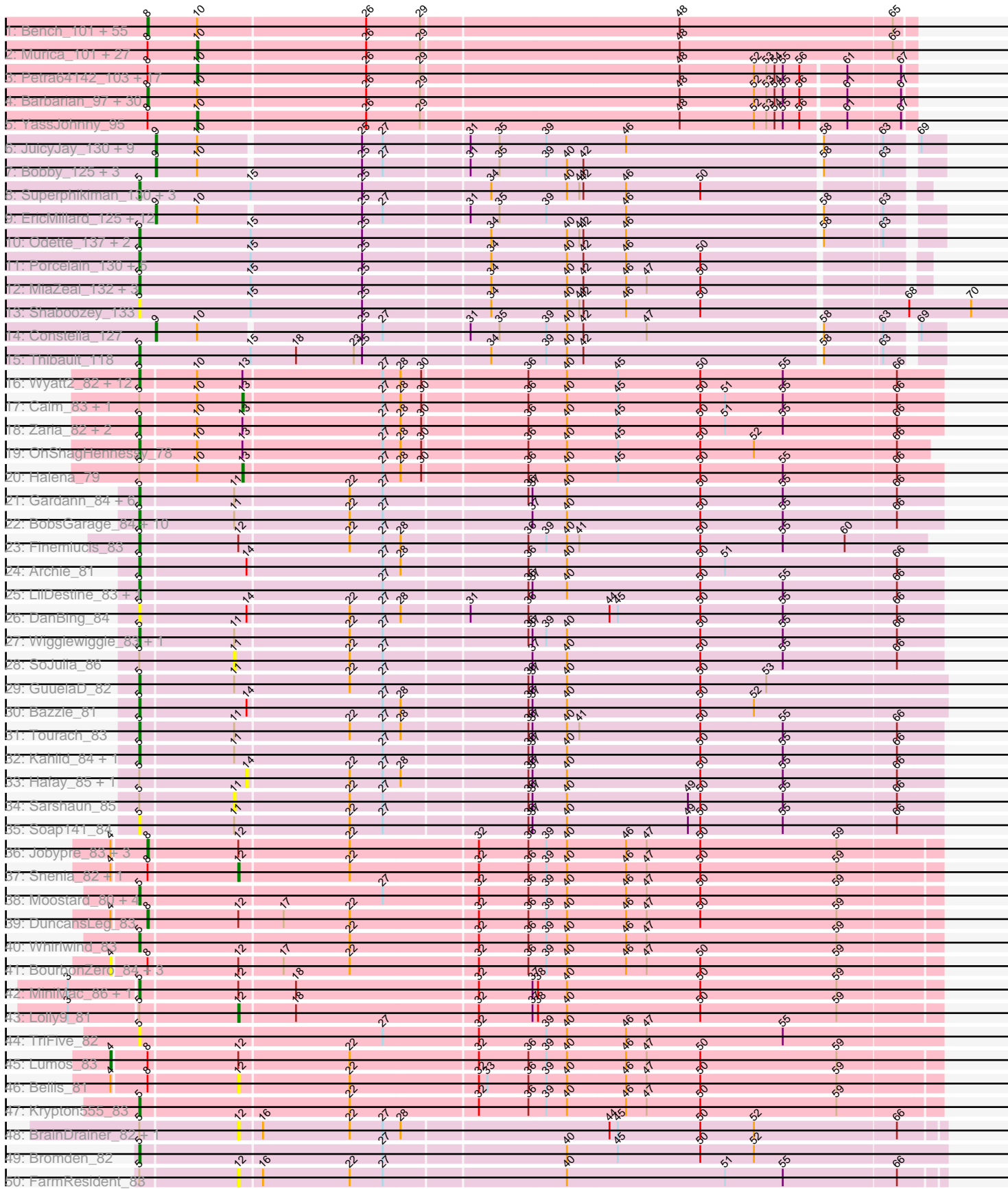


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Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. 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 212246 Report

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

Pham number 212246 has 275 members, 38 are drafts.

Phages represented in each track:

- Track 1 : Bench\_101, Miniwave\_93, Bruin\_95, ShereKhan\_96, HanKaySha\_99, Hopey\_99, Pat3\_95, Contagion\_94, Ukulele\_93, MPhalcon\_99, Quallification\_99, ChotaBhai\_98, Palpatine\_99, Manda\_100, Highbury\_96, Lilizi\_99, Misfit\_99, Phaux\_100, CrystalP\_97, Mindy\_97, Kanye\_95, Tomaszewski\_93, Moldemort\_101, Teaspoon\_99, Cookies\_95, Maxxinista\_100, Eureka\_97, Rimmer\_96, ShamWow\_98, Cactus\_101, Buck\_99, SophKB\_95, Simpliphy\_97, MISSy\_99, Henry\_95, Sotrice96\_99, BaboJay\_98, SirDuracell\_98, Thresher\_100, RiverMonster\_98, TeardropMSU\_94, Murphy\_98, MadamMonkfish\_98, Terminus\_101, BadStone\_95, NoSleep\_99, Policronamos\_100, Saints25\_96, Filch\_100, DrDrey\_98, Dumbo\_98, Toto\_96, Tucu\_99, Pharsalus\_95, Tarkin\_97, Phrux\_95
- Track 2 : Murica\_101, Lilpickle\_97, Cjw1\_98, Nala\_100, Dusk\_95, BugsBunny\_97, PhatBacter\_101, ABCat\_95, Mosby\_94, OrionPax\_97, ChosenOne\_98, Hoonter\_101, StellaBean\_96, FireRed\_101, Lilac\_100, Goku\_97, Goldilocks\_101, Stark\_99, Elite2014\_97, Sassay\_93, BilboSwaggins\_97, Emmina\_98, Paperbeatsrock\_97, HufflyPuff\_100, Elph10\_98, Amao\_98, Willez\_93, Porky\_97
- Track 3 : Petra64142\_103, GooberAzure\_101, Balomoji\_98, Becksu\_97, Gator\_96, Rakim\_99, Command613\_100, Gage\_100, Easy2Say\_98, GoldenSpark\_102, Daikon\_99, Inca\_95, Kostya\_98, Thimble\_101, Youngblood\_101, Asriel\_96, FoghornLeghorn\_92, Flypotenuse\_94
- Track 4 : Barbarian\_97, BigBubba\_98, Icee\_99, StormChicken\_100, Myrale\_98, StolenFromERC\_101, Adnama\_102, DoctorDiddles\_97, 244\_99, Stank\_100, Czystczon1\_99, Pumpkin\_101, NelitzaMV\_96, Nimrod\_98, Wiggin\_100, xkcd\_101, Argent26\_102, Gemini\_103, Phaja\_96, Xandras\_97, IHOP\_96, Marshmallow\_95, AmericanBeauty\_102, Bask21\_98, JeTaime\_98, Harella\_98, TBrady12\_101, Glexan\_97, Holt\_103, Kimchi\_102, Traaww1\_94
- Track 5 : YassJohnny\_95
- Track 6 : JuicyJay\_130, Halley\_135, Ejimix\_127, Pound\_122, NihilNomen\_135, Beem\_135, Dallas\_134, Bombitas\_121, Kalah2\_124, Optimus\_124
- Track 7 : Bobby\_125, Schatzie\_129, Marleymoo\_118, DmpstrDiver\_133
- Track 8 : Superphikiman\_130, Hannaconda\_126, Omega\_142, Courthouse\_128
- Track 9 : EricMillard\_125, Klein\_130, Hughesyang\_133, ThreeRngTarjay\_129, Minerva\_132, Zelink\_128, Wanda\_132, Redno2\_125, Dove\_119, BAKA\_133, Duke13\_128, Bagrid\_134, Phoebus\_134
- Track 10 : Odette\_137, Yeet\_127, HokkenD\_125
- Track 11 : Porcelain\_130, Gonephishing\_127, Ariel\_132, Lucky2013\_127, Rearden\_131, Squint\_130
- Track 12 : MiaZeal\_132, LittleE\_135, KashFlow\_130, Nekros\_135

- Track 13 : Shaboozey\_133
- Track 14 : Constella\_127
- Track 15 : Thibault\_118
- Track 16 : Wyatt2\_82, Appletree2\_80, LeBron\_80, Rose5\_82, Enceladus\_78, AvadaKedavra\_81, Silverleaf\_81, UPIE\_80, DirkDirk\_78, MAckerman\_80, JoeDirt\_82, Wamburggrxpress\_81, Tyson\_82
- Track 17 : Calm\_83, Poochiewood\_79
- Track 18 : Zaria\_82, Acquire49\_81, CicholasNage\_78
- Track 19 : OhShagHennessy\_78
- Track 20 : Halena\_79
- Track 21 : Gardann\_84, Loadrie\_82, Nicholasp3\_84, Crossroads\_84, Rumpelstiltskin\_81, Zakai\_85, Underpass\_75
- Track 22 : BobsGarage\_84, Faith1\_84, BigCheese\_84, Winky\_84, Miley16\_84, DrSeegs\_84, Itos\_84, Lewan\_85, Netyap\_85, Gabriela\_84, Breezona\_84
- Track 23 : Finemlucis\_83
- Track 24 : Archie\_81
- Track 25 : LilDestine\_83, Vetric\_83
- Track 26 : DanBing\_84
- Track 27 : Wigglewiggle\_83, MkaliMitinis3\_85
- Track 28 : SoJulia\_86
- Track 29 : GuuelaD\_82
- Track 30 : Bazzle\_81
- Track 31 : Tourach\_83
- Track 32 : Kahlid\_84, Wilder\_85
- Track 33 : Hafay\_85, Claus\_84
- Track 34 : Sarshaun\_85
- Track 35 : Soap141\_84
- Track 36 : Jobypre\_83, Jubie\_82, MsGreen\_83, Clautastrophe\_81
- Track 37 : Snenia\_82, Red305\_84
- Track 38 : Moostard\_80, Finnry\_82, Kingsolomon\_80, Nicholas\_80, Samty\_81
- Track 39 : DuncansLeg\_83
- Track 40 : Whirlwind\_83
- Track 41 : BourbonZero\_84, KirDoubleO7\_81, Ellson\_82, LiyuLake\_82
- Track 42 : MiniMac\_86, MiniLon\_86
- Track 43 : Lolly9\_81
- Track 44 : TriFive\_82
- Track 45 : Lumos\_83
- Track 46 : Bellis\_81
- Track 47 : Krypton555\_83
- Track 48 : BrainDrainer\_82, PYPDinur\_81
- Track 49 : Bromden\_82
- Track 50 : FarmResident\_83
- Track 51 : DyoEdafos\_86, Kropertea\_78
- Track 52 : Douzhi\_82
- Track 53 : Chaser\_81
- Track 54 : Douge\_82
- Track 55 : Sheng711\_83
- Track 56 : Quby\_82
- Track 57 : Baudelaire\_90, Aegeus\_90
- Track 58 : Nebkiss\_91
- Track 59 : Gaia\_92

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

The start number called the most often in the published annotations is 8, it was called in 93 of the 237 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 244\_99, Adnama\_102, Aegeus\_90, AmericanBeauty\_102, Argent26\_102, BaboJay\_98, BadStone\_95, Barbarian\_97, Bask21\_98, Baudelaire\_90, Bench\_101, BigBubba\_98, Bruin\_95, Buck\_99, Cactus\_101, ChotaBhai\_98, Clautastrophe\_81, Contagion\_94, Cookies\_95, CrystalP\_97, Czyszczonek\_99, DoctorDiddles\_97, DrDrey\_98, Dumbo\_98, DuncansLeg\_83, Eureka\_97, Filch\_100, Gemini\_103, Glexan\_97, HanKaySha\_99, Harella\_98, Henry\_95, Highbury\_96, Holt\_103, Hopey\_99, IHOP\_96, Icee\_99, JeTaime\_98, Jobypre\_83, Jubie\_82, Kanye\_95, Kimchi\_102, Lilizi\_99, MISSy\_99, MPhalcon\_99, MadamMonkfish\_98, Manda\_100, Marshmallow\_95, Maxxinista\_100, Mindy\_97, Miniwave\_93, Misfit\_99, Moldemort\_101, MsGreen\_83, Murphy\_98, Myrale\_98, NelitzaMV\_96, Nimrod\_98, NoSleep\_99, Palpatine\_99, Pat3\_95, Phaja\_96, Pharsalus\_95, Phaux\_100, Phrux\_95, Policronamos\_100, Pumpkin\_101, Quallification\_99, Rimmer\_96, RiverMonster\_98, Saints25\_96, ShamWow\_98, ShereKhan\_96, Simpliphy\_97, SirDuracell\_98, SophKB\_95, Sotrice96\_99, Stank\_100, StolenFromERC\_101, StormChicken\_100, TBrady12\_101, Tarkin\_97, TeardropMSU\_94, Teaspoon\_99, Terminus\_101, Thresher\_100, Tomaszewski\_93, Toto\_96, Traaww1\_94, Tuco\_99, Ukulele\_93, Wiggin\_100, Xandras\_97, xkcd\_101,

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

- ABCat\_95, Amao\_98, Asriel\_96, Balomoji\_98, Becksu\_97, Bellis\_81, BilboSwaggins\_97, BourbonZero\_84, BugsBunny\_97, ChosenOne\_98, Cjw1\_98, Command613\_100, Daikon\_99, Dusk\_95, Easy2Say\_98, Elite2014\_97, Ellson\_82, Elph10\_98, Emmina\_98, FireRed\_101, Flypotenuse\_94, FoghornLeghorn\_92, Gage\_100, Gator\_96, Goku\_97, GoldenSpark\_102, Goldilocks\_101, GooberAzure\_101, Hoonter\_101, HufflyPuff\_100, Inca\_95, KirDoubleO7\_81, Kostya\_98, Lilac\_100, Lilpickle\_97, LiyuLake\_82, Lumos\_83, Mosby\_94, Murica\_101, Nala\_100, OrionPax\_97, Paperbeatsrock\_97, Petra64142\_103, PhatBacter\_101, Porky\_97, Rakim\_99, Red305\_84, Sassay\_93, Snenia\_82, Stark\_99, StellaBean\_96, Thimble\_101, Willez\_93, YassJohnny\_95, Youngblood\_101,

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

- Acquire49\_81, Appletree2\_80, Archie\_81, Ariel\_132, AvadaKedavra\_81, BAKA\_133, Bagrid\_134, Bazzle\_81, Beem\_135, BigCheese\_84, Bobby\_125, BobsGarage\_84, Bombitas\_121, BrainDrainer\_82, Breezona\_84, Bromden\_82, Calm\_83, Chaser\_81, CicholasNage\_78, Claus\_84, Constella\_127, Courthouse\_128, Crossroads\_84, Dallas\_134, DanBing\_84, DirkDirk\_78, DmpstrDiver\_133, Douge\_82, Douzhi\_82, Dove\_119, DrSeegs\_84, Duke13\_128, DyoEdafos\_86, Ejimix\_127, Enceladus\_78, EricMillard\_125, Faith1\_84, FarmResident\_83, Finemlucis\_83, Finnry\_82, Gabriela\_84, Gaia\_92, Gardann\_84, Gonephishing\_127, GuuelaD\_82, Hafay\_85, Halena\_79, Halley\_135, Hannaconda\_126, HokkenD\_125, Hughesyang\_133, Itos\_84, JoeDirt\_82, JuicyJay\_130, Kahlid\_84, Kalah2\_124, KashFlow\_130, Kingsolomon\_80, Klein\_130, Kropertea\_78, Krypton555\_83, LeBron\_80, Lewan\_85, LilDestine\_83, LittleE\_135, Loadrie\_82, Lolly9\_81, Lucky2013\_127, MAckerman\_80, Marleymoo\_118, MiaZeal\_132, Miley16\_84, Minerva\_132, MiniLon\_86, MiniMac\_86, MkaliMitinis3\_85, Moostard\_80, Nebkiss\_91, Nekros\_135, Netyap\_85, Nicholas\_80, Nicholasp3\_84, NihilNomen\_135, Odette\_137,

