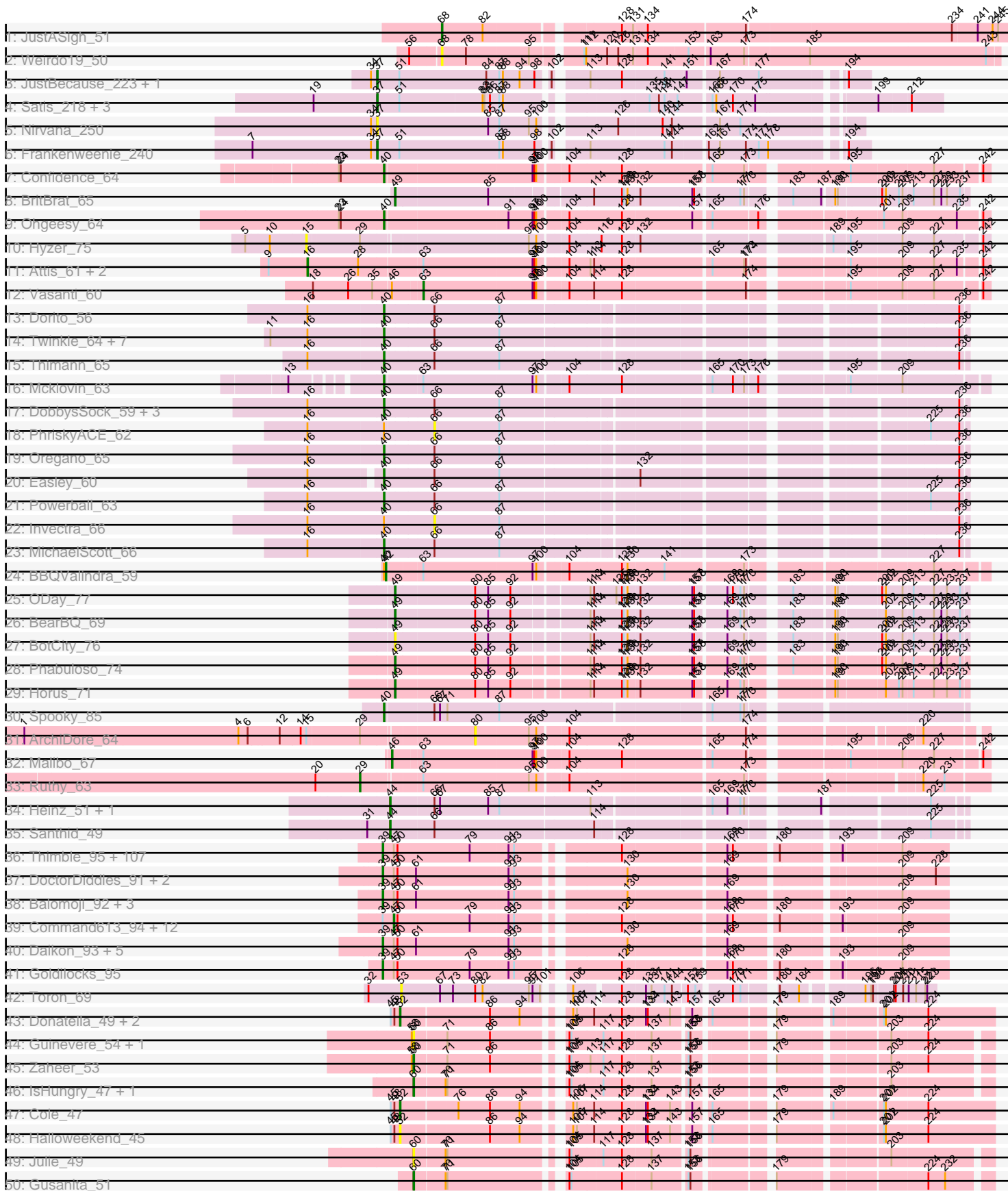
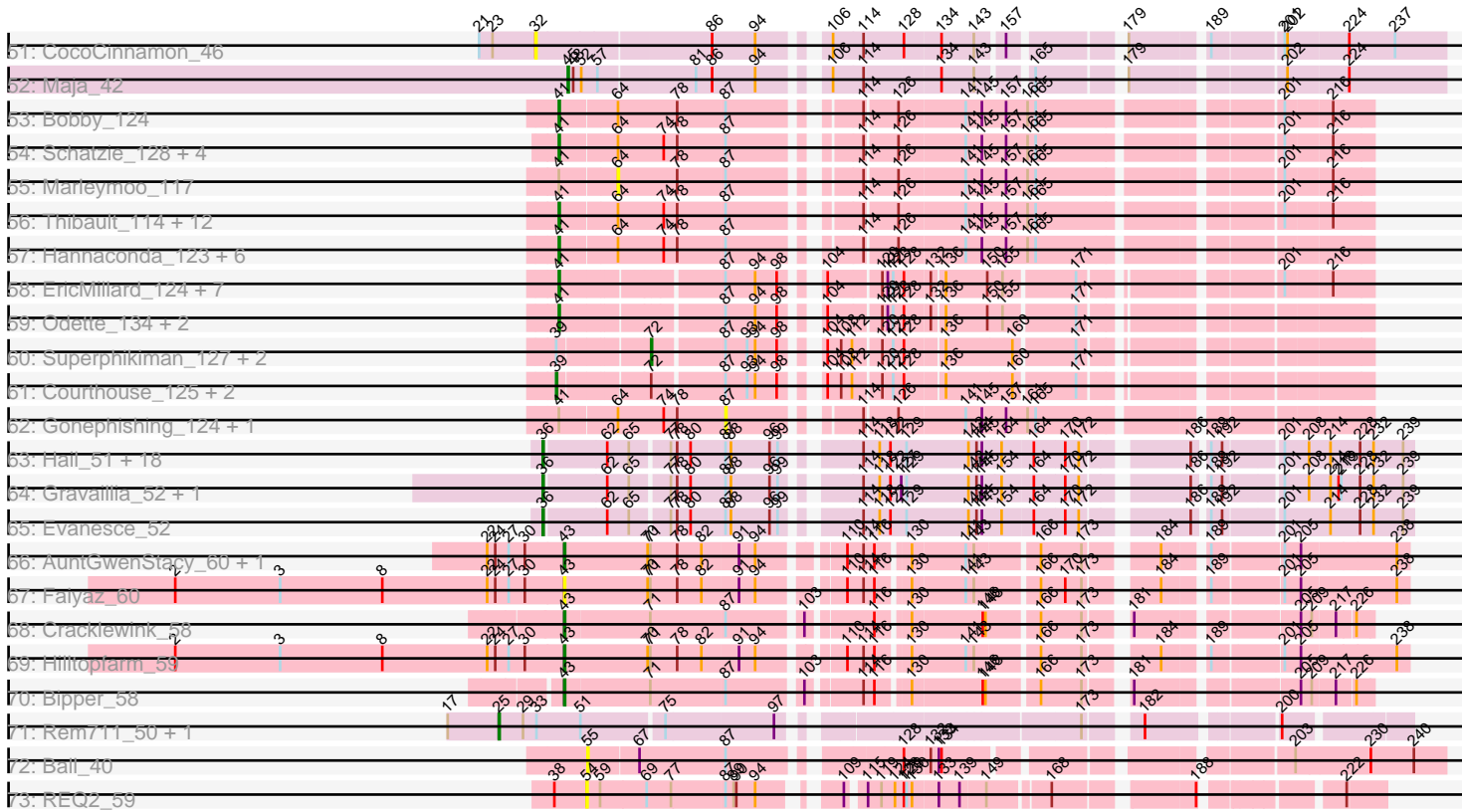


Pham 215776



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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 215776 Report

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

Pham number 215776 has 280 members, 37 are drafts.

Phages represented in each track:

- Track 1 : JustASigh\_51
- Track 2 : Weirido19\_50
- Track 3 : JustBecause\_223, Kela\_221
- Track 4 : Satis\_218, EhyElimayoE\_221, Kradal\_220, Quantum\_217
- Track 5 : Nirvana\_250
- Track 6 : Frankenweenie\_240
- Track 7 : Confidence\_64
- Track 8 : BritBrat\_65
- Track 9 : Ohgeesy\_64
- Track 10 : Hyzer\_75
- Track 11 : Attis\_61, LordFarquaad\_63, SoilAssassin\_61
- Track 12 : Vasanti\_60
- Track 13 : Dorito\_56
- Track 14 : Twinkle\_64, Adora\_62, Shlim410\_63, Howe\_65, Dolores\_63, Sekhmet\_62, WinkNick\_63, Hortense\_65
- Track 15 : Thimann\_65
- Track 16 : Mcklovin\_63
- Track 17 : DobbysSock\_59, Beenie\_59, Samman98\_65, Clark\_64
- Track 18 : PhriskyACE\_62
- Track 19 : Oregano\_65
- Track 20 : Easley\_60
- Track 21 : Powerball\_63
- Track 22 : Invectra\_66
- Track 23 : MichaelScott\_66
- Track 24 : BBQValindra\_59
- Track 25 : ODay\_77
- Track 26 : BearBQ\_69
- Track 27 : BotCity\_76
- Track 28 : Phabuloso\_74
- Track 29 : Horus\_71
- Track 30 : Spooky\_85
- Track 31 : ArchiDore\_64
- Track 32 : Malibo\_67
- Track 33 : Ruthy\_63
- Track 34 : Heinz\_51, Hibiscus\_51
- Track 35 : Santhid\_49

- Track 36 : Thimble\_95, GoldenSpark\_96, Hopey\_93, Adnama\_96, Traaww1\_88, FireRed\_96, Thresher\_95, IHOP\_90, Bench\_95, Tuco\_93, MPhalcon\_93, Harella\_92, Becksu\_91, Dumbo\_92, BugsBunny\_92, Terminus\_95, Filch\_94, Qualification\_93, Rakim\_93, Palpatine\_94, HanKaySha\_93, Willez\_87, Pharsalus\_89, Marshmallow\_90, Highbury\_91, YassJohnny\_89, Czyszczo1\_93, Lilpickle\_91, Stark\_94, CrystalP\_91, 244\_93, Mindy\_91, AmericanBeauty\_96, Myrale\_92, Amao\_92, Easy2Say\_93, Manda\_94, Teaspoon\_93, NelitzaMV\_90, Nimrod\_93, Pumpkin\_96, StellaBean\_90, Moldemort\_95, Emmina\_92, Cactus\_95, ShamWow\_92, BigBubba\_92, MISSy\_93, Hoonter\_95, Sassay\_87, BaboJay\_92, Policronamos\_95, Wiggin\_94, Henry\_90, Simpliphy\_91, Stank\_94, SirDuracell\_92, Icee\_93, Sotrice96\_93, RiverMonster\_93, Phrux\_90, Goku\_91, SophKB\_89, Kanye\_89, Argent26\_96, Elite2014\_91, ShereKhan\_90, ChosenOne\_92, Murphy\_92, FairyPath\_92, BilboSwaggins\_91, Contagion\_88, Holt\_97, Ukulele\_87, Xandras\_91, Paperbeatsrock\_91, NoSleep\_93, Inca\_89, Youngblood\_95, Saints25\_91, JeTaimé\_93, Asriel\_90, MadamMonkfish\_92, Flypotenuse\_88, Barbarian\_91, Elph10\_93, Gemini\_97, StolenFromERC\_95, DrDrey\_92, Misfit\_93, Toto\_90, BadStone\_89, Bruin\_89, TBrady12\_95, Tomaszewski\_87, Lilizi\_93, Miniwave\_87, OrionPax\_91, xkcd\_95, Phaux\_95, Phaja\_90, Porky\_91, Tarkin\_91, Kimchi\_96, GooberAzure\_95, TeardropMSU\_88, Gage\_94, Glexan\_91
- Track 37 : DoctorDiddles\_91, Bask21\_92, ChotaBhai\_92
- Track 38 : Balomoji\_92, Gator\_90, Cookies\_89, FoghornLeghorn\_86
- Track 39 : Command613\_94, Cjw1\_93, Dusk\_89, Mosby\_88, Eureka\_91, Kostya\_92, Murica\_95, Lilac\_95, Nala\_94, Maxxinista\_95, ABCat\_89, PhatBacter\_96, HuffyPuff\_94
- Track 40 : Daikon\_93, Petra64142\_97, Buck\_93, Rimmer\_90, StormChicken\_94, Pat3\_89
- Track 41 : Goldilocks\_95
- Track 42 : Toron\_69
- Track 43 : Donatella\_49, Ryan\_51, QuinnAvery\_52
- Track 44 : Guinevere\_54, GoodLuckBabe\_53
- Track 45 : Zaheer\_53
- Track 46 : IsHungry\_47, Popper\_52
- Track 47 : Cole\_47
- Track 48 : Halloweekend\_45
- Track 49 : Julie\_49
- Track 50 : Gusanita\_51
- Track 51 : CocoCinnamon\_46
- Track 52 : Maja\_42
- Track 53 : Bobby\_124
- Track 54 : Schatzie\_128, Pound\_121, DmpstrDiver\_132, Kalah2\_123, Optimus\_123
- Track 55 : Marleymoo\_117
- Track 56 : Thibault\_114, Constella\_122, JuicyJay\_129, Bombitas\_120, Hughesyang\_132, NihilNomen\_134, ThreeRngTarjay\_128, Minerva\_131, Phoebus\_133, Duke13\_127, Beem\_134, Zelink\_127, Wanda\_131
- Track 57 : Hannaconda\_123, Porcelain\_128, Lucky2013\_125, Ariel\_130, LittleE\_133, Omega\_140, MiaZeal\_130
- Track 58 : EricMillard\_124, Halley\_134, Redno2\_124, Dallas\_133, Dove\_118, BAKA\_132, Ejimix\_126, Klein\_129
- Track 59 : Odette\_134, Yeet\_124, HokkenD\_122
- Track 60 : Superphikiman\_127, Shaboozey\_131, Nekros\_133
- Track 61 : Courthouse\_125, KashFlow\_128, Squint\_128
- Track 62 : Gonephishing\_124, Rearden\_128

- Track 63 : Hail\_51, Kinbote\_53, Amochick\_53, Webster2\_53, Luke\_53, LilHazelNut\_53, Hadrien\_53, Wishmaker\_51, Giles\_51, Forge\_51, Luna22\_51, Ubuntu\_53, Gancho\_52, Ein37\_53, Amymech\_53, HH92\_52, DeepSoil15\_53, Daegal\_55, Dewey\_51
- Track 64 : Gravallia\_52, OBUpride\_53
- Track 65 : Evanesce\_52
- Track 66 : AuntGwenStacy\_60, Typha\_59
- Track 67 : Faiyaz\_60
- Track 68 : Cracklewink\_58
- Track 69 : Hilltopfarm\_59
- Track 70 : Bipper\_58
- Track 71 : Rem711\_50, 32HC\_51
- Track 72 : Ball\_40
- Track 73 : REQ2\_59

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

The start number called the most often in the published annotations is 39, it was called in 115 of the 243 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 244\_93, Adnama\_96, Amao\_92, AmericanBeauty\_96, Argent26\_96, Asriel\_90, BaboJay\_92, BadStone\_89, Balomoji\_92, Barbarian\_91, Bask21\_92, Becksu\_91, Bench\_95, BigBubba\_92, BilboSwaggins\_91, Bruin\_89, Buck\_93, BugsBunny\_92, Cactus\_95, ChosenOne\_92, ChotaBhai\_92, Contagion\_88, Cookies\_89, Courthouse\_125, CrystalP\_91, Czyszczonek\_93, Daikon\_93, DoctorDiddles\_91, DrDrey\_92, Dumbo\_92, Easy2Say\_93, Elite2014\_91, Elph10\_93, Emmina\_92, FairyPath\_92, Filch\_94, FireRed\_96, Flypotenuse\_88, FoghornLeghorn\_86, Gage\_94, Gator\_90, Gemini\_97, Glexan\_91, Goku\_91, GoldenSpark\_96, Goldilocks\_95, GooberAzure\_95, HanKaySha\_93, Harella\_92, Henry\_90, Highbury\_91, Holt\_97, Hoonter\_95, Hopey\_93, IHOP\_90, Icee\_93, Inca\_89, JeTaimie\_93, Kanye\_89, KashFlow\_128, Kimchi\_96, Lilizi\_93, Lilpickle\_91, MISSy\_93, MPhalcon\_93, MadamMonkfish\_92, Manda\_94, Marshmallow\_90, Mindy\_91, Miniwave\_87, Misfit\_93, Moldemort\_95, Murphy\_92, Myrale\_92, NelitzaMV\_90, Nimrod\_93, NoSleep\_93, OrionPax\_91, Palpatine\_94, Paperbeatsrock\_91, Pat3\_89, Petra64142\_97, Phaja\_90, Pharsalus\_89, Phaux\_95, Phrux\_90, Policronamos\_95, Porky\_91, Pumpkin\_96, Quallification\_93, Rakim\_93, Rimmer\_90, RiverMonster\_93, Saints25\_91, Sassay\_87, ShamWow\_92, ShereKhan\_90, Simpliphy\_91, SirDuracell\_92, SophKB\_89, Sotrice96\_93, Squint\_128, Stank\_94, Stark\_94, StellaBean\_90, StolenFromERC\_95, StormChicken\_94, TBrady12\_95, Tarkin\_91, TeardropMSU\_88, Teaspoon\_93, Terminus\_95, Thimble\_95, Thresher\_95, Tomaszewski\_87, Toto\_90, Traaww1\_88, Tuco\_93, Ukulele\_87, Wiggin\_94, Willez\_87, Xandras\_91, YassJohnny\_89, Youngblood\_95, xkcd\_95,

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

- ABCat\_89, Cjw1\_93, Command613\_94, Dusk\_89, Eureka\_91, HufflyPuff\_94, Kostya\_92, Lilac\_95, Maxxinista\_95, Mosby\_88, Murica\_95, Nala\_94, Nekros\_133, PhatBacter\_96, Shaboozey\_131, Superphikiman\_127,

