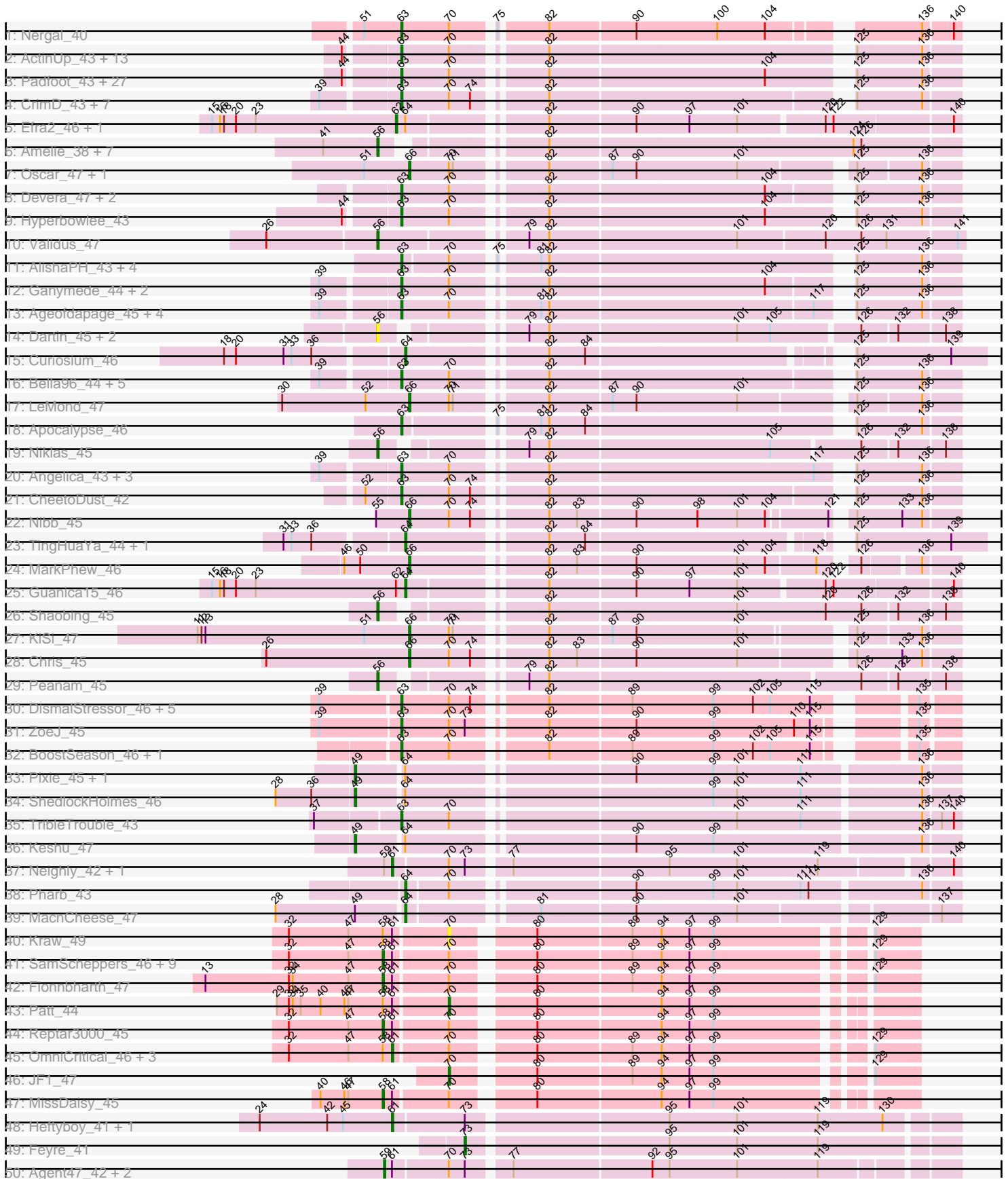
