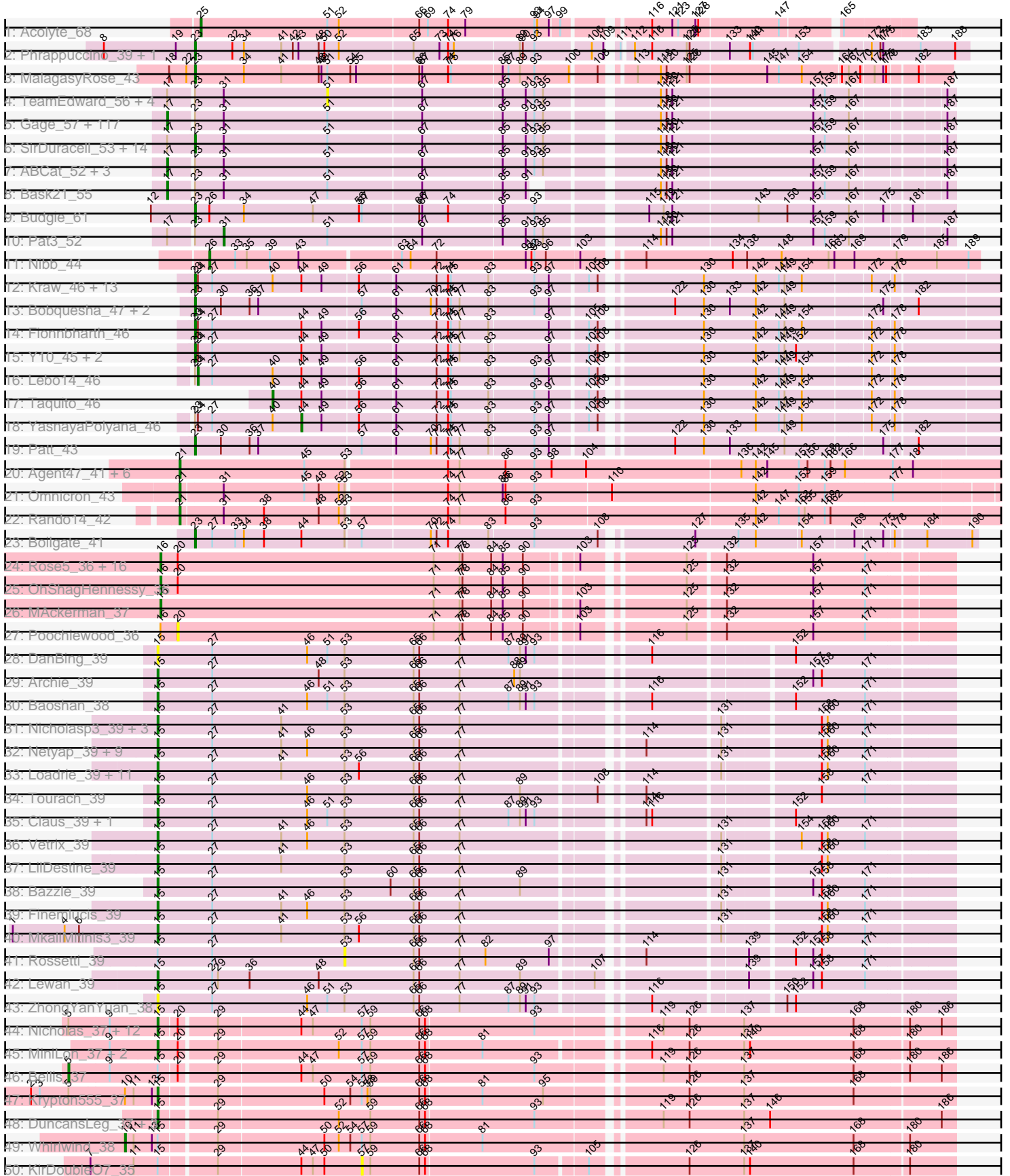
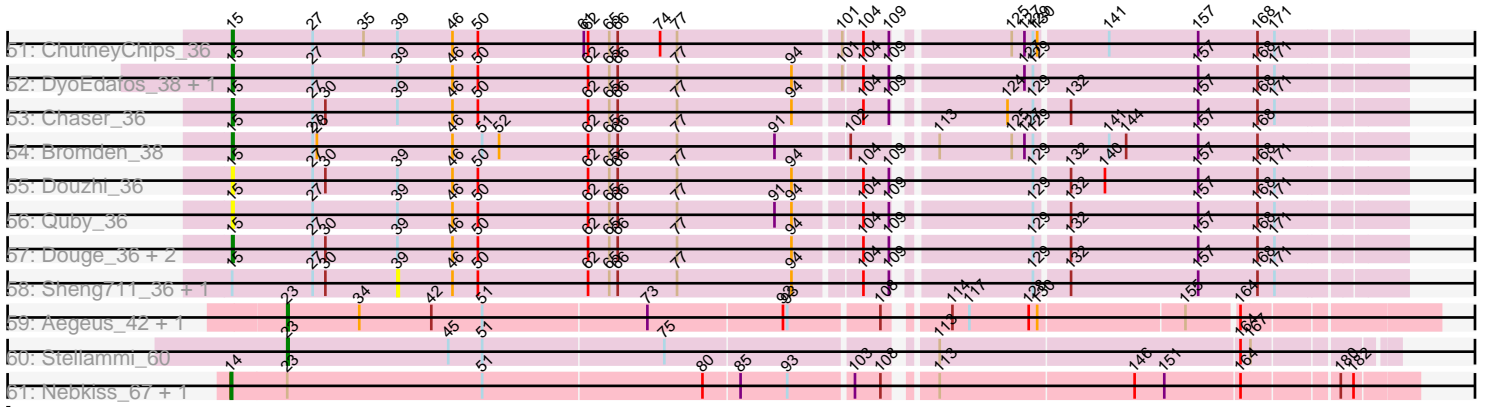


Pham 304666



Pham 304666



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 304666 Report

This analysis was run 06/08/26 on database version 649.

Pham number 304666 has 286 members, 39 are drafts.

Phages represented in each track:

- Track 1 : Acolyte\_68
- Track 2 : Phrappuccino\_39, Settecandela\_39
- Track 3 : MalagasyRose\_43
- Track 4 : TeamEdward\_56, MollyToe\_49, Bogg\_54, Liveloughbron\_58, Greep\_58
- Track 5 : Gage\_57, Kanye\_50, TeardropMSU\_50, Henry\_53, Lilac\_57, Wiggin\_56, Simpliphy\_53, GooberAzure\_57, Adnama\_58, DrDrey\_54, BaboJay\_50, StolenFromERC\_57, Goldilocks\_56, Holt\_59, Elph10\_54, Ukulele\_51, Cookies\_51, ChotaBhai\_54, Paperbeatsrock\_53, Murica\_56, Goku\_52, Policronamos\_57, Murphy\_56, Tuco\_55, BilboSwaggins\_53, Filch\_55, BugsBunny\_55, Stank\_58, Gemini\_58, Saints25\_55, PhatBacter\_57, Dumbo\_54, PaddyBaddy\_54, Dusk\_52, Phrux\_52, Daikon\_55, Contagion\_51, MadamMonkfish\_54, Xandras\_54, Manda\_54, Buck\_55, FoghornLeghorn\_49, JeTaimie\_55, Brewer\_48, MISSy\_54, Phaux\_56, Porky\_53, Amao\_54, NoSleep\_56, Glexan\_52, Nala\_55, BadStone\_52, Phaja\_52, xkcd\_58, HufflyPuff\_56, Traaww1\_50, Asriel\_54, Tarkin\_53, Lilpickle\_54, Willez\_48, DoctorDiddles\_54, Bruin\_50, BigBubba\_55, Sotrice96\_55, FireRed\_57, Lilizi\_54, Hopey\_54, ShereKhan\_52, Thresher\_57, Barbarian\_54, Youngblood\_56, Harella\_54, Easy2Say\_55, IHOP\_52, Quallification\_55, RiverMonster\_55, Terminus\_56, AmericanBeauty\_58, Bench\_56, Pharsalus\_52, Balomoji\_53, Thimble\_56, StellaBean\_52, Becksu\_55, OrionPax\_53, Stark\_55, CrystalP\_54, Mindy\_53, Sassay\_48, Tomaszewski\_50, Hoonter\_57, Command613\_56, Mosby\_50, FairyPath\_53, Misfit\_56, Cjw1\_54, MPhalcon\_54, Icee\_54, Maxxinista\_57, Nimrod\_57, Kimchi\_57, ChosenOne\_55, Rimmer\_55, ShamWow\_54, Elite2014\_54, HanKaySha\_53, Moldemort\_57, 244\_55, NonchalantPear\_54, NelitzaMV\_51, Miniwave\_51, SophKB\_51, Pumpkin\_56, Highbury\_55, Czyszczon1\_55, Cactus\_56, Gator\_52, Eureka\_52
- Track 6 : SirDuracell\_53, Argent26\_57, Toto\_53, Kostya\_55, Palpatine\_57, StormChicken\_56, Flypotenuse\_49, Emmina\_54, Petra64142\_59, GoldenSpark\_57, Ptowny\_53, Rakim\_56, TBrady12\_57, YassJohnny\_50, Teaspoon\_55
- Track 7 : ABCat\_52, Inca\_51, Myrale\_54, Marshmallow\_53
- Track 8 : Bask21\_55
- Track 9 : Budgie\_61
- Track 10 : Pat3\_52
- Track 11 : Nibb\_44
- Track 12 : Kraw\_46, SamScheppers\_45, Chancellor\_46, Qhanda\_48, Juliette\_48, Eponine\_48, Slarp\_46, Wintermute\_46, Cheetobro\_46, OmniCritical\_45, DanSyl44\_50, Ruthiejr\_47, Mitti\_46, Malthus\_47
- Track 13 : Bobquesha\_47, MissDaisy\_44, Reptar3000\_44

- Track 14 : Fionnbharth\_46
- Track 15 : Y10\_45, JF1\_46, Y2\_45
- Track 16 : Lebo14\_46
- Track 17 : Taquito\_46
- Track 18 : YasnayaPolyana\_46
- Track 19 : Patt\_43
- Track 20 : Agent47\_41, ViviJ\_40, BananenDer11\_41, LilDirt\_40, Collard\_40, InvictusManeo\_40, DoubleChamp\_40
- Track 21 : Omnicron\_43
- Track 22 : Rando14\_42
- Track 23 : Boilgate\_41
- Track 24 : Rose5\_36, Calm\_37, Tyson\_36, LeBron\_37, CicholasNage\_37, Halena\_36, Wyatt2\_37, Zaria\_37, Wamburggrxpress\_37, Acquire49\_37, Enceladus\_36, DirkDirk\_36, Appletree2\_36, JoeDirt\_36, Silverleaf\_36, UPIE\_37, AvadaKedavra\_37
- Track 25 : OhShagHennessy\_36
- Track 26 : MAckerman\_37
- Track 27 : Poochiewood\_36
- Track 28 : DanBing\_39
- Track 29 : Archie\_39
- Track 30 : Baoshan\_38
- Track 31 : Nicholasp3\_39, Underpass\_39, Rumpelstiltskin\_39, Gardann\_39
- Track 32 : Netyap\_39, Breezona\_39, SoJulia\_40, Winky\_39, Faith1\_39, Gabriela\_39, BigCheese\_39, DrSeegs\_39, BobsGarage\_39, Miley16\_39
- Track 33 : Loadrie\_39, Kahlid\_39, Soap141\_39, Sarshaun\_39, OverPar\_40, Lynnae\_39, GuuelaD\_39, Wigglewiggles\_39, Zakai\_39, Hafay\_39, Crossroads\_39, Wilder\_39
- Track 34 : Tourach\_39
- Track 35 : Claus\_39, DHan\_40
- Track 36 : Vetrix\_39
- Track 37 : LilDestine\_39
- Track 38 : Bazzle\_39
- Track 39 : Finemlucis\_39
- Track 40 : MkaliMitinis3\_39
- Track 41 : Rossetti\_39
- Track 42 : Lewan\_39
- Track 43 : ZhongYanYuan\_38
- Track 44 : Nicholas\_37, Red305\_37, Samty\_37, Lumos\_37, Jubie\_37, Clautastrophe\_37, Finnry\_37, MsGreen\_37, Snenia\_37, Jobypre\_37, Kingsolomon\_37, TriFive\_37, Moostard\_37
- Track 45 : MiniLon\_37, MiniMac\_37, Lolly9\_37
- Track 46 : Bellis\_37
- Track 47 : Krypton555\_37
- Track 48 : DuncansLeg\_37, LiyuLake\_37, BourbonZero\_36, Ellson\_37
- Track 49 : Whirlwind\_38
- Track 50 : KirDoubleO7\_35
- Track 51 : ChutneyChips\_36
- Track 52 : DyoEdafos\_38, Kropertea\_36
- Track 53 : Chaser\_36
- Track 54 : Bromden\_38
- Track 55 : Douzhi\_36
- Track 56 : Quby\_36
- Track 57 : Douge\_36, PYPDinur\_36, BrainDrainer\_37

- Track 58 : Sheng711\_36, FarmResident\_36
- Track 59 : Aegeus\_42, Baudelaire\_42
- Track 60 : Stellammi\_60
- Track 61 : Nebkiss\_67, Gaia\_67

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

The start number called the most often in the published annotations is 17, it was called in 118 of the 247 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 244\_55, ABCat\_52, Adnama\_58, Amao\_54, AmericanBeauty\_58, Asriel\_54, BaboJay\_50, BadStone\_52, Balomoji\_53, Barbarian\_54, Bask21\_55, Becksu\_55, Bench\_56, BigBubba\_55, BilboSwaggins\_53, Brewer\_48, Bruin\_50, Buck\_55, BugsBunny\_55, Cactus\_56, ChosenOne\_55, ChotaBhai\_54, Cjw1\_54, Command613\_56, Contagion\_51, Cookies\_51, CrystalP\_54, Czystoczon1\_55, Daikon\_55, DoctorDiddles\_54, DrDrey\_54, Dumbo\_54, Dusk\_52, Easy2Say\_55, Elite2014\_54, Elph10\_54, Eureka\_52, FairyPath\_53, Filch\_55, FireRed\_57, FoghornLeghorn\_49, Gage\_57, Gator\_52, Gemini\_58, Glexan\_52, Goku\_52, Goldilocks\_56, GooberAzure\_57, HanKaySha\_53, Harella\_54, Henry\_53, Highbury\_55, Holt\_59, Hoonter\_57, Hopey\_54, HuffyPuff\_56, IHOP\_52, Icee\_54, Inca\_51, JeTaime\_55, Kanye\_50, Kimchi\_57, Lilac\_57, Lilizi\_54, Lilpickle\_54, MISSy\_54, MPhalcon\_54, MadamMonkfish\_54, Manda\_54, Marshmallow\_53, Maxxinista\_57, Mindy\_53, Miniwave\_51, Misfit\_56, Moldemort\_57, Mosby\_50, Murica\_56, Murphy\_56, Myrale\_54, Nala\_55, NelitzaMV\_51, Nimrod\_57, NoSleep\_56, NonchalantPear\_54, OrionPax\_53, PaddyBaddy\_54, Paperbeatsrock\_53, Phaja\_52, Pharsalus\_52, PhatBacter\_57, Phaux\_56, Phrux\_52, Policronamos\_57, Porky\_53, Pumpkin\_56, Quallification\_55, Rimmer\_55, RiverMonster\_55, Saints25\_55, Sassay\_48, ShamWow\_54, ShereKhan\_52, Simpliphy\_53, SophKB\_51, Sotrice96\_55, Stank\_58, Stark\_55, StellaBean\_52, StolenFromERC\_57, Tarkin\_53, TeardropMSU\_50, Terminus\_56, Thimble\_56, Thresher\_57, Tomaszewski\_50, Traaww1\_50, Tuco\_55, Ukulele\_51, Wiggin\_56, Willez\_48, Xandras\_54, Youngblood\_56, xkcd\_58,

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

- Argent26\_57, Bogg\_54, Emmina\_54, Flypotenuse\_49, GoldenSpark\_57, Greep\_58, Kostya\_55, Liveloughbron\_58, MollyToe\_49, Palpatine\_57, Pat3\_52, Petra64142\_59, Ptowny\_53, Rakim\_56, SirDuracell\_53, StormChicken\_56, TBrady12\_57, TeamEdward\_56, Teaspoon\_55, Toto\_53, YassJohnny\_50,

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

- Acolyte\_68, Acquire49\_37, Aegeus\_42, Agent47\_41, Appletree2\_36, Archie\_39, AvadaKedavra\_37, BananenDer11\_41, Baoshan\_38, Baudelaire\_42, Bazzle\_39, Bellis\_37, BigCheese\_39, Bobquesha\_47, BobsGarage\_39, Boilgate\_41, BourbonZero\_36, BrainDrainer\_37, Breezona\_39, Bromden\_38, Budgie\_61, Calm\_37, Chancellor\_46, Chaser\_36, Cheetobro\_46, ChutneyChips\_36, CicholasNage\_37, Claus\_39, Clautastrophe\_37, Collard\_40, Crossroads\_39, DHan\_40, DanBing\_39, DanSyl44\_50, DirkDirk\_36, DoubleChamp\_40, Douge\_36, Douzhi\_36, DrSeegs\_39, DuncansLeg\_37, DyoEdafos\_38, Ellson\_37, Enceladus\_36, Eponine\_48, Faith1\_39, FarmResident\_36, Finemlucis\_39, Finrny\_37,

Fionnbharth\_46, Gabriela\_39, Gaia\_67, Gardann\_39, GuuelaD\_39, Hafay\_39, Halena\_36, InvictusManeo\_40, JF1\_46, Jobypre\_37, JoeDirt\_36, Jubie\_37, Juliette\_48, Kahlid\_39, Kingsolomon\_37, KirDoubleO7\_35, Kraw\_46, Kropertea\_36, Krypton555\_37, LeBron\_37, Lebo14\_46, Lewan\_39, LilDestine\_39, LilDirt\_40, LiyuLake\_37, Loadrie\_39, Lolly9\_37, Lumos\_37, Lynnae\_39, MAckerman\_37, MalagasyRose\_43, Malthus\_47, Miley16\_39, MiniLon\_37, MiniMac\_37, MissDaisy\_44, Mitti\_46, MkaliMitinis3\_39, Moostard\_37, MsGreen\_37, Nebkiss\_67, Netyap\_39, Nibb\_44, Nicholas\_37, Nicholasp3\_39, OhShagHennessy\_36, OmniCritical\_45, Omnicron\_43, OverPar\_40, PYPDinur\_36, Patt\_43, Phrappuccino\_39, Poochiewood\_36, Qhanda\_48, Quby\_36, Rando14\_42, Red305\_37, Reptar3000\_44, Rose5\_36, Rossetti\_39, Rumpelstiltskin\_39, Ruthiejr\_47, SamScheppers\_45, Samty\_37, Sarshaun\_39, Settecandela\_39, Sheng711\_36, Silverleaf\_36, Slarp\_46, Snenia\_37, SoJulia\_40, Soap141\_39, Stellammi\_60, Taquito\_46, Tourach\_39, TriFive\_37, Tyson\_36, UPIE\_37, Underpass\_39, Vetrix\_39, ViviJ\_40, Wamburggrxpress\_37, Whirlwind\_38, Wigglewiggles\_39, Wilder\_39, Winky\_39, Wintermute\_46, Wyatt2\_37, Y10\_45, Y2\_45, YasnayaPolyana\_46, Zakai\_39, Zaria\_37, ZhongYanYuan\_38,

### Summary by start number:

#### Start 5:

- Found in 15 of 286 ( 5.2% ) of genes in pham
- Manual Annotations of this start: 1 of 247
- Called 6.7% of time when present
- Phage (with cluster) where this start called: Bellis\_37 (L3),

#### Start 10:

- Found in 2 of 286 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 247
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Whirlwind\_38 (L3),

#### Start 14:

- Found in 2 of 286 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 2 of 247
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gaia\_67 (X), Nebkiss\_67 (X),

#### Start 15:

- Found in 76 of 286 ( 26.6% ) of genes in pham
- Manual Annotations of this start: 53 of 247
- Called 92.1% of time when present
- Phage (with cluster) where this start called: Archie\_39 (L2), Baoshan\_38 (L2), Bazzle\_39 (L2), BigCheese\_39 (L2), BobsGarage\_39 (L2), BourbonZero\_36 (L3), BrainDrainer\_37 (L4), Breezona\_39 (L2), Bromden\_38 (L4), Chaser\_36 (L4), ChutneyChips\_36 (L4), Claus\_39 (L2), Clautastrophe\_37 (L3), Crossroads\_39 (L2), DHan\_40 (L2), DanBing\_39 (L2), Douge\_36 (L4), Douzhi\_36 (L4), DrSeegs\_39 (L2), DuncansLeg\_37 (L3), DyoEdafos\_38 (L4), Ellson\_37 (L3), Faith1\_39 (L2), Finemlucis\_39 (L2), Finnry\_37 (L3), Gabriela\_39 (L2), Gardann\_39 (L2), GuuelaD\_39 (L2), Hafay\_39 (L2), Jobypre\_37 (L3), Jubie\_37 (L3), Kahlid\_39 (L2), Kingsolomon\_37 (L3), Kropertea\_36 (L4), Krypton555\_37 (L3), Lewan\_39 (L2), LilDestine\_39 (L2), LiyuLake\_37 (L3), Loadrie\_39 (L2), Lolly9\_37 (L3), Lumos\_37 (L3), Lynnae\_39 (L2), Miley16\_39 (L2), MiniLon\_37 (L3), MiniMac\_37 (L3),