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

- 32HC\_51, Adora\_62, Amochick\_53, Amymech\_53, ArchiDore\_64, Ariel\_130, Attis\_61, AuntGwenStacy\_60, BAKA\_132, BBQValindra\_59, Ball\_40, BearBQ\_69, Beem\_134, Beenie\_59, Bipper\_58, Bobby\_124, Bombitas\_120, BotCity\_76, BritBrat\_65, Clark\_64, CocoCinnamon\_46, Cole\_47, Confidence\_64, Constella\_122, Cracklewink\_58, Daegal\_55, Dallas\_133, DeepSoil15\_53, Dewey\_51, DmpstrDiver\_132, DobbysSock\_59, Dolores\_63, Donatella\_49, Dorito\_56, Dove\_118, Duke13\_127, Easley\_60, EhyElimayoE\_221, Ein37\_53, Ejimix\_126, EricMillard\_124, Evanesce\_52, Faiyaz\_60, Forge\_51, Frankenweenie\_240, Gancho\_52, Giles\_51, Gonephishing\_124, GoodLuckBabe\_53, Gravaillia\_52, Guinevere\_54, Gusanita\_51, HH92\_52, Hadrien\_53, Hail\_51, Halley\_134, Halloweekend\_45, Hannaconda\_123, Heinz\_51, Hibiscus\_51, Hilltopfarm\_59, HokkenD\_122, Hortense\_65, Horus\_71, Howe\_65, Hughesyang\_132, Hyzer\_75, Invectra\_66, IsHungry\_47, JuicyJay\_129, Julie\_49, JustASigh\_51, JustBecause\_223, Kalah2\_123, Kela\_221, Kinbote\_53, Klein\_129, Kradal\_220, LilHazelnut\_53, LittleE\_133, LordFarquaad\_63, Lucky2013\_125, Luke\_53, Luna22\_51, Maja\_42, Malibo\_67, Marleymoo\_117, Mcklovin\_63, MiaZeal\_130, MichaelScott\_66, Minerva\_131, NihilNomen\_134, Nirvana\_250, OBUpride\_53, ODay\_77, Odette\_134, Ohgeesy\_64, Omega\_140, Optimus\_123, Oregano\_65, Phabuloso\_74, Phoebus\_133, PhriskyACE\_62, Popper\_52, Porcelain\_128, Pound\_121, Powerball\_63, Quantum\_217, QuinnAvery\_52, REQ2\_59, Rearden\_128, Redno2\_124, Rem711\_50, Ruthy\_63, Ryan\_51, Samman98\_65, Santhid\_49, Satis\_218, Schatzie\_128, Sekhmet\_62, Shlim410\_63, SoilAssassin\_61, Spooky\_85, Thibault\_114, Thimann\_65, ThreeRngTarjay\_128, Toron\_69, Twinkle\_64, Typha\_59, Ubuntu\_53, Vasanti\_60, Wanda\_131, Webster2\_53, Weirdo19\_50, WinkNick\_63, Wishmaker\_51, Yeet\_124, Zaheer\_53, Zelink\_127,

### Summary by start number:

Start 15:

- Found in 2 of 280 ( 0.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Hyzer\_75 (CZ1),

Start 16:

- Found in 23 of 280 ( 8.2% ) of genes in pham
- Manual Annotations of this start: 3 of 243
- Called 13.0% of time when present
- Phage (with cluster) where this start called: Attis\_61 (CZ2), LordFarquaad\_63 (CZ2), SoilAssassin\_61 (CZ2),

Start 25:

- Found in 2 of 280 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 243
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 32HC\_51 (Z), Rem711\_50 (Z),

Start 29:

- Found in 5 of 280 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 1 of 243
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Ruthy\_63 (DW),

Start 32:

- Found in 2 of 280 ( 0.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: CocoCinnamon\_46 (FO),

Start 36:

- Found in 22 of 280 ( 7.9% ) of genes in pham
- Manual Annotations of this start: 22 of 243
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amochick\_53 (Q), Amymech\_53 (Q), Daegal\_55 (Q), DeepSoil15\_53 (Q), Dewey\_51 (Q), Ein37\_53 (Q), Evanesce\_52 (Q), Forge\_51 (Q), Gancho\_52 (Q), Giles\_51 (Q), Gravaillia\_52 (Q), HH92\_52 (Q), Hadrien\_53 (Q), Hail\_51 (Q), Kinbote\_53 (Q), LilHazelNut\_53 (Q), Luke\_53 (Q), Luna22\_51 (Q), OBUpride\_53 (Q), Ubuntu\_53 (Q), Webster2\_53 (Q), Wishmaker\_51 (Q),

Start 37:

- Found in 8 of 280 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 7 of 243
- Called 100.0% of time when present
- Phage (with cluster) where this start called: EhyElimayoE\_221 (BM), Frankenweenie\_240 (BM), JustBecause\_223 (BM), Kela\_221 (BM), Kradal\_220 (BM), Nirvana\_250 (BM), Quantum\_217 (BM), Satis\_218 (BM),

Start 39:

- Found in 141 of 280 ( 50.4% ) of genes in pham
- Manual Annotations of this start: 115 of 243
- Called 88.7% of time when present
- Phage (with cluster) where this start called: 244\_93 (E), Adnama\_96 (E), Amao\_92 (E), AmericanBeauty\_96 (E), Argent26\_96 (E), Asriel\_90 (E), BaboJay\_92 (E), BadStone\_89 (E), Balomoji\_92 (E), Barbarian\_91 (E), Bask21\_92 (E), Becksu\_91 (E), Bench\_95 (E), BigBubba\_92 (E), BilboSwaggins\_91 (E), Bruin\_89 (E), Buck\_93 (E), BugsBunny\_92 (E), Cactus\_95 (E), ChosenOne\_92 (E), ChotaBhai\_92 (E), Contagion\_88 (E), Cookies\_89 (E), Courthouse\_125 (J), CrystalP\_91 (E), Czystczon1\_93 (E), Daikon\_93 (E), DoctorDiddles\_91 (E), DrDrey\_92 (E), Dumbo\_92 (E), Easy2Say\_93 (E), Elite2014\_91 (E), Elph10\_93 (E), Emmina\_92 (E), FairyPath\_92 (E), Filch\_94 (E), FireRed\_96 (E), Flypotenuse\_88 (E), FoghornLeghorn\_86 (E), Gage\_94 (E), Gator\_90 (E), Gemini\_97 (E), Glexan\_91 (E), Goku\_91 (E), GoldenSpark\_96 (E), Goldilocks\_95 (E), GooberAzure\_95 (E), HanKaySha\_93 (E), Harella\_92 (E), Henry\_90 (E), Highbury\_91 (E), Holt\_97 (E), Hoonter\_95 (E), Hopey\_93 (E), IHOP\_90 (E), Icee\_93 (E), Inca\_89 (E), JeTaime\_93 (E), Kanye\_89 (E), KashFlow\_128 (J), Kimchi\_96 (E), Lilizi\_93 (E), Lilpickle\_91 (E), MISSy\_93 (E), MPhalcon\_93 (E), MadamMonkfish\_92 (E), Manda\_94 (E), Marshmallow\_90 (E), Mindy\_91 (E), Miniwave\_87 (E), Misfit\_93 (E), Moldemort\_95 (E), Murphy\_92 (E), Myrale\_92 (E), NelitzaMV\_90 (E), Nimrod\_93 (E), NoSleep\_93 (E), OrionPax\_91 (E), Palpatine\_94 (E), Paperbeatsrock\_91 (E), Pat3\_89 (E), Petra64142\_97 (E), Phaja\_90 (E), Pharsalus\_89 (E), Phaux\_95 (E), Phrux\_90 (E), Policronamos\_95 (E), Porky\_91 (E), Pumpkin\_96 (E), Quallification\_93 (E), Rakim\_93 (E), Rimmer\_90 (E), RiverMonster\_93 (E), Saints25\_91 (E), Sassay\_87 (E), ShamWow\_92 (E), ShereKhan\_90 (E), Simpliphy\_91 (E), SirDuracell\_92 (E), SophKB\_89 (E), Sotrice96\_93 (E), Squint\_128 (J), Stank\_94 (E), Stark\_94 (E),

StellaBean\_90 (E), StolenFromERC\_95 (E), StormChicken\_94 (E), TBrady12\_95 (E), Tarkin\_91 (E), TeardropMSU\_88 (E), Teaspoon\_93 (E), Terminus\_95 (E), Thimble\_95 (E), Thresher\_95 (E), Tomaszewski\_87 (E), Toto\_90 (E), Traaww1\_88 (E), Tuco\_93 (E), Ukulele\_87 (E), Wiggin\_94 (E), Willez\_87 (E), Xandras\_91 (E), YassJohnny\_89 (E), Youngblood\_95 (E), xkcd\_95 (E),

Start 40:

- Found in 25 of 280 ( 8.9% ) of genes in pham
- Manual Annotations of this start: 22 of 243
- Called 88.0% of time when present
- Phage (with cluster) where this start called: Adora\_62 (CZ4), Beenie\_59 (CZ4), Clark\_64 (CZ4), Confidence\_64 (CY1), DobbysSock\_59 (CZ4), Dolores\_63 (CZ4), Dorito\_56 (CZ4), Easley\_60 (CZ4), Hortense\_65 (CZ4), Howe\_65 (CZ4), Mcklovin\_63 (CZ4), MichaelScott\_66 (CZ4), Ohgeesy\_64 (CZ), Oregano\_65 (CZ4), Powerball\_63 (CZ4), Samman98\_65 (CZ4), Sekhmet\_62 (CZ4), Shlim410\_63 (CZ4), Spooky\_85 (DN2), Thimann\_65 (CZ4), Twinkle\_64 (CZ4), WinkNick\_63 (CZ4),

Start 41:

- Found in 40 of 280 ( 14.3% ) of genes in pham
- Manual Annotations of this start: 36 of 243
- Called 92.5% of time when present
- Phage (with cluster) where this start called: Ariel\_130 (J), BAKA\_132 (J), Beem\_134 (J), Bobby\_124 (J), Bombitas\_120 (J), Constella\_122 (J), Dallas\_133 (J), DmpstrDiver\_132 (J), Dove\_118 (J), Duke13\_127 (J), Ejimix\_126 (J), EricMillard\_124 (J), Halley\_134 (J), Hannaconda\_123 (J), HokkenD\_122 (J), Hughesyang\_132 (J), JuicyJay\_129 (J), Kalah2\_123 (J), Klein\_129 (J), LittleE\_133 (J), Lucky2013\_125 (J), MiaZeal\_130 (J), Minerva\_131 (J), NihilNomen\_134 (J), Odette\_134 (J), Omega\_140 (J), Optimus\_123 (J), Phoebus\_133 (J), Porcelain\_128 (J), Pound\_121 (J), Redno2\_124 (J), Schatzie\_128 (J), Thibault\_114 (J), ThreeRngTarjay\_128 (J), Wanda\_131 (J), Yeet\_124 (J), Zelink\_127 (J),

Start 42:

- Found in 1 of 280 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 243
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BBQValindra\_59 (DB),

Start 43:

- Found in 6 of 280 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 4 of 243
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AuntGwenStacy\_60 (Y), Bipper\_58 (Y), Cracklewink\_58 (Y), Faiyaz\_60 (Y), Hilltopfarm\_59 (Y), Typha\_59 (Y),

Start 44:

- Found in 3 of 280 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 2 of 243
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Heinz\_51 (DY), Hibiscus\_51 (DY), Santhid\_49 (DY),

Start 45:

- Found in 6 of 280 ( 2.1% ) of genes in pham



- Manual Annotations of this start: 1 of 243
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Maja\_42 (FO),

Start 46:

- Found in 2 of 280 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 243
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Malibo\_67 (DW),

Start 47:

- Found in 135 of 280 ( 48.2% ) of genes in pham
- Manual Annotations of this start: 13 of 243
- Called 9.6% of time when present
- Phage (with cluster) where this start called: ABCat\_89 (E), Cjw1\_93 (E), Command613\_94 (E), Dusk\_89 (E), Eureka\_91 (E), HufflyPuff\_94 (E), Kostya\_92 (E), Lilac\_95 (E), Maxxinista\_95 (E), Mosby\_88 (E), Murica\_95 (E), Nala\_94 (E), PhatBacter\_96 (E),

Start 49:

- Found in 6 of 280 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 5 of 243
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BearBQ\_69 (DN), BotCity\_76 (DN), BritBrat\_65 (CY2), Horus\_71 (DN1), ODay\_77 (DN), Phabuloso\_74 (DN1),

Start 52:

- Found in 6 of 280 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 3 of 243
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Cole\_47 (FF), Donatella\_49 (FF), Halloweekend\_45 (FF), QuinnAvery\_52 (FF), Ryan\_51 (FF),

Start 53:

- Found in 1 of 280 ( 0.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Toron\_69 (F6),

Start 54:

- Found in 1 of 280 ( 0.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: REQ2\_59 (singleton),

Start 55:

- Found in 1 of 280 ( 0.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ball\_40 (singleton),

Start 60:

- Found in 7 of 280 ( 2.5% ) of genes in pham

- Manual Annotations of this start: 3 of 243
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GoodLuckBabe\_53 (FF), Guinevere\_54 (FF), Gusanita\_51 (FF), IsHungry\_47 (FF), Julie\_49 (FF), Popper\_52 (FF), Zaheer\_53 (FF),

#### Start 63:

- Found in 8 of 280 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 1 of 243
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Vasanti\_60 (CZ2),

#### Start 64:

- Found in 29 of 280 ( 10.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 3.4% of time when present
- Phage (with cluster) where this start called: Marleymoo\_117 (J),

#### Start 66:

- Found in 24 of 280 ( 8.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 8.3% of time when present
- Phage (with cluster) where this start called: Invectra\_66 (CZ4), PhriskyACE\_62 (CZ4),

#### Start 68:

- Found in 2 of 280 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 243
- Called 100.0% of time when present
- Phage (with cluster) where this start called: JustASigh\_51 (AH), Weirido19\_50 (AH),

#### Start 72:

- Found in 6 of 280 ( 2.1% ) of genes in pham
- Manual Annotations of this start: 1 of 243
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Nekros\_133 (J), Shaboozey\_131 (J), Superphikiman\_127 (J),

#### Start 80:

- Found in 29 of 280 ( 10.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 3.4% of time when present
- Phage (with cluster) where this start called: ArchiDore\_64 (DW),

#### Start 87:

- Found in 103 of 280 ( 36.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 1.9% of time when present
- Phage (with cluster) where this start called: Gonephishing\_124 (J), Rearden\_128 (J),

### **Summary by clusters:**

There are 23 clusters represented in this pham: DN, singleton, CZ2, BM, CZ1, DB, CZ4, FF, DY, DW, FO, DN1, DN2, CY2, CY1, E, AH, J, Q, CZ, Y, Z, F6,

Info for manual annotations of cluster AH:

- Start number 68 was manually annotated 1 time for cluster AH.

Info for manual annotations of cluster BM:

- Start number 37 was manually annotated 7 times for cluster BM.

Info for manual annotations of cluster CY1:

- Start number 40 was manually annotated 1 time for cluster CY1.

Info for manual annotations of cluster CY2:

- Start number 49 was manually annotated 1 time for cluster CY2.

Info for manual annotations of cluster CZ:

- Start number 40 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ2:

- Start number 16 was manually annotated 3 times for cluster CZ2.
- Start number 63 was manually annotated 1 time for cluster CZ2.

Info for manual annotations of cluster CZ4:

- Start number 40 was manually annotated 19 times for cluster CZ4.

Info for manual annotations of cluster DB:

- Start number 42 was manually annotated 1 time for cluster DB.

Info for manual annotations of cluster DN:

- Start number 49 was manually annotated 2 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 49 was manually annotated 2 times for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 40 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster DW:

- Start number 29 was manually annotated 1 time for cluster DW.
- Start number 46 was manually annotated 1 time for cluster DW.

Info for manual annotations of cluster DY:

- Start number 44 was manually annotated 2 times for cluster DY.

Info for manual annotations of cluster E:

- Start number 39 was manually annotated 112 times for cluster E.
- Start number 47 was manually annotated 13 times for cluster E.

Info for manual annotations of cluster FF:

- Start number 52 was manually annotated 3 times for cluster FF.
- Start number 60 was manually annotated 3 times for cluster FF.

Info for manual annotations of cluster FO:

- Start number 45 was manually annotated 1 time for cluster FO.

Info for manual annotations of cluster J:

- Start number 39 was manually annotated 3 times for cluster J.
- Start number 41 was manually annotated 36 times for cluster J.
- Start number 72 was manually annotated 1 time for cluster J.

Info for manual annotations of cluster Q:

- Start number 36 was manually annotated 22 times for cluster Q.

Info for manual annotations of cluster Y:

- Start number 43 was manually annotated 4 times for cluster Y.

Info for manual annotations of cluster Z:

- Start number 25 was manually annotated 1 time for cluster Z.

### **Gene Information:**

Gene: 244\_93 Start: 55622, Stop: 56443, Start Num: 39

Candidate Starts for 244\_93:

(Start: 39 @55622 has 115 MA's), (Start: 47 @55640 has 13 MA's), (50, 55646), (79, 55763), (91, 55823), (93, 55832), (128, 55970), (169, 56129), (170, 56138), (180, 56201), (193, 56282), (209, 56372),

Gene: 32HC\_51 Start: 34909, Stop: 35787, Start Num: 25

Candidate Starts for 32HC\_51:

(17, 34852), (Start: 25 @34909 has 1 MA's), (Start: 29 @34936 has 1 MA's), (33, 34951), (51, 34999), (75, 35086), (97, 35203), (173, 35488), (182, 35533), (200, 35659),

Gene: ABCat\_89 Start: 56328, Stop: 57131, Start Num: 47

Candidate Starts for ABCat\_89:

(Start: 39 @56310 has 115 MA's), (Start: 47 @56328 has 13 MA's), (50, 56334), (79, 56451), (91, 56511), (93, 56520), (128, 56658), (169, 56817), (170, 56826), (180, 56889), (193, 56970), (209, 57060),

Gene: Adnama\_96 Start: 55918, Stop: 56739, Start Num: 39

Candidate Starts for Adnama\_96:

(Start: 39 @55918 has 115 MA's), (Start: 47 @55936 has 13 MA's), (50, 55942), (79, 56059), (91, 56119), (93, 56128), (128, 56266), (169, 56425), (170, 56434), (180, 56497), (193, 56578), (209, 56668),

Gene: Adora\_62 Start: 43256, Stop: 44095, Start Num: 40

Candidate Starts for Adora\_62:

(11, 43076), (Start: 16 @43136 has 3 MA's), (Start: 40 @43256 has 22 MA's), (66, 43334), (87, 43436), (236, 44084),

Gene: Amao\_92 Start: 55430, Stop: 56251, Start Num: 39

Candidate Starts for Amao\_92:

(Start: 39 @55430 has 115 MA's), (Start: 47 @55448 has 13 MA's), (50, 55454), (79, 55571), (91, 55631), (93, 55640), (128, 55778), (169, 55937), (170, 55946), (180, 56009), (193, 56090), (209, 56180),

Gene: AmericanBeauty\_96 Start: 56479, Stop: 57300, Start Num: 39

Candidate Starts for AmericanBeauty\_96:

(Start: 39 @56479 has 115 MA's), (Start: 47 @56497 has 13 MA's), (50, 56503), (79, 56620), (91, 56680), (93, 56689), (128, 56827), (169, 56986), (170, 56995), (180, 57058), (193, 57139), (209, 57229),

Gene: Amochick\_53 Start: 37915, Stop: 38778, Start Num: 36

Candidate Starts for Amochick\_53:

(Start: 36 @37915 has 22 MA's), (62, 37981), (65, 38005), (77, 38044), (78, 38050), (80, 38065), (87, 38101), (88, 38107), (96, 38149), (99, 38158), (114, 38221), (118, 38239), (122, 38251), (129, 38269), (142, 38338), (144, 38347), (145, 38353), (154, 38374), (164, 38407), (170, 38440), (172, 38455), (186, 38554), (189, 38566), (192, 38578), (201, 38635), (208, 38662), (214, 38686), (228, 38719), (232, 38734), (239, 38767),

Gene: Amymech\_53 Start: 37891, Stop: 38754, Start Num: 36

Candidate Starts for Amymech\_53:

(Start: 36 @37891 has 22 MA's), (62, 37957), (65, 37981), (77, 38020), (78, 38026), (80, 38041), (87, 38077), (88, 38083), (96, 38125), (99, 38134), (114, 38197), (118, 38215), (122, 38227), (129, 38245), (142, 38314), (144, 38323), (145, 38329), (154, 38350), (164, 38383), (170, 38416), (172, 38431), (186, 38530), (189, 38542), (192, 38554), (201, 38611), (208, 38638), (214, 38662), (228, 38695), (232, 38710), (239, 38743),

Gene: ArchiDore\_64 Start: 45888, Stop: 46604, Start Num: 80

Candidate Starts for ArchiDore\_64:

(1, 45183), (4, 45528), (6, 45543), (12, 45591), (14, 45624), (15, 45633), (Start: 29 @45717 has 1 MA's), (80, 45888), (95, 45972), (100, 45984), (104, 46026), (174, 46296), (220, 46518),

Gene: Argent26\_96 Start: 55839, Stop: 56660, Start Num: 39

Candidate Starts for Argent26\_96:

(Start: 39 @55839 has 115 MA's), (Start: 47 @55857 has 13 MA's), (50, 55863), (79, 55980), (91, 56040), (93, 56049), (128, 56187), (169, 56346), (170, 56355), (180, 56418), (193, 56499), (209, 56589),

Gene: Ariel\_130 Start: 68384, Stop: 69184, Start Num: 41

Candidate Starts for Ariel\_130:

(Start: 41 @68384 has 36 MA's), (64, 68444), (74, 68495), (78, 68510), (87, 68561), (114, 68675), (126, 68708), (141, 68777), (145, 68795), (157, 68822), (161, 68846), (165, 68855),

Gene: Asriel\_90 Start: 54255, Stop: 55076, Start Num: 39

Candidate Starts for Asriel\_90:

(Start: 39 @54255 has 115 MA's), (Start: 47 @54273 has 13 MA's), (50, 54279), (79, 54396), (91, 54456), (93, 54465), (128, 54603), (169, 54762), (170, 54771), (180, 54834), (193, 54915), (209, 55005),

Gene: Attis\_61 Start: 41335, Stop: 42336, Start Num: 16

Candidate Starts for Attis\_61:

(9, 41272), (Start: 16 @41335 has 3 MA's), (28, 41413), (Start: 63 @41509 has 1 MA's), (97, 41683), (98, 41686), (100, 41689), (104, 41731), (113, 41764), (114, 41770), (128, 41812), (165, 41947), (173, 41998), (174, 42001), (195, 42133), (209, 42211), (227, 42259), (235, 42295), (242, 42325),

Gene: AuntGwenStacy\_60 Start: 43522, Stop: 44343, Start Num: 43

Candidate Starts for AuntGwenStacy\_60:

(22, 43438), (24, 43447), (27, 43462), (30, 43480), (Start: 43 @43522 has 4 MA's), (70, 43615), (71, 43618), (78, 43648), (82, 43675), (91, 43714), (94, 43732), (110, 43807), (114, 43825), (116, 43837), (130, 43867), (141, 43924), (143, 43933), (166, 43996), (173, 44041), (184, 44104), (189, 44143), (201, 44212), (205, 44230), (238, 44332),

Gene: BAKA\_132 Start: 71349, Stop: 72104, Start Num: 41

Candidate Starts for BAKA\_132:

(Start: 41 @71349 has 36 MA's), (87, 71505), (94, 71538), (98, 71562), (104, 71586), (120, 71640), (121, 71646), (123, 71652), (128, 71661), (132, 71688), (136, 71700), (150, 71745), (155, 71760), (171, 71832), (201, 72012), (216, 72060),

Gene: BBQValindra\_59 Start: 41751, Stop: 42629, Start Num: 42

Candidate Starts for BBQValindra\_59:

(Start: 40 @41748 has 22 MA's), (Start: 42 @41751 has 1 MA's), (Start: 63 @41802 has 1 MA's), (97, 41976), (100, 41982), (104, 42024), (128, 42105), (130, 42114), (141, 42171), (173, 42291), (227, 42552),

Gene: BaboJay\_92 Start: 56501, Stop: 57322, Start Num: 39

Candidate Starts for BaboJay\_92:

(Start: 39 @56501 has 115 MA's), (Start: 47 @56519 has 13 MA's), (50, 56525), (79, 56642), (91, 56702), (93, 56711), (128, 56849), (169, 57008), (170, 57017), (180, 57080), (193, 57161), (209, 57251),

Gene: BadStone\_89 Start: 55879, Stop: 56700, Start Num: 39

Candidate Starts for BadStone\_89:

(Start: 39 @55879 has 115 MA's), (Start: 47 @55897 has 13 MA's), (50, 55903), (79, 56020), (91, 56080), (93, 56089), (128, 56227), (169, 56386), (170, 56395), (180, 56458), (193, 56539), (209, 56629),

Gene: Ball\_40 Start: 29611, Stop: 30444, Start Num: 55

Candidate Starts for Ball\_40:

(55, 29611), (67, 29665), (87, 29758), (128, 29917), (132, 29944), (133, 29953), (134, 29956), (203, 30280), (230, 30361), (240, 30409),

Gene: Balomoji\_92 Start: 56037, Stop: 56858, Start Num: 39

Candidate Starts for Balomoji\_92:

(Start: 39 @56037 has 115 MA's), (Start: 47 @56055 has 13 MA's), (50, 56061), (61, 56091), (91, 56238), (93, 56247), (130, 56394), (169, 56544), (209, 56787),

Gene: Barbarian\_91 Start: 54255, Stop: 55076, Start Num: 39

Candidate Starts for Barbarian\_91:

(Start: 39 @54255 has 115 MA's), (Start: 47 @54273 has 13 MA's), (50, 54279), (79, 54396), (91, 54456), (93, 54465), (128, 54603), (169, 54762), (170, 54771), (180, 54834), (193, 54915), (209, 55005),

Gene: Bask21\_92 Start: 54890, Stop: 55711, Start Num: 39

Candidate Starts for Bask21\_92:

(Start: 39 @54890 has 115 MA's), (Start: 47 @54908 has 13 MA's), (50, 54914), (61, 54944), (91, 55091), (93, 55100), (130, 55247), (169, 55397), (209, 55640), (228, 55691),

Gene: BearBQ\_69 Start: 43538, Stop: 44368, Start Num: 49

Candidate Starts for BearBQ\_69:

(Start: 49 @43538 has 5 MA's), (80, 43664), (85, 43685), (92, 43718), (113, 43826), (114, 43832), (128, 43874), (129, 43877), (130, 43883), (132, 43901), (157, 43982), (158, 43985), (169, 44030), (171, 44051), (173, 44057), (183, 44111), (190, 44168), (191, 44171), (202, 44240), (209, 44267), (213, 44282), (227, 44315), (229, 44327), (233, 44336), (237, 44357),

Gene: Becksu\_91 Start: 56231, Stop: 57052, Start Num: 39

Candidate Starts for Becksu\_91:

(Start: 39 @56231 has 115 MA's), (Start: 47 @56249 has 13 MA's), (50, 56255), (79, 56372), (91, 56432), (93, 56441), (128, 56579), (169, 56738), (170, 56747), (180, 56810), (193, 56891), (209, 56981),

Gene: Beem\_134 Start: 72902, Stop: 73702, Start Num: 41

Candidate Starts for Beem\_134:

(Start: 41 @72902 has 36 MA's), (64, 72962), (74, 73013), (78, 73028), (87, 73079), (114, 73193), (126, 73226), (141, 73295), (145, 73313), (157, 73340), (161, 73364), (165, 73373), (201, 73610), (216, 73658),

Gene: Beenie\_59 Start: 41304, Stop: 42143, Start Num: 40

Candidate Starts for Beenie\_59:

(Start: 16 @41181 has 3 MA's), (Start: 40 @41304 has 22 MA's), (66, 41382), (87, 41484), (236, 42132),

Gene: Bench\_95 Start: 55974, Stop: 56795, Start Num: 39

Candidate Starts for Bench\_95:

(Start: 39 @55974 has 115 MA's), (Start: 47 @55992 has 13 MA's), (50, 55998), (79, 56115), (91, 56175), (93, 56184), (128, 56322), (169, 56481), (170, 56490), (180, 56553), (193, 56634), (209, 56724),

Gene: BigBubba\_92 Start: 55271, Stop: 56092, Start Num: 39

Candidate Starts for BigBubba\_92:

(Start: 39 @55271 has 115 MA's), (Start: 47 @55289 has 13 MA's), (50, 55295), (79, 55412), (91, 55472), (93, 55481), (128, 55619), (169, 55778), (170, 55787), (180, 55850), (193, 55931), (209, 56021),

Gene: BilboSwaggins\_91 Start: 56276, Stop: 57097, Start Num: 39

Candidate Starts for BilboSwaggins\_91:

(Start: 39 @56276 has 115 MA's), (Start: 47 @56294 has 13 MA's), (50, 56300), (79, 56417), (91, 56477), (93, 56486), (128, 56624), (169, 56783), (170, 56792), (180, 56855), (193, 56936), (209, 57026),

Gene: Bipper\_58 Start: 42349, Stop: 43125, Start Num: 43

Candidate Starts for Bipper\_58:

(Start: 43 @42349 has 4 MA's), (71, 42442), (87, 42523), (103, 42598), (114, 42649), (116, 42661), (130, 42691), (146, 42766), (148, 42769), (166, 42820), (173, 42865), (181, 42898), (205, 43054), (209, 43066), (217, 43090), (226, 43108),

Gene: Bobby\_124 Start: 73003, Stop: 73803, Start Num: 41

Candidate Starts for Bobby\_124:

(Start: 41 @73003 has 36 MA's), (64, 73063), (78, 73129), (87, 73180), (114, 73294), (126, 73327), (141, 73396), (145, 73414), (157, 73441), (161, 73465), (165, 73474), (201, 73711), (216, 73759),

Gene: Bombitas\_120 Start: 70313, Stop: 71113, Start Num: 41

Candidate Starts for Bombitas\_120:

(Start: 41 @70313 has 36 MA's), (64, 70373), (74, 70424), (78, 70439), (87, 70490), (114, 70604), (126, 70637), (141, 70706), (145, 70724), (157, 70751), (161, 70775), (165, 70784), (201, 71021), (216, 71069),

Gene: BotCity\_76 Start: 43774, Stop: 44604, Start Num: 49

Candidate Starts for BotCity\_76:

(Start: 49 @43774 has 5 MA's), (80, 43900), (85, 43921), (92, 43954), (113, 44062), (114, 44068), (128, 44110), (129, 44113), (130, 44119), (132, 44137), (157, 44218), (158, 44221), (169, 44266), (173, 44293), (183, 44347), (190, 44404), (191, 44407), (200, 44470), (202, 44476), (209, 44503), (213, 44518), (227, 44551), (229, 44563), (233, 44572), (237, 44593),

Gene: BritBrat\_65 Start: 43022, Stop: 43852, Start Num: 49

Candidate Starts for BritBrat\_65:

(Start: 49 @43022 has 5 MA's), (85, 43169), (114, 43316), (128, 43358), (129, 43361), (130, 43367), (132, 43385), (157, 43466), (158, 43469), (171, 43535), (173, 43541), (183, 43595), (187, 43637), (190, 43652), (191, 43655), (200, 43718), (202, 43724), (207, 43745), (209, 43751), (213, 43766), (227, 43799), (229, 43811), (233, 43820), (237, 43841),

Gene: Bruin\_89 Start: 54853, Stop: 55674, Start Num: 39

Candidate Starts for Bruin\_89:

(Start: 39 @54853 has 115 MA's), (Start: 47 @54871 has 13 MA's), (50, 54877), (79, 54994), (91, 55054), (93, 55063), (128, 55201), (169, 55360), (170, 55369), (180, 55432), (193, 55513), (209, 55603),

Gene: Buck\_93 Start: 56542, Stop: 57363, Start Num: 39

Candidate Starts for Buck\_93:

(Start: 39 @56542 has 115 MA's), (Start: 47 @56560 has 13 MA's), (50, 56566), (61, 56596), (91, 56743), (93, 56752), (130, 56899), (169, 57049), (209, 57292),

Gene: BugsBunny\_92 Start: 56382, Stop: 57203, Start Num: 39

Candidate Starts for BugsBunny\_92:

(Start: 39 @56382 has 115 MA's), (Start: 47 @56400 has 13 MA's), (50, 56406), (79, 56523), (91, 56583), (93, 56592), (128, 56730), (169, 56889), (170, 56898), (180, 56961), (193, 57042), (209, 57132),

Gene: Cactus\_95 Start: 54919, Stop: 55740, Start Num: 39

Candidate Starts for Cactus\_95:

(Start: 39 @54919 has 115 MA's), (Start: 47 @54937 has 13 MA's), (50, 54943), (79, 55060), (91, 55120), (93, 55129), (128, 55267), (169, 55426), (170, 55435), (180, 55498), (193, 55579), (209, 55669),

Gene: ChosenOne\_92 Start: 55334, Stop: 56155, Start Num: 39

Candidate Starts for ChosenOne\_92:

(Start: 39 @55334 has 115 MA's), (Start: 47 @55352 has 13 MA's), (50, 55358), (79, 55475), (91, 55535), (93, 55544), (128, 55682), (169, 55841), (170, 55850), (180, 55913), (193, 55994), (209, 56084),

Gene: ChotaBhai\_92 Start: 55255, Stop: 56076, Start Num: 39

Candidate Starts for ChotaBhai\_92:

(Start: 39 @55255 has 115 MA's), (Start: 47 @55273 has 13 MA's), (50, 55279), (61, 55309), (91, 55456), (93, 55465), (130, 55612), (169, 55762), (209, 56005), (228, 56056),



Gene: Cjw1\_93 Start: 57316, Stop: 58119, Start Num: 47

Candidate Starts for Cjw1\_93:

(Start: 39 @57298 has 115 MA's), (Start: 47 @57316 has 13 MA's), (50, 57322), (79, 57439), (91, 57499), (93, 57508), (128, 57646), (169, 57805), (170, 57814), (180, 57877), (193, 57958), (209, 58048),

Gene: Clark\_64 Start: 41067, Stop: 41906, Start Num: 40

Candidate Starts for Clark\_64:

(Start: 16 @40944 has 3 MA's), (Start: 40 @41067 has 22 MA's), (66, 41145), (87, 41247), (236, 41895),

Gene: CocoCinnamon\_46 Start: 29916, Stop: 30803, Start Num: 32

Candidate Starts for CocoCinnamon\_46:

(21, 29853), (23, 29868), (32, 29916), (86, 30102), (94, 30150), (106, 30204), (114, 30237), (128, 30276), (134, 30315), (143, 30351), (157, 30378), (179, 30480), (189, 30555), (201, 30627), (202, 30630), (224, 30696), (237, 30747),

Gene: Cole\_47 Start: 33705, Stop: 34544, Start Num: 52

Candidate Starts for Cole\_47:

(Start: 45 @33690 has 1 MA's), (48, 33696), (Start: 52 @33705 has 3 MA's), (76, 33792), (86, 33843), (94, 33891), (106, 33945), (107, 33951), (114, 33978), (128, 34017), (133, 34053), (134, 34056), (143, 34092), (157, 34119), (165, 34140), (179, 34221), (189, 34296), (201, 34368), (202, 34371), (224, 34437),

Gene: Command613\_94 Start: 56391, Stop: 57194, Start Num: 47

Candidate Starts for Command613\_94:

(Start: 39 @56373 has 115 MA's), (Start: 47 @56391 has 13 MA's), (50, 56397), (79, 56514), (91, 56574), (93, 56583), (128, 56721), (169, 56880), (170, 56889), (180, 56952), (193, 57033), (209, 57123),

Gene: Confidence\_64 Start: 42274, Stop: 43167, Start Num: 40

Candidate Starts for Confidence\_64:

(23, 42202), (24, 42205), (Start: 40 @42274 has 22 MA's), (97, 42505), (98, 42508), (100, 42511), (104, 42553), (128, 42634), (165, 42769), (173, 42820), (195, 42964), (227, 43090), (242, 43156),

Gene: Constella\_122 Start: 68436, Stop: 69236, Start Num: 41

Candidate Starts for Constella\_122:

(Start: 41 @68436 has 36 MA's), (64, 68496), (74, 68547), (78, 68562), (87, 68613), (114, 68727), (126, 68760), (141, 68829), (145, 68847), (157, 68874), (161, 68898), (165, 68907), (201, 69144), (216, 69192),

Gene: Contagion\_88 Start: 55134, Stop: 55955, Start Num: 39

Candidate Starts for Contagion\_88:

(Start: 39 @55134 has 115 MA's), (Start: 47 @55152 has 13 MA's), (50, 55158), (79, 55275), (91, 55335), (93, 55344), (128, 55482), (169, 55641), (170, 55650), (180, 55713), (193, 55794), (209, 55884),

Gene: Cookies\_89 Start: 55112, Stop: 55933, Start Num: 39

Candidate Starts for Cookies\_89:

(Start: 39 @55112 has 115 MA's), (Start: 47 @55130 has 13 MA's), (50, 55136), (61, 55166), (91, 55313), (93, 55322), (130, 55469), (169, 55619), (209, 55862),

Gene: Courthouse\_125 Start: 67981, Stop: 68739, Start Num: 39

Candidate Starts for Courthouse\_125:

(Start: 39 @67981 has 115 MA's), (Start: 72 @68071 has 1 MA's), (87, 68140), (93, 68164), (94, 68173), (98, 68197), (104, 68221), (108, 68236), (112, 68248), (120, 68275), (123, 68287), (128, 68296), (136, 68335), (160, 68404), (171, 68467),

Gene: Cracklewink\_58 Start: 42330, Stop: 43106, Start Num: 43

Candidate Starts for Cracklewink\_58:

(Start: 43 @42330 has 4 MA's), (71, 42423), (87, 42504), (103, 42579), (116, 42642), (130, 42672), (146, 42747), (148, 42750), (166, 42801), (173, 42846), (181, 42879), (205, 43035), (209, 43047), (217, 43071), (226, 43089),

Gene: CrystalP\_91 Start: 56276, Stop: 57097, Start Num: 39

Candidate Starts for CrystalP\_91:

(Start: 39 @56276 has 115 MA's), (Start: 47 @56294 has 13 MA's), (50, 56300), (79, 56417), (91, 56477), (93, 56486), (128, 56624), (169, 56783), (170, 56792), (180, 56855), (193, 56936), (209, 57026),

Gene: Czyszczone1\_93 Start: 55837, Stop: 56658, Start Num: 39

Candidate Starts for Czyszczone1\_93:

(Start: 39 @55837 has 115 MA's), (Start: 47 @55855 has 13 MA's), (50, 55861), (79, 55978), (91, 56038), (93, 56047), (128, 56185), (169, 56344), (170, 56353), (180, 56416), (193, 56497), (209, 56587),

Gene: Daegal\_55 Start: 38475, Stop: 39338, Start Num: 36

Candidate Starts for Daegal\_55:

(Start: 36 @38475 has 22 MA's), (62, 38541), (65, 38565), (77, 38604), (78, 38610), (80, 38625), (87, 38661), (88, 38667), (96, 38709), (99, 38718), (114, 38781), (118, 38799), (122, 38811), (129, 38829), (142, 38898), (144, 38907), (145, 38913), (154, 38934), (164, 38967), (170, 39000), (172, 39015), (186, 39114), (189, 39126), (192, 39138), (201, 39195), (208, 39222), (214, 39246), (228, 39279), (232, 39294), (239, 39327),

Gene: Daikon\_93 Start: 55864, Stop: 56685, Start Num: 39

Candidate Starts for Daikon\_93:

(Start: 39 @55864 has 115 MA's), (Start: 47 @55882 has 13 MA's), (50, 55888), (61, 55918), (91, 56065), (93, 56074), (130, 56221), (169, 56371), (209, 56614),

Gene: Dallas\_133 Start: 72414, Stop: 73169, Start Num: 41

Candidate Starts for Dallas\_133:

(Start: 41 @72414 has 36 MA's), (87, 72570), (94, 72603), (98, 72627), (104, 72651), (120, 72705), (121, 72711), (123, 72717), (128, 72726), (132, 72753), (136, 72765), (150, 72810), (155, 72825), (171, 72897), (201, 73077), (216, 73125),

Gene: DeepSoil15\_53 Start: 37891, Stop: 38754, Start Num: 36

Candidate Starts for DeepSoil15\_53:

(Start: 36 @37891 has 22 MA's), (62, 37957), (65, 37981), (77, 38020), (78, 38026), (80, 38041), (87, 38077), (88, 38083), (96, 38125), (99, 38134), (114, 38197), (118, 38215), (122, 38227), (129, 38245), (142, 38314), (144, 38323), (145, 38329), (154, 38350), (164, 38383), (170, 38416), (172, 38431), (186, 38530), (189, 38542), (192, 38554), (201, 38611), (208, 38638), (214, 38662), (228, 38695), (232, 38710), (239, 38743),

Gene: Dewey\_51 Start: 37891, Stop: 38754, Start Num: 36

Candidate Starts for Dewey\_51:

(Start: 36 @37891 has 22 MA's), (62, 37957), (65, 37981), (77, 38020), (78, 38026), (80, 38041), (87, 38077), (88, 38083), (96, 38125), (99, 38134), (114, 38197), (118, 38215), (122, 38227), (129, 38245), (142, 38314), (144, 38323), (145, 38329), (154, 38350), (164, 38383), (170, 38416), (172, 38431), (186, 38530), (189, 38542), (192, 38554), (201, 38611), (208, 38638), (214, 38662), (228, 38695), (232, 38710), (239, 38743),

Gene: DmpstrDiver\_132 Start: 71716, Stop: 72516, Start Num: 41

Candidate Starts for DmpstrDiver\_132:

(Start: 41 @71716 has 36 MA's), (64, 71776), (74, 71827), (78, 71842), (87, 71893), (114, 72007), (126, 72040), (141, 72109), (145, 72127), (157, 72154), (161, 72178), (165, 72187), (201, 72424), (216, 72472),

Gene: DobbysSock\_59 Start: 40715, Stop: 41554, Start Num: 40

Candidate Starts for DobbysSock\_59:

(Start: 16 @40592 has 3 MA's), (Start: 40 @40715 has 22 MA's), (66, 40793), (87, 40895), (236, 41543),

Gene: DoctorDiddles\_91 Start: 55299, Stop: 56120, Start Num: 39

Candidate Starts for DoctorDiddles\_91:

(Start: 39 @55299 has 115 MA's), (Start: 47 @55317 has 13 MA's), (50, 55323), (61, 55353), (91, 55500), (93, 55509), (130, 55656), (169, 55806), (209, 56049), (228, 56100),

Gene: Dolores\_63 Start: 40400, Stop: 41236, Start Num: 40

Candidate Starts for Dolores\_63:

(11, 40220), (Start: 16 @40280 has 3 MA's), (Start: 40 @40400 has 22 MA's), (66, 40478), (87, 40580), (236, 41225),

Gene: Donatella\_49 Start: 34170, Stop: 35009, Start Num: 52

Candidate Starts for Donatella\_49:

(Start: 45 @34155 has 1 MA's), (48, 34161), (Start: 52 @34170 has 3 MA's), (86, 34308), (94, 34356), (106, 34410), (107, 34416), (114, 34443), (128, 34482), (133, 34518), (134, 34521), (143, 34557), (157, 34584), (165, 34605), (179, 34686), (189, 34761), (201, 34833), (202, 34836), (224, 34902),

Gene: Dorito\_56 Start: 38217, Stop: 39053, Start Num: 40

Candidate Starts for Dorito\_56:

(Start: 16 @38097 has 3 MA's), (Start: 40 @38217 has 22 MA's), (66, 38292), (87, 38394), (236, 39042),

Gene: Dove\_118 Start: 67360, Stop: 68115, Start Num: 41

Candidate Starts for Dove\_118:

(Start: 41 @67360 has 36 MA's), (87, 67516), (94, 67549), (98, 67573), (104, 67597), (120, 67651), (121, 67657), (123, 67663), (128, 67672), (132, 67699), (136, 67711), (150, 67756), (155, 67771), (171, 67843), (201, 68023), (216, 68071),

Gene: DrDrey\_92 Start: 56756, Stop: 57577, Start Num: 39

Candidate Starts for DrDrey\_92:

(Start: 39 @56756 has 115 MA's), (Start: 47 @56774 has 13 MA's), (50, 56780), (79, 56897), (91, 56957), (93, 56966), (128, 57104), (169, 57263), (170, 57272), (180, 57335), (193, 57416), (209, 57506),

Gene: Duke13\_127 Start: 69017, Stop: 69817, Start Num: 41

Candidate Starts for Duke13\_127:

(Start: 41 @69017 has 36 MA's), (64, 69077), (74, 69128), (78, 69143), (87, 69194), (114, 69308), (126, 69341), (141, 69410), (145, 69428), (157, 69455), (161, 69479), (165, 69488), (201, 69725), (216, 69773),

Gene: Dumbo\_92 Start: 55236, Stop: 56057, Start Num: 39

Candidate Starts for Dumbo\_92:

(Start: 39 @55236 has 115 MA's), (Start: 47 @55254 has 13 MA's), (50, 55260), (79, 55377), (91, 55437), (93, 55446), (128, 55584), (169, 55743), (170, 55752), (180, 55815), (193, 55896), (209, 55986),

Gene: Dusk\_89 Start: 55557, Stop: 56360, Start Num: 47

Candidate Starts for Dusk\_89:

(Start: 39 @55539 has 115 MA's), (Start: 47 @55557 has 13 MA's), (50, 55563), (79, 55680), (91, 55740), (93, 55749), (128, 55887), (169, 56046), (170, 56055), (180, 56118), (193, 56199), (209, 56289),

Gene: Easley\_60 Start: 39896, Stop: 40729, Start Num: 40

Candidate Starts for Easley\_60:

(Start: 16 @39791 has 3 MA's), (Start: 40 @39896 has 22 MA's), (66, 39971), (87, 40073), (132, 40277), (236, 40718),

Gene: Easy2Say\_93 Start: 56738, Stop: 57559, Start Num: 39

Candidate Starts for Easy2Say\_93:

(Start: 39 @56738 has 115 MA's), (Start: 47 @56756 has 13 MA's), (50, 56762), (79, 56879), (91, 56939), (93, 56948), (128, 57086), (169, 57245), (170, 57254), (180, 57317), (193, 57398), (209, 57488),

Gene: EhyElimayoE\_221 Start: 131574, Stop: 132389, Start Num: 37

Candidate Starts for EhyElimayoE\_221:

(19, 131472), (Start: 37 @131574 has 7 MA's), (51, 131610), (82, 131742), (83, 131745), (86, 131754), (87, 131766), (88, 131772), (135, 131967), (138, 131982), (141, 131991), (147, 132009), (165, 132057), (166, 132063), (170, 132090), (175, 132126), (199, 132291), (212, 132339),

Gene: Ein37\_53 Start: 37891, Stop: 38754, Start Num: 36

Candidate Starts for Ein37\_53:

(Start: 36 @37891 has 22 MA's), (62, 37957), (65, 37981), (77, 38020), (78, 38026), (80, 38041), (87, 38077), (88, 38083), (96, 38125), (99, 38134), (114, 38197), (118, 38215), (122, 38227), (129, 38245), (142, 38314), (144, 38323), (145, 38329), (154, 38350), (164, 38383), (170, 38416), (172, 38431), (186, 38530), (189, 38542), (192, 38554), (201, 38611), (208, 38638), (214, 38662), (228, 38695), (232, 38710), (239, 38743),

Gene: Ejimix\_126 Start: 72482, Stop: 73237, Start Num: 41

Candidate Starts for Ejimix\_126:

(Start: 41 @72482 has 36 MA's), (87, 72638), (94, 72671), (98, 72695), (104, 72719), (120, 72773), (121, 72779), (123, 72785), (128, 72794), (132, 72821), (136, 72833), (150, 72878), (155, 72893), (171, 72965), (201, 73145), (216, 73193),

Gene: Elite2014\_91 Start: 55333, Stop: 56154, Start Num: 39

Candidate Starts for Elite2014\_91:

(Start: 39 @55333 has 115 MA's), (Start: 47 @55351 has 13 MA's), (50, 55357), (79, 55474), (91, 55534), (93, 55543), (128, 55681), (169, 55840), (170, 55849), (180, 55912), (193, 55993), (209, 56083),

Gene: Elph10\_93 Start: 55326, Stop: 56147, Start Num: 39

Candidate Starts for Elph10\_93:

(Start: 39 @55326 has 115 MA's), (Start: 47 @55344 has 13 MA's), (50, 55350), (79, 55467), (91, 55527), (93, 55536), (128, 55674), (169, 55833), (170, 55842), (180, 55905), (193, 55986), (209, 56076),

Gene: Emmina\_92 Start: 54959, Stop: 55780, Start Num: 39

Candidate Starts for Emmina\_92:

(Start: 39 @54959 has 115 MA's), (Start: 47 @54977 has 13 MA's), (50, 54983), (79, 55100), (91, 55160), (93, 55169), (128, 55307), (169, 55466), (170, 55475), (180, 55538), (193, 55619), (209, 55709),

Gene: EricMillard\_124 Start: 70986, Stop: 71741, Start Num: 41

Candidate Starts for EricMillard\_124:

(Start: 41 @70986 has 36 MA's), (87, 71142), (94, 71175), (98, 71199), (104, 71223), (120, 71277), (121, 71283), (123, 71289), (128, 71298), (132, 71325), (136, 71337), (150, 71382), (155, 71397), (171, 71469), (201, 71649), (216, 71697),

Gene: Eureka\_91 Start: 56264, Stop: 57067, Start Num: 47

Candidate Starts for Eureka\_91:

(Start: 39 @56246 has 115 MA's), (Start: 47 @56264 has 13 MA's), (50, 56270), (79, 56387), (91, 56447), (93, 56456), (128, 56594), (169, 56753), (170, 56762), (180, 56825), (193, 56906), (209, 56996),

Gene: Evanesce\_52 Start: 37891, Stop: 38754, Start Num: 36

Candidate Starts for Evanesce\_52:

(Start: 36 @37891 has 22 MA's), (62, 37957), (65, 37981), (77, 38020), (78, 38026), (80, 38041), (87, 38077), (88, 38083), (96, 38125), (99, 38134), (114, 38197), (118, 38215), (122, 38227), (129, 38245), (142, 38314), (144, 38323), (145, 38329), (154, 38350), (164, 38383), (170, 38416), (172, 38431), (186, 38530), (189, 38542), (192, 38554), (201, 38611), (214, 38662), (228, 38695), (232, 38710), (239, 38743),

Gene: FairyPath\_92 Start: 56452, Stop: 57273, Start Num: 39

Candidate Starts for FairyPath\_92:

(Start: 39 @56452 has 115 MA's), (Start: 47 @56470 has 13 MA's), (50, 56476), (79, 56593), (91, 56653), (93, 56662), (128, 56800), (169, 56959), (170, 56968), (180, 57031), (193, 57112), (209, 57202),

Gene: Faiyaz\_60 Start: 43512, Stop: 44333, Start Num: 43

Candidate Starts for Faiyaz\_60:

(2, 43080), (3, 43197), (8, 43311), (22, 43428), (24, 43437), (27, 43452), (30, 43470), (Start: 43 @43512 has 4 MA's), (70, 43605), (71, 43608), (78, 43638), (82, 43665), (91, 43704), (94, 43722), (110, 43797), (114, 43815), (116, 43827), (130, 43857), (141, 43914), (143, 43923), (166, 43986), (170, 44013), (173, 44031), (184, 44094), (189, 44133), (201, 44202), (205, 44220), (238, 44322),

Gene: Filch\_94 Start: 55531, Stop: 56352, Start Num: 39

Candidate Starts for Filch\_94:

(Start: 39 @55531 has 115 MA's), (Start: 47 @55549 has 13 MA's), (50, 55555), (79, 55672), (91, 55732), (93, 55741), (128, 55879), (169, 56038), (170, 56047), (180, 56110), (193, 56191), (209, 56281),

Gene: FireRed\_96 Start: 56549, Stop: 57370, Start Num: 39

Candidate Starts for FireRed\_96:

(Start: 39 @56549 has 115 MA's), (Start: 47 @56567 has 13 MA's), (50, 56573), (79, 56690), (91, 56750), (93, 56759), (128, 56897), (169, 57056), (170, 57065), (180, 57128), (193, 57209), (209, 57299),

Gene: Flypotenuse\_88 Start: 54909, Stop: 55730, Start Num: 39

Candidate Starts for Flypotenuse\_88:

(Start: 39 @54909 has 115 MA's), (Start: 47 @54927 has 13 MA's), (50, 54933), (79, 55050), (91, 55110), (93, 55119), (128, 55257), (169, 55416), (170, 55425), (180, 55488), (193, 55569), (209, 55659),

Gene: FoghornLeghorn\_86 Start: 53934, Stop: 54755, Start Num: 39

Candidate Starts for FoghornLeghorn\_86:

(Start: 39 @53934 has 115 MA's), (Start: 47 @53952 has 13 MA's), (50, 53958), (61, 53988), (91, 54135), (93, 54144), (130, 54291), (169, 54441), (209, 54684),

Gene: Forge\_51 Start: 37891, Stop: 38754, Start Num: 36

Candidate Starts for Forge\_51:

(Start: 36 @37891 has 22 MA's), (62, 37957), (65, 37981), (77, 38020), (78, 38026), (80, 38041), (87, 38077), (88, 38083), (96, 38125), (99, 38134), (114, 38197), (118, 38215), (122, 38227), (129, 38245), (142, 38314), (144, 38323), (145, 38329), (154, 38350), (164, 38383), (170, 38416), (172, 38431), (186, 38530), (189, 38542), (192, 38554), (201, 38611), (208, 38638), (214, 38662), (228, 38695), (232, 38710), (239, 38743),

Gene: Frankenweenie\_240 Start: 142886, Stop: 143593, Start Num: 37

Candidate Starts for Frankenweenie\_240:

(7, 142685), (34, 142877), (Start: 37 @142886 has 7 MA's), (51, 142922), (87, 143081), (88, 143087), (98, 143138), (102, 143153), (113, 143195), (141, 143303), (144, 143315), (162, 143363), (167, 143381), (174, 143423), (177, 143444), (178, 143459), (194, 143558),

Gene: Gage\_94 Start: 55980, Stop: 56801, Start Num: 39

Candidate Starts for Gage\_94:

(Start: 39 @55980 has 115 MA's), (Start: 47 @55998 has 13 MA's), (50, 56004), (79, 56121), (91, 56181), (93, 56190), (128, 56328), (169, 56487), (170, 56496), (180, 56559), (193, 56640), (209, 56730),

Gene: Gancho\_52 Start: 37614, Stop: 38477, Start Num: 36

Candidate Starts for Gancho\_52:

(Start: 36 @37614 has 22 MA's), (62, 37680), (65, 37704), (77, 37743), (78, 37749), (80, 37764), (87, 37800), (88, 37806), (96, 37848), (99, 37857), (114, 37920), (118, 37938), (122, 37950), (129, 37968), (142, 38037), (144, 38046), (145, 38052), (154, 38073), (164, 38106), (170, 38139), (172, 38154), (186, 38253), (189, 38265), (192, 38277), (201, 38334), (208, 38361), (214, 38385), (228, 38418), (232, 38433), (239, 38466),

Gene: Gator\_90 Start: 55764, Stop: 56585, Start Num: 39

Candidate Starts for Gator\_90:

(Start: 39 @55764 has 115 MA's), (Start: 47 @55782 has 13 MA's), (50, 55788), (61, 55818), (91, 55965), (93, 55974), (130, 56121), (169, 56271), (209, 56514),

Gene: Gemini\_97 Start: 56356, Stop: 57177, Start Num: 39

Candidate Starts for Gemini\_97:

(Start: 39 @56356 has 115 MA's), (Start: 47 @56374 has 13 MA's), (50, 56380), (79, 56497), (91, 56557), (93, 56566), (128, 56704), (169, 56863), (170, 56872), (180, 56935), (193, 57016), (209, 57106),

Gene: Giles\_51 Start: 37891, Stop: 38754, Start Num: 36

Candidate Starts for Giles\_51:

(Start: 36 @37891 has 22 MA's), (62, 37957), (65, 37981), (77, 38020), (78, 38026), (80, 38041), (87, 38077), (88, 38083), (96, 38125), (99, 38134), (114, 38197), (118, 38215), (122, 38227), (129, 38245), (142, 38314), (144, 38323), (145, 38329), (154, 38350), (164, 38383), (170, 38416), (172, 38431), (186, 38530), (189, 38542), (192, 38554), (201, 38611), (208, 38638), (214, 38662), (228, 38695), (232, 38710), (239, 38743),

Gene: Glexan\_91 Start: 56039, Stop: 56860, Start Num: 39

Candidate Starts for Glexan\_91:

(Start: 39 @56039 has 115 MA's), (Start: 47 @56057 has 13 MA's), (50, 56063), (79, 56180), (91, 56240), (93, 56249), (128, 56387), (169, 56546), (170, 56555), (180, 56618), (193, 56699), (209, 56789),

Gene: Goku\_91 Start: 55975, Stop: 56796, Start Num: 39

Candidate Starts for Goku\_91:

(Start: 39 @55975 has 115 MA's), (Start: 47 @55993 has 13 MA's), (50, 55999), (79, 56116), (91, 56176), (93, 56185), (128, 56323), (169, 56482), (170, 56491), (180, 56554), (193, 56635), (209, 56725),

Gene: GoldenSpark\_96 Start: 55839, Stop: 56660, Start Num: 39

Candidate Starts for GoldenSpark\_96:

(Start: 39 @55839 has 115 MA's), (Start: 47 @55857 has 13 MA's), (50, 55863), (79, 55980), (91, 56040), (93, 56049), (128, 56187), (169, 56346), (170, 56355), (180, 56418), (193, 56499), (209, 56589),