OhShagHennessy\_78, Omega\_142, Optimus\_124, PYPDinur\_81, Phoebus\_134, Poochiewood\_79, Porcelain\_130, Pound\_122, Quby\_82, Rearden\_131, Redno2\_125, Rose5\_82, Rumpelstiltskin\_81, Samty\_81, Sarshaun\_85, Schatzie\_129, Shaboozey\_133, Sheng711\_83, Silverleaf\_81, SoJulia\_86, Soap141\_84, Squint\_130, Superphikiman\_130, Thibault\_118, ThreeRngTarjay\_129, Tourach\_83, TriFive\_82, Tyson\_82, UPIE\_80, Underpass\_75, Vetrix\_83, Wamburgrxpress\_81, Wanda\_132, Whirlwind\_83, Wigglewiggles\_83, Wilder\_85, Winky\_84, Wyatt2\_82, Yeet\_127, Zakai\_85, Zaria\_82, Zelink\_128,

### Summary by start number:

#### Start 4:

- Found in 13 of 275 ( 4.7% ) of genes in pham
- Manual Annotations of this start: 1 of 237
- Called 38.5% of time when present
- Phage (with cluster) where this start called: BourbonZero\_84 (L3), Ellson\_82 (L3), KirDoubleO7\_81 (L3), LiyuLake\_82 (L3), Lumos\_83 (L3),

#### Start 5:

- Found in 96 of 275 ( 34.9% ) of genes in pham
- Manual Annotations of this start: 72 of 237
- Called 87.5% of time when present
- Phage (with cluster) where this start called: Acquire49\_81 (L1), Appletree2\_80 (L1), Archie\_81 (L2), Ariel\_132 (J), AvadaKedavra\_81 (L1), Bazzle\_81 (L2), BigCheese\_84 (L2), BobsGarage\_84 (L2), Breezona\_84 (L2), Bromden\_82 (L4), Chaser\_81 (L4), CicholasNage\_78 (L1), Courthouse\_128 (J), Crossroads\_84 (L2), DanBing\_84 (L2), DirkDirk\_78 (L1), Douge\_82 (L4), DrSeegs\_84 (L2), DyoEdafos\_86 (L4), Enceladus\_78 (L1), Faith1\_84 (L2), Finemlucis\_83 (L2), Finnry\_82 (L3), Gabriela\_84 (L2), Gardann\_84 (L2), Gonephishing\_127 (J), GuuelaD\_82 (L2), Hannaconda\_126 (J), HokkenD\_125 (J), Itos\_84 (L2), JoeDirt\_82 (L1), Kahlid\_84 (L2), KashFlow\_130 (J), Kingsolomon\_80 (L3), Kropertea\_78 (L4), Krypton555\_83 (L3), LeBron\_80 (L1), Lewan\_85 (L2), LilDestine\_83 (L2), LittleE\_135 (J), Loadrie\_82 (L2), Lucky2013\_127 (J), MAckerman\_80 (L1), MiaZeal\_132 (J), Miley16\_84 (L2), MiniLon\_86 (L3), MiniMac\_86 (L3), MkaliMitinis3\_85 (L2), Moostard\_80 (L3), Nekros\_135 (J), Netyap\_85 (L2), Nicholas\_80 (L3), Nicholasp3\_84 (L2), Odette\_137 (J), OhShagHennessy\_78 (L1), Omega\_142 (J), Porcelain\_130 (J), Quby\_82 (L4), Rearden\_131 (J), Rose5\_82 (L1), Rumpelstiltskin\_81 (L2), Samty\_81 (L3), Shaboozey\_133 (J), Sheng711\_83 (L4), Silverleaf\_81 (L1), Soap141\_84 (L2), Squint\_130 (J), Superphikiman\_130 (J), Thibault\_118 (J), Tourach\_83 (L2), TriFive\_82 (L3), Tyson\_82 (L1), UPIE\_80 (L1), Underpass\_75 (L2), Vetrix\_83 (L2), Wamburgrxpress\_81 (L1), Whirlwind\_83 (L3), Wigglewiggles\_83 (L2), Wilder\_85 (L2), Winky\_84 (L2), Wyatt2\_82 (L1), Yeet\_127 (J), Zakai\_85 (L2), Zaria\_82 (L1),

#### Start 6:

- Found in 2 of 275 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 237
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Gaia\_92 (X),

#### Start 7:

- Found in 1 of 275 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 237
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Nebkiss\_91 (X),

#### Start 8:

- Found in 149 of 275 ( 54.2% ) of genes in pham
- Manual Annotations of this start: 93 of 237
- Called 63.1% of time when present
- Phage (with cluster) where this start called: 244\_99 (E), Adnama\_102 (E), Aegeus\_90 (L5), AmericanBeauty\_102 (E), Argent26\_102 (E), BaboJay\_98 (E), BadStone\_95 (E), Barbarian\_97 (E), Bask21\_98 (E), Baudelaire\_90 (L5), Bench\_101 (E), BigBubba\_98 (E), Bruin\_95 (E), Buck\_99 (E), Cactus\_101 (E), ChotaBhai\_98 (E), Clautastrophe\_81 (L3), Contagion\_94 (E), Cookies\_95 (E), CrystalP\_97 (E), Czystczon1\_99 (E), DoctorDiddles\_97 (E), DrDrey\_98 (E), Dumbo\_98 (E), DuncansLeg\_83 (L3), Eureka\_97 (E), Filch\_100 (E), Gemini\_103 (E), Glexan\_97 (E), HanKaySha\_99 (E), Harella\_98 (E), Henry\_95 (E), Highbury\_96 (E), Holt\_103 (E), Hopey\_99 (E), IHOP\_96 (E), Icee\_99 (E), JeTaime\_98 (E), Jobypre\_83 (L3), Jubie\_82 (L3), Kanye\_95 (E), Kimchi\_102 (E), Lilizi\_99 (E), MISSy\_99 (E), MPhalcon\_99 (E), MadamMonkfish\_98 (E), Manda\_100 (E), Marshmallow\_95 (E), Maxxinista\_100 (E), Mindy\_97 (E), Miniwave\_93 (E), Misfit\_99 (E), Moldemort\_101 (E), MsGreen\_83 (L3), Murphy\_98 (E), Myrale\_98 (E), NelitzaMV\_96 (E), Nimrod\_98 (E), NoSleep\_99 (E), Palpatine\_99 (E), Pat3\_95 (E), Phaja\_96 (E), Pharsalus\_95 (E), Phaux\_100 (E), Phrux\_95 (E), Policronamos\_100 (E), Pumpkin\_101 (E), Quallification\_99 (E), Rimmer\_96 (E), RiverMonster\_98 (E), Saints25\_96 (E), ShamWow\_98 (E), ShereKhan\_96 (E), Simpliphy\_97 (E), SirDuracell\_98 (E), SophKB\_95 (E), Sotrice96\_99 (E), Stank\_100 (E), StolenFromERC\_101 (E), StormChicken\_100 (E), TBrady12\_101 (E), Tarkin\_97 (E), TeardropMSU\_94 (E), Teaspoon\_99 (E), Terminus\_101 (E), Thresher\_100 (E), Tomaszewski\_93 (E), Toto\_96 (E), Traaww1\_94 (E), Tuco\_99 (E), Ukulele\_93 (E), Wiggin\_100 (E), Xandras\_97 (E), xkcd\_101 (E),

#### Start 9:

- Found in 28 of 275 ( 10.2% ) of genes in pham
- Manual Annotations of this start: 26 of 237
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BAKA\_133 (J), Bagrid\_134 (J), Beem\_135 (J), Bobby\_125 (J), Bombitas\_121 (J), Constella\_127 (J), Dallas\_134 (J), DmpstrDiver\_133 (J), Dove\_119 (J), Duke13\_128 (J), Ejimix\_127 (J), EricMillard\_125 (J), Halley\_135 (J), Hughesyang\_133 (J), JuicyJay\_130 (J), Kalah2\_124 (J), Klein\_130 (J), Marleymoo\_118 (J), Minerva\_132 (J), NihilNomen\_135 (J), Optimus\_124 (J), Phoebus\_134 (J), Pound\_122 (J), Redno2\_125 (J), Schatzie\_129 (J), ThreeRngTarjay\_129 (J), Wanda\_132 (J), Zelink\_128 (J),

#### Start 10:

- Found in 184 of 275 ( 66.9% ) of genes in pham
- Manual Annotations of this start: 39 of 237
- Called 25.5% of time when present
- Phage (with cluster) where this start called: ABCat\_95 (E), Amao\_98 (E), Asriel\_96 (E), Balomoji\_98 (E), Becksu\_97 (E), BilboSwaggins\_97 (E), BugsBunny\_97 (E), ChosenOne\_98 (E), Cjw1\_98 (E), Command613\_100 (E), Daikon\_99 (E), Dusk\_95 (E), Easy2Say\_98 (E), Elite2014\_97 (E), Elph10\_98 (E), Emmina\_98 (E), FireRed\_101 (E), Flypotenuse\_94 (E), FoghornLeghorn\_92 (E), Gage\_100 (E), Gator\_96 (E), Goku\_97 (E), GoldenSpark\_102 (E), Goldilocks\_101 (E), GooberAzure\_101 (E), Hoonter\_101 (E), HufflyPuff\_100 (E), Inca\_95 (E), Kostya\_98 (E), Lilac\_100 (E), Lilpickle\_97 (E), Mosby\_94 (E), Murica\_101 (E), Nala\_100 (E),

OrionPax\_97 (E), Paperbeatsrock\_97 (E), Petra64142\_103 (E), PhatBacter\_101 (E), Porky\_97 (E), Rakim\_99 (E), Sassay\_93 (E), Stark\_99 (E), StellaBean\_96 (E), Thimble\_101 (E), Willez\_93 (E), YassJohnny\_95 (E), Youngblood\_101 (E),

Start 11:

- Found in 27 of 275 ( 9.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 7.4% of time when present
- Phage (with cluster) where this start called: Sarshaun\_85 (L2), SoJulia\_86 (L2),

Start 12:

- Found in 24 of 275 ( 8.7% ) of genes in pham
- Manual Annotations of this start: 2 of 237
- Called 29.2% of time when present
- Phage (with cluster) where this start called: Bellis\_81 (L3), BrainDrainer\_82 (L4), FarmResident\_83 (L4), Lolly9\_81 (L3), PYPDinur\_81 (L4), Red305\_84 (L3), Snenia\_82 (L3),

Start 13:

- Found in 20 of 275 ( 7.3% ) of genes in pham
- Manual Annotations of this start: 2 of 237
- Called 15.0% of time when present
- Phage (with cluster) where this start called: Calm\_83 (L1), Halena\_79 (L1), Poochiewood\_79 (L1),

Start 14:

- Found in 5 of 275 ( 1.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 40.0% of time when present
- Phage (with cluster) where this start called: Claus\_84 (L2), Hafay\_85 (L2),

Start 16:

- Found in 7 of 275 ( 2.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Douzhi\_82 (L4),

### **Summary by clusters:**

There are 8 clusters represented in this pham: E, J, L4, L5, L2, L3, L1, X,

Info for manual annotations of cluster E:

- Start number 8 was manually annotated 86 times for cluster E.
- Start number 10 was manually annotated 39 times for cluster E.

Info for manual annotations of cluster J:

- Start number 5 was manually annotated 14 times for cluster J.
- Start number 9 was manually annotated 26 times for cluster J.

Info for manual annotations of cluster L1:

- Start number 5 was manually annotated 17 times for cluster L1.
- Start number 13 was manually annotated 2 times for cluster L1.



Info for manual annotations of cluster L2:

- Start number 5 was manually annotated 28 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 4 was manually annotated 1 time for cluster L3.
- Start number 5 was manually annotated 9 times for cluster L3.
- Start number 8 was manually annotated 5 times for cluster L3.
- Start number 12 was manually annotated 2 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 5 was manually annotated 4 times for cluster L4.

Info for manual annotations of cluster L5:

- Start number 8 was manually annotated 2 times for cluster L5.

Info for manual annotations of cluster X:

- Start number 6 was manually annotated 1 time for cluster X.
- Start number 7 was manually annotated 1 time for cluster X.

### **Gene Information:**

Gene: 244\_99 Start: 58106, Stop: 58642, Start Num: 8

Candidate Starts for 244\_99:

(Start: 8 @58106 has 93 MA's), (Start: 10 @58142 has 39 MA's), (26, 58262), (29, 58301), (48, 58481), (52, 58535), (53, 58544), (54, 58550), (55, 58556), (56, 58568), (61, 58598), (67, 58634),

Gene: ABCat\_95 Start: 58508, Stop: 59014, Start Num: 10

Candidate Starts for ABCat\_95:

(Start: 8 @58472 has 93 MA's), (Start: 10 @58508 has 39 MA's), (26, 58628), (29, 58667), (48, 58847), (65, 59000),

Gene: Acquire49\_81 Start: 52966, Stop: 53532, Start Num: 5

Candidate Starts for Acquire49\_81:

(Start: 5 @52966 has 72 MA's), (Start: 10 @53005 has 39 MA's), (Start: 13 @53038 has 2 MA's), (27, 53137), (28, 53149), (30, 53164), (36, 53236), (40, 53263), (45, 53299), (50, 53359), (51, 53377), (55, 53419), (66, 53500),

Gene: Adnama\_102 Start: 58401, Stop: 58937, Start Num: 8

Candidate Starts for Adnama\_102:

(Start: 8 @58401 has 93 MA's), (Start: 10 @58437 has 39 MA's), (26, 58557), (29, 58596), (48, 58776), (52, 58830), (53, 58839), (54, 58845), (55, 58851), (56, 58863), (61, 58893), (67, 58929),

Gene: Aegeus\_90 Start: 55548, Stop: 56093, Start Num: 8

Candidate Starts for Aegeus\_90:

(1, 55476), (2, 55482), (Start: 8 @55548 has 93 MA's), (Start: 10 @55584 has 39 MA's), (Start: 12 @55614 has 2 MA's), (21, 55689), (24, 55698), (33, 55782), (42, 55851), (47, 55896), (48, 55920), (55, 55995), (57, 56013),

Gene: Amao\_98 Start: 57950, Stop: 58456, Start Num: 10

Candidate Starts for Amao\_98:

(Start: 8 @57914 has 93 MA's), (Start: 10 @57950 has 39 MA's), (26, 58070), (29, 58109), (48, 58289), (65, 58442),

Gene: AmericanBeauty\_102 Start: 58641, Stop: 59177, Start Num: 8

Candidate Starts for AmericanBeauty\_102:

(Start: 8 @58641 has 93 MA's), (Start: 10 @58677 has 39 MA's), (26, 58797), (29, 58836), (48, 59016), (52, 59070), (53, 59079), (54, 59085), (55, 59091), (56, 59103), (61, 59133), (67, 59169),

Gene: Appletree2\_80 Start: 52577, Stop: 53143, Start Num: 5

Candidate Starts for Appletree2\_80:

(Start: 5 @52577 has 72 MA's), (Start: 10 @52616 has 39 MA's), (Start: 13 @52649 has 2 MA's), (27, 52748), (28, 52760), (30, 52775), (36, 52847), (40, 52874), (45, 52910), (50, 52970), (55, 53030), (66, 53111),