MkaliMitinis3\_39 (L2), Moostard\_37 (L3), MsGreen\_37 (L3), Netyap\_39 (L2), Nicholas\_37 (L3), Nicholasp3\_39 (L2), OverPar\_40 (L2), PYPDinur\_36 (L4), Quby\_36 (L4), Red305\_37 (L3), Rumpelstiltskin\_39 (L2), Samty\_37 (L3), Sarshaun\_39 (L2), Snenia\_37 (L3), SoJulia\_40 (L2), Soap141\_39 (L2), Tourach\_39 (L2), TriFive\_37 (L3), Underpass\_39 (L2), Vetrix\_39 (L2), Wigglewiggle\_39 (L2), Wilder\_39 (L2), Winky\_39 (L2), Zakai\_39 (L2), ZhongYanYuan\_38 (L2),

Start 16:

- Found in 20 of 286 ( 7.0% ) of genes in pham
- Manual Annotations of this start: 19 of 247
- Called 95.0% of time when present
- Phage (with cluster) where this start called: Acquire49\_37 (L1), Appletree2\_36 (L1), AvadaKedavra\_37 (L1), Calm\_37 (L1), CicholasNage\_37 (L1), DirkDirk\_36 (L1), Enceladus\_36 (L1), Halena\_36 (L1), JoeDirt\_36 (L1), LeBron\_37 (L1), MAckerman\_37 (L1), OhShagHennessy\_36 (L1), Rose5\_36 (L1), Silverleaf\_36 (L1), Tyson\_36 (L1), UPIE\_37 (L1), Wamburgxpress\_37 (L1), Wyatt2\_37 (L1), Zaria\_37 (L1),

Start 17:

- Found in 144 of 286 ( 50.3% ) of genes in pham
- Manual Annotations of this start: 118 of 247
- Called 85.4% of time when present
- Phage (with cluster) where this start called: 244\_55 (E), ABCat\_52 (E), Adnama\_58 (E), Amao\_54 (E), AmericanBeauty\_58 (E), Asriel\_54 (E), BaboJay\_50 (E), BadStone\_52 (E), Balomoji\_53 (E), Barbarian\_54 (E), Bask21\_55 (E), Becksu\_55 (E), Bench\_56 (E), BigBubba\_55 (E), BilboSwaggins\_53 (E), Brewer\_48 (E), Bruin\_50 (E), Buck\_55 (E), BugsBunny\_55 (E), Cactus\_56 (E), ChosenOne\_55 (E), ChotaBhai\_54 (E), Cjw1\_54 (E), Command613\_56 (E), Contagion\_51 (E), Cookies\_51 (E), CrystalP\_54 (E), Czystczon1\_55 (E), Daikon\_55 (E), DoctorDiddles\_54 (E), DrDrey\_54 (E), Dumbo\_54 (E), Dusk\_52 (E), Easy2Say\_55 (E), Elite2014\_54 (E), Elph10\_54 (E), Eureka\_52 (E), FairyPath\_53 (E), Filch\_55 (E), FireRed\_57 (E), FoghornLeghorn\_49 (E), Gage\_57 (E), Gator\_52 (E), Gemini\_58 (E), Glexan\_52 (E), Goku\_52 (E), Goldilocks\_56 (E), GooberAzure\_57 (E), HanKaySha\_53 (E), Harella\_54 (E), Henry\_53 (E), Highbury\_55 (E), Holt\_59 (E), Hoonter\_57 (E), Hopey\_54 (E), HufflyPuff\_56 (E), IHOP\_52 (E), Icee\_54 (E), Inca\_51 (E), JeTaime\_55 (E), Kanye\_50 (E), Kimchi\_57 (E), Lilac\_57 (E), Lilizi\_54 (E), Lilpickle\_54 (E), MISSy\_54 (E), MPhalcon\_54 (E), MadamMonkfish\_54 (E), Manda\_54 (E), Marshmallow\_53 (E), Maxxinista\_57 (E), Mindy\_53 (E), Miniwave\_51 (E), Misfit\_56 (E), Moldemort\_57 (E), Mosby\_50 (E), Murica\_56 (E), Murphy\_56 (E), Myrale\_54 (E), Nala\_55 (E), NelitzaMV\_51 (E), Nimrod\_57 (E), NoSleep\_56 (E), NonchalantPear\_54 (E), OrionPax\_53 (E), PaddyBaddy\_54 (E), Paperbeatsrock\_53 (E), Phaja\_52 (E), Pharsalus\_52 (E), PhatBacter\_57 (E), Phaux\_56 (E), Phrux\_52 (E), Policronamos\_57 (E), Porky\_53 (E), Pumpkin\_56 (E), Quallification\_55 (E), Rimmer\_55 (E), RiverMonster\_55 (E), Saints25\_55 (E), Sassay\_48 (E), ShamWow\_54 (E), ShereKhan\_52 (E), Simpliphy\_53 (E), SophKB\_51 (E), Sotrice96\_55 (E), Stank\_58 (E), Stark\_55 (E), StellaBean\_52 (E), StolenFromERC\_57 (E), Tarkin\_53 (E), TeardropMSU\_50 (E), Terminus\_56 (E), Thimble\_56 (E), Thresher\_57 (E), Tomaszewski\_50 (E), Traaww1\_50 (E), Tuco\_55 (E), Ukulele\_51 (E), Wigg\_56 (E), Willez\_48 (E), Xandras\_54 (E), Youngblood\_56 (E), xkcd\_58 (E),

Start 20:

- Found in 36 of 286 ( 12.6% ) of genes in pham

- No Manual Annotations of this start.
- Called 2.8% of time when present
- Phage (with cluster) where this start called: Poochiewood\_36 (L1),

#### Start 21:

- Found in 9 of 286 ( 3.1% ) of genes in pham
- Manual Annotations of this start: 8 of 247
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agent47\_41 (K5), BananenDer11\_41 (K5), Collard\_40 (K5), DoubleChamp\_40 (K5), InvictusManeo\_40 (K5), LilDirt\_40 (K5), Omnicron\_43 (K5), Rando14\_42 (K5), ViviJ\_40 (K5),

#### Start 23:

- Found in 178 of 286 ( 62.2% ) of genes in pham
- Manual Annotations of this start: 39 of 247
- Called 25.3% of time when present
- Phage (with cluster) where this start called: Aegeus\_42 (L5), Argent26\_57 (E), Baudelaire\_42 (L5), Bobquesha\_47 (K4), Boilgate\_41 (K8), Budgie\_61 (E), Chancellor\_46 (K4), Cheetobro\_46 (K4), DanSyl44\_50 (K4), Emmina\_54 (E), Eponine\_48 (K4), Fionnbharth\_46 (K4), Flypotenuse\_49 (E), GoldenSpark\_57 (E), JF1\_46 (K4), Juliette\_48 (K4), Kostya\_55 (E), Kraw\_46 (K4), MalagasyRose\_43 (AG), Malthus\_47 (K4), MissDaisy\_44 (K4), Mitti\_46 (K4), OmniCritical\_45 (K4), Palpatine\_57 (E), Patt\_43 (K4), Petra64142\_59 (E), Phrappuccino\_39 (AA), Ptowny\_53 (E), Qhanda\_48 (K4), Rakim\_56 (E), Reptar3000\_44 (K4), Ruthiejr\_47 (K4), SamScheppers\_45 (K4), Settecandela\_39 (AA), SirDuracell\_53 (E), Slarp\_46 (K4), Stellammi\_60 (UNK), StormChicken\_56 (E), TBrady12\_57 (E), Teaspoon\_55 (E), Toto\_53 (E), Wintermute\_46 (K4), Y10\_45 (K4), Y2\_45 (K4), YassJohnny\_50 (E),

#### Start 24:

- Found in 20 of 286 ( 7.0% ) of genes in pham
- Manual Annotations of this start: 1 of 247
- Called 5.0% of time when present
- Phage (with cluster) where this start called: Lebo14\_46 (K4),

#### Start 25:

- Found in 1 of 286 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 247
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Acolyte\_68 (A2),

#### Start 26:

- Found in 2 of 286 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 247
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Nibb\_44 (K1),

#### Start 31:

- Found in 146 of 286 ( 51.0% ) of genes in pham
- Manual Annotations of this start: 1 of 247
- Called 0.7% of time when present
- Phage (with cluster) where this start called: Pat3\_52 (E),

#### Start 39:

- Found in 12 of 286 ( 4.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 16.7% of time when present
- Phage (with cluster) where this start called: FarmResident\_36 (L4), Sheng711\_36 (L4),

Start 40:

- Found in 17 of 286 ( 5.9% ) of genes in pham
- Manual Annotations of this start: 1 of 247
- Called 5.9% of time when present
- Phage (with cluster) where this start called: Taquito\_46 (K4),

Start 44:

- Found in 37 of 286 ( 12.9% ) of genes in pham
- Manual Annotations of this start: 1 of 247
- Called 2.7% of time when present
- Phage (with cluster) where this start called: YasnayaPolyana\_46 (K4),

Start 51:

- Found in 157 of 286 ( 54.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 3.2% of time when present
- Phage (with cluster) where this start called: Bogg\_54 (E), Greep\_58 (E), Liveloughbron\_58 (E), MollyToe\_49 (E), TeamEdward\_56 (E),

Start 53:

- Found in 49 of 286 ( 17.1% ) of genes in pham
- No Manual Annotations of this start.
- Called 2.0% of time when present
- Phage (with cluster) where this start called: Rossetti\_39 (L2),

Start 57:

- Found in 26 of 286 ( 9.1% ) of genes in pham
- No Manual Annotations of this start.
- Called 3.8% of time when present
- Phage (with cluster) where this start called: KirDoubleO7\_35 (L3),

**Summary by clusters:**

There are 15 clusters represented in this pham: AA, UNK, E, AG, L1, K1, L5, L4, A2, L2, L3, K5, K4, X, K8,

Info for manual annotations of cluster A2:

- Start number 25 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster AA:

- Start number 23 was manually annotated 2 times for cluster AA.

Info for manual annotations of cluster AG:

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

Info for manual annotations of cluster E:

- Start number 17 was manually annotated 118 times for cluster E.

- Start number 23 was manually annotated 13 times for cluster E.
- Start number 31 was manually annotated 1 time for cluster E.

Info for manual annotations of cluster K1:

- Start number 26 was manually annotated 1 time for cluster K1.

Info for manual annotations of cluster K4:

- Start number 23 was manually annotated 19 times for cluster K4.
- Start number 24 was manually annotated 1 time for cluster K4.
- Start number 40 was manually annotated 1 time for cluster K4.
- Start number 44 was manually annotated 1 time for cluster K4.

Info for manual annotations of cluster K5:

- Start number 21 was manually annotated 8 times for cluster K5.

Info for manual annotations of cluster K8:

- Start number 23 was manually annotated 1 time for cluster K8.

Info for manual annotations of cluster L1:

- Start number 16 was manually annotated 19 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 15 was manually annotated 30 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 5 was manually annotated 1 time for cluster L3.
- Start number 10 was manually annotated 1 time for cluster L3.
- Start number 15 was manually annotated 17 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 15 was manually annotated 6 times for cluster L4.

Info for manual annotations of cluster L5:

- Start number 23 was manually annotated 2 times for cluster L5.

Info for manual annotations of cluster UNK:

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

Info for manual annotations of cluster X:

- Start number 14 was manually annotated 2 times for cluster X.

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

Gene: 244\_55 Start: 39721, Stop: 38948, Start Num: 17

Candidate Starts for 244\_55:

(Start: 17 @39721 has 118 MA's), (Start: 23 @39697 has 39 MA's), (Start: 31 @39667 has 1 MA's), (51, 39559), (67, 39463), (85, 39382), (91, 39358), (93, 39349), (95, 39340), (118, 39235), (120, 39229), (121, 39223), (157, 39079), (159, 39067), (167, 39043), (187, 38956),

Gene: ABCat\_52 Start: 40367, Stop: 39594, Start Num: 17

Candidate Starts for ABCat\_52:

(Start: 17 @40367 has 118 MA's), (Start: 23 @40343 has 39 MA's), (Start: 31 @40313 has 1 MA's), (51, 40205), (67, 40109), (85, 40028), (91, 40004), (93, 39995), (95, 39986), (118, 39881), (120, 39875), (121, 39869), (157, 39725), (167, 39689), (187, 39602),

Gene: Acolyte\_68 Start: 43894, Stop: 44586, Start Num: 25

Candidate Starts for Acolyte\_68:

(Start: 25 @43894 has 1 MA's), (51, 44026), (52, 44038), (66, 44119), (69, 44128), (74, 44149), (79, 44167), (93, 44239), (94, 44242), (97, 44254), (99, 44263), (116, 44335), (121, 44356), (123, 44362), (127, 44380), (128, 44383), (147, 44464), (165, 44518),

Gene: Acquire49\_37 Start: 32374, Stop: 31592, Start Num: 16

Candidate Starts for Acquire49\_37:

(Start: 16 @32374 has 19 MA's), (20, 32356), (71, 32089), (77, 32062), (78, 32059), (84, 32029), (85, 32017), (90, 31996), (103, 31948), (125, 31855), (132, 31819), (157, 31729), (171, 31675),

Gene: Adnama\_58 Start: 40390, Stop: 39617, Start Num: 17

Candidate Starts for Adnama\_58:

(Start: 17 @40390 has 118 MA's), (Start: 23 @40366 has 39 MA's), (Start: 31 @40336 has 1 MA's), (51, 40228), (67, 40132), (85, 40051), (91, 40027), (93, 40018), (95, 40009), (118, 39904), (120, 39898), (121, 39892), (157, 39748), (159, 39736), (167, 39712), (187, 39625),

Gene: Aegeus\_42 Start: 36206, Stop: 35445, Start Num: 23

Candidate Starts for Aegeus\_42:

(Start: 23 @36206 has 39 MA's), (34, 36155), (42, 36104), (51, 36068), (73, 35954), (92, 35861), (93, 35858), (108, 35798), (114, 35765), (117, 35753), (128, 35711), (130, 35705), (155, 35606), (164, 35573),

Gene: Agent47\_41 Start: 34000, Stop: 33149, Start Num: 21

Candidate Starts for Agent47\_41:

(Start: 21 @34000 has 8 MA's), (45, 33871), (53, 33829), (74, 33730), (77, 33718), (86, 33670), (93, 33640), (98, 33622), (104, 33586), (136, 33427), (142, 33412), (145, 33400), (153, 33367), (156, 33358), (159, 33340), (162, 33334), (166, 33319), (177, 33271), (181, 33250),

Gene: Amao\_54 Start: 39485, Stop: 38712, Start Num: 17

Candidate Starts for Amao\_54:

(Start: 17 @39485 has 118 MA's), (Start: 23 @39461 has 39 MA's), (Start: 31 @39431 has 1 MA's), (51, 39323), (67, 39227), (85, 39146), (91, 39122), (93, 39113), (95, 39104), (118, 38999), (120, 38993), (121, 38987), (157, 38843), (159, 38831), (167, 38807), (187, 38720),

Gene: AmericanBeauty\_58 Start: 40235, Stop: 39462, Start Num: 17

Candidate Starts for AmericanBeauty\_58:

(Start: 17 @40235 has 118 MA's), (Start: 23 @40211 has 39 MA's), (Start: 31 @40181 has 1 MA's), (51, 40073), (67, 39977), (85, 39896), (91, 39872), (93, 39863), (95, 39854), (118, 39749), (120, 39743), (121, 39737), (157, 39593), (159, 39581), (167, 39557), (187, 39470),

Gene: Appletree2\_36 Start: 32316, Stop: 31534, Start Num: 16

Candidate Starts for Appletree2\_36:

(Start: 16 @32316 has 19 MA's), (20, 32298), (71, 32031), (77, 32004), (78, 32001), (84, 31971), (85, 31959), (90, 31938), (103, 31890), (125, 31797), (132, 31761), (157, 31671), (171, 31617),

Gene: Archie\_39 Start: 33946, Stop: 33167, Start Num: 15

Candidate Starts for Archie\_39:

(Start: 15 @33946 has 53 MA's), (27, 33889), (48, 33778), (53, 33751), (65, 33679), (66, 33673), (77, 33631), (88, 33574), (89, 33568), (157, 33307), (158, 33298), (171, 33253),

Gene: Argent26\_57 Start: 39849, Stop: 39100, Start Num: 23

Candidate Starts for Argent26\_57:

(Start: 17 @39873 has 118 MA's), (Start: 23 @39849 has 39 MA's), (Start: 31 @39819 has 1 MA's), (51, 39711), (67, 39615), (85, 39534), (91, 39510), (93, 39501), (95, 39492), (118, 39387), (120, 39381), (121, 39375), (157, 39231), (159, 39219), (167, 39195), (187, 39108),

Gene: Asriel\_54 Start: 38727, Stop: 37954, Start Num: 17

Candidate Starts for Asriel\_54:

(Start: 17 @38727 has 118 MA's), (Start: 23 @38703 has 39 MA's), (Start: 31 @38673 has 1 MA's), (51, 38565), (67, 38469), (85, 38388), (91, 38364), (93, 38355), (95, 38346), (118, 38241), (120, 38235), (121, 38229), (157, 38085), (159, 38073), (167, 38049), (187, 37962),

Gene: AvadaKedavra\_37 Start: 32383, Stop: 31601, Start Num: 16

Candidate Starts for AvadaKedavra\_37:

(Start: 16 @32383 has 19 MA's), (20, 32365), (71, 32098), (77, 32071), (78, 32068), (84, 32038), (85, 32026), (90, 32005), (103, 31957), (125, 31864), (132, 31828), (157, 31738), (171, 31684),

Gene: BaboJay\_50 Start: 39273, Stop: 38500, Start Num: 17

Candidate Starts for BaboJay\_50:

(Start: 17 @39273 has 118 MA's), (Start: 23 @39249 has 39 MA's), (Start: 31 @39219 has 1 MA's), (51, 39111), (67, 39015), (85, 38934), (91, 38910), (93, 38901), (95, 38892), (118, 38787), (120, 38781), (121, 38775), (157, 38631), (159, 38619), (167, 38595), (187, 38508),

Gene: BadStone\_52 Start: 39936, Stop: 39163, Start Num: 17

Candidate Starts for BadStone\_52:

(Start: 17 @39936 has 118 MA's), (Start: 23 @39912 has 39 MA's), (Start: 31 @39882 has 1 MA's), (51, 39774), (67, 39678), (85, 39597), (91, 39573), (93, 39564), (95, 39555), (118, 39450), (120, 39444), (121, 39438), (157, 39294), (159, 39282), (167, 39258), (187, 39171),

Gene: Balomoji\_53 Start: 40204, Stop: 39431, Start Num: 17

Candidate Starts for Balomoji\_53:

(Start: 17 @40204 has 118 MA's), (Start: 23 @40180 has 39 MA's), (Start: 31 @40150 has 1 MA's), (51, 40042), (67, 39946), (85, 39865), (91, 39841), (93, 39832), (95, 39823), (118, 39718), (120, 39712), (121, 39706), (157, 39562), (159, 39550), (167, 39526), (187, 39439),

Gene: BananenDer11\_41 Start: 33961, Stop: 33110, Start Num: 21

Candidate Starts for BananenDer11\_41:

(Start: 21 @33961 has 8 MA's), (45, 33832), (53, 33790), (74, 33691), (77, 33679), (86, 33631), (93, 33601), (98, 33583), (104, 33547), (136, 33388), (142, 33373), (145, 33361), (153, 33328), (156, 33319), (159, 33301), (162, 33295), (166, 33280), (177, 33232), (181, 33211),

Gene: Baoshan\_38 Start: 33577, Stop: 32798, Start Num: 15

Candidate Starts for Baoshan\_38:

(Start: 15 @33577 has 53 MA's), (27, 33520), (46, 33421), (51, 33400), (53, 33382), (65, 33310), (66, 33304), (77, 33262), (87, 33211), (89, 33199), (91, 33193), (93, 33184), (116, 33088), (152, 32956), (171, 32884),

Gene: Barbarian\_54 Start: 38727, Stop: 37954, Start Num: 17

Candidate Starts for Barbarian\_54:

(Start: 17 @38727 has 118 MA's), (Start: 23 @38703 has 39 MA's), (Start: 31 @38673 has 1 MA's), (51, 38565), (67, 38469), (85, 38388), (91, 38364), (93, 38355), (95, 38346), (118, 38241), (120, 38235), (121, 38229), (157, 38085), (159, 38073), (167, 38049), (187, 37962),

Gene: Bask21\_55 Start: 39043, Stop: 38288, Start Num: 17

Candidate Starts for Bask21\_55:

(Start: 17 @39043 has 118 MA's), (Start: 23 @39019 has 39 MA's), (Start: 31 @38989 has 1 MA's), (51, 38881), (67, 38785), (85, 38704), (91, 38680), (118, 38575), (120, 38569), (121, 38563), (157, 38419), (159, 38407), (167, 38383), (187, 38296),