Gene: Goldilocks\_95 Start: 55197, Stop: 56018, Start Num: 39

Candidate Starts for Goldilocks\_95:

(Start: 39 @55197 has 115 MA's), (Start: 47 @55215 has 13 MA's), (50, 55221), (79, 55338), (91, 55398), (93, 55407), (128, 55545), (169, 55704), (170, 55713), (180, 55776), (193, 55857), (209, 55947),

Gene: Gonephishing\_124 Start: 67759, Stop: 68382, Start Num: 87

Candidate Starts for Gonephishing\_124:

(Start: 41 @67582 has 36 MA's), (64, 67642), (74, 67693), (78, 67708), (87, 67759), (114, 67873), (126, 67906), (141, 67975), (145, 67993), (157, 68020), (161, 68044), (165, 68053),

Gene: GooberAzure\_95 Start: 55839, Stop: 56660, Start Num: 39

Candidate Starts for GooberAzure\_95:

(Start: 39 @55839 has 115 MA's), (Start: 47 @55857 has 13 MA's), (50, 55863), (79, 55980), (91, 56040), (93, 56049), (128, 56187), (169, 56346), (170, 56355), (180, 56418), (193, 56499), (209, 56589),

Gene: GoodLuckBabe\_53 Start: 34865, Stop: 35668, Start Num: 60

Candidate Starts for GoodLuckBabe\_53:

(58, 34862), (Start: 60 @34865 has 3 MA's), (71, 34916), (86, 34985), (104, 35081), (105, 35084), (117, 35132), (128, 35159), (137, 35204), (153, 35255), (156, 35258), (179, 35360), (203, 35519), (224, 35576),

Gene: Gravallia\_52 Start: 37905, Stop: 38768, Start Num: 36

Candidate Starts for Gravallia\_52:

(Start: 36 @37905 has 22 MA's), (62, 37971), (65, 37995), (77, 38034), (78, 38040), (80, 38055), (87, 38091), (88, 38097), (96, 38139), (99, 38148), (114, 38211), (118, 38229), (122, 38241), (127, 38253), (129, 38259), (142, 38328), (144, 38337), (145, 38343), (154, 38364), (164, 38397), (170, 38430), (172, 38445), (186, 38544), (189, 38556), (192, 38568), (201, 38625), (208, 38652), (214, 38676), (218, 38685), (219, 38688), (228, 38709), (232, 38724), (239, 38757),

Gene: Guinevere\_54 Start: 34842, Stop: 35645, Start Num: 60

Candidate Starts for Guinevere\_54:

(58, 34839), (Start: 60 @34842 has 3 MA's), (71, 34893), (86, 34962), (104, 35058), (105, 35061), (117, 35109), (128, 35136), (137, 35181), (153, 35232), (156, 35235), (179, 35337), (203, 35496), (224, 35553),

Gene: Gusanita\_51 Start: 34996, Stop: 35799, Start Num: 60

Candidate Starts for Gusanita\_51:

(Start: 60 @34996 has 3 MA's), (70, 35044), (71, 35047), (104, 35212), (105, 35215), (128, 35290), (137, 35335), (153, 35386), (156, 35389), (179, 35491), (224, 35707), (232, 35734),

Gene: HH92\_52 Start: 37891, Stop: 38754, Start Num: 36

Candidate Starts for HH92\_52:

(Start: 36 @37891 has 22 MA's), (62, 37957), (65, 37981), (77, 38020), (78, 38026), (80, 38041), (87, 38077), (88, 38083), (96, 38125), (99, 38134), (114, 38197), (118, 38215), (122, 38227), (129, 38245), (142, 38314), (144, 38323), (145, 38329), (154, 38350), (164, 38383), (170, 38416), (172, 38431), (186, 38530), (189, 38542), (192, 38554), (201, 38611), (208, 38638), (214, 38662), (228, 38695), (232, 38710), (239, 38743),

Gene: Hadrien\_53 Start: 37891, Stop: 38754, Start Num: 36

Candidate Starts for Hadrien\_53:

(Start: 36 @37891 has 22 MA's), (62, 37957), (65, 37981), (77, 38020), (78, 38026), (80, 38041), (87, 38077), (88, 38083), (96, 38125), (99, 38134), (114, 38197), (118, 38215), (122, 38227), (129, 38245), (142, 38314), (144, 38323), (145, 38329), (154, 38350), (164, 38383), (170, 38416), (172, 38431), (186, 38530), (189, 38542), (192, 38554), (201, 38611), (208, 38638), (214, 38662), (228, 38695), (232, 38710), (239, 38743),

Gene: Hail\_51 Start: 37891, Stop: 38754, Start Num: 36

Candidate Starts for Hail\_51:

(Start: 36 @37891 has 22 MA's), (62, 37957), (65, 37981), (77, 38020), (78, 38026), (80, 38041), (87, 38077), (88, 38083), (96, 38125), (99, 38134), (114, 38197), (118, 38215), (122, 38227), (129, 38245), (142, 38314), (144, 38323), (145, 38329), (154, 38350), (164, 38383), (170, 38416), (172, 38431), (186, 38530), (189, 38542), (192, 38554), (201, 38611), (208, 38638), (214, 38662), (228, 38695), (232, 38710), (239, 38743),

Gene: Halley\_134 Start: 72798, Stop: 73553, Start Num: 41

Candidate Starts for Halley\_134:

(Start: 41 @72798 has 36 MA's), (87, 72954), (94, 72987), (98, 73011), (104, 73035), (120, 73089), (121, 73095), (123, 73101), (128, 73110), (132, 73137), (136, 73149), (150, 73194), (155, 73209), (171, 73281), (201, 73461), (216, 73509),

Gene: Halloween\_45 Start: 33347, Stop: 34186, Start Num: 52

Candidate Starts for Halloween\_45:

(Start: 45 @33332 has 1 MA's), (48, 33338), (Start: 52 @33347 has 3 MA's), (86, 33485), (94, 33533), (106, 33587), (107, 33593), (114, 33620), (128, 33659), (133, 33695), (134, 33698), (143, 33734), (157, 33761), (165, 33782), (179, 33863), (201, 34010), (202, 34013), (224, 34079),



Gene: HanKaySha\_93 Start: 55406, Stop: 56227, Start Num: 39

Candidate Starts for HanKaySha\_93:

(Start: 39 @55406 has 115 MA's), (Start: 47 @55424 has 13 MA's), (50, 55430), (79, 55547), (91, 55607), (93, 55616), (128, 55754), (169, 55913), (170, 55922), (180, 55985), (193, 56066), (209, 56156),

Gene: Hannaconda\_123 Start: 68235, Stop: 69035, Start Num: 41

Candidate Starts for Hannaconda\_123:

(Start: 41 @68235 has 36 MA's), (64, 68295), (74, 68346), (78, 68361), (87, 68412), (114, 68526), (126, 68559), (141, 68628), (145, 68646), (157, 68673), (161, 68697), (165, 68706),

Gene: Harella\_92 Start: 56555, Stop: 57376, Start Num: 39

Candidate Starts for Harella\_92:

(Start: 39 @56555 has 115 MA's), (Start: 47 @56573 has 13 MA's), (50, 56579), (79, 56696), (91, 56756), (93, 56765), (128, 56903), (169, 57062), (170, 57071), (180, 57134), (193, 57215), (209, 57305),

Gene: Heinz\_51 Start: 32603, Stop: 33430, Start Num: 44

Candidate Starts for Heinz\_51:

(Start: 44 @32603 has 2 MA's), (66, 32672), (67, 32681), (85, 32759), (87, 32774), (113, 32915), (165, 33086), (169, 33110), (171, 33131), (173, 33137), (187, 33233), (225, 33380),

Gene: Henry\_90 Start: 55716, Stop: 56537, Start Num: 39

Candidate Starts for Henry\_90:

(Start: 39 @55716 has 115 MA's), (Start: 47 @55734 has 13 MA's), (50, 55740), (79, 55857), (91, 55917), (93, 55926), (128, 56064), (169, 56223), (170, 56232), (180, 56295), (193, 56376), (209, 56466),

Gene: Hibiscus\_51 Start: 32552, Stop: 33379, Start Num: 44

Candidate Starts for Hibiscus\_51:

(Start: 44 @32552 has 2 MA's), (66, 32621), (67, 32630), (85, 32708), (87, 32723), (113, 32864), (165, 33035), (169, 33059), (171, 33080), (173, 33086), (187, 33182), (225, 33329),

Gene: Highbury\_91 Start: 55406, Stop: 56227, Start Num: 39

Candidate Starts for Highbury\_91:

(Start: 39 @55406 has 115 MA's), (Start: 47 @55424 has 13 MA's), (50, 55430), (79, 55547), (91, 55607), (93, 55616), (128, 55754), (169, 55913), (170, 55922), (180, 55985), (193, 56066), (209, 56156),

Gene: Hilltopfarm\_59 Start: 43214, Stop: 44035, Start Num: 43

Candidate Starts for Hilltopfarm\_59:

(2, 42782), (3, 42899), (8, 43013), (22, 43130), (24, 43139), (27, 43154), (30, 43172), (Start: 43 @43214 has 4 MA's), (70, 43307), (71, 43310), (78, 43340), (82, 43367), (91, 43406), (94, 43424), (110, 43499), (114, 43517), (116, 43529), (130, 43559), (141, 43616), (143, 43625), (166, 43688), (173, 43733), (184, 43796), (189, 43835), (201, 43904), (205, 43922), (238, 44024),

Gene: HokkenD\_122 Start: 71161, Stop: 71916, Start Num: 41

Candidate Starts for HokkenD\_122:

(Start: 41 @71161 has 36 MA's), (87, 71317), (94, 71350), (98, 71374), (104, 71398), (120, 71452), (121, 71458), (123, 71464), (128, 71473), (132, 71500), (136, 71512), (150, 71557), (155, 71572), (171, 71644),

Gene: Holt\_97 Start: 56253, Stop: 57074, Start Num: 39

Candidate Starts for Holt\_97:

(Start: 39 @56253 has 115 MA's), (Start: 47 @56271 has 13 MA's), (50, 56277), (79, 56394), (91, 56454), (93, 56463), (128, 56601), (169, 56760), (170, 56769), (180, 56832), (193, 56913), (209, 57003),

Gene: Hoonter\_95 Start: 55711, Stop: 56532, Start Num: 39

Candidate Starts for Hoonter\_95:

(Start: 39 @55711 has 115 MA's), (Start: 47 @55729 has 13 MA's), (50, 55735), (79, 55852), (91, 55912), (93, 55921), (128, 56059), (169, 56218), (170, 56227), (180, 56290), (193, 56371), (209, 56461),

Gene: Hokey\_93 Start: 56217, Stop: 57038, Start Num: 39

Candidate Starts for Hokey\_93:

(Start: 39 @56217 has 115 MA's), (Start: 47 @56235 has 13 MA's), (50, 56241), (79, 56358), (91, 56418), (93, 56427), (128, 56565), (169, 56724), (170, 56733), (180, 56796), (193, 56877), (209, 56967),

Gene: Hortense\_65 Start: 44611, Stop: 45450, Start Num: 40

Candidate Starts for Hortense\_65:

(11, 44431), (Start: 16 @44491 has 3 MA's), (Start: 40 @44611 has 22 MA's), (66, 44689), (87, 44791), (236, 45439),

Gene: Horus\_71 Start: 43494, Stop: 44324, Start Num: 49

Candidate Starts for Horus\_71:

(Start: 49 @43494 has 5 MA's), (80, 43620), (85, 43641), (92, 43674), (113, 43782), (114, 43788), (128, 43830), (129, 43833), (130, 43839), (132, 43857), (157, 43938), (158, 43941), (169, 43986), (171, 44007), (173, 44013), (190, 44124), (191, 44127), (202, 44196), (207, 44217), (209, 44223), (213, 44238), (227, 44271), (233, 44292), (237, 44313),

Gene: Howe\_65 Start: 44611, Stop: 45450, Start Num: 40

Candidate Starts for Howe\_65:

(11, 44431), (Start: 16 @44491 has 3 MA's), (Start: 40 @44611 has 22 MA's), (66, 44689), (87, 44791), (236, 45439),

Gene: HufflyPuff\_94 Start: 56319, Stop: 57122, Start Num: 47

Candidate Starts for HufflyPuff\_94:

(Start: 39 @56301 has 115 MA's), (Start: 47 @56319 has 13 MA's), (50, 56325), (79, 56442), (91, 56502), (93, 56511), (128, 56649), (169, 56808), (170, 56817), (180, 56880), (193, 56961), (209, 57051),

Gene: Hughesyang\_132 Start: 72523, Stop: 73323, Start Num: 41

Candidate Starts for Hughesyang\_132:

(Start: 41 @72523 has 36 MA's), (64, 72583), (74, 72634), (78, 72649), (87, 72700), (114, 72814), (126, 72847), (141, 72916), (145, 72934), (157, 72961), (161, 72985), (165, 72994), (201, 73231), (216, 73279),

Gene: Hyzer\_75 Start: 50006, Stop: 50998, Start Num: 15

Candidate Starts for Hyzer\_75:

(5, 49919), (10, 49952), (15, 50006), (Start: 29 @50087 has 1 MA's), (95, 50342), (100, 50354), (104, 50396), (116, 50447), (128, 50477), (132, 50504), (189, 50771), (195, 50795), (209, 50873), (227, 50921), (242, 50987),

Gene: IHOP\_90 Start: 55879, Stop: 56700, Start Num: 39

Candidate Starts for IHOP\_90:

(Start: 39 @55879 has 115 MA's), (Start: 47 @55897 has 13 MA's), (50, 55903), (79, 56020), (91, 56080), (93, 56089), (128, 56227), (169, 56386), (170, 56395), (180, 56458), (193, 56539), (209, 56629),

Gene: Icee\_93 Start: 55366, Stop: 56187, Start Num: 39

Candidate Starts for Icee\_93:

(Start: 39 @55366 has 115 MA's), (Start: 47 @55384 has 13 MA's), (50, 55390), (79, 55507), (91, 55567), (93, 55576), (128, 55714), (169, 55873), (170, 55882), (180, 55945), (193, 56026), (209, 56116),

Gene: Inca\_89 Start: 54368, Stop: 55189, Start Num: 39

Candidate Starts for Inca\_89:

(Start: 39 @54368 has 115 MA's), (Start: 47 @54386 has 13 MA's), (50, 54392), (79, 54509), (91, 54569), (93, 54578), (128, 54716), (169, 54875), (170, 54884), (180, 54947), (193, 55028), (209, 55118),

Gene: Invectra\_66 Start: 42718, Stop: 43479, Start Num: 66

Candidate Starts for Invectra\_66:

(Start: 16 @42517 has 3 MA's), (Start: 40 @42640 has 22 MA's), (66, 42718), (87, 42820), (236, 43468),

Gene: IsHungry\_47 Start: 33169, Stop: 33972, Start Num: 60

Candidate Starts for IsHungry\_47:

(Start: 60 @33169 has 3 MA's), (70, 33217), (71, 33220), (104, 33385), (105, 33388), (117, 33436), (128, 33463), (137, 33508), (153, 33559), (156, 33562), (203, 33823),

Gene: JeTaime\_93 Start: 56569, Stop: 57390, Start Num: 39

Candidate Starts for JeTaime\_93:

(Start: 39 @56569 has 115 MA's), (Start: 47 @56587 has 13 MA's), (50, 56593), (79, 56710), (91, 56770), (93, 56779), (128, 56917), (169, 57076), (170, 57085), (180, 57148), (193, 57229), (209, 57319),

Gene: JuicyJay\_129 Start: 74038, Stop: 74838, Start Num: 41

Candidate Starts for JuicyJay\_129:

(Start: 41 @74038 has 36 MA's), (64, 74098), (74, 74149), (78, 74164), (87, 74215), (114, 74329), (126, 74362), (141, 74431), (145, 74449), (157, 74476), (161, 74500), (165, 74509), (201, 74746), (216, 74794),

Gene: Julie\_49 Start: 34956, Stop: 35759, Start Num: 60

Candidate Starts for Julie\_49:

(Start: 60 @34956 has 3 MA's), (70, 35004), (71, 35007), (104, 35172), (105, 35175), (117, 35223), (128, 35250), (137, 35295), (153, 35346), (156, 35349), (203, 35610),

Gene: JustASigh\_51 Start: 35983, Stop: 36849, Start Num: 68

Candidate Starts for JustASigh\_51:

(Start: 68 @35983 has 1 MA's), (82, 36049), (128, 36244), (131, 36262), (134, 36283), (174, 36436), (234, 36757), (241, 36796), (244, 36820), (245, 36829),

Gene: JustBecause\_223 Start: 130604, Stop: 131311, Start Num: 37

Candidate Starts for JustBecause\_223:

(34, 130595), (Start: 37 @130604 has 7 MA's), (51, 130640), (84, 130781), (87, 130799), (88, 130805), (94, 130832), (98, 130856), (102, 130871), (113, 130913), (128, 130955), (141, 131021), (151,

131054), (167, 131099), (177, 131162), (194, 131276),

Gene: Kalah2\_123 Start: 71329, Stop: 72129, Start Num: 41

Candidate Starts for Kalah2\_123:

(Start: 41 @71329 has 36 MA's), (64, 71389), (74, 71440), (78, 71455), (87, 71506), (114, 71620), (126, 71653), (141, 71722), (145, 71740), (157, 71767), (161, 71791), (165, 71800), (201, 72037), (216, 72085),

Gene: Kanye\_89 Start: 55463, Stop: 56284, Start Num: 39

Candidate Starts for Kanye\_89:

(Start: 39 @55463 has 115 MA's), (Start: 47 @55481 has 13 MA's), (50, 55487), (79, 55604), (91, 55664), (93, 55673), (128, 55811), (169, 55970), (170, 55979), (180, 56042), (193, 56123), (209, 56213),

Gene: KashFlow\_128 Start: 70014, Stop: 70772, Start Num: 39

Candidate Starts for KashFlow\_128:

(Start: 39 @70014 has 115 MA's), (Start: 72 @70104 has 1 MA's), (87, 70173), (93, 70197), (94, 70206), (98, 70230), (104, 70254), (108, 70269), (112, 70281), (120, 70308), (123, 70320), (128, 70329), (136, 70368), (160, 70437), (171, 70500),

Gene: Kela\_221 Start: 130449, Stop: 131156, Start Num: 37

Candidate Starts for Kela\_221:

(34, 130440), (Start: 37 @130449 has 7 MA's), (51, 130485), (84, 130626), (87, 130644), (88, 130650), (94, 130677), (98, 130701), (102, 130716), (113, 130758), (128, 130800), (141, 130866), (151, 130899), (167, 130944), (177, 131007), (194, 131121),

Gene: Kimchi\_96 Start: 55983, Stop: 56804, Start Num: 39

Candidate Starts for Kimchi\_96:

(Start: 39 @55983 has 115 MA's), (Start: 47 @56001 has 13 MA's), (50, 56007), (79, 56124), (91, 56184), (93, 56193), (128, 56331), (169, 56490), (170, 56499), (180, 56562), (193, 56643), (209, 56733),