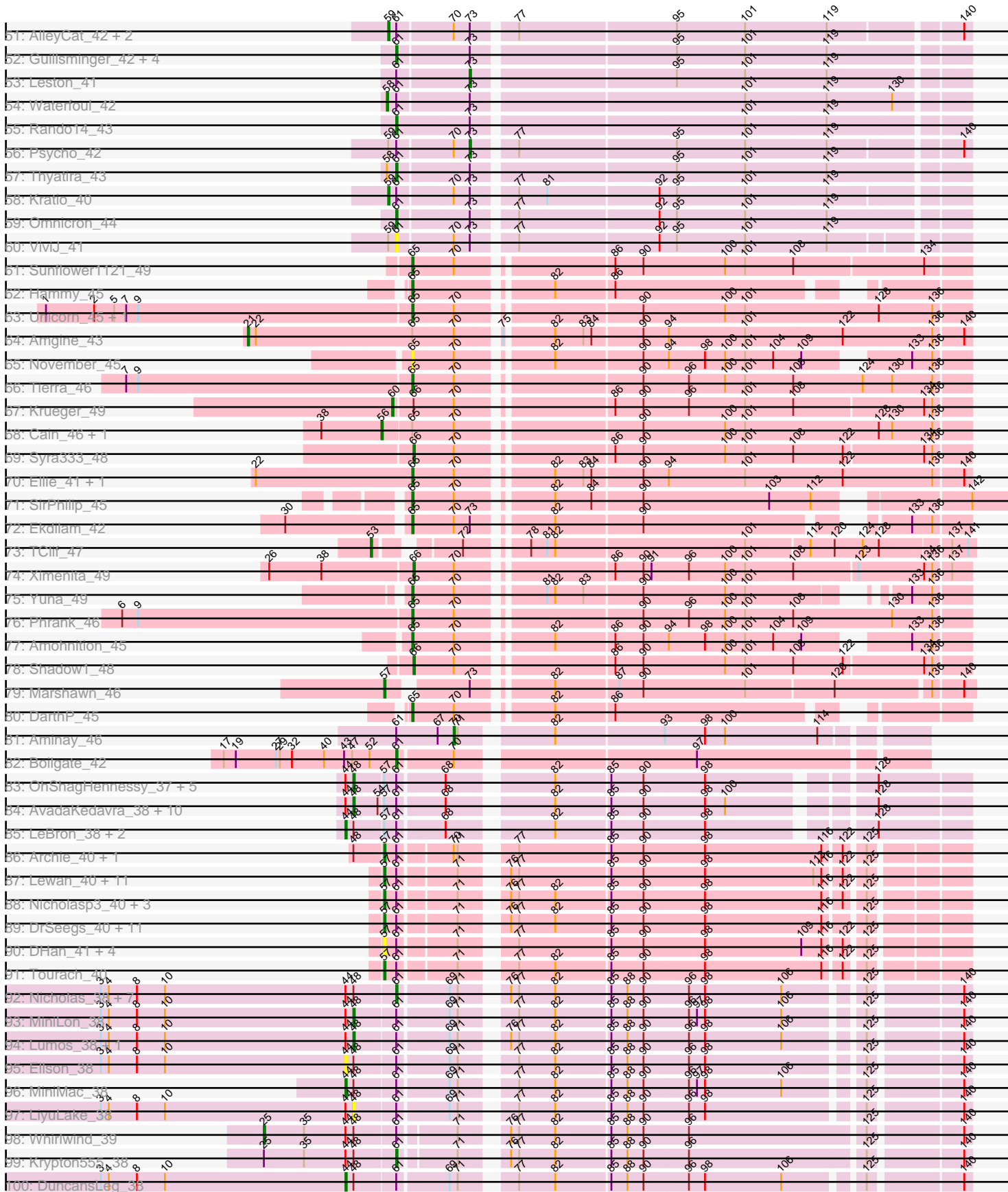


