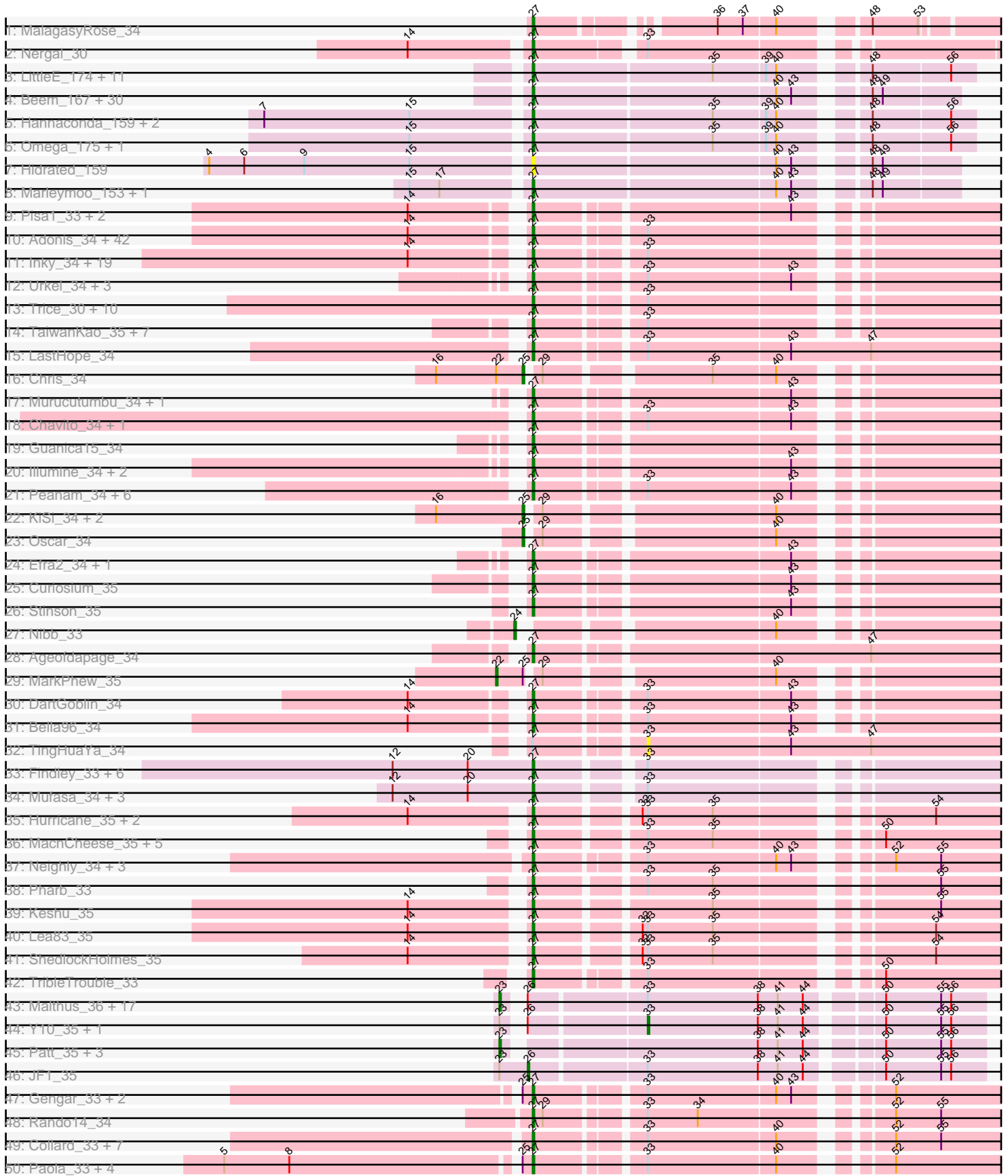


Pham 304672



Pham 304672



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 304672 Report

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

Pham number 304672 has 275 members, 27 are drafts.

Phages represented in each track:

- Track 1 : MalagasyRose\_34
- Track 2 : Nergal\_30
- Track 3 : LittleE\_174, Shaboozey\_165, BronnyJames\_162, Courthouse\_164, Nekros\_165, Superphikiman\_165, Porcelain\_167, Squint\_162, Ariel\_167, MiaZeal\_170, Lucky2013\_163, Nibley\_160
- Track 4 : Beem\_167, HokkenD\_161, EricMillard\_164, Bobby\_159, Dove\_153, BAKA\_172, Phoebus\_167, Constella\_162, Minerva\_166, Dallas\_166, Xiaokay\_162, Odette\_170, Optimus\_165, Kalah2\_163, Ejimix\_157, Halley\_167, Duke13\_169, Klein\_170, Hughesyang\_165, Yeet\_158, Bombitas\_153, Pound\_160, JuicyJay\_161, Schatzie\_161, NihilNomen\_168, Zelink\_159, Redno2\_160, ThreeRngTarjay\_163, Wanda\_164, Bagrid\_175, Thibault\_150
- Track 5 : Hannaconda\_159, Rearden\_166, Gonephishing\_160
- Track 6 : Omega\_175, KashFlow\_164
- Track 7 : Hidrated\_159
- Track 8 : Marleymoo\_153, DmpstrDiver\_167
- Track 9 : Pisa1\_33, Pisa4\_33, Bern\_34
- Track 10 : Adonis\_34, BarrelRoll\_34, Blizzard\_34, QuincyRose\_33, Apocalypse\_34, Deby\_34, BEEST\_34, Piatt\_34, Padfoot\_34, Adephagia\_34, Sulley\_34, Zavala\_34, Jayhawk\_34, Slimphazie\_34, Asayake\_34, JAWS\_34, Geraldini\_34, MacKat\_34, Angelica\_34, Tachez\_34, Mynx\_34, ShiaSurprise\_34, Zabiza\_34, Ganymede\_35, MeaningOfLife\_34, Beezoo\_34, AlishaPH\_34, ActinUp\_34, Clipper\_34, Pokerus\_33, Emerson\_34, TruffulaTree\_34, Padpat\_34, HedwigODU\_34, Atiba\_34, Rapunzel97\_34, Durfee\_34, Ramen\_34, Veliki\_34, Boiiii\_34, Hyperbowlee\_34, CaseJules\_34, YoureAdopted\_33
- Track 11 : Inky\_34, Spock\_34, Anaya\_35, BaghaKamala\_34, Belladonna\_34, Capricorn\_34, BGIlluviae\_34, CREW\_34, Joy99\_34, CallaLilly\_34, Jeckyll\_34, Dalmuri\_34, Rosmarinus\_34, Lunahalos\_34, Peel\_34, Llorens\_34, Twitch\_34, Topper\_34, Jarvi\_34, Homura\_34
- Track 12 : Urkel\_34, Anma\_34, SamuelLPlaqson\_34, DrHayes\_34
- Track 13 : Trice\_30, Enkosi\_30, Mdavu\_30, Biglebops\_30, Amelie\_30, SgtBeansprout\_30, Nikao\_30, Torres\_30, LilPharaoh\_30, Nutello\_30, Teejan\_30
- Track 14 : TaiwanKao\_35, LindNT\_34, CrimD\_34, Tiri\_34, TreyKay\_34, CheetoDust\_34, Megsy\_34, Prithvi\_34
- Track 15 : LastHope\_34
- Track 16 : Chris\_34
- Track 17 : Murucutumbu\_34, LaterM\_34
- Track 18 : Chavito\_34, Validus\_34

- Track 19 : Guanica15\_34
- Track 20 : Illumine\_34, Dole\_34, Devera\_34
- Track 21 : Peanam\_34, Shadow1\_33, Richo\_34, Dartin\_34, Shaobing\_34, McMater\_34, Niklas\_34
- Track 22 : KiSi\_34, LeMond\_34, Scarlett\_34
- Track 23 : Oscar\_34
- Track 24 : Efra2\_34, Yunkel11\_34
- Track 25 : Curiosium\_35
- Track 26 : Stinson\_35
- Track 27 : Nibb\_33
- Track 28 : Ageofdapage\_34
- Track 29 : MarkPhew\_35
- Track 30 : DartGoblin\_34
- Track 31 : Bella96\_34
- Track 32 : TingHuaYa\_34
- Track 33 : Findley\_33, Strobilo\_33, DismalStressor\_33, Milly\_33, DismalFunk\_33, Marcoliusprime\_33, ZoeJ\_33
- Track 34 : Mufasa\_34, Doughnut\_34, TM4\_35, BoostSeason\_34
- Track 35 : Hurricane\_35, TBond007\_34, Pixie\_34
- Track 36 : MacnCheese\_35, Amgine\_32, Ellie\_31, Applecrisp\_32, Lavahound\_32, Fefferhead\_33
- Track 37 : Neighly\_34, Larva\_34, Psycho\_34, Dadosky\_34
- Track 38 : Pharb\_33
- Track 39 : Keshu\_35
- Track 40 : Lea83\_35
- Track 41 : ShedlockHolmes\_35
- Track 42 : TribbleTrouble\_33
- Track 43 : Malthus\_36, Mitti\_35, Fionnbharth\_35, Kraw\_35, Chancellor\_35, Wintermute\_35, Lebo14\_35, Eponine\_37, Cheetobro\_35, Qhanda\_36, Juliette\_37, OmniCritical\_35, Slarp\_35, Ruthiejr\_36, Taquito\_35, SamScheppers\_35, YasnayaPolyana\_35, DanSyl44\_38
- Track 44 : Y10\_35, Y2\_35
- Track 45 : Patt\_35, MissDaisy\_35, Reptar3000\_35, Bobquesha\_36
- Track 46 : JF1\_35
- Track 47 : Gengar\_33, OkiRoe\_33, Feyre\_33
- Track 48 : Rando14\_34
- Track 49 : Collard\_33, ViviJ\_32, LilDirt\_32, DoubleChamp\_33, InvictusManeo\_33, BananenDer11\_33, AlleyCat\_34, Agent47\_33
- Track 50 : Paola\_33, Waterfoul\_33, Thyatira\_33, Guillsminger\_33, Leston\_33
- Track 51 : Heftyboy\_33, SoSeph\_33
- Track 52 : Miryou\_33
- Track 53 : Edugator\_33
- Track 54 : Kratio\_32
- Track 55 : Omnicron\_34
- Track 56 : Cain\_34, Krueger\_34, Phrank\_34, Unicorn\_34, Bryler\_34, Tierra\_34, Sunflower1121\_33, Tigress9\_34, PhelpsODU\_34
- Track 57 : DarthP\_33, Amohnition\_33, Hammy\_33
- Track 58 : Syra333\_34
- Track 59 : Yuna\_35
- Track 60 : Marshawn\_36
- Track 61 : November\_32
- Track 62 : TClif\_35
- Track 63 : Ximenita\_35, TiniBug\_34

- Track 64 : SirPhilip\_33
- Track 65 : Ekdilam\_31
- Track 66 : Aminay\_35
- Track 67 : Boilgate\_31
- Track 68 : DS6A\_35
- Track 69 : Jace\_83