Gene: Archie\_81 Start: 54499, Stop: 55065, Start Num: 5

Candidate Starts for Archie\_81:

(Start: 5 @54499 has 72 MA's), (14, 54574), (27, 54670), (28, 54682), (36, 54769), (40, 54796), (50, 54892), (51, 54910), (66, 55033),

Gene: Argent26\_102 Start: 58325, Stop: 58861, Start Num: 8

Candidate Starts for Argent26\_102:

(Start: 8 @58325 has 93 MA's), (Start: 10 @58361 has 39 MA's), (26, 58481), (29, 58520), (48, 58700), (52, 58754), (53, 58763), (54, 58769), (55, 58775), (56, 58787), (61, 58817), (67, 58853),

Gene: Ariel\_132 Start: 69405, Stop: 69953, Start Num: 5

Candidate Starts for Ariel\_132:

(Start: 5 @69405 has 72 MA's), (15, 69486), (25, 69567), (34, 69654), (40, 69708), (42, 69720), (46, 69750), (50, 69804),

Gene: Asriel\_96 Start: 56774, Stop: 57274, Start Num: 10

Candidate Starts for Asriel\_96:

(Start: 8 @56738 has 93 MA's), (Start: 10 @56774 has 39 MA's), (26, 56894), (29, 56933), (48, 57113), (52, 57167), (53, 57176), (54, 57182), (55, 57188), (56, 57200), (61, 57230), (67, 57266),

Gene: AvadaKedavra\_81 Start: 53045, Stop: 53611, Start Num: 5

Candidate Starts for AvadaKedavra\_81:

(Start: 5 @53045 has 72 MA's), (Start: 10 @53084 has 39 MA's), (Start: 13 @53117 has 2 MA's), (27, 53216), (28, 53228), (30, 53243), (36, 53315), (40, 53342), (45, 53378), (50, 53438), (55, 53498), (66, 53579),

Gene: BAKA\_133 Start: 72125, Stop: 72664, Start Num: 9

Candidate Starts for BAKA\_133:

(Start: 9 @72125 has 26 MA's), (Start: 10 @72155 has 39 MA's), (25, 72269), (27, 72284), (31, 72341), (35, 72362), (39, 72395), (46, 72452), (58, 72590), (63, 72629),

Gene: BaboJay\_98 Start: 58663, Stop: 59205, Start Num: 8

Candidate Starts for BaboJay\_98:

(Start: 8 @58663 has 93 MA's), (Start: 10 @58699 has 39 MA's), (26, 58819), (29, 58858), (48, 59038), (65, 59191),

Gene: BadStone\_95 Start: 58041, Stop: 58583, Start Num: 8

Candidate Starts for BadStone\_95:

(Start: 8 @58041 has 93 MA's), (Start: 10 @58077 has 39 MA's), (26, 58197), (29, 58236), (48, 58416), (65, 58569),

Gene: Bagrid\_134 Start: 72248, Stop: 72787, Start Num: 9

Candidate Starts for Bagrid\_134:

(Start: 9 @72248 has 26 MA's), (Start: 10 @72278 has 39 MA's), (25, 72392), (27, 72407), (31, 72464), (35, 72485), (39, 72518), (46, 72575), (58, 72713), (63, 72752),

Gene: Balomoji\_98 Start: 58557, Stop: 59057, Start Num: 10

Candidate Starts for Balomoji\_98:

(Start: 8 @58521 has 93 MA's), (Start: 10 @58557 has 39 MA's), (26, 58677), (29, 58716), (48, 58896), (52, 58950), (53, 58959), (54, 58965), (55, 58971), (56, 58983), (61, 59013), (67, 59049),

Gene: Barbarian\_97 Start: 56738, Stop: 57274, Start Num: 8

Candidate Starts for Barbarian\_97:

(Start: 8 @56738 has 93 MA's), (Start: 10 @56774 has 39 MA's), (26, 56894), (29, 56933), (48, 57113), (52, 57167), (53, 57176), (54, 57182), (55, 57188), (56, 57200), (61, 57230), (67, 57266),

Gene: Bask21\_98 Start: 57377, Stop: 57913, Start Num: 8

Candidate Starts for Bask21\_98:

(Start: 8 @57377 has 93 MA's), (Start: 10 @57413 has 39 MA's), (26, 57533), (29, 57572), (48, 57752), (52, 57806), (53, 57815), (54, 57821), (55, 57827), (56, 57839), (61, 57869), (67, 57905),

Gene: Baudelaire\_90 Start: 55548, Stop: 56093, Start Num: 8

Candidate Starts for Baudelaire\_90:

(1, 55476), (2, 55482), (Start: 8 @55548 has 93 MA's), (Start: 10 @55584 has 39 MA's), (Start: 12 @55614 has 2 MA's), (21, 55689), (24, 55698), (33, 55782), (42, 55851), (47, 55896), (48, 55920), (55, 55995), (57, 56013),

Gene: Bazzle\_81 Start: 54688, Stop: 55257, Start Num: 5

Candidate Starts for Bazzle\_81:

(Start: 5 @54688 has 72 MA's), (14, 54763), (27, 54859), (28, 54871), (36, 54958), (37, 54961), (40, 54985), (50, 55081), (52, 55120),

Gene: Becksu\_97 Start: 58750, Stop: 59250, Start Num: 10

Candidate Starts for Becksu\_97:

(Start: 8 @58714 has 93 MA's), (Start: 10 @58750 has 39 MA's), (26, 58870), (29, 58909), (48, 59089), (52, 59143), (53, 59152), (54, 59158), (55, 59164), (56, 59176), (61, 59206), (67, 59242),

Gene: Beem\_135 Start: 73723, Stop: 74262, Start Num: 9

Candidate Starts for Beem\_135:

(Start: 9 @73723 has 26 MA's), (Start: 10 @73753 has 39 MA's), (25, 73867), (27, 73882), (31, 73939), (35, 73960), (39, 73993), (46, 74050), (58, 74188), (63, 74227), (69, 74245),

Gene: Bellis\_81 Start: 54918, Stop: 55415, Start Num: 12

Candidate Starts for Bellis\_81:

(Start: 4 @54831 has 1 MA's), (Start: 8 @54855 has 93 MA's), (Start: 12 @54918 has 2 MA's), (22, 54996), (32, 55086), (33, 55092), (36, 55122), (39, 55134), (40, 55149), (46, 55191), (47, 55206), (50, 55245), (59, 55344),

Gene: Bench\_101 Start: 58457, Stop: 58999, Start Num: 8

Candidate Starts for Bench\_101:

(Start: 8 @58457 has 93 MA's), (Start: 10 @58493 has 39 MA's), (26, 58613), (29, 58652), (48, 58832), (65, 58985),

Gene: BigBubba\_98 Start: 57433, Stop: 57969, Start Num: 8

Candidate Starts for BigBubba\_98:

(Start: 8 @57433 has 93 MA's), (Start: 10 @57469 has 39 MA's), (26, 57589), (29, 57628), (48, 57808), (52, 57862), (53, 57871), (54, 57877), (55, 57883), (56, 57895), (61, 57925), (67, 57961),

Gene: BigCheese\_84 Start: 54918, Stop: 55484, Start Num: 5

Candidate Starts for BigCheese\_84:

(Start: 5 @54918 has 72 MA's), (11, 54984), (22, 55065), (27, 55089), (37, 55191), (40, 55215), (50, 55311), (55, 55371), (66, 55452),

Gene: BilboSwaggins\_97 Start: 58474, Stop: 58980, Start Num: 10

Candidate Starts for BilboSwaggins\_97:

(Start: 8 @58438 has 93 MA's), (Start: 10 @58474 has 39 MA's), (26, 58594), (29, 58633), (48, 58813), (65, 58966),

Gene: Bobby\_125 Start: 73824, Stop: 74363, Start Num: 9

Candidate Starts for Bobby\_125:

(Start: 9 @73824 has 26 MA's), (Start: 10 @73854 has 39 MA's), (25, 73968), (27, 73983), (31, 74040), (35, 74061), (39, 74094), (40, 74109), (42, 74121), (58, 74289), (63, 74328),

Gene: BobsGarage\_84 Start: 54918, Stop: 55484, Start Num: 5

Candidate Starts for BobsGarage\_84:

(Start: 5 @54918 has 72 MA's), (11, 54984), (22, 55065), (27, 55089), (37, 55191), (40, 55215), (50, 55311), (55, 55371), (66, 55452),

Gene: Bombitas\_121 Start: 71134, Stop: 71673, Start Num: 9

Candidate Starts for Bombitas\_121:

(Start: 9 @71134 has 26 MA's), (Start: 10 @71164 has 39 MA's), (25, 71278), (27, 71293), (31, 71350), (35, 71371), (39, 71404), (46, 71461), (58, 71599), (63, 71638), (69, 71656),

Gene: BourbonZero\_84 Start: 54860, Stop: 55444, Start Num: 4

Candidate Starts for BourbonZero\_84:

(Start: 4 @54860 has 1 MA's), (Start: 8 @54884 has 93 MA's), (Start: 12 @54947 has 2 MA's), (17, 54977), (22, 55025), (32, 55115), (36, 55151), (39, 55163), (40, 55178), (46, 55220), (47, 55235), (50, 55274), (59, 55373),

Gene: BrainDrainer\_82 Start: 53753, Stop: 54247, Start Num: 12

Candidate Starts for BrainDrainer\_82:

(Start: 5 @53684 has 72 MA's), (Start: 12 @53753 has 2 MA's), (16, 53768), (22, 53831), (27, 53855), (28, 53867), (44, 54011), (45, 54017), (50, 54077), (52, 54116), (66, 54218),

Gene: Breezona\_84 Start: 54918, Stop: 55484, Start Num: 5

Candidate Starts for Breezona\_84:

(Start: 5 @54918 has 72 MA's), (11, 54984), (22, 55065), (27, 55089), (37, 55191), (40, 55215), (50, 55311), (55, 55371), (66, 55452),

Gene: Bromden\_82 Start: 54314, Stop: 54883, Start Num: 5

Candidate Starts for Bromden\_82:

(Start: 5 @54314 has 72 MA's), (27, 54485), (40, 54611), (45, 54647), (50, 54707), (52, 54746),

Gene: Bruin\_95 Start: 57336, Stop: 57878, Start Num: 8

Candidate Starts for Bruin\_95:

(Start: 8 @57336 has 93 MA's), (Start: 10 @57372 has 39 MA's), (26, 57492), (29, 57531), (48, 57711), (65, 57864),

Gene: Buck\_99 Start: 59026, Stop: 59568, Start Num: 8

Candidate Starts for Buck\_99:

(Start: 8 @59026 has 93 MA's), (Start: 10 @59062 has 39 MA's), (26, 59182), (29, 59221), (48, 59401), (65, 59554),

Gene: BugsBunny\_97 Start: 58472, Stop: 58978, Start Num: 10

Candidate Starts for BugsBunny\_97:

(Start: 8 @58436 has 93 MA's), (Start: 10 @58472 has 39 MA's), (26, 58592), (29, 58631), (48, 58811), (65, 58964),

Gene: Cactus\_101 Start: 57402, Stop: 57944, Start Num: 8

Candidate Starts for Cactus\_101:

(Start: 8 @57402 has 93 MA's), (Start: 10 @57438 has 39 MA's), (26, 57558), (29, 57597), (48, 57777), (65, 57930),

Gene: Calm\_83 Start: 53360, Stop: 53854, Start Num: 13

Candidate Starts for Calm\_83:

(Start: 5 @53288 has 72 MA's), (Start: 10 @53327 has 39 MA's), (Start: 13 @53360 has 2 MA's), (27, 53459), (28, 53471), (30, 53486), (36, 53558), (40, 53585), (45, 53621), (50, 53681), (51, 53699), (55, 53741), (66, 53822),

Gene: Chaser\_81 Start: 53322, Stop: 53885, Start Num: 5

Candidate Starts for Chaser\_81:

(Start: 5 @53322 has 72 MA's), (Start: 12 @53391 has 2 MA's), (22, 53469), (27, 53493), (28, 53505), (45, 53655), (47, 53676), (50, 53715), (52, 53754), (66, 53856),

Gene: ChosenOne\_98 Start: 57532, Stop: 58038, Start Num: 10

Candidate Starts for ChosenOne\_98:

(Start: 8 @57496 has 93 MA's), (Start: 10 @57532 has 39 MA's), (26, 57652), (29, 57691), (48, 57871), (65, 58024),

Gene: ChotaBhai\_98 Start: 57739, Stop: 58281, Start Num: 8

Candidate Starts for ChotaBhai\_98:

(Start: 8 @57739 has 93 MA's), (Start: 10 @57775 has 39 MA's), (26, 57895), (29, 57934), (48, 58114), (65, 58267),

Gene: CicholasNage\_78 Start: 52630, Stop: 53196, Start Num: 5

Candidate Starts for CicholasNage\_78:

(Start: 5 @52630 has 72 MA's), (Start: 10 @52669 has 39 MA's), (Start: 13 @52702 has 2 MA's), (27, 52801), (28, 52813), (30, 52828), (36, 52900), (40, 52927), (45, 52963), (50, 53023), (51, 53041), (55, 53083), (66, 53164),

Gene: Cjw1\_98 Start: 59386, Stop: 59892, Start Num: 10

Candidate Starts for Cjw1\_98:

(Start: 8 @59350 has 93 MA's), (Start: 10 @59386 has 39 MA's), (26, 59506), (29, 59545), (48, 59725), (65, 59878),

Gene: Claus\_84 Start: 54928, Stop: 55419, Start Num: 14

Candidate Starts for Claus\_84:

(Start: 5 @54853 has 72 MA's), (14, 54928), (22, 55000), (27, 55024), (28, 55036), (36, 55123), (37, 55126), (40, 55150), (50, 55246), (55, 55306), (66, 55387),

Gene: Clautastrophe\_81 Start: 54853, Stop: 55413, Start Num: 8

Candidate Starts for Clautastrophe\_81:

(Start: 4 @54829 has 1 MA's), (Start: 8 @54853 has 93 MA's), (Start: 12 @54916 has 2 MA's), (22, 54994), (32, 55084), (36, 55120), (39, 55132), (40, 55147), (46, 55189), (47, 55204), (50, 55243), (59, 55342),

Gene: Command613\_100 Start: 58571, Stop: 59071, Start Num: 10

Candidate Starts for Command613\_100:

(Start: 8 @58535 has 93 MA's), (Start: 10 @58571 has 39 MA's), (26, 58691), (29, 58730), (48, 58910), (52, 58964), (53, 58973), (54, 58979), (55, 58985), (56, 58997), (61, 59027), (67, 59063),

Gene: Constella\_127 Start: 72376, Stop: 72915, Start Num: 9

Candidate Starts for Constella\_127:

(Start: 9 @72376 has 26 MA's), (Start: 10 @72406 has 39 MA's), (25, 72520), (27, 72535), (31, 72592), (35, 72613), (39, 72646), (40, 72661), (42, 72673), (47, 72718), (58, 72841), (63, 72880), (69, 72898),

Gene: Contagion\_94 Start: 57617, Stop: 58159, Start Num: 8

Candidate Starts for Contagion\_94:

(Start: 8 @57617 has 93 MA's), (Start: 10 @57653 has 39 MA's), (26, 57773), (29, 57812), (48, 57992), (65, 58145),

Gene: Cookies\_95 Start: 57596, Stop: 58138, Start Num: 8

Candidate Starts for Cookies\_95:

