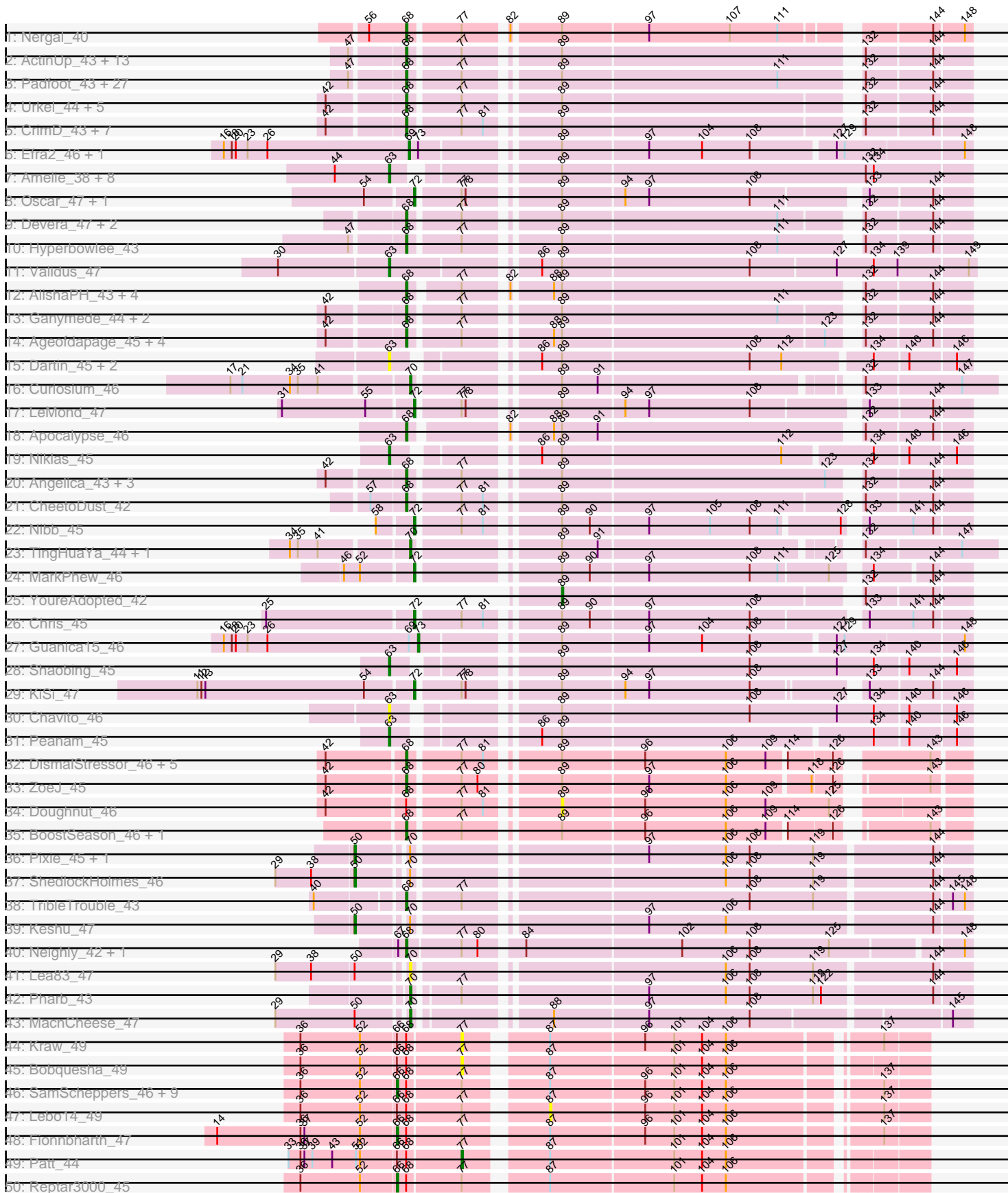
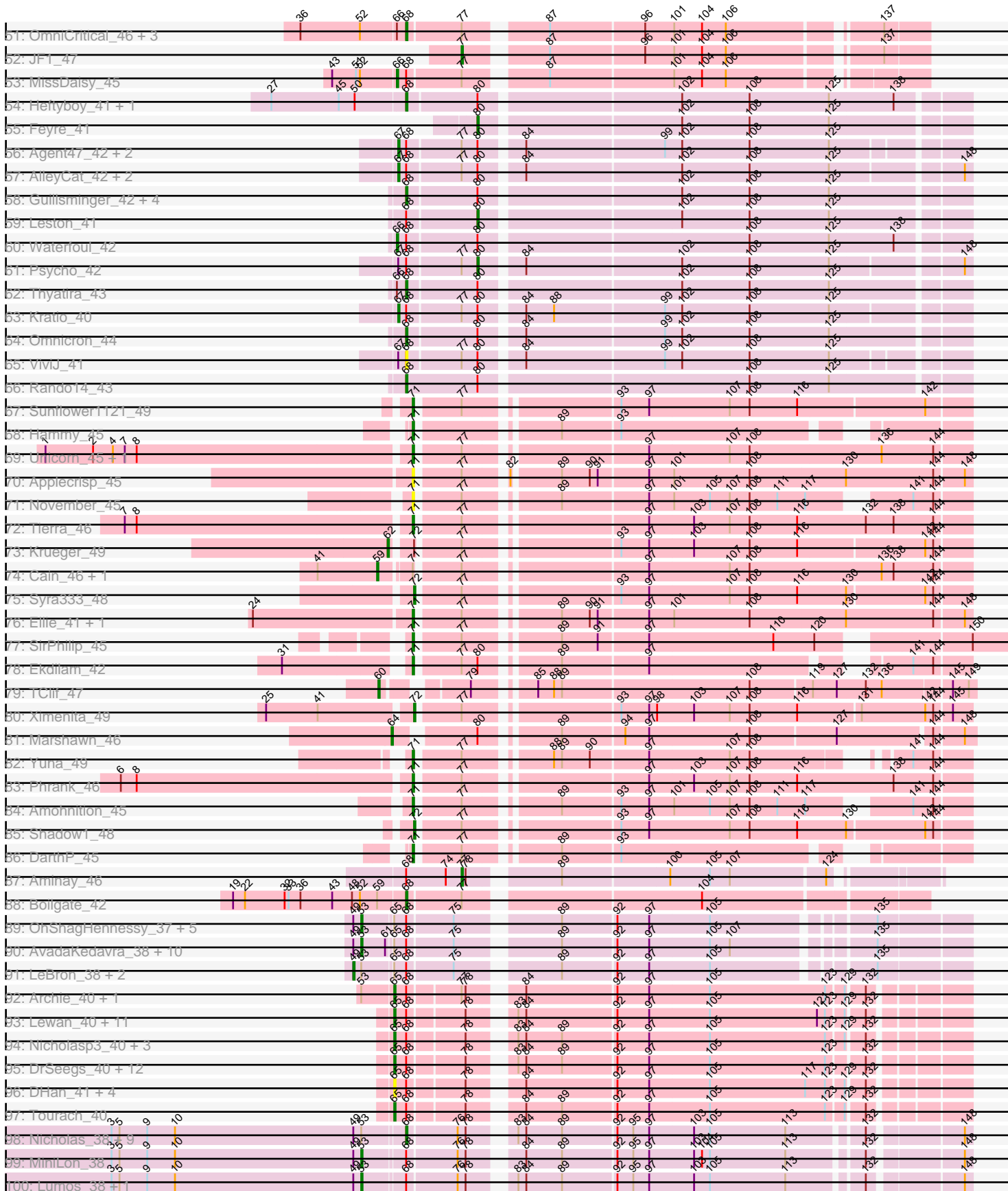


# Pham 215765



Pham 215765





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 215765 Report

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

Pham number 215765 has 291 members, 44 are drafts.

Phages represented in each track:

- Track 1 : Nergal\_40
- Track 2 : ActinUp\_43, Jayhawk\_44, BarrelRoll\_43, Ramen\_43, Adephagia\_43, TruffulaTree\_43, Slimphazie\_43, Atiba\_43, Veliki\_43, Padpat\_44, Rapunzel97\_43, HedwigODU\_43, Tachez\_43, Emerson\_44
- Track 3 : Padfoot\_43, Dalmuri\_43, CaseJules\_44, Llorens\_43, Rosmarinus\_43, CREW\_43, Boiiii\_43, Topper\_43, Joy99\_43, Asayake\_43, Blizzard\_43, BEEEST\_43, CallaLilly\_45, Belladonna\_43, Homura\_43, Inky\_43, Spock\_43, JAWS\_43, Lunahalos\_43, Capricorn\_43, ShiaSurprise\_44, Durfee\_43, Piatt\_43, BGlluviae\_43, Jarvi\_43, Jeckyll\_43, Peel\_43, Twitch\_43
- Track 4 : Urkel\_44, Bella96\_44, Beezoo\_45, TiniBug\_44, SamuelLPlaqson\_44, DrHayes\_44
- Track 5 : CrimD\_43, Megsy\_44, LindNT\_43, Zavala\_44, Prithvi\_44, Mynx\_44, TreyKay\_44, TaiwanKao\_45
- Track 6 : Efra2\_46, Yunkel11\_46
- Track 7 : Amelie\_38, Binglebops\_38, Nikao\_41, Teejan\_41, Torres\_41, SgtBeansprout\_38, Mdavu\_39, Enkosi\_41, Nutello\_38
- Track 8 : Oscar\_47, Scarlett\_47
- Track 9 : Devera\_47, Illumine\_46, Dole\_46
- Track 10 : Hyperbowlee\_43
- Track 11 : Validus\_47
- Track 12 : AlishaPH\_43, Clipper\_47, BaghaKamala\_42, Geraldini\_45, Pokerus\_42
- Track 13 : Ganymede\_44, MeaningOfLife\_44, QuincyRose\_42
- Track 14 : Ageofdapage\_45, Adonis\_43, LaterM\_44, Stinson\_44, Murucutumbu\_44
- Track 15 : Dartin\_45, Richo\_45, McMater\_45
- Track 16 : Curiosium\_46
- Track 17 : LeMond\_47
- Track 18 : Apocalypse\_46
- Track 19 : Niklas\_45
- Track 20 : Angelica\_43, Anaya\_45, Deby\_43, Sulley\_43
- Track 21 : CheetoDust\_42
- Track 22 : Nibb\_45
- Track 23 : TingHuaYa\_44, LastHope\_46
- Track 24 : MarkPhew\_46
- Track 25 : YoureAdopted\_42
- Track 26 : Chris\_45
- Track 27 : Guanica15\_46
- Track 28 : Shaobing\_45

- Track 29 : KiSi\_47
- Track 30 : Chavito\_46
- Track 31 : Peanam\_45
- Track 32 : DismalStressor\_46, Findley\_46, Strobilo\_46, Marcoliusprime\_46, Milly\_46, DismalFunk\_46
- Track 33 : ZoeJ\_45
- Track 34 : Doughnut\_46
- Track 35 : BoostSeason\_46, Mufasa\_46
- Track 36 : Pixie\_45, TBond007\_45
- Track 37 : ShedlockHolmes\_46
- Track 38 : TribbleTrouble\_43
- Track 39 : Keshu\_47
- Track 40 : Neighly\_42, Edugator\_41
- Track 41 : Lea83\_47
- Track 42 : Pharb\_43
- Track 43 : MacnCheese\_47
- Track 44 : Kraw\_49
- Track 45 : Bobquesha\_49
- Track 46 : SamScheppers\_46, Chancellor\_47, Juliette\_49, Eponine\_49, Slarp\_47, Cheetobro\_47, Malthus\_48, Mitti\_47, Ruthiejr\_48, Wintermute\_47
- Track 47 : Lebo14\_49
- Track 48 : Fionnbharth\_47
- Track 49 : Patt\_44
- Track 50 : Reptar3000\_45
- Track 51 : OmniCritical\_46, Taquito\_47, Y2\_46, Y10\_46
- Track 52 : JF1\_47
- Track 53 : MissDaisy\_45
- Track 54 : Heftyboy\_41, SoSeph\_41
- Track 55 : Feyre\_41
- Track 56 : Agent47\_42, InvictusManeo\_41, Collard\_41
- Track 57 : AlleyCat\_42, Larva\_42, Dadosky\_42
- Track 58 : Guillsminger\_42, Gengar\_41, OkiRoe\_41, Paola\_41, Miryou\_43
- Track 59 : Leston\_41
- Track 60 : Waterfoul\_42
- Track 61 : Psycho\_42
- Track 62 : Thyatira\_43
- Track 63 : Kratio\_40
- Track 64 : Omnicron\_44
- Track 65 : ViviJ\_41
- Track 66 : Rando14\_43
- Track 67 : Sunflower1121\_49
- Track 68 : Hammy\_45
- Track 69 : Unicorn\_45, PhelpsODU\_45
- Track 70 : Applecrisp\_45
- Track 71 : November\_45
- Track 72 : Tierra\_46
- Track 73 : Krueger\_49
- Track 74 : Cain\_46, Bryler\_46
- Track 75 : Syra333\_48
- Track 76 : Ellie\_41, Fefferhead\_43
- Track 77 : SirPhilip\_45
- Track 78 : Ekdilam\_42
- Track 79 : TClif\_47

- Track 80 : Ximenita\_49
- Track 81 : Marshawn\_46
- Track 82 : Yuna\_49
- Track 83 : Phrank\_46
- Track 84 : Amohnition\_45
- Track 85 : Shadow1\_48
- Track 86 : DarthP\_45
- Track 87 : Aminay\_46
- Track 88 : Boilgate\_42
- Track 89 : OhShagHennessy\_37, DirkDirk\_37, Poochiewood\_37, Wamburgrxpress\_38, Enceladus\_37, Appletree2\_37
- Track 90 : AvadaKedavra\_38, Calm\_38, Tyson\_37, Halena\_37, Rose5\_37, CicholasNage\_38, Wyatt2\_38, MAckerman\_38, Zaria\_38, Acquire49\_38, Silverleaf\_37
- Track 91 : LeBron\_38, UPIE\_38, JoeDirt\_37
- Track 92 : Archie\_40, Bazzle\_40
- Track 93 : Lewan\_40, Sarshaun\_40, Kahlid\_40, Hafay\_40, Crossroads\_40, Soap141\_40, Loadrie\_40, GuuelaD\_40, Wilder\_40, MkaliMitinis3\_40, Wigglewiggle\_40, Zakai\_40
- Track 94 : Nicholasp3\_40, Underpass\_40, Finemlucis\_40, Gardann\_40
- Track 95 : DrSeegs\_40, Winky\_40, SoJulia\_41, Gabriela\_40, Rumpelstiltskin\_40, BobsGarage\_40, Netyap\_40, Breezona\_40, LilDestine\_40, BigCheese\_40, Faith1\_40, Vetric\_40, Miley16\_40
- Track 96 : DHan\_41, Claus\_41, Baoshan\_39, ZhongYanYuan\_39, DanBing\_40
- Track 97 : Tourach\_40
- Track 98 : Nicholas\_38, Red305\_38, Jubie\_38, Snenia\_38, Moostard\_38, Bellis\_38, Clautastrophe\_38, MsGreen\_38, Jobypre\_38, TriFive\_38
- Track 99 : MiniLon\_38
- Track 100 : Lumos\_38, Kingsolomon\_38
- Track 101 : Ellson\_38
- Track 102 : MiniMac\_38
- Track 103 : LiyuLake\_38
- Track 104 : Whirlwind\_39
- Track 105 : Krypton555\_38
- Track 106 : DuncansLeg\_38
- Track 107 : Finnry\_38
- Track 108 : KirDoubleO7\_36
- Track 109 : BourbonZero\_37
- Track 110 : Lolly9\_38
- Track 111 : PYPDinur\_37, Douzhi\_37, BrainDrainer\_38, Sheng711\_38
- Track 112 : DyoEdafos\_39
- Track 113 : Bromden\_39
- Track 114 : Chaser\_37, Douge\_37
- Track 115 : FarmResident\_38
- Track 116 : Kropertea\_37
- Track 117 : Quby\_38

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

The start number called the most often in the published annotations is 68, it was called in 115 of the 247 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp\_43, Adephagia\_43, Adonis\_43, Ageofdapage\_45, AlishaPH\_43, Anaya\_45, Angelica\_43, Apocalypse\_46, Asayake\_43, Atiba\_43, BEEEST\_43, BGIlluviae\_43, BaghaKamala\_42, BarrelRoll\_43, Beezoo\_45, Bella96\_44, Belladonna\_43, Bellis\_38, Blizzard\_43, Boiiii\_43, Boilgate\_42, BoostSeason\_46, BourbonZero\_37, BrainDrainer\_38, CREW\_43, CallaLilly\_45, Capricorn\_43, CaseJules\_44, Chaser\_37, CheetoDust\_42, Clautastrophe\_38, Clipper\_47, CrimD\_43, Dalmuri\_43, Deby\_43, Devera\_47, DismalFunk\_46, DismalStressor\_46, Dole\_46, Douge\_37, Douzhi\_37, DrHayes\_44, Durfee\_43, DyoEdafos\_39, Edugator\_41, Emerson\_44, Findley\_46, Ganymede\_44, Gengar\_41, Geraldini\_45, Guillsminger\_42, HedwigODU\_43, Heftyboy\_41, Homura\_43, Hyperbowlee\_43, Illumine\_46, Inky\_43, JAWS\_43, Jarvi\_43, Jayhawk\_44, Jeckyll\_43, Jobypre\_38, Joy99\_43, Jubie\_38, KirDoubleO7\_36, Kropertea\_37, Krypton555\_38, LaterM\_44, LindNT\_43, Llorens\_43, Lolly9\_38, Lunahalos\_43, Marcoliusprime\_46, MeaningOfLife\_44, Megsy\_44, Milly\_46, Miryou\_43, Moostard\_38, MsGreen\_38, Mufasa\_46, Murucutumbu\_44, Mynx\_44, Neighly\_42, Nergal\_40, Nicholas\_38, OkiRoe\_41, OmniCritical\_46, Omnicron\_44, PYPDinur\_37, Padfoot\_43, Padpat\_44, Paola\_41, Peel\_43, Piatt\_43, Pokerus\_42, Prithvi\_44, Quby\_38, QuincyRose\_42, Ramen\_43, Rando14\_43, Rapunzel97\_43, Red305\_38, Rosmarinus\_43, SamuelLPlaqson\_44, Sheng711\_38, ShiaSurprise\_44, Slimphazie\_43, Snenia\_38, SoSeph\_41, Spock\_43, Stinson\_44, Strobilo\_46, Sulley\_43, Tachez\_43, TaiwanKao\_45, Taquito\_47, Thyatira\_43, TiniBug\_44, Topper\_43, TreyKay\_44, TriFive\_38, TribbleTrouble\_43, TruffulaTree\_43, Twitch\_43, Urkel\_44, Veliki\_43, ViviJ\_41, Y10\_46, Y2\_46, Zavala\_44, ZoeJ\_45,