Gene: Kinbote\_53 Start: 37891, Stop: 38754, Start Num: 36

Candidate Starts for Kinbote\_53:

(Start: 36 @37891 has 22 MA's), (62, 37957), (65, 37981), (77, 38020), (78, 38026), (80, 38041), (87, 38077), (88, 38083), (96, 38125), (99, 38134), (114, 38197), (118, 38215), (122, 38227), (129, 38245), (142, 38314), (144, 38323), (145, 38329), (154, 38350), (164, 38383), (170, 38416), (172, 38431), (186, 38530), (189, 38542), (192, 38554), (201, 38611), (208, 38638), (214, 38662), (228, 38695), (232, 38710), (239, 38743),

Gene: Klein\_129 Start: 69719, Stop: 70474, Start Num: 41

Candidate Starts for Klein\_129:

(Start: 41 @69719 has 36 MA's), (87, 69875), (94, 69908), (98, 69932), (104, 69956), (120, 70010), (121, 70016), (123, 70022), (128, 70031), (132, 70058), (136, 70070), (150, 70115), (155, 70130), (171, 70202), (201, 70382), (216, 70430),

Gene: Kostya\_92 Start: 55999, Stop: 56802, Start Num: 47

Candidate Starts for Kostya\_92:

(Start: 39 @55981 has 115 MA's), (Start: 47 @55999 has 13 MA's), (50, 56005), (79, 56122), (91, 56182), (93, 56191), (128, 56329), (169, 56488), (170, 56497), (180, 56560), (193, 56641), (209, 56731),

Gene: Kradal\_220 Start: 131571, Stop: 132386, Start Num: 37

Candidate Starts for Kradal\_220:

(19, 131469), (Start: 37 @131571 has 7 MA's), (51, 131607), (82, 131739), (83, 131742), (86, 131751), (87, 131763), (88, 131769), (135, 131964), (138, 131979), (141, 131988), (147, 132006), (165, 132054), (166, 132060), (170, 132087), (175, 132123), (199, 132288), (212, 132336),

Gene: LilHazelnut\_53 Start: 37891, Stop: 38754, Start Num: 36

Candidate Starts for LilHazelnut\_53:

(Start: 36 @37891 has 22 MA's), (62, 37957), (65, 37981), (77, 38020), (78, 38026), (80, 38041), (87, 38077), (88, 38083), (96, 38125), (99, 38134), (114, 38197), (118, 38215), (122, 38227), (129, 38245), (142, 38314), (144, 38323), (145, 38329), (154, 38350), (164, 38383), (170, 38416), (172, 38431), (186, 38530), (189, 38542), (192, 38554), (201, 38611), (208, 38638), (214, 38662), (228, 38695), (232, 38710), (239, 38743),

Gene: Lilac\_95 Start: 55826, Stop: 56629, Start Num: 47

Candidate Starts for Lilac\_95:

(Start: 39 @55808 has 115 MA's), (Start: 47 @55826 has 13 MA's), (50, 55832), (79, 55949), (91, 56009), (93, 56018), (128, 56156), (169, 56315), (170, 56324), (180, 56387), (193, 56468), (209, 56558),

Gene: Lilizi\_93 Start: 55445, Stop: 56266, Start Num: 39

Candidate Starts for Lilizi\_93:

(Start: 39 @55445 has 115 MA's), (Start: 47 @55463 has 13 MA's), (50, 55469), (79, 55586), (91, 55646), (93, 55655), (128, 55793), (169, 55952), (170, 55961), (180, 56024), (193, 56105), (209, 56195),

Gene: Lilpickle\_91 Start: 55333, Stop: 56154, Start Num: 39

Candidate Starts for Lilpickle\_91:

(Start: 39 @55333 has 115 MA's), (Start: 47 @55351 has 13 MA's), (50, 55357), (79, 55474), (91, 55534), (93, 55543), (128, 55681), (169, 55840), (170, 55849), (180, 55912), (193, 55993), (209, 56083),

Gene: LittleE\_133 Start: 71226, Stop: 72026, Start Num: 41

Candidate Starts for LittleE\_133:

(Start: 41 @71226 has 36 MA's), (64, 71286), (74, 71337), (78, 71352), (87, 71403), (114, 71517), (126, 71550), (141, 71619), (145, 71637), (157, 71664), (161, 71688), (165, 71697),

Gene: LordFarquaad\_63 Start: 41316, Stop: 42317, Start Num: 16

Candidate Starts for LordFarquaad\_63:

(9, 41253), (Start: 16 @41316 has 3 MA's), (28, 41394), (Start: 63 @41490 has 1 MA's), (97, 41664), (98, 41667), (100, 41670), (104, 41712), (113, 41745), (114, 41751), (128, 41793), (165, 41928), (173, 41979), (174, 41982), (195, 42114), (209, 42192), (227, 42240), (235, 42276), (242, 42306),

Gene: Lucky2013\_125 Start: 68103, Stop: 68903, Start Num: 41

Candidate Starts for Lucky2013\_125:

(Start: 41 @68103 has 36 MA's), (64, 68163), (74, 68214), (78, 68229), (87, 68280), (114, 68394), (126, 68427), (141, 68496), (145, 68514), (157, 68541), (161, 68565), (165, 68574),

Gene: Luke\_53 Start: 37846, Stop: 38709, Start Num: 36

Candidate Starts for Luke\_53:

(Start: 36 @37846 has 22 MA's), (62, 37912), (65, 37936), (77, 37975), (78, 37981), (80, 37996), (87, 38032), (88, 38038), (96, 38080), (99, 38089), (114, 38152), (118, 38170), (122, 38182), (129, 38200), (142, 38269), (144, 38278), (145, 38284), (154, 38305), (164, 38338), (170, 38371), (172, 38386), (186, 38485), (189, 38497), (192, 38509), (201, 38566), (208, 38593), (214, 38617), (228, 38650),

(232, 38665), (239, 38698),

Gene: Luna22\_51 Start: 37875, Stop: 38738, Start Num: 36

Candidate Starts for Luna22\_51:

(Start: 36 @37875 has 22 MA's), (62, 37941), (65, 37965), (77, 38004), (78, 38010), (80, 38025), (87, 38061), (88, 38067), (96, 38109), (99, 38118), (114, 38181), (118, 38199), (122, 38211), (129, 38229), (142, 38298), (144, 38307), (145, 38313), (154, 38334), (164, 38367), (170, 38400), (172, 38415), (186, 38514), (189, 38526), (192, 38538), (201, 38595), (208, 38622), (214, 38646), (228, 38679), (232, 38694), (239, 38727),

Gene: MISSy\_93 Start: 55561, Stop: 56382, Start Num: 39

Candidate Starts for MISSy\_93:

(Start: 39 @55561 has 115 MA's), (Start: 47 @55579 has 13 MA's), (50, 55585), (79, 55702), (91, 55762), (93, 55771), (128, 55909), (169, 56068), (170, 56077), (180, 56140), (193, 56221), (209, 56311),

Gene: MPhalcon\_93 Start: 55554, Stop: 56375, Start Num: 39

Candidate Starts for MPhalcon\_93:

(Start: 39 @55554 has 115 MA's), (Start: 47 @55572 has 13 MA's), (50, 55578), (79, 55695), (91, 55755), (93, 55764), (128, 55902), (169, 56061), (170, 56070), (180, 56133), (193, 56214), (209, 56304),

Gene: MadamMonkfish\_92 Start: 55060, Stop: 55881, Start Num: 39

Candidate Starts for MadamMonkfish\_92:

(Start: 39 @55060 has 115 MA's), (Start: 47 @55078 has 13 MA's), (50, 55084), (79, 55201), (91, 55261), (93, 55270), (128, 55408), (169, 55567), (170, 55576), (180, 55639), (193, 55720), (209, 55810),

Gene: Maja\_42 Start: 30329, Stop: 31183, Start Num: 45

Candidate Starts for Maja\_42:

(Start: 45 @30329 has 1 MA's), (48, 30335), (Start: 52 @30344 has 3 MA's), (57, 30362), (81, 30464), (86, 30482), (94, 30530), (106, 30584), (114, 30617), (134, 30695), (143, 30731), (165, 30779), (179, 30860), (202, 31010), (224, 31076),

Gene: Malibo\_67 Start: 44890, Stop: 45759, Start Num: 46

Candidate Starts for Malibo\_67:

(Start: 46 @44890 has 1 MA's), (Start: 63 @44935 has 1 MA's), (97, 45109), (98, 45112), (100, 45115), (104, 45157), (128, 45238), (165, 45373), (174, 45427), (195, 45556), (209, 45634), (227, 45682), (242, 45748),

Gene: Manda\_94 Start: 57137, Stop: 57958, Start Num: 39

Candidate Starts for Manda\_94:

(Start: 39 @57137 has 115 MA's), (Start: 47 @57155 has 13 MA's), (50, 57161), (79, 57278), (91, 57338), (93, 57347), (128, 57485), (169, 57644), (170, 57653), (180, 57716), (193, 57797), (209, 57887),

Gene: Marleymoo\_117 Start: 68809, Stop: 69549, Start Num: 64

Candidate Starts for Marleymoo\_117:

(Start: 41 @68749 has 36 MA's), (64, 68809), (78, 68875), (87, 68926), (114, 69040), (126, 69073), (141, 69142), (145, 69160), (157, 69187), (161, 69211), (165, 69220), (201, 69457), (216, 69505),

Gene: Marshmallow\_90 Start: 56609, Stop: 57430, Start Num: 39

Candidate Starts for Marshmallow\_90:

(Start: 39 @56609 has 115 MA's), (Start: 47 @56627 has 13 MA's), (50, 56633), (79, 56750), (91, 56810), (93, 56819), (128, 56957), (169, 57116), (170, 57125), (180, 57188), (193, 57269), (209, 57359),

Gene: Maxxinista\_95 Start: 55993, Stop: 56796, Start Num: 47

Candidate Starts for Maxxinista\_95:

(Start: 39 @55975 has 115 MA's), (Start: 47 @55993 has 13 MA's), (50, 55999), (79, 56116), (91, 56176), (93, 56185), (128, 56323), (169, 56482), (170, 56491), (180, 56554), (193, 56635), (209, 56725),

Gene: Mcklovin\_63 Start: 46941, Stop: 47825, Start Num: 40

Candidate Starts for Mcklovin\_63:

(13, 46821), (Start: 40 @46941 has 22 MA's), (Start: 63 @46998 has 1 MA's), (97, 47172), (100, 47178), (104, 47220), (128, 47301), (165, 47436), (170, 47469), (173, 47487), (176, 47505), (195, 47622), (209, 47700),

Gene: MiaZeal\_130 Start: 69241, Stop: 70041, Start Num: 41

Candidate Starts for MiaZeal\_130:

(Start: 41 @69241 has 36 MA's), (64, 69301), (74, 69352), (78, 69367), (87, 69418), (114, 69532), (126, 69565), (141, 69634), (145, 69652), (157, 69679), (161, 69703), (165, 69712),

Gene: MichaelScott\_66 Start: 42331, Stop: 43167, Start Num: 40

Candidate Starts for MichaelScott\_66:

(Start: 16 @42211 has 3 MA's), (Start: 40 @42331 has 22 MA's), (66, 42406), (87, 42508), (236, 43156),

Gene: Mindy\_91 Start: 54882, Stop: 55703, Start Num: 39

Candidate Starts for Mindy\_91:

(Start: 39 @54882 has 115 MA's), (Start: 47 @54900 has 13 MA's), (50, 54906), (79, 55023), (91, 55083), (93, 55092), (128, 55230), (169, 55389), (170, 55398), (180, 55461), (193, 55542), (209, 55632),

Gene: Minerva\_131 Start: 71124, Stop: 71924, Start Num: 41

Candidate Starts for Minerva\_131:

(Start: 41 @71124 has 36 MA's), (64, 71184), (74, 71235), (78, 71250), (87, 71301), (114, 71415), (126, 71448), (141, 71517), (145, 71535), (157, 71562), (161, 71586), (165, 71595), (201, 71832), (216, 71880),

Gene: Miniwave\_87 Start: 55377, Stop: 56198, Start Num: 39

Candidate Starts for Miniwave\_87:

(Start: 39 @55377 has 115 MA's), (Start: 47 @55395 has 13 MA's), (50, 55401), (79, 55518), (91, 55578), (93, 55587), (128, 55725), (169, 55884), (170, 55893), (180, 55956), (193, 56037), (209, 56127),

Gene: Misfit\_93 Start: 56851, Stop: 57672, Start Num: 39

Candidate Starts for Misfit\_93:

(Start: 39 @56851 has 115 MA's), (Start: 47 @56869 has 13 MA's), (50, 56875), (79, 56992), (91, 57052), (93, 57061), (128, 57199), (169, 57358), (170, 57367), (180, 57430), (193, 57511), (209, 57601),

Gene: Moldemort\_95 Start: 55518, Stop: 56339, Start Num: 39

Candidate Starts for Moldemort\_95:

(Start: 39 @55518 has 115 MA's), (Start: 47 @55536 has 13 MA's), (50, 55542), (79, 55659), (91, 55719), (93, 55728), (128, 55866), (169, 56025), (170, 56034), (180, 56097), (193, 56178), (209, 56268),

Gene: Mosby\_88 Start: 55152, Stop: 55955, Start Num: 47

Candidate Starts for Mosby\_88:

(Start: 39 @55134 has 115 MA's), (Start: 47 @55152 has 13 MA's), (50, 55158), (79, 55275), (91, 55335), (93, 55344), (128, 55482), (169, 55641), (170, 55650), (180, 55713), (193, 55794), (209, 55884),

Gene: Murica\_95 Start: 56795, Stop: 57598, Start Num: 47

Candidate Starts for Murica\_95:

(Start: 39 @56777 has 115 MA's), (Start: 47 @56795 has 13 MA's), (50, 56801), (79, 56918), (91, 56978), (93, 56987), (128, 57125), (169, 57284), (170, 57293), (180, 57356), (193, 57437), (209, 57527),

Gene: Murphy\_92 Start: 56218, Stop: 57039, Start Num: 39

Candidate Starts for Murphy\_92:

(Start: 39 @56218 has 115 MA's), (Start: 47 @56236 has 13 MA's), (50, 56242), (79, 56359), (91, 56419), (93, 56428), (128, 56566), (169, 56725), (170, 56734), (180, 56797), (193, 56878), (209, 56968),

Gene: Myrale\_92 Start: 56340, Stop: 57161, Start Num: 39

Candidate Starts for Myrale\_92:

(Start: 39 @56340 has 115 MA's), (Start: 47 @56358 has 13 MA's), (50, 56364), (79, 56481), (91, 56541), (93, 56550), (128, 56688), (169, 56847), (170, 56856), (180, 56919), (193, 57000), (209, 57090),

Gene: Nala\_94 Start: 56081, Stop: 56884, Start Num: 47

Candidate Starts for Nala\_94:

(Start: 39 @56063 has 115 MA's), (Start: 47 @56081 has 13 MA's), (50, 56087), (79, 56204), (91, 56264), (93, 56273), (128, 56411), (169, 56570), (170, 56579), (180, 56642), (193, 56723), (209, 56813),

Gene: Nekros\_133 Start: 72824, Stop: 73492, Start Num: 72

Candidate Starts for Nekros\_133:

(Start: 39 @72734 has 115 MA's), (Start: 72 @72824 has 1 MA's), (87, 72893), (93, 72917), (94, 72926), (98, 72950), (104, 72974), (108, 72989), (112, 73001), (120, 73028), (123, 73040), (128, 73049), (136, 73088), (160, 73157), (171, 73220),

Gene: NelitzaMV\_90 Start: 55423, Stop: 56244, Start Num: 39

Candidate Starts for NelitzaMV\_90:

(Start: 39 @55423 has 115 MA's), (Start: 47 @55441 has 13 MA's), (50, 55447), (79, 55564), (91, 55624), (93, 55633), (128, 55771), (169, 55930), (170, 55939), (180, 56002), (193, 56083), (209, 56173),

Gene: NihilNomen\_134 Start: 71983, Stop: 72783, Start Num: 41

Candidate Starts for NihilNomen\_134:

(Start: 41 @71983 has 36 MA's), (64, 72043), (74, 72094), (78, 72109), (87, 72160), (114, 72274), (126, 72307), (141, 72376), (145, 72394), (157, 72421), (161, 72445), (165, 72454), (201, 72691), (216, 72739),

Gene: Nimrod\_93 Start: 56766, Stop: 57587, Start Num: 39



Candidate Starts for Nimrod\_93:

(Start: 39 @56766 has 115 MA's), (Start: 47 @56784 has 13 MA's), (50, 56790), (79, 56907), (91, 56967), (93, 56976), (128, 57114), (169, 57273), (170, 57282), (180, 57345), (193, 57426), (209, 57516),

Gene: Nirvana\_250 Start: 141161, Stop: 141862, Start Num: 37

Candidate Starts for Nirvana\_250:

(34, 141152), (Start: 37 @141161 has 7 MA's), (85, 141341), (87, 141356), (95, 141404), (100, 141416), (126, 141512), (140, 141578), (144, 141593), (167, 141662), (171, 141695),

Gene: NoSleep\_93 Start: 55400, Stop: 56221, Start Num: 39

Candidate Starts for NoSleep\_93:

(Start: 39 @55400 has 115 MA's), (Start: 47 @55418 has 13 MA's), (50, 55424), (79, 55541), (91, 55601), (93, 55610), (128, 55748), (169, 55907), (170, 55916), (180, 55979), (193, 56060), (209, 56150),

Gene: OBUpride\_53 Start: 37905, Stop: 38768, Start Num: 36

Candidate Starts for OBUpride\_53:

(Start: 36 @37905 has 22 MA's), (62, 37971), (65, 37995), (77, 38034), (78, 38040), (80, 38055), (87, 38091), (88, 38097), (96, 38139), (99, 38148), (114, 38211), (118, 38229), (122, 38241), (127, 38253), (129, 38259), (142, 38328), (144, 38337), (145, 38343), (154, 38364), (164, 38397), (170, 38430), (172, 38445), (186, 38544), (189, 38556), (192, 38568), (201, 38625), (208, 38652), (214, 38676), (218, 38685), (219, 38688), (228, 38709), (232, 38724), (239, 38757),

Gene: ODay\_77 Start: 44730, Stop: 45560, Start Num: 49

Candidate Starts for ODay\_77:

(Start: 49 @44730 has 5 MA's), (80, 44856), (85, 44877), (92, 44910), (113, 45018), (114, 45024), (125, 45060), (128, 45066), (129, 45069), (130, 45075), (132, 45093), (157, 45174), (158, 45177), (169, 45222), (170, 45231), (171, 45243), (173, 45249), (183, 45303), (190, 45360), (191, 45363), (200, 45426), (202, 45432), (209, 45459), (213, 45474), (227, 45507), (233, 45528), (237, 45549),

Gene: Odette\_134 Start: 73078, Stop: 73833, Start Num: 41

Candidate Starts for Odette\_134:

(Start: 41 @73078 has 36 MA's), (87, 73234), (94, 73267), (98, 73291), (104, 73315), (120, 73369), (121, 73375), (123, 73381), (128, 73390), (132, 73417), (136, 73429), (150, 73474), (155, 73489), (171, 73561),