Gene: Baudelaire\_42 Start: 36206, Stop: 35445, Start Num: 23

Candidate Starts for Baudelaire\_42:

(Start: 23 @36206 has 39 MA's), (34, 36155), (42, 36104), (51, 36068), (73, 35954), (92, 35861), (93, 35858), (108, 35798), (114, 35765), (117, 35753), (128, 35711), (130, 35705), (155, 35606), (164, 35573),

Gene: Bazzle\_39 Start: 33979, Stop: 33200, Start Num: 15

Candidate Starts for Bazzle\_39:

(Start: 15 @33979 has 53 MA's), (27, 33922), (53, 33784), (60, 33736), (65, 33712), (66, 33706), (77, 33664), (89, 33601), (131, 33424), (157, 33340), (158, 33331), (171, 33286),

Gene: Becksu\_55 Start: 40270, Stop: 39497, Start Num: 17

Candidate Starts for Becksu\_55:

(Start: 17 @40270 has 118 MA's), (Start: 23 @40246 has 39 MA's), (Start: 31 @40216 has 1 MA's), (51, 40108), (67, 40012), (85, 39931), (91, 39907), (93, 39898), (95, 39889), (118, 39784), (120, 39778), (121, 39772), (157, 39628), (159, 39616), (167, 39592), (187, 39505),

Gene: Bellis\_37 Start: 34070, Stop: 33189, Start Num: 5

Candidate Starts for Bellis\_37:

(Start: 5 @34070 has 1 MA's), (9, 34028), (Start: 15 @33980 has 53 MA's), (20, 33962), (29, 33926), (Start: 44 @33842 has 1 MA's), (47, 33830), (57, 33779), (59, 33770), (66, 33719), (68, 33713), (93, 33602), (119, 33488), (126, 33461), (137, 33404), (168, 33290), (180, 33236), (186, 33203),

Gene: Bench\_56 Start: 39705, Stop: 38932, Start Num: 17

Candidate Starts for Bench\_56:

(Start: 17 @39705 has 118 MA's), (Start: 23 @39681 has 39 MA's), (Start: 31 @39651 has 1 MA's), (51, 39543), (67, 39447), (85, 39366), (91, 39342), (93, 39333), (95, 39324), (118, 39219), (120, 39213), (121, 39207), (157, 39063), (159, 39051), (167, 39027), (187, 38940),

Gene: BigBubba\_55 Start: 39746, Stop: 38973, Start Num: 17

Candidate Starts for BigBubba\_55:

(Start: 17 @39746 has 118 MA's), (Start: 23 @39722 has 39 MA's), (Start: 31 @39692 has 1 MA's), (51, 39584), (67, 39488), (85, 39407), (91, 39383), (93, 39374), (95, 39365), (118, 39260), (120, 39254), (121, 39248), (157, 39104), (159, 39092), (167, 39068), (187, 38981),

Gene: BigCheese\_39 Start: 33739, Stop: 32960, Start Num: 15

Candidate Starts for BigCheese\_39:

(Start: 15 @33739 has 53 MA's), (27, 33682), (41, 33610), (46, 33583), (53, 33544), (65, 33472), (66, 33466), (77, 33424), (114, 33256), (131, 33184), (158, 33091), (160, 33085), (171, 33046),

Gene: BilboSwaggins\_53 Start: 40375, Stop: 39602, Start Num: 17

Candidate Starts for BilboSwaggins\_53:

(Start: 17 @40375 has 118 MA's), (Start: 23 @40351 has 39 MA's), (Start: 31 @40321 has 1 MA's), (51, 40213), (67, 40117), (85, 40036), (91, 40012), (93, 40003), (95, 39994), (118, 39889), (120, 39883), (121, 39877), (157, 39733), (159, 39721), (167, 39697), (187, 39610),

Gene: Bobquesha\_47 Start: 34969, Stop: 34178, Start Num: 23

Candidate Starts for Bobquesha\_47:

(Start: 23 @34969 has 39 MA's), (30, 34942), (36, 34912), (37, 34903), (57, 34798), (61, 34765), (70, 34729), (72, 34723), (74, 34711), (75, 34708), (77, 34699), (83, 34669), (93, 34624), (97, 34609), (122, 34501), (130, 34471), (133, 34444), (142, 34417), (149, 34387), (175, 34291), (182, 34261),

Gene: BobsGarage\_39 Start: 33739, Stop: 32960, Start Num: 15

Candidate Starts for BobsGarage\_39:

(Start: 15 @33739 has 53 MA's), (27, 33682), (41, 33610), (46, 33583), (53, 33544), (65, 33472), (66, 33466), (77, 33424), (114, 33256), (131, 33184), (158, 33091), (160, 33085), (171, 33046),

Gene: Bogg\_54 Start: 38857, Stop: 38246, Start Num: 51

Candidate Starts for Bogg\_54:

(Start: 17 @39019 has 118 MA's), (Start: 23 @38995 has 39 MA's), (Start: 31 @38965 has 1 MA's), (51, 38857), (67, 38761), (85, 38680), (91, 38656), (93, 38647), (95, 38638), (118, 38533), (120, 38527), (121, 38521), (157, 38377), (159, 38365), (167, 38341), (187, 38254),

Gene: Boilgate\_41 Start: 35761, Stop: 34991, Start Num: 23

Candidate Starts for Boilgate\_41:

(Start: 23 @35761 has 39 MA's), (27, 35743), (33, 35719), (34, 35710), (38, 35689), (Start: 44 @35650 has 1 MA's), (53, 35605), (57, 35590), (70, 35521), (72, 35515), (74, 35503), (83, 35461), (93, 35416), (108, 35350), (127, 35266), (135, 35221), (142, 35203), (154, 35158), (169, 35107), (175, 35080), (178, 35071), (184, 35041), (190, 34996),

Gene: BourbonZero\_36 Start: 33952, Stop: 33161, Start Num: 15

Candidate Starts for BourbonZero\_36:

(Start: 15 @33952 has 53 MA's), (29, 33898), (52, 33775), (59, 33742), (66, 33691), (68, 33685), (93, 33574), (119, 33460), (126, 33433), (137, 33376), (146, 33349), (186, 33175),

Gene: BrainDrainer\_37 Start: 32627, Stop: 31839, Start Num: 15

Candidate Starts for BrainDrainer\_37:

(Start: 15 @32627 has 53 MA's), (27, 32570), (30, 32561), (39, 32510), (46, 32471), (50, 32453), (62, 32375), (65, 32360), (66, 32354), (77, 32312), (94, 32231), (104, 32189), (109, 32171), (129, 32087), (132, 32066), (157, 31976), (168, 31934), (171, 31922),

Gene: Breezona\_39 Start: 33739, Stop: 32960, Start Num: 15

Candidate Starts for Breezona\_39:

(Start: 15 @33739 has 53 MA's), (27, 33682), (41, 33610), (46, 33583), (53, 33544), (65, 33472), (66, 33466), (77, 33424), (114, 33256), (131, 33184), (158, 33091), (160, 33085), (171, 33046),

Gene: Brewer\_48 Start: 38535, Stop: 37762, Start Num: 17

Candidate Starts for Brewer\_48:

(Start: 17 @38535 has 118 MA's), (Start: 23 @38511 has 39 MA's), (Start: 31 @38481 has 1 MA's), (51, 38373), (67, 38277), (85, 38196), (91, 38172), (93, 38163), (95, 38154), (118, 38049), (120, 38043), (121, 38037), (157, 37893), (159, 37881), (167, 37857), (187, 37770),

Gene: Bromden\_38 Start: 33174, Stop: 32386, Start Num: 15

Candidate Starts for Bromden\_38:

(Start: 15 @33174 has 53 MA's), (27, 33117), (28, 33114), (46, 33018), (51, 32997), (52, 32985), (62, 32922), (65, 32907), (66, 32901), (77, 32859), (91, 32790), (102, 32745), (113, 32700), (125, 32649), (127, 32640), (129, 32634), (141, 32586), (144, 32574), (157, 32523), (168, 32481),

Gene: Bruin\_50 Start: 38614, Stop: 37841, Start Num: 17

Candidate Starts for Bruin\_50:

(Start: 17 @38614 has 118 MA's), (Start: 23 @38590 has 39 MA's), (Start: 31 @38560 has 1 MA's), (51, 38452), (67, 38356), (85, 38275), (91, 38251), (93, 38242), (95, 38233), (118, 38128), (120, 38122), (121, 38116), (157, 37972), (159, 37960), (167, 37936), (187, 37849),

Gene: Buck\_55 Start: 40321, Stop: 39548, Start Num: 17

Candidate Starts for Buck\_55:

(Start: 17 @40321 has 118 MA's), (Start: 23 @40297 has 39 MA's), (Start: 31 @40267 has 1 MA's), (51, 40159), (67, 40063), (85, 39982), (91, 39958), (93, 39949), (95, 39940), (118, 39835), (120, 39829), (121, 39823), (157, 39679), (159, 39667), (167, 39643), (187, 39556),

Gene: Budgie\_61 Start: 40856, Stop: 40104, Start Num: 23

Candidate Starts for Budgie\_61:

(12, 40898), (Start: 23 @40856 has 39 MA's), (Start: 26 @40841 has 1 MA's), (34, 40805), (47, 40733), (56, 40685), (57, 40682), (66, 40625), (67, 40622), (74, 40595), (85, 40541), (93, 40508), (115, 40406), (119, 40391), (121, 40382), (143, 40295), (150, 40265), (157, 40238), (167, 40202), (175, 40169), (181, 40145),

Gene: BugsBunny\_55 Start: 40152, Stop: 39379, Start Num: 17

Candidate Starts for BugsBunny\_55:

(Start: 17 @40152 has 118 MA's), (Start: 23 @40128 has 39 MA's), (Start: 31 @40098 has 1 MA's), (51, 39990), (67, 39894), (85, 39813), (91, 39789), (93, 39780), (95, 39771), (118, 39666), (120, 39660), (121, 39654), (157, 39510), (159, 39498), (167, 39474), (187, 39387),

Gene: Cactus\_56 Start: 39094, Stop: 38321, Start Num: 17

Candidate Starts for Cactus\_56:

(Start: 17 @39094 has 118 MA's), (Start: 23 @39070 has 39 MA's), (Start: 31 @39040 has 1 MA's), (51, 38932), (67, 38836), (85, 38755), (91, 38731), (93, 38722), (95, 38713), (118, 38608), (120, 38602), (121, 38596), (157, 38452), (159, 38440), (167, 38416), (187, 38329),

Gene: Calm\_37 Start: 32389, Stop: 31607, Start Num: 16

Candidate Starts for Calm\_37:

(Start: 16 @32389 has 19 MA's), (20, 32371), (71, 32104), (77, 32077), (78, 32074), (84, 32044), (85, 32032), (90, 32011), (103, 31963), (125, 31870), (132, 31834), (157, 31744), (171, 31690),

Gene: Chancellor\_46 Start: 35595, Stop: 34777, Start Num: 23

Candidate Starts for Chancellor\_46:

(Start: 23 @35595 has 39 MA's), (Start: 24 @35592 has 1 MA's), (27, 35577), (Start: 40 @35514 has 1 MA's), (Start: 44 @35484 has 1 MA's), (49, 35463), (56, 35427), (61, 35391), (72, 35349), (74, 35337), (75, 35334), (83, 35295), (93, 35250), (97, 35235), (105, 35199), (108, 35190), (130, 35097), (142, 35043), (147, 35019), (149, 35013), (154, 34995), (172, 34929), (178, 34908),

Gene: Chaser\_36 Start: 32444, Stop: 31656, Start Num: 15

Candidate Starts for Chaser\_36:

(Start: 15 @32444 has 53 MA's), (27, 32387), (30, 32378), (39, 32327), (46, 32288), (50, 32270), (62, 32192), (65, 32177), (66, 32171), (77, 32129), (94, 32048), (104, 32006), (109, 31988), (124, 31922), (129, 31904), (132, 31883), (157, 31793), (168, 31751), (171, 31739),

Gene: Cheetobro\_46 Start: 35592, Stop: 34774, Start Num: 23

Candidate Starts for Cheetobro\_46:

(Start: 23 @35592 has 39 MA's), (Start: 24 @35589 has 1 MA's), (27, 35574), (Start: 40 @35511 has 1 MA's), (Start: 44 @35481 has 1 MA's), (49, 35460), (56, 35424), (61, 35388), (72, 35346), (74, 35334), (75, 35331), (83, 35292), (93, 35247), (97, 35232), (105, 35196), (108, 35187), (130, 35094), (142, 35040), (147, 35016), (149, 35010), (154, 34992), (172, 34926), (178, 34905),

Gene: ChosenOne\_55 Start: 39394, Stop: 38621, Start Num: 17

Candidate Starts for ChosenOne\_55:

(Start: 17 @39394 has 118 MA's), (Start: 23 @39370 has 39 MA's), (Start: 31 @39340 has 1 MA's), (51, 39232), (67, 39136), (85, 39055), (91, 39031), (93, 39022), (95, 39013), (118, 38908), (120, 38902), (121, 38896), (157, 38752), (159, 38740), (167, 38716), (187, 38629),

Gene: ChotaBhai\_54 Start: 39416, Stop: 38643, Start Num: 17

Candidate Starts for ChotaBhai\_54:

(Start: 17 @39416 has 118 MA's), (Start: 23 @39392 has 39 MA's), (Start: 31 @39362 has 1 MA's), (51, 39254), (67, 39158), (85, 39077), (91, 39053), (93, 39044), (95, 39035), (118, 38930), (120, 38924), (121, 38918), (157, 38774), (159, 38762), (167, 38738), (187, 38651),

Gene: ChutneyChips\_36 Start: 32624, Stop: 31836, Start Num: 15

Candidate Starts for ChutneyChips\_36:

(Start: 15 @32624 has 53 MA's), (27, 32567), (35, 32531), (39, 32507), (46, 32468), (50, 32450), (61, 32375), (62, 32372), (65, 32357), (66, 32351), (74, 32321), (77, 32309), (101, 32198), (104, 32186), (109, 32168), (125, 32099), (127, 32090), (129, 32084), (130, 32081), (141, 32036), (157, 31973), (168, 31931), (171, 31919),

Gene: CicholasNage\_37 Start: 32410, Stop: 31628, Start Num: 16

Candidate Starts for CicholasNage\_37:

(Start: 16 @32410 has 19 MA's), (20, 32392), (71, 32125), (77, 32098), (78, 32095), (84, 32065), (85, 32053), (90, 32032), (103, 31984), (125, 31891), (132, 31855), (157, 31765), (171, 31711),

Gene: Cjw1\_54 Start: 40795, Stop: 40022, Start Num: 17

Candidate Starts for Cjw1\_54:

(Start: 17 @40795 has 118 MA's), (Start: 23 @40771 has 39 MA's), (Start: 31 @40741 has 1 MA's), (51, 40633), (67, 40537), (85, 40456), (91, 40432), (93, 40423), (95, 40414), (118, 40309), (120, 40303), (121, 40297), (157, 40153), (159, 40141), (167, 40117), (187, 40030),

Gene: Claus\_39 Start: 33735, Stop: 32956, Start Num: 15

Candidate Starts for Claus\_39:

(Start: 15 @33735 has 53 MA's), (27, 33678), (46, 33579), (51, 33558), (53, 33540), (65, 33468), (66, 33462), (77, 33420), (87, 33369), (89, 33357), (91, 33351), (93, 33342), (114, 33252), (116, 33246), (152, 33114),

Gene: Clautastrophe\_37 Start: 33978, Stop: 33187, Start Num: 15

Candidate Starts for Clautastrophe\_37:

(Start: 5 @34068 has 1 MA's), (9, 34026), (Start: 15 @33978 has 53 MA's), (20, 33960), (29, 33924), (Start: 44 @33840 has 1 MA's), (47, 33828), (57, 33777), (59, 33768), (66, 33717), (68, 33711), (93, 33600), (119, 33486), (126, 33459), (137, 33402), (168, 33288), (180, 33234), (186, 33201),

Gene: Collard\_40 Start: 33961, Stop: 33110, Start Num: 21

Candidate Starts for Collard\_40:

(Start: 21 @33961 has 8 MA's), (45, 33832), (53, 33790), (74, 33691), (77, 33679), (86, 33631), (93, 33601), (98, 33583), (104, 33547), (136, 33388), (142, 33373), (145, 33361), (153, 33328), (156,

33319), (159, 33301), (162, 33295), (166, 33280), (177, 33232), (181, 33211),

Gene: Command613\_56 Start: 40133, Stop: 39360, Start Num: 17

Candidate Starts for Command613\_56:

(Start: 17 @40133 has 118 MA's), (Start: 23 @40109 has 39 MA's), (Start: 31 @40079 has 1 MA's), (51, 39971), (67, 39875), (85, 39794), (91, 39770), (93, 39761), (95, 39752), (118, 39647), (120, 39641), (121, 39635), (157, 39491), (159, 39479), (167, 39455), (187, 39368),

Gene: Contagion\_51 Start: 38895, Stop: 38122, Start Num: 17

Candidate Starts for Contagion\_51:

(Start: 17 @38895 has 118 MA's), (Start: 23 @38871 has 39 MA's), (Start: 31 @38841 has 1 MA's), (51, 38733), (67, 38637), (85, 38556), (91, 38532), (93, 38523), (95, 38514), (118, 38409), (120, 38403), (121, 38397), (157, 38253), (159, 38241), (167, 38217), (187, 38130),

Gene: Cookies\_51 Start: 39266, Stop: 38493, Start Num: 17

Candidate Starts for Cookies\_51:

(Start: 17 @39266 has 118 MA's), (Start: 23 @39242 has 39 MA's), (Start: 31 @39212 has 1 MA's), (51, 39104), (67, 39008), (85, 38927), (91, 38903), (93, 38894), (95, 38885), (118, 38780), (120, 38774), (121, 38768), (157, 38624), (159, 38612), (167, 38588), (187, 38501),

Gene: Crossroads\_39 Start: 33740, Stop: 32961, Start Num: 15

Candidate Starts for Crossroads\_39:

(Start: 15 @33740 has 53 MA's), (27, 33683), (41, 33611), (53, 33545), (56, 33530), (65, 33473), (66, 33467), (77, 33425), (131, 33185), (158, 33092), (160, 33086), (171, 33047),

Gene: CrystalP\_54 Start: 40375, Stop: 39602, Start Num: 17

Candidate Starts for CrystalP\_54:

(Start: 17 @40375 has 118 MA's), (Start: 23 @40351 has 39 MA's), (Start: 31 @40321 has 1 MA's), (51, 40213), (67, 40117), (85, 40036), (91, 40012), (93, 40003), (95, 39994), (118, 39889), (120, 39883), (121, 39877), (157, 39733), (159, 39721), (167, 39697), (187, 39610),

Gene: Czyszczone1\_55 Start: 39604, Stop: 38831, Start Num: 17

Candidate Starts for Czyszczone1\_55:

(Start: 17 @39604 has 118 MA's), (Start: 23 @39580 has 39 MA's), (Start: 31 @39550 has 1 MA's), (51, 39442), (67, 39346), (85, 39265), (91, 39241), (93, 39232), (95, 39223), (118, 39118), (120, 39112), (121, 39106), (157, 38962), (159, 38950), (167, 38926), (187, 38839),

Gene: DHan\_40 Start: 33676, Stop: 32897, Start Num: 15

Candidate Starts for DHan\_40:

(Start: 15 @33676 has 53 MA's), (27, 33619), (46, 33520), (51, 33499), (53, 33481), (65, 33409), (66, 33403), (77, 33361), (87, 33310), (89, 33298), (91, 33292), (93, 33283), (114, 33193), (116, 33187), (152, 33055),

Gene: Daikon\_55 Start: 40225, Stop: 39452, Start Num: 17

Candidate Starts for Daikon\_55:

(Start: 17 @40225 has 118 MA's), (Start: 23 @40201 has 39 MA's), (Start: 31 @40171 has 1 MA's), (51, 40063), (67, 39967), (85, 39886), (91, 39862), (93, 39853), (95, 39844), (118, 39739), (120, 39733), (121, 39727), (157, 39583), (159, 39571), (167, 39547), (187, 39460),

Gene: DanBing\_39 Start: 33568, Stop: 32789, Start Num: 15

Candidate Starts for DanBing\_39:

(Start: 15 @33568 has 53 MA's), (27, 33511), (46, 33412), (51, 33391), (53, 33373), (65, 33301), (66, 33295), (77, 33253), (87, 33202), (89, 33190), (91, 33184), (93, 33175), (116, 33079), (152, 32947),

Gene: DanSyl44\_50 Start: 36636, Stop: 35818, Start Num: 23

Candidate Starts for DanSyl44\_50:

(Start: 23 @36636 has 39 MA's), (Start: 24 @36633 has 1 MA's), (27, 36618), (Start: 40 @36555 has 1 MA's), (Start: 44 @36525 has 1 MA's), (49, 36504), (56, 36468), (61, 36432), (72, 36390), (74, 36378), (75, 36375), (83, 36336), (93, 36291), (97, 36276), (105, 36240), (108, 36231), (130, 36138), (142, 36084), (147, 36060), (149, 36054), (154, 36036), (172, 35970), (178, 35949),

Gene: DirkDirk\_36 Start: 32376, Stop: 31594, Start Num: 16

Candidate Starts for DirkDirk\_36:

(Start: 16 @32376 has 19 MA's), (20, 32358), (71, 32091), (77, 32064), (78, 32061), (84, 32031), (85, 32019), (90, 31998), (103, 31950), (125, 31857), (132, 31821), (157, 31731), (171, 31677),

Gene: DoctorDiddles\_54 Start: 39452, Stop: 38679, Start Num: 17

Candidate Starts for DoctorDiddles\_54:

(Start: 17 @39452 has 118 MA's), (Start: 23 @39428 has 39 MA's), (Start: 31 @39398 has 1 MA's), (51, 39290), (67, 39194), (85, 39113), (91, 39089), (93, 39080), (95, 39071), (118, 38966), (120, 38960), (121, 38954), (157, 38810), (159, 38798), (167, 38774), (187, 38687),

Gene: DoubleChamp\_40 Start: 33961, Stop: 33110, Start Num: 21

Candidate Starts for DoubleChamp\_40:

(Start: 21 @33961 has 8 MA's), (45, 33832), (53, 33790), (74, 33691), (77, 33679), (86, 33631), (93, 33601), (98, 33583), (104, 33547), (136, 33388), (142, 33373), (145, 33361), (153, 33328), (156, 33319), (159, 33301), (162, 33295), (166, 33280), (177, 33232), (181, 33211),

Gene: Douge\_36 Start: 32382, Stop: 31594, Start Num: 15

Candidate Starts for Douge\_36:

(Start: 15 @32382 has 53 MA's), (27, 32325), (30, 32316), (39, 32265), (46, 32226), (50, 32208), (62, 32130), (65, 32115), (66, 32109), (77, 32067), (94, 31986), (104, 31944), (109, 31926), (129, 31842), (132, 31821), (157, 31731), (168, 31689), (171, 31677),

Gene: Douzhi\_36 Start: 32488, Stop: 31700, Start Num: 15

Candidate Starts for Douzhi\_36:

(Start: 15 @32488 has 53 MA's), (27, 32431), (30, 32422), (39, 32371), (46, 32332), (50, 32314), (62, 32236), (65, 32221), (66, 32215), (77, 32173), (94, 32092), (104, 32050), (109, 32032), (129, 31948), (132, 31927), (140, 31903), (157, 31837), (168, 31795), (171, 31783),

Gene: DrDrey\_54 Start: 40523, Stop: 39750, Start Num: 17

Candidate Starts for DrDrey\_54:

(Start: 17 @40523 has 118 MA's), (Start: 23 @40499 has 39 MA's), (Start: 31 @40469 has 1 MA's), (51, 40361), (67, 40265), (85, 40184), (91, 40160), (93, 40151), (95, 40142), (118, 40037), (120, 40031), (121, 40025), (157, 39881), (159, 39869), (167, 39845), (187, 39758),

Gene: DrSeegs\_39 Start: 33739, Stop: 32960, Start Num: 15

Candidate Starts for DrSeegs\_39:

(Start: 15 @33739 has 53 MA's), (27, 33682), (41, 33610), (46, 33583), (53, 33544), (65, 33472), (66, 33466), (77, 33424), (114, 33256), (131, 33184), (158, 33091), (160, 33085), (171, 33046),

Gene: Dumbo\_54 Start: 39299, Stop: 38526, Start Num: 17

Candidate Starts for Dumbo\_54:

(Start: 17 @39299 has 118 MA's), (Start: 23 @39275 has 39 MA's), (Start: 31 @39245 has 1 MA's), (51, 39137), (67, 39041), (85, 38960), (91, 38936), (93, 38927), (95, 38918), (118, 38813), (120, 38807), (121, 38801), (157, 38657), (159, 38645), (167, 38621), (187, 38534),

Gene: DuncansLeg\_37 Start: 33989, Stop: 33198, Start Num: 15

Candidate Starts for DuncansLeg\_37:

(Start: 15 @33989 has 53 MA's), (29, 33935), (52, 33812), (59, 33779), (66, 33728), (68, 33722), (93, 33611), (119, 33497), (126, 33470), (137, 33413), (146, 33386), (186, 33212),

Gene: Dusk\_52 Start: 39596, Stop: 38823, Start Num: 17

Candidate Starts for Dusk\_52:

(Start: 17 @39596 has 118 MA's), (Start: 23 @39572 has 39 MA's), (Start: 31 @39542 has 1 MA's), (51, 39434), (67, 39338), (85, 39257), (91, 39233), (93, 39224), (95, 39215), (118, 39110), (120, 39104), (121, 39098), (157, 38954), (159, 38942), (167, 38918), (187, 38831),

Gene: DyoEdafos\_38 Start: 32716, Stop: 31928, Start Num: 15

Candidate Starts for DyoEdafos\_38:

(Start: 15 @32716 has 53 MA's), (27, 32659), (39, 32599), (46, 32560), (50, 32542), (62, 32464), (65, 32449), (66, 32443), (77, 32401), (94, 32320), (101, 32290), (104, 32278), (109, 32260), (127, 32182), (129, 32176), (157, 32065), (168, 32023), (171, 32011),

Gene: Easy2Say\_55 Start: 40837, Stop: 40064, Start Num: 17

Candidate Starts for Easy2Say\_55:

(Start: 17 @40837 has 118 MA's), (Start: 23 @40813 has 39 MA's), (Start: 31 @40783 has 1 MA's), (51, 40675), (67, 40579), (85, 40498), (91, 40474), (93, 40465), (95, 40456), (118, 40351), (120, 40345), (121, 40339), (157, 40195), (159, 40183), (167, 40159), (187, 40072),

Gene: Elite2014\_54 Start: 39393, Stop: 38620, Start Num: 17

Candidate Starts for Elite2014\_54:

(Start: 17 @39393 has 118 MA's), (Start: 23 @39369 has 39 MA's), (Start: 31 @39339 has 1 MA's), (51, 39231), (67, 39135), (85, 39054), (91, 39030), (93, 39021), (95, 39012), (118, 38907), (120, 38901), (121, 38895), (157, 38751), (159, 38739), (167, 38715), (187, 38628),

Gene: Ellson\_37 Start: 33965, Stop: 33174, Start Num: 15

Candidate Starts for Ellson\_37:

(Start: 15 @33965 has 53 MA's), (29, 33911), (52, 33788), (59, 33755), (66, 33704), (68, 33698), (93, 33587), (119, 33473), (126, 33446), (137, 33389), (146, 33362), (186, 33188),

Gene: Elph10\_54 Start: 39102, Stop: 38329, Start Num: 17

Candidate Starts for Elph10\_54:

(Start: 17 @39102 has 118 MA's), (Start: 23 @39078 has 39 MA's), (Start: 31 @39048 has 1 MA's), (51, 38940), (67, 38844), (85, 38763), (91, 38739), (93, 38730), (95, 38721), (118, 38616), (120, 38610), (121, 38604), (157, 38460), (159, 38448), (167, 38424), (187, 38337),

Gene: Emmina\_54 Start: 39276, Stop: 38527, Start Num: 23

Candidate Starts for Emmina\_54:

(Start: 17 @39300 has 118 MA's), (Start: 23 @39276 has 39 MA's), (Start: 31 @39246 has 1 MA's), (51, 39138), (67, 39042), (85, 38961), (91, 38937), (93, 38928), (95, 38919), (118, 38814), (120, 38808), (121, 38802), (157, 38658), (159, 38646), (167, 38622), (187, 38535),

Gene: Enceladus\_36 Start: 32359, Stop: 31577, Start Num: 16

Candidate Starts for Enceladus\_36:

(Start: 16 @32359 has 19 MA's), (20, 32341), (71, 32074), (77, 32047), (78, 32044), (84, 32014), (85, 32002), (90, 31981), (103, 31933), (125, 31840), (132, 31804), (157, 31714), (171, 31660),

Gene: Eponine\_48 Start: 36348, Stop: 35530, Start Num: 23

Candidate Starts for Eponine\_48:

(Start: 23 @36348 has 39 MA's), (Start: 24 @36345 has 1 MA's), (27, 36330), (Start: 40 @36267 has 1 MA's), (Start: 44 @36237 has 1 MA's), (49, 36216), (56, 36180), (61, 36144), (72, 36102), (74, 36090), (75, 36087), (83, 36048), (93, 36003), (97, 35988), (105, 35952), (108, 35943), (130, 35850), (142, 35796), (147, 35772), (149, 35766), (154, 35748), (172, 35682), (178, 35661),

Gene: Eureka\_52 Start: 39864, Stop: 39091, Start Num: 17

Candidate Starts for Eureka\_52:

(Start: 17 @39864 has 118 MA's), (Start: 23 @39840 has 39 MA's), (Start: 31 @39810 has 1 MA's), (51, 39702), (67, 39606), (85, 39525), (91, 39501), (93, 39492), (95, 39483), (118, 39378), (120, 39372), (121, 39366), (157, 39222), (159, 39210), (167, 39186), (187, 39099),

Gene: FairyPath\_53 Start: 40216, Stop: 39443, Start Num: 17

Candidate Starts for FairyPath\_53:

(Start: 17 @40216 has 118 MA's), (Start: 23 @40192 has 39 MA's), (Start: 31 @40162 has 1 MA's), (51, 40054), (67, 39958), (85, 39877), (91, 39853), (93, 39844), (95, 39835), (118, 39730), (120, 39724), (121, 39718), (157, 39574), (159, 39562), (167, 39538), (187, 39451),

Gene: Faith1\_39 Start: 33739, Stop: 32960, Start Num: 15

Candidate Starts for Faith1\_39:

(Start: 15 @33739 has 53 MA's), (27, 33682), (41, 33610), (46, 33583), (53, 33544), (65, 33472), (66, 33466), (77, 33424), (114, 33256), (131, 33184), (158, 33091), (160, 33085), (171, 33046),

Gene: FarmResident\_36 Start: 32309, Stop: 31638, Start Num: 39

Candidate Starts for FarmResident\_36:

(Start: 15 @32426 has 53 MA's), (27, 32369), (30, 32360), (39, 32309), (46, 32270), (50, 32252), (62, 32174), (65, 32159), (66, 32153), (77, 32111), (94, 32030), (104, 31988), (109, 31970), (129, 31886), (132, 31865), (157, 31775), (168, 31733), (171, 31721),

Gene: Filch\_55 Start: 39325, Stop: 38552, Start Num: 17

Candidate Starts for Filch\_55:

(Start: 17 @39325 has 118 MA's), (Start: 23 @39301 has 39 MA's), (Start: 31 @39271 has 1 MA's), (51, 39163), (67, 39067), (85, 38986), (91, 38962), (93, 38953), (95, 38944), (118, 38839), (120, 38833), (121, 38827), (157, 38683), (159, 38671), (167, 38647), (187, 38560),

Gene: Finemlucis\_39 Start: 34015, Stop: 33236, Start Num: 15

Candidate Starts for Finemlucis\_39:

(Start: 15 @34015 has 53 MA's), (27, 33958), (41, 33886), (46, 33859), (53, 33820), (65, 33748), (66, 33742), (77, 33700), (131, 33460), (158, 33367), (160, 33361), (171, 33322),

Gene: Finnry\_37 Start: 33981, Stop: 33190, Start Num: 15

Candidate Starts for Finnry\_37:

(Start: 5 @34071 has 1 MA's), (9, 34029), (Start: 15 @33981 has 53 MA's), (20, 33963), (29, 33927), (Start: 44 @33843 has 1 MA's), (47, 33831), (57, 33780), (59, 33771), (66, 33720), (68, 33714), (93, 33603), (119, 33489), (126, 33462), (137, 33405), (168, 33291), (180, 33237), (186, 33204),

Gene: Fionnbharth\_46 Start: 35745, Stop: 34927, Start Num: 23

Candidate Starts for Fionnbharth\_46:

(Start: 23 @35745 has 39 MA's), (Start: 24 @35742 has 1 MA's), (27, 35727), (Start: 44 @35634 has 1 MA's), (49, 35613), (56, 35577), (61, 35541), (72, 35499), (74, 35487), (75, 35484), (77, 35475), (83, 35445), (97, 35385), (105, 35349), (108, 35340), (130, 35247), (142, 35193), (147, 35169), (149, 35163), (154, 35145), (172, 35079), (178, 35058),

Gene: FireRed\_57 Start: 40591, Stop: 39818, Start Num: 17

Candidate Starts for FireRed\_57:

(Start: 17 @40591 has 118 MA's), (Start: 23 @40567 has 39 MA's), (Start: 31 @40537 has 1 MA's), (51, 40429), (67, 40333), (85, 40252), (91, 40228), (93, 40219), (95, 40210), (118, 40105), (120, 40099), (121, 40093), (157, 39949), (159, 39937), (167, 39913), (187, 39826),

Gene: Flypotenuse\_49 Start: 39064, Stop: 38315, Start Num: 23

Candidate Starts for Flypotenuse\_49:

(Start: 17 @39088 has 118 MA's), (Start: 23 @39064 has 39 MA's), (Start: 31 @39034 has 1 MA's), (51, 38926), (67, 38830), (85, 38749), (91, 38725), (93, 38716), (95, 38707), (118, 38602), (120, 38596), (121, 38590), (157, 38446), (159, 38434), (167, 38410), (187, 38323),

Gene: FoghornLeghorn\_49 Start: 38098, Stop: 37325, Start Num: 17

Candidate Starts for FoghornLeghorn\_49:

(Start: 17 @38098 has 118 MA's), (Start: 23 @38074 has 39 MA's), (Start: 31 @38044 has 1 MA's), (51, 37936), (67, 37840), (85, 37759), (91, 37735), (93, 37726), (95, 37717), (118, 37612), (120, 37606), (121, 37600), (157, 37456), (159, 37444), (167, 37420), (187, 37333),

Gene: Gabriela\_39 Start: 34001, Stop: 33222, Start Num: 15

Candidate Starts for Gabriela\_39:

(Start: 15 @34001 has 53 MA's), (27, 33944), (41, 33872), (46, 33845), (53, 33806), (65, 33734), (66, 33728), (77, 33686), (114, 33518), (131, 33446), (158, 33353), (160, 33347), (171, 33308),

Gene: Gage\_57 Start: 39873, Stop: 39100, Start Num: 17

Candidate Starts for Gage\_57:

(Start: 17 @39873 has 118 MA's), (Start: 23 @39849 has 39 MA's), (Start: 31 @39819 has 1 MA's), (51, 39711), (67, 39615), (85, 39534), (91, 39510), (93, 39501), (95, 39492), (118, 39387), (120, 39381), (121, 39375), (157, 39231), (159, 39219), (167, 39195), (187, 39108),

Gene: Gaia\_67 Start: 44826, Stop: 44038, Start Num: 14

Candidate Starts for Gaia\_67:

(Start: 14 @44826 has 2 MA's), (Start: 23 @44787 has 39 MA's), (51, 44649), (80, 44496), (85, 44472), (93, 44439), (103, 44397), (108, 44379), (113, 44355), (146, 44220), (151, 44199), (164, 44148), (180, 44088), (182, 44079),

Gene: Gardann\_39 Start: 33740, Stop: 32961, Start Num: 15

Candidate Starts for Gardann\_39:

(Start: 15 @33740 has 53 MA's), (27, 33683), (41, 33611), (53, 33545), (65, 33473), (66, 33467), (77, 33425), (131, 33185), (158, 33092), (160, 33086), (171, 33047),

Gene: Gator\_52 Start: 40227, Stop: 39454, Start Num: 17

Candidate Starts for Gator\_52:

(Start: 17 @40227 has 118 MA's), (Start: 23 @40203 has 39 MA's), (Start: 31 @40173 has 1 MA's), (51, 40065), (67, 39969), (85, 39888), (91, 39864), (93, 39855), (95, 39846), (118, 39741), (120, 39735), (121, 39729), (157, 39585), (159, 39573), (167, 39549), (187, 39462),

Gene: Gemini\_58 Start: 40390, Stop: 39617, Start Num: 17

Candidate Starts for Gemini\_58:

(Start: 17 @40390 has 118 MA's), (Start: 23 @40366 has 39 MA's), (Start: 31 @40336 has 1 MA's), (51, 40228), (67, 40132), (85, 40051), (91, 40027), (93, 40018), (95, 40009), (118, 39904), (120, 39898), (121, 39892), (157, 39748), (159, 39736), (167, 39712), (187, 39625),

Gene: Glexan\_52 Start: 40215, Stop: 39442, Start Num: 17

Candidate Starts for Glexan\_52:

(Start: 17 @40215 has 118 MA's), (Start: 23 @40191 has 39 MA's), (Start: 31 @40161 has 1 MA's), (51, 40053), (67, 39957), (85, 39876), (91, 39852), (93, 39843), (95, 39834), (118, 39729), (120, 39723), (121, 39717), (157, 39573), (159, 39561), (167, 39537), (187, 39450),

Gene: Goku\_52 Start: 39593, Stop: 38820, Start Num: 17

Candidate Starts for Goku\_52:

(Start: 17 @39593 has 118 MA's), (Start: 23 @39569 has 39 MA's), (Start: 31 @39539 has 1 MA's), (51, 39431), (67, 39335), (85, 39254), (91, 39230), (93, 39221), (95, 39212), (118, 39107), (120, 39101), (121, 39095), (157, 38951), (159, 38939), (167, 38915), (187, 38828),

Gene: GoldenSpark\_57 Start: 39849, Stop: 39100, Start Num: 23

Candidate Starts for GoldenSpark\_57:

(Start: 17 @39873 has 118 MA's), (Start: 23 @39849 has 39 MA's), (Start: 31 @39819 has 1 MA's), (51, 39711), (67, 39615), (85, 39534), (91, 39510), (93, 39501), (95, 39492), (118, 39387), (120, 39381), (121, 39375), (157, 39231), (159, 39219), (167, 39195), (187, 39108),

Gene: Goldilocks\_56 Start: 39375, Stop: 38602, Start Num: 17

Candidate Starts for Goldilocks\_56:

(Start: 17 @39375 has 118 MA's), (Start: 23 @39351 has 39 MA's), (Start: 31 @39321 has 1 MA's), (51, 39213), (67, 39117), (85, 39036), (91, 39012), (93, 39003), (95, 38994), (118, 38889), (120, 38883), (121, 38877), (157, 38733), (159, 38721), (167, 38697), (187, 38610),

Gene: GooberAzure\_57 Start: 39873, Stop: 39100, Start Num: 17

Candidate Starts for GooberAzure\_57:

(Start: 17 @39873 has 118 MA's), (Start: 23 @39849 has 39 MA's), (Start: 31 @39819 has 1 MA's), (51, 39711), (67, 39615), (85, 39534), (91, 39510), (93, 39501), (95, 39492), (118, 39387), (120, 39381), (121, 39375), (157, 39231), (159, 39219), (167, 39195), (187, 39108),

Gene: Greep\_58 Start: 40721, Stop: 40110, Start Num: 51

Candidate Starts for Greep\_58:

(Start: 17 @40883 has 118 MA's), (Start: 23 @40859 has 39 MA's), (Start: 31 @40829 has 1 MA's), (51, 40721), (67, 40625), (85, 40544), (91, 40520), (93, 40511), (95, 40502), (118, 40397), (120, 40391), (121, 40385), (157, 40241), (159, 40229), (167, 40205), (187, 40118),

Gene: GuuelaD\_39 Start: 33777, Stop: 32998, Start Num: 15

Candidate Starts for GuuelaD\_39:

(Start: 15 @33777 has 53 MA's), (27, 33720), (41, 33648), (53, 33582), (56, 33567), (65, 33510), (66, 33504), (77, 33462), (131, 33222), (158, 33129), (160, 33123), (171, 33084),

Gene: Hafay\_39 Start: 33772, Stop: 32993, Start Num: 15

Candidate Starts for Hafay\_39:

(Start: 15 @33772 has 53 MA's), (27, 33715), (41, 33643), (53, 33577), (56, 33562), (65, 33505), (66, 33499), (77, 33457), (131, 33217), (158, 33124), (160, 33118), (171, 33079),

Gene: Halena\_36 Start: 32385, Stop: 31603, Start Num: 16

Candidate Starts for Halena\_36:

(Start: 16 @32385 has 19 MA's), (20, 32367), (71, 32100), (77, 32073), (78, 32070), (84, 32040), (85, 32028), (90, 32007), (103, 31959), (125, 31866), (132, 31830), (157, 31740), (171, 31686),

Gene: HanKaySha\_53 Start: 39183, Stop: 38410, Start Num: 17

Candidate Starts for HanKaySha\_53:

(Start: 17 @39183 has 118 MA's), (Start: 23 @39159 has 39 MA's), (Start: 31 @39129 has 1 MA's), (51, 39021), (67, 38925), (85, 38844), (91, 38820), (93, 38811), (95, 38802), (118, 38697), (120, 38691), (121, 38685), (157, 38541), (159, 38529), (167, 38505), (187, 38418),

Gene: Harella\_54 Start: 40731, Stop: 39958, Start Num: 17

Candidate Starts for Harella\_54:

(Start: 17 @40731 has 118 MA's), (Start: 23 @40707 has 39 MA's), (Start: 31 @40677 has 1 MA's), (51, 40569), (67, 40473), (85, 40392), (91, 40368), (93, 40359), (95, 40350), (118, 40245), (120, 40239), (121, 40233), (157, 40089), (159, 40077), (167, 40053), (187, 39966),