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

- Acquire49\_38, Agent47\_42, AlleyCat\_42, Aminay\_46, Appletree2\_37, Archie\_40, AvadaKedavra\_38, Baoshan\_39, Bazzle\_40, BigCheese\_40, Bobquesha\_49, BobsGarage\_40, Breezona\_40, Bromden\_39, Calm\_38, Chancellor\_47, Cheetobro\_47, CicholasNage\_38, Claus\_41, Collard\_41, Crossroads\_40, DHan\_41, Dadosky\_42, DanBing\_40, DirkDirk\_37, Doughnut\_46, DrSeegs\_40, DuncansLeg\_38, Ellson\_38, Enceladus\_37, Eponine\_49, Faith1\_40, FarmResident\_38, Finemlucis\_40, Finrny\_38, Fionnbharth\_47, Gabriela\_40, Gardann\_40, GuuelaD\_40, Hafay\_40, Halena\_37, InvictusManeo\_41, JoeDirt\_37, Juliette\_49, Kahlid\_40, Kingsolomon\_38, Kratio\_40, Kraw\_49, Larva\_42, LeBron\_38, Lebo14\_49, Leston\_41, Lewan\_40, LilDestine\_40, LiyuLake\_38, Loadrie\_40, Lumos\_38, MAckerman\_38, Malthus\_48, Miley16\_40, MiniLon\_38, MiniMac\_38, MissDaisy\_45, Mitti\_47, MkaliMitinis3\_40, Netyap\_40, Nicholasp3\_40, OhShagHennessy\_37, Patt\_44, Pochiewood\_37, Psycho\_42, Reptar3000\_45, Rose5\_37, Rumpelstiltskin\_40, Ruthiejr\_48, SamScheppers\_46, Sarshaun\_40, Silverleaf\_37, Slarp\_47, SoJulia\_41, Soap141\_40, Tourach\_40, Tyson\_37, UPIE\_38, Underpass\_40, Vetrrix\_40, Wamburggrxpress\_38, Waterfoul\_42, Whirlwind\_39, Wigglewiggles\_40, Wilder\_40, Winky\_40, Wintermute\_47, Wyatt2\_38, Zakai\_40, Zaria\_38, ZhongYanYuan\_39,

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

- Amelie\_38, Amohntion\_45, Applecrisp\_45, Binglebops\_38, Bryler\_46, Cain\_46, Chavito\_46, Chris\_45, Curiosium\_46, DarthP\_45, Dartin\_45, Efra2\_46, Ekdilam\_42, Ellie\_41, Enkosi\_41, Fefferhead\_43, Feyre\_41, Guanica15\_46, Hammy\_45, JF1\_47, Keshu\_47, KiSi\_47, Krueger\_49, LastHope\_46, LeMond\_47, Lea83\_47, MacnCheese\_47, MarkPhew\_46, Marshawn\_46, McMater\_45, Mdavu\_39, Nibb\_45,

Nikao\_41, Niklas\_45, November\_45, Nutello\_38, Oscar\_47, Peanam\_45, Pharb\_43, PhelpsODU\_45, Phrank\_46, Pixie\_45, Richo\_45, Scarlett\_47, SgtBeansprout\_38, Shadow1\_48, Shaobing\_45, ShedlockHolmes\_46, SirPhilip\_45, Sunflower1121\_49, Syra333\_48, TBond007\_45, TClif\_47, Teejan\_41, Tierra\_46, TingHuaYa\_44, Torres\_41, Unicorn\_45, Validus\_47, Ximenita\_49, YoureAdopted\_42, Yuna\_49, Yunkel11\_46,

### Summary by start number:

#### Start 28:

- Found in 2 of 291 ( 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\_39 (L3),

#### Start 49:

- Found in 54 of 291 ( 18.6% ) of genes in pham
- Manual Annotations of this start: 7 of 247
- Called 14.8% of time when present
- Phage (with cluster) where this start called: Bromden\_39 (L4), DuncansLeg\_38 (L3), Ellson\_38 (L3), Finnry\_38 (L3), JoeDirt\_37 (L1), LeBron\_38 (L1), MiniMac\_38 (L3), UPIE\_38 (L1),

#### Start 50:

- Found in 8 of 291 ( 2.7% ) of genes in pham
- Manual Annotations of this start: 4 of 247
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Keshu\_47 (K3), Pixie\_45 (K3), ShedlockHolmes\_46 (K3), TBond007\_45 (K3),

#### Start 53:

- Found in 45 of 291 ( 15.5% ) of genes in pham
- Manual Annotations of this start: 19 of 247
- Called 46.7% of time when present
- Phage (with cluster) where this start called: Acquire49\_38 (L1), Appletree2\_37 (L1), AvadaKedavra\_38 (L1), Calm\_38 (L1), CicholasNage\_38 (L1), DirkDirk\_37 (L1), Enceladus\_37 (L1), Halena\_37 (L1), Kingsolomon\_38 (L3), LiyuLake\_38 (L3), Lumos\_38 (L3), MAckerman\_38 (L1), MiniLon\_38 (L3), OhShagHennessy\_37 (L1), Pochiewood\_37 (L1), Rose5\_37 (L1), Silverleaf\_37 (L1), Tyson\_37 (L1), Wamburgxpress\_38 (L1), Wyatt2\_38 (L1), Zaria\_38 (L1),

#### Start 59:

- Found in 3 of 291 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 2 of 247
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Bryler\_46 (K6), Cain\_46 (K6),

#### Start 60:

- Found in 1 of 291 ( 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: TClif\_47 (K6),



Start 62:

- Found in 1 of 291 ( 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: Krueger\_49 (K6),

Start 63:

- Found in 17 of 291 ( 5.8% ) of genes in pham
- Manual Annotations of this start: 11 of 247
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amelie\_38 (K1), Binglebops\_38 (K1), Chavito\_46 (K1), Dartin\_45 (K1), Enkosi\_41 (K1), McMater\_45 (K1), Mdavu\_39 (K1), Nikao\_41 (K1), Niklas\_45 (K1), Nutello\_38 (K1), Peanam\_45 (K1), Richo\_45 (K1), SgtBeansprout\_38 (K1), Shaobing\_45 (K1), Teejan\_41 (K1), Torres\_41 (K1), Validus\_47 (K1),

Start 64:

- Found in 1 of 291 ( 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: Marshawn\_46 (K6),

Start 65:

- Found in 57 of 291 ( 19.6% ) of genes in pham
- Manual Annotations of this start: 27 of 247
- Called 64.9% of time when present
- Phage (with cluster) where this start called: Archie\_40 (L2), Baoshan\_39 (L2), Bazzle\_40 (L2), BigCheese\_40 (L2), BobsGarage\_40 (L2), Breezona\_40 (L2), Claus\_41 (L2), Crossroads\_40 (L2), DHan\_41 (L2), DanBing\_40 (L2), DrSeegs\_40 (L2), Faith1\_40 (L2), Finemlucis\_40 (L2), Gabriela\_40 (L2), Gardann\_40 (L2), GuuelaD\_40 (L2), Hafay\_40 (L2), Kahlid\_40 (L2), Lewan\_40 (L2), LilDestine\_40 (L2), Loadrie\_40 (L2), Miley16\_40 (L2), MkaliMitinis3\_40 (L2), Netyap\_40 (L2), Nicholasp3\_40 (L2), Rumpelstiltskin\_40 (L2), Sarshaun\_40 (L2), SoJulia\_41 (L2), Soap141\_40 (L2), Tourach\_40 (L2), Underpass\_40 (L2), Vetrix\_40 (L2), Wigglewiggles\_40 (L2), Wilder\_40 (L2), Winky\_40 (L2), Zakai\_40 (L2), ZhongYanYuan\_39 (L2),

Start 66:

- Found in 23 of 291 ( 7.9% ) of genes in pham
- Manual Annotations of this start: 14 of 247
- Called 60.9% of time when present
- Phage (with cluster) where this start called: Chancellor\_47 (K4), Cheetobro\_47 (K4), Eponine\_49 (K4), Fionnbharth\_47 (K4), Juliette\_49 (K4), Malthus\_48 (K4), MissDaisy\_45 (K4), Mitti\_47 (K4), Reptar3000\_45 (K4), Ruthiejr\_48 (K4), SamScheppers\_46 (K4), Slarp\_47 (K4), Waterfoul\_42 (K5), Wintermute\_47 (K4),

Start 67:

- Found in 11 of 291 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 7 of 247
- Called 63.6% of time when present
- Phage (with cluster) where this start called: Agent47\_42 (K5), AlleyCat\_42 (K5), Collard\_41 (K5), Dadosky\_42 (K5), InvictusManeo\_41 (K5), Kratio\_40 (K5), Larva\_42 (K5),

Start 68:

- Found in 228 of 291 ( 78.4% ) of genes in pham
- Manual Annotations of this start: 115 of 247
- Called 57.5% of time when present
- Phage (with cluster) where this start called: ActinUp\_43 (K1), Adephagia\_43 (K1), Adonis\_43 (K1), Ageofdapage\_45 (K1), AlishaPH\_43 (K1), Anaya\_45 (K1), Angelica\_43 (K1), Apocalypse\_46 (K1), Asayake\_43 (K1), Atiba\_43 (K1), BEEST\_43 (K1), BGlluviae\_43 (K1), BaghaKamala\_42 (K1), BarrelRoll\_43 (K1), Beezoo\_45 (K1), Bella96\_44 (K1), Belladonna\_43 (K1), Bellis\_38 (L3), Blizzard\_43 (K1), Boiiii\_43 (K1), Boilgate\_42 (K8), BoostSeason\_46 (K2), BourbonZero\_37 (L3), BrainDrainer\_38 (L4), CREW\_43 (K1), CallaLilly\_45 (K1), Capricorn\_43 (K1), CaseJules\_44 (K1), Chaser\_37 (L4), CheetoDust\_42 (K1), Clautastrophe\_38 (L3), Clipper\_47 (K1), CrimD\_43 (K1), Dalmuri\_43 (K1), Deby\_43 (K1), Devera\_47 (K1), DismalFunk\_46 (K2), DismalStressor\_46 (K2), Dole\_46 (K1), Douge\_37 (L4), Douzhi\_37 (L4), DrHayes\_44 (K1), Durfee\_43 (K1), DyoEdafos\_39 (L4), Edugator\_41 (K5), Emerson\_44 (K1), Findley\_46 (K2), Ganymede\_44 (K1), Gengar\_41 (K5), Geraldini\_45 (K1), Guillsminger\_42 (K5), HedwigODU\_43 (K1), Heftyboy\_41 (K5), Homura\_43 (K1), Hyperbowlee\_43 (K1), Illumine\_46 (K1), Inky\_43 (K1), JAWS\_43 (K1), Jarvi\_43 (K1), Jayhawk\_44 (K1), Jeckyll\_43 (K1), Jobypre\_38 (L3), Joy99\_43 (K1), Jubie\_38 (L3), KirDoubleO7\_36 (L3), Kropertea\_37 (L4), Krypton555\_38 (L3), LaterM\_44 (K1), LindNT\_43 (K1), Llorens\_43 (K1), Lolly9\_38 (L3), Lunahalos\_43 (K1), Marcoliusprime\_46 (K2), MeaningOfLife\_44 (K1), Megsy\_44 (K1), Milly\_46 (K2), Miryou\_43 (K5), Moostard\_38 (L3), MsGreen\_38 (L3), Mufasa\_46 (K2), Murucutumbu\_44 (K1), Mynx\_44 (K1), Neighly\_42 (K3), Nergal\_40 (AG), Nicholas\_38 (L3), OkiRoe\_41 (K5), OmniCritical\_46 (K4), Omnicron\_44 (K5), PYPDinur\_37 (L4), Padfoot\_43 (K1), Padpat\_44 (K1), Paola\_41 (K5), Peel\_43 (K1), Piatt\_43 (K1), Pokerus\_42 (K1), Prithvi\_44 (K1), Quby\_38 (L4), QuincyRose\_42 (K1), Ramen\_43 (K1), Rando14\_43 (K5), Rapunzel97\_43 (K1), Red305\_38 (L3), Rosmarinus\_43 (K1), SamuelLPlaqson\_44 (K1), Sheng711\_38 (L4), ShiaSurprise\_44 (K1), Slimphazie\_43 (K1), Snenia\_38 (L3), SoSeph\_41 (K5), Spock\_43 (K1), Stinson\_44 (K1), Strobilo\_46 (K2), Sulley\_43 (K1), Tachez\_43 (K1), TaiwanKao\_45 (K1), Taquito\_47 (K4), Thyatira\_43 (K5), TiniBug\_44 (K1), Topper\_43 (K1), TreyKay\_44 (K1), TriFive\_38 (L3), TribbleTrouble\_43 (K3), TruffulaTree\_43 (K1), Twitch\_43 (K1), Urkel\_44 (K1), Veliki\_43 (K1), ViviJ\_41 (K5), Y10\_46 (K4), Y2\_46 (K4), Zavala\_44 (K1), ZoeJ\_45 (K2),

Start 69:

- Found in 3 of 291 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 2 of 247
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Efra2\_46 (K1), Yunkel11\_46 (K1),

Start 70:

- Found in 10 of 291 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 4 of 247
- Called 60.0% of time when present
- Phage (with cluster) where this start called: Curiosium\_46 (K1), LastHope\_46 (K1), Lea83\_47 (K3), MacnCheese\_47 (K3), Pharb\_43 (K3), TingHuaYa\_44 (K1),

Start 71:

- Found in 17 of 291 ( 5.8% ) of genes in pham
- Manual Annotations of this start: 13 of 247

- Called 88.2% of time when present
- Phage (with cluster) where this start called: Amohnition\_45 (K6), Applecrisp\_45 (K6), DarthP\_45 (K6), Ekdilam\_42 (K6), Ellie\_41 (K6), Fefferhead\_43 (K6), Hammy\_45 (K6), November\_45 (K6), PhelpsODU\_45 (K6), Phrank\_46 (K6), SirPhilip\_45 (K6), Sunflower1121\_49 (K6), Tierra\_46 (K6), Unicorn\_45 (K6), Yuna\_49 (K6),

#### Start 72:

- Found in 11 of 291 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 10 of 247
- Called 90.9% of time when present
- Phage (with cluster) where this start called: Chris\_45 (K1), KiSi\_47 (K1), LeMond\_47 (K1), MarkPheW\_46 (K1), Nibb\_45 (K1), Oscar\_47 (K1), Scarlett\_47 (K1), Shadow1\_48 (K6), Syra333\_48 (K6), Ximenita\_49 (K6),

#### Start 73:

- Found in 3 of 291 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 1 of 247
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Guanica15\_46 (K1),

#### Start 76:

- Found in 30 of 291 ( 10.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 3.3% of time when present
- Phage (with cluster) where this start called: FarmResident\_38 (L4),

#### Start 77:

- Found in 154 of 291 ( 52.9% ) of genes in pham
- Manual Annotations of this start: 3 of 247
- Called 3.2% of time when present
- Phage (with cluster) where this start called: Aminay\_46 (K7), Bobquesha\_49 (K4), JF1\_47 (K4), Kraw\_49 (K4), Patt\_44 (K4),

#### Start 80:

- Found in 28 of 291 ( 9.6% ) of genes in pham
- Manual Annotations of this start: 3 of 247
- Called 10.7% of time when present
- Phage (with cluster) where this start called: Feyre\_41 (K5), Leston\_41 (K5), Psycho\_42 (K5),

#### Start 87:

- Found in 22 of 291 ( 7.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 4.5% of time when present
- Phage (with cluster) where this start called: Lebo14\_49 (K4),

#### Start 89:

- Found in 206 of 291 ( 70.8% ) of genes in pham
- Manual Annotations of this start: 1 of 247
- Called 1.0% of time when present
- Phage (with cluster) where this start called: Doughnut\_46 (K2), YoureAdopted\_42 (K1),

## Summary by clusters:

There are 13 clusters represented in this pham: AG, L1, L4, K3, K2, K1, L2, L3, K5, K4, K7, K8, K6,

Info for manual annotations of cluster AG:

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

Info for manual annotations of cluster K1:

- Start number 63 was manually annotated 11 times for cluster K1.
- Start number 68 was manually annotated 76 times for cluster K1.
- Start number 69 was manually annotated 2 times for cluster K1.
- Start number 70 was manually annotated 2 times for cluster K1.
- Start number 72 was manually annotated 7 times for cluster K1.
- Start number 73 was manually annotated 1 time for cluster K1.
- Start number 89 was manually annotated 1 time for cluster K1.

Info for manual annotations of cluster K2:

- Start number 68 was manually annotated 9 times for cluster K2.

Info for manual annotations of cluster K3:

- Start number 50 was manually annotated 4 times for cluster K3.
- Start number 68 was manually annotated 1 time for cluster K3.
- Start number 70 was manually annotated 2 times for cluster K3.

Info for manual annotations of cluster K4:

- Start number 66 was manually annotated 13 times for cluster K4.
- Start number 68 was manually annotated 4 times for cluster K4.
- Start number 77 was manually annotated 2 times for cluster K4.

Info for manual annotations of cluster K5:

- Start number 66 was manually annotated 1 time for cluster K5.
- Start number 67 was manually annotated 7 times for cluster K5.
- Start number 68 was manually annotated 11 times for cluster K5.
- Start number 80 was manually annotated 3 times for cluster K5.

Info for manual annotations of cluster K6:

- Start number 59 was manually annotated 2 times for cluster K6.
- Start number 60 was manually annotated 1 time for cluster K6.
- Start number 62 was manually annotated 1 time for cluster K6.
- Start number 64 was manually annotated 1 time for cluster K6.
- Start number 71 was manually annotated 13 times for cluster K6.
- Start number 72 was manually annotated 3 times for cluster K6.

Info for manual annotations of cluster K7:

- Start number 77 was manually annotated 1 time for cluster K7.

Info for manual annotations of cluster K8:

- Start number 68 was manually annotated 1 time for cluster K8.

Info for manual annotations of cluster L1:

- Start number 49 was manually annotated 3 times for cluster L1.
- Start number 53 was manually annotated 16 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 65 was manually annotated 27 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 28 was manually annotated 1 time for cluster L3.
- Start number 49 was manually annotated 3 times for cluster L3.
- Start number 53 was manually annotated 3 times for cluster L3.
- Start number 68 was manually annotated 9 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 49 was manually annotated 1 time for cluster L4.
- Start number 68 was manually annotated 3 times for cluster L4.