Gene: Ohgeesy\_64 Start: 43662, Stop: 44552, Start Num: 40

Candidate Starts for Ohgeesy\_64:

(23, 43590), (24, 43593), (Start: 40 @43662 has 22 MA's), (91, 43854), (97, 43893), (98, 43896), (100, 43899), (104, 43941), (128, 44022), (157, 44133), (165, 44157), (176, 44226), (201, 44391), (209, 44421), (235, 44505), (242, 44541),

Gene: Omega\_140 Start: 72907, Stop: 73707, Start Num: 41

Candidate Starts for Omega\_140:

(Start: 41 @72907 has 36 MA's), (64, 72967), (74, 73018), (78, 73033), (87, 73084), (114, 73198), (126, 73231), (141, 73300), (145, 73318), (157, 73345), (161, 73369), (165, 73378),

Gene: Optimus\_123 Start: 69520, Stop: 70320, Start Num: 41

Candidate Starts for Optimus\_123:

(Start: 41 @69520 has 36 MA's), (64, 69580), (74, 69631), (78, 69646), (87, 69697), (114, 69811), (126, 69844), (141, 69913), (145, 69931), (157, 69958), (161, 69982), (165, 69991), (201, 70228), (216, 70276),

Gene: Oregano\_65 Start: 41205, Stop: 42041, Start Num: 40

Candidate Starts for Oregano\_65:

(Start: 16 @41085 has 3 MA's), (Start: 40 @41205 has 22 MA's), (66, 41280), (87, 41382), (236, 42030),

Gene: OrionPax\_91 Start: 55151, Stop: 55972, Start Num: 39

Candidate Starts for OrionPax\_91:

(Start: 39 @55151 has 115 MA's), (Start: 47 @55169 has 13 MA's), (50, 55175), (79, 55292), (91, 55352), (93, 55361), (128, 55499), (169, 55658), (170, 55667), (180, 55730), (193, 55811), (209, 55901),

Gene: Palpatine\_94 Start: 56804, Stop: 57625, Start Num: 39

Candidate Starts for Palpatine\_94:

(Start: 39 @56804 has 115 MA's), (Start: 47 @56822 has 13 MA's), (50, 56828), (79, 56945), (91, 57005), (93, 57014), (128, 57152), (169, 57311), (170, 57320), (180, 57383), (193, 57464), (209, 57554),

Gene: Paperbeatsrock\_91 Start: 56055, Stop: 56876, Start Num: 39

Candidate Starts for Paperbeatsrock\_91:

(Start: 39 @56055 has 115 MA's), (Start: 47 @56073 has 13 MA's), (50, 56079), (79, 56196), (91, 56256), (93, 56265), (128, 56403), (169, 56562), (170, 56571), (180, 56634), (193, 56715), (209, 56805),

Gene: Pat3\_89 Start: 54253, Stop: 55074, Start Num: 39

Candidate Starts for Pat3\_89:

(Start: 39 @54253 has 115 MA's), (Start: 47 @54271 has 13 MA's), (50, 54277), (61, 54307), (91, 54454), (93, 54463), (130, 54610), (169, 54760), (209, 55003),

Gene: Petra64142\_97 Start: 57258, Stop: 58079, Start Num: 39

Candidate Starts for Petra64142\_97:

(Start: 39 @57258 has 115 MA's), (Start: 47 @57276 has 13 MA's), (50, 57282), (61, 57312), (91, 57459), (93, 57468), (130, 57615), (169, 57765), (209, 58008),

Gene: Phabuloso\_74 Start: 42992, Stop: 43822, Start Num: 49

Candidate Starts for Phabuloso\_74:

(Start: 49 @42992 has 5 MA's), (80, 43118), (85, 43139), (92, 43172), (113, 43280), (114, 43286), (128, 43328), (129, 43331), (130, 43337), (132, 43355), (157, 43436), (158, 43439), (169, 43484), (171, 43505), (173, 43511), (183, 43565), (190, 43622), (191, 43625), (200, 43688), (202, 43694), (209, 43721), (213, 43736), (227, 43769), (229, 43781), (233, 43790), (237, 43811),

Gene: Phaja\_90 Start: 55881, Stop: 56702, Start Num: 39

Candidate Starts for Phaja\_90:

(Start: 39 @55881 has 115 MA's), (Start: 47 @55899 has 13 MA's), (50, 55905), (79, 56022), (91, 56082), (93, 56091), (128, 56229), (169, 56388), (170, 56397), (180, 56460), (193, 56541), (209, 56631),

Gene: Pharsalus\_89 Start: 55855, Stop: 56676, Start Num: 39

Candidate Starts for Pharsalus\_89:

(Start: 39 @55855 has 115 MA's), (Start: 47 @55873 has 13 MA's), (50, 55879), (79, 55996), (91, 56056), (93, 56065), (128, 56203), (169, 56362), (170, 56371), (180, 56434), (193, 56515), (209, 56605),

Gene: PhatBacter\_96 Start: 56567, Stop: 57370, Start Num: 47

Candidate Starts for PhatBacter\_96:

(Start: 39 @56549 has 115 MA's), (Start: 47 @56567 has 13 MA's), (50, 56573), (79, 56690), (91, 56750), (93, 56759), (128, 56897), (169, 57056), (170, 57065), (180, 57128), (193, 57209), (209, 57299),

Gene: Phaux\_95 Start: 57091, Stop: 57912, Start Num: 39

Candidate Starts for Phaux\_95:

(Start: 39 @57091 has 115 MA's), (Start: 47 @57109 has 13 MA's), (50, 57115), (79, 57232), (91, 57292), (93, 57301), (128, 57439), (169, 57598), (170, 57607), (180, 57670), (193, 57751), (209, 57841),

Gene: Phoebus\_133 Start: 73877, Stop: 74677, Start Num: 41

Candidate Starts for Phoebus\_133:

(Start: 41 @73877 has 36 MA's), (64, 73937), (74, 73988), (78, 74003), (87, 74054), (114, 74168), (126, 74201), (141, 74270), (145, 74288), (157, 74315), (161, 74339), (165, 74348), (201, 74585), (216, 74633),

Gene: PhriskyACE\_62 Start: 41297, Stop: 42058, Start Num: 66

Candidate Starts for PhriskyACE\_62:

(Start: 16 @41102 has 3 MA's), (Start: 40 @41222 has 22 MA's), (66, 41297), (87, 41399), (225, 42002), (236, 42047),

Gene: Phrux\_90 Start: 55367, Stop: 56188, Start Num: 39

Candidate Starts for Phrux\_90:

(Start: 39 @55367 has 115 MA's), (Start: 47 @55385 has 13 MA's), (50, 55391), (79, 55508), (91, 55568), (93, 55577), (128, 55715), (169, 55874), (170, 55883), (180, 55946), (193, 56027), (209, 56117),

Gene: Policronamos\_95 Start: 56822, Stop: 57643, Start Num: 39

Candidate Starts for Policronamos\_95:

(Start: 39 @56822 has 115 MA's), (Start: 47 @56840 has 13 MA's), (50, 56846), (79, 56963), (91, 57023), (93, 57032), (128, 57170), (169, 57329), (170, 57338), (180, 57401), (193, 57482), (209, 57572),

Gene: Popper\_52 Start: 34367, Stop: 35170, Start Num: 60

Candidate Starts for Popper\_52:

(Start: 60 @34367 has 3 MA's), (70, 34415), (71, 34418), (104, 34583), (105, 34586), (117, 34634), (128, 34661), (137, 34706), (153, 34757), (156, 34760), (203, 35021),

Gene: Porcelain\_128 Start: 69049, Stop: 69849, Start Num: 41

Candidate Starts for Porcelain\_128:

(Start: 41 @69049 has 36 MA's), (64, 69109), (74, 69160), (78, 69175), (87, 69226), (114, 69340), (126, 69373), (141, 69442), (145, 69460), (157, 69487), (161, 69511), (165, 69520),

Gene: Porky\_91 Start: 54967, Stop: 55788, Start Num: 39

Candidate Starts for Porky\_91:

(Start: 39 @54967 has 115 MA's), (Start: 47 @54985 has 13 MA's), (50, 54991), (79, 55108), (91, 55168), (93, 55177), (128, 55315), (169, 55474), (170, 55483), (180, 55546), (193, 55627), (209, 55717),

Gene: Pound\_121 Start: 70260, Stop: 71060, Start Num: 41

Candidate Starts for Pound\_121:

(Start: 41 @70260 has 36 MA's), (64, 70320), (74, 70371), (78, 70386), (87, 70437), (114, 70551), (126, 70584), (141, 70653), (145, 70671), (157, 70698), (161, 70722), (165, 70731), (201, 70968), (216, 71016),

Gene: Powerball\_63 Start: 41331, Stop: 42167, Start Num: 40

Candidate Starts for Powerball\_63:

(Start: 16 @41208 has 3 MA's), (Start: 40 @41331 has 22 MA's), (66, 41406), (87, 41508), (225, 42111), (236, 42156),

Gene: Pumpkin\_96 Start: 56743, Stop: 57564, Start Num: 39

Candidate Starts for Pumpkin\_96:

(Start: 39 @56743 has 115 MA's), (Start: 47 @56761 has 13 MA's), (50, 56767), (79, 56884), (91, 56944), (93, 56953), (128, 57091), (169, 57250), (170, 57259), (180, 57322), (193, 57403), (209, 57493),

Gene: Quallification\_93 Start: 56463, Stop: 57284, Start Num: 39

Candidate Starts for Quallification\_93:

(Start: 39 @56463 has 115 MA's), (Start: 47 @56481 has 13 MA's), (50, 56487), (79, 56604), (91, 56664), (93, 56673), (128, 56811), (169, 56970), (170, 56979), (180, 57042), (193, 57123), (209, 57213),

Gene: Quantum\_217 Start: 131565, Stop: 132380, Start Num: 37

Candidate Starts for Quantum\_217:

(19, 131463), (Start: 37 @131565 has 7 MA's), (51, 131601), (82, 131733), (83, 131736), (86, 131745), (87, 131757), (88, 131763), (135, 131958), (138, 131973), (141, 131982), (147, 132000), (165, 132048), (166, 132054), (170, 132081), (175, 132117), (199, 132282), (212, 132330),

Gene: QuinnAvery\_52 Start: 34788, Stop: 35627, Start Num: 52

Candidate Starts for QuinnAvery\_52:

(Start: 45 @34773 has 1 MA's), (48, 34779), (Start: 52 @34788 has 3 MA's), (86, 34926), (94, 34974), (106, 35028), (107, 35034), (114, 35061), (128, 35100), (133, 35136), (134, 35139), (143, 35175), (157, 35202), (165, 35223), (179, 35304), (189, 35379), (201, 35451), (202, 35454), (224, 35520),

Gene: REQ2\_59 Start: 39789, Stop: 40529, Start Num: 54

Candidate Starts for REQ2\_59:

(38, 39753), (54, 39789), (59, 39804), (69, 39855), (77, 39882), (87, 39939), (89, 39948), (90, 39951), (94, 39972), (109, 40032), (115, 40047), (119, 40062), (124, 40077), (128, 40086), (129, 40089), (130, 40095), (133, 40122), (139, 40143), (149, 40170), (168, 40230), (188, 40362), (222, 40488),

Gene: Rakim\_93 Start: 55792, Stop: 56613, Start Num: 39

Candidate Starts for Rakim\_93:

(Start: 39 @55792 has 115 MA's), (Start: 47 @55810 has 13 MA's), (50, 55816), (79, 55933), (91, 55993), (93, 56002), (128, 56140), (169, 56299), (170, 56308), (180, 56371), (193, 56452), (209, 56542),

Gene: Rearden\_128 Start: 69317, Stop: 69940, Start Num: 87

Candidate Starts for Rearden\_128:

(Start: 41 @69140 has 36 MA's), (64, 69200), (74, 69251), (78, 69266), (87, 69317), (114, 69431), (126, 69464), (141, 69533), (145, 69551), (157, 69578), (161, 69602), (165, 69611),

Gene: Redno2\_124 Start: 69310, Stop: 70065, Start Num: 41

Candidate Starts for Redno2\_124:

(Start: 41 @69310 has 36 MA's), (87, 69466), (94, 69499), (98, 69523), (104, 69547), (120, 69601), (121, 69607), (123, 69613), (128, 69622), (132, 69649), (136, 69661), (150, 69706), (155, 69721), (171, 69793), (201, 69973), (216, 70021),

Gene: Rem711\_50 Start: 34893, Stop: 35771, Start Num: 25

Candidate Starts for Rem711\_50:

(17, 34836), (Start: 25 @34893 has 1 MA's), (Start: 29 @34920 has 1 MA's), (33, 34935), (51, 34983), (75, 35070), (97, 35187), (173, 35472), (182, 35517), (200, 35643),

Gene: Rimmer\_90 Start: 55364, Stop: 56185, Start Num: 39

Candidate Starts for Rimmer\_90:

(Start: 39 @55364 has 115 MA's), (Start: 47 @55382 has 13 MA's), (50, 55388), (61, 55418), (91, 55565), (93, 55574), (130, 55721), (169, 55871), (209, 56114),

Gene: RiverMonster\_93 Start: 56263, Stop: 57084, Start Num: 39

Candidate Starts for RiverMonster\_93:

(Start: 39 @56263 has 115 MA's), (Start: 47 @56281 has 13 MA's), (50, 56287), (79, 56404), (91, 56464), (93, 56473), (128, 56611), (169, 56770), (170, 56779), (180, 56842), (193, 56923), (209, 57013),

Gene: Ruthy\_63 Start: 45360, Stop: 46259, Start Num: 29

Candidate Starts for Ruthy\_63:

(20, 45288), (Start: 29 @45360 has 1 MA's), (Start: 63 @45447 has 1 MA's), (95, 45615), (100, 45627), (104, 45669), (173, 45936), (220, 46161), (231, 46191),

Gene: Ryan\_51 Start: 34472, Stop: 35311, Start Num: 52

Candidate Starts for Ryan\_51:

(Start: 45 @34457 has 1 MA's), (48, 34463), (Start: 52 @34472 has 3 MA's), (86, 34610), (94, 34658), (106, 34712), (107, 34718), (114, 34745), (128, 34784), (133, 34820), (134, 34823), (143, 34859), (157, 34886), (165, 34907), (179, 34988), (189, 35063), (201, 35135), (202, 35138), (224, 35204),

Gene: Saints25\_91 Start: 55406, Stop: 56227, Start Num: 39

Candidate Starts for Saints25\_91:

(Start: 39 @55406 has 115 MA's), (Start: 47 @55424 has 13 MA's), (50, 55430), (79, 55547), (91, 55607), (93, 55616), (128, 55754), (169, 55913), (170, 55922), (180, 55985), (193, 56066), (209, 56156),

Gene: Samman98\_65 Start: 41170, Stop: 42009, Start Num: 40

Candidate Starts for Samman98\_65:

(Start: 16 @41047 has 3 MA's), (Start: 40 @41170 has 22 MA's), (66, 41248), (87, 41350), (236, 41998),

Gene: Santhid\_49 Start: 31927, Stop: 32751, Start Num: 44

Candidate Starts for Santhid\_49:

(31, 31891), (Start: 44 @31927 has 2 MA's), (66, 31996), (114, 32245), (225, 32701),

Gene: Sassay\_87 Start: 54096, Stop: 54917, Start Num: 39

Candidate Starts for Sassay\_87:

(Start: 39 @54096 has 115 MA's), (Start: 47 @54114 has 13 MA's), (50, 54120), (79, 54237), (91, 54297), (93, 54306), (128, 54444), (169, 54603), (170, 54612), (180, 54675), (193, 54756), (209, 54846),

Gene: Satis\_218 Start: 131908, Stop: 132723, Start Num: 37

Candidate Starts for Satis\_218:

(19, 131806), (Start: 37 @131908 has 7 MA's), (51, 131944), (82, 132076), (83, 132079), (86, 132088), (87, 132100), (88, 132106), (135, 132301), (138, 132316), (141, 132325), (147, 132343), (165, 132391), (166, 132397), (170, 132424), (175, 132460), (199, 132625), (212, 132673),

Gene: Schatzie\_128 Start: 71973, Stop: 72773, Start Num: 41

Candidate Starts for Schatzie\_128:

(Start: 41 @71973 has 36 MA's), (64, 72033), (74, 72084), (78, 72099), (87, 72150), (114, 72264), (126, 72297), (141, 72366), (145, 72384), (157, 72411), (161, 72435), (165, 72444), (201, 72681), (216, 72729),

Gene: Sekhmet\_62 Start: 40799, Stop: 41635, Start Num: 40

Candidate Starts for Sekhmet\_62:

(11, 40619), (Start: 16 @40679 has 3 MA's), (Start: 40 @40799 has 22 MA's), (66, 40877), (87, 40979), (236, 41624),

Gene: Shaboozey\_131 Start: 69651, Stop: 70319, Start Num: 72

Candidate Starts for Shaboozey\_131:

(Start: 39 @69561 has 115 MA's), (Start: 72 @69651 has 1 MA's), (87, 69720), (93, 69744), (94, 69753), (98, 69777), (104, 69801), (108, 69816), (112, 69828), (120, 69855), (123, 69867), (128, 69876), (136, 69915), (160, 69984), (171, 70047),

Gene: ShamWow\_92 Start: 56276, Stop: 57097, Start Num: 39

Candidate Starts for ShamWow\_92:

(Start: 39 @56276 has 115 MA's), (Start: 47 @56294 has 13 MA's), (50, 56300), (79, 56417), (91, 56477), (93, 56486), (128, 56624), (169, 56783), (170, 56792), (180, 56855), (193, 56936), (209, 57026),

Gene: ShereKhan\_90 Start: 56388, Stop: 57209, Start Num: 39

Candidate Starts for ShereKhan\_90:

(Start: 39 @56388 has 115 MA's), (Start: 47 @56406 has 13 MA's), (50, 56412), (79, 56529), (91, 56589), (93, 56598), (128, 56736), (169, 56895), (170, 56904), (180, 56967), (193, 57048), (209, 57138),

Gene: Shlim410\_63 Start: 44611, Stop: 45450, Start Num: 40

Candidate Starts for Shlim410\_63:

(11, 44431), (Start: 16 @44491 has 3 MA's), (Start: 40 @44611 has 22 MA's), (66, 44689), (87, 44791), (236, 45439),

Gene: Simpliphy\_91 Start: 55396, Stop: 56217, Start Num: 39

Candidate Starts for Simpliphy\_91:

(Start: 39 @55396 has 115 MA's), (Start: 47 @55414 has 13 MA's), (50, 55420), (79, 55537), (91, 55597), (93, 55606), (128, 55744), (169, 55903), (170, 55912), (180, 55975), (193, 56056), (209, 56146),

Gene: SirDuracell\_92 Start: 54769, Stop: 55590, Start Num: 39

Candidate Starts for SirDuracell\_92:

(Start: 39 @54769 has 115 MA's), (Start: 47 @54787 has 13 MA's), (50, 54793), (79, 54910), (91, 54970), (93, 54979), (128, 55117), (169, 55276), (170, 55285), (180, 55348), (193, 55429), (209, 55519),

