, 26282), (42, 26294), (45, 26306), (64, 26453), (65, 26462), (70, 26501), (74, 26558), (78, 26570), (79, 26576), (84, 26609), (87, 26633), (90, 26651), (93, 26663), (97, 26702), (119, 26852), (122, 26882), (125, 26906), (129, 26927), (138, 27008), (139, 27011),

Gene: Command613\_54 Start: 38123, Stop: 39004, Start Num: 19

Candidate Starts for Command613\_54:

(Start: 19 @38123 has 123 MA's), (Start: 21 @38135 has 1 MA's), (Start: 27 @38165 has 1 MA's), (32, 38222), (51, 38303), (52, 38327), (53, 38348), (55, 38360), (57, 38369), (62, 38408), (63, 38411), (66, 38438), (69, 38465), (72, 38477), (76, 38531), (83, 38567), (89, 38618), (96, 38666), (110, 38774), (116, 38813), (123, 38855), (128, 38894), (140, 38990), (141, 38996),

Gene: Confidence\_36 Start: 28133, Stop: 29050, Start Num: 18

Candidate Starts for Confidence\_36:

(Start: 17 @28127 has 15 MA's), (Start: 18 @28133 has 60 MA's), (Start: 23 @28157 has 1 MA's), (34, 28253), (47, 28322), (49, 28328), (62, 28451), (71, 28514), (75, 28568), (78, 28577), (82, 28598), (83, 28607), (86, 28637), (109, 28790), (113, 28817), (118, 28853),

Gene: Constance\_34 Start: 24866, Stop: 25786, Start Num: 18

Candidate Starts for Constance\_34:

(Start: 18 @24866 has 60 MA's), (37, 25022), (42, 25040), (45, 25052), (64, 25199), (65, 25208), (70, 25247), (78, 25316), (79, 25322), (84, 25355), (90, 25397), (97, 25448), (122, 25628), (125, 25652), (127, 25667), (129, 25673), (138, 25754), (139, 25757),

Gene: Contagion\_49 Start: 36885, Stop: 37766, Start Num: 19

Candidate Starts for Contagion\_49:

(Start: 19 @36885 has 123 MA's), (Start: 21 @36897 has 1 MA's), (Start: 27 @36927 has 1 MA's), (32, 36984), (51, 37065), (52, 37089), (53, 37110), (55, 37122), (57, 37131), (62, 37170), (63, 37173), (66, 37200), (69, 37227), (72, 37239), (76, 37293), (83, 37329), (89, 37380), (96, 37428), (110, 37536), (116, 37575), (123, 37617), (128, 37656), (140, 37752), (141, 37758),

Gene: CookieBear\_37 Start: 24572, Stop: 25489, Start Num: 18

Candidate Starts for CookieBear\_37:

(5, 24443), (8, 24449), (Start: 18 @24572 has 60 MA's), (37, 24728), (41, 24743), (45, 24755), (64, 24902), (65, 24911), (70, 24950), (73, 24995), (78, 25019), (79, 25025), (84, 25058), (90, 25100), (92, 25109), (97, 25151), (109, 25235), (125, 25355), (127, 25370),

Gene: Cookies\_49 Start: 37256, Stop: 38137, Start Num: 19

Candidate Starts for Cookies\_49:

(Start: 19 @37256 has 123 MA's), (Start: 21 @37268 has 1 MA's), (Start: 27 @37298 has 1 MA's), (32, 37355), (51, 37436), (52, 37460), (53, 37481), (55, 37493), (57, 37502), (62, 37541), (63, 37544), (66, 37571), (69, 37598), (72, 37610), (76, 37664), (83, 37700), (89, 37751), (96, 37799), (110, 37907), (116, 37946), (123, 37988), (128, 38027), (140, 38123), (141, 38129),

Gene: CrystalP\_52 Start: 38365, Stop: 39246, Start Num: 19

Candidate Starts for CrystalP\_52:

(Start: 19 @38365 has 123 MA's), (Start: 21 @38377 has 1 MA's), (Start: 27 @38407 has 1 MA's), (32, 38464), (51, 38545), (52, 38569), (53, 38590), (55, 38602), (57, 38611), (62, 38650), (63, 38653), (66, 38680), (69, 38707), (72, 38719), (76, 38773), (83, 38809), (89, 38860), (96, 38908), (110, 39016), (116, 39055), (123, 39097), (128, 39136), (140, 39232), (141, 39238),

Gene: Culver\_60 Start: 37716, Stop: 38639, Start Num: 18



Candidate Starts for Culver\_60:

(Start: 17 @37710 has 15 MA's), (Start: 18 @37716 has 60 MA's), (Start: 23 @37746 has 1 MA's), (32, 37836), (45, 37902), (47, 37911), (49, 37917), (53, 37980), (59, 38019), (68, 38088), (73, 38142), (76, 38160), (77, 38163), (78, 38166), (82, 38187), (93, 38259), (94, 38283), (95, 38286), (96, 38292), (99, 38304), (105, 38352), (106, 38355), (109, 38379), (112, 38403), (118, 38442), (127, 38517), (133, 38556),

Gene: Czyszczone1\_53 Start: 37594, Stop: 38475, Start Num: 19

Candidate Starts for Czyszczone1\_53:

(Start: 19 @37594 has 123 MA's), (Start: 21 @37606 has 1 MA's), (Start: 27 @37636 has 1 MA's), (32, 37693), (51, 37774), (52, 37798), (53, 37819), (55, 37831), (57, 37840), (62, 37879), (63, 37882), (66, 37909), (69, 37936), (72, 37948), (76, 38002), (83, 38038), (89, 38089), (96, 38137), (110, 38245), (116, 38284), (123, 38326), (128, 38365), (140, 38461), (141, 38467),

Gene: Daikon\_53 Start: 38215, Stop: 39096, Start Num: 19

Candidate Starts for Daikon\_53:

(Start: 19 @38215 has 123 MA's), (Start: 21 @38227 has 1 MA's), (Start: 27 @38257 has 1 MA's), (32, 38314), (51, 38395), (52, 38419), (53, 38440), (55, 38452), (57, 38461), (62, 38500), (63, 38503), (66, 38530), (69, 38557), (72, 38569), (76, 38623), (83, 38659), (89, 38710), (96, 38758), (110, 38866), (116, 38905), (123, 38947), (128, 38986), (140, 39082), (141, 39088),

Gene: Dmitri\_36 Start: 30429, Stop: 31346, Start Num: 18

Candidate Starts for Dmitri\_36:

(Start: 17 @30423 has 15 MA's), (Start: 18 @30429 has 60 MA's), (Start: 23 @30453 has 1 MA's), (34, 30549), (47, 30618), (49, 30624), (62, 30747), (71, 30810), (75, 30864), (78, 30873), (82, 30894), (83, 30903), (86, 30933), (109, 31086), (113, 31113), (118, 31149), (119, 31155), (138, 31314),

Gene: DobbysSock\_30 Start: 26128, Stop: 27051, Start Num: 17

Candidate Starts for DobbysSock\_30:

(Start: 17 @26128 has 15 MA's), (Start: 18 @26134 has 60 MA's), (47, 26323), (49, 26329), (59, 26431), (63, 26455), (71, 26515), (76, 26572), (78, 26578), (79, 26584), (95, 26698), (96, 26704), (99, 26716), (109, 26791), (112, 26815), (113, 26818), (118, 26854), (119, 26860), (123, 26893), (134, 26974),

Gene: DoctorDiddles\_52 Start: 37442, Stop: 38323, Start Num: 19

Candidate Starts for DoctorDiddles\_52:

(Start: 19 @37442 has 123 MA's), (Start: 21 @37454 has 1 MA's), (Start: 27 @37484 has 1 MA's), (32, 37541), (51, 37622), (52, 37646), (53, 37667), (55, 37679), (57, 37688), (62, 37727), (63, 37730), (66, 37757), (69, 37784), (72, 37796), (76, 37850), (83, 37886), (89, 37937), (96, 37985), (110, 38093), (116, 38132), (123, 38174), (128, 38213), (140, 38309), (141, 38315),

Gene: Dolores\_37 Start: 28084, Stop: 29001, Start Num: 18

Candidate Starts for Dolores\_37:

(Start: 17 @28078 has 15 MA's), (Start: 18 @28084 has 60 MA's), (47, 28273), (49, 28279), (59, 28381), (63, 28405), (71, 28465), (76, 28522), (78, 28528), (79, 28534), (95, 28648), (96, 28654), (99, 28666), (109, 28741), (112, 28765), (113, 28768), (118, 28804), (119, 28810), (120, 28822), (134, 28924),

Gene: Donatella\_35 Start: 26584, Stop: 27504, Start Num: 18

Candidate Starts for Donatella\_35:

(Start: 13 @26542 has 1 MA's), (Start: 18 @26584 has 60 MA's), (37, 26740), (42, 26758), (45, 26770), (64, 26917), (65, 26926), (70, 26965), (71, 26971), (75, 27025), (78, 27034), (79, 27040), (84, 27073), (87, 27097), (90, 27115), (93, 27127), (97, 27166), (119, 27316), (121, 27331), (122, 27346), (125,

27370), (127, 27385), (129, 27391), (138, 27472), (139, 27475),

Gene: Dorito\_32 Start: 25772, Stop: 26695, Start Num: 17

Candidate Starts for Dorito\_32:

(Start: 17 @25772 has 15 MA's), (Start: 18 @25778 has 60 MA's), (47, 25967), (49, 25973), (59, 26075), (63, 26099), (71, 26159), (76, 26216), (78, 26222), (79, 26228), (95, 26342), (96, 26348), (99, 26360), (109, 26435), (112, 26459), (113, 26462), (118, 26498), (119, 26504), (123, 26537), (134, 26618),

Gene: DrDrey\_52 Start: 38513, Stop: 39394, Start Num: 19

Candidate Starts for DrDrey\_52:

(Start: 19 @38513 has 123 MA's), (Start: 21 @38525 has 1 MA's), (Start: 27 @38555 has 1 MA's), (32, 38612), (51, 38693), (52, 38717), (53, 38738), (55, 38750), (57, 38759), (62, 38798), (63, 38801), (66, 38828), (69, 38855), (72, 38867), (76, 38921), (83, 38957), (89, 39008), (96, 39056), (110, 39164), (116, 39203), (123, 39245), (128, 39284), (140, 39380), (141, 39386),

Gene: Dumbo\_52 Start: 37289, Stop: 38170, Start Num: 19

Candidate Starts for Dumbo\_52:

(Start: 19 @37289 has 123 MA's), (Start: 21 @37301 has 1 MA's), (Start: 27 @37331 has 1 MA's), (32, 37388), (51, 37469), (52, 37493), (53, 37514), (55, 37526), (57, 37535), (62, 37574), (63, 37577), (66, 37604), (69, 37631), (72, 37643), (76, 37697), (83, 37733), (89, 37784), (96, 37832), (110, 37940), (116, 37979), (123, 38021), (128, 38060), (140, 38156), (141, 38162),

Gene: Dusk\_50 Start: 37586, Stop: 38467, Start Num: 19

Candidate Starts for Dusk\_50:

(Start: 19 @37586 has 123 MA's), (Start: 21 @37598 has 1 MA's), (Start: 27 @37628 has 1 MA's), (32, 37685), (51, 37766), (52, 37790), (53, 37811), (55, 37823), (57, 37832), (62, 37871), (63, 37874), (66, 37901), (69, 37928), (72, 37940), (76, 37994), (83, 38030), (89, 38081), (96, 38129), (110, 38237), (116, 38276), (123, 38318), (128, 38357), (140, 38453), (141, 38459),

Gene: EMSquaredA\_36 Start: 28837, Stop: 29754, Start Num: 18

Candidate Starts for EMSquaredA\_36:

(Start: 17 @28831 has 15 MA's), (Start: 18 @28837 has 60 MA's), (Start: 23 @28861 has 1 MA's), (34, 28957), (47, 29026), (49, 29032), (62, 29155), (71, 29218), (75, 29272), (78, 29281), (82, 29302), (83, 29311), (86, 29341), (91, 29365), (107, 29473), (109, 29494), (113, 29521),

Gene: Easy2Say\_53 Start: 38827, Stop: 39708, Start Num: 19

Candidate Starts for Easy2Say\_53:

(Start: 19 @38827 has 123 MA's), (Start: 21 @38839 has 1 MA's), (Start: 27 @38869 has 1 MA's), (32, 38926), (51, 39007), (52, 39031), (53, 39052), (55, 39064), (57, 39073), (62, 39112), (63, 39115), (66, 39142), (69, 39169), (72, 39181), (76, 39235), (83, 39271), (89, 39322), (96, 39370), (110, 39478), (116, 39517), (123, 39559), (128, 39598), (140, 39694), (141, 39700),

Gene: Elite2014\_52 Start: 37383, Stop: 38264, Start Num: 19

Candidate Starts for Elite2014\_52:

(Start: 19 @37383 has 123 MA's), (Start: 21 @37395 has 1 MA's), (Start: 27 @37425 has 1 MA's), (32, 37482), (51, 37563), (52, 37587), (53, 37608), (55, 37620), (57, 37629), (62, 37668), (63, 37671), (66, 37698), (69, 37725), (72, 37737), (76, 37791), (83, 37827), (89, 37878), (96, 37926), (110, 38034), (116, 38073), (123, 38115), (128, 38154), (140, 38250), (141, 38256),

Gene: Elph10\_52 Start: 37092, Stop: 37973, Start Num: 19

Candidate Starts for Elph10\_52:

(Start: 19 @37092 has 123 MA's), (Start: 21 @37104 has 1 MA's), (Start: 27 @37134 has 1 MA's), (32, 37191), (51, 37272), (52, 37296), (53, 37317), (55, 37329), (57, 37338), (62, 37377), (63, 37380), (66, 37407), (69, 37434), (72, 37446), (76, 37500), (83, 37536), (89, 37587), (96, 37635), (110, 37743), (116, 37782), (123, 37824), (128, 37863), (140, 37959), (141, 37965),

Gene: Emmina\_52 Start: 37290, Stop: 38171, Start Num: 19

Candidate Starts for Emmina\_52:

(Start: 19 @37290 has 123 MA's), (Start: 21 @37302 has 1 MA's), (Start: 27 @37332 has 1 MA's), (32, 37389), (51, 37470), (52, 37494), (53, 37515), (55, 37527), (57, 37536), (62, 37575), (63, 37578), (66, 37605), (69, 37632), (72, 37644), (76, 37698), (83, 37734), (89, 37785), (96, 37833), (110, 37941), (116, 37980), (123, 38022), (128, 38061), (140, 38157), (141, 38163),

Gene: EnalisNailo\_34 Start: 29811, Stop: 30734, Start Num: 17

Candidate Starts for EnalisNailo\_34:

(Start: 17 @29811 has 15 MA's), (Start: 18 @29817 has 60 MA's), (Start: 23 @29841 has 1 MA's), (34, 29937), (49, 30012), (54, 30084), (62, 30135), (71, 30198), (75, 30252), (78, 30261), (82, 30282), (83, 30291), (86, 30321), (96, 30387), (107, 30453), (109, 30474), (113, 30501), (118, 30537),

Gene: Eureka\_50 Start: 37854, Stop: 38735, Start Num: 19

Candidate Starts for Eureka\_50:

(Start: 19 @37854 has 123 MA's), (Start: 21 @37866 has 1 MA's), (Start: 27 @37896 has 1 MA's), (32, 37953), (51, 38034), (52, 38058), (53, 38079), (55, 38091), (57, 38100), (62, 38139), (63, 38142), (66, 38169), (69, 38196), (72, 38208), (76, 38262), (83, 38298), (89, 38349), (96, 38397), (110, 38505), (116, 38544), (123, 38586), (128, 38625), (140, 38721), (141, 38727),

Gene: FairyPath\_52 Start: 38206, Stop: 39087, Start Num: 19

Candidate Starts for FairyPath\_52:

(Start: 19 @38206 has 123 MA's), (Start: 21 @38218 has 1 MA's), (Start: 27 @38248 has 1 MA's), (32, 38305), (51, 38386), (52, 38410), (53, 38431), (55, 38443), (57, 38452), (62, 38491), (63, 38494), (66, 38521), (69, 38548), (72, 38560), (76, 38614), (83, 38650), (89, 38701), (96, 38749), (110, 38857), (116, 38896), (123, 38938), (128, 38977), (140, 39073), (141, 39079),

Gene: Filch\_53 Start: 37315, Stop: 38196, Start Num: 19

Candidate Starts for Filch\_53:

(Start: 19 @37315 has 123 MA's), (Start: 21 @37327 has 1 MA's), (Start: 27 @37357 has 1 MA's), (32, 37414), (51, 37495), (52, 37519), (53, 37540), (55, 37552), (57, 37561), (62, 37600), (63, 37603), (66, 37630), (69, 37657), (72, 37669), (76, 37723), (83, 37759), (89, 37810), (96, 37858), (110, 37966), (116, 38005), (123, 38047), (128, 38086), (140, 38182), (141, 38188),

Gene: FireRed\_55 Start: 38581, Stop: 39462, Start Num: 19

Candidate Starts for FireRed\_55:

(Start: 19 @38581 has 123 MA's), (Start: 21 @38593 has 1 MA's), (Start: 27 @38623 has 1 MA's), (32, 38680), (51, 38761), (52, 38785), (53, 38806), (55, 38818), (57, 38827), (62, 38866), (63, 38869), (66, 38896), (69, 38923), (72, 38935), (76, 38989), (83, 39025), (89, 39076), (96, 39124), (110, 39232), (116, 39271), (123, 39313), (128, 39352), (140, 39448), (141, 39454),

Gene: Floral\_35 Start: 30904, Stop: 31827, Start Num: 17

Candidate Starts for Floral\_35:

(Start: 17 @30904 has 15 MA's), (Start: 18 @30910 has 60 MA's), (Start: 23 @30934 has 1 MA's), (34, 31030), (47, 31099), (49, 31105), (62, 31228), (71, 31291), (75, 31345), (78, 31354), (82, 31375), (83, 31384), (86, 31414), (91, 31438), (107, 31546), (109, 31567), (113, 31594),

Gene: Flypotenuse\_47 Start: 37078, Stop: 37959, Start Num: 19

Candidate Starts for Flypotenuse\_47:

(Start: 19 @37078 has 123 MA's), (Start: 21 @37090 has 1 MA's), (Start: 27 @37120 has 1 MA's), (32, 37177), (51, 37258), (52, 37282), (53, 37303), (55, 37315), (57, 37324), (62, 37363), (63, 37366), (66, 37393), (69, 37420), (72, 37432), (76, 37486), (83, 37522), (89, 37573), (96, 37621), (110, 37729), (116, 37768), (123, 37810), (128, 37849), (140, 37945), (141, 37951),

Gene: FoghornLeghorn\_47 Start: 36088, Stop: 36969, Start Num: 19

Candidate Starts for FoghornLeghorn\_47:

(Start: 19 @36088 has 123 MA's), (Start: 21 @36100 has 1 MA's), (Start: 27 @36130 has 1 MA's), (32, 36187), (51, 36268), (52, 36292), (53, 36313), (55, 36325), (57, 36334), (62, 36373), (63, 36376), (66, 36403), (69, 36430), (72, 36442), (76, 36496), (83, 36532), (89, 36583), (96, 36631), (110, 36739), (116, 36778), (123, 36820), (128, 36859), (140, 36955), (141, 36961),

Gene: FosterFrank\_36 Start: 24468, Stop: 25388, Start Num: 18

Candidate Starts for FosterFrank\_36:

(Start: 18 @24468 has 60 MA's), (37, 24624), (42, 24642), (45, 24654), (64, 24801), (65, 24810), (70, 24849), (78, 24918), (79, 24924), (84, 24957), (90, 24999), (97, 25050), (124, 25242), (127, 25269), (129, 25275), (138, 25356), (139, 25359),

Gene: Gage\_55 Start: 37863, Stop: 38744, Start Num: 19

Candidate Starts for Gage\_55:

(Start: 19 @37863 has 123 MA's), (Start: 21 @37875 has 1 MA's), (Start: 27 @37905 has 1 MA's), (32, 37962), (51, 38043), (52, 38067), (53, 38088), (55, 38100), (57, 38109), (62, 38148), (63, 38151), (66, 38178), (69, 38205), (72, 38217), (76, 38271), (83, 38307), (89, 38358), (96, 38406), (110, 38514), (116, 38553), (123, 38595), (128, 38634), (140, 38730), (141, 38736),

Gene: Gator\_50 Start: 38217, Stop: 39098, Start Num: 19

Candidate Starts for Gator\_50:

(Start: 19 @38217 has 123 MA's), (Start: 21 @38229 has 1 MA's), (Start: 27 @38259 has 1 MA's), (32, 38316), (51, 38397), (52, 38421), (53, 38442), (55, 38454), (57, 38463), (62, 38502), (63, 38505), (66, 38532), (69, 38559), (72, 38571), (76, 38625), (83, 38661), (89, 38712), (96, 38760), (110, 38868), (116, 38907), (123, 38949), (128, 38988), (140, 39084), (141, 39090),

Gene: Gemini\_56 Start: 38380, Stop: 39261, Start Num: 19

Candidate Starts for Gemini\_56:

(Start: 19 @38380 has 123 MA's), (Start: 21 @38392 has 1 MA's), (Start: 27 @38422 has 1 MA's), (32, 38479), (51, 38560), (52, 38584), (53, 38605), (55, 38617), (57, 38626), (62, 38665), (63, 38668), (66, 38695), (69, 38722), (72, 38734), (76, 38788), (83, 38824), (89, 38875), (96, 38923), (110, 39031), (116, 39070), (123, 39112), (128, 39151), (140, 39247), (141, 39253),

Gene: Glexan\_50 Start: 38205, Stop: 39086, Start Num: 19

Candidate Starts for Glexan\_50:

(Start: 19 @38205 has 123 MA's), (Start: 21 @38217 has 1 MA's), (Start: 27 @38247 has 1 MA's), (32, 38304), (51, 38385), (52, 38409), (53, 38430), (55, 38442), (57, 38451), (62, 38490), (63, 38493), (66, 38520), (69, 38547), (72, 38559), (76, 38613), (83, 38649), (89, 38700), (96, 38748), (110, 38856), (116, 38895), (123, 38937), (128, 38976), (140, 39072), (141, 39078),

Gene: Globfish\_36 Start: 24809, Stop: 25729, Start Num: 18

Candidate Starts for Globfish\_36:

(Start: 13 @24767 has 1 MA's), (15, 24791), (Start: 18 @24809 has 60 MA's), (42, 24983), (45, 24995), (64, 25142), (65, 25151), (70, 25190), (73, 25235), (78, 25259), (79, 25265), (84, 25298), (90, 25340), (92, 25349), (93, 25352), (99, 25397), (109, 25475), (125, 25595), (127, 25610), (139, 25700),

Gene: GlobiWarming\_35 Start: 24310, Stop: 25230, Start Num: 18

Candidate Starts for GlobiWarming\_35:

(5, 24181), (8, 24187), (Start: 18 @24310 has 60 MA's), (37, 24466), (42, 24484), (45, 24496), (64, 24643), (65, 24652), (70, 24691), (78, 24760), (79, 24766), (84, 24799), (90, 24841), (122, 25072), (125, 25096), (127, 25111), (129, 25117), (138, 25198), (139, 25201),

Gene: Goku\_50 Start: 37583, Stop: 38464, Start Num: 19

Candidate Starts for Goku\_50:

(Start: 19 @37583 has 123 MA's), (Start: 21 @37595 has 1 MA's), (Start: 27 @37625 has 1 MA's), (32, 37682), (51, 37763), (52, 37787), (53, 37808), (55, 37820), (57, 37829), (62, 37868), (63, 37871), (66, 37898), (69, 37925), (72, 37937), (76, 37991), (83, 38027), (89, 38078), (96, 38126), (110, 38234), (116, 38273), (123, 38315), (128, 38354), (140, 38450), (141, 38456),

Gene: GoldenSpark\_55 Start: 37863, Stop: 38744, Start Num: 19

Candidate Starts for GoldenSpark\_55:

(Start: 19 @37863 has 123 MA's), (Start: 21 @37875 has 1 MA's), (Start: 27 @37905 has 1 MA's), (32, 37962), (51, 38043), (52, 38067), (53, 38088), (55, 38100), (57, 38109), (62, 38148), (63, 38151), (66, 38178), (69, 38205), (72, 38217), (76, 38271), (83, 38307), (89, 38358), (96, 38406), (110, 38514), (116, 38553), (123, 38595), (128, 38634), (140, 38730), (141, 38736),

Gene: Goldilocks\_54 Start: 37365, Stop: 38246, Start Num: 19

Candidate Starts for Goldilocks\_54:

(Start: 19 @37365 has 123 MA's), (Start: 21 @37377 has 1 MA's), (Start: 27 @37407 has 1 MA's), (32, 37464), (51, 37545), (52, 37569), (53, 37590), (55, 37602), (57, 37611), (62, 37650), (63, 37653), (66, 37680), (69, 37707), (72, 37719), (76, 37773), (83, 37809), (89, 37860), (96, 37908), (110, 38016), (116, 38055), (123, 38097), (128, 38136), (140, 38232), (141, 38238),

Gene: GooberAzure\_55 Start: 37863, Stop: 38744, Start Num: 19

Candidate Starts for GooberAzure\_55:

(Start: 19 @37863 has 123 MA's), (Start: 21 @37875 has 1 MA's), (Start: 27 @37905 has 1 MA's), (32, 37962), (51, 38043), (52, 38067), (53, 38088), (55, 38100), (57, 38109), (62, 38148), (63, 38151), (66, 38178), (69, 38205), (72, 38217), (76, 38271), (83, 38307), (89, 38358), (96, 38406), (110, 38514), (116, 38553), (123, 38595), (128, 38634), (140, 38730), (141, 38736),

Gene: GoodLuckBabe\_36 Start: 26660, Stop: 27622, Start Num: 13

Candidate Starts for GoodLuckBabe\_36:

(Start: 13 @26660 has 1 MA's), (Start: 18 @26702 has 60 MA's), (37, 26858), (42, 26876), (45, 26888), (52, 26945), (64, 27035), (65, 27044), (70, 27083), (75, 27143), (78, 27152), (79, 27158), (84, 27191), (90, 27233), (93, 27245), (97, 27284), (122, 27464), (125, 27488), (127, 27503), (129, 27509), (138, 27590), (139, 27593),

Gene: Gorpy\_37 Start: 25804, Stop: 26721, Start Num: 18

Candidate Starts for Gorpy\_37:

(5, 25675), (8, 25681), (Start: 18 @25804 has 60 MA's), (37, 25960), (41, 25975), (45, 25987), (64, 26134), (65, 26143), (70, 26182), (73, 26227), (78, 26251), (79, 26257), (84, 26290), (90, 26332), (92, 26341), (97, 26383), (109, 26467), (125, 26587), (127, 26602),

Gene: Guinevere\_36 Start: 26292, Stop: 27212, Start Num: 18

Candidate Starts for Guinevere\_36:

(Start: 13 @26250 has 1 MA's), (Start: 18 @26292 has 60 MA's), (37, 26448), (42, 26466), (45, 26478), (64, 26625), (70, 26673), (75, 26733), (78, 26742), (79, 26748), (84, 26781), (90, 26823), (93, 26835), (97, 26874), (122, 27054), (125, 27078), (127, 27093), (129, 27099), (138, 27180), (139, 27183),

Gene: Gusanita\_34 Start: 26041, Stop: 26961, Start Num: 18

Candidate Starts for Gusanita\_34:

(5, 25912), (8, 25918), (Start: 18 @26041 has 60 MA's), (40, 26206), (42, 26215), (45, 26227), (47, 26236), (52, 26284), (64, 26374), (65, 26383), (70, 26422), (73, 26467), (78, 26491), (79, 26497), (84, 26530), (93, 26584), (97, 26623), (101, 26641), (109, 26707), (113, 26734), (137, 26923),

Gene: Halloweekend\_34 Start: 25999, Stop: 26919, Start Num: 18

Candidate Starts for Halloweekend\_34:

(Start: 13 @25957 has 1 MA's), (Start: 18 @25999 has 60 MA's), (37, 26155), (42, 26173), (45, 26185), (64, 26332), (65, 26341), (70, 26380), (78, 26449), (79, 26455), (84, 26488), (87, 26512), (90, 26530), (93, 26542), (122, 26761), (125, 26785), (127, 26800), (129, 26806), (138, 26887), (139, 26890),

Gene: HanKaySha\_51 Start: 37173, Stop: 38054, Start Num: 19

Candidate Starts for HanKaySha\_51:

(Start: 19 @37173 has 123 MA's), (Start: 21 @37185 has 1 MA's), (Start: 27 @37215 has 1 MA's), (32, 37272), (51, 37353), (52, 37377), (53, 37398), (55, 37410), (57, 37419), (62, 37458), (63, 37461), (66, 37488), (69, 37515), (72, 37527), (76, 37581), (83, 37617), (89, 37668), (96, 37716), (110, 37824), (116, 37863), (123, 37905), (128, 37944), (140, 38040), (141, 38046),