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

The start number called the most often in the published annotations is 27, it was called in 215 of the 248 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp\_34, Adephegia\_34, Adonis\_34, Agent47\_33, Ageofdapage\_34, AlishaPH\_34, AlleyCat\_34, Amelie\_30, Amgine\_32, Amohnition\_33, Anaya\_35, Angelica\_34, Anma\_34, Apocalypse\_34, Applecrisp\_32, Ariel\_167, Asayake\_34, Atiba\_34, BAKA\_172, BEEST\_34, BGIlluviae\_34, BaghaKamala\_34, Bagrid\_175, BananenDer11\_33, BarrelRoll\_34, Beem\_167, Beezoo\_34, Bella96\_34, Belladonna\_34, Bern\_34, Biglebops\_30, Blizzard\_34, Bobby\_159, Boiiii\_34, Bombitas\_153, BoostSeason\_34, BronnyJames\_162, Bryler\_34, CREW\_34, Cain\_34, CallaLilly\_34, Capricorn\_34, CaseJules\_34, Chavito\_34, CheetoDust\_34, Clipper\_34, Collard\_33, Constella\_162, Courthouse\_164, CrimD\_34, Curiosium\_35, Dadosky\_34, Dallas\_166, Dalmuri\_34, DartGoblin\_34, DarthP\_33, Dartin\_34, Deby\_34, Devera\_34, DismalFunk\_33, DismalStressor\_33, DmpstrDiver\_167, Dole\_34, DoubleChamp\_33, Doughnut\_34, Dove\_153, DrHayes\_34, Duke13\_169, Durfee\_34, Edugator\_33, Efra2\_34, Ejimix\_157, Ekdilam\_31, Ellie\_31, Emerson\_34, Enkosi\_30, EricMillard\_164, Fefferhead\_33, Feyre\_33, Findley\_33, Ganymede\_35, Gengar\_33, Geraldini\_34, Gonephishing\_160, Guanica15\_34, Guillsminger\_33, Halley\_167, Hammy\_33, Hannaconda\_159, HedwigODU\_34, Heftyboy\_33, Hidrated\_159, HokkenD\_161, Homura\_34, Hughesyang\_165, Hurricane\_35, Hyperbowlee\_34, Illumine\_34, Inky\_34, InvictusManeo\_33, JAWS\_34, Jace\_83, Jarvi\_34, Jayhawk\_34, Jeckyll\_34, Joy99\_34, JuicyJay\_161, Kalah2\_163, KashFlow\_164, Keshu\_35, Klein\_170, Kratio\_32, Krueger\_34, Larva\_34, LastHope\_34, LaterM\_34, Lavahound\_32, Lea83\_35, Leston\_33, LilDirt\_32, LilPharaoh\_30, LindNT\_34, LittleE\_174, Llorens\_34, Lucky2013\_163, Lunahalos\_34, MacKat\_34, MacnCheese\_35, MalagasyRose\_34, Marcoliusprime\_33, Marleymoo\_153, McMater\_34, Mdavu\_30, MeaningOfLife\_34, Megsy\_34, MiaZeal\_170, Milly\_33, Minerva\_166, Miryou\_33, Mufasa\_34, Murucutumbu\_34, Mynx\_34, Neighly\_34, Nekros\_165, Nergal\_30, Nibley\_160, NihilNomen\_168, Nikao\_30, Niklas\_34, November\_32, Nutello\_30, Odette\_170, OkiRoe\_33, Omega\_175, Omnicron\_34, Optimus\_165, Padfoot\_34, Padpat\_34, Paola\_33, Peanam\_34, Peel\_34, Pharb\_33, PhelpsODU\_34, Phoebus\_167, Phrank\_34, Piatt\_34, Pisa1\_33, Pisa4\_33, Pixie\_34, Pokerus\_33, Porcelain\_167, Pound\_160, Prithvi\_34, Psycho\_34, QuincyRose\_33, Ramen\_34, Rando14\_34, Rapunzel97\_34, Rearden\_166, Redno2\_160, Richo\_34, Rosmarinus\_34, SamuelLPlaqson\_34, Schatzie\_161, SgtBeansprout\_30, Shaboozey\_165, Shadow1\_33, Shaobing\_34, ShedlockHolmes\_35, ShiaSurprise\_34, SirPhilip\_33, Slimphazie\_34, SoSeph\_33, Spock\_34, Squint\_162, Stinson\_35, Strobilo\_33, Sulley\_34, Sunflower1121\_33, Superphikiman\_165, Syra333\_34, TBond007\_34, TClif\_35, TM4\_35, Tachez\_34, TaiwanKao\_35, Teejan\_30, Thibault\_150, ThreeRngTarjay\_163, Thyatira\_33,

Tierra\_34, Tigress9\_34, TiniBug\_34, Tiri\_34, Topper\_34, Torres\_30, TreyKay\_34, TripleTrouble\_33, Trice\_30, TruffulaTree\_34, Twitch\_34, Unicorn\_34, Urkel\_34, Validus\_34, Veliki\_34, ViviJ\_32, Wanda\_164, Waterfoul\_33, Xiaokay\_162, Ximenita\_35, Yeet\_158, YoureAdopted\_33, Yuna\_35, Yunkel11\_34, Zabiza\_34, Zavala\_34, Zelink\_159, ZoeJ\_33,

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

- TingHuaYa\_34,

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

- Aminay\_35, Bobquesha\_36, Boilgate\_31, Chancellor\_35, Cheetobro\_35, Chris\_34, DS6A\_35, DanSyl44\_38, Eponine\_37, Fionnbharth\_35, JF1\_35, Juliette\_37, KiSi\_34, Kraw\_35, LeMond\_34, Lebo14\_35, Malthus\_36, MarkPheW\_35, Marshawn\_36, MissDaisy\_35, Mitti\_35, Nibb\_33, OmniCritical\_35, Oscar\_34, Patt\_35, Qhanda\_36, Reptar3000\_35, Ruthiejr\_36, SamScheppers\_35, Scarlett\_34, Slarp\_35, Taquito\_35, Wintermute\_35, Y10\_35, Y2\_35, YasnayaPolyana\_35,

### Summary by start number:

Start 22:

- Found in 2 of 275 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 248
- Called 50.0% of time when present
- Phage (with cluster) where this start called: MarkPheW\_35 (K1),

Start 23:

- Found in 27 of 275 ( 9.8% ) of genes in pham
- Manual Annotations of this start: 21 of 248
- Called 88.9% of time when present
- Phage (with cluster) where this start called: Bobquesha\_36 (K4), Boilgate\_31 (K8), Chancellor\_35 (K4), Cheetobro\_35 (K4), DS6A\_35 (singleton), DanSyl44\_38 (K4), Eponine\_37 (K4), Fionnbharth\_35 (K4), Juliette\_37 (K4), Kraw\_35 (K4), Lebo14\_35 (K4), Malthus\_36 (K4), MissDaisy\_35 (K4), Mitti\_35 (K4), OmniCritical\_35 (K4), Patt\_35 (K4), Qhanda\_36 (K4), Reptar3000\_35 (K4), Ruthiejr\_36 (K4), SamScheppers\_35 (K4), Slarp\_35 (K4), Taquito\_35 (K4), Wintermute\_35 (K4), YasnayaPolyana\_35 (K4),

Start 24:

- Found in 1 of 275 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 248
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Nibb\_33 (K1),

Start 25:

- Found in 18 of 275 ( 6.5% ) of genes in pham
- Manual Annotations of this start: 6 of 248
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Chris\_34 (K1), KiSi\_34 (K1), LeMond\_34 (K1), Marshawn\_36 (K6), Oscar\_34 (K1), Scarlett\_34 (K1),

Start 26:

- Found in 21 of 275 ( 7.6% ) of genes in pham
- Manual Annotations of this start: 1 of 248

- Called 4.8% of time when present
- Phage (with cluster) where this start called: JF1\_35 (K4),

Start 27:

- Found in 239 of 275 ( 86.9% ) of genes in pham
- Manual Annotations of this start: 215 of 248
- Called 99.6% of time when present
- Phage (with cluster) where this start called: ActinUp\_34 (K1), Adephagia\_34 (K1), Adonis\_34 (K1), Agent47\_33 (K5), Ageofdapage\_34 (K1), AlishaPH\_34 (K1), AlleyCat\_34 (K5), Amelie\_30 (K1), Amgine\_32 (K6), Amohnition\_33 (K6), Anaya\_35 (K1), Angelica\_34 (K1), Anma\_34 (K1), Apocalypse\_34 (K1), Applecrisp\_32 (K6), Ariel\_167 (J), Asayake\_34 (K1), Atiba\_34 (K1), BAKA\_172 (J), BEEST\_34 (K1), BGIlluvia\_34 (K1), BaghaKamala\_34 (K1), Bagrid\_175 (J), BananenDer11\_33 (K5), BarrelRoll\_34 (K1), Beem\_167 (J), Beezoo\_34 (K1), Bella96\_34 (K1), Belladonna\_34 (K1), Bern\_34 (K1), Binglebops\_30 (K1), Blizzard\_34 (K1), Bobby\_159 (J), Boiii\_34 (K1), Bombitas\_153 (J), BoostSeason\_34 (K2), BronnyJames\_162 (J), Bryler\_34 (K6), CREW\_34 (K1), Cain\_34 (K6), CallaLilly\_34 (K1), Capricorn\_34 (K1), CaseJules\_34 (K1), Chavito\_34 (K1), CheetoDust\_34 (K1), Clipper\_34 (K1), Collard\_33 (K5), Constella\_162 (J), Courthouse\_164 (J), CrimD\_34 (K1), Curiosium\_35 (K1), Dadosky\_34 (K5), Dallas\_166 (J), Dalmuri\_34 (K1), DartGoblin\_34 (K1), DARTH\_33 (K6), Dartin\_34 (K1), Deby\_34 (K1), Devera\_34 (K1), DismalFunk\_33 (K2), DismalStressor\_33 (K2), DmpstrDiver\_167 (J), Dole\_34 (K1), DoubleChamp\_33 (K5), Doughnut\_34 (K2), Dove\_153 (J), DrHayes\_34 (K1), Duke13\_169 (J), Durfee\_34 (K1), Edugator\_33 (K5), Efra2\_34 (K1), Ejimix\_157 (J), Ekdilam\_31 (K6), Ellie\_31 (K6), Emerson\_34 (K1), Enkosi\_30 (K1), EricMillard\_164 (J), Fefferhead\_33 (K6), Feyre\_33 (K5), Findley\_33 (K2), Ganymede\_35 (K1), Gengar\_33 (K5), Geraldini\_34 (K1), Gonephishing\_160 (J), Guanica15\_34 (K1), Guillsminger\_33 (K5), Halley\_167 (J), Hammy\_33 (K6), Hannaconda\_159 (J), HedwigODU\_34 (K1), Heftyboy\_33 (K5), Hidrated\_159 (J), HokkenD\_161 (J), Homura\_34 (K1), Hughesyang\_165 (J), Hurricane\_35 (K3), Hyperbowlee\_34 (K1), Illumine\_34 (K1), Inky\_34 (K1), InvictusManeo\_33 (K5), JAWS\_34 (K1), Jace\_83 (singleton), Jarvi\_34 (K1), Jayhawk\_34 (K1), Jeckyll\_34 (K1), Joy99\_34 (K1), JuicyJay\_161 (J), Kalah2\_163 (J), KashFlow\_164 (J), Keshu\_35 (K3), Klein\_170 (J), Kratio\_32 (K5), Krueger\_34 (K6), Larva\_34 (K5), LastHope\_34 (K1), LaterM\_34 (K1), Lavahound\_32 (K6), Lea83\_35 (K3), Leston\_33 (K5), LilDirt\_32 (K5), LilPharaoh\_30 (K1), LindNT\_34 (K1), LittleE\_174 (J), Llorens\_34 (K1), Lucky2013\_163 (J), Lunahalos\_34 (K1), MacKat\_34 (K1), MacnCheese\_35 (K3), MalagasyRose\_34 (AG), Marcoliusprime\_33 (K2), Marleymoo\_153 (J), McMater\_34 (K1), Mdavu\_30 (K1), MeaningOfLife\_34 (K1), Megsy\_34 (K1), MiaZeal\_170 (J), Milly\_33 (K2), Minerva\_166 (J), Miryou\_33 (K5), Mufasa\_34 (K2), Murucutumbu\_34 (K1), Mynx\_34 (K1), Neighly\_34 (K3), Nekros\_165 (J), Nergal\_30 (AG), Nibley\_160 (J), NihilNomen\_168 (J), Nikao\_30 (K1), Niklas\_34 (K1), November\_32 (K6), Nutello\_30 (K1), Odette\_170 (J), OkiRoe\_33 (K5), Omega\_175 (J), Omnicron\_34 (K5), Optimus\_165 (J), Padfoot\_34 (K1), Padpat\_34 (K1), Paola\_33 (K5), Peanam\_34 (K1), Peel\_34 (K1), Pharb\_33 (K3), PhelpsODU\_34 (K6), Phoebus\_167 (J), Phrank\_34 (K6), Piatt\_34 (K1), Pisa1\_33 (K1), Pisa4\_33 (K1), Pixie\_34 (K3), Pokerus\_33 (K1), Porcelain\_167 (J), Pound\_160 (J), Prithvi\_34 (K1), Psycho\_34 (K5), QuincyRose\_33 (K1), Ramen\_34 (K1), Rando14\_34 (K5), Rapunzel97\_34 (K1), Rearden\_166 (J), Redno2\_160 (J), Richo\_34 (K1), Rosmarinus\_34 (K1), SamuelLPlaqson\_34 (K1), Schatzie\_161 (J), SgtBeansprout\_30 (K1), Shaboozey\_165 (J), Shadow1\_33 (K6), Shaobing\_34 (K1), ShedlockHolmes\_35 (K3), ShiaSurprise\_34 (K1), SirPhilip\_33 (K6), Slimphazie\_34 (K1), SoSeph\_33 (K5), Spock\_34 (K1), Squint\_162 (J), Stinson\_35 (K1), Strobilo\_33 (K2), Sulley\_34 (K1),