**Gene Information:**

Gene: Acquire49\_38 Start: 32935, Stop: 32525, Start Num: 53

Candidate Starts for Acquire49\_38:

(Start: 49 @32941 has 7 MA's), (Start: 53 @32935 has 19 MA's), (61, 32917), (Start: 65 @32914 has 27 MA's), (Start: 68 @32905 has 115 MA's), (75, 32872), (Start: 89 @32806 has 1 MA's), (92, 32767), (97, 32743), (105, 32698), (107, 32683), (135, 32590),

Gene: ActinUp\_43 Start: 34981, Stop: 34601, Start Num: 68

Candidate Starts for ActinUp\_43:

(47, 35017), (Start: 68 @34981 has 115 MA's), (Start: 77 @34945 has 3 MA's), (Start: 89 @34885 has 1 MA's), (132, 34675), (144, 34627),

Gene: Adephagia\_43 Start: 34978, Stop: 34598, Start Num: 68

Candidate Starts for Adephagia\_43:

(47, 35014), (Start: 68 @34978 has 115 MA's), (Start: 77 @34942 has 3 MA's), (Start: 89 @34882 has 1 MA's), (132, 34672), (144, 34624),

Gene: Adonis\_43 Start: 35277, Stop: 34897, Start Num: 68

Candidate Starts for Adonis\_43:

(42, 35328), (Start: 68 @35277 has 115 MA's), (Start: 77 @35241 has 3 MA's), (88, 35187), (Start: 89 @35181 has 1 MA's), (123, 34986), (132, 34971), (144, 34923),

Gene: Agent47\_42 Start: 34530, Stop: 34129, Start Num: 67

Candidate Starts for Agent47\_42:

(Start: 67 @34530 has 7 MA's), (Start: 68 @34524 has 115 MA's), (Start: 77 @34485 has 3 MA's), (Start: 80 @34473 has 3 MA's), (84, 34446), (99, 34344), (102, 34332), (108, 34281), (125, 34221),

Gene: Ageofdapage\_45 Start: 35950, Stop: 35573, Start Num: 68

Candidate Starts for Ageofdapage\_45:

(42, 36001), (Start: 68 @35950 has 115 MA's), (Start: 77 @35914 has 3 MA's), (88, 35860), (Start: 89 @35854 has 1 MA's), (123, 35662), (132, 35647), (144, 35599),

Gene: AlishaPH\_43 Start: 35250, Stop: 34873, Start Num: 68

Candidate Starts for AlishaPH\_43:

(Start: 68 @35250 has 115 MA's), (Start: 77 @35217 has 3 MA's), (82, 35190), (88, 35163), (Start: 89 @35157 has 1 MA's), (132, 34947), (144, 34899),

Gene: AlleyCat\_42 Start: 34384, Stop: 33980, Start Num: 67

Candidate Starts for AlleyCat\_42:

(Start: 67 @34384 has 7 MA's), (Start: 68 @34378 has 115 MA's), (Start: 77 @34339 has 3 MA's), (Start: 80 @34327 has 3 MA's), (84, 34300), (102, 34186), (108, 34135), (125, 34075), (148, 33985),

Gene: Amelie\_38 Start: 34527, Stop: 34129, Start Num: 63

Candidate Starts for Amelie\_38:

(44, 34566), (Start: 63 @34527 has 11 MA's), (Start: 89 @34431 has 1 MA's), (132, 34206), (134, 34200),

Gene: Aminay\_46 Start: 36466, Stop: 36146, Start Num: 77

Candidate Starts for Aminay\_46:

(Start: 68 @36508 has 115 MA's), (74, 36478), (Start: 77 @36466 has 3 MA's), (78, 36463), (Start: 89 @36406 has 1 MA's), (100, 36328), (105, 36298), (107, 36283), (124, 36214),

Gene: Amohnition\_45 Start: 36010, Stop: 35639, Start Num: 71

Candidate Starts for Amohnition\_45:

(Start: 71 @36010 has 13 MA's), (Start: 77 @35980 has 3 MA's), (Start: 89 @35920 has 1 MA's), (93, 35878), (97, 35857), (101, 35839), (105, 35812), (107, 35797), (108, 35782), (111, 35761), (117, 35740), (141, 35680), (144, 35665),

Gene: Anaya\_45 Start: 35589, Stop: 35209, Start Num: 68

Candidate Starts for Anaya\_45:

(42, 35640), (Start: 68 @35589 has 115 MA's), (Start: 77 @35553 has 3 MA's), (Start: 89 @35493 has 1 MA's), (123, 35298), (132, 35283), (144, 35235),

Gene: Angelica\_43 Start: 35209, Stop: 34829, Start Num: 68

Candidate Starts for Angelica\_43:

(42, 35260), (Start: 68 @35209 has 115 MA's), (Start: 77 @35173 has 3 MA's), (Start: 89 @35113 has 1 MA's), (123, 34918), (132, 34903), (144, 34855),

Gene: Apocalypse\_46 Start: 35992, Stop: 35615, Start Num: 68

Candidate Starts for Apocalypse\_46:

(Start: 68 @35992 has 115 MA's), (82, 35932), (88, 35905), (Start: 89 @35899 has 1 MA's), (91, 35872), (132, 35689), (144, 35641),

Gene: Applecrisp\_45 Start: 35470, Stop: 35078, Start Num: 71

Candidate Starts for Applecrisp\_45:

(Start: 71 @35470 has 13 MA's), (Start: 77 @35440 has 3 MA's), (82, 35413), (Start: 89 @35380 has 1 MA's), (90, 35359), (91, 35353), (97, 35317), (101, 35299), (108, 35242), (130, 35170), (144, 35104), (148, 35083),

Gene: Appletree2\_37 Start: 32877, Stop: 32467, Start Num: 53

Candidate Starts for Appletree2\_37:

(Start: 49 @32883 has 7 MA's), (Start: 53 @32877 has 19 MA's), (Start: 65 @32856 has 27 MA's), (Start: 68 @32847 has 115 MA's), (75, 32814), (Start: 89 @32748 has 1 MA's), (92, 32709), (97, 32685), (105, 32640), (135, 32532),

Gene: Archie\_40 Start: 34485, Stop: 34096, Start Num: 65

Candidate Starts for Archie\_40:

(Start: 53 @34506 has 19 MA's), (Start: 65 @34485 has 27 MA's), (Start: 68 @34476 has 115 MA's), (Start: 77 @34440 has 3 MA's), (78, 34437), (84, 34407), (92, 34341), (97, 34317), (105, 34272), (123,

34185), (129, 34173), (132, 34161),

Gene: Asayake\_43 Start: 35293, Stop: 34913, Start Num: 68

Candidate Starts for Asayake\_43:

(47, 35329), (Start: 68 @35293 has 115 MA's), (Start: 77 @35257 has 3 MA's), (Start: 89 @35197 has 1 MA's), (111, 35038), (132, 34987), (144, 34939),

Gene: Atiba\_43 Start: 34941, Stop: 34561, Start Num: 68

Candidate Starts for Atiba\_43:

(47, 34977), (Start: 68 @34941 has 115 MA's), (Start: 77 @34905 has 3 MA's), (Start: 89 @34845 has 1 MA's), (132, 34635), (144, 34587),

Gene: AvadaKedavra\_38 Start: 32944, Stop: 32534, Start Num: 53

Candidate Starts for AvadaKedavra\_38:

(Start: 49 @32950 has 7 MA's), (Start: 53 @32944 has 19 MA's), (61, 32926), (Start: 65 @32923 has 27 MA's), (Start: 68 @32914 has 115 MA's), (75, 32881), (Start: 89 @32815 has 1 MA's), (92, 32776), (97, 32752), (105, 32707), (107, 32692), (135, 32599),

Gene: BEEST\_43 Start: 35293, Stop: 34913, Start Num: 68

Candidate Starts for BEEST\_43:

(47, 35329), (Start: 68 @35293 has 115 MA's), (Start: 77 @35257 has 3 MA's), (Start: 89 @35197 has 1 MA's), (111, 35038), (132, 34987), (144, 34939),

Gene: BGIlluviae\_43 Start: 35096, Stop: 34716, Start Num: 68

Candidate Starts for BGIlluviae\_43:

(47, 35132), (Start: 68 @35096 has 115 MA's), (Start: 77 @35060 has 3 MA's), (Start: 89 @35000 has 1 MA's), (111, 34841), (132, 34790), (144, 34742),

Gene: BaghaKamala\_42 Start: 34415, Stop: 34038, Start Num: 68

Candidate Starts for BaghaKamala\_42:

(Start: 68 @34415 has 115 MA's), (Start: 77 @34382 has 3 MA's), (82, 34355), (88, 34328), (Start: 89 @34322 has 1 MA's), (132, 34112), (144, 34064),

Gene: Baoshan\_39 Start: 34142, Stop: 33753, Start Num: 65

Candidate Starts for Baoshan\_39:

(Start: 65 @34142 has 27 MA's), (Start: 68 @34133 has 115 MA's), (78, 34094), (84, 34064), (92, 33998), (97, 33974), (105, 33929), (117, 33857), (123, 33842), (129, 33830), (132, 33818),

Gene: BarrelRoll\_43 Start: 34964, Stop: 34584, Start Num: 68

Candidate Starts for BarrelRoll\_43:

(47, 35000), (Start: 68 @34964 has 115 MA's), (Start: 77 @34928 has 3 MA's), (Start: 89 @34868 has 1 MA's), (132, 34658), (144, 34610),

Gene: Bazzle\_40 Start: 34517, Stop: 34128, Start Num: 65

Candidate Starts for Bazzle\_40:

(Start: 53 @34538 has 19 MA's), (Start: 65 @34517 has 27 MA's), (Start: 68 @34508 has 115 MA's), (Start: 77 @34472 has 3 MA's), (78, 34469), (84, 34439), (92, 34373), (97, 34349), (105, 34304), (123, 34217), (129, 34205), (132, 34193),

Gene: Beezoo\_45 Start: 35940, Stop: 35563, Start Num: 68

Candidate Starts for Beezoo\_45:

(42, 35991), (Start: 68 @35940 has 115 MA's), (Start: 77 @35904 has 3 MA's), (Start: 89 @35844 has 1 MA's), (132, 35637), (144, 35589),

Gene: Bella96\_44 Start: 35832, Stop: 35455, Start Num: 68

Candidate Starts for Bella96\_44:

(42, 35883), (Start: 68 @35832 has 115 MA's), (Start: 77 @35796 has 3 MA's), (Start: 89 @35736 has 1 MA's), (132, 35529), (144, 35481),

Gene: Belladonna\_43 Start: 35096, Stop: 34716, Start Num: 68

Candidate Starts for Belladonna\_43:

(47, 35132), (Start: 68 @35096 has 115 MA's), (Start: 77 @35060 has 3 MA's), (Start: 89 @35000 has 1 MA's), (111, 34841), (132, 34790), (144, 34742),

Gene: Bellis\_38 Start: 34518, Stop: 34135, Start Num: 68

Candidate Starts for Bellis\_38:

(3, 34737), (5, 34731), (9, 34710), (10, 34689), (Start: 49 @34554 has 7 MA's), (Start: 53 @34548 has 19 MA's), (Start: 68 @34518 has 115 MA's), (76, 34482), (78, 34476), (83, 34452), (84, 34446), (Start: 89 @34419 has 1 MA's), (92, 34380), (95, 34368), (97, 34356), (103, 34323), (105, 34311), (113, 34254), (132, 34203), (148, 34140),

Gene: BigCheese\_40 Start: 34280, Stop: 33891, Start Num: 65

Candidate Starts for BigCheese\_40:

(Start: 65 @34280 has 27 MA's), (Start: 68 @34271 has 115 MA's), (78, 34232), (83, 34208), (84, 34202), (Start: 89 @34175 has 1 MA's), (92, 34136), (97, 34112), (105, 34067), (123, 33980), (132, 33956),

Gene: Biglebops\_38 Start: 34527, Stop: 34129, Start Num: 63

Candidate Starts for Biglebops\_38:

(44, 34566), (Start: 63 @34527 has 11 MA's), (Start: 89 @34431 has 1 MA's), (132, 34206), (134, 34200),

Gene: Blizzard\_43 Start: 35293, Stop: 34913, Start Num: 68

Candidate Starts for Blizzard\_43:

(47, 35329), (Start: 68 @35293 has 115 MA's), (Start: 77 @35257 has 3 MA's), (Start: 89 @35197 has 1 MA's), (111, 35038), (132, 34987), (144, 34939),

Gene: Bobquesha\_49 Start: 35368, Stop: 35057, Start Num: 77

Candidate Starts for Bobquesha\_49:

(36, 35482), (52, 35437), (Start: 66 @35413 has 14 MA's), (Start: 68 @35407 has 115 MA's), (Start: 77 @35368 has 3 MA's), (87, 35317), (101, 35227), (104, 35206), (106, 35188),

Gene: BobsGarage\_40 Start: 34280, Stop: 33891, Start Num: 65

Candidate Starts for BobsGarage\_40:

(Start: 65 @34280 has 27 MA's), (Start: 68 @34271 has 115 MA's), (78, 34232), (83, 34208), (84, 34202), (Start: 89 @34175 has 1 MA's), (92, 34136), (97, 34112), (105, 34067), (123, 33980), (132, 33956),

Gene: Boiiii\_43 Start: 35295, Stop: 34915, Start Num: 68

Candidate Starts for Boiiii\_43:

(47, 35331), (Start: 68 @35295 has 115 MA's), (Start: 77 @35259 has 3 MA's), (Start: 89 @35199 has 1 MA's), (111, 35040), (132, 34989), (144, 34941),

Gene: Boilgate\_42 Start: 36179, Stop: 35817, Start Num: 68

Candidate Starts for Boilgate\_42:



(19, 36305), (22, 36296), (32, 36266), (33, 36263), (36, 36254), (43, 36230), (48, 36215), (52, 36209), (Start: 59 @36197 has 2 MA's), (Start: 68 @36179 has 115 MA's), (Start: 77 @36140 has 3 MA's), (104, 35978),

Gene: BoostSeason\_46 Start: 36618, Stop: 36250, Start Num: 68

Candidate Starts for BoostSeason\_46:

(Start: 68 @36618 has 115 MA's), (Start: 77 @36582 has 3 MA's), (Start: 89 @36522 has 1 MA's), (96, 36462), (106, 36402), (109, 36372), (114, 36360), (126, 36330), (143, 36276),

Gene: BourbonZero\_37 Start: 34497, Stop: 34114, Start Num: 68

Candidate Starts for BourbonZero\_37:

(3, 34716), (5, 34710), (9, 34689), (10, 34668), (Start: 49 @34533 has 7 MA's), (Start: 53 @34527 has 19 MA's), (Start: 68 @34497 has 115 MA's), (76, 34461), (78, 34455), (84, 34425), (Start: 89 @34398 has 1 MA's), (92, 34359), (95, 34347), (97, 34335), (103, 34302), (105, 34290), (132, 34182), (148, 34119),

Gene: BrainDrainer\_38 Start: 33181, Stop: 32801, Start Num: 68

Candidate Starts for BrainDrainer\_38:

(Start: 49 @33217 has 7 MA's), (Start: 68 @33181 has 115 MA's), (76, 33148), (83, 33118), (84, 33112), (Start: 89 @33085 has 1 MA's), (92, 33046), (98, 33016), (105, 32977), (122, 32899), (132, 32872), (134, 32866),

Gene: Breezona\_40 Start: 34280, Stop: 33891, Start Num: 65

Candidate Starts for Breezona\_40:

(Start: 65 @34280 has 27 MA's), (Start: 68 @34271 has 115 MA's), (78, 34232), (83, 34208), (84, 34202), (Start: 89 @34175 has 1 MA's), (92, 34136), (97, 34112), (105, 34067), (123, 33980), (132, 33956),

Gene: Bromden\_39 Start: 33770, Stop: 33351, Start Num: 49

Candidate Starts for Bromden\_39:

(3, 33953), (5, 33947), (15, 33869), (Start: 49 @33770 has 7 MA's), (Start: 68 @33734 has 115 MA's), (78, 33698), (Start: 80 @33689 has 3 MA's), (84, 33668), (85, 33659), (Start: 89 @33641 has 1 MA's), (97, 33578), (98, 33572), (103, 33545), (105, 33533), (108, 33503), (123, 33449), (132, 33425), (134, 33419),

Gene: Bryler\_46 Start: 34876, Stop: 34463, Start Num: 59

Candidate Starts for Bryler\_46:

(41, 34921), (Start: 59 @34876 has 2 MA's), (Start: 71 @34855 has 13 MA's), (Start: 77 @34825 has 3 MA's), (97, 34702), (107, 34642), (108, 34627), (136, 34528), (138, 34519), (144, 34489),

Gene: CREW\_43 Start: 35096, Stop: 34716, Start Num: 68

Candidate Starts for CREW\_43:

(47, 35132), (Start: 68 @35096 has 115 MA's), (Start: 77 @35060 has 3 MA's), (Start: 89 @35000 has 1 MA's), (111, 34841), (132, 34790), (144, 34742),

Gene: Cain\_46 Start: 34864, Stop: 34451, Start Num: 59

Candidate Starts for Cain\_46:

(41, 34909), (Start: 59 @34864 has 2 MA's), (Start: 71 @34843 has 13 MA's), (Start: 77 @34813 has 3 MA's), (97, 34690), (107, 34630), (108, 34615), (136, 34516), (138, 34507), (144, 34477),

Gene: CallaLilly\_45 Start: 35019, Stop: 34639, Start Num: 68

Candidate Starts for CallaLilly\_45:

(47, 35055), (Start: 68 @35019 has 115 MA's), (Start: 77 @34983 has 3 MA's), (Start: 89 @34923 has 1 MA's), (111, 34764), (132, 34713), (144, 34665),

Gene: Calm\_38 Start: 32950, Stop: 32540, Start Num: 53

Candidate Starts for Calm\_38:

(Start: 49 @32956 has 7 MA's), (Start: 53 @32950 has 19 MA's), (61, 32932), (Start: 65 @32929 has 27 MA's), (Start: 68 @32920 has 115 MA's), (75, 32887), (Start: 89 @32821 has 1 MA's), (92, 32782), (97, 32758), (105, 32713), (107, 32698), (135, 32605),

Gene: Capricorn\_43 Start: 35096, Stop: 34716, Start Num: 68

Candidate Starts for Capricorn\_43:

(47, 35132), (Start: 68 @35096 has 115 MA's), (Start: 77 @35060 has 3 MA's), (Start: 89 @35000 has 1 MA's), (111, 34841), (132, 34790), (144, 34742),

Gene: CaseJules\_44 Start: 35293, Stop: 34913, Start Num: 68

Candidate Starts for CaseJules\_44:

(47, 35329), (Start: 68 @35293 has 115 MA's), (Start: 77 @35257 has 3 MA's), (Start: 89 @35197 has 1 MA's), (111, 35038), (132, 34987), (144, 34939),

Gene: Chancellor\_47 Start: 36038, Stop: 35679, Start Num: 66

Candidate Starts for Chancellor\_47:

(36, 36107), (52, 36062), (Start: 66 @36038 has 14 MA's), (Start: 68 @36032 has 115 MA's), (Start: 77 @35993 has 3 MA's), (87, 35942), (96, 35873), (101, 35852), (104, 35831), (106, 35813), (137, 35711),

Gene: Chaser\_37 Start: 32998, Stop: 32618, Start Num: 68

Candidate Starts for Chaser\_37:

(Start: 49 @33034 has 7 MA's), (Start: 68 @32998 has 115 MA's), (76, 32965), (83, 32935), (84, 32929), (Start: 89 @32902 has 1 MA's), (92, 32863), (98, 32833), (105, 32794), (132, 32689), (134, 32683),

Gene: Chavito\_46 Start: 36294, Stop: 35896, Start Num: 63

Candidate Starts for Chavito\_46:

(Start: 63 @36294 has 11 MA's), (Start: 89 @36195 has 1 MA's), (108, 36057), (127, 35991), (134, 35964), (140, 35940), (146, 35907),

Gene: CheetoDust\_42 Start: 34466, Stop: 34089, Start Num: 68

Candidate Starts for CheetoDust\_42:

(57, 34490), (Start: 68 @34466 has 115 MA's), (Start: 77 @34430 has 3 MA's), (81, 34415), (Start: 89 @34370 has 1 MA's), (132, 34163), (144, 34115),

Gene: Cheetobro\_47 Start: 36035, Stop: 35676, Start Num: 66

Candidate Starts for Cheetobro\_47:

(36, 36104), (52, 36059), (Start: 66 @36035 has 14 MA's), (Start: 68 @36029 has 115 MA's), (Start: 77 @35990 has 3 MA's), (87, 35939), (96, 35870), (101, 35849), (104, 35828), (106, 35810), (137, 35708),

Gene: Chris\_45 Start: 35677, Stop: 35300, Start Num: 72

Candidate Starts for Chris\_45:

(25, 35785), (Start: 72 @35677 has 10 MA's), (Start: 77 @35647 has 3 MA's), (81, 35632), (Start: 89 @35587 has 1 MA's), (90, 35566), (97, 35524), (108, 35449), (133, 35374), (141, 35341), (144, 35326),

Gene: CicholasNage\_38 Start: 32971, Stop: 32561, Start Num: 53

Candidate Starts for CicholasNage\_38:

(Start: 49 @32977 has 7 MA's), (Start: 53 @32971 has 19 MA's), (61, 32953), (Start: 65 @32950 has 27 MA's), (Start: 68 @32941 has 115 MA's), (75, 32908), (Start: 89 @32842 has 1 MA's), (92, 32803), (97, 32779), (105, 32734), (107, 32719), (135, 32626),

Gene: Claus\_41 Start: 34300, Stop: 33911, Start Num: 65

Candidate Starts for Claus\_41:

(Start: 65 @34300 has 27 MA's), (Start: 68 @34291 has 115 MA's), (78, 34252), (84, 34222), (92, 34156), (97, 34132), (105, 34087), (117, 34015), (123, 34000), (129, 33988), (132, 33976),

Gene: Clautastrophe\_38 Start: 34516, Stop: 34133, Start Num: 68

Candidate Starts for Clautastrophe\_38:

(3, 34735), (5, 34729), (9, 34708), (10, 34687), (Start: 49 @34552 has 7 MA's), (Start: 53 @34546 has 19 MA's), (Start: 68 @34516 has 115 MA's), (76, 34480), (78, 34474), (83, 34450), (84, 34444), (Start: 89 @34417 has 1 MA's), (92, 34378), (95, 34366), (97, 34354), (103, 34321), (105, 34309), (113, 34252), (132, 34201), (148, 34138),

Gene: Clipper\_47 Start: 35611, Stop: 35234, Start Num: 68

Candidate Starts for Clipper\_47:

(Start: 68 @35611 has 115 MA's), (Start: 77 @35578 has 3 MA's), (82, 35551), (88, 35524), (Start: 89 @35518 has 1 MA's), (132, 35308), (144, 35260),

Gene: Collard\_41 Start: 34491, Stop: 34090, Start Num: 67

Candidate Starts for Collard\_41:

(Start: 67 @34491 has 7 MA's), (Start: 68 @34485 has 115 MA's), (Start: 77 @34446 has 3 MA's), (Start: 80 @34434 has 3 MA's), (84, 34407), (99, 34305), (102, 34293), (108, 34242), (125, 34182),

Gene: CrimD\_43 Start: 35221, Stop: 34844, Start Num: 68

Candidate Starts for CrimD\_43:

(42, 35272), (Start: 68 @35221 has 115 MA's), (Start: 77 @35185 has 3 MA's), (81, 35170), (Start: 89 @35125 has 1 MA's), (132, 34918), (144, 34870),

Gene: Crossroads\_40 Start: 34282, Stop: 33893, Start Num: 65

Candidate Starts for Crossroads\_40:

(Start: 65 @34282 has 27 MA's), (Start: 68 @34273 has 115 MA's), (78, 34234), (83, 34210), (84, 34204), (92, 34138), (97, 34114), (105, 34069), (121, 33988), (123, 33982), (129, 33970), (132, 33958),

Gene: Curiosium\_46 Start: 34128, Stop: 33742, Start Num: 70

Candidate Starts for Curiosium\_46:

(17, 34254), (21, 34245), (34, 34209), (35, 34203), (41, 34188), (Start: 70 @34128 has 4 MA's), (Start: 89 @34035 has 1 MA's), (91, 34008), (132, 33837), (147, 33768),

Gene: DHan\_41 Start: 34241, Stop: 33852, Start Num: 65

Candidate Starts for DHan\_41:

(Start: 65 @34241 has 27 MA's), (Start: 68 @34232 has 115 MA's), (78, 34193), (84, 34163), (92, 34097), (97, 34073), (105, 34028), (117, 33956), (123, 33941), (129, 33929), (132, 33917),

Gene: Dadosky\_42 Start: 34386, Stop: 33982, Start Num: 67

Candidate Starts for Dadosky\_42:

(Start: 67 @34386 has 7 MA's), (Start: 68 @34380 has 115 MA's), (Start: 77 @34341 has 3 MA's), (Start: 80 @34329 has 3 MA's), (84, 34302), (102, 34188), (108, 34137), (125, 34077), (148, 33987),

Gene: Dalmuri\_43 Start: 35096, Stop: 34716, Start Num: 68

Candidate Starts for Dalmuri\_43:

(47, 35132), (Start: 68 @35096 has 115 MA's), (Start: 77 @35060 has 3 MA's), (Start: 89 @35000 has 1 MA's), (111, 34841), (132, 34790), (144, 34742),

Gene: DanBing\_40 Start: 34133, Stop: 33744, Start Num: 65

Candidate Starts for DanBing\_40:

(Start: 65 @34133 has 27 MA's), (Start: 68 @34124 has 115 MA's), (78, 34085), (84, 34055), (92, 33989), (97, 33965), (105, 33920), (117, 33848), (123, 33833), (129, 33821), (132, 33809),

Gene: DarthP\_45 Start: 35904, Stop: 35545, Start Num: 71

Candidate Starts for DarthP\_45:

(Start: 71 @35904 has 13 MA's), (Start: 77 @35874 has 3 MA's), (Start: 89 @35814 has 1 MA's), (93, 35772),

Gene: Dartin\_45 Start: 35648, Stop: 35256, Start Num: 63

Candidate Starts for Dartin\_45:

(Start: 63 @35648 has 11 MA's), (86, 35564), (Start: 89 @35549 has 1 MA's), (108, 35411), (112, 35387), (134, 35324), (140, 35300), (146, 35267),

Gene: Deby\_43 Start: 35225, Stop: 34845, Start Num: 68

Candidate Starts for Deby\_43:

(42, 35276), (Start: 68 @35225 has 115 MA's), (Start: 77 @35189 has 3 MA's), (Start: 89 @35129 has 1 MA's), (123, 34934), (132, 34919), (144, 34871),

Gene: Devera\_47 Start: 35759, Stop: 35382, Start Num: 68

Candidate Starts for Devera\_47:

(Start: 68 @35759 has 115 MA's), (Start: 77 @35723 has 3 MA's), (Start: 89 @35663 has 1 MA's), (111, 35504), (132, 35456), (144, 35408),

Gene: DirkDirk\_37 Start: 32937, Stop: 32527, Start Num: 53

Candidate Starts for DirkDirk\_37:

(Start: 49 @32943 has 7 MA's), (Start: 53 @32937 has 19 MA's), (Start: 65 @32916 has 27 MA's), (Start: 68 @32907 has 115 MA's), (75, 32874), (Start: 89 @32808 has 1 MA's), (92, 32769), (97, 32745), (105, 32700), (135, 32592),

Gene: DismalFunk\_46 Start: 37051, Stop: 36680, Start Num: 68

Candidate Starts for DismalFunk\_46:

(42, 37105), (Start: 68 @37051 has 115 MA's), (Start: 77 @37015 has 3 MA's), (81, 37000), (Start: 89 @36955 has 1 MA's), (96, 36895), (106, 36835), (109, 36805), (114, 36793), (126, 36763), (143, 36706),

Gene: DismalStressor\_46 Start: 37051, Stop: 36680, Start Num: 68

Candidate Starts for DismalStressor\_46:

(42, 37105), (Start: 68 @37051 has 115 MA's), (Start: 77 @37015 has 3 MA's), (81, 37000), (Start: 89 @36955 has 1 MA's), (96, 36895), (106, 36835), (109, 36805), (114, 36793), (126, 36763), (143, 36706),

Gene: Dole\_46 Start: 35761, Stop: 35384, Start Num: 68

Candidate Starts for Dole\_46:

(Start: 68 @35761 has 115 MA's), (Start: 77 @35725 has 3 MA's), (Start: 89 @35665 has 1 MA's), (111, 35506), (132, 35458), (144, 35410),

Gene: Douge\_37 Start: 32936, Stop: 32556, Start Num: 68

Candidate Starts for Douge\_37:

(Start: 49 @32972 has 7 MA's), (Start: 68 @32936 has 115 MA's), (76, 32903), (83, 32873), (84, 32867), (Start: 89 @32840 has 1 MA's), (92, 32801), (98, 32771), (105, 32732), (132, 32627), (134, 32621),

Gene: Doughnut\_46 Start: 36568, Stop: 36287, Start Num: 89

Candidate Starts for Doughnut\_46:

(42, 36718), (Start: 68 @36664 has 115 MA's), (Start: 77 @36628 has 3 MA's), (81, 36613), (Start: 89 @36568 has 1 MA's), (96, 36508), (106, 36448), (109, 36418), (125, 36370),

Gene: Douzhi\_37 Start: 33042, Stop: 32662, Start Num: 68

Candidate Starts for Douzhi\_37:

(Start: 49 @33078 has 7 MA's), (Start: 68 @33042 has 115 MA's), (76, 33009), (83, 32979), (84, 32973), (Start: 89 @32946 has 1 MA's), (92, 32907), (98, 32877), (105, 32838), (122, 32760), (132, 32733), (134, 32727),

Gene: DrHayes\_44 Start: 35877, Stop: 35500, Start Num: 68

Candidate Starts for DrHayes\_44:

(42, 35928), (Start: 68 @35877 has 115 MA's), (Start: 77 @35841 has 3 MA's), (Start: 89 @35781 has 1 MA's), (132, 35574), (144, 35526),

Gene: DrSeegs\_40 Start: 34280, Stop: 33891, Start Num: 65

Candidate Starts for DrSeegs\_40:

(Start: 65 @34280 has 27 MA's), (Start: 68 @34271 has 115 MA's), (78, 34232), (83, 34208), (84, 34202), (Start: 89 @34175 has 1 MA's), (92, 34136), (97, 34112), (105, 34067), (123, 33980), (132, 33956),

Gene: DuncansLeg\_38 Start: 34570, Stop: 34151, Start Num: 49

Candidate Starts for DuncansLeg\_38:

(3, 34753), (5, 34747), (9, 34726), (10, 34705), (Start: 49 @34570 has 7 MA's), (Start: 53 @34564 has 19 MA's), (Start: 68 @34534 has 115 MA's), (76, 34498), (78, 34492), (84, 34462), (Start: 89 @34435 has 1 MA's), (92, 34396), (95, 34384), (97, 34372), (103, 34339), (105, 34327), (113, 34270), (132, 34219), (148, 34156),

Gene: Durfee\_43 Start: 35293, Stop: 34913, Start Num: 68

Candidate Starts for Durfee\_43:

(47, 35329), (Start: 68 @35293 has 115 MA's), (Start: 77 @35257 has 3 MA's), (Start: 89 @35197 has 1 MA's), (111, 35038), (132, 34987), (144, 34939),

Gene: DyoEdafos\_39 Start: 33270, Stop: 32890, Start Num: 68

Candidate Starts for DyoEdafos\_39:

(Start: 49 @33306 has 7 MA's), (Start: 68 @33270 has 115 MA's), (76, 33237), (84, 33201), (Start: 89 @33174 has 1 MA's), (92, 33135), (97, 33111), (132, 32961), (134, 32955), (140, 32931),

Gene: Edugator\_41 Start: 34805, Stop: 34407, Start Num: 68

Candidate Starts for Edugator\_41:

(Start: 67 @34811 has 7 MA's), (Start: 68 @34805 has 115 MA's), (Start: 77 @34766 has 3 MA's), (Start: 80 @34754 has 3 MA's), (84, 34727), (102, 34613), (108, 34562), (125, 34502), (148, 34412),

Gene: Efra2\_46 Start: 35018, Stop: 34629, Start Num: 69

Candidate Starts for Efra2\_46:

(16, 35156), (18, 35150), (20, 35147), (23, 35138), (26, 35123), (Start: 69 @35018 has 2 MA's), (Start: 73 @35012 has 1 MA's), (Start: 89 @34922 has 1 MA's), (97, 34859), (104, 34820), (108, 34784), (127, 34724), (129, 34718), (148, 34634),

Gene: Ekdilam\_42 Start: 35465, Stop: 35106, Start Num: 71

Candidate Starts for Ekdilam\_42:

(31, 35549), (Start: 71 @35465 has 13 MA's), (Start: 77 @35435 has 3 MA's), (Start: 80 @35423 has 3 MA's), (Start: 89 @35375 has 1 MA's), (97, 35312), (141, 35147), (144, 35132),

Gene: Ellie\_41 Start: 35161, Stop: 34769, Start Num: 71

Candidate Starts for Ellie\_41:

(24, 35278), (Start: 71 @35161 has 13 MA's), (Start: 77 @35131 has 3 MA's), (Start: 89 @35071 has 1 MA's), (90, 35050), (91, 35044), (97, 35008), (101, 34990), (108, 34933), (130, 34861), (144, 34795), (148, 34774),

Gene: Ellson\_38 Start: 34546, Stop: 34127, Start Num: 49

Candidate Starts for Ellson\_38:

(3, 34729), (5, 34723), (9, 34702), (10, 34681), (Start: 49 @34546 has 7 MA's), (Start: 53 @34540 has 19 MA's), (Start: 68 @34510 has 115 MA's), (76, 34474), (78, 34468), (84, 34438), (Start: 89 @34411 has 1 MA's), (92, 34372), (95, 34360), (97, 34348), (103, 34315), (105, 34303), (132, 34195), (148, 34132),

Gene: Emerson\_44 Start: 34972, Stop: 34592, Start Num: 68

Candidate Starts for Emerson\_44:

(47, 35008), (Start: 68 @34972 has 115 MA's), (Start: 77 @34936 has 3 MA's), (Start: 89 @34876 has 1 MA's), (132, 34666), (144, 34618),

Gene: Enceladus\_37 Start: 32920, Stop: 32510, Start Num: 53

Candidate Starts for Enceladus\_37:

(Start: 49 @32926 has 7 MA's), (Start: 53 @32920 has 19 MA's), (Start: 65 @32899 has 27 MA's), (Start: 68 @32890 has 115 MA's), (75, 32857), (Start: 89 @32791 has 1 MA's), (92, 32752), (97, 32728), (105, 32683), (135, 32575),

Gene: Enkosi\_41 Start: 37140, Stop: 36742, Start Num: 63

Candidate Starts for Enkosi\_41:

(44, 37179), (Start: 63 @37140 has 11 MA's), (Start: 89 @37044 has 1 MA's), (132, 36819), (134, 36813),

Gene: Eponine\_49 Start: 36791, Stop: 36432, Start Num: 66

Candidate Starts for Eponine\_49:

(36, 36860), (52, 36815), (Start: 66 @36791 has 14 MA's), (Start: 68 @36785 has 115 MA's), (Start: 77 @36746 has 3 MA's), (87, 36695), (96, 36626), (101, 36605), (104, 36584), (106, 36566), (137, 36464),

Gene: Faith1\_40 Start: 34280, Stop: 33891, Start Num: 65

Candidate Starts for Faith1\_40:

(Start: 65 @34280 has 27 MA's), (Start: 68 @34271 has 115 MA's), (78, 34232), (83, 34208), (84, 34202), (Start: 89 @34175 has 1 MA's), (92, 34136), (97, 34112), (105, 34067), (123, 33980), (132, 33956),

Gene: FarmResident\_38 Start: 32947, Stop: 32600, Start Num: 76

Candidate Starts for FarmResident\_38:

(Start: 49 @33016 has 7 MA's), (Start: 68 @32980 has 115 MA's), (76, 32947), (83, 32917), (84, 32911), (Start: 89 @32884 has 1 MA's), (92, 32845), (98, 32815), (132, 32671), (134, 32665),

Gene: Fefferhead\_43 Start: 35112, Stop: 34720, Start Num: 71

Candidate Starts for Fefferhead\_43:

(24, 35229), (Start: 71 @35112 has 13 MA's), (Start: 77 @35082 has 3 MA's), (Start: 89 @35022 has 1 MA's), (90, 35001), (91, 34995), (97, 34959), (101, 34941), (108, 34884), (130, 34812), (144, 34746), (148, 34725),

Gene: Feyre\_41 Start: 34186, Stop: 33836, Start Num: 80

Candidate Starts for Feyre\_41:

(Start: 80 @34186 has 3 MA's), (102, 34045), (108, 33994), (125, 33934),

Gene: Findley\_46 Start: 37044, Stop: 36673, Start Num: 68

Candidate Starts for Findley\_46:

(42, 37098), (Start: 68 @37044 has 115 MA's), (Start: 77 @37008 has 3 MA's), (81, 36993), (Start: 89 @36948 has 1 MA's), (96, 36888), (106, 36828), (109, 36798), (114, 36786), (126, 36756), (143, 36699),

Gene: Finemlucis\_40 Start: 34556, Stop: 34167, Start Num: 65

Candidate Starts for Finemlucis\_40:

(Start: 65 @34556 has 27 MA's), (Start: 68 @34547 has 115 MA's), (78, 34508), (83, 34484), (84, 34478), (Start: 89 @34451 has 1 MA's), (92, 34412), (97, 34388), (105, 34343), (123, 34256), (129, 34244), (132, 34232),