Gene: SoilAssassin\_61 Start: 41334, Stop: 42335, Start Num: 16

Candidate Starts for SoilAssassin\_61:

(9, 41271), (Start: 16 @41334 has 3 MA's), (28, 41412), (Start: 63 @41508 has 1 MA's), (97, 41682), (98, 41685), (100, 41688), (104, 41730), (113, 41763), (114, 41769), (128, 41811), (165, 41946), (173, 41997), (174, 42000), (195, 42132), (209, 42210), (227, 42258), (235, 42294), (242, 42324),

Gene: SophKB\_89 Start: 55074, Stop: 55895, Start Num: 39

Candidate Starts for SophKB\_89:

(Start: 39 @55074 has 115 MA's), (Start: 47 @55092 has 13 MA's), (50, 55098), (79, 55215), (91, 55275), (93, 55284), (128, 55422), (169, 55581), (170, 55590), (180, 55653), (193, 55734), (209, 55824),

Gene: Sotrice96\_93 Start: 55662, Stop: 56483, Start Num: 39

Candidate Starts for Sotrice96\_93:

(Start: 39 @55662 has 115 MA's), (Start: 47 @55680 has 13 MA's), (50, 55686), (79, 55803), (91, 55863), (93, 55872), (128, 56010), (169, 56169), (170, 56178), (180, 56241), (193, 56322), (209, 56412),

Gene: Spooky\_85 Start: 47535, Stop: 48386, Start Num: 40

Candidate Starts for Spooky\_85:

(Start: 40 @47535 has 22 MA's), (66, 47610), (67, 47619), (71, 47631), (87, 47712), (165, 48030), (171, 48075), (173, 48081),

Gene: Squint\_128 Start: 69351, Stop: 70109, Start Num: 39

Candidate Starts for Squint\_128:

(Start: 39 @69351 has 115 MA's), (Start: 72 @69441 has 1 MA's), (87, 69510), (93, 69534), (94, 69543), (98, 69567), (104, 69591), (108, 69606), (112, 69618), (120, 69645), (123, 69657), (128, 69666), (136, 69705), (160, 69774), (171, 69837),

Gene: Stank\_94 Start: 56055, Stop: 56876, Start Num: 39

Candidate Starts for Stank\_94:

(Start: 39 @56055 has 115 MA's), (Start: 47 @56073 has 13 MA's), (50, 56079), (79, 56196), (91, 56256), (93, 56265), (128, 56403), (169, 56562), (170, 56571), (180, 56634), (193, 56715), (209, 56805),

Gene: Stark\_94 Start: 56146, Stop: 56967, Start Num: 39

Candidate Starts for Stark\_94:

(Start: 39 @56146 has 115 MA's), (Start: 47 @56164 has 13 MA's), (50, 56170), (79, 56287), (91, 56347), (93, 56356), (128, 56494), (169, 56653), (170, 56662), (180, 56725), (193, 56806), (209, 56896),

Gene: StellaBean\_90 Start: 55600, Stop: 56421, Start Num: 39

Candidate Starts for StellaBean\_90:

(Start: 39 @55600 has 115 MA's), (Start: 47 @55618 has 13 MA's), (50, 55624), (79, 55741), (91, 55801), (93, 55810), (128, 55948), (169, 56107), (170, 56116), (180, 56179), (193, 56260), (209, 56350),

Gene: StolenFromERC\_95 Start: 55980, Stop: 56801, Start Num: 39

Candidate Starts for StolenFromERC\_95:

(Start: 39 @55980 has 115 MA's), (Start: 47 @55998 has 13 MA's), (50, 56004), (79, 56121), (91, 56181), (93, 56190), (128, 56328), (169, 56487), (170, 56496), (180, 56559), (193, 56640), (209, 56730),

Gene: StormChicken\_94 Start: 56759, Stop: 57580, Start Num: 39

Candidate Starts for StormChicken\_94:

(Start: 39 @56759 has 115 MA's), (Start: 47 @56777 has 13 MA's), (50, 56783), (61, 56813), (91, 56960), (93, 56969), (130, 57116), (169, 57266), (209, 57509),

Gene: Superphikiman\_127 Start: 68353, Stop: 69021, Start Num: 72  
Candidate Starts for Superphikiman\_127:

(Start: 39 @68263 has 115 MA's), (Start: 72 @68353 has 1 MA's), (87, 68422), (93, 68446), (94, 68455), (98, 68479), (104, 68503), (108, 68518), (112, 68530), (120, 68557), (123, 68569), (128, 68578), (136, 68617), (160, 68686), (171, 68749),

Gene: TBrady12\_95 Start: 55816, Stop: 56637, Start Num: 39  
Candidate Starts for TBrady12\_95:

(Start: 39 @55816 has 115 MA's), (Start: 47 @55834 has 13 MA's), (50, 55840), (79, 55957), (91, 56017), (93, 56026), (128, 56164), (169, 56323), (170, 56332), (180, 56395), (193, 56476), (209, 56566),

Gene: Tarkin\_91 Start: 56064, Stop: 56885, Start Num: 39  
Candidate Starts for Tarkin\_91:

(Start: 39 @56064 has 115 MA's), (Start: 47 @56082 has 13 MA's), (50, 56088), (79, 56205), (91, 56265), (93, 56274), (128, 56412), (169, 56571), (170, 56580), (180, 56643), (193, 56724), (209, 56814),

Gene: TeardropMSU\_88 Start: 55064, Stop: 55885, Start Num: 39  
Candidate Starts for TeardropMSU\_88:

(Start: 39 @55064 has 115 MA's), (Start: 47 @55082 has 13 MA's), (50, 55088), (79, 55205), (91, 55265), (93, 55274), (128, 55412), (169, 55571), (170, 55580), (180, 55643), (193, 55724), (209, 55814),

Gene: Teaspoon\_93 Start: 55916, Stop: 56737, Start Num: 39  
Candidate Starts for Teaspoon\_93:

(Start: 39 @55916 has 115 MA's), (Start: 47 @55934 has 13 MA's), (50, 55940), (79, 56057), (91, 56117), (93, 56126), (128, 56264), (169, 56423), (170, 56432), (180, 56495), (193, 56576), (209, 56666),

Gene: Terminus\_95 Start: 56851, Stop: 57672, Start Num: 39  
Candidate Starts for Terminus\_95:

(Start: 39 @56851 has 115 MA's), (Start: 47 @56869 has 13 MA's), (50, 56875), (79, 56992), (91, 57052), (93, 57061), (128, 57199), (169, 57358), (170, 57367), (180, 57430), (193, 57511), (209, 57601),

Gene: Thibault\_114 Start: 66645, Stop: 67445, Start Num: 41  
Candidate Starts for Thibault\_114:

(Start: 41 @66645 has 36 MA's), (64, 66705), (74, 66756), (78, 66771), (87, 66822), (114, 66936), (126, 66969), (141, 67038), (145, 67056), (157, 67083), (161, 67107), (165, 67116), (201, 67353), (216, 67401),

Gene: Thimann\_65 Start: 41439, Stop: 42275, Start Num: 40  
Candidate Starts for Thimann\_65:

(Start: 16 @41319 has 3 MA's), (Start: 40 @41439 has 22 MA's), (66, 41514), (87, 41616), (236, 42264),

Gene: Thimble\_95 Start: 55566, Stop: 56387, Start Num: 39  
Candidate Starts for Thimble\_95:



(Start: 39 @55566 has 115 MA's), (Start: 47 @55584 has 13 MA's), (50, 55590), (79, 55707), (91, 55767), (93, 55776), (128, 55914), (169, 56073), (170, 56082), (180, 56145), (193, 56226), (209, 56316),

Gene: ThreeRngTarjay\_128 Start: 72468, Stop: 73268, Start Num: 41

Candidate Starts for ThreeRngTarjay\_128:

(Start: 41 @72468 has 36 MA's), (64, 72528), (74, 72579), (78, 72594), (87, 72645), (114, 72759), (126, 72792), (141, 72861), (145, 72879), (157, 72906), (161, 72930), (165, 72939), (201, 73176), (216, 73224),

Gene: Thresher\_95 Start: 56926, Stop: 57747, Start Num: 39

Candidate Starts for Thresher\_95:

(Start: 39 @56926 has 115 MA's), (Start: 47 @56944 has 13 MA's), (50, 56950), (79, 57067), (91, 57127), (93, 57136), (128, 57274), (169, 57433), (170, 57442), (180, 57505), (193, 57586), (209, 57676),

Gene: Tomaszewski\_87 Start: 55227, Stop: 56048, Start Num: 39

Candidate Starts for Tomaszewski\_87:

(Start: 39 @55227 has 115 MA's), (Start: 47 @55245 has 13 MA's), (50, 55251), (79, 55368), (91, 55428), (93, 55437), (128, 55575), (169, 55734), (170, 55743), (180, 55806), (193, 55887), (209, 55977),

Gene: Toron\_69 Start: 42674, Stop: 43411, Start Num: 53

Candidate Starts for Toron\_69:

(32, 42623), (53, 42674), (67, 42734), (73, 42755), (80, 42791), (82, 42803), (95, 42875), (97, 42881), (101, 42893), (106, 42911), (128, 42974), (133, 43010), (137, 43019), (141, 43040), (144, 43052), (152, 43073), (159, 43085), (170, 43133), (171, 43145), (180, 43184), (184, 43214), (196, 43301), (197, 43310), (198, 43313), (204, 43343), (206, 43346), (210, 43358), (211, 43367), (215, 43379), (221, 43394), (223, 43397),

Gene: Toto\_90 Start: 56276, Stop: 57097, Start Num: 39

Candidate Starts for Toto\_90:

(Start: 39 @56276 has 115 MA's), (Start: 47 @56294 has 13 MA's), (50, 56300), (79, 56417), (91, 56477), (93, 56486), (128, 56624), (169, 56783), (170, 56792), (180, 56855), (193, 56936), (209, 57026),

Gene: Traaww1\_88 Start: 55084, Stop: 55905, Start Num: 39

Candidate Starts for Traaww1\_88:

(Start: 39 @55084 has 115 MA's), (Start: 47 @55102 has 13 MA's), (50, 55108), (79, 55225), (91, 55285), (93, 55294), (128, 55432), (169, 55591), (170, 55600), (180, 55663), (193, 55744), (209, 55834),

Gene: Tuco\_93 Start: 56823, Stop: 57644, Start Num: 39

Candidate Starts for Tuco\_93:

(Start: 39 @56823 has 115 MA's), (Start: 47 @56841 has 13 MA's), (50, 56847), (79, 56964), (91, 57024), (93, 57033), (128, 57171), (169, 57330), (170, 57339), (180, 57402), (193, 57483), (209, 57573),

Gene: Twinkle\_64 Start: 45670, Stop: 46509, Start Num: 40

Candidate Starts for Twinkle\_64:

(11, 45490), (Start: 16 @45550 has 3 MA's), (Start: 40 @45670 has 22 MA's), (66, 45748), (87, 45850), (236, 46498),

Gene: Typha\_59 Start: 43522, Stop: 44343, Start Num: 43

Candidate Starts for Typha\_59:

(22, 43438), (24, 43447), (27, 43462), (30, 43480), (Start: 43 @43522 has 4 MA's), (70, 43615), (71, 43618), (78, 43648), (82, 43675), (91, 43714), (94, 43732), (110, 43807), (114, 43825), (116, 43837), (130, 43867), (141, 43924), (143, 43933), (166, 43996), (173, 44041), (184, 44104), (189, 44143), (201, 44212), (205, 44230), (238, 44332),

Gene: Ubuntu\_53 Start: 37891, Stop: 38754, Start Num: 36

Candidate Starts for Ubuntu\_53:

(Start: 36 @37891 has 22 MA's), (62, 37957), (65, 37981), (77, 38020), (78, 38026), (80, 38041), (87, 38077), (88, 38083), (96, 38125), (99, 38134), (114, 38197), (118, 38215), (122, 38227), (129, 38245), (142, 38314), (144, 38323), (145, 38329), (154, 38350), (164, 38383), (170, 38416), (172, 38431), (186, 38530), (189, 38542), (192, 38554), (201, 38611), (208, 38638), (214, 38662), (228, 38695), (232, 38710), (239, 38743),

Gene: Ukulele\_87 Start: 55209, Stop: 56030, Start Num: 39

Candidate Starts for Ukulele\_87:

(Start: 39 @55209 has 115 MA's), (Start: 47 @55227 has 13 MA's), (50, 55233), (79, 55350), (91, 55410), (93, 55419), (128, 55557), (169, 55716), (170, 55725), (180, 55788), (193, 55869), (209, 55959),

Gene: Vasanti\_60 Start: 40525, Stop: 41349, Start Num: 63

Candidate Starts for Vasanti\_60:

(18, 40357), (26, 40414), (35, 40453), (Start: 46 @40480 has 1 MA's), (Start: 63 @40525 has 1 MA's), (97, 40699), (98, 40702), (100, 40705), (104, 40747), (114, 40786), (128, 40828), (174, 41017), (195, 41146), (209, 41224), (227, 41272), (242, 41338),

Gene: Wanda\_131 Start: 69603, Stop: 70403, Start Num: 41

Candidate Starts for Wanda\_131:

(Start: 41 @69603 has 36 MA's), (64, 69663), (74, 69714), (78, 69729), (87, 69780), (114, 69894), (126, 69927), (141, 69996), (145, 70014), (157, 70041), (161, 70065), (165, 70074), (201, 70311), (216, 70359),

Gene: Webster2\_53 Start: 37891, Stop: 38754, Start Num: 36

Candidate Starts for Webster2\_53:

(Start: 36 @37891 has 22 MA's), (62, 37957), (65, 37981), (77, 38020), (78, 38026), (80, 38041), (87, 38077), (88, 38083), (96, 38125), (99, 38134), (114, 38197), (118, 38215), (122, 38227), (129, 38245), (142, 38314), (144, 38323), (145, 38329), (154, 38350), (164, 38383), (170, 38416), (172, 38431), (186, 38530), (189, 38542), (192, 38554), (201, 38611), (208, 38638), (214, 38662), (228, 38695), (232, 38710), (239, 38743),

Gene: Weirido19\_50 Start: 36157, Stop: 37002, Start Num: 68

Candidate Starts for Weirido19\_50:

(56, 36112), (Start: 68 @36157 has 1 MA's), (78, 36196), (95, 36295), (111, 36364), (112, 36367), (120, 36400), (126, 36418), (131, 36442), (134, 36463), (153, 36523), (163, 36553), (173, 36607), (185, 36706), (243, 36985),

Gene: Wiggin\_94 Start: 55485, Stop: 56306, Start Num: 39

Candidate Starts for Wiggin\_94:

(Start: 39 @55485 has 115 MA's), (Start: 47 @55503 has 13 MA's), (50, 55509), (79, 55626), (91, 55686), (93, 55695), (128, 55833), (169, 55992), (170, 56001), (180, 56064), (193, 56145), (209, 56235),

Gene: Willez\_87 Start: 54096, Stop: 54917, Start Num: 39

Candidate Starts for Willez\_87:

(Start: 39 @54096 has 115 MA's), (Start: 47 @54114 has 13 MA's), (50, 54120), (79, 54237), (91, 54297), (93, 54306), (128, 54444), (169, 54603), (170, 54612), (180, 54675), (193, 54756), (209, 54846),

Gene: WinkNick\_63 Start: 40323, Stop: 41159, Start Num: 40

Candidate Starts for WinkNick\_63:

(11, 40143), (Start: 16 @40203 has 3 MA's), (Start: 40 @40323 has 22 MA's), (66, 40401), (87, 40503), (236, 41148),

Gene: Wishmaker\_51 Start: 37891, Stop: 38754, Start Num: 36

Candidate Starts for Wishmaker\_51:

(Start: 36 @37891 has 22 MA's), (62, 37957), (65, 37981), (77, 38020), (78, 38026), (80, 38041), (87, 38077), (88, 38083), (96, 38125), (99, 38134), (114, 38197), (118, 38215), (122, 38227), (129, 38245), (142, 38314), (144, 38323), (145, 38329), (154, 38350), (164, 38383), (170, 38416), (172, 38431), (186, 38530), (189, 38542), (192, 38554), (201, 38611), (208, 38638), (214, 38662), (228, 38695), (232, 38710), (239, 38743),

Gene: Xandras\_91 Start: 55308, Stop: 56129, Start Num: 39

Candidate Starts for Xandras\_91:

(Start: 39 @55308 has 115 MA's), (Start: 47 @55326 has 13 MA's), (50, 55332), (79, 55449), (91, 55509), (93, 55518), (128, 55656), (169, 55815), (170, 55824), (180, 55887), (193, 55968), (209, 56058),

Gene: YassJohnny\_89 Start: 54949, Stop: 55770, Start Num: 39

Candidate Starts for YassJohnny\_89:

(Start: 39 @54949 has 115 MA's), (Start: 47 @54967 has 13 MA's), (50, 54973), (79, 55090), (91, 55150), (93, 55159), (128, 55297), (169, 55456), (170, 55465), (180, 55528), (193, 55609), (209, 55699),

Gene: Yeet\_124 Start: 71190, Stop: 71945, Start Num: 41

Candidate Starts for Yeet\_124:

(Start: 41 @71190 has 36 MA's), (87, 71346), (94, 71379), (98, 71403), (104, 71427), (120, 71481), (121, 71487), (123, 71493), (128, 71502), (132, 71529), (136, 71541), (150, 71586), (155, 71601), (171, 71673),

Gene: Youngblood\_95 Start: 56778, Stop: 57599, Start Num: 39

Candidate Starts for Youngblood\_95:

(Start: 39 @56778 has 115 MA's), (Start: 47 @56796 has 13 MA's), (50, 56802), (79, 56919), (91, 56979), (93, 56988), (128, 57126), (169, 57285), (170, 57294), (180, 57357), (193, 57438), (209, 57528),

Gene: Zaheer\_53 Start: 35680, Stop: 36483, Start Num: 60

Candidate Starts for Zaheer\_53:

(58, 35677), (Start: 60 @35680 has 3 MA's), (71, 35731), (86, 35800), (104, 35896), (105, 35899), (113, 35929), (117, 35947), (128, 35974), (137, 36019), (153, 36070), (156, 36073), (179, 36175), (203, 36334), (224, 36391),

Gene: Zelink\_127 Start: 72415, Stop: 73215, Start Num: 41

Candidate Starts for Zelink\_127:

(Start: 41 @72415 has 36 MA's), (64, 72475), (74, 72526), (78, 72541), (87, 72592), (114, 72706), (126, 72739), (141, 72808), (145, 72826), (157, 72853), (161, 72877), (165, 72886), (201, 73123),

(216, 73171),

Gene: xkcd\_95 Start: 56962, Stop: 57783, Start Num: 39

Candidate Starts for xkcd\_95:

(Start: 39 @56962 has 115 MA's), (Start: 47 @56980 has 13 MA's), (50, 56986), (79, 57103), (91, 57163), (93, 57172), (128, 57310), (169, 57469), (170, 57478), (180, 57541), (193, 57622), (209, 57712),