Gene: Henry\_53 Start: 39815, Stop: 39042, Start Num: 17

Candidate Starts for Henry\_53:

(Start: 17 @39815 has 118 MA's), (Start: 23 @39791 has 39 MA's), (Start: 31 @39761 has 1 MA's), (51, 39653), (67, 39557), (85, 39476), (91, 39452), (93, 39443), (95, 39434), (118, 39329), (120, 39323), (121, 39317), (157, 39173), (159, 39161), (167, 39137), (187, 39050),

Gene: Highbury\_55 Start: 39472, Stop: 38699, Start Num: 17

Candidate Starts for Highbury\_55:

(Start: 17 @39472 has 118 MA's), (Start: 23 @39448 has 39 MA's), (Start: 31 @39418 has 1 MA's), (51, 39310), (67, 39214), (85, 39133), (91, 39109), (93, 39100), (95, 39091), (118, 38986), (120, 38980), (121, 38974), (157, 38830), (159, 38818), (167, 38794), (187, 38707),

Gene: Holt\_59 Start: 40287, Stop: 39514, Start Num: 17

Candidate Starts for Holt\_59:

(Start: 17 @40287 has 118 MA's), (Start: 23 @40263 has 39 MA's), (Start: 31 @40233 has 1 MA's), (51, 40125), (67, 40029), (85, 39948), (91, 39924), (93, 39915), (95, 39906), (118, 39801), (120, 39795), (121, 39789), (157, 39645), (159, 39633), (167, 39609), (187, 39522),

Gene: Hoonter\_57 Start: 39873, Stop: 39100, Start Num: 17

Candidate Starts for Hoonter\_57:

(Start: 17 @39873 has 118 MA's), (Start: 23 @39849 has 39 MA's), (Start: 31 @39819 has 1 MA's), (51, 39711), (67, 39615), (85, 39534), (91, 39510), (93, 39501), (95, 39492), (118, 39387), (120, 39381), (121, 39375), (157, 39231), (159, 39219), (167, 39195), (187, 39108),

Gene: Hokey\_54 Start: 39717, Stop: 38944, Start Num: 17

Candidate Starts for Hokey\_54:

(Start: 17 @39717 has 118 MA's), (Start: 23 @39693 has 39 MA's), (Start: 31 @39663 has 1 MA's), (51, 39555), (67, 39459), (85, 39378), (91, 39354), (93, 39345), (95, 39336), (118, 39231), (120, 39225), (121, 39219), (157, 39075), (159, 39063), (167, 39039), (187, 38952),

Gene: HufflyPuff\_56 Start: 40547, Stop: 39774, Start Num: 17

Candidate Starts for HufflyPuff\_56:

(Start: 17 @40547 has 118 MA's), (Start: 23 @40523 has 39 MA's), (Start: 31 @40493 has 1 MA's), (51, 40385), (67, 40289), (85, 40208), (91, 40184), (93, 40175), (95, 40166), (118, 40061), (120, 40055), (121, 40049), (157, 39905), (159, 39893), (167, 39869), (187, 39782),

Gene: IHOP\_52 Start: 39939, Stop: 39166, Start Num: 17

Candidate Starts for IHOP\_52:

(Start: 17 @39939 has 118 MA's), (Start: 23 @39915 has 39 MA's), (Start: 31 @39885 has 1 MA's), (51, 39777), (67, 39681), (85, 39600), (91, 39576), (93, 39567), (95, 39558), (118, 39453), (120, 39447), (121, 39441), (157, 39297), (159, 39285), (167, 39261), (187, 39174),

Gene: Icee\_54 Start: 39541, Stop: 38768, Start Num: 17

Candidate Starts for Icee\_54:

(Start: 17 @39541 has 118 MA's), (Start: 23 @39517 has 39 MA's), (Start: 31 @39487 has 1 MA's), (51, 39379), (67, 39283), (85, 39202), (91, 39178), (93, 39169), (95, 39160), (118, 39055), (120, 39049), (121, 39043), (157, 38899), (159, 38887), (167, 38863), (187, 38776),

Gene: Inca\_51 Start: 38464, Stop: 37691, Start Num: 17

Candidate Starts for Inca\_51:

(Start: 17 @38464 has 118 MA's), (Start: 23 @38440 has 39 MA's), (Start: 31 @38410 has 1 MA's), (51, 38302), (67, 38206), (85, 38125), (91, 38101), (93, 38092), (95, 38083), (118, 37978), (120, 37972), (121, 37966), (157, 37822), (167, 37786), (187, 37699),

Gene: InvictusManeo\_40 Start: 34004, Stop: 33153, Start Num: 21

Candidate Starts for InvictusManeo\_40:

(Start: 21 @34004 has 8 MA's), (45, 33875), (53, 33833), (74, 33734), (77, 33722), (86, 33674), (93, 33644), (98, 33626), (104, 33590), (136, 33431), (142, 33416), (145, 33404), (153, 33371), (156, 33362), (159, 33344), (162, 33338), (166, 33323), (177, 33275), (181, 33254),

Gene: JF1\_46 Start: 35662, Stop: 34841, Start Num: 23

Candidate Starts for JF1\_46:

(Start: 23 @35662 has 39 MA's), (Start: 24 @35659 has 1 MA's), (27, 35644), (Start: 44 @35551 has 1 MA's), (49, 35530), (61, 35458), (72, 35416), (74, 35404), (75, 35401), (77, 35392), (83, 35362), (97, 35302), (105, 35266), (108, 35257), (130, 35164), (142, 35110), (147, 35086), (149, 35080), (152, 35068), (172, 34996), (178, 34975),

Gene: JeTaime\_55 Start: 40367, Stop: 39594, Start Num: 17

Candidate Starts for JeTaime\_55:

(Start: 17 @40367 has 118 MA's), (Start: 23 @40343 has 39 MA's), (Start: 31 @40313 has 1 MA's), (51, 40205), (67, 40109), (85, 40028), (91, 40004), (93, 39995), (95, 39986), (118, 39881), (120, 39875), (121, 39869), (157, 39725), (159, 39713), (167, 39689), (187, 39602),

Gene: Jobypre\_37 Start: 33978, Stop: 33187, Start Num: 15

Candidate Starts for Jobypre\_37:

(Start: 5 @34068 has 1 MA's), (9, 34026), (Start: 15 @33978 has 53 MA's), (20, 33960), (29, 33924), (Start: 44 @33840 has 1 MA's), (47, 33828), (57, 33777), (59, 33768), (66, 33717), (68, 33711), (93, 33600), (119, 33486), (126, 33459), (137, 33402), (168, 33288), (180, 33234), (186, 33201),

Gene: JoeDirt\_36 Start: 32357, Stop: 31575, Start Num: 16

Candidate Starts for JoeDirt\_36:

(Start: 16 @32357 has 19 MA's), (20, 32339), (71, 32072), (77, 32045), (78, 32042), (84, 32012), (85, 32000), (90, 31979), (103, 31931), (125, 31838), (132, 31802), (157, 31712), (171, 31658),

Gene: Jubie\_37 Start: 33979, Stop: 33188, Start Num: 15

Candidate Starts for Jubie\_37:

(Start: 5 @34069 has 1 MA's), (9, 34027), (Start: 15 @33979 has 53 MA's), (20, 33961), (29, 33925), (Start: 44 @33841 has 1 MA's), (47, 33829), (57, 33778), (59, 33769), (66, 33718), (68, 33712), (93, 33601), (119, 33487), (126, 33460), (137, 33403), (168, 33289), (180, 33235), (186, 33202),

Gene: Juliette\_48 Start: 35819, Stop: 35001, Start Num: 23

Candidate Starts for Juliette\_48:

(Start: 23 @35819 has 39 MA's), (Start: 24 @35816 has 1 MA's), (27, 35801), (Start: 40 @35738 has 1 MA's), (Start: 44 @35708 has 1 MA's), (49, 35687), (56, 35651), (61, 35615), (72, 35573), (74, 35561), (75, 35558), (83, 35519), (93, 35474), (97, 35459), (105, 35423), (108, 35414), (130, 35321), (142, 35267), (147, 35243), (149, 35237), (154, 35219), (172, 35153), (178, 35132),

Gene: Kahlid\_39 Start: 33744, Stop: 32965, Start Num: 15

Candidate Starts for Kahlid\_39:

(Start: 15 @33744 has 53 MA's), (27, 33687), (41, 33615), (53, 33549), (56, 33534), (65, 33477), (66, 33471), (77, 33429), (131, 33189), (158, 33096), (160, 33090), (171, 33051),

Gene: Kanye\_50 Start: 39227, Stop: 38454, Start Num: 17

Candidate Starts for Kanye\_50:

(Start: 17 @39227 has 118 MA's), (Start: 23 @39203 has 39 MA's), (Start: 31 @39173 has 1 MA's), (51, 39065), (67, 38969), (85, 38888), (91, 38864), (93, 38855), (95, 38846), (118, 38741), (120, 38735), (121, 38729), (157, 38585), (159, 38573), (167, 38549), (187, 38462),

Gene: Kimchi\_57 Start: 39876, Stop: 39103, Start Num: 17

Candidate Starts for Kimchi\_57:

(Start: 17 @39876 has 118 MA's), (Start: 23 @39852 has 39 MA's), (Start: 31 @39822 has 1 MA's), (51, 39714), (67, 39618), (85, 39537), (91, 39513), (93, 39504), (95, 39495), (118, 39390), (120, 39384), (121, 39378), (157, 39234), (159, 39222), (167, 39198), (187, 39111),

Gene: Kingsolomon\_37 Start: 33978, Stop: 33187, Start Num: 15

Candidate Starts for Kingsolomon\_37:

(Start: 5 @34068 has 1 MA's), (9, 34026), (Start: 15 @33978 has 53 MA's), (20, 33960), (29, 33924), (Start: 44 @33840 has 1 MA's), (47, 33828), (57, 33777), (59, 33768), (66, 33717), (68, 33711), (93, 33600), (119, 33486), (126, 33459), (137, 33402), (168, 33288), (180, 33234), (186, 33201),

Gene: KirDoubleO7\_35 Start: 33790, Stop: 33206, Start Num: 57

Candidate Starts for KirDoubleO7\_35:

(7, 34060), (11, 34015), (Start: 15 @33991 has 53 MA's), (29, 33937), (Start: 44 @33853 has 1 MA's), (47, 33841), (50, 33829), (57, 33790), (59, 33781), (66, 33730), (68, 33724), (93, 33613), (105, 33565), (126, 33478), (137, 33421), (140, 33415), (168, 33307), (180, 33253),

Gene: Kostya\_55 Start: 40014, Stop: 39265, Start Num: 23

Candidate Starts for Kostya\_55:

(Start: 17 @40038 has 118 MA's), (Start: 23 @40014 has 39 MA's), (Start: 31 @39984 has 1 MA's), (51, 39876), (67, 39780), (85, 39699), (91, 39675), (93, 39666), (95, 39657), (118, 39552), (120, 39546), (121, 39540), (157, 39396), (159, 39384), (167, 39360), (187, 39273),

Gene: Kraw\_46 Start: 35507, Stop: 34689, Start Num: 23

Candidate Starts for Kraw\_46:

(Start: 23 @35507 has 39 MA's), (Start: 24 @35504 has 1 MA's), (27, 35489), (Start: 40 @35426 has 1 MA's), (Start: 44 @35396 has 1 MA's), (49, 35375), (56, 35339), (61, 35303), (72, 35261), (74, 35249), (75, 35246), (83, 35207), (93, 35162), (97, 35147), (105, 35111), (108, 35102), (130, 35009), (142, 34955), (147, 34931), (149, 34925), (154, 34907), (172, 34841), (178, 34820),

Gene: Kropertea\_36 Start: 32524, Stop: 31736, Start Num: 15

Candidate Starts for Kropertea\_36:

(Start: 15 @32524 has 53 MA's), (27, 32467), (39, 32407), (46, 32368), (50, 32350), (62, 32272), (65, 32257), (66, 32251), (77, 32209), (94, 32128), (101, 32098), (104, 32086), (109, 32068), (127, 31990), (129, 31984), (157, 31873), (168, 31831), (171, 31819),

Gene: Krypton555\_37 Start: 33883, Stop: 33092, Start Num: 15

Candidate Starts for Krypton555\_37:

(2, 34012), (3, 34003), (Start: 5 @33973 has 1 MA's), (Start: 10 @33916 has 1 MA's), (11, 33907), (13, 33889), (Start: 15 @33883 has 53 MA's), (29, 33829), (50, 33721), (54, 33694), (57, 33682), (58,

33676), (59, 33673), (66, 33622), (68, 33616), (81, 33559), (95, 33496), (126, 33364), (137, 33307), (168, 33193),

Gene: LeBron\_37 Start: 32401, Stop: 31619, Start Num: 16

Candidate Starts for LeBron\_37:

(Start: 16 @32401 has 19 MA's), (20, 32383), (71, 32116), (77, 32089), (78, 32086), (84, 32056), (85, 32044), (90, 32023), (103, 31975), (125, 31882), (132, 31846), (157, 31756), (171, 31702),

Gene: Lebo14\_46 Start: 35768, Stop: 34953, Start Num: 24

Candidate Starts for Lebo14\_46:

(Start: 23 @35771 has 39 MA's), (Start: 24 @35768 has 1 MA's), (27, 35753), (Start: 40 @35690 has 1 MA's), (Start: 44 @35660 has 1 MA's), (49, 35639), (56, 35603), (61, 35567), (72, 35525), (74, 35513), (75, 35510), (83, 35471), (93, 35426), (97, 35411), (105, 35375), (108, 35366), (130, 35273), (142, 35219), (147, 35195), (149, 35189), (154, 35171), (172, 35105), (178, 35084),

Gene: Lewan\_39 Start: 33732, Stop: 32953, Start Num: 15

Candidate Starts for Lewan\_39:

(Start: 15 @33732 has 53 MA's), (27, 33675), (29, 33669), (36, 33636), (48, 33564), (65, 33465), (66, 33459), (77, 33417), (89, 33354), (107, 33285), (139, 33153), (157, 33093), (158, 33084), (171, 33039),

Gene: LilDestine\_39 Start: 33737, Stop: 32958, Start Num: 15

Candidate Starts for LilDestine\_39:

(Start: 15 @33737 has 53 MA's), (27, 33680), (41, 33608), (53, 33542), (65, 33470), (66, 33464), (77, 33422), (131, 33182), (158, 33089), (160, 33083),

Gene: LilDirt\_40 Start: 33762, Stop: 32911, Start Num: 21

Candidate Starts for LilDirt\_40:

(Start: 21 @33762 has 8 MA's), (45, 33633), (53, 33591), (74, 33492), (77, 33480), (86, 33432), (93, 33402), (98, 33384), (104, 33348), (136, 33189), (142, 33174), (145, 33162), (153, 33129), (156, 33120), (159, 33102), (162, 33096), (166, 33081), (177, 33033), (181, 33012),

Gene: Lilac\_57 Start: 39502, Stop: 38729, Start Num: 17

Candidate Starts for Lilac\_57:

(Start: 17 @39502 has 118 MA's), (Start: 23 @39478 has 39 MA's), (Start: 31 @39448 has 1 MA's), (51, 39340), (67, 39244), (85, 39163), (91, 39139), (93, 39130), (95, 39121), (118, 39016), (120, 39010), (121, 39004), (157, 38860), (159, 38848), (167, 38824), (187, 38737),

Gene: Lilizi\_54 Start: 39176, Stop: 38403, Start Num: 17

Candidate Starts for Lilizi\_54:

(Start: 17 @39176 has 118 MA's), (Start: 23 @39152 has 39 MA's), (Start: 31 @39122 has 1 MA's), (51, 39014), (67, 38918), (85, 38837), (91, 38813), (93, 38804), (95, 38795), (118, 38690), (120, 38684), (121, 38678), (157, 38534), (159, 38522), (167, 38498), (187, 38411),

Gene: Lilpickle\_54 Start: 39393, Stop: 38620, Start Num: 17

Candidate Starts for Lilpickle\_54:

(Start: 17 @39393 has 118 MA's), (Start: 23 @39369 has 39 MA's), (Start: 31 @39339 has 1 MA's), (51, 39231), (67, 39135), (85, 39054), (91, 39030), (93, 39021), (95, 39012), (118, 38907), (120, 38901), (121, 38895), (157, 38751), (159, 38739), (167, 38715), (187, 38628),

Gene: Liveloughbron\_58 Start: 40515, Stop: 39904, Start Num: 51

Candidate Starts for Liveloughbron\_58:

(Start: 17 @40677 has 118 MA's), (Start: 23 @40653 has 39 MA's), (Start: 31 @40623 has 1 MA's), (51, 40515), (67, 40419), (85, 40338), (91, 40314), (93, 40305), (95, 40296), (118, 40191), (120, 40185), (121, 40179), (157, 40035), (159, 40023), (167, 39999), (187, 39912),

Gene: LiyuLake\_37 Start: 33955, Stop: 33164, Start Num: 15

Candidate Starts for LiyuLake\_37:

(Start: 15 @33955 has 53 MA's), (29, 33901), (52, 33778), (59, 33745), (66, 33694), (68, 33688), (93, 33577), (119, 33463), (126, 33436), (137, 33379), (146, 33352), (186, 33178),

Gene: Loadrie\_39 Start: 33770, Stop: 32991, Start Num: 15

Candidate Starts for Loadrie\_39:

(Start: 15 @33770 has 53 MA's), (27, 33713), (41, 33641), (53, 33575), (56, 33560), (65, 33503), (66, 33497), (77, 33455), (131, 33215), (158, 33122), (160, 33116), (171, 33077),

Gene: Lolly9\_37 Start: 33775, Stop: 32987, Start Num: 15

Candidate Starts for Lolly9\_37:

(9, 33823), (Start: 15 @33775 has 53 MA's), (20, 33754), (29, 33718), (52, 33595), (57, 33571), (59, 33562), (66, 33511), (68, 33505), (81, 33448), (116, 33298), (126, 33259), (137, 33202), (140, 33196), (168, 33088), (180, 33034),

Gene: Lumos\_37 Start: 33975, Stop: 33184, Start Num: 15

Candidate Starts for Lumos\_37:

(Start: 5 @34065 has 1 MA's), (9, 34023), (Start: 15 @33975 has 53 MA's), (20, 33957), (29, 33921), (Start: 44 @33837 has 1 MA's), (47, 33825), (57, 33774), (59, 33765), (66, 33714), (68, 33708), (93, 33597), (119, 33483), (126, 33456), (137, 33399), (168, 33285), (180, 33231), (186, 33198),

Gene: Lynnae\_39 Start: 33727, Stop: 32948, Start Num: 15

Candidate Starts for Lynnae\_39:

(Start: 15 @33727 has 53 MA's), (27, 33670), (41, 33598), (53, 33532), (56, 33517), (65, 33460), (66, 33454), (77, 33412), (131, 33172), (158, 33079), (160, 33073), (171, 33034),

Gene: MAckerman\_37 Start: 32379, Stop: 31597, Start Num: 16

Candidate Starts for MAckerman\_37:

(Start: 16 @32379 has 19 MA's), (71, 32094), (77, 32067), (78, 32064), (84, 32034), (85, 32022), (90, 32001), (103, 31953), (125, 31860), (132, 31824), (157, 31734), (171, 31680),

Gene: MISSy\_54 Start: 39600, Stop: 38827, Start Num: 17

Candidate Starts for MISSy\_54:

(Start: 17 @39600 has 118 MA's), (Start: 23 @39576 has 39 MA's), (Start: 31 @39546 has 1 MA's), (51, 39438), (67, 39342), (85, 39261), (91, 39237), (93, 39228), (95, 39219), (118, 39114), (120, 39108), (121, 39102), (157, 38958), (159, 38946), (167, 38922), (187, 38835),

Gene: MPhalcon\_54 Start: 39593, Stop: 38820, Start Num: 17

Candidate Starts for MPhalcon\_54:

(Start: 17 @39593 has 118 MA's), (Start: 23 @39569 has 39 MA's), (Start: 31 @39539 has 1 MA's), (51, 39431), (67, 39335), (85, 39254), (91, 39230), (93, 39221), (95, 39212), (118, 39107), (120, 39101), (121, 39095), (157, 38951), (159, 38939), (167, 38915), (187, 38828),

Gene: MadamMonkfish\_54 Start: 39117, Stop: 38344, Start Num: 17

Candidate Starts for MadamMonkfish\_54:

(Start: 17 @39117 has 118 MA's), (Start: 23 @39093 has 39 MA's), (Start: 31 @39063 has 1 MA's), (51, 38955), (67, 38859), (85, 38778), (91, 38754), (93, 38745), (95, 38736), (118, 38631), (120, 38625), (121, 38619), (157, 38475), (159, 38463), (167, 38439), (187, 38352),

Gene: MalagasyRose\_43 Start: 32679, Stop: 33419, Start Num: 23

Candidate Starts for MalagasyRose\_43:

(18, 32652), (22, 32670), (Start: 23 @32679 has 39 MA's), (34, 32730), (41, 32769), (48, 32808), (49, 32811), (51, 32817), (54, 32841), (55, 32847), (66, 32910), (67, 32913), (74, 32940), (75, 32943), (85, 32994), (87, 33000), (89, 33012), (93, 33027), (100, 33063), (108, 33087), (113, 33111), (118, 33135), (120, 33141), (125, 33162), (126, 33165), (145, 33243), (147, 33255), (154, 33279), (164, 33318), (167, 33324), (170, 33336), (173, 33348), (175, 33357), (176, 33360), (182, 33387),

Gene: Malthus\_47 Start: 35507, Stop: 34689, Start Num: 23

Candidate Starts for Malthus\_47:

(Start: 23 @35507 has 39 MA's), (Start: 24 @35504 has 1 MA's), (27, 35489), (Start: 40 @35426 has 1 MA's), (Start: 44 @35396 has 1 MA's), (49, 35375), (56, 35339), (61, 35303), (72, 35261), (74, 35249), (75, 35246), (83, 35207), (93, 35162), (97, 35147), (105, 35111), (108, 35102), (130, 35009), (142, 34955), (147, 34931), (149, 34925), (154, 34907), (172, 34841), (178, 34820),

Gene: Manda\_54 Start: 40398, Stop: 39625, Start Num: 17

Candidate Starts for Manda\_54:

(Start: 17 @40398 has 118 MA's), (Start: 23 @40374 has 39 MA's), (Start: 31 @40344 has 1 MA's), (51, 40236), (67, 40140), (85, 40059), (91, 40035), (93, 40026), (95, 40017), (118, 39912), (120, 39906), (121, 39900), (157, 39756), (159, 39744), (167, 39720), (187, 39633),

Gene: Marshmallow\_53 Start: 40373, Stop: 39600, Start Num: 17

Candidate Starts for Marshmallow\_53:

(Start: 17 @40373 has 118 MA's), (Start: 23 @40349 has 39 MA's), (Start: 31 @40319 has 1 MA's), (51, 40211), (67, 40115), (85, 40034), (91, 40010), (93, 40001), (95, 39992), (118, 39887), (120, 39881), (121, 39875), (157, 39731), (167, 39695), (187, 39608),

Gene: Maxxinista\_57 Start: 39472, Stop: 38699, Start Num: 17

Candidate Starts for Maxxinista\_57:

(Start: 17 @39472 has 118 MA's), (Start: 23 @39448 has 39 MA's), (Start: 31 @39418 has 1 MA's), (51, 39310), (67, 39214), (85, 39133), (91, 39109), (93, 39100), (95, 39091), (118, 38986), (120, 38980), (121, 38974), (157, 38830), (159, 38818), (167, 38794), (187, 38707),

Gene: Miley16\_39 Start: 33739, Stop: 32960, Start Num: 15

Candidate Starts for Miley16\_39:

(Start: 15 @33739 has 53 MA's), (27, 33682), (41, 33610), (46, 33583), (53, 33544), (65, 33472), (66, 33466), (77, 33424), (114, 33256), (131, 33184), (158, 33091), (160, 33085), (171, 33046),

Gene: Mindy\_53 Start: 38981, Stop: 38208, Start Num: 17

Candidate Starts for Mindy\_53:

(Start: 17 @38981 has 118 MA's), (Start: 23 @38957 has 39 MA's), (Start: 31 @38927 has 1 MA's), (51, 38819), (67, 38723), (85, 38642), (91, 38618), (93, 38609), (95, 38600), (118, 38495), (120, 38489), (121, 38483), (157, 38339), (159, 38327), (167, 38303), (187, 38216),

Gene: MiniLon\_37 Start: 33776, Stop: 32988, Start Num: 15

Candidate Starts for MiniLon\_37:

(9, 33824), (Start: 15 @33776 has 53 MA's), (20, 33755), (29, 33719), (52, 33596), (57, 33572), (59, 33563), (66, 33512), (68, 33506), (81, 33449), (116, 33299), (126, 33260), (137, 33203), (140, 33197), (168, 33089), (180, 33035),

Gene: MiniMac\_37 Start: 33773, Stop: 32985, Start Num: 15

Candidate Starts for MiniMac\_37:

(9, 33821), (Start: 15 @33773 has 53 MA's), (20, 33752), (29, 33716), (52, 33593), (57, 33569), (59, 33560), (66, 33509), (68, 33503), (81, 33446), (116, 33296), (126, 33257), (137, 33200), (140, 33194), (168, 33086), (180, 33032),

Gene: Miniwave\_51 Start: 39434, Stop: 38661, Start Num: 17

Candidate Starts for Miniwave\_51:

(Start: 17 @39434 has 118 MA's), (Start: 23 @39410 has 39 MA's), (Start: 31 @39380 has 1 MA's), (51, 39272), (67, 39176), (85, 39095), (91, 39071), (93, 39062), (95, 39053), (118, 38948), (120, 38942), (121, 38936), (157, 38792), (159, 38780), (167, 38756), (187, 38669),

Gene: Misfit\_56 Start: 40612, Stop: 39839, Start Num: 17

Candidate Starts for Misfit\_56:

(Start: 17 @40612 has 118 MA's), (Start: 23 @40588 has 39 MA's), (Start: 31 @40558 has 1 MA's), (51, 40450), (67, 40354), (85, 40273), (91, 40249), (93, 40240), (95, 40231), (118, 40126), (120, 40120), (121, 40114), (157, 39970), (159, 39958), (167, 39934), (187, 39847),

Gene: MissDaisy\_44 Start: 34981, Stop: 34190, Start Num: 23

Candidate Starts for MissDaisy\_44:

(Start: 23 @34981 has 39 MA's), (30, 34954), (36, 34924), (37, 34915), (57, 34810), (61, 34777), (70, 34741), (72, 34735), (74, 34723), (75, 34720), (77, 34711), (83, 34681), (93, 34636), (97, 34621), (122, 34513), (130, 34483), (133, 34456), (142, 34429), (149, 34399), (175, 34303), (182, 34273),

Gene: Mitti\_46 Start: 35683, Stop: 34865, Start Num: 23

Candidate Starts for Mitti\_46:

(Start: 23 @35683 has 39 MA's), (Start: 24 @35680 has 1 MA's), (27, 35665), (Start: 40 @35602 has 1 MA's), (Start: 44 @35572 has 1 MA's), (49, 35551), (56, 35515), (61, 35479), (72, 35437), (74, 35425), (75, 35422), (83, 35383), (93, 35338), (97, 35323), (105, 35287), (108, 35278), (130, 35185), (142, 35131), (147, 35107), (149, 35101), (154, 35083), (172, 35017), (178, 34996),

Gene: MkaliMitis3\_39 Start: 33739, Stop: 32960, Start Num: 15

Candidate Starts for MkaliMitis3\_39:

(1, 33889), (4, 33835), (6, 33820), (Start: 15 @33739 has 53 MA's), (27, 33682), (41, 33610), (53, 33544), (56, 33529), (65, 33472), (66, 33466), (77, 33424), (131, 33184), (158, 33091), (160, 33085), (171, 33046),

Gene: Moldemort\_57 Start: 39990, Stop: 39217, Start Num: 17

Candidate Starts for Moldemort\_57:

(Start: 17 @39990 has 118 MA's), (Start: 23 @39966 has 39 MA's), (Start: 31 @39936 has 1 MA's), (51, 39828), (67, 39732), (85, 39651), (91, 39627), (93, 39618), (95, 39609), (118, 39504), (120, 39498), (121, 39492), (157, 39348), (159, 39336), (167, 39312), (187, 39225),

Gene: MollyToe\_49 Start: 38279, Stop: 37668, Start Num: 51

Candidate Starts for MollyToe\_49:

(Start: 17 @38441 has 118 MA's), (Start: 23 @38417 has 39 MA's), (Start: 31 @38387 has 1 MA's), (51, 38279), (67, 38183), (85, 38102), (91, 38078), (93, 38069), (95, 38060), (118, 37955), (120, 37949), (121, 37943), (157, 37799), (159, 37787), (167, 37763), (187, 37676),

Gene: Moostard\_37 Start: 33980, Stop: 33189, Start Num: 15

Candidate Starts for Moostard\_37:

(Start: 5 @34070 has 1 MA's), (9, 34028), (Start: 15 @33980 has 53 MA's), (20, 33962), (29, 33926), (Start: 44 @33842 has 1 MA's), (47, 33830), (57, 33779), (59, 33770), (66, 33719), (68, 33713), (93, 33602), (119, 33488), (126, 33461), (137, 33404), (168, 33290), (180, 33236), (186, 33203),

Gene: Mosby\_50 Start: 38895, Stop: 38122, Start Num: 17

Candidate Starts for Mosby\_50:

(Start: 17 @38895 has 118 MA's), (Start: 23 @38871 has 39 MA's), (Start: 31 @38841 has 1 MA's), (51, 38733), (67, 38637), (85, 38556), (91, 38532), (93, 38523), (95, 38514), (118, 38409), (120, 38403), (121, 38397), (157, 38253), (159, 38241), (167, 38217), (187, 38130),

Gene: MsGreen\_37 Start: 33978, Stop: 33187, Start Num: 15

Candidate Starts for MsGreen\_37:

(Start: 5 @34068 has 1 MA's), (9, 34026), (Start: 15 @33978 has 53 MA's), (20, 33960), (29, 33924), (Start: 44 @33840 has 1 MA's), (47, 33828), (57, 33777), (59, 33768), (66, 33717), (68, 33711), (93, 33600), (119, 33486), (126, 33459), (137, 33402), (168, 33288), (180, 33234), (186, 33201),

Gene: Murica\_56 Start: 40547, Stop: 39774, Start Num: 17

Candidate Starts for Murica\_56:

(Start: 17 @40547 has 118 MA's), (Start: 23 @40523 has 39 MA's), (Start: 31 @40493 has 1 MA's), (51, 40385), (67, 40289), (85, 40208), (91, 40184), (93, 40175), (95, 40166), (118, 40061), (120, 40055), (121, 40049), (157, 39905), (159, 39893), (167, 39869), (187, 39782),

Gene: Murphy\_56 Start: 39984, Stop: 39211, Start Num: 17

Candidate Starts for Murphy\_56:

(Start: 17 @39984 has 118 MA's), (Start: 23 @39960 has 39 MA's), (Start: 31 @39930 has 1 MA's), (51, 39822), (67, 39726), (85, 39645), (91, 39621), (93, 39612), (95, 39603), (118, 39498), (120, 39492), (121, 39486), (157, 39342), (159, 39330), (167, 39306), (187, 39219),

Gene: Myrale\_54 Start: 40238, Stop: 39465, Start Num: 17

Candidate Starts for Myrale\_54:

(Start: 17 @40238 has 118 MA's), (Start: 23 @40214 has 39 MA's), (Start: 31 @40184 has 1 MA's), (51, 40076), (67, 39980), (85, 39899), (91, 39875), (93, 39866), (95, 39857), (118, 39752), (120, 39746), (121, 39740), (157, 39596), (167, 39560), (187, 39473),

Gene: Nala\_55 Start: 40105, Stop: 39332, Start Num: 17

Candidate Starts for Nala\_55:

(Start: 17 @40105 has 118 MA's), (Start: 23 @40081 has 39 MA's), (Start: 31 @40051 has 1 MA's), (51, 39943), (67, 39847), (85, 39766), (91, 39742), (93, 39733), (95, 39724), (118, 39619), (120, 39613), (121, 39607), (157, 39463), (159, 39451), (167, 39427), (187, 39340),

Gene: Nebkiss\_67 Start: 43437, Stop: 42649, Start Num: 14

Candidate Starts for Nebkiss\_67:

(Start: 14 @43437 has 2 MA's), (Start: 23 @43398 has 39 MA's), (51, 43260), (80, 43107), (85, 43083), (93, 43050), (103, 43008), (108, 42990), (113, 42966), (146, 42831), (151, 42810), (164, 42759), (180, 42699), (182, 42690),

Gene: NelitzaMV\_51 Start: 39182, Stop: 38409, Start Num: 17

Candidate Starts for NelitzaMV\_51:

(Start: 17 @39182 has 118 MA's), (Start: 23 @39158 has 39 MA's), (Start: 31 @39128 has 1 MA's), (51, 39020), (67, 38924), (85, 38843), (91, 38819), (93, 38810), (95, 38801), (118, 38696), (120, 38690), (121, 38684), (157, 38540), (159, 38528), (167, 38504), (187, 38417),

Gene: Netyap\_39 Start: 33739, Stop: 32960, Start Num: 15

Candidate Starts for Netyap\_39:

(Start: 15 @33739 has 53 MA's), (27, 33682), (41, 33610), (46, 33583), (53, 33544), (65, 33472), (66, 33466), (77, 33424), (114, 33256), (131, 33184), (158, 33091), (160, 33085), (171, 33046),

Gene: Nibb\_44 Start: 34807, Stop: 34040, Start Num: 26

Candidate Starts for Nibb\_44:

(Start: 26 @34807 has 1 MA's), (33, 34780), (35, 34768), (39, 34744), (43, 34714), (63, 34615), (64, 34606), (72, 34579), (91, 34489), (92, 34483), (93, 34480), (96, 34468), (103, 34435), (114, 34384), (134, 34294), (138, 34279), (148, 34243), (161, 34195), (163, 34189), (169, 34168), (179, 34126), (185, 34084), (189, 34051),

Gene: Nicholas\_37 Start: 33978, Stop: 33187, Start Num: 15

Candidate Starts for Nicholas\_37:

(Start: 5 @34068 has 1 MA's), (9, 34026), (Start: 15 @33978 has 53 MA's), (20, 33960), (29, 33924), (Start: 44 @33840 has 1 MA's), (47, 33828), (57, 33777), (59, 33768), (66, 33717), (68, 33711), (93, 33600), (119, 33486), (126, 33459), (137, 33402), (168, 33288), (180, 33234), (186, 33201),

Gene: Nicholasp3\_39 Start: 33740, Stop: 32961, Start Num: 15

Candidate Starts for Nicholasp3\_39:

(Start: 15 @33740 has 53 MA's), (27, 33683), (41, 33611), (53, 33545), (65, 33473), (66, 33467), (77, 33425), (131, 33185), (158, 33092), (160, 33086), (171, 33047),

Gene: Nimrod\_57 Start: 40805, Stop: 40032, Start Num: 17

Candidate Starts for Nimrod\_57:

(Start: 17 @40805 has 118 MA's), (Start: 23 @40781 has 39 MA's), (Start: 31 @40751 has 1 MA's), (51, 40643), (67, 40547), (85, 40466), (91, 40442), (93, 40433), (95, 40424), (118, 40319), (120, 40313), (121, 40307), (157, 40163), (159, 40151), (167, 40127), (187, 40040),

Gene: NoSleep\_56 Start: 39744, Stop: 38971, Start Num: 17

Candidate Starts for NoSleep\_56:

(Start: 17 @39744 has 118 MA's), (Start: 23 @39720 has 39 MA's), (Start: 31 @39690 has 1 MA's), (51, 39582), (67, 39486), (85, 39405), (91, 39381), (93, 39372), (95, 39363), (118, 39258), (120, 39252), (121, 39246), (157, 39102), (159, 39090), (167, 39066), (187, 38979),

Gene: NonchalantPear\_54 Start: 39588, Stop: 38815, Start Num: 17

Candidate Starts for NonchalantPear\_54:

(Start: 17 @39588 has 118 MA's), (Start: 23 @39564 has 39 MA's), (Start: 31 @39534 has 1 MA's), (51, 39426), (67, 39330), (85, 39249), (91, 39225), (93, 39216), (95, 39207), (118, 39102), (120, 39096), (121, 39090), (157, 38946), (159, 38934), (167, 38910), (187, 38823),

Gene: OhShagHennessy\_36 Start: 32347, Stop: 31565, Start Num: 16

Candidate Starts for OhShagHennessy\_36:

(Start: 16 @32347 has 19 MA's), (20, 32329), (71, 32062), (77, 32035), (78, 32032), (84, 32002), (85, 31990), (90, 31969), (125, 31828), (132, 31792), (157, 31702), (171, 31648),

Gene: OmniCritical\_45 Start: 35490, Stop: 34672, Start Num: 23

Candidate Starts for OmniCritical\_45:

(Start: 23 @35490 has 39 MA's), (Start: 24 @35487 has 1 MA's), (27, 35472), (Start: 40 @35409 has 1 MA's), (Start: 44 @35379 has 1 MA's), (49, 35358), (56, 35322), (61, 35286), (72, 35244), (74, 35232), (75, 35229), (83, 35190), (93, 35145), (97, 35130), (105, 35094), (108, 35085), (130, 34992), (142, 34938), (147, 34914), (149, 34908), (154, 34890), (172, 34824), (178, 34803),

Gene: Omnicron\_43 Start: 33409, Stop: 32570, Start Num: 21

Candidate Starts for Omnicron\_43:

(Start: 21 @33409 has 8 MA's), (Start: 31 @33367 has 1 MA's), (45, 33283), (48, 33268), (52, 33247), (53, 33241), (74, 33142), (77, 33130), (85, 33085), (86, 33082), (93, 33052), (110, 32974), (142, 32827), (153, 32782), (159, 32755), (177, 32686),

Gene: OrionPax\_53 Start: 39189, Stop: 38416, Start Num: 17

Candidate Starts for OrionPax\_53:

(Start: 17 @39189 has 118 MA's), (Start: 23 @39165 has 39 MA's), (Start: 31 @39135 has 1 MA's), (51, 39027), (67, 38931), (85, 38850), (91, 38826), (93, 38817), (95, 38808), (118, 38703), (120, 38697), (121, 38691), (157, 38547), (159, 38535), (167, 38511), (187, 38424),

Gene: OverPar\_40 Start: 33770, Stop: 32991, Start Num: 15

Candidate Starts for OverPar\_40:

(Start: 15 @33770 has 53 MA's), (27, 33713), (41, 33641), (53, 33575), (56, 33560), (65, 33503), (66, 33497), (77, 33455), (131, 33215), (158, 33122), (160, 33116), (171, 33077),

Gene: PYPDinur\_36 Start: 32488, Stop: 31700, Start Num: 15

Candidate Starts for PYPDinur\_36:

(Start: 15 @32488 has 53 MA's), (27, 32431), (30, 32422), (39, 32371), (46, 32332), (50, 32314), (62, 32236), (65, 32221), (66, 32215), (77, 32173), (94, 32092), (104, 32050), (109, 32032), (129, 31948), (132, 31927), (157, 31837), (168, 31795), (171, 31783),

Gene: PaddyBaddy\_54 Start: 39196, Stop: 38423, Start Num: 17

Candidate Starts for PaddyBaddy\_54:

(Start: 17 @39196 has 118 MA's), (Start: 23 @39172 has 39 MA's), (Start: 31 @39142 has 1 MA's), (51, 39034), (67, 38938), (85, 38857), (91, 38833), (93, 38824), (95, 38815), (118, 38710), (120, 38704), (121, 38698), (157, 38554), (159, 38542), (167, 38518), (187, 38431),

Gene: Palpatine\_57 Start: 40553, Stop: 39804, Start Num: 23

Candidate Starts for Palpatine\_57:

(Start: 17 @40577 has 118 MA's), (Start: 23 @40553 has 39 MA's), (Start: 31 @40523 has 1 MA's), (51, 40415), (67, 40319), (85, 40238), (91, 40214), (93, 40205), (95, 40196), (118, 40091), (120, 40085), (121, 40079), (157, 39935), (159, 39923), (167, 39899), (187, 39812),

Gene: Paperbeatsrock\_53 Start: 40112, Stop: 39339, Start Num: 17

Candidate Starts for Paperbeatsrock\_53:

(Start: 17 @40112 has 118 MA's), (Start: 23 @40088 has 39 MA's), (Start: 31 @40058 has 1 MA's), (51, 39950), (67, 39854), (85, 39773), (91, 39749), (93, 39740), (95, 39731), (118, 39626), (120, 39620), (121, 39614), (157, 39470), (159, 39458), (167, 39434), (187, 39347),

Gene: Pat3\_52 Start: 38288, Stop: 37569, Start Num: 31

Candidate Starts for Pat3\_52:

(Start: 17 @38342 has 118 MA's), (Start: 23 @38318 has 39 MA's), (Start: 31 @38288 has 1 MA's), (51, 38180), (67, 38084), (85, 38003), (91, 37979), (93, 37970), (95, 37961), (118, 37856), (120, 37850), (121, 37844), (157, 37700), (159, 37688), (167, 37664), (187, 37577),

Gene: Patt\_43 Start: 34705, Stop: 33914, Start Num: 23

Candidate Starts for Patt\_43:

(Start: 23 @34705 has 39 MA's), (30, 34678), (36, 34648), (37, 34639), (57, 34534), (61, 34501), (70, 34465), (72, 34459), (74, 34447), (75, 34444), (77, 34435), (83, 34405), (93, 34360), (97, 34345), (122, 34237), (130, 34207), (133, 34180), (149, 34123), (175, 34027), (182, 33997),

Gene: Petra64142\_59 Start: 41017, Stop: 40268, Start Num: 23

Candidate Starts for Petra64142\_59:

(Start: 17 @41041 has 118 MA's), (Start: 23 @41017 has 39 MA's), (Start: 31 @40987 has 1 MA's), (51, 40879), (67, 40783), (85, 40702), (91, 40678), (93, 40669), (95, 40660), (118, 40555), (120, 40549), (121, 40543), (157, 40399), (159, 40387), (167, 40363), (187, 40276),