(Start: 8 @57596 has 93 MA's), (Start: 10 @57632 has 39 MA's), (26, 57752), (29, 57791), (48, 57971), (65, 58124),

Gene: Courthouse\_128 Start: 69263, Stop: 69811, Start Num: 5

Candidate Starts for Courthouse\_128:

(Start: 5 @69263 has 72 MA's), (15, 69344), (25, 69425), (34, 69512), (40, 69566), (41, 69575), (42, 69578), (46, 69608), (50, 69662),

Gene: Crossroads\_84 Start: 54993, Stop: 55559, Start Num: 5

Candidate Starts for Crossroads\_84:

(Start: 5 @54993 has 72 MA's), (11, 55059), (22, 55140), (27, 55164), (36, 55263), (37, 55266), (40, 55290), (50, 55386), (55, 55446), (66, 55527),

Gene: CrystalP\_97 Start: 58438, Stop: 58980, Start Num: 8

Candidate Starts for CrystalP\_97:

(Start: 8 @58438 has 93 MA's), (Start: 10 @58474 has 39 MA's), (26, 58594), (29, 58633), (48, 58813), (65, 58966),

Gene: Czyszczone1\_99 Start: 58320, Stop: 58856, Start Num: 8

Candidate Starts for Czyszczone1\_99:

(Start: 8 @58320 has 93 MA's), (Start: 10 @58356 has 39 MA's), (26, 58476), (29, 58515), (48, 58695), (52, 58749), (53, 58758), (54, 58764), (55, 58770), (56, 58782), (61, 58812), (67, 58848),

Gene: Daikon\_99 Start: 58384, Stop: 58884, Start Num: 10

Candidate Starts for Daikon\_99:

(Start: 8 @58348 has 93 MA's), (Start: 10 @58384 has 39 MA's), (26, 58504), (29, 58543), (48, 58723), (52, 58777), (53, 58786), (54, 58792), (55, 58798), (56, 58810), (61, 58840), (67, 58876),

Gene: Dallas\_134 Start: 73190, Stop: 73729, Start Num: 9

Candidate Starts for Dallas\_134:

(Start: 9 @73190 has 26 MA's), (Start: 10 @73220 has 39 MA's), (25, 73334), (27, 73349), (31, 73406), (35, 73427), (39, 73460), (46, 73517), (58, 73655), (63, 73694), (69, 73712),

Gene: DanBing\_84 Start: 54723, Stop: 55289, Start Num: 5

Candidate Starts for DanBing\_84:

(Start: 5 @54723 has 72 MA's), (14, 54798), (22, 54870), (27, 54894), (28, 54906), (31, 54951), (36, 54993), (44, 55050), (45, 55056), (50, 55116), (55, 55176), (66, 55257),

Gene: DirkDirk\_78 Start: 52157, Stop: 52723, Start Num: 5

Candidate Starts for DirkDirk\_78:

(Start: 5 @52157 has 72 MA's), (Start: 10 @52196 has 39 MA's), (Start: 13 @52229 has 2 MA's), (27, 52328), (28, 52340), (30, 52355), (36, 52427), (40, 52454), (45, 52490), (50, 52550), (55, 52610), (66, 52691),

Gene: DmpstrDiver\_133 Start: 72537, Stop: 73076, Start Num: 9

Candidate Starts for DmpstrDiver\_133:

(Start: 9 @72537 has 26 MA's), (Start: 10 @72567 has 39 MA's), (25, 72681), (27, 72696), (31, 72753), (35, 72774), (39, 72807), (40, 72822), (42, 72834), (58, 73002), (63, 73041),

Gene: DoctorDiddles\_97 Start: 57783, Stop: 58319, Start Num: 8

Candidate Starts for DoctorDiddles\_97:

(Start: 8 @57783 has 93 MA's), (Start: 10 @57819 has 39 MA's), (26, 57939), (29, 57978), (48, 58158), (52, 58212), (53, 58221), (54, 58227), (55, 58233), (56, 58245), (61, 58275), (67, 58311),

Gene: Douge\_82 Start: 53266, Stop: 53835, Start Num: 5

Candidate Starts for Douge\_82:

(Start: 5 @53266 has 72 MA's), (16, 53350), (22, 53413), (27, 53437), (28, 53449), (40, 53563), (50, 53659), (52, 53698), (53, 53707), (55, 53719),

Gene: Douzhi\_82 Start: 53585, Stop: 54064, Start Num: 16

Candidate Starts for Douzhi\_82:

(Start: 5 @53501 has 72 MA's), (16, 53585), (22, 53648), (27, 53672), (40, 53798), (50, 53894), (52, 53933), (66, 54035),

Gene: Dove\_119 Start: 68136, Stop: 68675, Start Num: 9

Candidate Starts for Dove\_119:

(Start: 9 @68136 has 26 MA's), (Start: 10 @68166 has 39 MA's), (25, 68280), (27, 68295), (31, 68352), (35, 68373), (39, 68406), (46, 68463), (58, 68601), (63, 68640),

Gene: DrDrey\_98 Start: 58918, Stop: 59460, Start Num: 8

Candidate Starts for DrDrey\_98:

(Start: 8 @58918 has 93 MA's), (Start: 10 @58954 has 39 MA's), (26, 59074), (29, 59113), (48, 59293), (65, 59446),

Gene: DrSeegs\_84 Start: 54918, Stop: 55484, Start Num: 5

Candidate Starts for DrSeegs\_84:

(Start: 5 @54918 has 72 MA's), (11, 54984), (22, 55065), (27, 55089), (37, 55191), (40, 55215), (50, 55311), (55, 55371), (66, 55452),

Gene: Duke13\_128 Start: 69838, Stop: 70377, Start Num: 9

Candidate Starts for Duke13\_128:

(Start: 9 @69838 has 26 MA's), (Start: 10 @69868 has 39 MA's), (25, 69982), (27, 69997), (31, 70054), (35, 70075), (39, 70108), (46, 70165), (58, 70303), (63, 70342),

Gene: Dumbo\_98 Start: 57719, Stop: 58261, Start Num: 8

Candidate Starts for Dumbo\_98:

(Start: 8 @57719 has 93 MA's), (Start: 10 @57755 has 39 MA's), (26, 57875), (29, 57914), (48, 58094), (65, 58247),

Gene: DuncansLeg\_83 Start: 54872, Stop: 55432, Start Num: 8

Candidate Starts for DuncansLeg\_83:

(Start: 4 @54848 has 1 MA's), (Start: 8 @54872 has 93 MA's), (Start: 12 @54935 has 2 MA's), (17, 54965), (22, 55013), (32, 55103), (36, 55139), (39, 55151), (40, 55166), (46, 55208), (47, 55223), (50, 55262), (59, 55361),

Gene: Dusk\_95 Start: 57737, Stop: 58243, Start Num: 10

Candidate Starts for Dusk\_95:

(Start: 8 @57701 has 93 MA's), (Start: 10 @57737 has 39 MA's), (26, 57857), (29, 57896), (48, 58076), (65, 58229),

Gene: DyoEdafos\_86 Start: 54173, Stop: 54739, Start Num: 5

Candidate Starts for DyoEdafos\_86:

(Start: 5 @54173 has 72 MA's), (27, 54344), (28, 54356), (44, 54500), (50, 54566), (52, 54605), (66, 54707),

Gene: Easy2Say\_98 Start: 58828, Stop: 59328, Start Num: 10

Candidate Starts for Easy2Say\_98:

(Start: 8 @58792 has 93 MA's), (Start: 10 @58828 has 39 MA's), (26, 58948), (29, 58987), (48, 59167), (52, 59221), (53, 59230), (54, 59236), (55, 59242), (56, 59254), (61, 59284), (67, 59320),

Gene: Ejimix\_127 Start: 73258, Stop: 73797, Start Num: 9

Candidate Starts for Ejimix\_127:

(Start: 9 @73258 has 26 MA's), (Start: 10 @73288 has 39 MA's), (25, 73402), (27, 73417), (31, 73474), (35, 73495), (39, 73528), (46, 73585), (58, 73723), (63, 73762), (69, 73780),

Gene: Elite2014\_97 Start: 57531, Stop: 58037, Start Num: 10

Candidate Starts for Elite2014\_97:

(Start: 8 @57495 has 93 MA's), (Start: 10 @57531 has 39 MA's), (26, 57651), (29, 57690), (48, 57870), (65, 58023),

Gene: Ellson\_82 Start: 55163, Stop: 55747, Start Num: 4

Candidate Starts for Ellson\_82:

(Start: 4 @55163 has 1 MA's), (Start: 8 @55187 has 93 MA's), (Start: 12 @55250 has 2 MA's), (17, 55280), (22, 55328), (32, 55418), (36, 55454), (39, 55466), (40, 55481), (46, 55523), (47, 55538), (50, 55577), (59, 55676),

Gene: Elph10\_98 Start: 57416, Stop: 57922, Start Num: 10

Candidate Starts for Elph10\_98:

(Start: 8 @57380 has 93 MA's), (Start: 10 @57416 has 39 MA's), (26, 57536), (29, 57575), (48, 57755), (65, 57908),



Gene: Emmina\_98 Start: 57157, Stop: 57663, Start Num: 10

Candidate Starts for Emmina\_98:

(Start: 8 @57121 has 93 MA's), (Start: 10 @57157 has 39 MA's), (26, 57277), (29, 57316), (48, 57496), (65, 57649),

Gene: Enceladus\_78 Start: 52934, Stop: 53500, Start Num: 5

Candidate Starts for Enceladus\_78:

(Start: 5 @52934 has 72 MA's), (Start: 10 @52973 has 39 MA's), (Start: 13 @53006 has 2 MA's), (27, 53105), (28, 53117), (30, 53132), (36, 53204), (40, 53231), (45, 53267), (50, 53327), (55, 53387), (66, 53468),

Gene: EricMillard\_125 Start: 71762, Stop: 72301, Start Num: 9

Candidate Starts for EricMillard\_125:

(Start: 9 @71762 has 26 MA's), (Start: 10 @71792 has 39 MA's), (25, 71906), (27, 71921), (31, 71978), (35, 71999), (39, 72032), (46, 72089), (58, 72227), (63, 72266),

Gene: Eureka\_97 Start: 58408, Stop: 58950, Start Num: 8

Candidate Starts for Eureka\_97:

(Start: 8 @58408 has 93 MA's), (Start: 10 @58444 has 39 MA's), (26, 58564), (29, 58603), (48, 58783), (65, 58936),

Gene: Faith1\_84 Start: 54918, Stop: 55484, Start Num: 5

Candidate Starts for Faith1\_84:

(Start: 5 @54918 has 72 MA's), (11, 54984), (22, 55065), (27, 55089), (37, 55191), (40, 55215), (50, 55311), (55, 55371), (66, 55452),

Gene: FarmResident\_83 Start: 53309, Stop: 53803, Start Num: 12

Candidate Starts for FarmResident\_83:

(Start: 5 @53240 has 72 MA's), (Start: 12 @53309 has 2 MA's), (16, 53324), (22, 53387), (27, 53411), (40, 53537), (51, 53651), (55, 53693), (66, 53774),

Gene: Filch\_100 Start: 57693, Stop: 58235, Start Num: 8

Candidate Starts for Filch\_100:

(Start: 8 @57693 has 93 MA's), (Start: 10 @57729 has 39 MA's), (26, 57849), (29, 57888), (48, 58068), (65, 58221),

Gene: Finemlucis\_83 Start: 55392, Stop: 55946, Start Num: 5

Candidate Starts for Finemlucis\_83:

(Start: 5 @55392 has 72 MA's), (Start: 12 @55461 has 2 MA's), (22, 55539), (27, 55563), (28, 55575), (36, 55662), (39, 55674), (40, 55689), (41, 55698), (50, 55785), (55, 55845), (60, 55890),

Gene: Finnry\_82 Start: 54868, Stop: 55434, Start Num: 5

Candidate Starts for Finnry\_82:

(Start: 5 @54868 has 72 MA's), (27, 55039), (32, 55105), (36, 55141), (39, 55153), (40, 55168), (46, 55210), (47, 55225), (50, 55264), (59, 55363),

Gene: FireRed\_101 Start: 58612, Stop: 59118, Start Num: 10

Candidate Starts for FireRed\_101:

(Start: 8 @58576 has 93 MA's), (Start: 10 @58612 has 39 MA's), (26, 58732), (29, 58771), (48, 58951), (65, 59104),

Gene: Flypotenuse\_94 Start: 57428, Stop: 57928, Start Num: 10

Candidate Starts for Flypotenuse\_94:

(Start: 8 @57392 has 93 MA's), (Start: 10 @57428 has 39 MA's), (26, 57548), (29, 57587), (48, 57767), (52, 57821), (53, 57830), (54, 57836), (55, 57842), (56, 57854), (61, 57884), (67, 57920),

Gene: FoghornLeghorn\_92 Start: 56133, Stop: 56633, Start Num: 10

Candidate Starts for FoghornLeghorn\_92:

(Start: 8 @56097 has 93 MA's), (Start: 10 @56133 has 39 MA's), (26, 56253), (29, 56292), (48, 56472), (52, 56526), (53, 56535), (54, 56541), (55, 56547), (56, 56559), (61, 56589), (67, 56625),

Gene: Gabriela\_84 Start: 54264, Stop: 54830, Start Num: 5

Candidate Starts for Gabriela\_84:

(Start: 5 @54264 has 72 MA's), (11, 54330), (22, 54411), (27, 54435), (37, 54537), (40, 54561), (50, 54657), (55, 54717), (66, 54798),

Gene: Gage\_100 Start: 58499, Stop: 58999, Start Num: 10

Candidate Starts for Gage\_100:

(Start: 8 @58463 has 93 MA's), (Start: 10 @58499 has 39 MA's), (26, 58619), (29, 58658), (48, 58838), (52, 58892), (53, 58901), (54, 58907), (55, 58913), (56, 58925), (61, 58955), (67, 58991),

Gene: Gaia\_92 Start: 54832, Stop: 55401, Start Num: 6

Candidate Starts for Gaia\_92:

(Start: 6 @54832 has 1 MA's), (19, 54949), (20, 54952), (30, 55030), (31, 55063), (32, 55069), (34, 55078), (35, 55084), (43, 55150), (49, 55219), (53, 55276), (62, 55330), (64, 55360),

Gene: Gardann\_84 Start: 54753, Stop: 55319, Start Num: 5

Candidate Starts for Gardann\_84:

(Start: 5 @54753 has 72 MA's), (11, 54819), (22, 54900), (27, 54924), (36, 55023), (37, 55026), (40, 55050), (50, 55146), (55, 55206), (66, 55287),

Gene: Gator\_96 Start: 58284, Stop: 58784, Start Num: 10

Candidate Starts for Gator\_96:

(Start: 8 @58248 has 93 MA's), (Start: 10 @58284 has 39 MA's), (26, 58404), (29, 58443), (48, 58623), (52, 58677), (53, 58686), (54, 58692), (55, 58698), (56, 58710), (61, 58740), (67, 58776),

Gene: Gemini\_103 Start: 58842, Stop: 59378, Start Num: 8

Candidate Starts for Gemini\_103:

(Start: 8 @58842 has 93 MA's), (Start: 10 @58878 has 39 MA's), (26, 58998), (29, 59037), (48, 59217), (52, 59271), (53, 59280), (54, 59286), (55, 59292), (56, 59304), (61, 59334), (67, 59370),

Gene: Glexan\_97 Start: 58522, Stop: 59058, Start Num: 8

Candidate Starts for Glexan\_97:

(Start: 8 @58522 has 93 MA's), (Start: 10 @58558 has 39 MA's), (26, 58678), (29, 58717), (48, 58897), (52, 58951), (53, 58960), (54, 58966), (55, 58972), (56, 58984), (61, 59014), (67, 59050),

Gene: Goku\_97 Start: 58173, Stop: 58679, Start Num: 10

Candidate Starts for Goku\_97:

(Start: 8 @58137 has 93 MA's), (Start: 10 @58173 has 39 MA's), (26, 58293), (29, 58332), (48, 58512), (65, 58665),

Gene: GoldenSpark\_102 Start: 58361, Stop: 58861, Start Num: 10

Candidate Starts for GoldenSpark\_102:

(Start: 8 @58325 has 93 MA's), (Start: 10 @58361 has 39 MA's), (26, 58481), (29, 58520), (48, 58700), (52, 58754), (53, 58763), (54, 58769), (55, 58775), (56, 58787), (61, 58817), (67, 58853),

Gene: Goldilocks\_101 Start: 57395, Stop: 57901, Start Num: 10  
Candidate Starts for Goldilocks\_101:  
(Start: 8 @57359 has 93 MA's), (Start: 10 @57395 has 39 MA's), (26, 57515), (29, 57554), (48, 57734), (65, 57887),

Gene: Gonephishing\_127 Start: 68906, Stop: 69454, Start Num: 5  
Candidate Starts for Gonephishing\_127:  
(Start: 5 @68906 has 72 MA's), (15, 68987), (25, 69068), (34, 69155), (40, 69209), (42, 69221), (46, 69251), (50, 69305),

Gene: GooberAzure\_101 Start: 58361, Stop: 58861, Start Num: 10  
Candidate Starts for GooberAzure\_101:  
(Start: 8 @58325 has 93 MA's), (Start: 10 @58361 has 39 MA's), (26, 58481), (29, 58520), (48, 58700), (52, 58754), (53, 58763), (54, 58769), (55, 58775), (56, 58787), (61, 58817), (67, 58853),

Gene: GuuelaD\_82 Start: 54813, Stop: 55382, Start Num: 5  
Candidate Starts for GuuelaD\_82:  
(Start: 5 @54813 has 72 MA's), (11, 54879), (22, 54960), (27, 54984), (36, 55083), (37, 55086), (40, 55110), (50, 55206), (53, 55254),

Gene: Hafay\_85 Start: 54923, Stop: 55414, Start Num: 14  
Candidate Starts for Hafay\_85:  
(Start: 5 @54848 has 72 MA's), (14, 54923), (22, 54995), (27, 55019), (28, 55031), (36, 55118), (37, 55121), (40, 55145), (50, 55241), (55, 55301), (66, 55382),

Gene: Halena\_79 Start: 52276, Stop: 52770, Start Num: 13  
Candidate Starts for Halena\_79:  
(Start: 5 @52204 has 72 MA's), (Start: 10 @52243 has 39 MA's), (Start: 13 @52276 has 2 MA's), (27, 52375), (28, 52387), (30, 52402), (36, 52474), (40, 52501), (45, 52537), (50, 52597), (55, 52657), (66, 52738),

Gene: Halley\_135 Start: 73574, Stop: 74113, Start Num: 9  
Candidate Starts for Halley\_135:  
(Start: 9 @73574 has 26 MA's), (Start: 10 @73604 has 39 MA's), (25, 73718), (27, 73733), (31, 73790), (35, 73811), (39, 73844), (46, 73901), (58, 74039), (63, 74078), (69, 74096),

Gene: HanKaySha\_99 Start: 57889, Stop: 58431, Start Num: 8  
Candidate Starts for HanKaySha\_99:  
(Start: 8 @57889 has 93 MA's), (Start: 10 @57925 has 39 MA's), (26, 58045), (29, 58084), (48, 58264), (65, 58417),

Gene: Hannaconda\_126 Start: 69559, Stop: 70107, Start Num: 5  
Candidate Starts for Hannaconda\_126:  
(Start: 5 @69559 has 72 MA's), (15, 69640), (25, 69721), (34, 69808), (40, 69862), (41, 69871), (42, 69874), (46, 69904), (50, 69958),

Gene: Harella\_98 Start: 59038, Stop: 59574, Start Num: 8  
Candidate Starts for Harella\_98:  
(Start: 8 @59038 has 93 MA's), (Start: 10 @59074 has 39 MA's), (26, 59194), (29, 59233), (48, 59413), (52, 59467), (53, 59476), (54, 59482), (55, 59488), (56, 59500), (61, 59530), (67, 59566),

Gene: Henry\_95 Start: 57743, Stop: 58285, Start Num: 8  
Candidate Starts for Henry\_95:

(Start: 8 @57743 has 93 MA's), (Start: 10 @57779 has 39 MA's), (26, 57899), (29, 57938), (48, 58118), (65, 58271),

Gene: Highbury\_96 Start: 57460, Stop: 58005, Start Num: 8

Candidate Starts for Highbury\_96:

(Start: 8 @57460 has 93 MA's), (Start: 10 @57496 has 39 MA's), (26, 57616), (29, 57655), (48, 57835), (65, 57988),

Gene: HokkenD\_125 Start: 72440, Stop: 72997, Start Num: 5

Candidate Starts for HokkenD\_125:

(Start: 5 @72440 has 72 MA's), (15, 72521), (25, 72602), (34, 72689), (40, 72743), (41, 72752), (42, 72755), (46, 72785), (58, 72923), (63, 72962),

Gene: Holt\_103 Start: 58739, Stop: 59275, Start Num: 8

Candidate Starts for Holt\_103:

(Start: 8 @58739 has 93 MA's), (Start: 10 @58775 has 39 MA's), (26, 58895), (29, 58934), (48, 59114), (52, 59168), (53, 59177), (54, 59183), (55, 59189), (56, 59201), (61, 59231), (67, 59267),

Gene: Hoonter\_101 Start: 58230, Stop: 58736, Start Num: 10

Candidate Starts for Hoonter\_101:

(Start: 8 @58194 has 93 MA's), (Start: 10 @58230 has 39 MA's), (26, 58350), (29, 58389), (48, 58569), (65, 58722),

Gene: Hokey\_99 Start: 58700, Stop: 59242, Start Num: 8

Candidate Starts for Hokey\_99:

(Start: 8 @58700 has 93 MA's), (Start: 10 @58736 has 39 MA's), (26, 58856), (29, 58895), (48, 59075), (65, 59228),

Gene: HufflyPuff\_100 Start: 58820, Stop: 59326, Start Num: 10

Candidate Starts for HufflyPuff\_100:

(Start: 8 @58784 has 93 MA's), (Start: 10 @58820 has 39 MA's), (26, 58940), (29, 58979), (48, 59159), (65, 59312),

Gene: Hughesyang\_133 Start: 73344, Stop: 73883, Start Num: 9

Candidate Starts for Hughesyang\_133:

(Start: 9 @73344 has 26 MA's), (Start: 10 @73374 has 39 MA's), (25, 73488), (27, 73503), (31, 73560), (35, 73581), (39, 73614), (46, 73671), (58, 73809), (63, 73848),

Gene: IHOP\_96 Start: 58041, Stop: 58577, Start Num: 8

Candidate Starts for IHOP\_96:

(Start: 8 @58041 has 93 MA's), (Start: 10 @58077 has 39 MA's), (26, 58197), (29, 58236), (48, 58416), (52, 58470), (53, 58479), (54, 58485), (55, 58491), (56, 58503), (61, 58533), (67, 58569),

Gene: Icee\_99 Start: 57849, Stop: 58385, Start Num: 8

Candidate Starts for Icee\_99:

(Start: 8 @57849 has 93 MA's), (Start: 10 @57885 has 39 MA's), (26, 58005), (29, 58044), (48, 58224), (52, 58278), (53, 58287), (54, 58293), (55, 58299), (56, 58311), (61, 58341), (67, 58377),

Gene: Inca\_95 Start: 56566, Stop: 57066, Start Num: 10

Candidate Starts for Inca\_95:

(Start: 8 @56530 has 93 MA's), (Start: 10 @56566 has 39 MA's), (26, 56686), (29, 56725), (48, 56905), (52, 56959), (53, 56968), (54, 56974), (55, 56980), (56, 56992), (61, 57022), (67, 57058),

Gene: Itos\_84 Start: 53824, Stop: 54390, Start Num: 5

Candidate Starts for Itos\_84:

(Start: 5 @53824 has 72 MA's), (11, 53890), (22, 53971), (27, 53995), (37, 54097), (40, 54121), (50, 54217), (55, 54277), (66, 54358),

Gene: JeTaime\_98 Start: 58624, Stop: 59160, Start Num: 8

Candidate Starts for JeTaime\_98:

(Start: 8 @58624 has 93 MA's), (Start: 10 @58660 has 39 MA's), (26, 58780), (29, 58819), (48, 58999), (52, 59053), (53, 59062), (54, 59068), (55, 59074), (56, 59086), (61, 59116), (67, 59152),

Gene: Jobypre\_83 Start: 54853, Stop: 55413, Start Num: 8

Candidate Starts for Jobypre\_83:

(Start: 4 @54829 has 1 MA's), (Start: 8 @54853 has 93 MA's), (Start: 12 @54916 has 2 MA's), (22, 54994), (32, 55084), (36, 55120), (39, 55132), (40, 55147), (46, 55189), (47, 55204), (50, 55243), (59, 55342),

Gene: JoeDirt\_82 Start: 53532, Stop: 54098, Start Num: 5

Candidate Starts for JoeDirt\_82:

(Start: 5 @53532 has 72 MA's), (Start: 10 @53571 has 39 MA's), (Start: 13 @53604 has 2 MA's), (27, 53703), (28, 53715), (30, 53730), (36, 53802), (40, 53829), (45, 53865), (50, 53925), (55, 53985), (66, 54066),

Gene: Jubie\_82 Start: 54988, Stop: 55548, Start Num: 8

Candidate Starts for Jubie\_82:

(Start: 4 @54964 has 1 MA's), (Start: 8 @54988 has 93 MA's), (Start: 12 @55051 has 2 MA's), (22, 55129), (32, 55219), (36, 55255), (39, 55267), (40, 55282), (46, 55324), (47, 55339), (50, 55378), (59, 55477),

Gene: JuicyJay\_130 Start: 74859, Stop: 75398, Start Num: 9

Candidate Starts for JuicyJay\_130:

(Start: 9 @74859 has 26 MA's), (Start: 10 @74889 has 39 MA's), (25, 75003), (27, 75018), (31, 75075), (35, 75096), (39, 75129), (46, 75186), (58, 75324), (63, 75363), (69, 75381),

Gene: Kahlid\_84 Start: 54704, Stop: 55270, Start Num: 5

Candidate Starts for Kahlid\_84:

(Start: 5 @54704 has 72 MA's), (11, 54770), (27, 54875), (36, 54974), (37, 54977), (40, 55001), (50, 55097), (55, 55157), (66, 55238),

Gene: Kalah2\_124 Start: 72150, Stop: 72689, Start Num: 9

Candidate Starts for Kalah2\_124:

(Start: 9 @72150 has 26 MA's), (Start: 10 @72180 has 39 MA's), (25, 72294), (27, 72309), (31, 72366), (35, 72387), (39, 72420), (46, 72477), (58, 72615), (63, 72654), (69, 72672),

Gene: Kanye\_95 Start: 57946, Stop: 58488, Start Num: 8

Candidate Starts for Kanye\_95:

(Start: 8 @57946 has 93 MA's), (Start: 10 @57982 has 39 MA's), (26, 58102), (29, 58141), (48, 58321), (65, 58474),

Gene: KashFlow\_130 Start: 70994, Stop: 71542, Start Num: 5

Candidate Starts for KashFlow\_130:

(Start: 5 @70994 has 72 MA's), (15, 71075), (25, 71156), (34, 71243), (40, 71297), (42, 71309), (46, 71339), (47, 71354), (50, 71393),

Gene: Kimchi\_102 Start: 58466, Stop: 59002, Start Num: 8

Candidate Starts for Kimchi\_102:

(Start: 8 @58466 has 93 MA's), (Start: 10 @58502 has 39 MA's), (26, 58622), (29, 58661), (48, 58841), (52, 58895), (53, 58904), (54, 58910), (55, 58916), (56, 58928), (61, 58958), (67, 58994),

Gene: Kingsolomon\_80 Start: 54624, Stop: 55190, Start Num: 5

Candidate Starts for Kingsolomon\_80:

(Start: 5 @54624 has 72 MA's), (27, 54795), (32, 54861), (36, 54897), (39, 54909), (40, 54924), (46, 54966), (47, 54981), (50, 55020), (59, 55119),

Gene: KirDoubleO7\_81 Start: 54850, Stop: 55434, Start Num: 4

Candidate Starts for KirDoubleO7\_81:

(Start: 4 @54850 has 1 MA's), (Start: 8 @54874 has 93 MA's), (Start: 12 @54937 has 2 MA's), (17, 54967), (22, 55015), (32, 55105), (36, 55141), (39, 55153), (40, 55168), (46, 55210), (47, 55225), (50, 55264), (59, 55363),

Gene: Klein\_130 Start: 70495, Stop: 71034, Start Num: 9

Candidate Starts for Klein\_130:

(Start: 9 @70495 has 26 MA's), (Start: 10 @70525 has 39 MA's), (25, 70639), (27, 70654), (31, 70711), (35, 70732), (39, 70765), (46, 70822), (58, 70960), (63, 70999),

Gene: Kostya\_98 Start: 58179, Stop: 58679, Start Num: 10

Candidate Starts for Kostya\_98:

(Start: 8 @58143 has 93 MA's), (Start: 10 @58179 has 39 MA's), (26, 58299), (29, 58338), (48, 58518), (52, 58572), (53, 58581), (54, 58587), (55, 58593), (56, 58605), (61, 58635), (67, 58671),

Gene: Kropertea\_78 Start: 53449, Stop: 54015, Start Num: 5

Candidate Starts for Kropertea\_78:

(Start: 5 @53449 has 72 MA's), (27, 53620), (28, 53632), (44, 53776), (50, 53842), (52, 53881), (66, 53983),

Gene: Krypton555\_83 Start: 54893, Stop: 55459, Start Num: 5

Candidate Starts for Krypton555\_83:

(Start: 5 @54893 has 72 MA's), (22, 55040), (32, 55130), (36, 55166), (39, 55178), (40, 55193), (46, 55235), (47, 55250), (50, 55289), (59, 55388),

Gene: LeBron\_80 Start: 52203, Stop: 52769, Start Num: 5

Candidate Starts for LeBron\_80:

(Start: 5 @52203 has 72 MA's), (Start: 10 @52242 has 39 MA's), (Start: 13 @52275 has 2 MA's), (27, 52374), (28, 52386), (30, 52401), (36, 52473), (40, 52500), (45, 52536), (50, 52596), (55, 52656), (66, 52737),

Gene: Lewan\_85 Start: 54759, Stop: 55325, Start Num: 5

Candidate Starts for Lewan\_85:

(Start: 5 @54759 has 72 MA's), (11, 54825), (22, 54906), (27, 54930), (37, 55032), (40, 55056), (50, 55152), (55, 55212), (66, 55293),

Gene: LilDestine\_83 Start: 54608, Stop: 55174, Start Num: 5

Candidate Starts for LilDestine\_83:

(Start: 5 @54608 has 72 MA's), (27, 54779), (36, 54878), (37, 54881), (40, 54905), (50, 55001), (55, 55061), (66, 55142),