Sunflower1121\_33 (K6), Superphikiman\_165 (J), Syra333\_34 (K6), TBond007\_34 (K3), TClif\_35 (K6), TM4\_35 (K2), Tachez\_34 (K1), TaiwanKao\_35 (K1), Teejan\_30 (K1), Thibault\_150 (J), ThreeRngTarjay\_163 (J), Thyatira\_33 (K5), Tierra\_34 (K6), Tigress9\_34 (K6), TiniBug\_34 (K1), Tiri\_34 (K1), Topper\_34 (K1), Torres\_30 (K1), TreyKay\_34 (K1), TribbleTrouble\_33 (K3), Trice\_30 (K1), TruffulaTree\_34 (K1), Twitch\_34 (K1), Unicorn\_34 (K6), Urkel\_34 (K1), Validus\_34 (K1), Veliki\_34 (K1), ViviJ\_32 (K5), Wanda\_164 (J), Waterfoul\_33 (K5), Xiaokay\_162 (J), Ximenita\_35 (K6), Yeet\_158 (J), YoureAdopted\_33 (K1), Yuna\_35 (K6), Yunkel11\_34 (K1), Zabiza\_34 (K1), Zavala\_34 (K1), Zelink\_159 (J), ZoeJ\_33 (K2),

Start 28:

- Found in 1 of 275 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 248
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aminay\_35 (K7),

Start 33:

- Found in 191 of 275 ( 69.5% ) of genes in pham
- Manual Annotations of this start: 2 of 248
- Called 1.6% of time when present
- Phage (with cluster) where this start called: TingHuaYa\_34 (K1), Y10\_35 (K4), Y2\_35 (K4),

### **Summary by clusters:**

There are 11 clusters represented in this pham: singleton, AG, J, K3, K2, K1, K7, K6, K5, K4, K8,

Info for manual annotations of cluster AG:

- Start number 27 was manually annotated 2 times for cluster AG.

Info for manual annotations of cluster J:

- Start number 27 was manually annotated 40 times for cluster J.

Info for manual annotations of cluster K1:

- Start number 22 was manually annotated 1 time for cluster K1.
- Start number 24 was manually annotated 1 time for cluster K1.
- Start number 25 was manually annotated 5 times for cluster K1.
- Start number 27 was manually annotated 102 times for cluster K1.

Info for manual annotations of cluster K2:

- Start number 27 was manually annotated 11 times for cluster K2.

Info for manual annotations of cluster K3:

- Start number 27 was manually annotated 9 times for cluster K3.

Info for manual annotations of cluster K4:

- Start number 23 was manually annotated 19 times for cluster K4.
- Start number 26 was manually annotated 1 time for cluster K4.
- Start number 33 was manually annotated 2 times for cluster K4.

Info for manual annotations of cluster K5:

- Start number 27 was manually annotated 25 times for cluster K5.

Info for manual annotations of cluster K6:

- Start number 25 was manually annotated 1 time for cluster K6.
- Start number 27 was manually annotated 25 times for cluster K6.

Info for manual annotations of cluster K7:

- Start number 28 was manually annotated 1 time for cluster K7.

Info for manual annotations of cluster K8:

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

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

Gene: ActinUp\_34 Start: 28124, Stop: 28375, Start Num: 27

Candidate Starts for ActinUp\_34:

(14, 28064), (Start: 27 @28124 has 215 MA's), (Start: 33 @28181 has 2 MA's),

Gene: Adephagia\_34 Start: 28121, Stop: 28372, Start Num: 27

Candidate Starts for Adephagia\_34:

(14, 28061), (Start: 27 @28121 has 215 MA's), (Start: 33 @28178 has 2 MA's),

Gene: Adonis\_34 Start: 28136, Stop: 28387, Start Num: 27

Candidate Starts for Adonis\_34:

(14, 28076), (Start: 27 @28136 has 215 MA's), (Start: 33 @28193 has 2 MA's),

Gene: Agent47\_33 Start: 28760, Stop: 29011, Start Num: 27

Candidate Starts for Agent47\_33:

(Start: 27 @28760 has 215 MA's), (Start: 33 @28817 has 2 MA's), (40, 28892), (52, 28943), (55, 28970),

Gene: Ageofdapage\_34 Start: 28061, Stop: 28333, Start Num: 27

Candidate Starts for Ageofdapage\_34:

(Start: 27 @28061 has 215 MA's), (47, 28250),

Gene: AlishaPH\_34 Start: 28114, Stop: 28365, Start Num: 27

Candidate Starts for AlishaPH\_34:

(14, 28054), (Start: 27 @28114 has 215 MA's), (Start: 33 @28171 has 2 MA's),

Gene: AlleyCat\_34 Start: 28691, Stop: 28942, Start Num: 27

Candidate Starts for AlleyCat\_34:

(Start: 27 @28691 has 215 MA's), (Start: 33 @28748 has 2 MA's), (40, 28823), (52, 28874), (55, 28901),

Gene: Amelie\_30 Start: 27546, Stop: 27797, Start Num: 27

Candidate Starts for Amelie\_30:

(Start: 27 @27546 has 215 MA's), (Start: 33 @27603 has 2 MA's),

Gene: Amgine\_32 Start: 28083, Stop: 28340, Start Num: 27

Candidate Starts for Amgine\_32:

(Start: 27 @28083 has 215 MA's), (Start: 33 @28146 has 2 MA's), (35, 28185), (50, 28266),

Gene: Aminay\_35 Start: 29809, Stop: 30045, Start Num: 28  
Candidate Starts for Aminay\_35:  
(Start: 28 @29809 has 1 MA's), (30, 29818), (Start: 33 @29875 has 2 MA's), (45, 29968),

Gene: Amohnition\_33 Start: 28517, Stop: 28768, Start Num: 27  
Candidate Starts for Amohnition\_33:  
(14, 28454), (Start: 27 @28517 has 215 MA's), (35, 28613), (50, 28694),

Gene: Anaya\_35 Start: 28149, Stop: 28400, Start Num: 27  
Candidate Starts for Anaya\_35:  
(14, 28089), (Start: 27 @28149 has 215 MA's), (Start: 33 @28206 has 2 MA's),

Gene: Angelica\_34 Start: 28071, Stop: 28322, Start Num: 27  
Candidate Starts for Angelica\_34:  
(14, 28011), (Start: 27 @28071 has 215 MA's), (Start: 33 @28128 has 2 MA's),

Gene: Anma\_34 Start: 28065, Stop: 28316, Start Num: 27  
Candidate Starts for Anma\_34:  
(Start: 27 @28065 has 215 MA's), (Start: 33 @28122 has 2 MA's), (43, 28206),

Gene: Apocalypse\_34 Start: 28092, Stop: 28343, Start Num: 27  
Candidate Starts for Apocalypse\_34:  
(14, 28032), (Start: 27 @28092 has 215 MA's), (Start: 33 @28149 has 2 MA's),

Gene: Applecrisp\_32 Start: 28505, Stop: 28762, Start Num: 27  
Candidate Starts for Applecrisp\_32:  
(Start: 27 @28505 has 215 MA's), (Start: 33 @28568 has 2 MA's), (35, 28607), (50, 28688),

Gene: Ariel\_167 Start: 85326, Stop: 85568, Start Num: 27  
Candidate Starts for Ariel\_167:  
(Start: 27 @85326 has 215 MA's), (35, 85431), (39, 85461), (40, 85467), (48, 85509), (56, 85554),

Gene: Asayake\_34 Start: 28155, Stop: 28406, Start Num: 27  
Candidate Starts for Asayake\_34:  
(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: Atiba\_34 Start: 28084, Stop: 28335, Start Num: 27  
Candidate Starts for Atiba\_34:  
(14, 28024), (Start: 27 @28084 has 215 MA's), (Start: 33 @28141 has 2 MA's),

Gene: BAKA\_172 Start: 90313, Stop: 90546, Start Num: 27  
Candidate Starts for BAKA\_172:  
(Start: 27 @90313 has 215 MA's), (40, 90454), (43, 90463), (48, 90496), (49, 90502),

Gene: BEEST\_34 Start: 28155, Stop: 28406, Start Num: 27  
Candidate Starts for BEEST\_34:  
(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: BGlluviae\_34 Start: 28155, Stop: 28406, Start Num: 27  
Candidate Starts for BGlluviae\_34:  
(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: BaghaKamala\_34 Start: 28084, Stop: 28335, Start Num: 27

Candidate Starts for BaghaKamala\_34:

(14, 28024), (Start: 27 @28084 has 215 MA's), (Start: 33 @28141 has 2 MA's),

Gene: Bagrid\_175 Start: 90675, Stop: 90908, Start Num: 27

Candidate Starts for Bagrid\_175:

(Start: 27 @90675 has 215 MA's), (40, 90816), (43, 90825), (48, 90858), (49, 90864),

Gene: BananenDer11\_33 Start: 28721, Stop: 28972, Start Num: 27

Candidate Starts for BananenDer11\_33:

(Start: 27 @28721 has 215 MA's), (Start: 33 @28778 has 2 MA's), (40, 28853), (52, 28904), (55, 28931),

Gene: BarrelRoll\_34 Start: 28107, Stop: 28358, Start Num: 27

Candidate Starts for BarrelRoll\_34:

(14, 28047), (Start: 27 @28107 has 215 MA's), (Start: 33 @28164 has 2 MA's),

Gene: Beem\_167 Start: 89468, Stop: 89701, Start Num: 27

Candidate Starts for Beem\_167:

(Start: 27 @89468 has 215 MA's), (40, 89609), (43, 89618), (48, 89651), (49, 89657),

Gene: Beezoo\_34 Start: 28132, Stop: 28383, Start Num: 27

Candidate Starts for Beezoo\_34:

(14, 28072), (Start: 27 @28132 has 215 MA's), (Start: 33 @28189 has 2 MA's),

Gene: Bella96\_34 Start: 28025, Stop: 28276, Start Num: 27

Candidate Starts for Bella96\_34:

(14, 27965), (Start: 27 @28025 has 215 MA's), (Start: 33 @28082 has 2 MA's), (43, 28166),

Gene: Belladonna\_34 Start: 28155, Stop: 28406, Start Num: 27

Candidate Starts for Belladonna\_34:

(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: Bern\_34 Start: 28064, Stop: 28315, Start Num: 27

Candidate Starts for Bern\_34:

(14, 28004), (Start: 27 @28064 has 215 MA's), (43, 28205),

Gene: Biglebops\_30 Start: 27546, Stop: 27797, Start Num: 27

Candidate Starts for Biglebops\_30:

(Start: 27 @27546 has 215 MA's), (Start: 33 @27603 has 2 MA's),

Gene: Blizzard\_34 Start: 28155, Stop: 28406, Start Num: 27

Candidate Starts for Blizzard\_34:

(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: Bobby\_159 Start: 90463, Stop: 90696, Start Num: 27

Candidate Starts for Bobby\_159:

(Start: 27 @90463 has 215 MA's), (40, 90604), (43, 90613), (48, 90646), (49, 90652),

Gene: Bobquesha\_36 Start: 28938, Stop: 29198, Start Num: 23

Candidate Starts for Bobquesha\_36:

(Start: 23 @28938 has 21 MA's), (38, 29076), (41, 29088), (44, 29103), (50, 29139), (55, 29172), (56, 29178),

Gene: Boiiii\_34 Start: 28157, Stop: 28408, Start Num: 27

Candidate Starts for Boiiii\_34:

(14, 28097), (Start: 27 @28157 has 215 MA's), (Start: 33 @28214 has 2 MA's),

Gene: Boilgate\_31 Start: 29990, Stop: 30247, Start Num: 23

Candidate Starts for Boilgate\_31:

(Start: 23 @29990 has 21 MA's), (31, 30020), (Start: 33 @30059 has 2 MA's), (38, 30125), (50, 30188), (52, 30194), (55, 30221),

Gene: Bombitas\_153 Start: 85698, Stop: 85931, Start Num: 27

Candidate Starts for Bombitas\_153:

(Start: 27 @85698 has 215 MA's), (40, 85839), (43, 85848), (48, 85881), (49, 85887),

Gene: BoostSeason\_34 Start: 27482, Stop: 27730, Start Num: 27

Candidate Starts for BoostSeason\_34:

(12, 27398), (20, 27443), (Start: 27 @27482 has 215 MA's), (Start: 33 @27536 has 2 MA's),

Gene: BronnyJames\_162 Start: 85372, Stop: 85614, Start Num: 27

Candidate Starts for BronnyJames\_162:

(Start: 27 @85372 has 215 MA's), (35, 85477), (39, 85507), (40, 85513), (48, 85555), (56, 85600),

Gene: Bryler\_34 Start: 27447, Stop: 27698, Start Num: 27

Candidate Starts for Bryler\_34:

(Start: 27 @27447 has 215 MA's), (Start: 33 @27504 has 2 MA's), (43, 27588), (50, 27624),

Gene: CREW\_34 Start: 28155, Stop: 28406, Start Num: 27

Candidate Starts for CREW\_34:

(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: Cain\_34 Start: 27435, Stop: 27686, Start Num: 27

Candidate Starts for Cain\_34:

(Start: 27 @27435 has 215 MA's), (Start: 33 @27492 has 2 MA's), (43, 27576), (50, 27612),

Gene: CallaLilly\_34 Start: 28078, Stop: 28329, Start Num: 27

Candidate Starts for CallaLilly\_34:

(14, 28018), (Start: 27 @28078 has 215 MA's), (Start: 33 @28135 has 2 MA's),

Gene: Capricorn\_34 Start: 28155, Stop: 28406, Start Num: 27

Candidate Starts for Capricorn\_34:

(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: CaseJules\_34 Start: 28155, Stop: 28406, Start Num: 27

Candidate Starts for CaseJules\_34:

(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: Chancellor\_35 Start: 29198, Stop: 29458, Start Num: 23

Candidate Starts for Chancellor\_35:

(Start: 23 @29198 has 21 MA's), (Start: 26 @29204 has 1 MA's), (Start: 33 @29270 has 2 MA's), (38, 29336), (41, 29348), (44, 29363), (50, 29399), (55, 29432), (56, 29438),

Gene: Chavito\_34 Start: 27754, Stop: 28005, Start Num: 27

Candidate Starts for Chavito\_34:

(Start: 27 @27754 has 215 MA's), (Start: 33 @27811 has 2 MA's), (43, 27895),

Gene: CheetoDust\_34 Start: 28132, Stop: 28383, Start Num: 27  
Candidate Starts for CheetoDust\_34:  
(Start: 27 @28132 has 215 MA's), (Start: 33 @28189 has 2 MA's),

Gene: Cheetobro\_35 Start: 29195, Stop: 29455, Start Num: 23  
Candidate Starts for Cheetobro\_35:  
(Start: 23 @29195 has 21 MA's), (Start: 26 @29201 has 1 MA's), (Start: 33 @29267 has 2 MA's), (38, 29333), (41, 29345), (44, 29360), (50, 29396), (55, 29429), (56, 29435),

Gene: Chris\_34 Start: 27872, Stop: 28120, Start Num: 25  
Candidate Starts for Chris\_34:  
(16, 27821), (Start: 22 @27857 has 1 MA's), (Start: 25 @27872 has 6 MA's), (29, 27878), (35, 27965), (40, 28001),

Gene: Clipper\_34 Start: 28132, Stop: 28383, Start Num: 27  
Candidate Starts for Clipper\_34:  
(14, 28072), (Start: 27 @28132 has 215 MA's), (Start: 33 @28189 has 2 MA's),

Gene: Collard\_33 Start: 28721, Stop: 28972, Start Num: 27  
Candidate Starts for Collard\_33:  
(Start: 27 @28721 has 215 MA's), (Start: 33 @28778 has 2 MA's), (40, 28853), (52, 28904), (55, 28931),

Gene: Constella\_162 Start: 88202, Stop: 88435, Start Num: 27  
Candidate Starts for Constella\_162:  
(Start: 27 @88202 has 215 MA's), (40, 88343), (43, 88352), (48, 88385), (49, 88391),

Gene: Courthouse\_164 Start: 85770, Stop: 86012, Start Num: 27  
Candidate Starts for Courthouse\_164:  
(Start: 27 @85770 has 215 MA's), (35, 85875), (39, 85905), (40, 85911), (48, 85953), (56, 85998),

Gene: CrimD\_34 Start: 28089, Stop: 28340, Start Num: 27  
Candidate Starts for CrimD\_34:  
(Start: 27 @28089 has 215 MA's), (Start: 33 @28146 has 2 MA's),

Gene: Curiosium\_35 Start: 27915, Stop: 28166, Start Num: 27  
Candidate Starts for Curiosium\_35:  
(Start: 27 @27915 has 215 MA's), (43, 28056),

Gene: DS6A\_35 Start: 29978, Stop: 30217, Start Num: 23  
Candidate Starts for DS6A\_35:  
(21, 29969), (Start: 23 @29978 has 21 MA's), (30, 29996), (46, 30155),

Gene: Dadosky\_34 Start: 28692, Stop: 28943, Start Num: 27  
Candidate Starts for Dadosky\_34:  
(Start: 27 @28692 has 215 MA's), (Start: 33 @28749 has 2 MA's), (40, 28824), (43, 28833), (52, 28875), (55, 28902),

Gene: Dallas\_166 Start: 88691, Stop: 88924, Start Num: 27  
Candidate Starts for Dallas\_166:  
(Start: 27 @88691 has 215 MA's), (40, 88832), (43, 88841), (48, 88874), (49, 88880),

Gene: Dalmuri\_34 Start: 28155, Stop: 28406, Start Num: 27  
Candidate Starts for Dalmuri\_34:  
(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: DanSyl44\_38 Start: 30064, Stop: 30324, Start Num: 23  
Candidate Starts for DanSyl44\_38:  
(Start: 23 @30064 has 21 MA's), (Start: 26 @30070 has 1 MA's), (Start: 33 @30136 has 2 MA's), (38, 30202), (41, 30214), (44, 30229), (50, 30265), (55, 30298), (56, 30304),

Gene: DartGoblin\_34 Start: 28019, Stop: 28270, Start Num: 27  
Candidate Starts for DartGoblin\_34:  
(14, 27959), (Start: 27 @28019 has 215 MA's), (Start: 33 @28076 has 2 MA's), (43, 28160),

Gene: DarthP\_33 Start: 28439, Stop: 28690, Start Num: 27  
Candidate Starts for DarthP\_33:  
(14, 28376), (Start: 27 @28439 has 215 MA's), (35, 28535), (50, 28616),

Gene: Dartin\_34 Start: 27442, Stop: 27693, Start Num: 27  
Candidate Starts for Dartin\_34:  
(Start: 27 @27442 has 215 MA's), (Start: 33 @27499 has 2 MA's), (43, 27583),

Gene: Deby\_34 Start: 28089, Stop: 28340, Start Num: 27  
Candidate Starts for Deby\_34:  
(14, 28029), (Start: 27 @28089 has 215 MA's), (Start: 33 @28146 has 2 MA's),

Gene: Devera\_34 Start: 28150, Stop: 28401, Start Num: 27  
Candidate Starts for Devera\_34:  
(Start: 27 @28150 has 215 MA's), (43, 28291),

Gene: DismalFunk\_33 Start: 27394, Stop: 27642, Start Num: 27  
Candidate Starts for DismalFunk\_33:  
(12, 27310), (20, 27355), (Start: 27 @27394 has 215 MA's), (Start: 33 @27448 has 2 MA's),

Gene: DismalStressor\_33 Start: 27394, Stop: 27642, Start Num: 27  
Candidate Starts for DismalStressor\_33:  
(12, 27310), (20, 27355), (Start: 27 @27394 has 215 MA's), (Start: 33 @27448 has 2 MA's),

Gene: DmpstrDiver\_167 Start: 88386, Stop: 88619, Start Num: 27  
Candidate Starts for DmpstrDiver\_167:  
(15, 88320), (17, 88338), (Start: 27 @88386 has 215 MA's), (40, 88527), (43, 88536), (48, 88569), (49, 88575),

Gene: Dole\_34 Start: 28152, Stop: 28403, Start Num: 27  
Candidate Starts for Dole\_34:  
(Start: 27 @28152 has 215 MA's), (43, 28293),

Gene: DoubleChamp\_33 Start: 28721, Stop: 28972, Start Num: 27  
Candidate Starts for DoubleChamp\_33:  
(Start: 27 @28721 has 215 MA's), (Start: 33 @28778 has 2 MA's), (40, 28853), (52, 28904), (55, 28931),

Gene: Doughnut\_34 Start: 27475, Stop: 27723, Start Num: 27  
Candidate Starts for Doughnut\_34:

(12, 27391), (20, 27436), (Start: 27 @27475 has 215 MA's), (Start: 33 @27529 has 2 MA's),

Gene: Dove\_153 Start: 84054, Stop: 84287, Start Num: 27

Candidate Starts for Dove\_153:

(Start: 27 @84054 has 215 MA's), (40, 84195), (43, 84204), (48, 84237), (49, 84243),

Gene: DrHayes\_34 Start: 28065, Stop: 28316, Start Num: 27

Candidate Starts for DrHayes\_34:

(Start: 27 @28065 has 215 MA's), (Start: 33 @28122 has 2 MA's), (43, 28206),

Gene: Duke13\_169 Start: 88809, Stop: 89042, Start Num: 27

Candidate Starts for Duke13\_169:

(Start: 27 @88809 has 215 MA's), (40, 88950), (43, 88959), (48, 88992), (49, 88998),

Gene: Durfee\_34 Start: 28155, Stop: 28406, Start Num: 27

Candidate Starts for Durfee\_34:

(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: Edugator\_33 Start: 28691, Stop: 28945, Start Num: 27

Candidate Starts for Edugator\_33:

(Start: 27 @28691 has 215 MA's), (Start: 33 @28748 has 2 MA's), (40, 28823), (43, 28832), (52, 28874),

Gene: Efra2\_34 Start: 27390, Stop: 27641, Start Num: 27

Candidate Starts for Efra2\_34:

(Start: 27 @27390 has 215 MA's), (43, 27531),

Gene: Ejimix\_157 Start: 87679, Stop: 87912, Start Num: 27

Candidate Starts for Ejimix\_157:

(Start: 27 @87679 has 215 MA's), (40, 87820), (43, 87829), (48, 87862), (49, 87868),

Gene: Ekdilam\_31 Start: 28197, Stop: 28448, Start Num: 27

Candidate Starts for Ekdilam\_31:

(Start: 27 @28197 has 215 MA's), (Start: 33 @28254 has 2 MA's), (35, 28293), (50, 28374),

Gene: Ellie\_31 Start: 28196, Stop: 28453, Start Num: 27

Candidate Starts for Ellie\_31:

(Start: 27 @28196 has 215 MA's), (Start: 33 @28259 has 2 MA's), (35, 28298), (50, 28379),

Gene: Emerson\_34 Start: 28115, Stop: 28366, Start Num: 27

Candidate Starts for Emerson\_34:

(14, 28055), (Start: 27 @28115 has 215 MA's), (Start: 33 @28172 has 2 MA's),

Gene: Enkosi\_30 Start: 27546, Stop: 27797, Start Num: 27

Candidate Starts for Enkosi\_30:

(Start: 27 @27546 has 215 MA's), (Start: 33 @27603 has 2 MA's),

Gene: Eponine\_37 Start: 29951, Stop: 30211, Start Num: 23

Candidate Starts for Eponine\_37:

(Start: 23 @29951 has 21 MA's), (Start: 26 @29957 has 1 MA's), (Start: 33 @30023 has 2 MA's), (38, 30089), (41, 30101), (44, 30116), (50, 30152), (55, 30185), (56, 30191),

Gene: EricMillard\_164 Start: 89285, Stop: 89518, Start Num: 27

Candidate Starts for EricMillard\_164:

(Start: 27 @89285 has 215 MA's), (40, 89426), (43, 89435), (48, 89468), (49, 89474),

Gene: Fefferhead\_33 Start: 28396, Stop: 28653, Start Num: 27

Candidate Starts for Fefferhead\_33:

(Start: 27 @28396 has 215 MA's), (Start: 33 @28459 has 2 MA's), (35, 28498), (50, 28579),