Gene: Finnry\_38 Start: 34555, Stop: 34136, Start Num: 49

Candidate Starts for Finnry\_38:

(3, 34738), (5, 34732), (9, 34711), (10, 34690), (Start: 49 @34555 has 7 MA's), (Start: 53 @34549 has 19 MA's), (Start: 68 @34519 has 115 MA's), (76, 34483), (78, 34477), (83, 34453), (84, 34447), (Start: 89 @34420 has 1 MA's), (92, 34381), (95, 34369), (97, 34357), (103, 34324), (105, 34312), (113, 34255), (132, 34204), (148, 34141),

Gene: Fionnbharth\_47 Start: 36189, Stop: 35830, Start Num: 66

Candidate Starts for Fionnbharth\_47:

(14, 36321), (36, 36258), (37, 36255), (52, 36213), (Start: 66 @36189 has 14 MA's), (Start: 68 @36183 has 115 MA's), (Start: 77 @36144 has 3 MA's), (87, 36093), (96, 36024), (101, 36003), (104, 35982), (106, 35964), (137, 35862),

Gene: Gabriela\_40 Start: 34542, Stop: 34153, Start Num: 65

Candidate Starts for Gabriela\_40:

(Start: 65 @34542 has 27 MA's), (Start: 68 @34533 has 115 MA's), (78, 34494), (83, 34470), (84, 34464), (Start: 89 @34437 has 1 MA's), (92, 34398), (97, 34374), (105, 34329), (123, 34242), (132, 34218),

Gene: Ganymede\_44 Start: 35413, Stop: 35036, Start Num: 68

Candidate Starts for Ganymede\_44:

(42, 35464), (Start: 68 @35413 has 115 MA's), (Start: 77 @35377 has 3 MA's), (Start: 89 @35317 has 1 MA's), (111, 35158), (132, 35110), (144, 35062),

Gene: Gardann\_40 Start: 34281, Stop: 33892, Start Num: 65

Candidate Starts for Gardann\_40:

(Start: 65 @34281 has 27 MA's), (Start: 68 @34272 has 115 MA's), (78, 34233), (83, 34209), (84, 34203), (Start: 89 @34176 has 1 MA's), (92, 34137), (97, 34113), (105, 34068), (123, 33981), (129,

33969), (132, 33957),

Gene: Gengar\_41 Start: 34347, Stop: 33946, Start Num: 68

Candidate Starts for Gengar\_41:

(Start: 68 @34347 has 115 MA's), (Start: 80 @34296 has 3 MA's), (102, 34155), (108, 34104), (125, 34044),

Gene: Geraldini\_45 Start: 36027, Stop: 35650, Start Num: 68

Candidate Starts for Geraldini\_45:

(Start: 68 @36027 has 115 MA's), (Start: 77 @35994 has 3 MA's), (82, 35967), (88, 35940), (Start: 89 @35934 has 1 MA's), (132, 35724), (144, 35676),

Gene: Guanica15\_46 Start: 34969, Stop: 34586, Start Num: 73

Candidate Starts for Guanica15\_46:

(16, 35113), (18, 35107), (20, 35104), (23, 35095), (26, 35080), (Start: 69 @34975 has 2 MA's), (Start: 73 @34969 has 1 MA's), (Start: 89 @34879 has 1 MA's), (97, 34816), (104, 34777), (108, 34741), (127, 34681), (129, 34675), (148, 34591),

Gene: Guillsminger\_42 Start: 34318, Stop: 33917, Start Num: 68

Candidate Starts for Guillsminger\_42:

(Start: 68 @34318 has 115 MA's), (Start: 80 @34267 has 3 MA's), (102, 34126), (108, 34075), (125, 34015),

Gene: GuuelaD\_40 Start: 34319, Stop: 33930, Start Num: 65

Candidate Starts for GuuelaD\_40:

(Start: 65 @34319 has 27 MA's), (Start: 68 @34310 has 115 MA's), (78, 34271), (83, 34247), (84, 34241), (92, 34175), (97, 34151), (105, 34106), (121, 34025), (123, 34019), (129, 34007), (132, 33995),

Gene: Hafay\_40 Start: 34314, Stop: 33925, Start Num: 65

Candidate Starts for Hafay\_40:

(Start: 65 @34314 has 27 MA's), (Start: 68 @34305 has 115 MA's), (78, 34266), (83, 34242), (84, 34236), (92, 34170), (97, 34146), (105, 34101), (121, 34020), (123, 34014), (129, 34002), (132, 33990),

Gene: Halena\_37 Start: 32946, Stop: 32536, Start Num: 53

Candidate Starts for Halena\_37:

(Start: 49 @32952 has 7 MA's), (Start: 53 @32946 has 19 MA's), (61, 32928), (Start: 65 @32925 has 27 MA's), (Start: 68 @32916 has 115 MA's), (75, 32883), (Start: 89 @32817 has 1 MA's), (92, 32778), (97, 32754), (105, 32709), (107, 32694), (135, 32601),

Gene: Hammy\_45 Start: 35892, Stop: 35533, Start Num: 71

Candidate Starts for Hammy\_45:

(Start: 71 @35892 has 13 MA's), (Start: 89 @35802 has 1 MA's), (93, 35760),

Gene: HedwigODU\_43 Start: 34981, Stop: 34601, Start Num: 68

Candidate Starts for HedwigODU\_43:

(47, 35017), (Start: 68 @34981 has 115 MA's), (Start: 77 @34945 has 3 MA's), (Start: 89 @34885 has 1 MA's), (132, 34675), (144, 34627),

Gene: Heftyboy\_41 Start: 34467, Stop: 34066, Start Num: 68

Candidate Starts for Heftyboy\_41:



(27, 34566), (45, 34515), (Start: 50 @34503 has 4 MA's), (Start: 68 @34467 has 115 MA's), (Start: 80 @34416 has 3 MA's), (102, 34275), (108, 34224), (125, 34164), (138, 34116),

Gene: Homura\_43 Start: 35096, Stop: 34716, Start Num: 68

Candidate Starts for Homura\_43:

(47, 35132), (Start: 68 @35096 has 115 MA's), (Start: 77 @35060 has 3 MA's), (Start: 89 @35000 has 1 MA's), (111, 34841), (132, 34790), (144, 34742),

Gene: Hyperbowlee\_43 Start: 35293, Stop: 34913, Start Num: 68

Candidate Starts for Hyperbowlee\_43:

(47, 35329), (Start: 68 @35293 has 115 MA's), (Start: 77 @35257 has 3 MA's), (Start: 89 @35197 has 1 MA's), (111, 35038), (132, 34987), (144, 34939),

Gene: Illumine\_46 Start: 35761, Stop: 35384, Start Num: 68

Candidate Starts for Illumine\_46:

(Start: 68 @35761 has 115 MA's), (Start: 77 @35725 has 3 MA's), (Start: 89 @35665 has 1 MA's), (111, 35506), (132, 35458), (144, 35410),

Gene: Inky\_43 Start: 35096, Stop: 34716, Start Num: 68

Candidate Starts for Inky\_43:

(47, 35132), (Start: 68 @35096 has 115 MA's), (Start: 77 @35060 has 3 MA's), (Start: 89 @35000 has 1 MA's), (111, 34841), (132, 34790), (144, 34742),

Gene: InvictusManeo\_41 Start: 34534, Stop: 34133, Start Num: 67

Candidate Starts for InvictusManeo\_41:

(Start: 67 @34534 has 7 MA's), (Start: 68 @34528 has 115 MA's), (Start: 77 @34489 has 3 MA's), (Start: 80 @34477 has 3 MA's), (84, 34450), (99, 34348), (102, 34336), (108, 34285), (125, 34225),

Gene: JAWS\_43 Start: 34970, Stop: 34590, Start Num: 68

Candidate Starts for JAWS\_43:

(47, 35006), (Start: 68 @34970 has 115 MA's), (Start: 77 @34934 has 3 MA's), (Start: 89 @34874 has 1 MA's), (111, 34715), (132, 34664), (144, 34616),

Gene: JF1\_47 Start: 36061, Stop: 35747, Start Num: 77

Candidate Starts for JF1\_47:

(Start: 77 @36061 has 3 MA's), (87, 36010), (96, 35941), (101, 35920), (104, 35899), (106, 35881), (137, 35779),

Gene: Jarvi\_43 Start: 35096, Stop: 34716, Start Num: 68

Candidate Starts for Jarvi\_43:

(47, 35132), (Start: 68 @35096 has 115 MA's), (Start: 77 @35060 has 3 MA's), (Start: 89 @35000 has 1 MA's), (111, 34841), (132, 34790), (144, 34742),

Gene: Jayhawk\_44 Start: 34979, Stop: 34599, Start Num: 68

Candidate Starts for Jayhawk\_44:

(47, 35015), (Start: 68 @34979 has 115 MA's), (Start: 77 @34943 has 3 MA's), (Start: 89 @34883 has 1 MA's), (132, 34673), (144, 34625),

Gene: Jeckyll\_43 Start: 35096, Stop: 34716, Start Num: 68

Candidate Starts for Jeckyll\_43:

(47, 35132), (Start: 68 @35096 has 115 MA's), (Start: 77 @35060 has 3 MA's), (Start: 89 @35000 has 1 MA's), (111, 34841), (132, 34790), (144, 34742),

Gene: Jobypre\_38 Start: 34516, Stop: 34133, Start Num: 68

Candidate Starts for Jobypre\_38:

(3, 34735), (5, 34729), (9, 34708), (10, 34687), (Start: 49 @34552 has 7 MA's), (Start: 53 @34546 has 19 MA's), (Start: 68 @34516 has 115 MA's), (76, 34480), (78, 34474), (83, 34450), (84, 34444), (Start: 89 @34417 has 1 MA's), (92, 34378), (95, 34366), (97, 34354), (103, 34321), (105, 34309), (113, 34252), (132, 34201), (148, 34138),

Gene: JoeDirt\_37 Start: 32924, Stop: 32508, Start Num: 49

Candidate Starts for JoeDirt\_37:

(Start: 49 @32924 has 7 MA's), (Start: 53 @32918 has 19 MA's), (Start: 65 @32897 has 27 MA's), (Start: 68 @32888 has 115 MA's), (75, 32855), (Start: 89 @32789 has 1 MA's), (92, 32750), (97, 32726), (105, 32681), (135, 32573),

Gene: Joy99\_43 Start: 35025, Stop: 34645, Start Num: 68

Candidate Starts for Joy99\_43:

(47, 35061), (Start: 68 @35025 has 115 MA's), (Start: 77 @34989 has 3 MA's), (Start: 89 @34929 has 1 MA's), (111, 34770), (132, 34719), (144, 34671),

Gene: Jubie\_38 Start: 34517, Stop: 34134, Start Num: 68

Candidate Starts for Jubie\_38:

(3, 34736), (5, 34730), (9, 34709), (10, 34688), (Start: 49 @34553 has 7 MA's), (Start: 53 @34547 has 19 MA's), (Start: 68 @34517 has 115 MA's), (76, 34481), (78, 34475), (83, 34451), (84, 34445), (Start: 89 @34418 has 1 MA's), (92, 34379), (95, 34367), (97, 34355), (103, 34322), (105, 34310), (113, 34253), (132, 34202), (148, 34139),

Gene: Juliette\_49 Start: 36262, Stop: 35903, Start Num: 66

Candidate Starts for Juliette\_49:

(36, 36331), (52, 36286), (Start: 66 @36262 has 14 MA's), (Start: 68 @36256 has 115 MA's), (Start: 77 @36217 has 3 MA's), (87, 36166), (96, 36097), (101, 36076), (104, 36055), (106, 36037), (137, 35935),

Gene: Kahlid\_40 Start: 34286, Stop: 33897, Start Num: 65

Candidate Starts for Kahlid\_40:

(Start: 65 @34286 has 27 MA's), (Start: 68 @34277 has 115 MA's), (78, 34238), (83, 34214), (84, 34208), (92, 34142), (97, 34118), (105, 34073), (121, 33992), (123, 33986), (129, 33974), (132, 33962),

Gene: Keshu\_47 Start: 35704, Stop: 35282, Start Num: 50

Candidate Starts for Keshu\_47:

(Start: 50 @35704 has 4 MA's), (Start: 70 @35671 has 4 MA's), (97, 35515), (106, 35458), (144, 35308),

Gene: KiSi\_47 Start: 36100, Stop: 35729, Start Num: 72

Candidate Starts for KiSi\_47:

(11, 36259), (12, 36256), (13, 36253), (54, 36133), (Start: 72 @36100 has 10 MA's), (Start: 77 @36070 has 3 MA's), (78, 36067), (Start: 89 @36010 has 1 MA's), (94, 35965), (97, 35947), (108, 35872), (133, 35800), (144, 35755),

Gene: Kingsolomon\_38 Start: 34546, Stop: 34133, Start Num: 53

Candidate Starts for Kingsolomon\_38:

(3, 34735), (5, 34729), (9, 34708), (10, 34687), (Start: 49 @34552 has 7 MA's), (Start: 53 @34546 has 19 MA's), (Start: 68 @34516 has 115 MA's), (76, 34480), (78, 34474), (83, 34450), (84, 34444), (Start: 89 @34417 has 1 MA's), (92, 34378), (95, 34366), (97, 34354), (103, 34321), (105, 34309), (113,

34252), (132, 34201), (148, 34138),

Gene: KirDoubleO7\_36 Start: 34538, Stop: 34158, Start Num: 68

Candidate Starts for KirDoubleO7\_36:

(Start: 49 @34574 has 7 MA's), (Start: 53 @34568 has 19 MA's), (Start: 68 @34538 has 115 MA's), (78, 34499), (83, 34475), (84, 34469), (Start: 89 @34442 has 1 MA's), (92, 34403), (95, 34391), (97, 34379), (103, 34346), (105, 34334), (113, 34277), (148, 34163),

Gene: Kratio\_40 Start: 34085, Stop: 33681, Start Num: 67

Candidate Starts for Kratio\_40:

(Start: 67 @34085 has 7 MA's), (Start: 68 @34079 has 115 MA's), (Start: 77 @34040 has 3 MA's), (Start: 80 @34028 has 3 MA's), (84, 34001), (88, 33980), (99, 33899), (102, 33887), (108, 33836), (125, 33776),

Gene: Kraw\_49 Start: 35905, Stop: 35591, Start Num: 77

Candidate Starts for Kraw\_49:

(36, 36019), (52, 35974), (Start: 66 @35950 has 14 MA's), (Start: 68 @35944 has 115 MA's), (Start: 77 @35905 has 3 MA's), (87, 35854), (96, 35785), (101, 35764), (104, 35743), (106, 35725), (137, 35623),

Gene: Kropertea\_37 Start: 33093, Stop: 32698, Start Num: 68

Candidate Starts for Kropertea\_37:

(Start: 49 @33129 has 7 MA's), (Start: 68 @33093 has 115 MA's), (76, 33060), (84, 33009), (Start: 89 @32982 has 1 MA's), (92, 32943), (97, 32919), (132, 32769), (134, 32763), (140, 32739),

Gene: Krueger\_49 Start: 35862, Stop: 35461, Start Num: 62

Candidate Starts for Krueger\_49:

(Start: 62 @35862 has 1 MA's), (Start: 72 @35850 has 10 MA's), (Start: 77 @35820 has 3 MA's), (93, 35718), (97, 35697), (103, 35664), (108, 35622), (116, 35586), (142, 35493), (144, 35487),

Gene: Krypton555\_38 Start: 34434, Stop: 34048, Start Num: 68

Candidate Starts for Krypton555\_38:

(Start: 28 @34530 has 1 MA's), (39, 34500), (Start: 49 @34470 has 7 MA's), (Start: 53 @34464 has 19 MA's), (Start: 68 @34434 has 115 MA's), (78, 34395), (83, 34371), (84, 34365), (Start: 89 @34338 has 1 MA's), (92, 34299), (95, 34287), (97, 34275), (103, 34242), (132, 34116), (148, 34053),

Gene: Larva\_42 Start: 34253, Stop: 33849, Start Num: 67

Candidate Starts for Larva\_42:

(Start: 67 @34253 has 7 MA's), (Start: 68 @34247 has 115 MA's), (Start: 77 @34208 has 3 MA's), (Start: 80 @34196 has 3 MA's), (84, 34169), (102, 34055), (108, 34004), (125, 33944), (148, 33854),

Gene: LastHope\_46 Start: 34433, Stop: 34047, Start Num: 70

Candidate Starts for LastHope\_46:

(34, 34514), (35, 34508), (41, 34493), (Start: 70 @34433 has 4 MA's), (Start: 89 @34340 has 1 MA's), (91, 34313), (132, 34142), (147, 34073),

Gene: LaterM\_44 Start: 35874, Stop: 35497, Start Num: 68

Candidate Starts for LaterM\_44:

(42, 35925), (Start: 68 @35874 has 115 MA's), (Start: 77 @35838 has 3 MA's), (88, 35784), (Start: 89 @35778 has 1 MA's), (123, 35586), (132, 35571), (144, 35523),

Gene: LeBron\_38 Start: 32968, Stop: 32552, Start Num: 49

Candidate Starts for LeBron\_38:

(Start: 49 @32968 has 7 MA's), (Start: 53 @32962 has 19 MA's), (Start: 65 @32941 has 27 MA's), (Start: 68 @32932 has 115 MA's), (75, 32899), (Start: 89 @32833 has 1 MA's), (92, 32794), (97, 32770), (105, 32725), (135, 32617),

Gene: LeMond\_47 Start: 36084, Stop: 35710, Start Num: 72

Candidate Starts for LeMond\_47:

(31, 36180), (55, 36117), (Start: 72 @36084 has 10 MA's), (Start: 77 @36054 has 3 MA's), (78, 36051), (Start: 89 @35994 has 1 MA's), (94, 35949), (97, 35931), (108, 35856), (133, 35781), (144, 35736),

Gene: Lea83\_47 Start: 35646, Stop: 35257, Start Num: 70

Candidate Starts for Lea83\_47:

(29, 35736), (38, 35709), (Start: 50 @35679 has 4 MA's), (Start: 70 @35646 has 4 MA's), (106, 35433), (108, 35415), (119, 35367), (144, 35283),

Gene: Lebo14\_49 Start: 36120, Stop: 35857, Start Num: 87

Candidate Starts for Lebo14\_49:

(36, 36285), (52, 36240), (Start: 66 @36216 has 14 MA's), (Start: 68 @36210 has 115 MA's), (Start: 77 @36171 has 3 MA's), (87, 36120), (96, 36051), (101, 36030), (104, 36009), (106, 35991), (137, 35889),

Gene: Leston\_41 Start: 34396, Stop: 34046, Start Num: 80

Candidate Starts for Leston\_41:

(Start: 68 @34447 has 115 MA's), (Start: 80 @34396 has 3 MA's), (102, 34255), (108, 34204), (125, 34144),

Gene: Lewan\_40 Start: 34274, Stop: 33885, Start Num: 65

Candidate Starts for Lewan\_40:

(Start: 65 @34274 has 27 MA's), (Start: 68 @34265 has 115 MA's), (78, 34226), (83, 34202), (84, 34196), (92, 34130), (97, 34106), (105, 34061), (121, 33980), (123, 33974), (129, 33962), (132, 33950),

Gene: LilDestine\_40 Start: 34278, Stop: 33889, Start Num: 65

Candidate Starts for LilDestine\_40:

(Start: 65 @34278 has 27 MA's), (Start: 68 @34269 has 115 MA's), (78, 34230), (83, 34206), (84, 34200), (Start: 89 @34173 has 1 MA's), (92, 34134), (97, 34110), (105, 34065), (123, 33978), (132, 33954),

Gene: LindNT\_43 Start: 35164, Stop: 34787, Start Num: 68

Candidate Starts for LindNT\_43:

(42, 35215), (Start: 68 @35164 has 115 MA's), (Start: 77 @35128 has 3 MA's), (81, 35113), (Start: 89 @35068 has 1 MA's), (132, 34861), (144, 34813),

Gene: LiyuLake\_38 Start: 34530, Stop: 34117, Start Num: 53

Candidate Starts for LiyuLake\_38:

(3, 34719), (5, 34713), (9, 34692), (10, 34671), (Start: 49 @34536 has 7 MA's), (Start: 53 @34530 has 19 MA's), (Start: 68 @34500 has 115 MA's), (76, 34464), (78, 34458), (84, 34428), (Start: 89 @34401 has 1 MA's), (92, 34362), (95, 34350), (97, 34338), (103, 34305), (105, 34293), (132, 34185), (148, 34122),

Gene: Llorens\_43 Start: 35096, Stop: 34716, Start Num: 68

Candidate Starts for Llorens\_43:

(47, 35132), (Start: 68 @35096 has 115 MA's), (Start: 77 @35060 has 3 MA's), (Start: 89 @35000 has 1 MA's), (111, 34841), (132, 34790), (144, 34742),

Gene: Loadrie\_40 Start: 34312, Stop: 33923, Start Num: 65

Candidate Starts for Loadrie\_40:

(Start: 65 @34312 has 27 MA's), (Start: 68 @34303 has 115 MA's), (78, 34264), (83, 34240), (84, 34234), (92, 34168), (97, 34144), (105, 34099), (121, 34018), (123, 34012), (129, 34000), (132, 33988),

Gene: Lolly9\_38 Start: 34324, Stop: 33941, Start Num: 68

Candidate Starts for Lolly9\_38:

(3, 34543), (5, 34537), (9, 34516), (10, 34495), (Start: 49 @34360 has 7 MA's), (Start: 53 @34354 has 19 MA's), (Start: 68 @34324 has 115 MA's), (76, 34288), (78, 34282), (84, 34252), (Start: 89 @34225 has 1 MA's), (92, 34186), (95, 34174), (97, 34162), (103, 34129), (104, 34123), (105, 34117), (113, 34060), (132, 34009), (148, 33946),

Gene: Lumos\_38 Start: 34543, Stop: 34130, Start Num: 53

Candidate Starts for Lumos\_38:

(3, 34732), (5, 34726), (9, 34705), (10, 34684), (Start: 49 @34549 has 7 MA's), (Start: 53 @34543 has 19 MA's), (Start: 68 @34513 has 115 MA's), (76, 34477), (78, 34471), (83, 34447), (84, 34441), (Start: 89 @34414 has 1 MA's), (92, 34375), (95, 34363), (97, 34351), (103, 34318), (105, 34306), (113, 34249), (132, 34198), (148, 34135),

Gene: Lunahalos\_43 Start: 35096, Stop: 34716, Start Num: 68

Candidate Starts for Lunahalos\_43:

(47, 35132), (Start: 68 @35096 has 115 MA's), (Start: 77 @35060 has 3 MA's), (Start: 89 @35000 has 1 MA's), (111, 34841), (132, 34790), (144, 34742),

Gene: MAckerman\_38 Start: 32940, Stop: 32530, Start Num: 53

Candidate Starts for MAckerman\_38:

(Start: 49 @32946 has 7 MA's), (Start: 53 @32940 has 19 MA's), (61, 32922), (Start: 65 @32919 has 27 MA's), (Start: 68 @32910 has 115 MA's), (75, 32877), (Start: 89 @32811 has 1 MA's), (92, 32772), (97, 32748), (105, 32703), (107, 32688), (135, 32595),

Gene: MacnCheese\_47 Start: 36557, Stop: 36177, Start Num: 70

Candidate Starts for MacnCheese\_47:

(29, 36650), (Start: 50 @36590 has 4 MA's), (Start: 70 @36557 has 4 MA's), (88, 36473), (97, 36404), (108, 36329), (145, 36191),

Gene: Malthus\_48 Start: 35950, Stop: 35591, Start Num: 66

Candidate Starts for Malthus\_48:

(36, 36019), (52, 35974), (Start: 66 @35950 has 14 MA's), (Start: 68 @35944 has 115 MA's), (Start: 77 @35905 has 3 MA's), (87, 35854), (96, 35785), (101, 35764), (104, 35743), (106, 35725), (137, 35623),

Gene: Marcoliusprime\_46 Start: 37051, Stop: 36680, Start Num: 68

Candidate Starts for Marcoliusprime\_46:

(42, 37105), (Start: 68 @37051 has 115 MA's), (Start: 77 @37015 has 3 MA's), (81, 37000), (Start: 89 @36955 has 1 MA's), (96, 36895), (106, 36835), (109, 36805), (114, 36793), (126, 36763), (143, 36706),

Gene: MarkPhew\_46 Start: 35518, Stop: 35147, Start Num: 72

Candidate Starts for MarkPhew\_46:

(46, 35566), (52, 35554), (Start: 72 @35518 has 10 MA's), (Start: 89 @35428 has 1 MA's), (90, 35407), (97, 35365), (108, 35290), (111, 35269), (125, 35233), (134, 35212), (144, 35173),

Gene: Marshawn\_46 Start: 35965, Stop: 35570, Start Num: 64

Candidate Starts for Marshawn\_46:

(Start: 64 @35965 has 1 MA's), (Start: 80 @35914 has 3 MA's), (Start: 89 @35866 has 1 MA's), (94, 35821), (97, 35803), (108, 35728), (127, 35665), (144, 35599), (148, 35578),

Gene: McMater\_45 Start: 35648, Stop: 35256, Start Num: 63

Candidate Starts for McMater\_45:

(Start: 63 @35648 has 11 MA's), (86, 35564), (Start: 89 @35549 has 1 MA's), (108, 35411), (112, 35387), (134, 35324), (140, 35300), (146, 35267),

Gene: Mdavu\_39 Start: 34516, Stop: 34118, Start Num: 63

Candidate Starts for Mdavu\_39:

(44, 34555), (Start: 63 @34516 has 11 MA's), (Start: 89 @34420 has 1 MA's), (132, 34195), (134, 34189),

Gene: MeaningOfLife\_44 Start: 35907, Stop: 35530, Start Num: 68

Candidate Starts for MeaningOfLife\_44:

(42, 35958), (Start: 68 @35907 has 115 MA's), (Start: 77 @35871 has 3 MA's), (Start: 89 @35811 has 1 MA's), (111, 35652), (132, 35604), (144, 35556),

Gene: Megsy\_44 Start: 35223, Stop: 34846, Start Num: 68

Candidate Starts for Megsy\_44:

(42, 35274), (Start: 68 @35223 has 115 MA's), (Start: 77 @35187 has 3 MA's), (81, 35172), (Start: 89 @35127 has 1 MA's), (132, 34920), (144, 34872),

Gene: Miley16\_40 Start: 34280, Stop: 33891, Start Num: 65

Candidate Starts for Miley16\_40:

(Start: 65 @34280 has 27 MA's), (Start: 68 @34271 has 115 MA's), (78, 34232), (83, 34208), (84, 34202), (Start: 89 @34175 has 1 MA's), (92, 34136), (97, 34112), (105, 34067), (123, 33980), (132, 33956),

Gene: Milly\_46 Start: 37024, Stop: 36653, Start Num: 68

Candidate Starts for Milly\_46:

(42, 37078), (Start: 68 @37024 has 115 MA's), (Start: 77 @36988 has 3 MA's), (81, 36973), (Start: 89 @36928 has 1 MA's), (96, 36868), (106, 36808), (109, 36778), (114, 36766), (126, 36736), (143, 36679),

Gene: MiniLon\_38 Start: 34355, Stop: 33942, Start Num: 53

Candidate Starts for MiniLon\_38:

(3, 34544), (5, 34538), (9, 34517), (10, 34496), (Start: 49 @34361 has 7 MA's), (Start: 53 @34355 has 19 MA's), (Start: 68 @34325 has 115 MA's), (76, 34289), (78, 34283), (84, 34253), (Start: 89 @34226 has 1 MA's), (92, 34187), (95, 34175), (97, 34163), (103, 34130), (104, 34124), (105, 34118), (113, 34061), (132, 34010), (148, 33947),

Gene: MiniMac\_38 Start: 34358, Stop: 33939, Start Num: 49

Candidate Starts for MiniMac\_38:

(Start: 49 @34358 has 7 MA's), (Start: 53 @34352 has 19 MA's), (Start: 68 @34322 has 115 MA's), (76, 34286), (78, 34280), (84, 34250), (Start: 89 @34223 has 1 MA's), (92, 34184), (95, 34172), (97, 34160), (103, 34127), (104, 34121), (105, 34115), (113, 34058), (132, 34007), (148, 33944),

Gene: Miryou\_43 Start: 36650, Stop: 36249, Start Num: 68

Candidate Starts for Miryou\_43:

(Start: 68 @36650 has 115 MA's), (Start: 80 @36599 has 3 MA's), (102, 36458), (108, 36407), (125, 36347),

Gene: MissDaisy\_45 Start: 35425, Stop: 35069, Start Num: 66

Candidate Starts for MissDaisy\_45:

(43, 35470), (51, 35452), (52, 35449), (Start: 66 @35425 has 14 MA's), (Start: 68 @35419 has 115 MA's), (Start: 77 @35380 has 3 MA's), (87, 35329), (101, 35239), (104, 35218), (106, 35200),

Gene: Mitti\_47 Start: 36126, Stop: 35767, Start Num: 66

Candidate Starts for Mitti\_47:

(36, 36195), (52, 36150), (Start: 66 @36126 has 14 MA's), (Start: 68 @36120 has 115 MA's), (Start: 77 @36081 has 3 MA's), (87, 36030), (96, 35961), (101, 35940), (104, 35919), (106, 35901), (137, 35799),

Gene: MkaliMitinis3\_40 Start: 34282, Stop: 33893, Start Num: 65

Candidate Starts for MkaliMitinis3\_40:

(Start: 65 @34282 has 27 MA's), (Start: 68 @34273 has 115 MA's), (78, 34234), (83, 34210), (84, 34204), (92, 34138), (97, 34114), (105, 34069), (121, 33988), (123, 33982), (129, 33970), (132, 33958),

Gene: Moostard\_38 Start: 34518, Stop: 34135, Start Num: 68

Candidate Starts for Moostard\_38:

(3, 34737), (5, 34731), (9, 34710), (10, 34689), (Start: 49 @34554 has 7 MA's), (Start: 53 @34548 has 19 MA's), (Start: 68 @34518 has 115 MA's), (76, 34482), (78, 34476), (83, 34452), (84, 34446), (Start: 89 @34419 has 1 MA's), (92, 34380), (95, 34368), (97, 34356), (103, 34323), (105, 34311), (113, 34254), (132, 34203), (148, 34140),

Gene: MsGreen\_38 Start: 34516, Stop: 34133, Start Num: 68

Candidate Starts for MsGreen\_38:

(3, 34735), (5, 34729), (9, 34708), (10, 34687), (Start: 49 @34552 has 7 MA's), (Start: 53 @34546 has 19 MA's), (Start: 68 @34516 has 115 MA's), (76, 34480), (78, 34474), (83, 34450), (84, 34444), (Start: 89 @34417 has 1 MA's), (92, 34378), (95, 34366), (97, 34354), (103, 34321), (105, 34309), (113, 34252), (132, 34201), (148, 34138),

Gene: Mufasa\_46 Start: 36609, Stop: 36241, Start Num: 68

Candidate Starts for Mufasa\_46:

(Start: 68 @36609 has 115 MA's), (Start: 77 @36573 has 3 MA's), (Start: 89 @36513 has 1 MA's), (96, 36453), (106, 36393), (109, 36363), (114, 36351), (126, 36321), (143, 36267),

Gene: Murucutumbu\_44 Start: 35967, Stop: 35590, Start Num: 68

Candidate Starts for Murucutumbu\_44:

(42, 36018), (Start: 68 @35967 has 115 MA's), (Start: 77 @35931 has 3 MA's), (88, 35877), (Start: 89 @35871 has 1 MA's), (123, 35679), (132, 35664), (144, 35616),

Gene: Mynx\_44 Start: 35298, Stop: 34921, Start Num: 68

Candidate Starts for Mynx\_44:

(42, 35349), (Start: 68 @35298 has 115 MA's), (Start: 77 @35262 has 3 MA's), (81, 35247), (Start: 89 @35202 has 1 MA's), (132, 34995), (144, 34947),

Gene: Neighly\_42 Start: 34246, Stop: 33848, Start Num: 68

Candidate Starts for Neighly\_42:

(Start: 67 @34252 has 7 MA's), (Start: 68 @34246 has 115 MA's), (Start: 77 @34207 has 3 MA's), (Start: 80 @34195 has 3 MA's), (84, 34168), (102, 34054), (108, 34003), (125, 33943), (148, 33853),

Gene: Nergal\_40 Start: 33595, Stop: 33221, Start Num: 68

Candidate Starts for Nergal\_40:

(56, 33622), (Start: 68 @33595 has 115 MA's), (Start: 77 @33559 has 3 MA's), (82, 33532), (Start: 89 @33499 has 1 MA's), (97, 33436), (107, 33376), (111, 33340), (144, 33247), (148, 33226),

Gene: Netyap\_40 Start: 34280, Stop: 33891, Start Num: 65

Candidate Starts for Netyap\_40:

(Start: 65 @34280 has 27 MA's), (Start: 68 @34271 has 115 MA's), (78, 34232), (83, 34208), (84, 34202), (Start: 89 @34175 has 1 MA's), (92, 34136), (97, 34112), (105, 34067), (123, 33980), (132, 33956),

Gene: Nibb\_45 Start: 35241, Stop: 34867, Start Num: 72

Candidate Starts for Nibb\_45:

(58, 35265), (Start: 72 @35241 has 10 MA's), (Start: 77 @35211 has 3 MA's), (81, 35196), (Start: 89 @35151 has 1 MA's), (90, 35130), (97, 35088), (105, 35043), (108, 35013), (111, 34992), (128, 34950), (133, 34941), (141, 34908), (144, 34893),

Gene: Nicholas\_38 Start: 34516, Stop: 34133, Start Num: 68

Candidate Starts for Nicholas\_38:

(3, 34735), (5, 34729), (9, 34708), (10, 34687), (Start: 49 @34552 has 7 MA's), (Start: 53 @34546 has 19 MA's), (Start: 68 @34516 has 115 MA's), (76, 34480), (78, 34474), (83, 34450), (84, 34444), (Start: 89 @34417 has 1 MA's), (92, 34378), (95, 34366), (97, 34354), (103, 34321), (105, 34309), (113, 34252), (132, 34201), (148, 34138),

Gene: Nicholasp3\_40 Start: 34281, Stop: 33892, Start Num: 65

Candidate Starts for Nicholasp3\_40:

(Start: 65 @34281 has 27 MA's), (Start: 68 @34272 has 115 MA's), (78, 34233), (83, 34209), (84, 34203), (Start: 89 @34176 has 1 MA's), (92, 34137), (97, 34113), (105, 34068), (123, 33981), (129, 33969), (132, 33957),

Gene: Nikao\_41 Start: 37140, Stop: 36742, Start Num: 63

Candidate Starts for Nikao\_41:

(44, 37179), (Start: 63 @37140 has 11 MA's), (Start: 89 @37044 has 1 MA's), (132, 36819), (134, 36813),

Gene: Niklas\_45 Start: 35707, Stop: 35315, Start Num: 63

Candidate Starts for Niklas\_45:

(Start: 63 @35707 has 11 MA's), (86, 35623), (Start: 89 @35608 has 1 MA's), (112, 35446), (134, 35383), (140, 35359), (146, 35326),

Gene: November\_45 Start: 35619, Stop: 35248, Start Num: 71

Candidate Starts for November\_45:

(Start: 71 @35619 has 13 MA's), (Start: 77 @35589 has 3 MA's), (Start: 89 @35529 has 1 MA's), (97, 35466), (101, 35448), (105, 35421), (107, 35406), (108, 35391), (111, 35370), (117, 35349), (141, 35289), (144, 35274),

Gene: Nutello\_38 Start: 34527, Stop: 34129, Start Num: 63

Candidate Starts for Nutello\_38:

(44, 34566), (Start: 63 @34527 has 11 MA's), (Start: 89 @34431 has 1 MA's), (132, 34206), (134, 34200),

Gene: OhShagHennessy\_37 Start: 32908, Stop: 32498, Start Num: 53



Candidate Starts for OhShagHennessy\_37:

(Start: 49 @32914 has 7 MA's), (Start: 53 @32908 has 19 MA's), (Start: 65 @32887 has 27 MA's), (Start: 68 @32878 has 115 MA's), (75, 32845), (Start: 89 @32779 has 1 MA's), (92, 32740), (97, 32716), (105, 32671), (135, 32563),

Gene: OkiRoe\_41 Start: 34320, Stop: 33919, Start Num: 68

Candidate Starts for OkiRoe\_41:

(Start: 68 @34320 has 115 MA's), (Start: 80 @34269 has 3 MA's), (102, 34128), (108, 34077), (125, 34017),

Gene: OmniCritical\_46 Start: 35929, Stop: 35576, Start Num: 68

Candidate Starts for OmniCritical\_46:

(36, 36004), (52, 35959), (Start: 66 @35935 has 14 MA's), (Start: 68 @35929 has 115 MA's), (Start: 77 @35890 has 3 MA's), (87, 35839), (96, 35770), (101, 35749), (104, 35728), (106, 35710), (137, 35608),

Gene: Omnicron\_44 Start: 33930, Stop: 33529, Start Num: 68

Candidate Starts for Omnicron\_44:

(Start: 68 @33930 has 115 MA's), (Start: 80 @33879 has 3 MA's), (84, 33852), (99, 33750), (102, 33738), (108, 33687), (125, 33627),