Gene: Lilac\_100 Start: 57898, Stop: 58404, Start Num: 10

Candidate Starts for Lilac\_100:

(Start: 8 @57862 has 93 MA's), (Start: 10 @57898 has 39 MA's), (26, 58018), (29, 58057), (48, 58237), (65, 58390),

Gene: Lilizi\_99 Start: 57928, Stop: 58470, Start Num: 8

Candidate Starts for Lilizi\_99:

(Start: 8 @57928 has 93 MA's), (Start: 10 @57964 has 39 MA's), (26, 58084), (29, 58123), (48, 58303), (65, 58456),

Gene: Lilpickle\_97 Start: 57531, Stop: 58037, Start Num: 10

Candidate Starts for Lilpickle\_97:

(Start: 8 @57495 has 93 MA's), (Start: 10 @57531 has 39 MA's), (26, 57651), (29, 57690), (48, 57870), (65, 58023),

Gene: LittleE\_135 Start: 72248, Stop: 72796, Start Num: 5

Candidate Starts for LittleE\_135:

(Start: 5 @72248 has 72 MA's), (15, 72329), (25, 72410), (34, 72497), (40, 72551), (42, 72563), (46, 72593), (47, 72608), (50, 72647),

Gene: LiyuLake\_82 Start: 54923, Stop: 55507, Start Num: 4

Candidate Starts for LiyuLake\_82:

(Start: 4 @54923 has 1 MA's), (Start: 8 @54947 has 93 MA's), (Start: 12 @55010 has 2 MA's), (17, 55040), (22, 55088), (32, 55178), (36, 55214), (39, 55226), (40, 55241), (46, 55283), (47, 55298), (50, 55337), (59, 55436),

Gene: Loadrie\_82 Start: 54783, Stop: 55349, Start Num: 5

Candidate Starts for Loadrie\_82:

(Start: 5 @54783 has 72 MA's), (11, 54849), (22, 54930), (27, 54954), (36, 55053), (37, 55056), (40, 55080), (50, 55176), (55, 55236), (66, 55317),

Gene: Lolly9\_81 Start: 54769, Stop: 55266, Start Num: 12

Candidate Starts for Lolly9\_81:

(3, 54652), (Start: 5 @54700 has 72 MA's), (Start: 12 @54769 has 2 MA's), (18, 54808), (32, 54937), (37, 54976), (38, 54979), (40, 55000), (50, 55096), (59, 55195),

Gene: Lucky2013\_127 Start: 69124, Stop: 69672, Start Num: 5

Candidate Starts for Lucky2013\_127:

(Start: 5 @69124 has 72 MA's), (15, 69205), (25, 69286), (34, 69373), (40, 69427), (42, 69439), (46, 69469), (50, 69523),

Gene: Lumos\_83 Start: 54826, Stop: 55410, Start Num: 4

Candidate Starts for Lumos\_83:

(Start: 4 @54826 has 1 MA's), (Start: 8 @54850 has 93 MA's), (Start: 12 @54913 has 2 MA's), (22, 54991), (32, 55081), (36, 55117), (39, 55129), (40, 55144), (46, 55186), (47, 55201), (50, 55240), (59, 55339),

Gene: MAckerman\_80 Start: 52197, Stop: 52763, Start Num: 5

Candidate Starts for MAckerman\_80:

(Start: 5 @52197 has 72 MA's), (Start: 10 @52236 has 39 MA's), (Start: 13 @52269 has 2 MA's), (27, 52368), (28, 52380), (30, 52395), (36, 52467), (40, 52494), (45, 52530), (50, 52590), (55, 52650), (66, 52731),

Gene: MISSy\_99 Start: 58044, Stop: 58586, Start Num: 8

Candidate Starts for MISSy\_99:

(Start: 8 @58044 has 93 MA's), (Start: 10 @58080 has 39 MA's), (26, 58200), (29, 58239), (48, 58419), (65, 58572),

Gene: MPhalcon\_99 Start: 58037, Stop: 58579, Start Num: 8

Candidate Starts for MPhalcon\_99:

(Start: 8 @58037 has 93 MA's), (Start: 10 @58073 has 39 MA's), (26, 58193), (29, 58232), (48, 58412), (65, 58565),

Gene: MadamMonkfish\_98 Start: 57543, Stop: 58085, Start Num: 8

Candidate Starts for MadamMonkfish\_98:

(Start: 8 @57543 has 93 MA's), (Start: 10 @57579 has 39 MA's), (26, 57699), (29, 57738), (48, 57918), (65, 58071),

Gene: Manda\_100 Start: 59299, Stop: 59841, Start Num: 8

Candidate Starts for Manda\_100:

(Start: 8 @59299 has 93 MA's), (Start: 10 @59335 has 39 MA's), (26, 59455), (29, 59494), (48, 59674), (65, 59827),

Gene: Marleymoo\_118 Start: 69570, Stop: 70109, Start Num: 9

Candidate Starts for Marleymoo\_118:

(Start: 9 @69570 has 26 MA's), (Start: 10 @69600 has 39 MA's), (25, 69714), (27, 69729), (31, 69786), (35, 69807), (39, 69840), (40, 69855), (42, 69867), (58, 70035), (63, 70074),

Gene: Marshmallow\_95 Start: 58663, Stop: 59199, Start Num: 8

Candidate Starts for Marshmallow\_95:

(Start: 8 @58663 has 93 MA's), (Start: 10 @58699 has 39 MA's), (26, 58819), (29, 58858), (48, 59038), (52, 59092), (53, 59101), (54, 59107), (55, 59113), (56, 59125), (61, 59155), (67, 59191),

Gene: Maxxinista\_100 Start: 58029, Stop: 58571, Start Num: 8

Candidate Starts for Maxxinista\_100:

(Start: 8 @58029 has 93 MA's), (Start: 10 @58065 has 39 MA's), (26, 58185), (29, 58224), (48, 58404), (65, 58557),

Gene: MiaZeal\_132 Start: 70263, Stop: 70811, Start Num: 5

Candidate Starts for MiaZeal\_132:

(Start: 5 @70263 has 72 MA's), (15, 70344), (25, 70425), (34, 70512), (40, 70566), (42, 70578), (46, 70608), (47, 70623), (50, 70662),

Gene: Miley16\_84 Start: 54918, Stop: 55484, Start Num: 5

Candidate Starts for Miley16\_84:

(Start: 5 @54918 has 72 MA's), (11, 54984), (22, 55065), (27, 55089), (37, 55191), (40, 55215), (50, 55311), (55, 55371), (66, 55452),

Gene: Mindy\_97 Start: 57365, Stop: 57907, Start Num: 8

Candidate Starts for Mindy\_97:

(Start: 8 @57365 has 93 MA's), (Start: 10 @57401 has 39 MA's), (26, 57521), (29, 57560), (48, 57740), (65, 57893),

Gene: Minerva\_132 Start: 71945, Stop: 72484, Start Num: 9

Candidate Starts for Minerva\_132:

(Start: 9 @71945 has 26 MA's), (Start: 10 @71975 has 39 MA's), (25, 72089), (27, 72104), (31, 72161), (35, 72182), (39, 72215), (46, 72272), (58, 72410), (63, 72449),



Gene: MiniLon\_86 Start: 54701, Stop: 55267, Start Num: 5

Candidate Starts for MiniLon\_86:

(3, 54653), (Start: 5 @54701 has 72 MA's), (Start: 12 @54770 has 2 MA's), (18, 54809), (32, 54938), (37, 54977), (38, 54980), (40, 55001), (50, 55097), (59, 55196),

Gene: MiniMac\_86 Start: 54696, Stop: 55262, Start Num: 5

Candidate Starts for MiniMac\_86:

(3, 54648), (Start: 5 @54696 has 72 MA's), (Start: 12 @54765 has 2 MA's), (18, 54804), (32, 54933), (37, 54972), (38, 54975), (40, 54996), (50, 55092), (59, 55191),

Gene: Miniwave\_93 Start: 57539, Stop: 58081, Start Num: 8

Candidate Starts for Miniwave\_93:

(Start: 8 @57539 has 93 MA's), (Start: 10 @57575 has 39 MA's), (26, 57695), (29, 57734), (48, 57914), (65, 58067),

Gene: Misfit\_99 Start: 59334, Stop: 59876, Start Num: 8

Candidate Starts for Misfit\_99:

(Start: 8 @59334 has 93 MA's), (Start: 10 @59370 has 39 MA's), (26, 59490), (29, 59529), (48, 59709), (65, 59862),

Gene: MkaliMitinis3\_85 Start: 54767, Stop: 55333, Start Num: 5

Candidate Starts for MkaliMitinis3\_85:

(Start: 5 @54767 has 72 MA's), (11, 54833), (22, 54914), (27, 54938), (36, 55037), (37, 55040), (39, 55049), (40, 55064), (50, 55160), (55, 55220), (66, 55301),

Gene: Moldemort\_101 Start: 58001, Stop: 58543, Start Num: 8

Candidate Starts for Moldemort\_101:

(Start: 8 @58001 has 93 MA's), (Start: 10 @58037 has 39 MA's), (26, 58157), (29, 58196), (48, 58376), (65, 58529),

Gene: Moostard\_80 Start: 54619, Stop: 55185, Start Num: 5

Candidate Starts for Moostard\_80:

(Start: 5 @54619 has 72 MA's), (27, 54790), (32, 54856), (36, 54892), (39, 54904), (40, 54919), (46, 54961), (47, 54976), (50, 55015), (59, 55114),

Gene: Mosby\_94 Start: 57653, Stop: 58159, Start Num: 10

Candidate Starts for Mosby\_94:

(Start: 8 @57617 has 93 MA's), (Start: 10 @57653 has 39 MA's), (26, 57773), (29, 57812), (48, 57992), (65, 58145),

Gene: MsGreen\_83 Start: 54852, Stop: 55412, Start Num: 8

Candidate Starts for MsGreen\_83:

(Start: 4 @54828 has 1 MA's), (Start: 8 @54852 has 93 MA's), (Start: 12 @54915 has 2 MA's), (22, 54993), (32, 55083), (36, 55119), (39, 55131), (40, 55146), (46, 55188), (47, 55203), (50, 55242), (59, 55341),

Gene: Murica\_101 Start: 59296, Stop: 59802, Start Num: 10

Candidate Starts for Murica\_101:

(Start: 8 @59260 has 93 MA's), (Start: 10 @59296 has 39 MA's), (26, 59416), (29, 59455), (48, 59635), (65, 59788),

Gene: Murphy\_98 Start: 58380, Stop: 58922, Start Num: 8

Candidate Starts for Murphy\_98:

(Start: 8 @58380 has 93 MA's), (Start: 10 @58416 has 39 MA's), (26, 58536), (29, 58575), (48, 58755), (65, 58908),

Gene: Myrale\_98 Start: 58823, Stop: 59359, Start Num: 8

Candidate Starts for Myrale\_98:

(Start: 8 @58823 has 93 MA's), (Start: 10 @58859 has 39 MA's), (26, 58979), (29, 59018), (48, 59198), (52, 59252), (53, 59261), (54, 59267), (55, 59273), (56, 59285), (61, 59315), (67, 59351),

Gene: Nala\_100 Start: 58582, Stop: 59088, Start Num: 10

Candidate Starts for Nala\_100:

(Start: 8 @58546 has 93 MA's), (Start: 10 @58582 has 39 MA's), (26, 58702), (29, 58741), (48, 58921), (65, 59074),

Gene: Nebkiss\_91 Start: 53520, Stop: 54086, Start Num: 7

Candidate Starts for Nebkiss\_91:

(Start: 6 @53517 has 1 MA's), (Start: 7 @53520 has 1 MA's), (19, 53634), (20, 53637), (30, 53715), (31, 53748), (32, 53754), (34, 53763), (35, 53769), (43, 53835), (49, 53904), (53, 53961), (60, 54012), (62, 54015), (64, 54045),

Gene: Nekros\_135 Start: 73714, Stop: 74262, Start Num: 5

Candidate Starts for Nekros\_135:

(Start: 5 @73714 has 72 MA's), (15, 73795), (25, 73876), (34, 73963), (40, 74017), (42, 74029), (46, 74059), (47, 74074), (50, 74113),

Gene: NelitzaMV\_96 Start: 57585, Stop: 58121, Start Num: 8

Candidate Starts for NelitzaMV\_96:

(Start: 8 @57585 has 93 MA's), (Start: 10 @57621 has 39 MA's), (26, 57741), (29, 57780), (48, 57960), (52, 58014), (53, 58023), (54, 58029), (55, 58035), (56, 58047), (61, 58077), (67, 58113),

Gene: Netyap\_85 Start: 54919, Stop: 55485, Start Num: 5

Candidate Starts for Netyap\_85:

(Start: 5 @54919 has 72 MA's), (11, 54985), (22, 55066), (27, 55090), (37, 55192), (40, 55216), (50, 55312), (55, 55372), (66, 55453),

Gene: Nicholas\_80 Start: 54624, Stop: 55190, Start Num: 5

Candidate Starts for Nicholas\_80:

(Start: 5 @54624 has 72 MA's), (27, 54795), (32, 54861), (36, 54897), (39, 54909), (40, 54924), (46, 54966), (47, 54981), (50, 55020), (59, 55119),

Gene: Nicholasp3\_84 Start: 54753, Stop: 55319, Start Num: 5

Candidate Starts for Nicholasp3\_84:

(Start: 5 @54753 has 72 MA's), (11, 54819), (22, 54900), (27, 54924), (36, 55023), (37, 55026), (40, 55050), (50, 55146), (55, 55206), (66, 55287),

Gene: NihilNomen\_135 Start: 72804, Stop: 73343, Start Num: 9

Candidate Starts for NihilNomen\_135:

(Start: 9 @72804 has 26 MA's), (Start: 10 @72834 has 39 MA's), (25, 72948), (27, 72963), (31, 73020), (35, 73041), (39, 73074), (46, 73131), (58, 73269), (63, 73308), (69, 73326),

Gene: Nimrod\_98 Start: 58790, Stop: 59326, Start Num: 8

Candidate Starts for Nimrod\_98:

(Start: 8 @58790 has 93 MA's), (Start: 10 @58826 has 39 MA's), (26, 58946), (29, 58985), (48, 59165), (52, 59219), (53, 59228), (54, 59234), (55, 59240), (56, 59252), (61, 59282), (67, 59318),

Gene: NoSleep\_99 Start: 57562, Stop: 58104, Start Num: 8

Candidate Starts for NoSleep\_99:

(Start: 8 @57562 has 93 MA's), (Start: 10 @57598 has 39 MA's), (26, 57718), (29, 57757), (48, 57937), (65, 58090),

Gene: Odette\_137 Start: 74357, Stop: 74914, Start Num: 5

Candidate Starts for Odette\_137:

(Start: 5 @74357 has 72 MA's), (15, 74438), (25, 74519), (34, 74606), (40, 74660), (41, 74669), (42, 74672), (46, 74702), (58, 74840), (63, 74879),

Gene: OhShagHennessy\_78 Start: 52235, Stop: 52792, Start Num: 5

Candidate Starts for OhShagHennessy\_78:

(Start: 5 @52235 has 72 MA's), (Start: 10 @52274 has 39 MA's), (Start: 13 @52307 has 2 MA's), (27, 52406), (28, 52418), (30, 52433), (36, 52505), (40, 52532), (45, 52568), (50, 52628), (52, 52667), (66, 52769),

Gene: Omega\_142 Start: 73929, Stop: 74477, Start Num: 5

Candidate Starts for Omega\_142:

(Start: 5 @73929 has 72 MA's), (15, 74010), (25, 74091), (34, 74178), (40, 74232), (41, 74241), (42, 74244), (46, 74274), (50, 74328),

Gene: Optimus\_124 Start: 70341, Stop: 70880, Start Num: 9

Candidate Starts for Optimus\_124:

(Start: 9 @70341 has 26 MA's), (Start: 10 @70371 has 39 MA's), (25, 70485), (27, 70500), (31, 70557), (35, 70578), (39, 70611), (46, 70668), (58, 70806), (63, 70845), (69, 70863),

Gene: OrionPax\_97 Start: 57670, Stop: 58176, Start Num: 10

Candidate Starts for OrionPax\_97:

(Start: 8 @57634 has 93 MA's), (Start: 10 @57670 has 39 MA's), (26, 57790), (29, 57829), (48, 58009), (65, 58162),

Gene: PYPDinur\_81 Start: 54005, Stop: 54499, Start Num: 12

Candidate Starts for PYPDinur\_81:

(Start: 5 @53936 has 72 MA's), (Start: 12 @54005 has 2 MA's), (16, 54020), (22, 54083), (27, 54107), (28, 54119), (44, 54263), (45, 54269), (50, 54329), (52, 54368), (66, 54470),

Gene: Palpatine\_99 Start: 58831, Stop: 59373, Start Num: 8

Candidate Starts for Palpatine\_99:

(Start: 8 @58831 has 93 MA's), (Start: 10 @58867 has 39 MA's), (26, 58987), (29, 59026), (48, 59206), (65, 59359),

Gene: Paperbeatsrock\_97 Start: 58253, Stop: 58759, Start Num: 10

Candidate Starts for Paperbeatsrock\_97:

(Start: 8 @58217 has 93 MA's), (Start: 10 @58253 has 39 MA's), (26, 58373), (29, 58412), (48, 58592), (65, 58745),

Gene: Pat3\_95 Start: 56740, Stop: 57282, Start Num: 8

Candidate Starts for Pat3\_95:

(Start: 8 @56740 has 93 MA's), (Start: 10 @56776 has 39 MA's), (26, 56896), (29, 56935), (48, 57115), (65, 57268),

Gene: Petra64142\_103 Start: 59778, Stop: 60278, Start Num: 10

Candidate Starts for Petra64142\_103:

(Start: 8 @59742 has 93 MA's), (Start: 10 @59778 has 39 MA's), (26, 59898), (29, 59937), (48, 60117), (52, 60171), (53, 60180), (54, 60186), (55, 60192), (56, 60204), (61, 60234), (67, 60270),

Gene: Phaja\_96 Start: 58043, Stop: 58579, Start Num: 8

Candidate Starts for Phaja\_96:

(Start: 8 @58043 has 93 MA's), (Start: 10 @58079 has 39 MA's), (26, 58199), (29, 58238), (48, 58418), (52, 58472), (53, 58481), (54, 58487), (55, 58493), (56, 58505), (61, 58535), (67, 58571),

Gene: Pharsalus\_95 Start: 58017, Stop: 58559, Start Num: 8

Candidate Starts for Pharsalus\_95:

(Start: 8 @58017 has 93 MA's), (Start: 10 @58053 has 39 MA's), (26, 58173), (29, 58212), (48, 58392), (65, 58545),

Gene: PhatBacter\_101 Start: 58612, Stop: 59118, Start Num: 10

Candidate Starts for PhatBacter\_101:

(Start: 8 @58576 has 93 MA's), (Start: 10 @58612 has 39 MA's), (26, 58732), (29, 58771), (48, 58951), (65, 59104),

Gene: Phaux\_100 Start: 59145, Stop: 59687, Start Num: 8

Candidate Starts for Phaux\_100:

(Start: 8 @59145 has 93 MA's), (Start: 10 @59181 has 39 MA's), (26, 59301), (29, 59340), (48, 59520), (65, 59673),

Gene: Phoebus\_134 Start: 74698, Stop: 75237, Start Num: 9

Candidate Starts for Phoebus\_134:

(Start: 9 @74698 has 26 MA's), (Start: 10 @74728 has 39 MA's), (25, 74842), (27, 74857), (31, 74914), (35, 74935), (39, 74968), (46, 75025), (58, 75163), (63, 75202),

Gene: Phrux\_95 Start: 57421, Stop: 57963, Start Num: 8

Candidate Starts for Phrux\_95:

(Start: 8 @57421 has 93 MA's), (Start: 10 @57457 has 39 MA's), (26, 57577), (29, 57616), (48, 57796), (65, 57949),

Gene: Policronamos\_100 Start: 58849, Stop: 59391, Start Num: 8

Candidate Starts for Policronamos\_100:

(Start: 8 @58849 has 93 MA's), (Start: 10 @58885 has 39 MA's), (26, 59005), (29, 59044), (48, 59224), (65, 59377),

Gene: Pochiewood\_79 Start: 53612, Stop: 54106, Start Num: 13

Candidate Starts for Pochiewood\_79:

(Start: 5 @53540 has 72 MA's), (Start: 10 @53579 has 39 MA's), (Start: 13 @53612 has 2 MA's), (27, 53711), (28, 53723), (30, 53738), (36, 53810), (40, 53837), (45, 53873), (50, 53933), (51, 53951), (55, 53993), (66, 54074),

Gene: Porcelain\_130 Start: 70070, Stop: 70618, Start Num: 5

Candidate Starts for Porcelain\_130:

(Start: 5 @70070 has 72 MA's), (15, 70151), (25, 70232), (34, 70319), (40, 70373), (42, 70385), (46, 70415), (50, 70469),

Gene: Porky\_97 Start: 57165, Stop: 57671, Start Num: 10

Candidate Starts for Porky\_97:

(Start: 8 @57129 has 93 MA's), (Start: 10 @57165 has 39 MA's), (26, 57285), (29, 57324), (48, 57504), (65, 57657),

Gene: Pound\_122 Start: 71081, Stop: 71620, Start Num: 9

Candidate Starts for Pound\_122:

(Start: 9 @71081 has 26 MA's), (Start: 10 @71111 has 39 MA's), (25, 71225), (27, 71240), (31, 71297), (35, 71318), (39, 71351), (46, 71408), (58, 71546), (63, 71585), (69, 71603),

Gene: Pumpkin\_101 Start: 58797, Stop: 59333, Start Num: 8

Candidate Starts for Pumpkin\_101:

(Start: 8 @58797 has 93 MA's), (Start: 10 @58833 has 39 MA's), (26, 58953), (29, 58992), (48, 59172), (52, 59226), (53, 59235), (54, 59241), (55, 59247), (56, 59259), (61, 59289), (67, 59325),

Gene: Quallification\_99 Start: 58625, Stop: 59167, Start Num: 8

Candidate Starts for Quallification\_99:

(Start: 8 @58625 has 93 MA's), (Start: 10 @58661 has 39 MA's), (26, 58781), (29, 58820), (48, 59000), (65, 59153),

Gene: Quby\_82 Start: 53264, Stop: 53827, Start Num: 5

Candidate Starts for Quby\_82:

(Start: 5 @53264 has 72 MA's), (Start: 12 @53333 has 2 MA's), (16, 53348), (22, 53411), (27, 53435), (50, 53657), (52, 53696), (66, 53798),

Gene: Rakim\_99 Start: 58311, Stop: 58811, Start Num: 10

Candidate Starts for Rakim\_99:

(Start: 8 @58275 has 93 MA's), (Start: 10 @58311 has 39 MA's), (26, 58431), (29, 58470), (48, 58650), (52, 58704), (53, 58713), (54, 58719), (55, 58725), (56, 58737), (61, 58767), (67, 58803),

Gene: Rearden\_131 Start: 70464, Stop: 71012, Start Num: 5

Candidate Starts for Rearden\_131:

(Start: 5 @70464 has 72 MA's), (15, 70545), (25, 70626), (34, 70713), (40, 70767), (42, 70779), (46, 70809), (50, 70863),

Gene: Red305\_84 Start: 54916, Stop: 55413, Start Num: 12

Candidate Starts for Red305\_84:

(Start: 4 @54829 has 1 MA's), (Start: 8 @54853 has 93 MA's), (Start: 12 @54916 has 2 MA's), (22, 54994), (32, 55084), (36, 55120), (39, 55132), (40, 55147), (46, 55189), (47, 55204), (50, 55243), (59, 55342),

Gene: Redno2\_125 Start: 70086, Stop: 70625, Start Num: 9

Candidate Starts for Redno2\_125:

(Start: 9 @70086 has 26 MA's), (Start: 10 @70116 has 39 MA's), (25, 70230), (27, 70245), (31, 70302), (35, 70323), (39, 70356), (46, 70413), (58, 70551), (63, 70590),

Gene: Rimmer\_96 Start: 57851, Stop: 58393, Start Num: 8

Candidate Starts for Rimmer\_96:

(Start: 8 @57851 has 93 MA's), (Start: 10 @57887 has 39 MA's), (26, 58007), (29, 58046), (48, 58226), (65, 58379),

Gene: RiverMonster\_98 Start: 58317, Stop: 58859, Start Num: 8

Candidate Starts for RiverMonster\_98:

(Start: 8 @58317 has 93 MA's), (Start: 10 @58353 has 39 MA's), (26, 58473), (29, 58512), (48, 58692), (65, 58845),

Gene: Rose5\_82 Start: 53377, Stop: 53943, Start Num: 5

Candidate Starts for Rose5\_82:

(Start: 5 @53377 has 72 MA's), (Start: 10 @53416 has 39 MA's), (Start: 13 @53449 has 2 MA's), (27, 53548), (28, 53560), (30, 53575), (36, 53647), (40, 53674), (45, 53710), (50, 53770), (55, 53830), (66, 53911),

Gene: Rumpelstiltskin\_81 Start: 54546, Stop: 55112, Start Num: 5

Candidate Starts for Rumpelstiltskin\_81:

(Start: 5 @54546 has 72 MA's), (11, 54612), (22, 54693), (27, 54717), (36, 54816), (37, 54819), (40, 54843), (50, 54939), (55, 54999), (66, 55080),

Gene: Saints25\_96 Start: 57460, Stop: 58005, Start Num: 8

Candidate Starts for Saints25\_96:

(Start: 8 @57460 has 93 MA's), (Start: 10 @57496 has 39 MA's), (26, 57616), (29, 57655), (48, 57835), (65, 57988),

Gene: Samty\_81 Start: 54612, Stop: 55178, Start Num: 5

Candidate Starts for Samty\_81:

(Start: 5 @54612 has 72 MA's), (27, 54783), (32, 54849), (36, 54885), (39, 54897), (40, 54912), (46, 54954), (47, 54969), (50, 55008), (59, 55107),

Gene: Sarshaun\_85 Start: 55077, Stop: 55577, Start Num: 11

Candidate Starts for Sarshaun\_85:

(Start: 5 @55011 has 72 MA's), (11, 55077), (22, 55158), (27, 55182), (36, 55281), (37, 55284), (40, 55308), (49, 55395), (50, 55404), (55, 55464), (66, 55545),

Gene: Sassay\_93 Start: 56615, Stop: 57121, Start Num: 10

Candidate Starts for Sassay\_93:

(Start: 8 @56579 has 93 MA's), (Start: 10 @56615 has 39 MA's), (26, 56735), (29, 56774), (48, 56954), (65, 57107),

Gene: Schatzie\_129 Start: 72794, Stop: 73333, Start Num: 9

Candidate Starts for Schatzie\_129:

(Start: 9 @72794 has 26 MA's), (Start: 10 @72824 has 39 MA's), (25, 72938), (27, 72953), (31, 73010), (35, 73031), (39, 73064), (40, 73079), (42, 73091), (58, 73259), (63, 73298),

Gene: Shaboozey\_133 Start: 70541, Stop: 71233, Start Num: 5

Candidate Starts for Shaboozey\_133:

(Start: 5 @70541 has 72 MA's), (15, 70622), (25, 70703), (34, 70790), (40, 70844), (41, 70853), (42, 70856), (46, 70886), (50, 70940), (68, 71084), (70, 71129),

Gene: ShamWow\_98 Start: 58438, Stop: 58980, Start Num: 8

Candidate Starts for ShamWow\_98:

(Start: 8 @58438 has 93 MA's), (Start: 10 @58474 has 39 MA's), (26, 58594), (29, 58633), (48, 58813), (65, 58966),

Gene: Sheng711\_83 Start: 53570, Stop: 54133, Start Num: 5

Candidate Starts for Sheng711\_83:

(Start: 5 @53570 has 72 MA's), (16, 53654), (22, 53717), (27, 53741), (40, 53867), (50, 53963), (52, 54002), (66, 54104),

Gene: ShereKhan\_96 Start: 58871, Stop: 59413, Start Num: 8

Candidate Starts for ShereKhan\_96:

(Start: 8 @58871 has 93 MA's), (Start: 10 @58907 has 39 MA's), (26, 59027), (29, 59066), (48, 59246), (65, 59399),

Gene: Silverleaf\_81 Start: 52833, Stop: 53399, Start Num: 5

Candidate Starts for Silverleaf\_81:

(Start: 5 @52833 has 72 MA's), (Start: 10 @52872 has 39 MA's), (Start: 13 @52905 has 2 MA's), (27, 53004), (28, 53016), (30, 53031), (36, 53103), (40, 53130), (45, 53166), (50, 53226), (55, 53286), (66, 53367),

Gene: Simpliphy\_97 Start: 57879, Stop: 58421, Start Num: 8

Candidate Starts for Simpliphy\_97:

(Start: 8 @57879 has 93 MA's), (Start: 10 @57915 has 39 MA's), (26, 58035), (29, 58074), (48, 58254), (65, 58407),

Gene: SirDuracell\_98 Start: 57255, Stop: 57797, Start Num: 8

Candidate Starts for SirDuracell\_98:

(Start: 8 @57255 has 93 MA's), (Start: 10 @57291 has 39 MA's), (26, 57411), (29, 57450), (48, 57630), (65, 57783),

Gene: Snenia\_82 Start: 54917, Stop: 55414, Start Num: 12

Candidate Starts for Snenia\_82:

(Start: 4 @54830 has 1 MA's), (Start: 8 @54854 has 93 MA's), (Start: 12 @54917 has 2 MA's), (22, 54995), (32, 55085), (36, 55121), (39, 55133), (40, 55148), (46, 55190), (47, 55205), (50, 55244), (59, 55343),

Gene: SoJulia\_86 Start: 56145, Stop: 56645, Start Num: 11

Candidate Starts for SoJulia\_86:

(Start: 5 @56079 has 72 MA's), (11, 56145), (22, 56226), (27, 56250), (37, 56352), (40, 56376), (50, 56472), (55, 56532), (66, 56613),

Gene: Soap141\_84 Start: 55011, Stop: 55577, Start Num: 5

Candidate Starts for Soap141\_84:

(Start: 5 @55011 has 72 MA's), (11, 55077), (22, 55158), (27, 55182), (36, 55281), (37, 55284), (40, 55308), (49, 55395), (50, 55404), (55, 55464), (66, 55545),

Gene: SophKB\_95 Start: 57236, Stop: 57778, Start Num: 8

Candidate Starts for SophKB\_95:

(Start: 8 @57236 has 93 MA's), (Start: 10 @57272 has 39 MA's), (26, 57392), (29, 57431), (48, 57611), (65, 57764),

Gene: Sotrice96\_99 Start: 58145, Stop: 58687, Start Num: 8

Candidate Starts for Sotrice96\_99:

(Start: 8 @58145 has 93 MA's), (Start: 10 @58181 has 39 MA's), (26, 58301), (29, 58340), (48, 58520), (65, 58673),

Gene: Squint\_130 Start: 70330, Stop: 70878, Start Num: 5

Candidate Starts for Squint\_130:

(Start: 5 @70330 has 72 MA's), (15, 70411), (25, 70492), (34, 70579), (40, 70633), (42, 70645), (46, 70675), (50, 70729),

Gene: Stank\_100 Start: 58538, Stop: 59074, Start Num: 8

Candidate Starts for Stank\_100:

(Start: 8 @58538 has 93 MA's), (Start: 10 @58574 has 39 MA's), (26, 58694), (29, 58733), (48, 58913), (52, 58967), (53, 58976), (54, 58982), (55, 58988), (56, 59000), (61, 59030), (67, 59066),

Gene: Stark\_99 Start: 58236, Stop: 58742, Start Num: 10

Candidate Starts for Stark\_99:

(Start: 8 @58200 has 93 MA's), (Start: 10 @58236 has 39 MA's), (26, 58356), (29, 58395), (48, 58575), (65, 58728),

Gene: StellaBean\_96 Start: 57798, Stop: 58304, Start Num: 10

Candidate Starts for StellaBean\_96:

(Start: 8 @57762 has 93 MA's), (Start: 10 @57798 has 39 MA's), (26, 57918), (29, 57957), (48, 58137), (65, 58290),

Gene: StolenFromERC\_101 Start: 58463, Stop: 58999, Start Num: 8

Candidate Starts for StolenFromERC\_101:

(Start: 8 @58463 has 93 MA's), (Start: 10 @58499 has 39 MA's), (26, 58619), (29, 58658), (48, 58838), (52, 58892), (53, 58901), (54, 58907), (55, 58913), (56, 58925), (61, 58955), (67, 58991),

Gene: StormChicken\_100 Start: 59243, Stop: 59779, Start Num: 8

Candidate Starts for StormChicken\_100:

(Start: 8 @59243 has 93 MA's), (Start: 10 @59279 has 39 MA's), (26, 59399), (29, 59438), (48, 59618), (52, 59672), (53, 59681), (54, 59687), (55, 59693), (56, 59705), (61, 59735), (67, 59771),

Gene: Superphikiman\_130 Start: 69545, Stop: 70093, Start Num: 5

Candidate Starts for Superphikiman\_130:

(Start: 5 @69545 has 72 MA's), (15, 69626), (25, 69707), (34, 69794), (40, 69848), (41, 69857), (42, 69860), (46, 69890), (50, 69944),

Gene: TBrady12\_101 Start: 57978, Stop: 58514, Start Num: 8

Candidate Starts for TBrady12\_101:

(Start: 8 @57978 has 93 MA's), (Start: 10 @58014 has 39 MA's), (26, 58134), (29, 58173), (48, 58353), (52, 58407), (53, 58416), (54, 58422), (55, 58428), (56, 58440), (61, 58470), (67, 58506),

Gene: Tarkin\_97 Start: 58226, Stop: 58768, Start Num: 8

Candidate Starts for Tarkin\_97:

(Start: 8 @58226 has 93 MA's), (Start: 10 @58262 has 39 MA's), (26, 58382), (29, 58421), (48, 58601), (65, 58754),

Gene: TeardropMSU\_94 Start: 57226, Stop: 57768, Start Num: 8

Candidate Starts for TeardropMSU\_94:

(Start: 8 @57226 has 93 MA's), (Start: 10 @57262 has 39 MA's), (26, 57382), (29, 57421), (48, 57601), (65, 57754),

Gene: Teaspoon\_99 Start: 58078, Stop: 58620, Start Num: 8

Candidate Starts for Teaspoon\_99:

(Start: 8 @58078 has 93 MA's), (Start: 10 @58114 has 39 MA's), (26, 58234), (29, 58273), (48, 58453), (65, 58606),

Gene: Terminus\_101 Start: 59334, Stop: 59876, Start Num: 8

Candidate Starts for Terminus\_101:



(Start: 8 @59334 has 93 MA's), (Start: 10 @59370 has 39 MA's), (26, 59490), (29, 59529), (48, 59709), (65, 59862),

Gene: Thibault\_118 Start: 69990, Stop: 70547, Start Num: 5

Candidate Starts for Thibault\_118:

(Start: 5 @69990 has 72 MA's), (15, 70071), (18, 70104), (23, 70146), (25, 70152), (34, 70239), (39, 70278), (40, 70293), (42, 70305), (58, 70473), (63, 70512),

Gene: Thimble\_101 Start: 57764, Stop: 58264, Start Num: 10

Candidate Starts for Thimble\_101:

(Start: 8 @57728 has 93 MA's), (Start: 10 @57764 has 39 MA's), (26, 57884), (29, 57923), (48, 58103), (52, 58157), (53, 58166), (54, 58172), (55, 58178), (56, 58190), (61, 58220), (67, 58256),

Gene: ThreeRngTarjay\_129 Start: 73289, Stop: 73828, Start Num: 9

Candidate Starts for ThreeRngTarjay\_129:

(Start: 9 @73289 has 26 MA's), (Start: 10 @73319 has 39 MA's), (25, 73433), (27, 73448), (31, 73505), (35, 73526), (39, 73559), (46, 73616), (58, 73754), (63, 73793),

Gene: Thresher\_100 Start: 58980, Stop: 59522, Start Num: 8

Candidate Starts for Thresher\_100:

(Start: 8 @58980 has 93 MA's), (Start: 10 @59016 has 39 MA's), (26, 59136), (29, 59175), (48, 59355), (65, 59508),

Gene: Tomaszewski\_93 Start: 57710, Stop: 58252, Start Num: 8

Candidate Starts for Tomaszewski\_93:

(Start: 8 @57710 has 93 MA's), (Start: 10 @57746 has 39 MA's), (26, 57866), (29, 57905), (48, 58085), (65, 58238),

Gene: Toto\_96 Start: 58438, Stop: 58980, Start Num: 8

Candidate Starts for Toto\_96:

(Start: 8 @58438 has 93 MA's), (Start: 10 @58474 has 39 MA's), (26, 58594), (29, 58633), (48, 58813), (65, 58966),

Gene: Tourach\_83 Start: 55036, Stop: 55602, Start Num: 5

Candidate Starts for Tourach\_83:

(Start: 5 @55036 has 72 MA's), (11, 55102), (22, 55183), (27, 55207), (28, 55219), (36, 55306), (37, 55309), (40, 55333), (41, 55342), (50, 55429), (55, 55489), (66, 55570),

Gene: Traaww1\_94 Start: 57567, Stop: 58103, Start Num: 8

Candidate Starts for Traaww1\_94:

(Start: 8 @57567 has 93 MA's), (Start: 10 @57603 has 39 MA's), (26, 57723), (29, 57762), (48, 57942), (52, 57996), (53, 58005), (54, 58011), (55, 58017), (56, 58029), (61, 58059), (67, 58095),

Gene: TriFive\_82 Start: 54617, Stop: 55186, Start Num: 5

Candidate Starts for TriFive\_82:

(Start: 5 @54617 has 72 MA's), (27, 54788), (32, 54854), (39, 54902), (40, 54917), (46, 54959), (47, 54974), (55, 55073),

Gene: Tuco\_99 Start: 59306, Stop: 59848, Start Num: 8

Candidate Starts for Tuco\_99:

(Start: 8 @59306 has 93 MA's), (Start: 10 @59342 has 39 MA's), (26, 59462), (29, 59501), (48, 59681), (65, 59834),

Gene: Tyson\_82 Start: 53303, Stop: 53869, Start Num: 5

Candidate Starts for Tyson\_82:

(Start: 5 @53303 has 72 MA's), (Start: 10 @53342 has 39 MA's), (Start: 13 @53375 has 2 MA's), (27, 53474), (28, 53486), (30, 53501), (36, 53573), (40, 53600), (45, 53636), (50, 53696), (55, 53756), (66, 53837),

Gene: UPIE\_80 Start: 52899, Stop: 53465, Start Num: 5

Candidate Starts for UPIE\_80:

(Start: 5 @52899 has 72 MA's), (Start: 10 @52938 has 39 MA's), (Start: 13 @52971 has 2 MA's), (27, 53070), (28, 53082), (30, 53097), (36, 53169), (40, 53196), (45, 53232), (50, 53292), (55, 53352), (66, 53433),

Gene: Ukulele\_93 Start: 57692, Stop: 58234, Start Num: 8

Candidate Starts for Ukulele\_93:

(Start: 8 @57692 has 93 MA's), (Start: 10 @57728 has 39 MA's), (26, 57848), (29, 57887), (48, 58067), (65, 58220),

Gene: Underpass\_75 Start: 49789, Stop: 50355, Start Num: 5

Candidate Starts for Underpass\_75:

(Start: 5 @49789 has 72 MA's), (11, 49855), (22, 49936), (27, 49960), (36, 50059), (37, 50062), (40, 50086), (50, 50182), (55, 50242), (66, 50323),

Gene: Vetrix\_83 Start: 54615, Stop: 55181, Start Num: 5

Candidate Starts for Vetrix\_83:

(Start: 5 @54615 has 72 MA's), (27, 54786), (36, 54885), (37, 54888), (40, 54912), (50, 55008), (55, 55068), (66, 55149),

Gene: Wamburgrexpress\_81 Start: 53338, Stop: 53904, Start Num: 5

Candidate Starts for Wamburgrexpress\_81:

(Start: 5 @53338 has 72 MA's), (Start: 10 @53377 has 39 MA's), (Start: 13 @53410 has 2 MA's), (27, 53509), (28, 53521), (30, 53536), (36, 53608), (40, 53635), (45, 53671), (50, 53731), (55, 53791), (66, 53872),

Gene: Wanda\_132 Start: 70424, Stop: 70963, Start Num: 9

Candidate Starts for Wanda\_132:

(Start: 9 @70424 has 26 MA's), (Start: 10 @70454 has 39 MA's), (25, 70568), (27, 70583), (31, 70640), (35, 70661), (39, 70694), (46, 70751), (58, 70889), (63, 70928),

Gene: Whirlwind\_83 Start: 54856, Stop: 55422, Start Num: 5

Candidate Starts for Whirlwind\_83:

(Start: 5 @54856 has 72 MA's), (22, 55003), (32, 55093), (36, 55129), (39, 55141), (40, 55156), (46, 55198), (47, 55213), (59, 55351),

Gene: Wiggin\_100 Start: 57968, Stop: 58504, Start Num: 8

Candidate Starts for Wiggin\_100:

(Start: 8 @57968 has 93 MA's), (Start: 10 @58004 has 39 MA's), (26, 58124), (29, 58163), (48, 58343), (52, 58397), (53, 58406), (54, 58412), (55, 58418), (56, 58430), (61, 58460), (67, 58496),

Gene: Wigglewigggle\_83 Start: 54560, Stop: 55126, Start Num: 5

Candidate Starts for Wigglewigggle\_83:

(Start: 5 @54560 has 72 MA's), (11, 54626), (22, 54707), (27, 54731), (36, 54830), (37, 54833), (39, 54842), (40, 54857), (50, 54953), (55, 55013), (66, 55094),

Gene: Wilder\_85 Start: 54704, Stop: 55270, Start Num: 5

Candidate Starts for Wilder\_85:

(Start: 5 @54704 has 72 MA's), (11, 54770), (27, 54875), (36, 54974), (37, 54977), (40, 55001), (50, 55097), (55, 55157), (66, 55238),

Gene: Willez\_93 Start: 56615, Stop: 57121, Start Num: 10

Candidate Starts for Willez\_93:

(Start: 8 @56579 has 93 MA's), (Start: 10 @56615 has 39 MA's), (26, 56735), (29, 56774), (48, 56954), (65, 57107),

Gene: Winky\_84 Start: 54918, Stop: 55484, Start Num: 5

Candidate Starts for Winky\_84:

(Start: 5 @54918 has 72 MA's), (11, 54984), (22, 55065), (27, 55089), (37, 55191), (40, 55215), (50, 55311), (55, 55371), (66, 55452),

Gene: Wyatt2\_82 Start: 53301, Stop: 53867, Start Num: 5

Candidate Starts for Wyatt2\_82:

(Start: 5 @53301 has 72 MA's), (Start: 10 @53340 has 39 MA's), (Start: 13 @53373 has 2 MA's), (27, 53472), (28, 53484), (30, 53499), (36, 53571), (40, 53598), (45, 53634), (50, 53694), (55, 53754), (66, 53835),

Gene: Xandras\_97 Start: 57791, Stop: 58327, Start Num: 8

Candidate Starts for Xandras\_97:

(Start: 8 @57791 has 93 MA's), (Start: 10 @57827 has 39 MA's), (26, 57947), (29, 57986), (48, 58166), (52, 58220), (53, 58229), (54, 58235), (55, 58241), (56, 58253), (61, 58283), (67, 58319),

Gene: YassJohnny\_95 Start: 57147, Stop: 57647, Start Num: 10

Candidate Starts for YassJohnny\_95:

(Start: 8 @57111 has 93 MA's), (Start: 10 @57147 has 39 MA's), (26, 57267), (29, 57306), (48, 57486), (52, 57540), (53, 57549), (54, 57555), (55, 57561), (56, 57573), (61, 57603), (67, 57639),

Gene: Yeet\_127 Start: 72469, Stop: 73026, Start Num: 5

Candidate Starts for Yeet\_127:

(Start: 5 @72469 has 72 MA's), (15, 72550), (25, 72631), (34, 72718), (40, 72772), (41, 72781), (42, 72784), (46, 72814), (58, 72952), (63, 72991),

Gene: Youngblood\_101 Start: 59297, Stop: 59797, Start Num: 10

Candidate Starts for Youngblood\_101:

(Start: 8 @59261 has 93 MA's), (Start: 10 @59297 has 39 MA's), (26, 59417), (29, 59456), (48, 59636), (52, 59690), (53, 59699), (54, 59705), (55, 59711), (56, 59723), (61, 59753), (67, 59789),

Gene: Zakai\_85 Start: 55024, Stop: 55590, Start Num: 5

Candidate Starts for Zakai\_85:

(Start: 5 @55024 has 72 MA's), (11, 55090), (22, 55171), (27, 55195), (36, 55294), (37, 55297), (40, 55321), (50, 55417), (55, 55477), (66, 55558),

Gene: Zaria\_82 Start: 52753, Stop: 53319, Start Num: 5

Candidate Starts for Zaria\_82:

(Start: 5 @52753 has 72 MA's), (Start: 10 @52792 has 39 MA's), (Start: 13 @52825 has 2 MA's), (27, 52924), (28, 52936), (30, 52951), (36, 53023), (40, 53050), (45, 53086), (50, 53146), (51, 53164), (55, 53206), (66, 53287),

Gene: Zelink\_128 Start: 73236, Stop: 73775, Start Num: 9

Candidate Starts for Zelink\_128:

(Start: 9 @73236 has 26 MA's), (Start: 10 @73266 has 39 MA's), (25, 73380), (27, 73395), (31, 73452), (35, 73473), (39, 73506), (46, 73563), (58, 73701), (63, 73740),

Gene: xkcd\_101 Start: 59445, Stop: 59981, Start Num: 8

Candidate Starts for xkcd\_101:

(Start: 8 @59445 has 93 MA's), (Start: 10 @59481 has 39 MA's), (26, 59601), (29, 59640), (48, 59820), (52, 59874), (53, 59883), (54, 59889), (55, 59895), (56, 59907), (61, 59937), (67, 59973),