Gene: Harella\_52 Start: 38721, Stop: 39602, Start Num: 19

Candidate Starts for Harella\_52:

(Start: 19 @38721 has 123 MA's), (Start: 21 @38733 has 1 MA's), (Start: 27 @38763 has 1 MA's), (32, 38820), (51, 38901), (52, 38925), (53, 38946), (55, 38958), (57, 38967), (62, 39006), (63, 39009), (66, 39036), (69, 39063), (72, 39075), (76, 39129), (83, 39165), (89, 39216), (96, 39264), (110, 39372), (116, 39411), (123, 39453), (128, 39492), (140, 39588), (141, 39594),

Gene: Henry\_51 Start: 37805, Stop: 38686, Start Num: 19

Candidate Starts for Henry\_51:

(Start: 19 @37805 has 123 MA's), (Start: 21 @37817 has 1 MA's), (Start: 27 @37847 has 1 MA's), (32, 37904), (51, 37985), (52, 38009), (53, 38030), (55, 38042), (57, 38051), (62, 38090), (63, 38093), (66, 38120), (69, 38147), (72, 38159), (76, 38213), (83, 38249), (89, 38300), (96, 38348), (110, 38456), (116, 38495), (123, 38537), (128, 38576), (140, 38672), (141, 38678),

Gene: Hestia\_36 Start: 24611, Stop: 25531, Start Num: 18

Candidate Starts for Hestia\_36:

(5, 24482), (8, 24488), (Start: 18 @24611 has 60 MA's), (42, 24785), (45, 24797), (64, 24944), (70, 24992), (78, 25061), (79, 25067), (97, 25193), (109, 25277), (122, 25373), (125, 25397), (127, 25412), (129, 25418), (138, 25499),

Gene: Highbury\_53 Start: 37462, Stop: 38343, Start Num: 19

Candidate Starts for Highbury\_53:

(Start: 19 @37462 has 123 MA's), (Start: 21 @37474 has 1 MA's), (Start: 27 @37504 has 1 MA's), (32, 37561), (51, 37642), (52, 37666), (53, 37687), (55, 37699), (57, 37708), (62, 37747), (63, 37750), (66, 37777), (69, 37804), (72, 37816), (76, 37870), (83, 37906), (89, 37957), (96, 38005), (110, 38113), (116, 38152), (123, 38194), (128, 38233), (140, 38329), (141, 38335),

Gene: Hillester\_36 Start: 24572, Stop: 25492, Start Num: 18

Candidate Starts for Hillester\_36:

(5, 24443), (10, 24470), (Start: 18 @24572 has 60 MA's), (31, 24686), (42, 24746), (45, 24758), (52, 24815), (64, 24905), (70, 24953), (78, 25022), (79, 25028), (84, 25061), (87, 25085), (125, 25358), (127, 25373), (129, 25379),

Gene: Holt\_57 Start: 38277, Stop: 39158, Start Num: 19

Candidate Starts for Holt\_57:

(Start: 19 @38277 has 123 MA's), (Start: 21 @38289 has 1 MA's), (Start: 27 @38319 has 1 MA's), (32, 38376), (51, 38457), (52, 38481), (53, 38502), (55, 38514), (57, 38523), (62, 38562), (63, 38565), (66, 38592), (69, 38619), (72, 38631), (76, 38685), (83, 38721), (89, 38772), (96, 38820), (110, 38928), (116, 38967), (123, 39009), (128, 39048), (140, 39144), (141, 39150),

Gene: Hoonter\_55 Start: 37863, Stop: 38744, Start Num: 19

Candidate Starts for Hoonter\_55:

(Start: 19 @37863 has 123 MA's), (Start: 21 @37875 has 1 MA's), (Start: 27 @37905 has 1 MA's), (32, 37962), (51, 38043), (52, 38067), (53, 38088), (55, 38100), (57, 38109), (62, 38148), (63, 38151), (66, 38178), (69, 38205), (72, 38217), (76, 38271), (83, 38307), (89, 38358), (96, 38406), (110, 38514), (116, 38553), (123, 38595), (128, 38634), (140, 38730), (141, 38736),

Gene: Hokey\_52 Start: 37707, Stop: 38588, Start Num: 19

Candidate Starts for Hokey\_52:

(Start: 19 @37707 has 123 MA's), (Start: 21 @37719 has 1 MA's), (Start: 27 @37749 has 1 MA's), (32, 37806), (51, 37887), (52, 37911), (53, 37932), (55, 37944), (57, 37953), (62, 37992), (63, 37995), (66, 38022), (69, 38049), (72, 38061), (76, 38115), (83, 38151), (89, 38202), (96, 38250), (110, 38358), (116, 38397), (123, 38439), (128, 38478), (140, 38574), (141, 38580),

Gene: Hortense\_36 Start: 30765, Stop: 31682, Start Num: 18

Candidate Starts for Hortense\_36:

(Start: 17 @30759 has 15 MA's), (Start: 18 @30765 has 60 MA's), (45, 30945), (47, 30954), (49, 30960), (68, 31131), (71, 31146), (76, 31203), (78, 31209), (79, 31215), (82, 31230), (95, 31329), (96, 31335), (99, 31347), (109, 31422), (112, 31446), (113, 31449), (118, 31485), (119, 31491), (120, 31503), (134, 31605),

Gene: HotPotato\_34 Start: 24923, Stop: 25843, Start Num: 18

Candidate Starts for HotPotato\_34:

(Start: 18 @24923 has 60 MA's), (37, 25079), (42, 25097), (45, 25109), (64, 25256), (65, 25265), (70, 25304), (78, 25373), (79, 25379), (84, 25412), (90, 25454), (93, 25466), (122, 25685), (125, 25709), (127, 25724), (129, 25730), (138, 25811), (139, 25814),

Gene: Howe\_36 Start: 30765, Stop: 31682, Start Num: 18

Candidate Starts for Howe\_36:

(Start: 17 @30759 has 15 MA's), (Start: 18 @30765 has 60 MA's), (45, 30945), (47, 30954), (49, 30960), (68, 31131), (71, 31146), (76, 31203), (78, 31209), (79, 31215), (82, 31230), (95, 31329), (96, 31335), (99, 31347), (109, 31422), (112, 31446), (113, 31449), (118, 31485), (119, 31491), (120, 31503), (134, 31605),

Gene: HufflyPuff\_54 Start: 38537, Stop: 39418, Start Num: 19

Candidate Starts for HufflyPuff\_54:

(Start: 19 @38537 has 123 MA's), (Start: 21 @38549 has 1 MA's), (Start: 27 @38579 has 1 MA's), (32, 38636), (51, 38717), (52, 38741), (53, 38762), (55, 38774), (57, 38783), (62, 38822), (63, 38825), (66, 38852), (69, 38879), (72, 38891), (76, 38945), (83, 38981), (89, 39032), (96, 39080), (110, 39188), (116, 39227), (123, 39269), (128, 39308), (140, 39404), (141, 39410),

Gene: IHOP\_50 Start: 37929, Stop: 38810, Start Num: 19

Candidate Starts for IHOP\_50:

(Start: 19 @37929 has 123 MA's), (Start: 21 @37941 has 1 MA's), (Start: 27 @37971 has 1 MA's), (32, 38028), (51, 38109), (52, 38133), (53, 38154), (55, 38166), (57, 38175), (62, 38214), (63, 38217), (66, 38244), (69, 38271), (72, 38283), (76, 38337), (83, 38373), (89, 38424), (96, 38472), (110, 38580), (116, 38619), (123, 38661), (128, 38700), (140, 38796), (141, 38802),

Gene: Icee\_52 Start: 37531, Stop: 38412, Start Num: 19

Candidate Starts for Icee\_52:

(Start: 19 @37531 has 123 MA's), (Start: 21 @37543 has 1 MA's), (Start: 27 @37573 has 1 MA's), (32, 37630), (51, 37711), (52, 37735), (53, 37756), (55, 37768), (57, 37777), (62, 37816), (63, 37819), (66, 37846), (69, 37873), (72, 37885), (76, 37939), (83, 37975), (89, 38026), (96, 38074), (110, 38182), (116, 38221), (123, 38263), (128, 38302), (140, 38398), (141, 38404),

Gene: Ichiang\_34 Start: 26018, Stop: 26938, Start Num: 18

Candidate Starts for Ichiang\_34:

(Start: 13 @25976 has 1 MA's), (Start: 18 @26018 has 60 MA's), (37, 26174), (42, 26192), (45, 26204), (50, 26228), (64, 26351), (65, 26360), (70, 26399), (78, 26468), (79, 26474), (84, 26507), (87, 26531), (90, 26549), (93, 26561), (96, 26594), (97, 26600), (99, 26606), (122, 26780), (125, 26804), (127, 26819), (129, 26825), (138, 26906), (139, 26909),

Gene: Inca\_49 Start: 36454, Stop: 37335, Start Num: 19

Candidate Starts for Inca\_49:

(Start: 19 @36454 has 123 MA's), (Start: 21 @36466 has 1 MA's), (Start: 27 @36496 has 1 MA's), (32, 36553), (51, 36634), (52, 36658), (53, 36679), (55, 36691), (57, 36700), (62, 36739), (63, 36742), (66, 36769), (69, 36796), (72, 36808), (76, 36862), (83, 36898), (89, 36949), (96, 36997), (110, 37105), (116, 37144), (123, 37186), (128, 37225), (140, 37321), (141, 37327),

Gene: Invectra\_37 Start: 28866, Stop: 29783, Start Num: 18

Candidate Starts for Invectra\_37:

(Start: 17 @28860 has 15 MA's), (Start: 18 @28866 has 60 MA's), (47, 29055), (49, 29061), (59, 29163), (63, 29187), (71, 29247), (76, 29304), (78, 29310), (79, 29316), (95, 29430), (96, 29436), (99, 29448), (109, 29523), (112, 29547), (113, 29550), (118, 29586), (119, 29592), (123, 29625), (134, 29706),

Gene: IsHungry\_32 Start: 25028, Stop: 25948, Start Num: 18

Candidate Starts for IsHungry\_32:

(4, 24872), (5, 24896), (10, 24923), (11, 24962), (Start: 18 @25028 has 60 MA's), (22, 25052), (31, 25142), (37, 25184), (42, 25202), (45, 25214), (52, 25271), (64, 25361), (67, 25394), (70, 25409), (73, 25454), (78, 25478), (79, 25484), (84, 25517), (109, 25694), (113, 25721), (122, 25790), (125, 25814), (139, 25919),

Gene: Isolde\_36 Start: 24341, Stop: 25258, Start Num: 18

Candidate Starts for Isolde\_36:

(5, 24212), (8, 24218), (Start: 18 @24341 has 60 MA's), (41, 24512), (45, 24524), (64, 24671), (70, 24719), (73, 24764), (78, 24788), (79, 24794), (84, 24827), (90, 24869), (92, 24878), (99, 24926), (109, 25004), (113, 25031), (127, 25139), (139, 25229),

Gene: Jablanski\_34 Start: 28854, Stop: 29789, Start Num: 17

Candidate Starts for Jablanski\_34:

(12, 28800), (Start: 17 @28854 has 15 MA's), (34, 28986), (52, 29103), (59, 29163), (60, 29166), (63, 29187), (74, 29298), (78, 29310), (90, 29391), (98, 29445), (100, 29451), (103, 29469), (109, 29529), (112, 29553), (113, 29556), (118, 29592), (119, 29598), (131, 29676), (136, 29736),

Gene: JeTaime\_53 Start: 38357, Stop: 39238, Start Num: 19

Candidate Starts for JeTaime\_53:

(Start: 19 @38357 has 123 MA's), (Start: 21 @38369 has 1 MA's), (Start: 27 @38399 has 1 MA's), (32, 38456), (51, 38537), (52, 38561), (53, 38582), (55, 38594), (57, 38603), (62, 38642), (63, 38645), (66, 38672), (69, 38699), (72, 38711), (76, 38765), (83, 38801), (89, 38852), (96, 38900), (110, 39008),



(116, 39047), (123, 39089), (128, 39128), (140, 39224), (141, 39230),

Gene: JellyBread\_32 Start: 23160, Stop: 24080, Start Num: 18

Candidate Starts for JellyBread\_32:

(Start: 18 @23160 has 60 MA's), (26, 23217), (37, 23316), (42, 23334), (45, 23346), (64, 23493), (70, 23541), (73, 23586), (75, 23601), (78, 23610), (79, 23616), (82, 23631), (84, 23649), (90, 23691), (92, 23700), (97, 23742), (109, 23826), (113, 23853), (125, 23946), (127, 23961), (139, 24051),

Gene: Judy\_35 Start: 24877, Stop: 25797, Start Num: 18

Candidate Starts for Judy\_35:

(Start: 18 @24877 has 60 MA's), (37, 25033), (42, 25051), (45, 25063), (64, 25210), (65, 25219), (70, 25258), (78, 25327), (79, 25333), (84, 25366), (90, 25408), (97, 25459), (122, 25639), (125, 25663), (127, 25678), (129, 25684), (138, 25765), (139, 25768),

Gene: Julie\_35 Start: 26941, Stop: 27861, Start Num: 18

Candidate Starts for Julie\_35:

(5, 26809), (8, 26815), (10, 26836), (11, 26875), (Start: 18 @26941 has 60 MA's), (22, 26965), (31, 27055), (37, 27097), (42, 27115), (45, 27127), (64, 27274), (70, 27322), (73, 27367), (78, 27391), (79, 27397), (84, 27430), (90, 27472), (109, 27607), (113, 27634), (122, 27703), (125, 27727), (139, 27832),

Gene: Kanye\_48 Start: 37217, Stop: 38098, Start Num: 19

Candidate Starts for Kanye\_48:

(Start: 19 @37217 has 123 MA's), (Start: 21 @37229 has 1 MA's), (Start: 27 @37259 has 1 MA's), (32, 37316), (51, 37397), (52, 37421), (53, 37442), (55, 37454), (57, 37463), (62, 37502), (63, 37505), (66, 37532), (69, 37559), (72, 37571), (76, 37625), (83, 37661), (89, 37712), (96, 37760), (110, 37868), (116, 37907), (123, 37949), (128, 37988), (140, 38084), (141, 38090),

Gene: Karkharias\_34 Start: 24280, Stop: 25200, Start Num: 18

Candidate Starts for Karkharias\_34:

(Start: 13 @24238 has 1 MA's), (Start: 18 @24280 has 60 MA's), (37, 24436), (42, 24454), (45, 24466), (64, 24613), (65, 24622), (70, 24661), (78, 24730), (79, 24736), (84, 24769), (90, 24811), (93, 24823), (122, 25042), (125, 25066), (127, 25081), (129, 25087), (138, 25168), (139, 25171),