Gene: Oscar\_47 Start: 35987, Stop: 35613, Start Num: 72

Candidate Starts for Oscar\_47:

(54, 36020), (Start: 72 @35987 has 10 MA's), (Start: 77 @35957 has 3 MA's), (78, 35954), (Start: 89 @35897 has 1 MA's), (94, 35852), (97, 35834), (108, 35759), (133, 35684), (144, 35639),

Gene: PYPDinur\_37 Start: 33042, Stop: 32662, Start Num: 68

Candidate Starts for PYPDinur\_37:

(Start: 49 @33078 has 7 MA's), (Start: 68 @33042 has 115 MA's), (76, 33009), (83, 32979), (84, 32973), (Start: 89 @32946 has 1 MA's), (92, 32907), (98, 32877), (105, 32838), (122, 32760), (132, 32733), (134, 32727),

Gene: Padfoot\_43 Start: 35293, Stop: 34913, Start Num: 68

Candidate Starts for Padfoot\_43:

(47, 35329), (Start: 68 @35293 has 115 MA's), (Start: 77 @35257 has 3 MA's), (Start: 89 @35197 has 1 MA's), (111, 35038), (132, 34987), (144, 34939),

Gene: Padpat\_44 Start: 34972, Stop: 34592, Start Num: 68

Candidate Starts for Padpat\_44:

(47, 35008), (Start: 68 @34972 has 115 MA's), (Start: 77 @34936 has 3 MA's), (Start: 89 @34876 has 1 MA's), (132, 34666), (144, 34618),

Gene: Paola\_41 Start: 34318, Stop: 33917, Start Num: 68

Candidate Starts for Paola\_41:

(Start: 68 @34318 has 115 MA's), (Start: 80 @34267 has 3 MA's), (102, 34126), (108, 34075), (125, 34015),

Gene: Patt\_44 Start: 35104, Stop: 34793, Start Num: 77

Candidate Starts for Patt\_44:

(33, 35227), (36, 35218), (37, 35215), (39, 35209), (43, 35194), (51, 35176), (52, 35173), (Start: 66 @35149 has 14 MA's), (Start: 68 @35143 has 115 MA's), (Start: 77 @35104 has 3 MA's), (87, 35053), (101, 34963), (104, 34942), (106, 34924),

Gene: Peanam\_45 Start: 35664, Stop: 35272, Start Num: 63

Candidate Starts for Peanam\_45:

(Start: 63 @35664 has 11 MA's), (86, 35580), (Start: 89 @35565 has 1 MA's), (134, 35340), (140, 35316), (146, 35283),

Gene: Peel\_43 Start: 35098, Stop: 34718, Start Num: 68

Candidate Starts for Peel\_43:

(47, 35134), (Start: 68 @35098 has 115 MA's), (Start: 77 @35062 has 3 MA's), (Start: 89 @35002 has 1 MA's), (111, 34843), (132, 34792), (144, 34744),

Gene: Pharb\_43 Start: 34363, Stop: 33977, Start Num: 70

Candidate Starts for Pharb\_43:

(Start: 70 @34363 has 4 MA's), (Start: 77 @34333 has 3 MA's), (97, 34210), (106, 34153), (108, 34135), (119, 34087), (122, 34081), (144, 34003),

Gene: PhelpsODU\_45 Start: 34877, Stop: 34485, Start Num: 71

Candidate Starts for PhelpsODU\_45:

(1, 35147), (2, 35111), (4, 35096), (7, 35087), (8, 35078), (Start: 71 @34877 has 13 MA's), (Start: 77 @34847 has 3 MA's), (97, 34724), (107, 34664), (108, 34649), (136, 34550), (144, 34511),

Gene: Phrank\_46 Start: 34834, Stop: 34442, Start Num: 71

Candidate Starts for Phrank\_46:

(6, 35047), (8, 35035), (Start: 71 @34834 has 13 MA's), (Start: 77 @34804 has 3 MA's), (97, 34681), (103, 34648), (107, 34621), (108, 34606), (116, 34570), (138, 34498), (144, 34468),

Gene: Piatt\_43 Start: 35293, Stop: 34913, Start Num: 68

Candidate Starts for Piatt\_43:

(47, 35329), (Start: 68 @35293 has 115 MA's), (Start: 77 @35257 has 3 MA's), (Start: 89 @35197 has 1 MA's), (111, 35038), (132, 34987), (144, 34939),

Gene: Pixie\_45 Start: 35157, Stop: 34735, Start Num: 50

Candidate Starts for Pixie\_45:

(Start: 50 @35157 has 4 MA's), (Start: 70 @35124 has 4 MA's), (97, 34968), (106, 34911), (108, 34893), (119, 34845), (144, 34761),

Gene: Pokerus\_42 Start: 35018, Stop: 34638, Start Num: 68

Candidate Starts for Pokerus\_42:

(Start: 68 @35018 has 115 MA's), (Start: 77 @34985 has 3 MA's), (82, 34958), (88, 34931), (Start: 89 @34925 has 1 MA's), (132, 34712), (144, 34664),

Gene: Poochiewood\_37 Start: 32936, Stop: 32526, Start Num: 53

Candidate Starts for Poochiewood\_37:

(Start: 49 @32942 has 7 MA's), (Start: 53 @32936 has 19 MA's), (Start: 65 @32915 has 27 MA's), (Start: 68 @32906 has 115 MA's), (75, 32873), (Start: 89 @32807 has 1 MA's), (92, 32768), (97, 32744), (105, 32699), (135, 32591),

Gene: Prithvi\_44 Start: 35164, Stop: 34787, Start Num: 68

Candidate Starts for Prithvi\_44:

(42, 35215), (Start: 68 @35164 has 115 MA's), (Start: 77 @35128 has 3 MA's), (81, 35113), (Start: 89 @35068 has 1 MA's), (132, 34861), (144, 34813),

Gene: Psycho\_42 Start: 34326, Stop: 33979, Start Num: 80

Candidate Starts for Psycho\_42:

(Start: 67 @34383 has 7 MA's), (Start: 68 @34377 has 115 MA's), (Start: 77 @34338 has 3 MA's), (Start: 80 @34326 has 3 MA's), (84, 34299), (102, 34185), (108, 34134), (125, 34074), (148, 33984),

Gene: Quby\_38 Start: 32936, Stop: 32556, Start Num: 68

Candidate Starts for Quby\_38:

(Start: 49 @32972 has 7 MA's), (Start: 68 @32936 has 115 MA's), (76, 32903), (83, 32873), (84, 32867), (Start: 89 @32840 has 1 MA's), (92, 32801), (98, 32771), (105, 32732), (115, 32672), (132, 32627), (134, 32621),

Gene: QuincyRose\_42 Start: 35413, Stop: 35036, Start Num: 68

Candidate Starts for QuincyRose\_42:

(42, 35464), (Start: 68 @35413 has 115 MA's), (Start: 77 @35377 has 3 MA's), (Start: 89 @35317 has 1 MA's), (111, 35158), (132, 35110), (144, 35062),

Gene: Ramen\_43 Start: 34983, Stop: 34603, Start Num: 68

Candidate Starts for Ramen\_43:

(47, 35019), (Start: 68 @34983 has 115 MA's), (Start: 77 @34947 has 3 MA's), (Start: 89 @34887 has 1 MA's), (132, 34677), (144, 34629),

Gene: Rando14\_43 Start: 33501, Stop: 33097, Start Num: 68

Candidate Starts for Rando14\_43:

(Start: 68 @33501 has 115 MA's), (Start: 80 @33447 has 3 MA's), (108, 33255), (125, 33195),

Gene: Rapunzel97\_43 Start: 34979, Stop: 34599, Start Num: 68

Candidate Starts for Rapunzel97\_43:

(47, 35015), (Start: 68 @34979 has 115 MA's), (Start: 77 @34943 has 3 MA's), (Start: 89 @34883 has 1 MA's), (132, 34673), (144, 34625),

Gene: Red305\_38 Start: 34516, Stop: 34133, Start Num: 68

Candidate Starts for Red305\_38:

(3, 34735), (5, 34729), (9, 34708), (10, 34687), (Start: 49 @34552 has 7 MA's), (Start: 53 @34546 has 19 MA's), (Start: 68 @34516 has 115 MA's), (76, 34480), (78, 34474), (83, 34450), (84, 34444), (Start: 89 @34417 has 1 MA's), (92, 34378), (95, 34366), (97, 34354), (103, 34321), (105, 34309), (113, 34252), (132, 34201), (148, 34138),

Gene: Reptar3000\_45 Start: 35140, Stop: 34784, Start Num: 66

Candidate Starts for Reptar3000\_45:

(36, 35209), (52, 35164), (Start: 66 @35140 has 14 MA's), (Start: 68 @35134 has 115 MA's), (Start: 77 @35095 has 3 MA's), (87, 35044), (101, 34954), (104, 34933), (106, 34915),

Gene: Richo\_45 Start: 35648, Stop: 35256, Start Num: 63

Candidate Starts for Richo\_45:

(Start: 63 @35648 has 11 MA's), (86, 35564), (Start: 89 @35549 has 1 MA's), (108, 35411), (112, 35387), (134, 35324), (140, 35300), (146, 35267),

Gene: Rose5\_37 Start: 32935, Stop: 32525, Start Num: 53

Candidate Starts for Rose5\_37:

(Start: 49 @32941 has 7 MA's), (Start: 53 @32935 has 19 MA's), (61, 32917), (Start: 65 @32914 has 27 MA's), (Start: 68 @32905 has 115 MA's), (75, 32872), (Start: 89 @32806 has 1 MA's), (92, 32767), (97, 32743), (105, 32698), (107, 32683), (135, 32590),

Gene: Rosmarinus\_43 Start: 35084, Stop: 34704, Start Num: 68

Candidate Starts for Rosmarinus\_43:

(47, 35120), (Start: 68 @35084 has 115 MA's), (Start: 77 @35048 has 3 MA's), (Start: 89 @34988 has 1 MA's), (111, 34829), (132, 34778), (144, 34730),

Gene: Rumpelstiltskin\_40 Start: 34547, Stop: 34158, Start Num: 65

Candidate Starts for Rumpelstiltskin\_40:

(Start: 65 @34547 has 27 MA's), (Start: 68 @34538 has 115 MA's), (78, 34499), (83, 34475), (84, 34469), (Start: 89 @34442 has 1 MA's), (92, 34403), (97, 34379), (105, 34334), (123, 34247), (132, 34223),

Gene: Ruthiejr\_48 Start: 36000, Stop: 35641, Start Num: 66

Candidate Starts for Ruthiejr\_48:

(36, 36069), (52, 36024), (Start: 66 @36000 has 14 MA's), (Start: 68 @35994 has 115 MA's), (Start: 77 @35955 has 3 MA's), (87, 35904), (96, 35835), (101, 35814), (104, 35793), (106, 35775), (137, 35673),

Gene: SamScheppers\_46 Start: 36429, Stop: 36070, Start Num: 66

Candidate Starts for SamScheppers\_46:

(36, 36498), (52, 36453), (Start: 66 @36429 has 14 MA's), (Start: 68 @36423 has 115 MA's), (Start: 77 @36384 has 3 MA's), (87, 36333), (96, 36264), (101, 36243), (104, 36222), (106, 36204), (137, 36102),

Gene: SamuelLPlaqson\_44 Start: 35877, Stop: 35500, Start Num: 68

Candidate Starts for SamuelLPlaqson\_44:

(42, 35928), (Start: 68 @35877 has 115 MA's), (Start: 77 @35841 has 3 MA's), (Start: 89 @35781 has 1 MA's), (132, 35574), (144, 35526),

Gene: Sarshaun\_40 Start: 34314, Stop: 33925, Start Num: 65

Candidate Starts for Sarshaun\_40:

(Start: 65 @34314 has 27 MA's), (Start: 68 @34305 has 115 MA's), (78, 34266), (83, 34242), (84, 34236), (92, 34170), (97, 34146), (105, 34101), (121, 34020), (123, 34014), (129, 34002), (132, 33990),

Gene: Scarlett\_47 Start: 35979, Stop: 35605, Start Num: 72

Candidate Starts for Scarlett\_47:

(54, 36012), (Start: 72 @35979 has 10 MA's), (Start: 77 @35949 has 3 MA's), (78, 35946), (Start: 89 @35889 has 1 MA's), (94, 35844), (97, 35826), (108, 35751), (133, 35676), (144, 35631),

Gene: SgtBeansprout\_38 Start: 34527, Stop: 34063, Start Num: 63

Candidate Starts for SgtBeansprout\_38:

(44, 34566), (Start: 63 @34527 has 11 MA's), (Start: 89 @34431 has 1 MA's), (132, 34206), (134, 34200),

Gene: Shadow1\_48 Start: 35996, Stop: 35607, Start Num: 72

Candidate Starts for Shadow1\_48:

(Start: 72 @35996 has 10 MA's), (Start: 77 @35966 has 3 MA's), (93, 35864), (97, 35843), (107, 35783), (108, 35768), (116, 35732), (130, 35696), (142, 35639), (144, 35633),

Gene: Shaobing\_45 Start: 35682, Stop: 35284, Start Num: 63

Candidate Starts for Shaobing\_45:

(Start: 63 @35682 has 11 MA's), (Start: 89 @35583 has 1 MA's), (108, 35445), (127, 35379), (134, 35352), (140, 35328), (146, 35295),

Gene: ShedlockHolmes\_46 Start: 35683, Stop: 35261, Start Num: 50

Candidate Starts for ShedlockHolmes\_46:

(29, 35740), (38, 35713), (Start: 50 @35683 has 4 MA's), (Start: 70 @35650 has 4 MA's), (106, 35437), (108, 35419), (119, 35371), (144, 35287),

Gene: Sheng711\_38 Start: 33042, Stop: 32662, Start Num: 68

Candidate Starts for Sheng711\_38:

(Start: 49 @33078 has 7 MA's), (Start: 68 @33042 has 115 MA's), (76, 33009), (83, 32979), (84, 32973), (Start: 89 @32946 has 1 MA's), (92, 32907), (98, 32877), (105, 32838), (122, 32760), (132, 32733), (134, 32727),

Gene: ShiaSurprise\_44 Start: 35293, Stop: 34913, Start Num: 68

Candidate Starts for ShiaSurprise\_44:

(47, 35329), (Start: 68 @35293 has 115 MA's), (Start: 77 @35257 has 3 MA's), (Start: 89 @35197 has 1 MA's), (111, 35038), (132, 34987), (144, 34939),

Gene: Silverleaf\_37 Start: 32935, Stop: 32525, Start Num: 53

Candidate Starts for Silverleaf\_37:

(Start: 49 @32941 has 7 MA's), (Start: 53 @32935 has 19 MA's), (61, 32917), (Start: 65 @32914 has 27 MA's), (Start: 68 @32905 has 115 MA's), (75, 32872), (Start: 89 @32806 has 1 MA's), (92, 32767), (97, 32743), (105, 32698), (107, 32683), (135, 32590),

Gene: SirPhilip\_45 Start: 36219, Stop: 35824, Start Num: 71

Candidate Starts for SirPhilip\_45:

(Start: 71 @36219 has 13 MA's), (Start: 77 @36189 has 3 MA's), (Start: 89 @36129 has 1 MA's), (91, 36102), (97, 36066), (110, 35973), (120, 35943), (150, 35850),

Gene: Slarp\_47 Start: 36038, Stop: 35679, Start Num: 66

Candidate Starts for Slarp\_47:

(36, 36107), (52, 36062), (Start: 66 @36038 has 14 MA's), (Start: 68 @36032 has 115 MA's), (Start: 77 @35993 has 3 MA's), (87, 35942), (96, 35873), (101, 35852), (104, 35831), (106, 35813), (137, 35711),

Gene: Slimphazie\_43 Start: 34979, Stop: 34599, Start Num: 68

Candidate Starts for Slimphazie\_43:

(47, 35015), (Start: 68 @34979 has 115 MA's), (Start: 77 @34943 has 3 MA's), (Start: 89 @34883 has 1 MA's), (132, 34673), (144, 34625),

Gene: Snenia\_38 Start: 34517, Stop: 34134, Start Num: 68

Candidate Starts for Snenia\_38:

(3, 34736), (5, 34730), (9, 34709), (10, 34688), (Start: 49 @34553 has 7 MA's), (Start: 53 @34547 has 19 MA's), (Start: 68 @34517 has 115 MA's), (76, 34481), (78, 34475), (83, 34451), (84, 34445), (Start: 89 @34418 has 1 MA's), (92, 34379), (95, 34367), (97, 34355), (103, 34322), (105, 34310), (113, 34253), (132, 34202), (148, 34139),

Gene: SoJulia\_41 Start: 34540, Stop: 34151, Start Num: 65

Candidate Starts for SoJulia\_41:

(Start: 65 @34540 has 27 MA's), (Start: 68 @34531 has 115 MA's), (78, 34492), (83, 34468), (84, 34462), (Start: 89 @34435 has 1 MA's), (92, 34396), (97, 34372), (105, 34327), (123, 34240), (132, 34216),

Gene: SoSeph\_41 Start: 34467, Stop: 34066, Start Num: 68

Candidate Starts for SoSeph\_41:

(27, 34566), (45, 34515), (Start: 50 @34503 has 4 MA's), (Start: 68 @34467 has 115 MA's), (Start: 80 @34416 has 3 MA's), (102, 34275), (108, 34224), (125, 34164), (138, 34116),

Gene: Soap141\_40 Start: 34314, Stop: 33925, Start Num: 65

Candidate Starts for Soap141\_40:

(Start: 65 @34314 has 27 MA's), (Start: 68 @34305 has 115 MA's), (78, 34266), (83, 34242), (84, 34236), (92, 34170), (97, 34146), (105, 34101), (121, 34020), (123, 34014), (129, 34002), (132, 33990),

Gene: Spock\_43 Start: 35097, Stop: 34717, Start Num: 68

Candidate Starts for Spock\_43:

(47, 35133), (Start: 68 @35097 has 115 MA's), (Start: 77 @35061 has 3 MA's), (Start: 89 @35001 has 1 MA's), (111, 34842), (132, 34791), (144, 34743),

Gene: Stinson\_44 Start: 35487, Stop: 35110, Start Num: 68

Candidate Starts for Stinson\_44:

(42, 35538), (Start: 68 @35487 has 115 MA's), (Start: 77 @35451 has 3 MA's), (88, 35397), (Start: 89 @35391 has 1 MA's), (123, 35199), (132, 35184), (144, 35136),

Gene: Strobilo\_46 Start: 37026, Stop: 36655, Start Num: 68

Candidate Starts for Strobilo\_46:

(42, 37080), (Start: 68 @37026 has 115 MA's), (Start: 77 @36990 has 3 MA's), (81, 36975), (Start: 89 @36930 has 1 MA's), (96, 36870), (106, 36810), (109, 36780), (114, 36768), (126, 36738), (143, 36681),