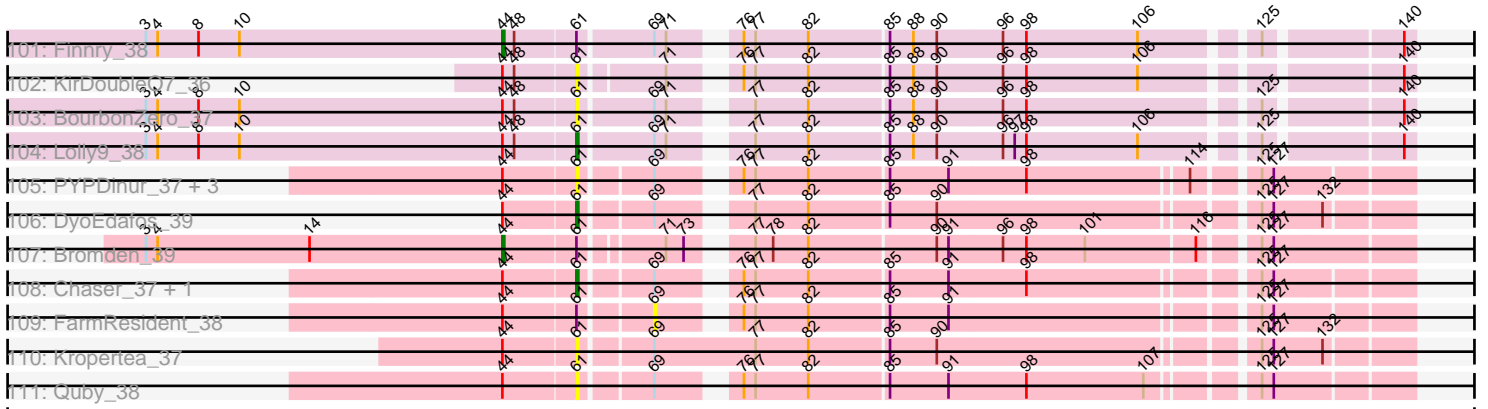
Pham 197806



Pham 197806



Pham 197806



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 197806 Report

This analysis was run 01/18/25 on database version 583.

Pham number 197806 has 281 members, 35 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, Topper\_43, Dalmuri\_43, CaseJules\_44, Jeckyll\_43, Llorens\_43, Rosmarinus\_43, CREW\_43, BGlluviae\_43, Boiiii\_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, Jarvi\_43, Peel\_43, Twitch\_43
- Track 4 : CrimD\_43, Megsy\_44, LindNT\_43, Zavala\_44, Prithvi\_44, Mynx\_44, TreyKay\_44, TaiwanKao\_45
- Track 5 : Efra2\_46, Yunkel11\_46
- Track 6 : Amelie\_38, Binglebops\_38, Nikao\_41, Torres\_41, SgtBeansprout\_38, Mdavu\_39, Enkosi\_41, Nutello\_38
- Track 7 : Oscar\_47, Scarlett\_47
- Track 8 : Devera\_47, Illumine\_46, Dole\_46
- Track 9 : Hyperbowlee\_43
- Track 10 : Validus\_47
- Track 11 : AlishaPH\_43, BaghaKamala\_42, Geraldini\_45, Pokerus\_42, Clipper\_47
- Track 12 : Ganymede\_44, MeaningOfLife\_44, QuincyRose\_42
- Track 13 : Ageofdapage\_45, Adonis\_43, LaterM\_44, Stinson\_44, Murucutumbu\_44
- Track 14 : Dartin\_45, McMater\_45, Richo\_45
- Track 15 : Curiosium\_46
- Track 16 : Bella96\_44, Beezoo\_45, Urkel\_44, SamuelLPlaqson\_44, TiniBug\_44, DrHayes\_44
- 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 : Guanica15\_46
- Track 26 : Shaobing\_45
- Track 27 : KiSi\_47
- Track 28 : Chris\_45