Gene: Feyre\_33 Start: 28605, Stop: 28859, Start Num: 27

Candidate Starts for Feyre\_33:

(Start: 25 @28599 has 6 MA's), (Start: 27 @28605 has 215 MA's), (Start: 33 @28662 has 2 MA's), (40, 28737), (43, 28746), (52, 28788),

Gene: Findley\_33 Start: 27386, Stop: 27631, Start Num: 27

Candidate Starts for Findley\_33:

(12, 27302), (20, 27347), (Start: 27 @27386 has 215 MA's), (Start: 33 @27440 has 2 MA's),

Gene: Fionnbharth\_35 Start: 29186, Stop: 29446, Start Num: 23

Candidate Starts for Fionnbharth\_35:

(Start: 23 @29186 has 21 MA's), (Start: 26 @29192 has 1 MA's), (Start: 33 @29258 has 2 MA's), (38, 29324), (41, 29336), (44, 29351), (50, 29387), (55, 29420), (56, 29426),

Gene: Ganymede\_35 Start: 28144, Stop: 28395, Start Num: 27

Candidate Starts for Ganymede\_35:

(14, 28084), (Start: 27 @28144 has 215 MA's), (Start: 33 @28201 has 2 MA's),

Gene: Gengar\_33 Start: 28715, Stop: 28969, Start Num: 27

Candidate Starts for Gengar\_33:

(Start: 25 @28709 has 6 MA's), (Start: 27 @28715 has 215 MA's), (Start: 33 @28772 has 2 MA's), (40, 28847), (43, 28856), (52, 28898),

Gene: Geraldini\_34 Start: 28132, Stop: 28383, Start Num: 27

Candidate Starts for Geraldini\_34:

(14, 28072), (Start: 27 @28132 has 215 MA's), (Start: 33 @28189 has 2 MA's),

Gene: Gonephishing\_160 Start: 86587, Stop: 86829, Start Num: 27

Candidate Starts for Gonephishing\_160:

(7, 86434), (15, 86521), (Start: 27 @86587 has 215 MA's), (35, 86692), (39, 86722), (40, 86728), (48, 86770), (56, 86815),

Gene: Guanica15\_34 Start: 27407, Stop: 27658, Start Num: 27

Candidate Starts for Guanica15\_34:

(Start: 27 @27407 has 215 MA's),

Gene: Guillsminger\_33 Start: 28686, Stop: 28940, Start Num: 27

Candidate Starts for Guillsminger\_33:

(5, 28512), (8, 28551), (Start: 25 @28680 has 6 MA's), (Start: 27 @28686 has 215 MA's), (Start: 33 @28743 has 2 MA's), (40, 28818), (52, 28869),

Gene: Halley\_167 Start: 87995, Stop: 88228, Start Num: 27

Candidate Starts for Halley\_167:

(Start: 27 @87995 has 215 MA's), (40, 88136), (43, 88145), (48, 88178), (49, 88184),

Gene: Hammy\_33 Start: 28430, Stop: 28681, Start Num: 27

Candidate Starts for Hammy\_33:

(14, 28367), (Start: 27 @28430 has 215 MA's), (35, 28526), (50, 28607),

Gene: Hannaconda\_159 Start: 88508, Stop: 88750, Start Num: 27

Candidate Starts for Hannaconda\_159:

(7, 88355), (15, 88442), (Start: 27 @88508 has 215 MA's), (35, 88613), (39, 88643), (40, 88649), (48, 88691), (56, 88736),

Gene: HedwigODU\_34 Start: 28124, Stop: 28375, Start Num: 27

Candidate Starts for HedwigODU\_34:

(14, 28064), (Start: 27 @28124 has 215 MA's), (Start: 33 @28181 has 2 MA's),

Gene: Heftyboy\_33 Start: 28832, Stop: 29086, Start Num: 27

Candidate Starts for Heftyboy\_33:

(5, 28658), (8, 28697), (11, 28727), (21, 28814), (Start: 25 @28826 has 6 MA's), (Start: 27 @28832 has 215 MA's), (Start: 33 @28889 has 2 MA's), (40, 28964), (52, 29015),

Gene: Hidrated\_159 Start: 89709, Stop: 89942, Start Num: 27

Candidate Starts for Hidrated\_159:

(4, 89523), (6, 89544), (9, 89580), (15, 89643), (Start: 27 @89709 has 215 MA's), (40, 89850), (43, 89859), (48, 89892), (49, 89898),

Gene: HokkenD\_161 Start: 89776, Stop: 90009, Start Num: 27

Candidate Starts for HokkenD\_161:

(Start: 27 @89776 has 215 MA's), (40, 89917), (43, 89926), (48, 89959), (49, 89965),

Gene: Homura\_34 Start: 28155, Stop: 28406, Start Num: 27

Candidate Starts for Homura\_34:

(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: Hughesyang\_165 Start: 88477, Stop: 88710, Start Num: 27

Candidate Starts for Hughesyang\_165:

(Start: 27 @88477 has 215 MA's), (40, 88618), (43, 88627), (48, 88660), (49, 88666),

Gene: Hurricane\_35 Start: 28982, Stop: 29233, Start Num: 27

Candidate Starts for Hurricane\_35:

(14, 28919), (Start: 27 @28982 has 215 MA's), (32, 29036), (Start: 33 @29039 has 2 MA's), (35, 29078), (54, 29189),

Gene: Hyperbowlee\_34 Start: 28155, Stop: 28406, Start Num: 27

Candidate Starts for Hyperbowlee\_34:

(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: Illumine\_34 Start: 28152, Stop: 28403, Start Num: 27

Candidate Starts for Illumine\_34:

(Start: 27 @28152 has 215 MA's), (43, 28293),

Gene: Inky\_34 Start: 28155, Stop: 28406, Start Num: 27

Candidate Starts for Inky\_34:

(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: InvictusManeo\_33 Start: 28764, Stop: 29015, Start Num: 27

Candidate Starts for InvictusManeo\_33:

(Start: 27 @28764 has 215 MA's), (Start: 33 @28821 has 2 MA's), (40, 28896), (52, 28947), (55, 28974),

Gene: JAWS\_34 Start: 28109, Stop: 28360, Start Num: 27

Candidate Starts for JAWS\_34:

(14, 28049), (Start: 27 @28109 has 215 MA's), (Start: 33 @28166 has 2 MA's),

Gene: JF1\_35 Start: 29191, Stop: 29445, Start Num: 26

Candidate Starts for JF1\_35:

(Start: 23 @29185 has 21 MA's), (Start: 26 @29191 has 1 MA's), (Start: 33 @29257 has 2 MA's), (38, 29323), (41, 29335), (44, 29350), (50, 29386), (55, 29419), (56, 29425),

Gene: Jace\_83 Start: 45617, Stop: 45856, Start Num: 27

Candidate Starts for Jace\_83:

(18, 45572), (19, 45584), (Start: 27 @45617 has 215 MA's), (43, 45755), (53, 45815), (54, 45824),

Gene: Jarvi\_34 Start: 28155, Stop: 28406, Start Num: 27

Candidate Starts for Jarvi\_34:

(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: Jayhawk\_34 Start: 28122, Stop: 28373, Start Num: 27

Candidate Starts for Jayhawk\_34:

(14, 28062), (Start: 27 @28122 has 215 MA's), (Start: 33 @28179 has 2 MA's),

Gene: Jeckyll\_34 Start: 28155, Stop: 28406, Start Num: 27

Candidate Starts for Jeckyll\_34:

(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: Joy99\_34 Start: 28084, Stop: 28335, Start Num: 27

Candidate Starts for Joy99\_34:

(14, 28024), (Start: 27 @28084 has 215 MA's), (Start: 33 @28141 has 2 MA's),

Gene: JuicyJay\_161 Start: 89423, Stop: 89656, Start Num: 27

Candidate Starts for JuicyJay\_161:

(Start: 27 @89423 has 215 MA's), (40, 89564), (43, 89573), (48, 89606), (49, 89612),

Gene: Juliette\_37 Start: 29344, Stop: 29604, Start Num: 23

Candidate Starts for Juliette\_37:

(Start: 23 @29344 has 21 MA's), (Start: 26 @29350 has 1 MA's), (Start: 33 @29416 has 2 MA's), (38, 29482), (41, 29494), (44, 29509), (50, 29545), (55, 29578), (56, 29584),

Gene: Kalah2\_163 Start: 89761, Stop: 89994, Start Num: 27

Candidate Starts for Kalah2\_163:

(Start: 27 @89761 has 215 MA's), (40, 89902), (43, 89911), (48, 89944), (49, 89950),

Gene: KashFlow\_164 Start: 88321, Stop: 88563, Start Num: 27

Candidate Starts for KashFlow\_164:

(15, 88255), (Start: 27 @88321 has 215 MA's), (35, 88426), (39, 88456), (40, 88462), (48, 88504), (56, 88549),

Gene: Keshu\_35 Start: 28970, Stop: 29221, Start Num: 27

Candidate Starts for Keshu\_35:

(14, 28907), (Start: 27 @28970 has 215 MA's), (35, 29066), (55, 29180),

Gene: KiSi\_34 Start: 27747, Stop: 27995, Start Num: 25  
Candidate Starts for KiSi\_34:  
(16, 27696), (Start: 25 @27747 has 6 MA's), (29, 27753), (40, 27876),

Gene: Klein\_170 Start: 88100, Stop: 88333, Start Num: 27  
Candidate Starts for Klein\_170:  
(Start: 27 @88100 has 215 MA's), (40, 88241), (43, 88250), (48, 88283), (49, 88289),

Gene: Kratio\_32 Start: 28395, Stop: 28646, Start Num: 27  
Candidate Starts for Kratio\_32:  
(Start: 27 @28395 has 215 MA's), (Start: 33 @28452 has 2 MA's), (40, 28527), (51, 28575), (52, 28578), (55, 28605),

Gene: Kraw\_35 Start: 29110, Stop: 29370, Start Num: 23  
Candidate Starts for Kraw\_35:  
(Start: 23 @29110 has 21 MA's), (Start: 26 @29116 has 1 MA's), (Start: 33 @29182 has 2 MA's), (38, 29248), (41, 29260), (44, 29275), (50, 29311), (55, 29344), (56, 29350),

Gene: Krueger\_34 Start: 27308, Stop: 27559, Start Num: 27  
Candidate Starts for Krueger\_34:  
(Start: 27 @27308 has 215 MA's), (Start: 33 @27365 has 2 MA's), (43, 27449), (50, 27485),

Gene: Larva\_34 Start: 28559, Stop: 28810, Start Num: 27  
Candidate Starts for Larva\_34:  
(Start: 27 @28559 has 215 MA's), (Start: 33 @28616 has 2 MA's), (40, 28691), (43, 28700), (52, 28742), (55, 28769),

Gene: LastHope\_34 Start: 27271, Stop: 27543, Start Num: 27  
Candidate Starts for LastHope\_34:  
(Start: 27 @27271 has 215 MA's), (Start: 33 @27328 has 2 MA's), (43, 27412), (47, 27460),

Gene: LaterM\_34 Start: 28069, Stop: 28320, Start Num: 27  
Candidate Starts for LaterM\_34:  
(Start: 27 @28069 has 215 MA's), (43, 28210),

Gene: Lavahound\_32 Start: 28088, Stop: 28345, Start Num: 27  
Candidate Starts for Lavahound\_32:  
(Start: 27 @28088 has 215 MA's), (Start: 33 @28151 has 2 MA's), (35, 28190), (50, 28271),

Gene: LeMond\_34 Start: 27818, Stop: 28066, Start Num: 25  
Candidate Starts for LeMond\_34:  
(16, 27767), (Start: 25 @27818 has 6 MA's), (29, 27824), (40, 27947),

Gene: Lea83\_35 Start: 29040, Stop: 29291, Start Num: 27  
Candidate Starts for Lea83\_35:  
(14, 28977), (Start: 27 @29040 has 215 MA's), (32, 29094), (Start: 33 @29097 has 2 MA's), (35, 29136), (54, 29247),

Gene: Lebo14\_35 Start: 29199, Stop: 29459, Start Num: 23  
Candidate Starts for Lebo14\_35:  
(Start: 23 @29199 has 21 MA's), (Start: 26 @29205 has 1 MA's), (Start: 33 @29271 has 2 MA's), (38, 29337), (41, 29349), (44, 29364), (50, 29400), (55, 29433), (56, 29439),