Gene: KayMoney\_35 Start: 24398, Stop: 25318, Start Num: 18

Candidate Starts for KayMoney\_35:

(Start: 18 @24398 has 60 MA's), (37, 24554), (42, 24572), (45, 24584), (64, 24731), (65, 24740), (70, 24779), (78, 24848), (79, 24854), (84, 24887), (90, 24929), (97, 24980), (122, 25160), (125, 25184), (127, 25199), (129, 25205), (138, 25286), (139, 25289),

Gene: Kihatsu\_37 Start: 26637, Stop: 27557, Start Num: 18

Candidate Starts for Kihatsu\_37:

(Start: 18 @26637 has 60 MA's), (37, 26793), (42, 26811), (45, 26823), (64, 26970), (65, 26979), (70, 27018), (75, 27078), (78, 27087), (79, 27093), (84, 27126), (90, 27168), (93, 27180), (96, 27213), (97, 27219), (99, 27225), (109, 27303), (122, 27399), (129, 27444), (138, 27525), (139, 27528),

Gene: Kiko\_37 Start: 28964, Stop: 29881, Start Num: 18

Candidate Starts for Kiko\_37:

(Start: 17 @28958 has 15 MA's), (Start: 18 @28964 has 60 MA's), (46, 29147), (47, 29153), (49, 29159), (71, 29345), (78, 29408), (79, 29414), (82, 29429), (95, 29528), (96, 29534), (99, 29546), (109, 29621), (112, 29645), (113, 29648), (122, 29720), (123, 29723), (127, 29759),

Gene: Kimchi\_55 Start: 37866, Stop: 38747, Start Num: 19

Candidate Starts for Kimchi\_55:

(Start: 19 @37866 has 123 MA's), (Start: 21 @37878 has 1 MA's), (Start: 27 @37908 has 1 MA's), (32, 37965), (51, 38046), (52, 38070), (53, 38091), (55, 38103), (57, 38112), (62, 38151), (63, 38154), (66, 38181), (69, 38208), (72, 38220), (76, 38274), (83, 38310), (89, 38361), (96, 38409), (110, 38517), (116, 38556), (123, 38598), (128, 38637), (140, 38733), (141, 38739),

Gene: Kostya\_53 Start: 38070, Stop: 38909, Start Num: 27

Candidate Starts for Kostya\_53:

(Start: 19 @38028 has 123 MA's), (Start: 21 @38040 has 1 MA's), (Start: 27 @38070 has 1 MA's), (32, 38127), (51, 38208), (52, 38232), (53, 38253), (55, 38265), (57, 38274), (62, 38313), (63, 38316), (66, 38343), (69, 38370), (72, 38382), (76, 38436), (83, 38472), (89, 38523), (96, 38571), (110, 38679), (116, 38718), (123, 38760), (128, 38799), (140, 38895), (141, 38901),

Gene: Kromp\_36 Start: 29237, Stop: 28317, Start Num: 16

Candidate Starts for Kromp\_36:

(Start: 16 @29237 has 1 MA's), (20, 29210), (30, 29132), (43, 29051), (78, 28787), (84, 28748), (88, 28712), (106, 28589), (128, 28427), (130, 28421), (132, 28397),

Gene: Lawnathon\_36 Start: 24435, Stop: 25352, Start Num: 18

Candidate Starts for Lawnathon\_36:

(5, 24306), (8, 24312), (Start: 18 @24435 has 60 MA's), (37, 24591), (41, 24606), (45, 24618), (64, 24765), (65, 24774), (70, 24813), (73, 24858), (78, 24882), (79, 24888), (84, 24921), (90, 24963), (92, 24972), (97, 25014), (109, 25098), (127, 25233),

Gene: Lenoxika\_36 Start: 26286, Stop: 27206, Start Num: 18

Candidate Starts for Lenoxika\_36:

(Start: 18 @26286 has 60 MA's), (37, 26442), (42, 26460), (45, 26472), (64, 26619), (65, 26628), (70, 26667), (78, 26736), (79, 26742), (84, 26775), (90, 26817), (93, 26829), (97, 26868), (122, 27048), (125, 27072), (127, 27087), (129, 27093), (138, 27174), (139, 27177),

Gene: Lilac\_55 Start: 37492, Stop: 38373, Start Num: 19

Candidate Starts for Lilac\_55:

(Start: 19 @37492 has 123 MA's), (Start: 21 @37504 has 1 MA's), (Start: 27 @37534 has 1 MA's), (32, 37591), (51, 37672), (52, 37696), (53, 37717), (55, 37729), (57, 37738), (62, 37777), (63, 37780), (66, 37807), (69, 37834), (72, 37846), (76, 37900), (83, 37936), (89, 37987), (96, 38035), (110, 38143), (116, 38182), (123, 38224), (128, 38263), (140, 38359), (141, 38365),

Gene: Lilas\_37 Start: 31522, Stop: 32445, Start Num: 17

Candidate Starts for Lilas\_37:

(Start: 17 @31522 has 15 MA's), (Start: 18 @31528 has 60 MA's), (Start: 23 @31552 has 1 MA's), (34, 31648), (49, 31723), (54, 31795), (62, 31846), (71, 31909), (75, 31963), (78, 31972), (82, 31993), (83, 32002), (86, 32032), (96, 32098), (107, 32164), (109, 32185), (113, 32212), (118, 32248),

Gene: Lilizi\_52 Start: 37166, Stop: 38047, Start Num: 19

Candidate Starts for Lilizi\_52:

(Start: 19 @37166 has 123 MA's), (Start: 21 @37178 has 1 MA's), (Start: 27 @37208 has 1 MA's), (32, 37265), (51, 37346), (52, 37370), (53, 37391), (55, 37403), (57, 37412), (62, 37451), (63, 37454), (66, 37481), (69, 37508), (72, 37520), (76, 37574), (83, 37610), (89, 37661), (96, 37709), (110, 37817), (116, 37856), (123, 37898), (128, 37937), (140, 38033), (141, 38039),

Gene: Lilpickle\_52 Start: 37383, Stop: 38264, Start Num: 19

Candidate Starts for Lilpickle\_52:

(Start: 19 @37383 has 123 MA's), (Start: 21 @37395 has 1 MA's), (Start: 27 @37425 has 1 MA's), (32, 37482), (51, 37563), (52, 37587), (53, 37608), (55, 37620), (57, 37629), (62, 37668), (63, 37671), (66, 37698), (69, 37725), (72, 37737), (76, 37791), (83, 37827), (89, 37878), (96, 37926), (110, 38034), (116, 38073), (123, 38115), (128, 38154), (140, 38250), (141, 38256),

Gene: LonelyBoi\_37 Start: 31310, Stop: 32227, Start Num: 18

Candidate Starts for LonelyBoi\_37:

(Start: 17 @31304 has 15 MA's), (Start: 18 @31310 has 60 MA's), (Start: 23 @31334 has 1 MA's), (34, 31430), (49, 31505), (59, 31607), (62, 31628), (71, 31691), (75, 31745), (78, 31754), (82, 31775), (83, 31784), (86, 31814), (96, 31880), (101, 31904), (107, 31946), (109, 31967), (113, 31994), (118, 32030), (119, 32036),

Gene: MISSy\_52 Start: 37590, Stop: 38471, Start Num: 19

Candidate Starts for MISSy\_52:

(Start: 19 @37590 has 123 MA's), (Start: 21 @37602 has 1 MA's), (Start: 27 @37632 has 1 MA's), (32, 37689), (51, 37770), (52, 37794), (53, 37815), (55, 37827), (57, 37836), (62, 37875), (63, 37878), (66, 37905), (69, 37932), (72, 37944), (76, 37998), (83, 38034), (89, 38085), (96, 38133), (110, 38241), (116, 38280), (123, 38322), (128, 38361), (140, 38457), (141, 38463),

Gene: MPhalcon\_52 Start: 37583, Stop: 38464, Start Num: 19

Candidate Starts for MPhalcon\_52:

(Start: 19 @37583 has 123 MA's), (Start: 21 @37595 has 1 MA's), (Start: 27 @37625 has 1 MA's), (32, 37682), (51, 37763), (52, 37787), (53, 37808), (55, 37820), (57, 37829), (62, 37868), (63, 37871), (66, 37898), (69, 37925), (72, 37937), (76, 37991), (83, 38027), (89, 38078), (96, 38126), (110, 38234), (116, 38273), (123, 38315), (128, 38354), (140, 38450), (141, 38456),

Gene: MUWow\_35 Start: 24597, Stop: 25514, Start Num: 18

Candidate Starts for MUWow\_35:

(Start: 13 @24558 has 1 MA's), (Start: 18 @24597 has 60 MA's), (37, 24753), (41, 24768), (64, 24927), (73, 25020), (75, 25035), (78, 25044), (79, 25050), (82, 25065), (84, 25083), (90, 25125), (92, 25134), (99, 25182), (109, 25260), (113, 25287), (127, 25395), (139, 25485),

Gene: MadamMonkfish\_52 Start: 37107, Stop: 37988, Start Num: 19

Candidate Starts for MadamMonkfish\_52:

(Start: 19 @37107 has 123 MA's), (Start: 21 @37119 has 1 MA's), (Start: 27 @37149 has 1 MA's), (32, 37206), (51, 37287), (52, 37311), (53, 37332), (55, 37344), (57, 37353), (62, 37392), (63, 37395), (66, 37422), (69, 37449), (72, 37461), (76, 37515), (83, 37551), (89, 37602), (96, 37650), (110, 37758), (116, 37797), (123, 37839), (128, 37878), (140, 37974), (141, 37980),

Gene: Maja\_28 Start: 23177, Stop: 24097, Start Num: 18

Candidate Starts for Maja\_28:

(Start: 18 @23177 has 60 MA's), (37, 23333), (42, 23351), (45, 23363), (47, 23372), (52, 23420), (64, 23510), (70, 23558), (78, 23627), (79, 23633), (84, 23666), (90, 23708), (93, 23720), (97, 23759), (109, 23843), (113, 23870), (129, 23984), (139, 24068),

Gene: Malibo\_38 Start: 29560, Stop: 30477, Start Num: 18

Candidate Starts for Malibo\_38:

(Start: 17 @29554 has 15 MA's), (Start: 18 @29560 has 60 MA's), (34, 29680), (47, 29749), (49, 29755), (54, 29827), (59, 29857), (62, 29878), (71, 29941), (78, 30004), (82, 30025), (83, 30034), (86, 30064), (91, 30088), (109, 30217), (113, 30244), (118, 30280),

Gene: Manda\_52 Start: 38388, Stop: 39269, Start Num: 19

Candidate Starts for Manda\_52:

(Start: 19 @38388 has 123 MA's), (Start: 21 @38400 has 1 MA's), (Start: 27 @38430 has 1 MA's), (32, 38487), (51, 38568), (52, 38592), (53, 38613), (55, 38625), (57, 38634), (62, 38673), (63, 38676), (66, 38703), (69, 38730), (72, 38742), (76, 38796), (83, 38832), (89, 38883), (96, 38931), (110, 39039), (116, 39078), (123, 39120), (128, 39159), (140, 39255), (141, 39261),

Gene: Marshmallow\_51 Start: 38363, Stop: 39244, Start Num: 19

Candidate Starts for Marshmallow\_51:

(Start: 19 @38363 has 123 MA's), (Start: 21 @38375 has 1 MA's), (Start: 27 @38405 has 1 MA's), (32, 38462), (51, 38543), (52, 38567), (53, 38588), (55, 38600), (57, 38609), (62, 38648), (63, 38651), (66, 38678), (69, 38705), (72, 38717), (76, 38771), (83, 38807), (89, 38858), (96, 38906), (110, 39014), (116, 39053), (123, 39095), (128, 39134), (140, 39230), (141, 39236),

Gene: Marteena\_35 Start: 28837, Stop: 29754, Start Num: 18

Candidate Starts for Marteena\_35:

(Start: 17 @28831 has 15 MA's), (Start: 18 @28837 has 60 MA's), (Start: 23 @28861 has 1 MA's), (34, 28957), (47, 29026), (49, 29032), (62, 29155), (71, 29218), (75, 29272), (78, 29281), (82, 29302), (83, 29311), (86, 29341), (91, 29365), (107, 29473), (109, 29494), (113, 29521),

Gene: MaterMagnus\_36 Start: 24582, Stop: 25499, Start Num: 18

Candidate Starts for MaterMagnus\_36:

(5, 24453), (6, 24456), (8, 24459), (Start: 18 @24582 has 60 MA's), (37, 24738), (41, 24753), (45, 24765), (64, 24912), (65, 24921), (70, 24960), (73, 25005), (78, 25029), (79, 25035), (84, 25068), (90, 25110), (92, 25119), (97, 25161), (109, 25245), (125, 25365), (127, 25380),

Gene: Maxxinista\_55 Start: 37462, Stop: 38343, Start Num: 19

Candidate Starts for Maxxinista\_55:

(Start: 19 @37462 has 123 MA's), (Start: 21 @37474 has 1 MA's), (Start: 27 @37504 has 1 MA's), (32, 37561), (51, 37642), (52, 37666), (53, 37687), (55, 37699), (57, 37708), (62, 37747), (63, 37750), (66, 37777), (69, 37804), (72, 37816), (76, 37870), (83, 37906), (89, 37957), (96, 38005), (110, 38113), (116, 38152), (123, 38194), (128, 38233), (140, 38329), (141, 38335),

Gene: Mcklovin\_34 Start: 32550, Stop: 33467, Start Num: 18

Candidate Starts for Mcklovin\_34:

(Start: 17 @32544 has 15 MA's), (Start: 18 @32550 has 60 MA's), (47, 32739), (49, 32745), (59, 32847), (63, 32871), (71, 32931), (76, 32988), (78, 32994), (79, 33000), (95, 33114), (96, 33120), (99, 33132), (109, 33207), (112, 33231), (113, 33234), (118, 33270), (119, 33276), (123, 33309), (127, 33345), (134, 33390),

Gene: Melba\_35 Start: 28919, Stop: 29845, Start Num: 17

Candidate Starts for Melba\_35:

(Start: 17 @28919 has 15 MA's), (Start: 18 @28925 has 60 MA's), (33, 29042), (34, 29045), (46, 29108), (47, 29114), (49, 29120), (71, 29306), (75, 29360), (76, 29363), (78, 29369), (82, 29390), (95, 29489), (96, 29495), (99, 29507), (109, 29582), (113, 29609), (118, 29645), (127, 29720),

Gene: MichaelScott\_36 Start: 28688, Stop: 29605, Start Num: 18

Candidate Starts for MichaelScott\_36:

(Start: 17 @28682 has 15 MA's), (Start: 18 @28688 has 60 MA's), (47, 28877), (49, 28883), (59, 28985), (63, 29009), (71, 29069), (76, 29126), (78, 29132), (79, 29138), (95, 29252), (96, 29258), (99, 29270), (109, 29345), (112, 29369), (113, 29372), (118, 29408), (119, 29414), (123, 29447), (134, 29528),

Gene: MidnightRain\_38 Start: 25380, Stop: 26300, Start Num: 18

Candidate Starts for MidnightRain\_38:

(5, 25251), (8, 25257), (Start: 18 @25380 has 60 MA's), (31, 25494), (42, 25554), (45, 25566), (64, 25713), (70, 25761), (73, 25806), (78, 25830), (79, 25836), (81, 25845), (84, 25869), (90, 25911), (93, 25923), (97, 25962), (101, 25980), (109, 26046), (125, 26166), (127, 26181),

Gene: Mindy\_51 Start: 36971, Stop: 37852, Start Num: 19

Candidate Starts for Mindy\_51:

(Start: 19 @36971 has 123 MA's), (Start: 21 @36983 has 1 MA's), (Start: 27 @37013 has 1 MA's), (32, 37070), (51, 37151), (52, 37175), (53, 37196), (55, 37208), (57, 37217), (62, 37256), (63, 37259), (66, 37286), (69, 37313), (72, 37325), (76, 37379), (83, 37415), (89, 37466), (96, 37514), (110, 37622), (116, 37661), (123, 37703), (128, 37742), (140, 37838), (141, 37844),

Gene: Miniwave\_49 Start: 37424, Stop: 38305, Start Num: 19

Candidate Starts for Miniwave\_49:

(Start: 19 @37424 has 123 MA's), (Start: 21 @37436 has 1 MA's), (Start: 27 @37466 has 1 MA's), (32, 37523), (51, 37604), (52, 37628), (53, 37649), (55, 37661), (57, 37670), (62, 37709), (63, 37712), (66, 37739), (69, 37766), (72, 37778), (76, 37832), (83, 37868), (89, 37919), (96, 37967), (110, 38075), (116, 38114), (123, 38156), (128, 38195), (140, 38291), (141, 38297),

Gene: Misfit\_54 Start: 38602, Stop: 39483, Start Num: 19

Candidate Starts for Misfit\_54:

(Start: 19 @38602 has 123 MA's), (Start: 21 @38614 has 1 MA's), (Start: 27 @38644 has 1 MA's), (32, 38701), (51, 38782), (52, 38806), (53, 38827), (55, 38839), (57, 38848), (62, 38887), (63, 38890), (66, 38917), (69, 38944), (72, 38956), (76, 39010), (83, 39046), (89, 39097), (96, 39145), (110, 39253), (116, 39292), (123, 39334), (128, 39373), (140, 39469), (141, 39475),

Gene: Moldemort\_55 Start: 37980, Stop: 38861, Start Num: 19

Candidate Starts for Moldemort\_55:

(Start: 19 @37980 has 123 MA's), (Start: 21 @37992 has 1 MA's), (Start: 27 @38022 has 1 MA's), (32, 38079), (51, 38160), (52, 38184), (53, 38205), (55, 38217), (57, 38226), (62, 38265), (63, 38268), (66, 38295), (69, 38322), (72, 38334), (76, 38388), (83, 38424), (89, 38475), (96, 38523), (110, 38631), (116, 38670), (123, 38712), (128, 38751), (140, 38847), (141, 38853),

Gene: Moonflower\_36 Start: 30479, Stop: 31372, Start Num: 23

Candidate Starts for Moonflower\_36:

(Start: 17 @30449 has 15 MA's), (Start: 18 @30455 has 60 MA's), (Start: 23 @30479 has 1 MA's), (25, 30497), (33, 30572), (34, 30575), (47, 30644), (49, 30650), (63, 30776), (71, 30836), (75, 30890), (78, 30899), (82, 30920), (83, 30929), (86, 30959), (107, 31091), (109, 31112), (112, 31136), (113, 31139), (118, 31175), (121, 31196), (126, 31241),

Gene: Mosby\_48 Start: 36885, Stop: 37766, Start Num: 19

Candidate Starts for Mosby\_48:

(Start: 19 @36885 has 123 MA's), (Start: 21 @36897 has 1 MA's), (Start: 27 @36927 has 1 MA's), (32, 36984), (51, 37065), (52, 37089), (53, 37110), (55, 37122), (57, 37131), (62, 37170), (63, 37173), (66, 37200), (69, 37227), (72, 37239), (76, 37293), (83, 37329), (89, 37380), (96, 37428), (110, 37536), (116, 37575), (123, 37617), (128, 37656), (140, 37752), (141, 37758),

Gene: Murica\_54 Start: 38537, Stop: 39418, Start Num: 19

Candidate Starts for Murica\_54:

(Start: 19 @38537 has 123 MA's), (Start: 21 @38549 has 1 MA's), (Start: 27 @38579 has 1 MA's), (32, 38636), (51, 38717), (52, 38741), (53, 38762), (55, 38774), (57, 38783), (62, 38822), (63, 38825), (66, 38852), (69, 38879), (72, 38891), (76, 38945), (83, 38981), (89, 39032), (96, 39080), (110, 39188), (116, 39227), (123, 39269), (128, 39308), (140, 39404), (141, 39410),

Gene: Murphy\_54 Start: 37974, Stop: 38855, Start Num: 19

Candidate Starts for Murphy\_54:

(Start: 19 @37974 has 123 MA's), (Start: 21 @37986 has 1 MA's), (Start: 27 @38016 has 1 MA's), (32, 38073), (51, 38154), (52, 38178), (53, 38199), (55, 38211), (57, 38220), (62, 38259), (63, 38262), (66, 38289), (69, 38316), (72, 38328), (76, 38382), (83, 38418), (89, 38469), (96, 38517), (110, 38625), (116, 38664), (123, 38706), (128, 38745), (140, 38841), (141, 38847),

Gene: Mutzi\_37 Start: 33648, Stop: 34565, Start Num: 18

Candidate Starts for Mutzi\_37:

(Start: 17 @33642 has 15 MA's), (Start: 18 @33648 has 60 MA's), (34, 33768), (47, 33837), (49, 33843), (50, 33852), (59, 33945), (74, 34080), (75, 34083), (76, 34086), (78, 34092), (82, 34113), (91, 34176), (94, 34209), (95, 34212), (99, 34230), (107, 34284), (109, 34305), (112, 34329), (113, 34332), (118, 34368), (119, 34374), (121, 34389), (127, 34443), (139, 34536), (142, 34557),

Gene: Myrale\_52 Start: 38228, Stop: 39109, Start Num: 19

Candidate Starts for Myrale\_52:

(Start: 19 @38228 has 123 MA's), (Start: 21 @38240 has 1 MA's), (Start: 27 @38270 has 1 MA's), (32, 38327), (51, 38408), (52, 38432), (53, 38453), (55, 38465), (57, 38474), (62, 38513), (63, 38516), (66, 38543), (69, 38570), (72, 38582), (76, 38636), (83, 38672), (89, 38723), (96, 38771), (110, 38879), (116, 38918), (123, 38960), (128, 38999), (140, 39095), (141, 39101),

Gene: Nala\_53 Start: 38095, Stop: 38976, Start Num: 19

Candidate Starts for Nala\_53:

(Start: 19 @38095 has 123 MA's), (Start: 21 @38107 has 1 MA's), (Start: 27 @38137 has 1 MA's), (32, 38194), (51, 38275), (52, 38299), (53, 38320), (55, 38332), (57, 38341), (62, 38380), (63, 38383), (66, 38410), (69, 38437), (72, 38449), (76, 38503), (83, 38539), (89, 38590), (96, 38638), (110, 38746), (116, 38785), (123, 38827), (128, 38866), (140, 38962), (141, 38968),

Gene: Nandita\_36 Start: 26292, Stop: 27212, Start Num: 18

Candidate Starts for Nandita\_36:

(Start: 13 @26250 has 1 MA's), (Start: 18 @26292 has 60 MA's), (37, 26448), (42, 26466), (45, 26478), (64, 26625), (70, 26673), (75, 26733), (78, 26742), (79, 26748), (84, 26781), (87, 26805), (90, 26823), (93, 26835), (97, 26874), (122, 27054), (125, 27078), (127, 27093), (129, 27099), (138, 27180), (139, 27183),

Gene: NelitzaMV\_49 Start: 37172, Stop: 38053, Start Num: 19

Candidate Starts for NelitzaMV\_49:

(Start: 19 @37172 has 123 MA's), (Start: 21 @37184 has 1 MA's), (Start: 27 @37214 has 1 MA's), (32, 37271), (51, 37352), (52, 37376), (53, 37397), (55, 37409), (57, 37418), (62, 37457), (63, 37460), (66, 37487), (69, 37514), (72, 37526), (76, 37580), (83, 37616), (89, 37667), (96, 37715), (110, 37823), (116, 37862), (123, 37904), (128, 37943), (140, 38039), (141, 38045),

Gene: Nimrod\_55 Start: 38795, Stop: 39676, Start Num: 19

Candidate Starts for Nimrod\_55:

(Start: 19 @38795 has 123 MA's), (Start: 21 @38807 has 1 MA's), (Start: 27 @38837 has 1 MA's), (32, 38894), (51, 38975), (52, 38999), (53, 39020), (55, 39032), (57, 39041), (62, 39080), (63, 39083), (66, 39110), (69, 39137), (72, 39149), (76, 39203), (83, 39239), (89, 39290), (96, 39338), (110, 39446), (116, 39485), (123, 39527), (128, 39566), (140, 39662), (141, 39668),

Gene: NoSleep\_54 Start: 37734, Stop: 38615, Start Num: 19

Candidate Starts for NoSleep\_54:

(Start: 19 @37734 has 123 MA's), (Start: 21 @37746 has 1 MA's), (Start: 27 @37776 has 1 MA's), (32, 37833), (51, 37914), (52, 37938), (53, 37959), (55, 37971), (57, 37980), (62, 38019), (63, 38022), (66,

38049), (69, 38076), (72, 38088), (76, 38142), (83, 38178), (89, 38229), (96, 38277), (110, 38385), (116, 38424), (123, 38466), (128, 38505), (140, 38601), (141, 38607),

Gene: Oregano\_37 Start: 27817, Stop: 28734, Start Num: 18

Candidate Starts for Oregano\_37:

(Start: 17 @27811 has 15 MA's), (Start: 18 @27817 has 60 MA's), (47, 28006), (49, 28012), (59, 28114), (63, 28138), (71, 28198), (76, 28255), (78, 28261), (79, 28267), (95, 28381), (96, 28387), (99, 28399), (109, 28474), (112, 28498), (113, 28501), (118, 28537), (119, 28543), (123, 28576),

Gene: OrionPax\_51 Start: 37179, Stop: 38060, Start Num: 19

Candidate Starts for OrionPax\_51:

(Start: 19 @37179 has 123 MA's), (Start: 21 @37191 has 1 MA's), (Start: 27 @37221 has 1 MA's), (32, 37278), (51, 37359), (52, 37383), (53, 37404), (55, 37416), (57, 37425), (62, 37464), (63, 37467), (66, 37494), (69, 37521), (72, 37533), (76, 37587), (83, 37623), (89, 37674), (96, 37722), (110, 37830), (116, 37869), (123, 37911), (128, 37950), (140, 38046), (141, 38052),

Gene: Palpatine\_55 Start: 38567, Stop: 39448, Start Num: 19

Candidate Starts for Palpatine\_55:

(Start: 19 @38567 has 123 MA's), (Start: 21 @38579 has 1 MA's), (Start: 27 @38609 has 1 MA's), (32, 38666), (51, 38747), (52, 38771), (53, 38792), (55, 38804), (57, 38813), (62, 38852), (63, 38855), (66, 38882), (69, 38909), (72, 38921), (76, 38975), (83, 39011), (89, 39062), (96, 39110), (110, 39218), (116, 39257), (123, 39299), (128, 39338), (140, 39434), (141, 39440),

Gene: Paperbeatsrock\_51 Start: 38102, Stop: 38983, Start Num: 19

Candidate Starts for Paperbeatsrock\_51:

(Start: 19 @38102 has 123 MA's), (Start: 21 @38114 has 1 MA's), (Start: 27 @38144 has 1 MA's), (32, 38201), (51, 38282), (52, 38306), (53, 38327), (55, 38339), (57, 38348), (62, 38387), (63, 38390), (66, 38417), (69, 38444), (72, 38456), (76, 38510), (83, 38546), (89, 38597), (96, 38645), (110, 38753), (116, 38792), (123, 38834), (128, 38873), (140, 38969), (141, 38975),

Gene: Pat3\_50 Start: 36332, Stop: 37213, Start Num: 19

Candidate Starts for Pat3\_50:

(Start: 19 @36332 has 123 MA's), (Start: 21 @36344 has 1 MA's), (Start: 27 @36374 has 1 MA's), (32, 36431), (51, 36512), (52, 36536), (53, 36557), (55, 36569), (57, 36578), (62, 36617), (63, 36620), (66, 36647), (69, 36674), (72, 36686), (76, 36740), (83, 36776), (89, 36827), (96, 36875), (110, 36983), (116, 37022), (123, 37064), (128, 37103), (140, 37199), (141, 37205),

Gene: PeggyLeg03\_34 Start: 24890, Stop: 25810, Start Num: 18

Candidate Starts for PeggyLeg03\_34:

(Start: 18 @24890 has 60 MA's), (37, 25046), (42, 25064), (45, 25076), (64, 25223), (65, 25232), (70, 25271), (78, 25340), (79, 25346), (84, 25379), (90, 25421), (93, 25433), (122, 25652), (124, 25664), (125, 25676), (127, 25691), (129, 25697), (138, 25778), (139, 25781),

Gene: Petra64142\_57 Start: 39031, Stop: 39912, Start Num: 19

Candidate Starts for Petra64142\_57:

(Start: 19 @39031 has 123 MA's), (Start: 21 @39043 has 1 MA's), (Start: 27 @39073 has 1 MA's), (32, 39130), (51, 39211), (52, 39235), (53, 39256), (55, 39268), (57, 39277), (62, 39316), (63, 39319), (66, 39346), (69, 39373), (72, 39385), (76, 39439), (83, 39475), (89, 39526), (96, 39574), (110, 39682), (116, 39721), (123, 39763), (128, 39802), (140, 39898), (141, 39904),

Gene: Phaja\_50 Start: 37928, Stop: 38809, Start Num: 19

Candidate Starts for Phaja\_50:

(Start: 19 @37928 has 123 MA's), (Start: 21 @37940 has 1 MA's), (Start: 27 @37970 has 1 MA's), (32, 38027), (51, 38108), (52, 38132), (53, 38153), (55, 38165), (57, 38174), (62, 38213), (63, 38216), (66, 38243), (69, 38270), (72, 38282), (76, 38336), (83, 38372), (89, 38423), (96, 38471), (110, 38579), (116, 38618), (123, 38660), (128, 38699), (140, 38795), (141, 38801),

Gene: Pharsalus\_50 Start: 37902, Stop: 38783, Start Num: 19

Candidate Starts for Pharsalus\_50:

(Start: 19 @37902 has 123 MA's), (Start: 21 @37914 has 1 MA's), (Start: 27 @37944 has 1 MA's), (32, 38001), (51, 38082), (52, 38106), (53, 38127), (55, 38139), (57, 38148), (62, 38187), (63, 38190), (66, 38217), (69, 38244), (72, 38256), (76, 38310), (83, 38346), (89, 38397), (96, 38445), (110, 38553), (116, 38592), (123, 38634), (128, 38673), (140, 38769), (141, 38775),

Gene: PhatBacter\_55 Start: 38581, Stop: 39462, Start Num: 19

Candidate Starts for PhatBacter\_55:

(Start: 19 @38581 has 123 MA's), (Start: 21 @38593 has 1 MA's), (Start: 27 @38623 has 1 MA's), (32, 38680), (51, 38761), (52, 38785), (53, 38806), (55, 38818), (57, 38827), (62, 38866), (63, 38869), (66, 38896), (69, 38923), (72, 38935), (76, 38989), (83, 39025), (89, 39076), (96, 39124), (110, 39232), (116, 39271), (123, 39313), (128, 39352), (140, 39448), (141, 39454),

Gene: Phaux\_54 Start: 38579, Stop: 39460, Start Num: 19

Candidate Starts for Phaux\_54:

(Start: 19 @38579 has 123 MA's), (Start: 21 @38591 has 1 MA's), (Start: 27 @38621 has 1 MA's), (32, 38678), (51, 38759), (52, 38783), (53, 38804), (55, 38816), (57, 38825), (62, 38864), (63, 38867), (66, 38894), (69, 38921), (72, 38933), (76, 38987), (83, 39023), (89, 39074), (96, 39122), (110, 39230), (116, 39269), (123, 39311), (128, 39350), (140, 39446), (141, 39452),

Gene: PhriskyACE\_35 Start: 28658, Stop: 29575, Start Num: 18

Candidate Starts for PhriskyACE\_35:

(Start: 17 @28652 has 15 MA's), (Start: 18 @28658 has 60 MA's), (46, 28841), (47, 28847), (49, 28853), (71, 29039), (78, 29102), (79, 29108), (82, 29123), (95, 29222), (96, 29228), (99, 29240), (109, 29315), (112, 29339), (113, 29342), (118, 29378), (119, 29384), (120, 29396), (127, 29453), (134, 29498),

Gene: Phrux\_50 Start: 37172, Stop: 38053, Start Num: 19

Candidate Starts for Phrux\_50:

(Start: 19 @37172 has 123 MA's), (Start: 21 @37184 has 1 MA's), (Start: 27 @37214 has 1 MA's), (32, 37271), (51, 37352), (52, 37376), (53, 37397), (55, 37409), (57, 37418), (62, 37457), (63, 37460), (66, 37487), (69, 37514), (72, 37526), (76, 37580), (83, 37616), (89, 37667), (96, 37715), (110, 37823), (116, 37862), (123, 37904), (128, 37943), (140, 38039), (141, 38045),

Gene: Pipp\_33 Start: 27701, Stop: 28627, Start Num: 17

Candidate Starts for Pipp\_33:

(Start: 17 @27701 has 15 MA's), (Start: 18 @27707 has 60 MA's), (33, 27824), (34, 27827), (46, 27890), (47, 27896), (49, 27902), (59, 28004), (71, 28088), (75, 28142), (76, 28145), (78, 28151), (82, 28172), (95, 28271), (99, 28289), (109, 28364), (113, 28391), (118, 28427), (127, 28502),

Gene: Policronamos\_55 Start: 38579, Stop: 39460, Start Num: 19

Candidate Starts for Policronamos\_55:

(Start: 19 @38579 has 123 MA's), (Start: 21 @38591 has 1 MA's), (Start: 27 @38621 has 1 MA's), (32, 38678), (51, 38759), (52, 38783), (53, 38804), (55, 38816), (57, 38825), (62, 38864), (63, 38867), (66, 38894), (69, 38921), (72, 38933), (76, 38987), (83, 39023), (89, 39074), (96, 39122), (110, 39230), (116, 39269), (123, 39311), (128, 39350), (140, 39446), (141, 39452),



Gene: Pollux\_37 Start: 30910, Stop: 31827, Start Num: 18

Candidate Starts for Pollux\_37:

(Start: 17 @30904 has 15 MA's), (Start: 18 @30910 has 60 MA's), (Start: 23 @30934 has 1 MA's), (34, 31030), (47, 31099), (49, 31105), (62, 31228), (71, 31291), (75, 31345), (78, 31354), (82, 31375), (83, 31384), (86, 31414), (91, 31438), (107, 31546), (109, 31567), (113, 31594),

Gene: Popper\_34 Start: 26204, Stop: 27124, Start Num: 18

Candidate Starts for Popper\_34:

(Start: 18 @26204 has 60 MA's), (24, 26243), (37, 26360), (42, 26378), (45, 26390), (64, 26537), (70, 26585), (75, 26645), (78, 26654), (79, 26660), (84, 26693), (90, 26735), (93, 26747), (97, 26786), (122, 26966), (125, 26990), (127, 27005), (129, 27011), (138, 27092), (139, 27095),

Gene: Porky\_51 Start: 37298, Stop: 38179, Start Num: 19

Candidate Starts for Porky\_51:

(Start: 19 @37298 has 123 MA's), (Start: 21 @37310 has 1 MA's), (Start: 27 @37340 has 1 MA's), (32, 37397), (51, 37478), (52, 37502), (53, 37523), (55, 37535), (57, 37544), (62, 37583), (63, 37586), (66, 37613), (69, 37640), (72, 37652), (76, 37706), (83, 37742), (89, 37793), (96, 37841), (110, 37949), (116, 37988), (123, 38030), (128, 38069), (140, 38165), (141, 38171),

Gene: Pucara\_31 Start: 24120, Stop: 25040, Start Num: 18

Candidate Starts for Pucara\_31:

(Start: 18 @24120 has 60 MA's), (37, 24276), (42, 24294), (45, 24306), (64, 24453), (65, 24462), (70, 24501), (78, 24570), (79, 24576), (84, 24609), (90, 24651), (122, 24882), (125, 24906), (129, 24927), (138, 25008), (139, 25011),

Gene: Pumpkin\_54 Start: 38229, Stop: 39110, Start Num: 19

Candidate Starts for Pumpkin\_54:

(Start: 19 @38229 has 123 MA's), (Start: 21 @38241 has 1 MA's), (Start: 27 @38271 has 1 MA's), (32, 38328), (51, 38409), (52, 38433), (53, 38454), (55, 38466), (57, 38475), (62, 38514), (63, 38517), (66, 38544), (69, 38571), (72, 38583), (76, 38637), (83, 38673), (89, 38724), (96, 38772), (110, 38880), (116, 38919), (123, 38961), (128, 39000), (140, 39096), (141, 39102),

Gene: Pytheas\_34 Start: 28853, Stop: 29788, Start Num: 17

Candidate Starts for Pytheas\_34:

(12, 28799), (Start: 17 @28853 has 15 MA's), (34, 28985), (52, 29102), (59, 29162), (60, 29165), (63, 29186), (74, 29297), (78, 29309), (90, 29390), (98, 29444), (100, 29450), (103, 29468), (109, 29528), (112, 29552), (113, 29555), (118, 29591), (119, 29597), (131, 29675), (136, 29735),

Gene: Quallification\_53 Start: 38217, Stop: 39098, Start Num: 19

Candidate Starts for Quallification\_53:

(Start: 19 @38217 has 123 MA's), (Start: 21 @38229 has 1 MA's), (Start: 27 @38259 has 1 MA's), (32, 38316), (51, 38397), (52, 38421), (53, 38442), (55, 38454), (57, 38463), (62, 38502), (63, 38505), (66, 38532), (69, 38559), (72, 38571), (76, 38625), (83, 38661), (89, 38712), (96, 38760), (110, 38868), (116, 38907), (123, 38949), (128, 38988), (140, 39084), (141, 39090),

Gene: QuinnAvery\_38 Start: 27407, Stop: 28369, Start Num: 13

Candidate Starts for QuinnAvery\_38:

(Start: 13 @27407 has 1 MA's), (Start: 18 @27449 has 60 MA's), (37, 27605), (42, 27623), (45, 27635), (64, 27782), (65, 27791), (70, 27830), (74, 27887), (78, 27899), (79, 27905), (84, 27938), (87, 27962), (90, 27980), (93, 27992), (122, 28211), (125, 28235), (127, 28250), (129, 28256), (138, 28337), (139, 28340),

Gene: RadFad\_36 Start: 24572, Stop: 25492, Start Num: 18

Candidate Starts for RadFad\_36:

(5, 24443), (10, 24470), (Start: 18 @24572 has 60 MA's), (31, 24686), (42, 24746), (45, 24758), (52, 24815), (64, 24905), (70, 24953), (78, 25022), (79, 25028), (84, 25061), (87, 25085), (125, 25358), (127, 25373), (129, 25379),

Gene: Rakim\_54 Start: 37979, Stop: 38860, Start Num: 19

Candidate Starts for Rakim\_54:

(Start: 19 @37979 has 123 MA's), (Start: 21 @37991 has 1 MA's), (Start: 27 @38021 has 1 MA's), (32, 38078), (51, 38159), (52, 38183), (53, 38204), (55, 38216), (57, 38225), (62, 38264), (63, 38267), (66, 38294), (69, 38321), (72, 38333), (76, 38387), (83, 38423), (89, 38474), (96, 38522), (110, 38630), (116, 38669), (123, 38711), (128, 38750), (140, 38846), (141, 38852),

Gene: Raphaella\_36 Start: 24506, Stop: 25423, Start Num: 18

Candidate Starts for Raphaella\_36:

(5, 24377), (8, 24383), (Start: 18 @24506 has 60 MA's), (37, 24662), (41, 24677), (45, 24689), (64, 24836), (65, 24845), (70, 24884), (73, 24929), (78, 24953), (79, 24959), (84, 24992), (90, 25034), (92, 25043), (97, 25085), (109, 25169), (125, 25289), (127, 25304),

Gene: Richie\_36 Start: 24587, Stop: 25504, Start Num: 18

Candidate Starts for Richie\_36:

(5, 24458), (8, 24464), (Start: 18 @24587 has 60 MA's), (41, 24758), (45, 24770), (52, 24827), (64, 24917), (65, 24926), (70, 24965), (73, 25010), (78, 25034), (79, 25040), (84, 25073), (90, 25115), (92, 25124), (97, 25166), (109, 25250), (125, 25370), (127, 25385),

Gene: Rimmer\_53 Start: 37921, Stop: 38802, Start Num: 19

Candidate Starts for Rimmer\_53:

(Start: 19 @37921 has 123 MA's), (Start: 21 @37933 has 1 MA's), (Start: 27 @37963 has 1 MA's), (32, 38020), (51, 38101), (52, 38125), (53, 38146), (55, 38158), (57, 38167), (62, 38206), (63, 38209), (66, 38236), (69, 38263), (72, 38275), (76, 38329), (83, 38365), (89, 38416), (96, 38464), (110, 38572), (116, 38611), (123, 38653), (128, 38692), (140, 38788), (141, 38794),

Gene: RiverMonster\_53 Start: 37750, Stop: 38631, Start Num: 19

Candidate Starts for RiverMonster\_53:

(Start: 19 @37750 has 123 MA's), (Start: 21 @37762 has 1 MA's), (Start: 27 @37792 has 1 MA's), (32, 37849), (51, 37930), (52, 37954), (53, 37975), (55, 37987), (57, 37996), (62, 38035), (63, 38038), (66, 38065), (69, 38092), (72, 38104), (76, 38158), (83, 38194), (89, 38245), (96, 38293), (110, 38401), (116, 38440), (123, 38482), (128, 38521), (140, 38617), (141, 38623),

Gene: Ryan\_36 Start: 26903, Stop: 27823, Start Num: 18

Candidate Starts for Ryan\_36:

(Start: 13 @26861 has 1 MA's), (Start: 18 @26903 has 60 MA's), (37, 27059), (42, 27077), (45, 27089), (64, 27236), (65, 27245), (70, 27284), (78, 27353), (79, 27359), (84, 27392), (87, 27416), (90, 27434), (93, 27446), (97, 27485), (122, 27665), (125, 27689), (127, 27704), (129, 27710), (138, 27791), (139, 27794),

Gene: Saints25\_53 Start: 37462, Stop: 38343, Start Num: 19

Candidate Starts for Saints25\_53:

(Start: 19 @37462 has 123 MA's), (Start: 21 @37474 has 1 MA's), (Start: 27 @37504 has 1 MA's), (32, 37561), (51, 37642), (52, 37666), (53, 37687), (55, 37699), (57, 37708), (62, 37747), (63, 37750), (66, 37777), (69, 37804), (72, 37816), (76, 37870), (83, 37906), (89, 37957), (96, 38005), (110, 38113), (116, 38152), (123, 38194), (128, 38233), (140, 38329), (141, 38335),

Gene: Sakai\_36 Start: 24515, Stop: 25432, Start Num: 18

Candidate Starts for Sakai\_36:

(5, 24386), (8, 24392), (Start: 18 @24515 has 60 MA's), (37, 24671), (41, 24686), (45, 24698), (64, 24845), (65, 24854), (70, 24893), (73, 24938), (78, 24962), (79, 24968), (84, 25001), (90, 25043), (92, 25052), (97, 25094), (109, 25178), (125, 25298), (127, 25313),

Gene: Samman98\_36 Start: 27315, Stop: 28232, Start Num: 18

Candidate Starts for Samman98\_36:

(Start: 17 @27309 has 15 MA's), (Start: 18 @27315 has 60 MA's), (47, 27504), (49, 27510), (59, 27612), (63, 27636), (71, 27696), (76, 27753), (78, 27759), (79, 27765), (95, 27879), (96, 27885), (99, 27897), (109, 27972), (112, 27996), (113, 27999), (118, 28035), (119, 28041), (120, 28053), (134, 28155),

Gene: Sashimi\_35 Start: 25890, Stop: 26810, Start Num: 18

Candidate Starts for Sashimi\_35:

(5, 25755), (6, 25758), (9, 25773), (10, 25782), (Start: 13 @25848 has 1 MA's), (Start: 18 @25890 has 60 MA's), (37, 26046), (39, 26052), (42, 26064), (45, 26076), (64, 26223), (65, 26232), (70, 26271), (73, 26316), (78, 26340), (79, 26346), (93, 26433), (101, 26490), (108, 26550), (109, 26556), (113, 26583), (125, 26676), (127, 26691), (139, 26781),

Gene: Sassay\_46 Start: 35849, Stop: 36730, Start Num: 19

Candidate Starts for Sassay\_46:

(Start: 19 @35849 has 123 MA's), (Start: 21 @35861 has 1 MA's), (Start: 27 @35891 has 1 MA's), (32, 35948), (51, 36029), (52, 36053), (53, 36074), (55, 36086), (57, 36095), (62, 36134), (63, 36137), (66, 36164), (69, 36191), (72, 36203), (76, 36257), (83, 36293), (89, 36344), (96, 36392), (110, 36500), (116, 36539), (123, 36581), (128, 36620), (140, 36716), (141, 36722),

Gene: Schism\_38 Start: 27082, Stop: 28002, Start Num: 18

Candidate Starts for Schism\_38:

(Start: 13 @27040 has 1 MA's), (Start: 18 @27082 has 60 MA's), (37, 27238), (42, 27256), (45, 27268), (52, 27325), (64, 27415), (65, 27424), (70, 27463), (75, 27523), (78, 27532), (79, 27538), (84, 27571), (90, 27613), (93, 27625), (97, 27664), (122, 27844), (125, 27868), (127, 27883), (129, 27889), (138, 27970), (139, 27973),

Gene: Seahorse\_38 Start: 26187, Stop: 27107, Start Num: 18

Candidate Starts for Seahorse\_38:

(5, 26058), (8, 26064), (Start: 18 @26187 has 60 MA's), (31, 26301), (40, 26352), (42, 26361), (45, 26373), (52, 26430), (64, 26520), (65, 26529), (70, 26568), (78, 26637), (79, 26643), (81, 26652), (84, 26676), (87, 26700), (111, 26874), (125, 26973), (127, 26988), (139, 27078),

Gene: ShamWow\_52 Start: 38365, Stop: 39246, Start Num: 19

Candidate Starts for ShamWow\_52:

(Start: 19 @38365 has 123 MA's), (Start: 21 @38377 has 1 MA's), (Start: 27 @38407 has 1 MA's), (32, 38464), (51, 38545), (52, 38569), (53, 38590), (55, 38602), (57, 38611), (62, 38650), (63, 38653), (66, 38680), (69, 38707), (72, 38719), (76, 38773), (83, 38809), (89, 38860), (96, 38908), (110, 39016), (116, 39055), (123, 39097), (128, 39136), (140, 39232), (141, 39238),

Gene: ShereKhan\_50 Start: 38141, Stop: 39022, Start Num: 19

Candidate Starts for ShereKhan\_50:

(Start: 19 @38141 has 123 MA's), (Start: 21 @38153 has 1 MA's), (Start: 27 @38183 has 1 MA's), (32, 38240), (51, 38321), (52, 38345), (53, 38366), (55, 38378), (57, 38387), (62, 38426), (63, 38429), (66, 38456), (69, 38483), (72, 38495), (76, 38549), (83, 38585), (89, 38636), (96, 38684), (110, 38792), (116, 38831), (123, 38873), (128, 38912), (140, 39008), (141, 39014),

Gene: Shlim410\_35 Start: 30765, Stop: 31682, Start Num: 18

Candidate Starts for Shlim410\_35:

(Start: 17 @30759 has 15 MA's), (Start: 18 @30765 has 60 MA's), (45, 30945), (47, 30954), (49, 30960), (68, 31131), (71, 31146), (76, 31203), (78, 31209), (79, 31215), (82, 31230), (95, 31329), (96, 31335), (99, 31347), (109, 31422), (112, 31446), (113, 31449), (118, 31485), (119, 31491), (120, 31503), (134, 31605),

Gene: Shukran\_39 Start: 25561, Stop: 26481, Start Num: 18

Candidate Starts for Shukran\_39:

(Start: 18 @25561 has 60 MA's), (31, 25675), (42, 25735), (45, 25747), (64, 25894), (65, 25903), (70, 25942), (73, 25987), (78, 26011), (79, 26017), (81, 26026), (84, 26050), (90, 26092), (91, 26095), (92, 26101), (97, 26143), (101, 26161), (109, 26227), (113, 26254), (125, 26347), (127, 26362),

Gene: Simpliphy\_51 Start: 37446, Stop: 38327, Start Num: 19

Candidate Starts for Simpliphy\_51:

(Start: 19 @37446 has 123 MA's), (Start: 21 @37458 has 1 MA's), (Start: 27 @37488 has 1 MA's), (32, 37545), (51, 37626), (52, 37650), (53, 37671), (55, 37683), (57, 37692), (62, 37731), (63, 37734), (66, 37761), (69, 37788), (72, 37800), (76, 37854), (83, 37890), (89, 37941), (96, 37989), (110, 38097), (116, 38136), (123, 38178), (128, 38217), (140, 38313), (141, 38319),

Gene: SirDuracell\_51 Start: 36422, Stop: 37303, Start Num: 19

Candidate Starts for SirDuracell\_51:

(Start: 19 @36422 has 123 MA's), (Start: 21 @36434 has 1 MA's), (Start: 27 @36464 has 1 MA's), (32, 36521), (51, 36602), (52, 36626), (53, 36647), (55, 36659), (57, 36668), (62, 36707), (63, 36710), (66, 36737), (69, 36764), (72, 36776), (76, 36830), (83, 36866), (89, 36917), (96, 36965), (110, 37073), (116, 37112), (123, 37154), (128, 37193), (140, 37289), (141, 37295),

Gene: Sixama\_89 Start: 47436, Stop: 48350, Start Num: 23

Candidate Starts for Sixama\_89:

(Start: 23 @47436 has 1 MA's), (28, 47481), (36, 47538), (39, 47568), (44, 47586), (53, 47667), (56, 47685), (71, 47796), (73, 47853), (77, 47874), (78, 47877), (102, 48027), (104, 48063), (107, 48072),

Gene: SophKB\_49 Start: 37121, Stop: 38002, Start Num: 19

Candidate Starts for SophKB\_49:

(Start: 19 @37121 has 123 MA's), (Start: 21 @37133 has 1 MA's), (Start: 27 @37163 has 1 MA's), (32, 37220), (51, 37301), (52, 37325), (53, 37346), (55, 37358), (57, 37367), (62, 37406), (63, 37409), (66, 37436), (69, 37463), (72, 37475), (76, 37529), (83, 37565), (89, 37616), (96, 37664), (110, 37772), (116, 37811), (123, 37853), (128, 37892), (140, 37988), (141, 37994),

Gene: Sotrice96\_53 Start: 37827, Stop: 38708, Start Num: 19

Candidate Starts for Sotrice96\_53:

(Start: 19 @37827 has 123 MA's), (Start: 21 @37839 has 1 MA's), (Start: 27 @37869 has 1 MA's), (32, 37926), (51, 38007), (52, 38031), (53, 38052), (55, 38064), (57, 38073), (62, 38112), (63, 38115), (66, 38142), (69, 38169), (72, 38181), (76, 38235), (83, 38271), (89, 38322), (96, 38370), (110, 38478), (116, 38517), (123, 38559), (128, 38598), (140, 38694), (141, 38700),

Gene: SpicyFrank\_36 Start: 24807, Stop: 25724, Start Num: 18

Candidate Starts for SpicyFrank\_36:

(5, 24678), (8, 24684), (Start: 18 @24807 has 60 MA's), (37, 24963), (41, 24978), (45, 24990), (64, 25137), (70, 25185), (73, 25230), (78, 25254), (79, 25260), (84, 25293), (90, 25335), (92, 25344), (93, 25347), (99, 25392), (109, 25470), (122, 25566), (125, 25590), (127, 25605), (139, 25695),

Gene: Spooky\_35 Start: 27760, Stop: 28698, Start Num: 17

Candidate Starts for Spooky\_35:

(14, 27748), (Start: 17 @27760 has 15 MA's), (29, 27853), (38, 27925), (50, 27976), (58, 28054), (63, 28093), (67, 28132), (74, 28204), (78, 28216), (81, 28231), (82, 28237), (85, 28261), (90, 28297), (100, 28357), (103, 28375), (105, 28408), (109, 28435), (112, 28459), (113, 28462), (117, 28495), (118, 28501), (131, 28585), (134, 28621), (142, 28690),

Gene: Squiddly\_37 Start: 28992, Stop: 29930, Start Num: 17

Candidate Starts for Squiddly\_37:

(14, 28980), (Start: 17 @28992 has 15 MA's), (38, 29157), (50, 29208), (63, 29325), (74, 29436), (78, 29448), (81, 29463), (82, 29469), (83, 29478), (85, 29493), (90, 29529), (95, 29568), (100, 29589), (103, 29607), (105, 29640), (109, 29667), (112, 29691), (113, 29694), (114, 29697), (116, 29721), (118, 29733), (127, 29808), (129, 29814), (131, 29817), (139, 29901), (142, 29922),

Gene: Stank\_56 Start: 38379, Stop: 39260, Start Num: 19

Candidate Starts for Stank\_56:

(Start: 19 @38379 has 123 MA's), (Start: 21 @38391 has 1 MA's), (Start: 27 @38421 has 1 MA's), (32, 38478), (51, 38559), (52, 38583), (53, 38604), (55, 38616), (57, 38625), (62, 38664), (63, 38667), (66, 38694), (69, 38721), (72, 38733), (76, 38787), (83, 38823), (89, 38874), (96, 38922), (110, 39030), (116, 39069), (123, 39111), (128, 39150), (140, 39246), (141, 39252),

Gene: Stark\_53 Start: 37634, Stop: 38515, Start Num: 19

Candidate Starts for Stark\_53:

(Start: 19 @37634 has 123 MA's), (Start: 21 @37646 has 1 MA's), (Start: 27 @37676 has 1 MA's), (32, 37733), (51, 37814), (52, 37838), (53, 37859), (55, 37871), (57, 37880), (62, 37919), (63, 37922), (66, 37949), (69, 37976), (72, 37988), (76, 38042), (83, 38078), (89, 38129), (96, 38177), (110, 38285), (116, 38324), (123, 38366), (128, 38405), (140, 38501), (141, 38507),

Gene: StellaBean\_50 Start: 37689, Stop: 38570, Start Num: 19

Candidate Starts for StellaBean\_50:

(Start: 19 @37689 has 123 MA's), (Start: 21 @37701 has 1 MA's), (Start: 27 @37731 has 1 MA's), (32, 37788), (51, 37869), (52, 37893), (53, 37914), (55, 37926), (57, 37935), (62, 37974), (63, 37977), (66, 38004), (69, 38031), (72, 38043), (76, 38097), (83, 38133), (89, 38184), (96, 38232), (110, 38340), (116, 38379), (123, 38421), (128, 38460), (140, 38556), (141, 38562),

Gene: StolenFromERC\_55 Start: 37863, Stop: 38744, Start Num: 19

Candidate Starts for StolenFromERC\_55:

(Start: 19 @37863 has 123 MA's), (Start: 21 @37875 has 1 MA's), (Start: 27 @37905 has 1 MA's), (32, 37962), (51, 38043), (52, 38067), (53, 38088), (55, 38100), (57, 38109), (62, 38148), (63, 38151), (66, 38178), (69, 38205), (72, 38217), (76, 38271), (83, 38307), (89, 38358), (96, 38406), (110, 38514), (116, 38553), (123, 38595), (128, 38634), (140, 38730), (141, 38736),

Gene: StormChicken\_54 Start: 38529, Stop: 39410, Start Num: 19

Candidate Starts for StormChicken\_54:

(Start: 19 @38529 has 123 MA's), (Start: 21 @38541 has 1 MA's), (Start: 27 @38571 has 1 MA's), (32, 38628), (51, 38709), (52, 38733), (53, 38754), (55, 38766), (57, 38775), (62, 38814), (63, 38817), (66, 38844), (69, 38871), (72, 38883), (76, 38937), (83, 38973), (89, 39024), (96, 39072), (110, 39180), (116, 39219), (123, 39261), (128, 39300), (140, 39396), (141, 39402),

Gene: TBrady12\_55 Start: 37863, Stop: 38744, Start Num: 19

Candidate Starts for TBrady12\_55:

(Start: 19 @37863 has 123 MA's), (Start: 21 @37875 has 1 MA's), (Start: 27 @37905 has 1 MA's), (32, 37962), (51, 38043), (52, 38067), (53, 38088), (55, 38100), (57, 38109), (62, 38148), (63, 38151), (66, 38178), (69, 38205), (72, 38217), (76, 38271), (83, 38307), (89, 38358), (96, 38406), (110, 38514),

(116, 38553), (123, 38595), (128, 38634), (140, 38730), (141, 38736),

Gene: Tarkin\_51 Start: 38111, Stop: 38992, Start Num: 19

Candidate Starts for Tarkin\_51:

(Start: 19 @38111 has 123 MA's), (Start: 21 @38123 has 1 MA's), (Start: 27 @38153 has 1 MA's), (32, 38210), (51, 38291), (52, 38315), (53, 38336), (55, 38348), (57, 38357), (62, 38396), (63, 38399), (66, 38426), (69, 38453), (72, 38465), (76, 38519), (83, 38555), (89, 38606), (96, 38654), (110, 38762), (116, 38801), (123, 38843), (128, 38882), (140, 38978), (141, 38984),

Gene: TeardropMSU\_48 Start: 37111, Stop: 37992, Start Num: 19

Candidate Starts for TeardropMSU\_48:

(Start: 19 @37111 has 123 MA's), (Start: 21 @37123 has 1 MA's), (Start: 27 @37153 has 1 MA's), (32, 37210), (51, 37291), (52, 37315), (53, 37336), (55, 37348), (57, 37357), (62, 37396), (63, 37399), (66, 37426), (69, 37453), (72, 37465), (76, 37519), (83, 37555), (89, 37606), (96, 37654), (110, 37762), (116, 37801), (123, 37843), (128, 37882), (140, 37978), (141, 37984),

Gene: Teaspoon\_53 Start: 38005, Stop: 38886, Start Num: 19

Candidate Starts for Teaspoon\_53:

(Start: 19 @38005 has 123 MA's), (Start: 21 @38017 has 1 MA's), (Start: 27 @38047 has 1 MA's), (32, 38104), (51, 38185), (52, 38209), (53, 38230), (55, 38242), (57, 38251), (62, 38290), (63, 38293), (66, 38320), (69, 38347), (72, 38359), (76, 38413), (83, 38449), (89, 38500), (96, 38548), (110, 38656), (116, 38695), (123, 38737), (128, 38776), (140, 38872), (141, 38878),