Gene: Sulley\_43 Start: 35224, Stop: 34844, Start Num: 68

Candidate Starts for Sulley\_43:

(42, 35275), (Start: 68 @35224 has 115 MA's), (Start: 77 @35188 has 3 MA's), (Start: 89 @35128 has 1 MA's), (123, 34933), (132, 34918), (144, 34870),

Gene: Sunflower1121\_49 Start: 36097, Stop: 35708, Start Num: 71

Candidate Starts for Sunflower1121\_49:

(Start: 71 @36097 has 13 MA's), (Start: 77 @36067 has 3 MA's), (93, 35965), (97, 35944), (107, 35884), (108, 35869), (116, 35833), (142, 35740),

Gene: Syra333\_48 Start: 35764, Stop: 35375, Start Num: 72

Candidate Starts for Syra333\_48:

(Start: 72 @35764 has 10 MA's), (Start: 77 @35734 has 3 MA's), (93, 35632), (97, 35611), (107, 35551), (108, 35536), (116, 35500), (130, 35464), (142, 35407), (144, 35401),

Gene: TBond007\_45 Start: 35156, Stop: 34734, Start Num: 50

Candidate Starts for TBond007\_45:

(Start: 50 @35156 has 4 MA's), (Start: 70 @35123 has 4 MA's), (97, 34967), (106, 34910), (108, 34892), (119, 34844), (144, 34760),

Gene: TClif\_47 Start: 36099, Stop: 35698, Start Num: 60

Candidate Starts for TClif\_47:

(Start: 60 @36099 has 1 MA's), (79, 36051), (85, 36015), (88, 36003), (Start: 89 @35997 has 1 MA's), (108, 35859), (119, 35814), (127, 35796), (132, 35775), (136, 35763), (145, 35715), (149, 35703),

Gene: Tachez\_43 Start: 34941, Stop: 34561, Start Num: 68

Candidate Starts for Tachez\_43:

(47, 34977), (Start: 68 @34941 has 115 MA's), (Start: 77 @34905 has 3 MA's), (Start: 89 @34845 has 1 MA's), (132, 34635), (144, 34587),

Gene: TaiwanKao\_45 Start: 35220, Stop: 34843, Start Num: 68

Candidate Starts for TaiwanKao\_45:

(42, 35271), (Start: 68 @35220 has 115 MA's), (Start: 77 @35184 has 3 MA's), (81, 35169), (Start: 89 @35124 has 1 MA's), (132, 34917), (144, 34869),

Gene: Taquito\_47 Start: 36279, Stop: 35926, Start Num: 68

Candidate Starts for Taquito\_47:

(36, 36354), (52, 36309), (Start: 66 @36285 has 14 MA's), (Start: 68 @36279 has 115 MA's), (Start: 77 @36240 has 3 MA's), (87, 36189), (96, 36120), (101, 36099), (104, 36078), (106, 36060), (137, 35958),

Gene: Teejan\_41 Start: 37140, Stop: 36742, Start Num: 63

Candidate Starts for Teejan\_41:

(44, 37179), (Start: 63 @37140 has 11 MA's), (Start: 89 @37044 has 1 MA's), (132, 36819), (134, 36813),

Gene: Thyatira\_43 Start: 36667, Stop: 36266, Start Num: 68

Candidate Starts for Thyatira\_43:

(Start: 66 @36673 has 14 MA's), (Start: 68 @36667 has 115 MA's), (Start: 80 @36616 has 3 MA's), (102, 36475), (108, 36424), (125, 36364),

Gene: Tierra\_46 Start: 35645, Stop: 35253, Start Num: 71

Candidate Starts for Tierra\_46:

(7, 35855), (8, 35846), (Start: 71 @35645 has 13 MA's), (Start: 77 @35615 has 3 MA's), (97, 35492), (103, 35459), (107, 35432), (108, 35417), (116, 35381), (132, 35330), (138, 35309), (144, 35279),

Gene: TingHuaYa\_44 Start: 34216, Stop: 33830, Start Num: 70

Candidate Starts for TingHuaYa\_44:

(34, 34297), (35, 34291), (41, 34276), (Start: 70 @34216 has 4 MA's), (Start: 89 @34123 has 1 MA's), (91, 34096), (132, 33925), (147, 33856),

Gene: TiniBug\_44 Start: 35873, Stop: 35496, Start Num: 68

Candidate Starts for TiniBug\_44:

(42, 35924), (Start: 68 @35873 has 115 MA's), (Start: 77 @35837 has 3 MA's), (Start: 89 @35777 has 1 MA's), (132, 35570), (144, 35522),

Gene: Topper\_43 Start: 35096, Stop: 34716, Start Num: 68

Candidate Starts for Topper\_43:

(47, 35132), (Start: 68 @35096 has 115 MA's), (Start: 77 @35060 has 3 MA's), (Start: 89 @35000 has 1 MA's), (111, 34841), (132, 34790), (144, 34742),

Gene: Torres\_41 Start: 37141, Stop: 36743, Start Num: 63

Candidate Starts for Torres\_41:

(44, 37180), (Start: 63 @37141 has 11 MA's), (Start: 89 @37045 has 1 MA's), (132, 36820), (134, 36814),

Gene: Tourach\_40 Start: 34296, Stop: 33907, Start Num: 65

Candidate Starts for Tourach\_40:

(Start: 65 @34296 has 27 MA's), (Start: 68 @34287 has 115 MA's), (78, 34248), (84, 34218), (Start: 89 @34191 has 1 MA's), (92, 34152), (97, 34128), (105, 34083), (123, 33996), (129, 33984), (132,

33972),

Gene: TreyKay\_44 Start: 35164, Stop: 34787, Start Num: 68

Candidate Starts for TreyKay\_44:

(42, 35215), (Start: 68 @35164 has 115 MA's), (Start: 77 @35128 has 3 MA's), (81, 35113), (Start: 89 @35068 has 1 MA's), (132, 34861), (144, 34813),

Gene: TriFive\_38 Start: 34516, Stop: 34133, Start Num: 68

Candidate Starts for TriFive\_38:

(3, 34735), (5, 34729), (9, 34708), (10, 34687), (Start: 49 @34552 has 7 MA's), (Start: 53 @34546 has 19 MA's), (Start: 68 @34516 has 115 MA's), (76, 34480), (78, 34474), (83, 34450), (84, 34444), (Start: 89 @34417 has 1 MA's), (92, 34378), (95, 34366), (97, 34354), (103, 34321), (105, 34309), (113, 34252), (132, 34201), (148, 34138),

Gene: TribbleTrouble\_43 Start: 35018, Stop: 34626, Start Num: 68

Candidate Starts for TribbleTrouble\_43:

(40, 35075), (Start: 68 @35018 has 115 MA's), (Start: 77 @34982 has 3 MA's), (108, 34784), (119, 34736), (144, 34652), (145, 34640), (148, 34631),

Gene: TruffulaTree\_43 Start: 34975, Stop: 34595, Start Num: 68

Candidate Starts for TruffulaTree\_43:

(47, 35011), (Start: 68 @34975 has 115 MA's), (Start: 77 @34939 has 3 MA's), (Start: 89 @34879 has 1 MA's), (132, 34669), (144, 34621),

Gene: Twitch\_43 Start: 35098, Stop: 34718, Start Num: 68

Candidate Starts for Twitch\_43:

(47, 35134), (Start: 68 @35098 has 115 MA's), (Start: 77 @35062 has 3 MA's), (Start: 89 @35002 has 1 MA's), (111, 34843), (132, 34792), (144, 34744),

Gene: Tyson\_37 Start: 32936, Stop: 32526, Start Num: 53

Candidate Starts for Tyson\_37:

(Start: 49 @32942 has 7 MA's), (Start: 53 @32936 has 19 MA's), (61, 32918), (Start: 65 @32915 has 27 MA's), (Start: 68 @32906 has 115 MA's), (75, 32873), (Start: 89 @32807 has 1 MA's), (92, 32768), (97, 32744), (105, 32699), (107, 32684), (135, 32591),

Gene: UPIE\_38 Start: 32940, Stop: 32524, Start Num: 49

Candidate Starts for UPIE\_38:

(Start: 49 @32940 has 7 MA's), (Start: 53 @32934 has 19 MA's), (Start: 65 @32913 has 27 MA's), (Start: 68 @32904 has 115 MA's), (75, 32871), (Start: 89 @32805 has 1 MA's), (92, 32766), (97, 32742), (105, 32697), (135, 32589),

Gene: Underpass\_40 Start: 34281, Stop: 33892, Start Num: 65

Candidate Starts for Underpass\_40:

(Start: 65 @34281 has 27 MA's), (Start: 68 @34272 has 115 MA's), (78, 34233), (83, 34209), (84, 34203), (Start: 89 @34176 has 1 MA's), (92, 34137), (97, 34113), (105, 34068), (123, 33981), (129, 33969), (132, 33957),

Gene: Unicorn\_45 Start: 34877, Stop: 34485, Start Num: 71

Candidate Starts for Unicorn\_45:

(1, 35147), (2, 35111), (4, 35096), (7, 35087), (8, 35078), (Start: 71 @34877 has 13 MA's), (Start: 77 @34847 has 3 MA's), (97, 34724), (107, 34664), (108, 34649), (136, 34550), (144, 34511),

Gene: Urkel\_44 Start: 35877, Stop: 35500, Start Num: 68



Candidate Starts for Urkel\_44:

(42, 35928), (Start: 68 @35877 has 115 MA's), (Start: 77 @35841 has 3 MA's), (Start: 89 @35781 has 1 MA's), (132, 35574), (144, 35526),

Gene: Validus\_47 Start: 35733, Stop: 35320, Start Num: 63

Candidate Starts for Validus\_47:

(30, 35814), (Start: 63 @35733 has 11 MA's), (86, 35637), (Start: 89 @35622 has 1 MA's), (108, 35484), (127, 35421), (134, 35394), (139, 35376), (149, 35325),

Gene: Veliki\_43 Start: 35015, Stop: 34635, Start Num: 68

Candidate Starts for Veliki\_43:

(47, 35051), (Start: 68 @35015 has 115 MA's), (Start: 77 @34979 has 3 MA's), (Start: 89 @34919 has 1 MA's), (132, 34709), (144, 34661),

Gene: Vetric\_40 Start: 34287, Stop: 33898, Start Num: 65

Candidate Starts for Vetric\_40:

(Start: 65 @34287 has 27 MA's), (Start: 68 @34278 has 115 MA's), (78, 34239), (83, 34215), (84, 34209), (Start: 89 @34182 has 1 MA's), (92, 34143), (97, 34119), (105, 34074), (123, 33987), (132, 33963),

Gene: ViviJ\_41 Start: 34285, Stop: 33890, Start Num: 68

Candidate Starts for ViviJ\_41:

(Start: 67 @34291 has 7 MA's), (Start: 68 @34285 has 115 MA's), (Start: 77 @34246 has 3 MA's), (Start: 80 @34234 has 3 MA's), (84, 34207), (99, 34105), (102, 34093), (108, 34042), (125, 33982),

Gene: Wamburgxpress\_38 Start: 32949, Stop: 32539, Start Num: 53

Candidate Starts for Wamburgxpress\_38:

(Start: 49 @32955 has 7 MA's), (Start: 53 @32949 has 19 MA's), (Start: 65 @32928 has 27 MA's), (Start: 68 @32919 has 115 MA's), (75, 32886), (Start: 89 @32820 has 1 MA's), (92, 32781), (97, 32757), (105, 32712), (135, 32604),

Gene: Waterfoul\_42 Start: 34567, Stop: 34160, Start Num: 66

Candidate Starts for Waterfoul\_42:

(Start: 66 @34567 has 14 MA's), (Start: 68 @34561 has 115 MA's), (Start: 80 @34510 has 3 MA's), (108, 34318), (125, 34258), (138, 34210),

Gene: Whirlwind\_39 Start: 34372, Stop: 33890, Start Num: 28

Candidate Starts for Whirlwind\_39:

(Start: 28 @34372 has 1 MA's), (39, 34342), (Start: 49 @34312 has 7 MA's), (Start: 53 @34306 has 19 MA's), (Start: 68 @34276 has 115 MA's), (78, 34237), (83, 34213), (84, 34207), (Start: 89 @34180 has 1 MA's), (92, 34141), (95, 34129), (97, 34117), (103, 34084), (132, 33958), (148, 33895),

Gene: Wigglewigggle\_40 Start: 34313, Stop: 33924, Start Num: 65

Candidate Starts for Wigglewigggle\_40:

(Start: 65 @34313 has 27 MA's), (Start: 68 @34304 has 115 MA's), (78, 34265), (83, 34241), (84, 34235), (92, 34169), (97, 34145), (105, 34100), (121, 34019), (123, 34013), (129, 34001), (132, 33989),

Gene: Wilder\_40 Start: 34286, Stop: 33897, Start Num: 65

Candidate Starts for Wilder\_40:

(Start: 65 @34286 has 27 MA's), (Start: 68 @34277 has 115 MA's), (78, 34238), (83, 34214), (84, 34208), (92, 34142), (97, 34118), (105, 34073), (121, 33992), (123, 33986), (129, 33974), (132, 33962),

Gene: Winky\_40 Start: 34280, Stop: 33891, Start Num: 65

Candidate Starts for Winky\_40:

(Start: 65 @34280 has 27 MA's), (Start: 68 @34271 has 115 MA's), (78, 34232), (83, 34208), (84, 34202), (Start: 89 @34175 has 1 MA's), (92, 34136), (97, 34112), (105, 34067), (123, 33980), (132, 33956),

Gene: Wintermute\_47 Start: 36187, Stop: 35828, Start Num: 66

Candidate Starts for Wintermute\_47:

(36, 36256), (52, 36211), (Start: 66 @36187 has 14 MA's), (Start: 68 @36181 has 115 MA's), (Start: 77 @36142 has 3 MA's), (87, 36091), (96, 36022), (101, 36001), (104, 35980), (106, 35962), (137, 35860),

Gene: Wyatt2\_38 Start: 32935, Stop: 32525, Start Num: 53

Candidate Starts for Wyatt2\_38:

(Start: 49 @32941 has 7 MA's), (Start: 53 @32935 has 19 MA's), (61, 32917), (Start: 65 @32914 has 27 MA's), (Start: 68 @32905 has 115 MA's), (75, 32872), (Start: 89 @32806 has 1 MA's), (92, 32767), (97, 32743), (105, 32698), (107, 32683), (135, 32590),

Gene: Ximenita\_49 Start: 35950, Stop: 35561, Start Num: 72

Candidate Starts for Ximenita\_49:

(25, 36055), (41, 36016), (Start: 72 @35950 has 10 MA's), (Start: 77 @35920 has 3 MA's), (93, 35818), (97, 35797), (98, 35791), (103, 35764), (107, 35737), (108, 35722), (116, 35686), (131, 35641), (142, 35593), (144, 35587), (145, 35575),

Gene: Y10\_46 Start: 36100, Stop: 35747, Start Num: 68

Candidate Starts for Y10\_46:

(36, 36175), (52, 36130), (Start: 66 @36106 has 14 MA's), (Start: 68 @36100 has 115 MA's), (Start: 77 @36061 has 3 MA's), (87, 36010), (96, 35941), (101, 35920), (104, 35899), (106, 35881), (137, 35779),

Gene: Y2\_46 Start: 36100, Stop: 35747, Start Num: 68

Candidate Starts for Y2\_46:

(36, 36175), (52, 36130), (Start: 66 @36106 has 14 MA's), (Start: 68 @36100 has 115 MA's), (Start: 77 @36061 has 3 MA's), (87, 36010), (96, 35941), (101, 35920), (104, 35899), (106, 35881), (137, 35779),

Gene: YoureAdopted\_42 Start: 35085, Stop: 34804, Start Num: 89

Candidate Starts for YoureAdopted\_42:

(Start: 89 @35085 has 1 MA's), (132, 34878), (144, 34830),

Gene: Yuna\_49 Start: 36719, Stop: 36363, Start Num: 71

Candidate Starts for Yuna\_49:

(Start: 71 @36719 has 13 MA's), (Start: 77 @36689 has 3 MA's), (88, 36635), (Start: 89 @36629 has 1 MA's), (90, 36608), (97, 36566), (107, 36506), (108, 36491), (141, 36404), (144, 36389),

Gene: Yunkel11\_46 Start: 34974, Stop: 34585, Start Num: 69

Candidate Starts for Yunkel11\_46:

(16, 35112), (18, 35106), (20, 35103), (23, 35094), (26, 35079), (Start: 69 @34974 has 2 MA's), (Start: 73 @34968 has 1 MA's), (Start: 89 @34878 has 1 MA's), (97, 34815), (104, 34776), (108, 34740), (127, 34680), (129, 34674), (148, 34590),

Gene: Zakai\_40 Start: 34538, Stop: 34149, Start Num: 65

Candidate Starts for Zakai\_40:

(Start: 65 @34538 has 27 MA's), (Start: 68 @34529 has 115 MA's), (78, 34490), (83, 34466), (84, 34460), (92, 34394), (97, 34370), (105, 34325), (121, 34244), (123, 34238), (129, 34226), (132, 34214),

Gene: Zaria\_38 Start: 32950, Stop: 32540, Start Num: 53

Candidate Starts for Zaria\_38:

(Start: 49 @32956 has 7 MA's), (Start: 53 @32950 has 19 MA's), (61, 32932), (Start: 65 @32929 has 27 MA's), (Start: 68 @32920 has 115 MA's), (75, 32887), (Start: 89 @32821 has 1 MA's), (92, 32782), (97, 32758), (105, 32713), (107, 32698), (135, 32605),

Gene: Zavala\_44 Start: 35258, Stop: 34881, Start Num: 68

Candidate Starts for Zavala\_44:

(42, 35309), (Start: 68 @35258 has 115 MA's), (Start: 77 @35222 has 3 MA's), (81, 35207), (Start: 89 @35162 has 1 MA's), (132, 34955), (144, 34907),

Gene: ZhongYanYuan\_39 Start: 34142, Stop: 33753, Start Num: 65

Candidate Starts for ZhongYanYuan\_39:

(Start: 65 @34142 has 27 MA's), (Start: 68 @34133 has 115 MA's), (78, 34094), (84, 34064), (92, 33998), (97, 33974), (105, 33929), (117, 33857), (123, 33842), (129, 33830), (132, 33818),

Gene: ZoeJ\_45 Start: 36489, Stop: 36121, Start Num: 68

Candidate Starts for ZoeJ\_45:

(42, 36546), (Start: 68 @36489 has 115 MA's), (Start: 77 @36453 has 3 MA's), (Start: 80 @36441 has 3 MA's), (Start: 89 @36393 has 1 MA's), (97, 36330), (106, 36273), (118, 36213), (126, 36201), (143, 36147),