Gene: Leston\_33 Start: 28816, Stop: 29070, Start Num: 27

Candidate Starts for Leston\_33:

(5, 28642), (8, 28681), (Start: 25 @28810 has 6 MA's), (Start: 27 @28816 has 215 MA's), (Start: 33 @28873 has 2 MA's), (40, 28948), (52, 28999),

Gene: LilDirt\_32 Start: 28521, Stop: 28772, Start Num: 27

Candidate Starts for LilDirt\_32:

(Start: 27 @28521 has 215 MA's), (Start: 33 @28578 has 2 MA's), (40, 28653), (52, 28704), (55, 28731),

Gene: LilPharaoh\_30 Start: 27546, Stop: 27797, Start Num: 27

Candidate Starts for LilPharaoh\_30:

(Start: 27 @27546 has 215 MA's), (Start: 33 @27603 has 2 MA's),

Gene: LindNT\_34 Start: 28085, Stop: 28336, Start Num: 27

Candidate Starts for LindNT\_34:

(Start: 27 @28085 has 215 MA's), (Start: 33 @28142 has 2 MA's),

Gene: LittleE\_174 Start: 89344, Stop: 89586, Start Num: 27

Candidate Starts for LittleE\_174:

(Start: 27 @89344 has 215 MA's), (35, 89449), (39, 89479), (40, 89485), (48, 89527), (56, 89572),

Gene: Llorens\_34 Start: 28155, Stop: 28406, Start Num: 27

Candidate Starts for Llorens\_34:

(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: Lucky2013\_163 Start: 84841, Stop: 85083, Start Num: 27

Candidate Starts for Lucky2013\_163:

(Start: 27 @84841 has 215 MA's), (35, 84946), (39, 84976), (40, 84982), (48, 85024), (56, 85069),

Gene: Lunahalos\_34 Start: 28155, Stop: 28406, Start Num: 27

Candidate Starts for Lunahalos\_34:

(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: MacKat\_34 Start: 28132, Stop: 28383, Start Num: 27

Candidate Starts for MacKat\_34:

(14, 28072), (Start: 27 @28132 has 215 MA's), (Start: 33 @28189 has 2 MA's),

Gene: MacnCheese\_35 Start: 29023, Stop: 29301, Start Num: 27

Candidate Starts for MacnCheese\_35:

(Start: 27 @29023 has 215 MA's), (Start: 33 @29080 has 2 MA's), (35, 29119), (50, 29200),

Gene: MalagasyRose\_34 Start: 27443, Stop: 27676, Start Num: 27

Candidate Starts for MalagasyRose\_34:

(Start: 27 @27443 has 215 MA's), (36, 27530), (37, 27545), (40, 27563), (48, 27605), (53, 27632),

Gene: Malthus\_36 Start: 29110, Stop: 29370, Start Num: 23

Candidate Starts for Malthus\_36:

(Start: 23 @29110 has 21 MA's), (Start: 26 @29116 has 1 MA's), (Start: 33 @29182 has 2 MA's), (38, 29248), (41, 29260), (44, 29275), (50, 29311), (55, 29344), (56, 29350),

Gene: Marcoliusprime\_33 Start: 27394, Stop: 27642, Start Num: 27

Candidate Starts for Marcoliusprime\_33:  
(12, 27310), (20, 27355), (Start: 27 @27394 has 215 MA's), (Start: 33 @27448 has 2 MA's),

Gene: MarkPhew\_35 Start: 27704, Stop: 27967, Start Num: 22  
Candidate Starts for MarkPhew\_35:  
(Start: 22 @27704 has 1 MA's), (Start: 25 @27719 has 6 MA's), (29, 27725), (40, 27848),

Gene: Marleymoo\_153 Start: 86613, Stop: 86846, Start Num: 27  
Candidate Starts for Marleymoo\_153:  
(15, 86547), (17, 86565), (Start: 27 @86613 has 215 MA's), (40, 86754), (43, 86763), (48, 86796), (49, 86802),

Gene: Marshawn\_36 Start: 28360, Stop: 28608, Start Num: 25  
Candidate Starts for Marshawn\_36:  
(Start: 25 @28360 has 6 MA's), (Start: 33 @28414 has 2 MA's), (40, 28489),

Gene: McMater\_34 Start: 27442, Stop: 27693, Start Num: 27  
Candidate Starts for McMater\_34:  
(Start: 27 @27442 has 215 MA's), (Start: 33 @27499 has 2 MA's), (43, 27583),

Gene: Mdavu\_30 Start: 27534, Stop: 27785, Start Num: 27  
Candidate Starts for Mdavu\_30:  
(Start: 27 @27534 has 215 MA's), (Start: 33 @27591 has 2 MA's),

Gene: MeaningOfLife\_34 Start: 28100, Stop: 28351, Start Num: 27  
Candidate Starts for MeaningOfLife\_34:  
(14, 28040), (Start: 27 @28100 has 215 MA's), (Start: 33 @28157 has 2 MA's),

Gene: Megsy\_34 Start: 28088, Stop: 28339, Start Num: 27  
Candidate Starts for Megsy\_34:  
(Start: 27 @28088 has 215 MA's), (Start: 33 @28145 has 2 MA's),

Gene: MiaZeal\_170 Start: 85988, Stop: 86230, Start Num: 27  
Candidate Starts for MiaZeal\_170:  
(Start: 27 @85988 has 215 MA's), (35, 86093), (39, 86123), (40, 86129), (48, 86171), (56, 86216),

Gene: Milly\_33 Start: 27367, Stop: 27615, Start Num: 27  
Candidate Starts for Milly\_33:  
(12, 27283), (20, 27328), (Start: 27 @27367 has 215 MA's), (Start: 33 @27421 has 2 MA's),

Gene: Minerva\_166 Start: 87841, Stop: 88074, Start Num: 27  
Candidate Starts for Minerva\_166:  
(Start: 27 @87841 has 215 MA's), (40, 87982), (43, 87991), (48, 88024), (49, 88030),

Gene: Miryou\_33 Start: 28671, Stop: 28925, Start Num: 27  
Candidate Starts for Miryou\_33:  
(5, 28497), (8, 28536), (Start: 27 @28671 has 215 MA's), (Start: 33 @28728 has 2 MA's), (40, 28803), (52, 28854),

Gene: MissDaisy\_35 Start: 28953, Stop: 29213, Start Num: 23  
Candidate Starts for MissDaisy\_35:  
(Start: 23 @28953 has 21 MA's), (38, 29091), (41, 29103), (44, 29118), (50, 29154), (55, 29187), (56, 29193),

Gene: Mitti\_35 Start: 29111, Stop: 29371, Start Num: 23

Candidate Starts for Mitti\_35:

(Start: 23 @29111 has 21 MA's), (Start: 26 @29117 has 1 MA's), (Start: 33 @29183 has 2 MA's), (38, 29249), (41, 29261), (44, 29276), (50, 29312), (55, 29345), (56, 29351),

Gene: Mufasa\_34 Start: 27475, Stop: 27723, Start Num: 27

Candidate Starts for Mufasa\_34:

(12, 27391), (20, 27436), (Start: 27 @27475 has 215 MA's), (Start: 33 @27529 has 2 MA's),

Gene: Murucutumbu\_34 Start: 28088, Stop: 28339, Start Num: 27

Candidate Starts for Murucutumbu\_34:

(Start: 27 @28088 has 215 MA's), (43, 28229),

Gene: Mynx\_34 Start: 28138, Stop: 28389, Start Num: 27

Candidate Starts for Mynx\_34:

(14, 28078), (Start: 27 @28138 has 215 MA's), (Start: 33 @28195 has 2 MA's),

Gene: Neighly\_34 Start: 28558, Stop: 28809, Start Num: 27

Candidate Starts for Neighly\_34:

(Start: 27 @28558 has 215 MA's), (Start: 33 @28615 has 2 MA's), (40, 28690), (43, 28699), (52, 28741), (55, 28768),

Gene: Nekros\_165 Start: 87788, Stop: 88030, Start Num: 27

Candidate Starts for Nekros\_165:

(Start: 27 @87788 has 215 MA's), (35, 87893), (39, 87923), (40, 87929), (48, 87971), (56, 88016),

Gene: Nergal\_30 Start: 25836, Stop: 26081, Start Num: 27

Candidate Starts for Nergal\_30:

(14, 25770), (Start: 27 @25836 has 215 MA's), (Start: 33 @25893 has 2 MA's),

Gene: Nibb\_33 Start: 27286, Stop: 27534, Start Num: 24

Candidate Starts for Nibb\_33:

(Start: 24 @27286 has 1 MA's), (40, 27415),

Gene: Nibley\_160 Start: 84949, Stop: 85191, Start Num: 27

Candidate Starts for Nibley\_160:

(Start: 27 @84949 has 215 MA's), (35, 85054), (39, 85084), (40, 85090), (48, 85132), (56, 85177),

Gene: NihilNomen\_168 Start: 87549, Stop: 87782, Start Num: 27

Candidate Starts for NihilNomen\_168:

(Start: 27 @87549 has 215 MA's), (40, 87690), (43, 87699), (48, 87732), (49, 87738),

Gene: Nikao\_30 Start: 27546, Stop: 27797, Start Num: 27

Candidate Starts for Nikao\_30:

(Start: 27 @27546 has 215 MA's), (Start: 33 @27603 has 2 MA's),

Gene: Niklas\_34 Start: 27445, Stop: 27696, Start Num: 27

Candidate Starts for Niklas\_34:

(Start: 27 @27445 has 215 MA's), (Start: 33 @27502 has 2 MA's), (43, 27586),

Gene: November\_32 Start: 28358, Stop: 28609, Start Num: 27

Candidate Starts for November\_32:

(Start: 27 @28358 has 215 MA's), (50, 28535),

Gene: Nutello\_30 Start: 27546, Stop: 27797, Start Num: 27

Candidate Starts for Nutello\_30:

(Start: 27 @27546 has 215 MA's), (Start: 33 @27603 has 2 MA's),

Gene: Odette\_170 Start: 90230, Stop: 90463, Start Num: 27

Candidate Starts for Odette\_170:

(Start: 27 @90230 has 215 MA's), (40, 90371), (43, 90380), (48, 90413), (49, 90419),

Gene: OkiRoe\_33 Start: 28688, Stop: 28942, Start Num: 27

Candidate Starts for OkiRoe\_33:

(Start: 25 @28682 has 6 MA's), (Start: 27 @28688 has 215 MA's), (Start: 33 @28745 has 2 MA's), (40, 28820), (43, 28829), (52, 28871),

Gene: Omega\_175 Start: 90315, Stop: 90557, Start Num: 27

Candidate Starts for Omega\_175:

(15, 90249), (Start: 27 @90315 has 215 MA's), (35, 90420), (39, 90450), (40, 90456), (48, 90498), (56, 90543),

Gene: OmniCritical\_35 Start: 29095, Stop: 29355, Start Num: 23

Candidate Starts for OmniCritical\_35:

(Start: 23 @29095 has 21 MA's), (Start: 26 @29101 has 1 MA's), (Start: 33 @29167 has 2 MA's), (38, 29233), (41, 29245), (44, 29260), (50, 29296), (55, 29329), (56, 29335),

Gene: Omnicron\_34 Start: 27596, Stop: 27847, Start Num: 27

Candidate Starts for Omnicron\_34:

(2, 27383), (3, 27389), (5, 27419), (8, 27458), (10, 27470), (13, 27524), (Start: 25 @27590 has 6 MA's), (Start: 27 @27596 has 215 MA's), (Start: 33 @27653 has 2 MA's), (34, 27683), (50, 27773), (52, 27779), (55, 27806),

Gene: Optimus\_165 Start: 88756, Stop: 88989, Start Num: 27

Candidate Starts for Optimus\_165:

(Start: 27 @88756 has 215 MA's), (40, 88897), (43, 88906), (48, 88939), (49, 88945),

Gene: Oscar\_34 Start: 27820, Stop: 28068, Start Num: 25

Candidate Starts for Oscar\_34:

(Start: 25 @27820 has 6 MA's), (29, 27826), (40, 27949),

Gene: Padfoot\_34 Start: 28155, Stop: 28406, Start Num: 27

Candidate Starts for Padfoot\_34:

(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: Padpat\_34 Start: 28115, Stop: 28366, Start Num: 27

Candidate Starts for Padpat\_34:

(14, 28055), (Start: 27 @28115 has 215 MA's), (Start: 33 @28172 has 2 MA's),

Gene: Paola\_33 Start: 28686, Stop: 28940, Start Num: 27

Candidate Starts for Paola\_33:

(5, 28512), (8, 28551), (Start: 25 @28680 has 6 MA's), (Start: 27 @28686 has 215 MA's), (Start: 33 @28743 has 2 MA's), (40, 28818), (52, 28869),

Gene: Patt\_35 Start: 28929, Stop: 29189, Start Num: 23

Candidate Starts for Patt\_35:

(Start: 23 @28929 has 21 MA's), (38, 29067), (41, 29079), (44, 29094), (50, 29130), (55, 29163), (56, 29169),

Gene: Peanam\_34 Start: 27442, Stop: 27693, Start Num: 27

Candidate Starts for Peanam\_34:

(Start: 27 @27442 has 215 MA's), (Start: 33 @27499 has 2 MA's), (43, 27583),

Gene: Peel\_34 Start: 28155, Stop: 28406, Start Num: 27

Candidate Starts for Peel\_34:

(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: Pharb\_33 Start: 28285, Stop: 28536, Start Num: 27

Candidate Starts for Pharb\_33:

(Start: 27 @28285 has 215 MA's), (Start: 33 @28342 has 2 MA's), (35, 28381), (55, 28495),

Gene: PhelpsODU\_34 Start: 27473, Stop: 27724, Start Num: 27

Candidate Starts for PhelpsODU\_34:

(Start: 27 @27473 has 215 MA's), (Start: 33 @27530 has 2 MA's), (43, 27614), (50, 27650),

Gene: Phoebus\_167 Start: 91236, Stop: 91469, Start Num: 27

Candidate Starts for Phoebus\_167:

(Start: 27 @91236 has 215 MA's), (40, 91377), (43, 91386), (48, 91419), (49, 91425),

Gene: Phrank\_34 Start: 27423, Stop: 27674, Start Num: 27

Candidate Starts for Phrank\_34:

(Start: 27 @27423 has 215 MA's), (Start: 33 @27480 has 2 MA's), (43, 27564), (50, 27600),

Gene: Piatt\_34 Start: 28155, Stop: 28406, Start Num: 27

Candidate Starts for Piatt\_34:

(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: Pisa1\_33 Start: 28150, Stop: 28401, Start Num: 27

Candidate Starts for Pisa1\_33:

(14, 28090), (Start: 27 @28150 has 215 MA's), (43, 28291),

Gene: Pisa4\_33 Start: 28150, Stop: 28401, Start Num: 27

Candidate Starts for Pisa4\_33:

(14, 28090), (Start: 27 @28150 has 215 MA's), (43, 28291),

Gene: Pixie\_34 Start: 28524, Stop: 28775, Start Num: 27

Candidate Starts for Pixie\_34:

(14, 28461), (Start: 27 @28524 has 215 MA's), (32, 28578), (Start: 33 @28581 has 2 MA's), (35, 28620), (54, 28731),

Gene: Pokerus\_33 Start: 28072, Stop: 28323, Start Num: 27

Candidate Starts for Pokerus\_33:

(14, 28012), (Start: 27 @28072 has 215 MA's), (Start: 33 @28129 has 2 MA's),

Gene: Porcelain\_167 Start: 85787, Stop: 86029, Start Num: 27

Candidate Starts for Porcelain\_167:

(Start: 27 @85787 has 215 MA's), (35, 85892), (39, 85922), (40, 85928), (48, 85970), (56, 86015),

Gene: Pound\_160 Start: 87285, Stop: 87518, Start Num: 27  
Candidate Starts for Pound\_160:  
(Start: 27 @87285 has 215 MA's), (40, 87426), (43, 87435), (48, 87468), (49, 87474),

Gene: Prithvi\_34 Start: 28085, Stop: 28336, Start Num: 27  
Candidate Starts for Prithvi\_34:  
(Start: 27 @28085 has 215 MA's), (Start: 33 @28142 has 2 MA's),

Gene: Psycho\_34 Start: 28689, Stop: 28940, Start Num: 27  
Candidate Starts for Psycho\_34:  
(Start: 27 @28689 has 215 MA's), (Start: 33 @28746 has 2 MA's), (40, 28821), (43, 28830), (52, 28872), (55, 28899),

Gene: Qhanda\_36 Start: 29207, Stop: 29467, Start Num: 23  
Candidate Starts for Qhanda\_36:  
(Start: 23 @29207 has 21 MA's), (Start: 26 @29213 has 1 MA's), (Start: 33 @29279 has 2 MA's), (38, 29345), (41, 29357), (44, 29372), (50, 29408), (55, 29441), (56, 29447),

Gene: QuincyRose\_33 Start: 28144, Stop: 28395, Start Num: 27  
Candidate Starts for QuincyRose\_33:  
(14, 28084), (Start: 27 @28144 has 215 MA's), (Start: 33 @28201 has 2 MA's),

Gene: Ramen\_34 Start: 28121, Stop: 28372, Start Num: 27  
Candidate Starts for Ramen\_34:  
(14, 28061), (Start: 27 @28121 has 215 MA's), (Start: 33 @28178 has 2 MA's),

Gene: Rando14\_34 Start: 27550, Stop: 27801, Start Num: 27  
Candidate Starts for Rando14\_34:  
(Start: 27 @27550 has 215 MA's), (29, 27556), (Start: 33 @27607 has 2 MA's), (34, 27637), (52, 27733), (55, 27760),

Gene: Rapunzel97\_34 Start: 28122, Stop: 28373, Start Num: 27  
Candidate Starts for Rapunzel97\_34:  
(14, 28062), (Start: 27 @28122 has 215 MA's), (Start: 33 @28179 has 2 MA's),

Gene: Rearden\_166 Start: 86290, Stop: 86532, Start Num: 27  
Candidate Starts for Rearden\_166:  
(7, 86137), (15, 86224), (Start: 27 @86290 has 215 MA's), (35, 86395), (39, 86425), (40, 86431), (48, 86473), (56, 86518),

Gene: Redno2\_160 Start: 85349, Stop: 85582, Start Num: 27  
Candidate Starts for Redno2\_160:  
(Start: 27 @85349 has 215 MA's), (40, 85490), (43, 85499), (48, 85532), (49, 85538),

Gene: Reptar3000\_35 Start: 28920, Stop: 29180, Start Num: 23  
Candidate Starts for Reptar3000\_35:  
(Start: 23 @28920 has 21 MA's), (38, 29058), (41, 29070), (44, 29085), (50, 29121), (55, 29154), (56, 29160),

Gene: Richo\_34 Start: 27442, Stop: 27693, Start Num: 27  
Candidate Starts for Richo\_34:  
(Start: 27 @27442 has 215 MA's), (Start: 33 @27499 has 2 MA's), (43, 27583),

Gene: Rosmarinus\_34 Start: 28143, Stop: 28394, Start Num: 27  
Candidate Starts for Rosmarinus\_34:  
(14, 28083), (Start: 27 @28143 has 215 MA's), (Start: 33 @28200 has 2 MA's),

Gene: Ruthiejr\_36 Start: 29076, Stop: 29336, Start Num: 23  
Candidate Starts for Ruthiejr\_36:  
(Start: 23 @29076 has 21 MA's), (Start: 26 @29082 has 1 MA's), (Start: 33 @29148 has 2 MA's), (38, 29214), (41, 29226), (44, 29241), (50, 29277), (55, 29310), (56, 29316),

Gene: SamScheppers\_35 Start: 29589, Stop: 29849, Start Num: 23  
Candidate Starts for SamScheppers\_35:  
(Start: 23 @29589 has 21 MA's), (Start: 26 @29595 has 1 MA's), (Start: 33 @29661 has 2 MA's), (38, 29727), (41, 29739), (44, 29754), (50, 29790), (55, 29823), (56, 29829),

Gene: SamuelLPlaqson\_34 Start: 28065, Stop: 28316, Start Num: 27  
Candidate Starts for SamuelLPlaqson\_34:  
(Start: 27 @28065 has 215 MA's), (Start: 33 @28122 has 2 MA's), (43, 28206),

Gene: Scarlett\_34 Start: 27820, Stop: 28068, Start Num: 25  
Candidate Starts for Scarlett\_34:  
(16, 27769), (Start: 25 @27820 has 6 MA's), (29, 27826), (40, 27949),

Gene: Schatzie\_161 Start: 88284, Stop: 88517, Start Num: 27  
Candidate Starts for Schatzie\_161:  
(Start: 27 @88284 has 215 MA's), (40, 88425), (43, 88434), (48, 88467), (49, 88473),

Gene: SgtBeansprout\_30 Start: 27546, Stop: 27797, Start Num: 27  
Candidate Starts for SgtBeansprout\_30:  
(Start: 27 @27546 has 215 MA's), (Start: 33 @27603 has 2 MA's),

Gene: Shaboozey\_165 Start: 85393, Stop: 85635, Start Num: 27  
Candidate Starts for Shaboozey\_165:  
(Start: 27 @85393 has 215 MA's), (35, 85498), (39, 85528), (40, 85534), (48, 85576), (56, 85621),

Gene: Shadow1\_33 Start: 27290, Stop: 27541, Start Num: 27  
Candidate Starts for Shadow1\_33:  
(Start: 27 @27290 has 215 MA's), (Start: 33 @27347 has 2 MA's), (43, 27431),

Gene: Shaobing\_34 Start: 27442, Stop: 27693, Start Num: 27  
Candidate Starts for Shaobing\_34:  
(Start: 27 @27442 has 215 MA's), (Start: 33 @27499 has 2 MA's), (43, 27583),

Gene: ShedlockHolmes\_35 Start: 29046, Stop: 29297, Start Num: 27  
Candidate Starts for ShedlockHolmes\_35:  
(14, 28983), (Start: 27 @29046 has 215 MA's), (32, 29100), (Start: 33 @29103 has 2 MA's), (35, 29142), (54, 29253),

Gene: ShiaSurprise\_34 Start: 28155, Stop: 28406, Start Num: 27  
Candidate Starts for ShiaSurprise\_34:  
(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: SirPhilip\_33 Start: 26921, Stop: 27172, Start Num: 27  
Candidate Starts for SirPhilip\_33:

(Start: 27 @26921 has 215 MA's), (Start: 33 @26978 has 2 MA's), (42, 27059),

Gene: Slarp\_35 Start: 29198, Stop: 29458, Start Num: 23

Candidate Starts for Slarp\_35:

(Start: 23 @29198 has 21 MA's), (Start: 26 @29204 has 1 MA's), (Start: 33 @29270 has 2 MA's), (38, 29336), (41, 29348), (44, 29363), (50, 29399), (55, 29432), (56, 29438),

Gene: Slimphazie\_34 Start: 28122, Stop: 28373, Start Num: 27

Candidate Starts for Slimphazie\_34:

(14, 28062), (Start: 27 @28122 has 215 MA's), (Start: 33 @28179 has 2 MA's),

Gene: SoSeph\_33 Start: 28832, Stop: 29086, Start Num: 27

Candidate Starts for SoSeph\_33:

(5, 28658), (8, 28697), (11, 28727), (21, 28814), (Start: 25 @28826 has 6 MA's), (Start: 27 @28832 has 215 MA's), (Start: 33 @28889 has 2 MA's), (40, 28964), (52, 29015),

Gene: Spock\_34 Start: 28155, Stop: 28406, Start Num: 27

Candidate Starts for Spock\_34:

(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: Squint\_162 Start: 86297, Stop: 86539, Start Num: 27

Candidate Starts for Squint\_162:

(Start: 27 @86297 has 215 MA's), (35, 86402), (39, 86432), (40, 86438), (48, 86480), (56, 86525),

Gene: Stinson\_35 Start: 28357, Stop: 28608, Start Num: 27

Candidate Starts for Stinson\_35:

(Start: 27 @28357 has 215 MA's), (43, 28498),

Gene: Strobilo\_33 Start: 27367, Stop: 27612, Start Num: 27

Candidate Starts for Strobilo\_33:

(12, 27283), (20, 27328), (Start: 27 @27367 has 215 MA's), (Start: 33 @27421 has 2 MA's),

Gene: Sulley\_34 Start: 28088, Stop: 28339, Start Num: 27

Candidate Starts for Sulley\_34:

(14, 28028), (Start: 27 @28088 has 215 MA's), (Start: 33 @28145 has 2 MA's),

Gene: Sunflower1121\_33 Start: 27308, Stop: 27559, Start Num: 27

Candidate Starts for Sunflower1121\_33:

(Start: 27 @27308 has 215 MA's), (Start: 33 @27365 has 2 MA's), (43, 27449), (50, 27485),

Gene: Superphikiman\_165 Start: 85466, Stop: 85708, Start Num: 27

Candidate Starts for Superphikiman\_165:

(Start: 27 @85466 has 215 MA's), (35, 85571), (39, 85601), (40, 85607), (48, 85649), (56, 85694),

Gene: Syra333\_34 Start: 27309, Stop: 27560, Start Num: 27

Candidate Starts for Syra333\_34:

(Start: 27 @27309 has 215 MA's), (Start: 33 @27366 has 2 MA's), (43, 27450),

Gene: TBond007\_34 Start: 28523, Stop: 28774, Start Num: 27

Candidate Starts for TBond007\_34:

(14, 28460), (Start: 27 @28523 has 215 MA's), (32, 28577), (Start: 33 @28580 has 2 MA's), (35, 28619), (54, 28730),

Gene: TClif\_35 Start: 27881, Stop: 28138, Start Num: 27  
Candidate Starts for TClif\_35:  
(1, 27608), (Start: 27 @27881 has 215 MA's), (Start: 33 @27944 has 2 MA's), (40, 28019), (50, 28064),

Gene: TM4\_35 Start: 27573, Stop: 27821, Start Num: 27  
Candidate Starts for TM4\_35:  
(12, 27489), (20, 27534), (Start: 27 @27573 has 215 MA's), (Start: 33 @27627 has 2 MA's),

Gene: Tachez\_34 Start: 28084, Stop: 28335, Start Num: 27  
Candidate Starts for Tachez\_34:  
(14, 28024), (Start: 27 @28084 has 215 MA's), (Start: 33 @28141 has 2 MA's),

Gene: TaiwanKao\_35 Start: 28085, Stop: 28336, Start Num: 27  
Candidate Starts for TaiwanKao\_35:  
(Start: 27 @28085 has 215 MA's), (Start: 33 @28142 has 2 MA's),

Gene: Taquito\_35 Start: 29636, Stop: 29896, Start Num: 23  
Candidate Starts for Taquito\_35:  
(Start: 23 @29636 has 21 MA's), (Start: 26 @29642 has 1 MA's), (Start: 33 @29708 has 2 MA's), (38, 29774), (41, 29786), (44, 29801), (50, 29837), (55, 29870), (56, 29876),

Gene: Teejan\_30 Start: 27546, Stop: 27797, Start Num: 27  
Candidate Starts for Teejan\_30:  
(Start: 27 @27546 has 215 MA's), (Start: 33 @27603 has 2 MA's),

Gene: Thibault\_150 Start: 85164, Stop: 85397, Start Num: 27  
Candidate Starts for Thibault\_150:  
(Start: 27 @85164 has 215 MA's), (40, 85305), (43, 85314), (48, 85347), (49, 85353),

Gene: ThreeRngTarjay\_163 Start: 89158, Stop: 89391, Start Num: 27  
Candidate Starts for ThreeRngTarjay\_163:  
(Start: 27 @89158 has 215 MA's), (40, 89299), (43, 89308), (48, 89341), (49, 89347),

Gene: Thyatira\_33 Start: 28686, Stop: 28940, Start Num: 27  
Candidate Starts for Thyatira\_33:  
(5, 28512), (8, 28551), (Start: 25 @28680 has 6 MA's), (Start: 27 @28686 has 215 MA's), (Start: 33 @28743 has 2 MA's), (40, 28818), (52, 28869),

Gene: Tierra\_34 Start: 28144, Stop: 28395, Start Num: 27  
Candidate Starts for Tierra\_34:  
(Start: 27 @28144 has 215 MA's), (Start: 33 @28201 has 2 MA's), (43, 28285), (50, 28321),

Gene: Tigress9\_34 Start: 27308, Stop: 27559, Start Num: 27  
Candidate Starts for Tigress9\_34:  
(Start: 27 @27308 has 215 MA's), (Start: 33 @27365 has 2 MA's), (43, 27449), (50, 27485),

Gene: TingHuaYa\_34 Start: 27313, Stop: 27528, Start Num: 33  
Candidate Starts for TingHuaYa\_34:  
(Start: 27 @27256 has 215 MA's), (Start: 33 @27313 has 2 MA's), (43, 27397), (47, 27445),

Gene: TiniBug\_34 Start: 28061, Stop: 28312, Start Num: 27  
Candidate Starts for TiniBug\_34:  
(Start: 27 @28061 has 215 MA's), (Start: 33 @28118 has 2 MA's), (43, 28202),

Gene: Tiri\_34 Start: 28136, Stop: 28387, Start Num: 27  
Candidate Starts for Tiri\_34:  
(Start: 27 @28136 has 215 MA's), (Start: 33 @28193 has 2 MA's),

Gene: Topper\_34 Start: 28155, Stop: 28406, Start Num: 27  
Candidate Starts for Topper\_34:  
(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: Torres\_30 Start: 27546, Stop: 27797, Start Num: 27  
Candidate Starts for Torres\_30:  
(Start: 27 @27546 has 215 MA's), (Start: 33 @27603 has 2 MA's),

Gene: TreyKay\_34 Start: 28085, Stop: 28336, Start Num: 27  
Candidate Starts for TreyKay\_34:  
(Start: 27 @28085 has 215 MA's), (Start: 33 @28142 has 2 MA's),

Gene: TribelTrouble\_33 Start: 28580, Stop: 28831, Start Num: 27  
Candidate Starts for TribelTrouble\_33:  
(Start: 27 @28580 has 215 MA's), (Start: 33 @28637 has 2 MA's), (50, 28757),

Gene: Trice\_30 Start: 27546, Stop: 27797, Start Num: 27  
Candidate Starts for Trice\_30:  
(Start: 27 @27546 has 215 MA's), (Start: 33 @27603 has 2 MA's),

Gene: TruffulaTree\_34 Start: 28118, Stop: 28369, Start Num: 27  
Candidate Starts for TruffulaTree\_34:  
(14, 28058), (Start: 27 @28118 has 215 MA's), (Start: 33 @28175 has 2 MA's),

Gene: Twitch\_34 Start: 28155, Stop: 28406, Start Num: 27  
Candidate Starts for Twitch\_34:  
(14, 28095), (Start: 27 @28155 has 215 MA's), (Start: 33 @28212 has 2 MA's),

Gene: Unicorn\_34 Start: 27473, Stop: 27724, Start Num: 27  
Candidate Starts for Unicorn\_34:  
(Start: 27 @27473 has 215 MA's), (Start: 33 @27530 has 2 MA's), (43, 27614), (50, 27650),

Gene: Urkel\_34 Start: 28065, Stop: 28316, Start Num: 27  
Candidate Starts for Urkel\_34:  
(Start: 27 @28065 has 215 MA's), (Start: 33 @28122 has 2 MA's), (43, 28206),

Gene: Validus\_34 Start: 27374, Stop: 27625, Start Num: 27  
Candidate Starts for Validus\_34:  
(Start: 27 @27374 has 215 MA's), (Start: 33 @27431 has 2 MA's), (43, 27515),

Gene: Veliki\_34 Start: 28158, Stop: 28409, Start Num: 27  
Candidate Starts for Veliki\_34:  
(14, 28098), (Start: 27 @28158 has 215 MA's), (Start: 33 @28215 has 2 MA's),

Gene: ViviJ\_32 Start: 28521, Stop: 28772, Start Num: 27  
Candidate Starts for ViviJ\_32:  
(Start: 27 @28521 has 215 MA's), (Start: 33 @28578 has 2 MA's), (40, 28653), (52, 28704), (55, 28731),

Gene: Wanda\_164 Start: 85749, Stop: 85982, Start Num: 27  
Candidate Starts for Wanda\_164:  
(Start: 27 @85749 has 215 MA's), (40, 85890), (43, 85899), (48, 85932), (49, 85938),

Gene: Waterfoul\_33 Start: 28710, Stop: 28964, Start Num: 27  
Candidate Starts for Waterfoul\_33:  
(5, 28536), (8, 28575), (Start: 25 @28704 has 6 MA's), (Start: 27 @28710 has 215 MA's), (Start: 33 @28767 has 2 MA's), (40, 28842), (52, 28893),

Gene: Wintermute\_35 Start: 29185, Stop: 29445, Start Num: 23  
Candidate Starts for Wintermute\_35:  
(Start: 23 @29185 has 21 MA's), (Start: 26 @29191 has 1 MA's), (Start: 33 @29257 has 2 MA's), (38, 29323), (41, 29335), (44, 29350), (50, 29386), (55, 29419), (56, 29425),

Gene: Xiaokay\_162 Start: 89184, Stop: 89417, Start Num: 27  
Candidate Starts for Xiaokay\_162:  
(Start: 27 @89184 has 215 MA's), (40, 89325), (43, 89334), (48, 89367), (49, 89373),

Gene: Ximenita\_35 Start: 27494, Stop: 27745, Start Num: 27  
Candidate Starts for Ximenita\_35:  
(Start: 27 @27494 has 215 MA's), (Start: 33 @27551 has 2 MA's), (43, 27635),

Gene: Y10\_35 Start: 29257, Stop: 29445, Start Num: 33  
Candidate Starts for Y10\_35:  
(Start: 23 @29185 has 21 MA's), (Start: 26 @29191 has 1 MA's), (Start: 33 @29257 has 2 MA's), (38, 29323), (41, 29335), (44, 29350), (50, 29386), (55, 29419), (56, 29425),

Gene: Y2\_35 Start: 29257, Stop: 29445, Start Num: 33  
Candidate Starts for Y2\_35:  
(Start: 23 @29185 has 21 MA's), (Start: 26 @29191 has 1 MA's), (Start: 33 @29257 has 2 MA's), (38, 29323), (41, 29335), (44, 29350), (50, 29386), (55, 29419), (56, 29425),

Gene: YasnayaPolyana\_35 Start: 29186, Stop: 29446, Start Num: 23  
Candidate Starts for YasnayaPolyana\_35:  
(Start: 23 @29186 has 21 MA's), (Start: 26 @29192 has 1 MA's), (Start: 33 @29258 has 2 MA's), (38, 29324), (41, 29336), (44, 29351), (50, 29387), (55, 29420), (56, 29426),

Gene: Yeet\_158 Start: 87137, Stop: 87370, Start Num: 27  
Candidate Starts for Yeet\_158:  
(Start: 27 @87137 has 215 MA's), (40, 87278), (43, 87287), (48, 87320), (49, 87326),

Gene: YoureAdopted\_33 Start: 28091, Stop: 28342, Start Num: 27  
Candidate Starts for YoureAdopted\_33:  
(14, 28031), (Start: 27 @28091 has 215 MA's), (Start: 33 @28148 has 2 MA's),

Gene: Yuna\_35 Start: 27890, Stop: 28141, Start Num: 27  
Candidate Starts for Yuna\_35:  
(14, 27818), (Start: 27 @27890 has 215 MA's), (Start: 33 @27947 has 2 MA's), (50, 28067),

Gene: Yunkel11\_34 Start: 27406, Stop: 27657, Start Num: 27  
Candidate Starts for Yunkel11\_34:  
(Start: 27 @27406 has 215 MA's), (43, 27547),

Gene: Zabiza\_34 Start: 28122, Stop: 28373, Start Num: 27

Candidate Starts for Zabiza\_34:

(14, 28062), (Start: 27 @28122 has 215 MA's), (Start: 33 @28179 has 2 MA's),

Gene: Zavala\_34 Start: 28097, Stop: 28348, Start Num: 27

Candidate Starts for Zavala\_34:

(14, 28037), (Start: 27 @28097 has 215 MA's), (Start: 33 @28154 has 2 MA's),

Gene: Zelink\_159 Start: 87472, Stop: 87705, Start Num: 27

Candidate Starts for Zelink\_159:

(Start: 27 @87472 has 215 MA's), (40, 87613), (43, 87622), (48, 87655), (49, 87661),

Gene: ZoeJ\_33 Start: 27372, Stop: 27620, Start Num: 27

Candidate Starts for ZoeJ\_33:

(12, 27288), (20, 27333), (Start: 27 @27372 has 215 MA's), (Start: 33 @27426 has 2 MA's),