- Track 29 : Peanam\_45
- Track 30 : DismalStressor\_46, Findley\_46, Strobilo\_46, Milly\_46, Marcoliusprime\_46, DismalFunk\_46
- Track 31 : ZoeJ\_45
- Track 32 : BoostSeason\_46, Mufasa\_46
- Track 33 : Pixie\_45, TBond007\_45
- Track 34 : ShedlockHolmes\_46
- Track 35 : TribbleTrouble\_43
- Track 36 : Keshu\_47
- Track 37 : Neighly\_42, Edugator\_41
- Track 38 : Pharb\_43
- Track 39 : MacnCheese\_47
- Track 40 : Kraw\_49
- Track 41 : SamScheppers\_46, Chancellor\_47, Juliette\_49, Eponine\_49, Slarp\_47, Wintermute\_47, Cheetobro\_47, Malthus\_48, Mitti\_47, Ruthiejr\_48
- Track 42 : Fionnbharth\_47
- Track 43 : Patt\_44
- Track 44 : Reptar3000\_45
- Track 45 : OmniCritical\_46, Taquito\_47, Y10\_46, Y2\_46
- Track 46 : JF1\_47
- Track 47 : MissDaisy\_45
- Track 48 : Heftyboy\_41, SoSeph\_41
- Track 49 : Feyre\_41
- Track 50 : Agent47\_42, InvictusManeo\_41, Collard\_41
- Track 51 : AlleyCat\_42, Larva\_42, Dadosky\_42
- Track 52 : Guillsminger\_42, Gengar\_41, OkiRoe\_41, Paola\_41, Miryou\_43
- Track 53 : Leston\_41
- Track 54 : Waterfoul\_42
- Track 55 : Rando14\_43
- Track 56 : Psycho\_42
- Track 57 : Thyatira\_43
- Track 58 : Kratio\_40
- Track 59 : Omnicron\_44
- Track 60 : ViviJ\_41
- Track 61 : Sunflower1121\_49
- Track 62 : Hammy\_45
- Track 63 : Unicorn\_45, PhelpsODU\_45
- Track 64 : Amgine\_43
- Track 65 : November\_45
- Track 66 : Tierra\_46
- Track 67 : Krueger\_49
- Track 68 : Cain\_46, Bryler\_46
- Track 69 : Syra333\_48
- Track 70 : Ellie\_41, Fefferhead\_43
- Track 71 : SirPhilip\_45
- Track 72 : Ekdilam\_42
- Track 73 : TClif\_47
- Track 74 : Ximenita\_49
- Track 75 : Yuna\_49
- Track 76 : Phrank\_46
- Track 77 : Amohnition\_45
- Track 78 : Shadow1\_48
- Track 79 : Marshawn\_46

- Track 80 : DarthP\_45
- Track 81 : Aminay\_46
- Track 82 : Boilgate\_42
- Track 83 : OhShagHennessy\_37, DirkDirk\_37, Poochiewood\_37, Wamburgxpress\_38, Enceladus\_37, Appletree2\_37
- Track 84 : AvadaKedavra\_38, Calm\_38, Tyson\_37, Rose5\_37, CicholasNage\_38, Halena\_37, Wyatt2\_38, MAckerman\_38, Zaria\_38, Acquire49\_38, Silverleaf\_37
- Track 85 : LeBron\_38, UPIE\_38, JoeDirt\_37
- Track 86 : Archie\_40, Bazzle\_40
- Track 87 : 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 88 : Nicholasp3\_40, Underpass\_40, Finemlucis\_40, Gardann\_40
- Track 89 : DrSeegs\_40, Winky\_40, Gabriela\_40, Rumpelstiltskin\_40, BobsGarage\_40, Netyap\_40, Breezona\_40, LilDestine\_40, Faith1\_40, Vetrix\_40, Miley16\_40, BigCheese\_40
- Track 90 : DHan\_41, Claus\_41, Baoshan\_39, ZhongYanYuan\_39, DanBing\_40
- Track 91 : Tourach\_40
- Track 92 : Nicholas\_38, Jubie\_38, Snenia\_38, Moostard\_38, Bellis\_38, Clautastrophe\_38, MsGreen\_38, TriFive\_38
- Track 93 : MiniLon\_38
- Track 94 : Lumos\_38, Kingsolomon\_38
- Track 95 : Ellson\_38
- Track 96 : MiniMac\_38
- Track 97 : LiyuLake\_38
- Track 98 : Whirlwind\_39
- Track 99 : Krypton555\_38
- Track 100 : DuncansLeg\_38
- Track 101 : Finnry\_38
- Track 102 : KirDoubleO7\_36
- Track 103 : BourbonZero\_37
- Track 104 : Lolly9\_38
- Track 105 : PYPDinur\_37, Douzhi\_37, BrainDrainer\_38, Sheng711\_38
- Track 106 : DyoEdafos\_39
- Track 107 : Bromden\_39
- Track 108 : Chaser\_37, Douge\_37
- Track 109 : FarmResident\_38
- Track 110 : Kropertea\_37
- Track 111 : 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 63, it was called in 87 of the 246 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp\_43, Adephegia\_43, Adonis\_43, Ageofdapage\_45, AlishaPH\_43, Anaya\_45, Angelica\_43, Apocalypse\_46, Asayake\_43, Atiba\_43, BEEST\_43, BGlluviae\_43, BaghaKamala\_42, BarrelRoll\_43, Beezoo\_45, Bella96\_44, Belladonna\_43, Blizzard\_43, Boiiii\_43, BoostSeason\_46, CREW\_43, CallaLilly\_45, Capricorn\_43,