Gene: Phaja\_52 Start: 39938, Stop: 39165, Start Num: 17

Candidate Starts for Phaja\_52:

(Start: 17 @39938 has 118 MA's), (Start: 23 @39914 has 39 MA's), (Start: 31 @39884 has 1 MA's), (51, 39776), (67, 39680), (85, 39599), (91, 39575), (93, 39566), (95, 39557), (118, 39452), (120, 39446), (121, 39440), (157, 39296), (159, 39284), (167, 39260), (187, 39173),

Gene: Pharsalus\_52 Start: 39912, Stop: 39139, Start Num: 17

Candidate Starts for Pharsalus\_52:

(Start: 17 @39912 has 118 MA's), (Start: 23 @39888 has 39 MA's), (Start: 31 @39858 has 1 MA's), (51, 39750), (67, 39654), (85, 39573), (91, 39549), (93, 39540), (95, 39531), (118, 39426), (120, 39420), (121, 39414), (157, 39270), (159, 39258), (167, 39234), (187, 39147),

Gene: PhatBacter\_57 Start: 40591, Stop: 39818, Start Num: 17

Candidate Starts for PhatBacter\_57:

(Start: 17 @40591 has 118 MA's), (Start: 23 @40567 has 39 MA's), (Start: 31 @40537 has 1 MA's), (51, 40429), (67, 40333), (85, 40252), (91, 40228), (93, 40219), (95, 40210), (118, 40105), (120, 40099), (121, 40093), (157, 39949), (159, 39937), (167, 39913), (187, 39826),

Gene: Phaux\_56 Start: 40589, Stop: 39816, Start Num: 17

Candidate Starts for Phaux\_56:

(Start: 17 @40589 has 118 MA's), (Start: 23 @40565 has 39 MA's), (Start: 31 @40535 has 1 MA's), (51, 40427), (67, 40331), (85, 40250), (91, 40226), (93, 40217), (95, 40208), (118, 40103), (120, 40097), (121, 40091), (157, 39947), (159, 39935), (167, 39911), (187, 39824),

Gene: Phrappuccino\_39 Start: 21883, Stop: 22644, Start Num: 23

Candidate Starts for Phrappuccino\_39:

(8, 21793), (19, 21868), (Start: 23 @21883 has 39 MA's), (32, 21922), (34, 21934), (41, 21973), (42, 21985), (43, 21991), (48, 22012), (50, 22018), (52, 22033), (65, 22108), (73, 22135), (74, 22144), (76, 22150), (89, 22216), (90, 22219), (93, 22231), (106, 22285), (109, 22297), (111, 22303), (112, 22312), (116, 22330), (125, 22366), (126, 22369), (133, 22408), (140, 22429), (141, 22432), (153, 22480), (172, 22543), (174, 22552), (175, 22555), (183, 22594), (188, 22630),

Gene: Phrux\_52 Start: 39182, Stop: 38409, Start Num: 17

Candidate Starts for Phrux\_52:

(Start: 17 @39182 has 118 MA's), (Start: 23 @39158 has 39 MA's), (Start: 31 @39128 has 1 MA's), (51, 39020), (67, 38924), (85, 38843), (91, 38819), (93, 38810), (95, 38801), (118, 38696), (120, 38690), (121, 38684), (157, 38540), (159, 38528), (167, 38504), (187, 38417),

Gene: Policronamos\_57 Start: 40589, Stop: 39816, Start Num: 17

Candidate Starts for Policronamos\_57:

(Start: 17 @40589 has 118 MA's), (Start: 23 @40565 has 39 MA's), (Start: 31 @40535 has 1 MA's), (51, 40427), (67, 40331), (85, 40250), (91, 40226), (93, 40217), (95, 40208), (118, 40103), (120, 40097), (121, 40091), (157, 39947), (159, 39935), (167, 39911), (187, 39824),

Gene: Pochiewood\_36 Start: 32357, Stop: 31593, Start Num: 20

Candidate Starts for Pochiewood\_36:

(Start: 16 @32375 has 19 MA's), (20, 32357), (71, 32090), (77, 32063), (78, 32060), (84, 32030), (85, 32018), (90, 31997), (103, 31949), (125, 31856), (132, 31820), (157, 31730), (171, 31676),

Gene: Porky\_53 Start: 39308, Stop: 38535, Start Num: 17

Candidate Starts for Porky\_53:

(Start: 17 @39308 has 118 MA's), (Start: 23 @39284 has 39 MA's), (Start: 31 @39254 has 1 MA's), (51, 39146), (67, 39050), (85, 38969), (91, 38945), (93, 38936), (95, 38927), (118, 38822), (120, 38816), (121, 38810), (157, 38666), (159, 38654), (167, 38630), (187, 38543),

Gene: Ptowny\_53 Start: 38750, Stop: 38001, Start Num: 23

Candidate Starts for Ptowny\_53:

(Start: 17 @38774 has 118 MA's), (Start: 23 @38750 has 39 MA's), (Start: 31 @38720 has 1 MA's), (51, 38612), (67, 38516), (85, 38435), (91, 38411), (93, 38402), (95, 38393), (118, 38288), (120, 38282), (121, 38276), (157, 38132), (159, 38120), (167, 38096), (187, 38009),

Gene: Pumpkin\_56 Start: 40239, Stop: 39466, Start Num: 17

Candidate Starts for Pumpkin\_56:

(Start: 17 @40239 has 118 MA's), (Start: 23 @40215 has 39 MA's), (Start: 31 @40185 has 1 MA's), (51, 40077), (67, 39981), (85, 39900), (91, 39876), (93, 39867), (95, 39858), (118, 39753), (120, 39747), (121, 39741), (157, 39597), (159, 39585), (167, 39561), (187, 39474),

Gene: Qhanda\_48 Start: 35604, Stop: 34786, Start Num: 23

Candidate Starts for Qhanda\_48:

(Start: 23 @35604 has 39 MA's), (Start: 24 @35601 has 1 MA's), (27, 35586), (Start: 40 @35523 has 1 MA's), (Start: 44 @35493 has 1 MA's), (49, 35472), (56, 35436), (61, 35400), (72, 35358), (74, 35346), (75, 35343), (83, 35304), (93, 35259), (97, 35244), (105, 35208), (108, 35199), (130, 35106), (142, 35052), (147, 35028), (149, 35022), (154, 35004), (172, 34938), (178, 34917),

Gene: Quallification\_55 Start: 40227, Stop: 39454, Start Num: 17

Candidate Starts for Quallification\_55:

(Start: 17 @40227 has 118 MA's), (Start: 23 @40203 has 39 MA's), (Start: 31 @40173 has 1 MA's), (51, 40065), (67, 39969), (85, 39888), (91, 39864), (93, 39855), (95, 39846), (118, 39741), (120, 39735), (121, 39729), (157, 39585), (159, 39573), (167, 39549), (187, 39462),

Gene: Quby\_36 Start: 32381, Stop: 31593, Start Num: 15

Candidate Starts for Quby\_36:

(Start: 15 @32381 has 53 MA's), (27, 32324), (39, 32264), (46, 32225), (50, 32207), (62, 32129), (65, 32114), (66, 32108), (77, 32066), (91, 31997), (94, 31985), (104, 31943), (109, 31925), (129, 31841), (132, 31820), (157, 31730), (168, 31688), (171, 31676),

Gene: Rakim\_56 Start: 39965, Stop: 39216, Start Num: 23

Candidate Starts for Rakim\_56:

(Start: 17 @39989 has 118 MA's), (Start: 23 @39965 has 39 MA's), (Start: 31 @39935 has 1 MA's), (51, 39827), (67, 39731), (85, 39650), (91, 39626), (93, 39617), (95, 39608), (118, 39503), (120, 39497), (121, 39491), (157, 39347), (159, 39335), (167, 39311), (187, 39224),

Gene: Rando14\_42 Start: 32984, Stop: 32142, Start Num: 21

Candidate Starts for Rando14\_42:

(Start: 21 @32984 has 8 MA's), (Start: 31 @32942 has 1 MA's), (38, 32900), (48, 32843), (52, 32822), (53, 32816), (74, 32717), (77, 32705), (86, 32657), (93, 32627), (142, 32402), (147, 32378), (153, 32357), (155, 32351), (159, 32330), (162, 32324),

Gene: Red305\_37 Start: 33978, Stop: 33187, Start Num: 15

Candidate Starts for Red305\_37:

(Start: 5 @34068 has 1 MA's), (9, 34026), (Start: 15 @33978 has 53 MA's), (20, 33960), (29, 33924), (Start: 44 @33840 has 1 MA's), (47, 33828), (57, 33777), (59, 33768), (66, 33717), (68, 33711), (93, 33600), (119, 33486), (126, 33459), (137, 33402), (168, 33288), (180, 33234), (186, 33201),

Gene: Reptar3000\_44 Start: 34696, Stop: 33905, Start Num: 23

Candidate Starts for Reptar3000\_44:

(Start: 23 @34696 has 39 MA's), (30, 34669), (36, 34639), (37, 34630), (57, 34525), (61, 34492), (70, 34456), (72, 34450), (74, 34438), (75, 34435), (77, 34426), (83, 34396), (93, 34351), (97, 34336), (122, 34228), (130, 34198), (133, 34171), (142, 34144), (149, 34114), (175, 34018), (182, 33988),

Gene: Rimmer\_55 Start: 39931, Stop: 39158, Start Num: 17

Candidate Starts for Rimmer\_55:

(Start: 17 @39931 has 118 MA's), (Start: 23 @39907 has 39 MA's), (Start: 31 @39877 has 1 MA's), (51, 39769), (67, 39673), (85, 39592), (91, 39568), (93, 39559), (95, 39550), (118, 39445), (120, 39439), (121, 39433), (157, 39289), (159, 39277), (167, 39253), (187, 39166),

Gene: RiverMonster\_55 Start: 39760, Stop: 38987, Start Num: 17

Candidate Starts for RiverMonster\_55:

(Start: 17 @39760 has 118 MA's), (Start: 23 @39736 has 39 MA's), (Start: 31 @39706 has 1 MA's), (51, 39598), (67, 39502), (85, 39421), (91, 39397), (93, 39388), (95, 39379), (118, 39274), (120, 39268), (121, 39262), (157, 39118), (159, 39106), (167, 39082), (187, 38995),

Gene: Rose5\_36 Start: 32374, Stop: 31592, Start Num: 16

Candidate Starts for Rose5\_36:

(Start: 16 @32374 has 19 MA's), (20, 32356), (71, 32089), (77, 32062), (78, 32059), (84, 32029), (85, 32017), (90, 31996), (103, 31948), (125, 31855), (132, 31819), (157, 31729), (171, 31675),

Gene: Rossetti\_39 Start: 33812, Stop: 33228, Start Num: 53

Candidate Starts for Rossetti\_39:

(Start: 15 @34007 has 53 MA's), (27, 33950), (53, 33812), (65, 33740), (66, 33734), (77, 33692), (82, 33665), (97, 33599), (114, 33524), (139, 33428), (152, 33386), (157, 33368), (158, 33359), (171, 33314),

Gene: Rumpelstiltskin\_39 Start: 34006, Stop: 33227, Start Num: 15

Candidate Starts for Rumpelstiltskin\_39:

(Start: 15 @34006 has 53 MA's), (27, 33949), (41, 33877), (53, 33811), (65, 33739), (66, 33733), (77, 33691), (131, 33451), (158, 33358), (160, 33352), (171, 33313),

Gene: Ruthiejr\_47 Start: 35557, Stop: 34739, Start Num: 23

Candidate Starts for Ruthiejr\_47:

(Start: 23 @35557 has 39 MA's), (Start: 24 @35554 has 1 MA's), (27, 35539), (Start: 40 @35476 has 1 MA's), (Start: 44 @35446 has 1 MA's), (49, 35425), (56, 35389), (61, 35353), (72, 35311), (74, 35299), (75, 35296), (83, 35257), (93, 35212), (97, 35197), (105, 35161), (108, 35152), (130, 35059), (142, 35005), (147, 34981), (149, 34975), (154, 34957), (172, 34891), (178, 34870),

Gene: Saints25\_55 Start: 39472, Stop: 38699, Start Num: 17

Candidate Starts for Saints25\_55:

(Start: 17 @39472 has 118 MA's), (Start: 23 @39448 has 39 MA's), (Start: 31 @39418 has 1 MA's), (51, 39310), (67, 39214), (85, 39133), (91, 39109), (93, 39100), (95, 39091), (118, 38986), (120, 38980), (121, 38974), (157, 38830), (159, 38818), (167, 38794), (187, 38707),

Gene: SamScheppers\_45 Start: 35986, Stop: 35168, Start Num: 23

Candidate Starts for SamScheppers\_45:

(Start: 23 @35986 has 39 MA's), (Start: 24 @35983 has 1 MA's), (27, 35968), (Start: 40 @35905 has 1 MA's), (Start: 44 @35875 has 1 MA's), (49, 35854), (56, 35818), (61, 35782), (72, 35740), (74, 35728), (75, 35725), (83, 35686), (93, 35641), (97, 35626), (105, 35590), (108, 35581), (130, 35488), (142, 35434), (147, 35410), (149, 35404), (154, 35386), (172, 35320), (178, 35299),

Gene: Samty\_37 Start: 33979, Stop: 33188, Start Num: 15

Candidate Starts for Samty\_37:

(Start: 5 @34069 has 1 MA's), (9, 34027), (Start: 15 @33979 has 53 MA's), (20, 33961), (29, 33925), (Start: 44 @33841 has 1 MA's), (47, 33829), (57, 33778), (59, 33769), (66, 33718), (68, 33712), (93, 33601), (119, 33487), (126, 33460), (137, 33403), (168, 33289), (180, 33235), (186, 33202),

Gene: Sarshaun\_39 Start: 33772, Stop: 32993, Start Num: 15

Candidate Starts for Sarshaun\_39:

(Start: 15 @33772 has 53 MA's), (27, 33715), (41, 33643), (53, 33577), (56, 33562), (65, 33505), (66, 33499), (77, 33457), (131, 33217), (158, 33124), (160, 33118), (171, 33079),

Gene: Sassay\_48 Start: 37859, Stop: 37086, Start Num: 17

Candidate Starts for Sassay\_48:

(Start: 17 @37859 has 118 MA's), (Start: 23 @37835 has 39 MA's), (Start: 31 @37805 has 1 MA's), (51, 37697), (67, 37601), (85, 37520), (91, 37496), (93, 37487), (95, 37478), (118, 37373), (120, 37367), (121, 37361), (157, 37217), (159, 37205), (167, 37181), (187, 37094),

Gene: Settecandela\_39 Start: 21883, Stop: 22644, Start Num: 23

Candidate Starts for Settecandela\_39:

(8, 21793), (19, 21868), (Start: 23 @21883 has 39 MA's), (32, 21922), (34, 21934), (41, 21973), (42, 21985), (43, 21991), (48, 22012), (50, 22018), (52, 22033), (65, 22108), (73, 22135), (74, 22144), (76, 22150), (89, 22216), (90, 22219), (93, 22231), (106, 22285), (109, 22297), (111, 22303), (112, 22312), (116, 22330), (125, 22366), (126, 22369), (133, 22408), (140, 22429), (141, 22432), (153, 22480), (172, 22543), (174, 22552), (175, 22555), (183, 22594), (188, 22630),

Gene: ShamWow\_54 Start: 40375, Stop: 39602, Start Num: 17

Candidate Starts for ShamWow\_54:

(Start: 17 @40375 has 118 MA's), (Start: 23 @40351 has 39 MA's), (Start: 31 @40321 has 1 MA's), (51, 40213), (67, 40117), (85, 40036), (91, 40012), (93, 40003), (95, 39994), (118, 39889), (120, 39883), (121, 39877), (157, 39733), (159, 39721), (167, 39697), (187, 39610),

Gene: Sheng711\_36 Start: 32371, Stop: 31700, Start Num: 39

Candidate Starts for Sheng711\_36:

(Start: 15 @32488 has 53 MA's), (27, 32431), (30, 32422), (39, 32371), (46, 32332), (50, 32314), (62, 32236), (65, 32221), (66, 32215), (77, 32173), (94, 32092), (104, 32050), (109, 32032), (129, 31948), (132, 31927), (157, 31837), (168, 31795), (171, 31783),

Gene: ShereKhan\_52 Start: 40151, Stop: 39378, Start Num: 17

Candidate Starts for ShereKhan\_52:

(Start: 17 @40151 has 118 MA's), (Start: 23 @40127 has 39 MA's), (Start: 31 @40097 has 1 MA's), (51, 39989), (67, 39893), (85, 39812), (91, 39788), (93, 39779), (95, 39770), (118, 39665), (120, 39659), (121, 39653), (157, 39509), (159, 39497), (167, 39473), (187, 39386),

Gene: Silverleaf\_36 Start: 32374, Stop: 31592, Start Num: 16

Candidate Starts for Silverleaf\_36:

(Start: 16 @32374 has 19 MA's), (20, 32356), (71, 32089), (77, 32062), (78, 32059), (84, 32029), (85, 32017), (90, 31996), (103, 31948), (125, 31855), (132, 31819), (157, 31729), (171, 31675),

Gene: Simpliphy\_53 Start: 39456, Stop: 38683, Start Num: 17

Candidate Starts for Simpliphy\_53:

(Start: 17 @39456 has 118 MA's), (Start: 23 @39432 has 39 MA's), (Start: 31 @39402 has 1 MA's), (51, 39294), (67, 39198), (85, 39117), (91, 39093), (93, 39084), (95, 39075), (118, 38970), (120,

38964), (121, 38958), (157, 38814), (159, 38802), (167, 38778), (187, 38691),

Gene: SirDuracell\_53 Start: 38408, Stop: 37659, Start Num: 23

Candidate Starts for SirDuracell\_53:

(Start: 17 @38432 has 118 MA's), (Start: 23 @38408 has 39 MA's), (Start: 31 @38378 has 1 MA's), (51, 38270), (67, 38174), (85, 38093), (91, 38069), (93, 38060), (95, 38051), (118, 37946), (120, 37940), (121, 37934), (157, 37790), (159, 37778), (167, 37754), (187, 37667),

Gene: Slarp\_46 Start: 35595, Stop: 34777, Start Num: 23

Candidate Starts for Slarp\_46:

(Start: 23 @35595 has 39 MA's), (Start: 24 @35592 has 1 MA's), (27, 35577), (Start: 40 @35514 has 1 MA's), (Start: 44 @35484 has 1 MA's), (49, 35463), (56, 35427), (61, 35391), (72, 35349), (74, 35337), (75, 35334), (83, 35295), (93, 35250), (97, 35235), (105, 35199), (108, 35190), (130, 35097), (142, 35043), (147, 35019), (149, 35013), (154, 34995), (172, 34929), (178, 34908),

Gene: Snenia\_37 Start: 33979, Stop: 33188, Start Num: 15

Candidate Starts for Snenia\_37:

(Start: 5 @34069 has 1 MA's), (9, 34027), (Start: 15 @33979 has 53 MA's), (20, 33961), (29, 33925), (Start: 44 @33841 has 1 MA's), (47, 33829), (57, 33778), (59, 33769), (66, 33718), (68, 33712), (93, 33601), (119, 33487), (126, 33460), (137, 33403), (168, 33289), (180, 33235), (186, 33202),

Gene: SoJulia\_40 Start: 33999, Stop: 33220, Start Num: 15

Candidate Starts for SoJulia\_40:

(Start: 15 @33999 has 53 MA's), (27, 33942), (41, 33870), (46, 33843), (53, 33804), (65, 33732), (66, 33726), (77, 33684), (114, 33516), (131, 33444), (158, 33351), (160, 33345), (171, 33306),

Gene: Soap141\_39 Start: 33772, Stop: 32993, Start Num: 15

Candidate Starts for Soap141\_39:

(Start: 15 @33772 has 53 MA's), (27, 33715), (41, 33643), (53, 33577), (56, 33562), (65, 33505), (66, 33499), (77, 33457), (131, 33217), (158, 33124), (160, 33118), (171, 33079),

Gene: SophKB\_51 Start: 39131, Stop: 38358, Start Num: 17

Candidate Starts for SophKB\_51:

(Start: 17 @39131 has 118 MA's), (Start: 23 @39107 has 39 MA's), (Start: 31 @39077 has 1 MA's), (51, 38969), (67, 38873), (85, 38792), (91, 38768), (93, 38759), (95, 38750), (118, 38645), (120, 38639), (121, 38633), (157, 38489), (159, 38477), (167, 38453), (187, 38366),

Gene: Sotrice96\_55 Start: 39837, Stop: 39064, Start Num: 17

Candidate Starts for Sotrice96\_55:

(Start: 17 @39837 has 118 MA's), (Start: 23 @39813 has 39 MA's), (Start: 31 @39783 has 1 MA's), (51, 39675), (67, 39579), (85, 39498), (91, 39474), (93, 39465), (95, 39456), (118, 39351), (120, 39345), (121, 39339), (157, 39195), (159, 39183), (167, 39159), (187, 39072),

Gene: Stank\_58 Start: 40389, Stop: 39616, Start Num: 17

Candidate Starts for Stank\_58:

(Start: 17 @40389 has 118 MA's), (Start: 23 @40365 has 39 MA's), (Start: 31 @40335 has 1 MA's), (51, 40227), (67, 40131), (85, 40050), (91, 40026), (93, 40017), (95, 40008), (118, 39903), (120, 39897), (121, 39891), (157, 39747), (159, 39735), (167, 39711), (187, 39624),

Gene: Stark\_55 Start: 39644, Stop: 38871, Start Num: 17

Candidate Starts for Stark\_55:

(Start: 17 @39644 has 118 MA's), (Start: 23 @39620 has 39 MA's), (Start: 31 @39590 has 1 MA's), (51, 39482), (67, 39386), (85, 39305), (91, 39281), (93, 39272), (95, 39263), (118, 39158), (120,

39152), (121, 39146), (157, 39002), (159, 38990), (167, 38966), (187, 38879),

Gene: StellaBean\_52 Start: 39699, Stop: 38926, Start Num: 17

Candidate Starts for StellaBean\_52:

(Start: 17 @39699 has 118 MA's), (Start: 23 @39675 has 39 MA's), (Start: 31 @39645 has 1 MA's), (51, 39537), (67, 39441), (85, 39360), (91, 39336), (93, 39327), (95, 39318), (118, 39213), (120, 39207), (121, 39201), (157, 39057), (159, 39045), (167, 39021), (187, 38934),

Gene: Stellammi\_60 Start: 38158, Stop: 37427, Start Num: 23

Candidate Starts for Stellammi\_60:

(Start: 23 @38158 has 39 MA's), (45, 38044), (51, 38020), (75, 37894), (113, 37726), (164, 37519), (167, 37513),

Gene: StolenFromERC\_57 Start: 39873, Stop: 39100, Start Num: 17

Candidate Starts for StolenFromERC\_57:

(Start: 17 @39873 has 118 MA's), (Start: 23 @39849 has 39 MA's), (Start: 31 @39819 has 1 MA's), (51, 39711), (67, 39615), (85, 39534), (91, 39510), (93, 39501), (95, 39492), (118, 39387), (120, 39381), (121, 39375), (157, 39231), (159, 39219), (167, 39195), (187, 39108),

Gene: StormChicken\_56 Start: 40515, Stop: 39766, Start Num: 23

Candidate Starts for StormChicken\_56:

(Start: 17 @40539 has 118 MA's), (Start: 23 @40515 has 39 MA's), (Start: 31 @40485 has 1 MA's), (51, 40377), (67, 40281), (85, 40200), (91, 40176), (93, 40167), (95, 40158), (118, 40053), (120, 40047), (121, 40041), (157, 39897), (159, 39885), (167, 39861), (187, 39774),

Gene: TBrady12\_57 Start: 39849, Stop: 39100, Start Num: 23

Candidate Starts for TBrady12\_57:

(Start: 17 @39873 has 118 MA's), (Start: 23 @39849 has 39 MA's), (Start: 31 @39819 has 1 MA's), (51, 39711), (67, 39615), (85, 39534), (91, 39510), (93, 39501), (95, 39492), (118, 39387), (120, 39381), (121, 39375), (157, 39231), (159, 39219), (167, 39195), (187, 39108),

Gene: Taquito\_46 Start: 35901, Stop: 35164, Start Num: 40

Candidate Starts for Taquito\_46:

(Start: 40 @35901 has 1 MA's), (Start: 44 @35871 has 1 MA's), (49, 35850), (56, 35814), (61, 35778), (72, 35736), (74, 35724), (75, 35721), (83, 35682), (93, 35637), (97, 35622), (105, 35586), (108, 35577), (130, 35484), (142, 35430), (147, 35406), (149, 35400), (154, 35382), (172, 35316), (178, 35295),

Gene: Tarkin\_53 Start: 40121, Stop: 39348, Start Num: 17

Candidate Starts for Tarkin\_53:

(Start: 17 @40121 has 118 MA's), (Start: 23 @40097 has 39 MA's), (Start: 31 @40067 has 1 MA's), (51, 39959), (67, 39863), (85, 39782), (91, 39758), (93, 39749), (95, 39740), (118, 39635), (120, 39629), (121, 39623), (157, 39479), (159, 39467), (167, 39443), (187, 39356),

Gene: TeamEdward\_56 Start: 40374, Stop: 39763, Start Num: 51

Candidate Starts for TeamEdward\_56:

(Start: 17 @40536 has 118 MA's), (Start: 23 @40512 has 39 MA's), (Start: 31 @40482 has 1 MA's), (51, 40374), (67, 40278), (85, 40197), (91, 40173), (93, 40164), (95, 40155), (118, 40050), (120, 40044), (121, 40038), (157, 39894), (159, 39882), (167, 39858), (187, 39771),

Gene: TeardropMSU\_50 Start: 39121, Stop: 38348, Start Num: 17

Candidate Starts for TeardropMSU\_50:

(Start: 17 @39121 has 118 MA's), (Start: 23 @39097 has 39 MA's), (Start: 31 @39067 has 1 MA's), (51, 38959), (67, 38863), (85, 38782), (91, 38758), (93, 38749), (95, 38740), (118, 38635), (120, 38629), (121, 38623), (157, 38479), (159, 38467), (167, 38443), (187, 38356),

Gene: Teaspoon\_55 Start: 39991, Stop: 39242, Start Num: 23

Candidate Starts for Teaspoon\_55:

(Start: 17 @40015 has 118 MA's), (Start: 23 @39991 has 39 MA's), (Start: 31 @39961 has 1 MA's), (51, 39853), (67, 39757), (85, 39676), (91, 39652), (93, 39643), (95, 39634), (118, 39529), (120, 39523), (121, 39517), (157, 39373), (159, 39361), (167, 39337), (187, 39250),

Gene: Terminus\_56 Start: 40612, Stop: 39839, Start Num: 17

Candidate Starts for Terminus\_56:

(Start: 17 @40612 has 118 MA's), (Start: 23 @40588 has 39 MA's), (Start: 31 @40558 has 1 MA's), (51, 40450), (67, 40354), (85, 40273), (91, 40249), (93, 40240), (95, 40231), (118, 40126), (120, 40120), (121, 40114), (157, 39970), (159, 39958), (167, 39934), (187, 39847),

Gene: Thimble\_56 Start: 39055, Stop: 38282, Start Num: 17

Candidate Starts for Thimble\_56:

(Start: 17 @39055 has 118 MA's), (Start: 23 @39031 has 39 MA's), (Start: 31 @39001 has 1 MA's), (51, 38893), (67, 38797), (85, 38716), (91, 38692), (93, 38683), (95, 38674), (118, 38569), (120, 38563), (121, 38557), (157, 38413), (159, 38401), (167, 38377), (187, 38290),

Gene: Thresher\_57 Start: 40998, Stop: 40225, Start Num: 17

Candidate Starts for Thresher\_57:

(Start: 17 @40998 has 118 MA's), (Start: 23 @40974 has 39 MA's), (Start: 31 @40944 has 1 MA's), (51, 40836), (67, 40740), (85, 40659), (91, 40635), (93, 40626), (95, 40617), (118, 40512), (120, 40506), (121, 40500), (157, 40356), (159, 40344), (167, 40320), (187, 40233),

Gene: Tomaszewski\_50 Start: 38994, Stop: 38221, Start Num: 17

Candidate Starts for Tomaszewski\_50:

(Start: 17 @38994 has 118 MA's), (Start: 23 @38970 has 39 MA's), (Start: 31 @38940 has 1 MA's), (51, 38832), (67, 38736), (85, 38655), (91, 38631), (93, 38622), (95, 38613), (118, 38508), (120, 38502), (121, 38496), (157, 38352), (159, 38340), (167, 38316), (187, 38229),

Gene: Toto\_53 Start: 40351, Stop: 39602, Start Num: 23

Candidate Starts for Toto\_53:

(Start: 17 @40375 has 118 MA's), (Start: 23 @40351 has 39 MA's), (Start: 31 @40321 has 1 MA's), (51, 40213), (67, 40117), (85, 40036), (91, 40012), (93, 40003), (95, 39994), (118, 39889), (120, 39883), (121, 39877), (157, 39733), (159, 39721), (167, 39697), (187, 39610),

Gene: Tourach\_39 Start: 33734, Stop: 32955, Start Num: 15

Candidate Starts for Tourach\_39:

(Start: 15 @33734 has 53 MA's), (27, 33677), (46, 33578), (53, 33539), (65, 33467), (66, 33461), (77, 33419), (89, 33356), (108, 33284), (114, 33251), (158, 33086), (171, 33041),

Gene: Traaww1\_50 Start: 39556, Stop: 38783, Start Num: 17

Candidate Starts for Traaww1\_50:

(Start: 17 @39556 has 118 MA's), (Start: 23 @39532 has 39 MA's), (Start: 31 @39502 has 1 MA's), (51, 39394), (67, 39298), (85, 39217), (91, 39193), (93, 39184), (95, 39175), (118, 39070), (120, 39064), (121, 39058), (157, 38914), (159, 38902), (167, 38878), (187, 38791),

Gene: TriFive\_37 Start: 33978, Stop: 33187, Start Num: 15

Candidate Starts for TriFive\_37:

(Start: 5 @34068 has 1 MA's), (9, 34026), (Start: 15 @33978 has 53 MA's), (20, 33960), (29, 33924), (Start: 44 @33840 has 1 MA's), (47, 33828), (57, 33777), (59, 33768), (66, 33717), (68, 33711), (93, 33600), (119, 33486), (126, 33459), (137, 33402), (168, 33288), (180, 33234), (186, 33201),

Gene: Tuco\_55 Start: 40883, Stop: 40110, Start Num: 17

Candidate Starts for Tuco\_55:

(Start: 17 @40883 has 118 MA's), (Start: 23 @40859 has 39 MA's), (Start: 31 @40829 has 1 MA's), (51, 40721), (67, 40625), (85, 40544), (91, 40520), (93, 40511), (95, 40502), (118, 40397), (120, 40391), (121, 40385), (157, 40241), (159, 40229), (167, 40205), (187, 40118),

Gene: Tyson\_36 Start: 32375, Stop: 31593, Start Num: 16

Candidate Starts for Tyson\_36:

(Start: 16 @32375 has 19 MA's), (20, 32357), (71, 32090), (77, 32063), (78, 32060), (84, 32030), (85, 32018), (90, 31997), (103, 31949), (125, 31856), (132, 31820), (157, 31730), (171, 31676),

Gene: UPIE\_37 Start: 32373, Stop: 31591, Start Num: 16

Candidate Starts for UPIE\_37:

(Start: 16 @32373 has 19 MA's), (20, 32355), (71, 32088), (77, 32061), (78, 32058), (84, 32028), (85, 32016), (90, 31995), (103, 31947), (125, 31854), (132, 31818), (157, 31728), (171, 31674),

Gene: Ukulele\_51 Start: 39269, Stop: 38496, Start Num: 17

Candidate Starts for Ukulele\_51:

(Start: 17 @39269 has 118 MA's), (Start: 23 @39245 has 39 MA's), (Start: 31 @39215 has 1 MA's), (51, 39107), (67, 39011), (85, 38930), (91, 38906), (93, 38897), (95, 38888), (118, 38783), (120, 38777), (121, 38771), (157, 38627), (159, 38615), (167, 38591), (187, 38504),

Gene: Underpass\_39 Start: 33740, Stop: 32961, Start Num: 15

Candidate Starts for Underpass\_39:

(Start: 15 @33740 has 53 MA's), (27, 33683), (41, 33611), (53, 33545), (65, 33473), (66, 33467), (77, 33425), (131, 33185), (158, 33092), (160, 33086), (171, 33047),

Gene: Vetric\_39 Start: 33745, Stop: 32966, Start Num: 15

Candidate Starts for Vetric\_39:

(Start: 15 @33745 has 53 MA's), (27, 33688), (41, 33616), (46, 33589), (53, 33550), (65, 33478), (66, 33472), (77, 33430), (131, 33190), (154, 33118), (158, 33097), (160, 33091), (171, 33052),

Gene: ViviJ\_40 Start: 33761, Stop: 32910, Start Num: 21

Candidate Starts for ViviJ\_40:

(Start: 21 @33761 has 8 MA's), (45, 33632), (53, 33590), (74, 33491), (77, 33479), (86, 33431), (93, 33401), (98, 33383), (104, 33347), (136, 33188), (142, 33173), (145, 33161), (153, 33128), (156, 33119), (159, 33101), (162, 33095), (166, 33080), (177, 33032), (181, 33011),

Gene: Wamburgxpress\_37 Start: 32388, Stop: 31606, Start Num: 16

Candidate Starts for Wamburgxpress\_37:

(Start: 16 @32388 has 19 MA's), (20, 32370), (71, 32103), (77, 32076), (78, 32073), (84, 32043), (85, 32031), (90, 32010), (103, 31962), (125, 31869), (132, 31833), (157, 31743), (171, 31689),

Gene: Whirlwind\_38 Start: 33757, Stop: 32933, Start Num: 10

Candidate Starts for Whirlwind\_38:

(Start: 10 @33757 has 1 MA's), (11, 33748), (13, 33730), (Start: 15 @33724 has 53 MA's), (29, 33670), (50, 33562), (52, 33547), (54, 33535), (57, 33523), (59, 33514), (66, 33463), (68, 33457), (81, 33400), (137, 33148), (168, 33034), (180, 32980),

Gene: Wiggin\_56 Start: 39957, Stop: 39184, Start Num: 17

Candidate Starts for Wiggin\_56:

(Start: 17 @39957 has 118 MA's), (Start: 23 @39933 has 39 MA's), (Start: 31 @39903 has 1 MA's), (51, 39795), (67, 39699), (85, 39618), (91, 39594), (93, 39585), (95, 39576), (118, 39471), (120, 39465), (121, 39459), (157, 39315), (159, 39303), (167, 39279), (187, 39192),

Gene: Wigglewigggle\_39 Start: 33771, Stop: 32992, Start Num: 15

Candidate Starts for Wigglewigggle\_39:

(Start: 15 @33771 has 53 MA's), (27, 33714), (41, 33642), (53, 33576), (56, 33561), (65, 33504), (66, 33498), (77, 33456), (131, 33216), (158, 33123), (160, 33117), (171, 33078),

Gene: Wilder\_39 Start: 33744, Stop: 32965, Start Num: 15

Candidate Starts for Wilder\_39:

(Start: 15 @33744 has 53 MA's), (27, 33687), (41, 33615), (53, 33549), (56, 33534), (65, 33477), (66, 33471), (77, 33429), (131, 33189), (158, 33096), (160, 33090), (171, 33051),

Gene: Willez\_48 Start: 37859, Stop: 37086, Start Num: 17

Candidate Starts for Willez\_48:

(Start: 17 @37859 has 118 MA's), (Start: 23 @37835 has 39 MA's), (Start: 31 @37805 has 1 MA's), (51, 37697), (67, 37601), (85, 37520), (91, 37496), (93, 37487), (95, 37478), (118, 37373), (120, 37367), (121, 37361), (157, 37217), (159, 37205), (167, 37181), (187, 37094),

Gene: Winky\_39 Start: 33739, Stop: 32960, Start Num: 15

Candidate Starts for Winky\_39:

(Start: 15 @33739 has 53 MA's), (27, 33682), (41, 33610), (46, 33583), (53, 33544), (65, 33472), (66, 33466), (77, 33424), (114, 33256), (131, 33184), (158, 33091), (160, 33085), (171, 33046),

Gene: Wintermute\_46 Start: 35744, Stop: 34926, Start Num: 23

Candidate Starts for Wintermute\_46:

(Start: 23 @35744 has 39 MA's), (Start: 24 @35741 has 1 MA's), (27, 35726), (Start: 40 @35663 has 1 MA's), (Start: 44 @35633 has 1 MA's), (49, 35612), (56, 35576), (61, 35540), (72, 35498), (74, 35486), (75, 35483), (83, 35444), (93, 35399), (97, 35384), (105, 35348), (108, 35339), (130, 35246), (142, 35192), (147, 35168), (149, 35162), (154, 35144), (172, 35078), (178, 35057),

Gene: Wyatt2\_37 Start: 32374, Stop: 31592, Start Num: 16

Candidate Starts for Wyatt2\_37:

(Start: 16 @32374 has 19 MA's), (20, 32356), (71, 32089), (77, 32062), (78, 32059), (84, 32029), (85, 32017), (90, 31996), (103, 31948), (125, 31855), (132, 31819), (157, 31729), (171, 31675),

Gene: Xandras\_54 Start: 39368, Stop: 38595, Start Num: 17

Candidate Starts for Xandras\_54:

(Start: 17 @39368 has 118 MA's), (Start: 23 @39344 has 39 MA's), (Start: 31 @39314 has 1 MA's), (51, 39206), (67, 39110), (85, 39029), (91, 39005), (93, 38996), (95, 38987), (118, 38882), (120, 38876), (121, 38870), (157, 38726), (159, 38714), (167, 38690), (187, 38603),

Gene: Y10\_45 Start: 35662, Stop: 34841, Start Num: 23

Candidate Starts for Y10\_45:

(Start: 23 @35662 has 39 MA's), (Start: 24 @35659 has 1 MA's), (27, 35644), (Start: 44 @35551 has 1 MA's), (49, 35530), (61, 35458), (72, 35416), (74, 35404), (75, 35401), (77, 35392), (83, 35362), (97, 35302), (105, 35266), (108, 35257), (130, 35164), (142, 35110), (147, 35086), (149, 35080), (152, 35068), (172, 34996), (178, 34975),

Gene: Y2\_45 Start: 35662, Stop: 34841, Start Num: 23

Candidate Starts for Y2\_45:

(Start: 23 @35662 has 39 MA's), (Start: 24 @35659 has 1 MA's), (27, 35644), (Start: 44 @35551 has 1 MA's), (49, 35530), (61, 35458), (72, 35416), (74, 35404), (75, 35401), (77, 35392), (83, 35362), (97, 35302), (105, 35266), (108, 35257), (130, 35164), (142, 35110), (147, 35086), (149, 35080), (152, 35068), (172, 34996), (178, 34975),

Gene: YasnayaPolyana\_46 Start: 35482, Stop: 34775, Start Num: 44

Candidate Starts for YasnayaPolyana\_46:

(Start: 23 @35593 has 39 MA's), (Start: 24 @35590 has 1 MA's), (27, 35575), (Start: 40 @35512 has 1 MA's), (Start: 44 @35482 has 1 MA's), (49, 35461), (56, 35425), (61, 35389), (72, 35347), (74, 35335), (75, 35332), (83, 35293), (93, 35248), (97, 35233), (105, 35197), (108, 35188), (130, 35095), (142, 35041), (147, 35017), (149, 35011), (154, 34993), (172, 34927), (178, 34906),

Gene: YassJohnny\_50 Start: 39010, Stop: 38261, Start Num: 23

Candidate Starts for YassJohnny\_50:

(Start: 17 @39034 has 118 MA's), (Start: 23 @39010 has 39 MA's), (Start: 31 @38980 has 1 MA's), (51, 38872), (67, 38776), (85, 38695), (91, 38671), (93, 38662), (95, 38653), (118, 38548), (120, 38542), (121, 38536), (157, 38392), (159, 38380), (167, 38356), (187, 38269),

Gene: Youngblood\_56 Start: 40542, Stop: 39769, Start Num: 17

Candidate Starts for Youngblood\_56:

(Start: 17 @40542 has 118 MA's), (Start: 23 @40518 has 39 MA's), (Start: 31 @40488 has 1 MA's), (51, 40380), (67, 40284), (85, 40203), (91, 40179), (93, 40170), (95, 40161), (118, 40056), (120, 40050), (121, 40044), (157, 39900), (159, 39888), (167, 39864), (187, 39777),

Gene: Zakai\_39 Start: 33996, Stop: 33217, Start Num: 15

Candidate Starts for Zakai\_39:

(Start: 15 @33996 has 53 MA's), (27, 33939), (41, 33867), (53, 33801), (56, 33786), (65, 33729), (66, 33723), (77, 33681), (131, 33441), (158, 33348), (160, 33342), (171, 33303),

Gene: Zaria\_37 Start: 32389, Stop: 31607, Start Num: 16

Candidate Starts for Zaria\_37:

(Start: 16 @32389 has 19 MA's), (20, 32371), (71, 32104), (77, 32077), (78, 32074), (84, 32044), (85, 32032), (90, 32011), (103, 31963), (125, 31870), (132, 31834), (157, 31744), (171, 31690),

Gene: ZhongYanYuan\_38 Start: 33577, Stop: 32798, Start Num: 15

Candidate Starts for ZhongYanYuan\_38:

(Start: 15 @33577 has 53 MA's), (27, 33520), (46, 33421), (51, 33400), (53, 33382), (65, 33310), (66, 33304), (77, 33262), (87, 33211), (89, 33199), (91, 33193), (93, 33184), (116, 33088), (150, 32965), (152, 32956),

Gene: xkcd\_58 Start: 40732, Stop: 39959, Start Num: 17

Candidate Starts for xkcd\_58:

(Start: 17 @40732 has 118 MA's), (Start: 23 @40708 has 39 MA's), (Start: 31 @40678 has 1 MA's), (51, 40570), (67, 40474), (85, 40393), (91, 40369), (93, 40360), (95, 40351), (118, 40246), (120, 40240), (121, 40234), (157, 40090), (159, 40078), (167, 40054), (187, 39967),