Gene: Terminus\_54 Start: 38602, Stop: 39483, Start Num: 19

Candidate Starts for Terminus\_54:

(Start: 19 @38602 has 123 MA's), (Start: 21 @38614 has 1 MA's), (Start: 27 @38644 has 1 MA's), (32, 38701), (51, 38782), (52, 38806), (53, 38827), (55, 38839), (57, 38848), (62, 38887), (63, 38890), (66, 38917), (69, 38944), (72, 38956), (76, 39010), (83, 39046), (89, 39097), (96, 39145), (110, 39253), (116, 39292), (123, 39334), (128, 39373), (140, 39469), (141, 39475),

Gene: ThayneTheZag\_36 Start: 24729, Stop: 25649, Start Num: 18

Candidate Starts for ThayneTheZag\_36:

(Start: 18 @24729 has 60 MA's), (42, 24903), (45, 24915), (61, 25050), (64, 25062), (65, 25071), (70, 25110), (73, 25155), (77, 25176), (78, 25179), (79, 25185), (84, 25218), (90, 25260), (92, 25269), (109, 25395), (122, 25491), (125, 25515), (127, 25530),

Gene: Thimann\_34 Start: 26659, Stop: 27576, Start Num: 18

Candidate Starts for Thimann\_34:

(Start: 17 @26653 has 15 MA's), (Start: 18 @26659 has 60 MA's), (47, 26848), (49, 26854), (59, 26956), (63, 26980), (71, 27040), (76, 27097), (78, 27103), (79, 27109), (95, 27223), (96, 27229), (99, 27241), (109, 27316), (112, 27340), (113, 27343), (118, 27379), (119, 27385), (120, 27397), (134, 27499),

Gene: Thimble\_54 Start: 37045, Stop: 37926, Start Num: 19

Candidate Starts for Thimble\_54:

(Start: 19 @37045 has 123 MA's), (Start: 21 @37057 has 1 MA's), (Start: 27 @37087 has 1 MA's), (32, 37144), (51, 37225), (52, 37249), (53, 37270), (55, 37282), (57, 37291), (62, 37330), (63, 37333), (66, 37360), (69, 37387), (72, 37399), (76, 37453), (83, 37489), (89, 37540), (96, 37588), (110, 37696), (116, 37735), (123, 37777), (128, 37816), (140, 37912), (141, 37918),

Gene: Thresher\_55 Start: 38988, Stop: 39869, Start Num: 19

Candidate Starts for Thresher\_55:

(Start: 19 @38988 has 123 MA's), (Start: 21 @39000 has 1 MA's), (Start: 27 @39030 has 1 MA's), (32, 39087), (51, 39168), (52, 39192), (53, 39213), (55, 39225), (57, 39234), (62, 39273), (63, 39276), (66, 39303), (69, 39330), (72, 39342), (76, 39396), (83, 39432), (89, 39483), (96, 39531), (110, 39639), (116, 39678), (123, 39720), (128, 39759), (140, 39855), (141, 39861),

Gene: Tiff81\_32 Start: 21991, Stop: 22911, Start Num: 18

Candidate Starts for Tiff81\_32:

(5, 21862), (Start: 18 @21991 has 60 MA's), (31, 22105), (42, 22165), (45, 22177), (64, 22324), (70, 22372), (73, 22417), (78, 22441), (79, 22447), (93, 22534), (101, 22591), (109, 22657), (113, 22684), (125, 22777), (127, 22792), (139, 22882),

Gene: Tomaszewski\_48 Start: 36996, Stop: 37865, Start Num: 21

Candidate Starts for Tomaszewski\_48:

(Start: 19 @36984 has 123 MA's), (Start: 21 @36996 has 1 MA's), (Start: 27 @37026 has 1 MA's), (32, 37083), (51, 37164), (52, 37188), (53, 37209), (55, 37221), (57, 37230), (62, 37269), (63, 37272), (66, 37299), (69, 37326), (72, 37338), (76, 37392), (83, 37428), (89, 37479), (96, 37527), (110, 37635), (116, 37674), (123, 37716), (128, 37755), (140, 37851), (141, 37857),

Gene: Toto\_51 Start: 38365, Stop: 39246, Start Num: 19

Candidate Starts for Toto\_51:

(Start: 19 @38365 has 123 MA's), (Start: 21 @38377 has 1 MA's), (Start: 27 @38407 has 1 MA's), (32, 38464), (51, 38545), (52, 38569), (53, 38590), (55, 38602), (57, 38611), (62, 38650), (63, 38653), (66, 38680), (69, 38707), (72, 38719), (76, 38773), (83, 38809), (89, 38860), (96, 38908), (110, 39016), (116, 39055), (123, 39097), (128, 39136), (140, 39232), (141, 39238),

Gene: Traaww1\_48 Start: 37546, Stop: 38427, Start Num: 19

Candidate Starts for Traaww1\_48:

(Start: 19 @37546 has 123 MA's), (Start: 21 @37558 has 1 MA's), (Start: 27 @37588 has 1 MA's), (32, 37645), (51, 37726), (52, 37750), (53, 37771), (55, 37783), (57, 37792), (62, 37831), (63, 37834), (66, 37861), (69, 37888), (72, 37900), (76, 37954), (83, 37990), (89, 38041), (96, 38089), (110, 38197), (116, 38236), (123, 38278), (128, 38317), (140, 38413), (141, 38419),

Gene: Tuco\_53 Start: 38873, Stop: 39754, Start Num: 19

Candidate Starts for Tuco\_53:

(Start: 19 @38873 has 123 MA's), (Start: 21 @38885 has 1 MA's), (Start: 27 @38915 has 1 MA's), (32, 38972), (51, 39053), (52, 39077), (53, 39098), (55, 39110), (57, 39119), (62, 39158), (63, 39161), (66, 39188), (69, 39215), (72, 39227), (76, 39281), (83, 39317), (89, 39368), (96, 39416), (110, 39524), (116, 39563), (123, 39605), (128, 39644), (140, 39740), (141, 39746),

Gene: Twinkle\_35 Start: 31824, Stop: 32741, Start Num: 18

Candidate Starts for Twinkle\_35:

(Start: 17 @31818 has 15 MA's), (Start: 18 @31824 has 60 MA's), (45, 32004), (47, 32013), (49, 32019), (68, 32190), (71, 32205), (76, 32262), (78, 32268), (79, 32274), (82, 32289), (95, 32388), (96, 32394), (99, 32406), (109, 32481), (112, 32505), (113, 32508), (118, 32544), (119, 32550), (120, 32562), (134, 32664),

Gene: Ukulele\_49 Start: 37259, Stop: 38140, Start Num: 19

Candidate Starts for Ukulele\_49:

(Start: 19 @37259 has 123 MA's), (Start: 21 @37271 has 1 MA's), (Start: 27 @37301 has 1 MA's), (32, 37358), (51, 37439), (52, 37463), (53, 37484), (55, 37496), (57, 37505), (62, 37544), (63, 37547), (66, 37574), (69, 37601), (72, 37613), (76, 37667), (83, 37703), (89, 37754), (96, 37802), (110, 37910), (116, 37949), (123, 37991), (128, 38030), (140, 38126), (141, 38132),

Gene: Utz\_31 Start: 28505, Stop: 29425, Start Num: 18

Candidate Starts for Utz\_31:

(Start: 17 @28499 has 15 MA's), (Start: 18 @28505 has 60 MA's), (33, 28622), (34, 28625), (46, 28688), (47, 28694), (49, 28700), (59, 28802), (71, 28886), (75, 28940), (76, 28943), (78, 28949), (82, 28970), (95, 29069), (99, 29087), (109, 29162), (113, 29189), (118, 29225), (127, 29300),

Gene: Vopal\_39 Start: 27391, Stop: 28311, Start Num: 18

Candidate Starts for Vopal\_39:

(Start: 13 @27349 has 1 MA's), (Start: 18 @27391 has 60 MA's), (37, 27547), (42, 27565), (45, 27577), (64, 27724), (70, 27772), (73, 27817), (75, 27832), (78, 27841), (79, 27847), (82, 27862), (84, 27880), (90, 27922), (92, 27931), (97, 27973), (109, 28057), (113, 28084), (127, 28192), (139, 28282),

Gene: Wiggin\_54 Start: 37947, Stop: 38828, Start Num: 19

Candidate Starts for Wiggin\_54:

(Start: 19 @37947 has 123 MA's), (Start: 21 @37959 has 1 MA's), (Start: 27 @37989 has 1 MA's), (32, 38046), (51, 38127), (52, 38151), (53, 38172), (55, 38184), (57, 38193), (62, 38232), (63, 38235), (66, 38262), (69, 38289), (72, 38301), (76, 38355), (83, 38391), (89, 38442), (96, 38490), (110, 38598), (116, 38637), (123, 38679), (128, 38718), (140, 38814), (141, 38820),

Gene: Willez\_46 Start: 35849, Stop: 36730, Start Num: 19

Candidate Starts for Willez\_46:

(Start: 19 @35849 has 123 MA's), (Start: 21 @35861 has 1 MA's), (Start: 27 @35891 has 1 MA's), (32, 35948), (51, 36029), (52, 36053), (53, 36074), (55, 36086), (57, 36095), (62, 36134), (63, 36137), (66, 36164), (69, 36191), (72, 36203), (76, 36257), (83, 36293), (89, 36344), (96, 36392), (110, 36500), (116, 36539), (123, 36581), (128, 36620), (140, 36716), (141, 36722),

Gene: WinkNick\_38 Start: 28007, Stop: 28924, Start Num: 18

Candidate Starts for WinkNick\_38:

(Start: 17 @28001 has 15 MA's), (Start: 18 @28007 has 60 MA's), (47, 28196), (49, 28202), (59, 28304), (63, 28328), (71, 28388), (76, 28445), (78, 28451), (79, 28457), (95, 28571), (96, 28577), (99, 28589), (109, 28664), (112, 28688), (113, 28691), (118, 28727), (119, 28733), (120, 28745), (134, 28847),

Gene: Xandras\_52 Start: 37358, Stop: 38239, Start Num: 19

Candidate Starts for Xandras\_52:

(Start: 19 @37358 has 123 MA's), (Start: 21 @37370 has 1 MA's), (Start: 27 @37400 has 1 MA's), (32, 37457), (51, 37538), (52, 37562), (53, 37583), (55, 37595), (57, 37604), (62, 37643), (63, 37646), (66, 37673), (69, 37700), (72, 37712), (76, 37766), (83, 37802), (89, 37853), (96, 37901), (110, 38009), (116, 38048), (123, 38090), (128, 38129), (140, 38225), (141, 38231),

Gene: YassJohnny\_48 Start: 37024, Stop: 37905, Start Num: 19

Candidate Starts for YassJohnny\_48:

(Start: 19 @37024 has 123 MA's), (Start: 21 @37036 has 1 MA's), (Start: 27 @37066 has 1 MA's), (32, 37123), (51, 37204), (52, 37228), (53, 37249), (55, 37261), (57, 37270), (62, 37309), (63, 37312), (66, 37339), (69, 37366), (72, 37378), (76, 37432), (83, 37468), (89, 37519), (96, 37567), (110, 37675), (116, 37714), (123, 37756), (128, 37795), (140, 37891), (141, 37897),

Gene: YoungHarleezy\_36 Start: 24585, Stop: 25502, Start Num: 18

Candidate Starts for YoungHarleezy\_36:

(5, 24456), (8, 24462), (Start: 18 @24585 has 60 MA's), (37, 24741), (41, 24756), (45, 24768), (64, 24915), (65, 24924), (70, 24963), (73, 25008), (78, 25032), (79, 25038), (84, 25071), (90, 25113), (92, 25122), (97, 25164), (109, 25248), (125, 25368), (127, 25383),



Gene: Youngblood\_54 Start: 38532, Stop: 39413, Start Num: 19

Candidate Starts for Youngblood\_54:

(Start: 19 @38532 has 123 MA's), (Start: 21 @38544 has 1 MA's), (Start: 27 @38574 has 1 MA's), (32, 38631), (51, 38712), (52, 38736), (53, 38757), (55, 38769), (57, 38778), (62, 38817), (63, 38820), (66, 38847), (69, 38874), (72, 38886), (76, 38940), (83, 38976), (89, 39027), (96, 39075), (110, 39183), (116, 39222), (123, 39264), (128, 39303), (140, 39399), (141, 39405),

Gene: YungMoney\_41 Start: 35216, Stop: 36133, Start Num: 18

Candidate Starts for YungMoney\_41:

(Start: 17 @35210 has 15 MA's), (Start: 18 @35216 has 60 MA's), (33, 35333), (34, 35336), (46, 35399), (47, 35405), (49, 35411), (71, 35597), (75, 35651), (76, 35654), (78, 35660), (82, 35681), (95, 35780), (96, 35786), (99, 35798), (109, 35873), (113, 35900), (118, 35936), (122, 35972), (127, 36011), (139, 36104), (142, 36125),

Gene: Zaheer\_36 Start: 26991, Stop: 27911, Start Num: 18

Candidate Starts for Zaheer\_36:

(Start: 18 @26991 has 60 MA's), (37, 27147), (42, 27165), (45, 27177), (64, 27324), (65, 27333), (70, 27372), (75, 27432), (78, 27441), (79, 27447), (84, 27480), (90, 27522), (93, 27534), (96, 27567), (97, 27573), (99, 27579), (109, 27657), (122, 27753), (129, 27798), (138, 27879), (139, 27882),

Gene: Zucker\_29 Start: 23884, Stop: 24804, Start Num: 18

Candidate Starts for Zucker\_29:

(Start: 13 @23842 has 1 MA's), (Start: 18 @23884 has 60 MA's), (42, 24058), (45, 24070), (64, 24217), (65, 24226), (70, 24265), (78, 24334), (79, 24340), (80, 24343), (84, 24373), (90, 24415), (109, 24550), (122, 24646), (124, 24658), (125, 24670), (127, 24685), (129, 24691),

Gene: xkcd\_56 Start: 38722, Stop: 39603, Start Num: 19

Candidate Starts for xkcd\_56:

(Start: 19 @38722 has 123 MA's), (Start: 21 @38734 has 1 MA's), (Start: 27 @38764 has 1 MA's), (32, 38821), (51, 38902), (52, 38926), (53, 38947), (55, 38959), (57, 38968), (62, 39007), (63, 39010), (66, 39037), (69, 39064), (72, 39076), (76, 39130), (83, 39166), (89, 39217), (96, 39265), (110, 39373), (116, 39412), (123, 39454), (128, 39493), (140, 39589), (141, 39595),