CaseJules\_44, CheetoDust\_42, Clipper\_47, CrimD\_43, Dalmuri\_43, Deby\_43, Devera\_47, DismalFunk\_46, DismalStressor\_46, Dole\_46, DrHayes\_44, Durfee\_43, Emerson\_44, Findley\_46, Ganymede\_44, Geraldini\_45, HedwigODU\_43, Homura\_43, Hyperbowlee\_43, Illumine\_46, Inky\_43, JAWS\_43, Jarvi\_43, Jayhawk\_44, Jeckyll\_43, Joy99\_43, LaterM\_44, LindNT\_43, Llorens\_43, Lunahalos\_43, Marcoliusprime\_46, MeaningOfLife\_44, Megsy\_44, Milly\_46, Mufasa\_46, Murucutumbu\_44, Mynx\_44, Nergal\_40, Padfoot\_43, Padpat\_44, Peel\_43, Piatt\_43, Pokerus\_42, Prithvi\_44, QuincyRose\_42, Ramen\_43, Rapunzel97\_43, Rosmarinus\_43, SamuelLPlaqsom\_44, ShiaSurprise\_44, Slimphazie\_43, Spock\_43, Stinson\_44, Strobilo\_46, Sulley\_43, Tachez\_43, TaiwanKao\_45, TiniBug\_44, Topper\_43, TreyKay\_44, TripleTrouble\_43, TruffulaTree\_43, Twitch\_43, Urkel\_44, Veliki\_43, Zavala\_44, ZoeJ\_45,

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

- 

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

- Acquire49\_38, Agent47\_42, AlleyCat\_42, Amelie\_38, Amgine\_43, Aminay\_46, Amohntion\_45, Appletree2\_37, Archie\_40, AvadaKedavra\_38, Baoshan\_39, Bazzle\_40, Bellis\_38, BigCheese\_40, Binglebops\_38, BobsGarage\_40, Boilgate\_42, BourbonZero\_37, BrainDrainer\_38, Breezona\_40, Bromden\_39, Bryler\_46, Cain\_46, Calm\_38, Chancellor\_47, Chaser\_37, Cheetobro\_47, Chris\_45, CicholasNage\_38, Claus\_41, Clautastrophe\_38, Collard\_41, Crossroads\_40, Curiosium\_46, DHan\_41, Dadosky\_42, DanBing\_40, DARTH\_45, Dartin\_45, DirkDirk\_37, Douge\_37, Douzhi\_37, DrSeegs\_40, DuncansLeg\_38, DyoEdafos\_39, Edugator\_41, Efra2\_46, Ekdilam\_42, Ellie\_41, Ellson\_38, Enceladus\_37, Enkosi\_41, Eponine\_49, Faith1\_40, FarmResident\_38, Fefferhead\_43, Feyre\_41, Finemlucis\_40, Finnry\_38, Fionnbharth\_47, Gabriela\_40, Gardann\_40, Gengar\_41, Guanica15\_46, Guillsminger\_42, GuuelaD\_40, Hafay\_40, Halena\_37, Hammy\_45, Heftyboy\_41, InvictusManeo\_41, JF1\_47, JoeDirt\_37, Jubie\_38, Juliette\_49, Kahlid\_40, Keshu\_47, KiSi\_47, Kingsolomon\_38, KirDoubleO7\_36, Kratio\_40, Kraw\_49, Kropertea\_37, Krueger\_49, Krypton555\_38, Larva\_42, LastHope\_46, LeBron\_38, LeMond\_47, Leston\_41, Lewan\_40, LilDestine\_40, LiyuLake\_38, Loadrie\_40, Lolly9\_38, Lumos\_38, MAckerman\_38, MacnCheese\_47, Malthus\_48, MarkPhew\_46, Marshawn\_46, McMater\_45, Mdavu\_39, Miley16\_40, MiniLon\_38, MiniMac\_38, Miryou\_43, MissDaisy\_45, Mitti\_47, MkaliMitinis3\_40, Moostard\_38, MsGreen\_38, Neighly\_42, Netyap\_40, Nibb\_45, Nicholas\_38, Nicholasp3\_40, Nikao\_41, Niklas\_45, November\_45, Nutello\_38, OhShagHennessy\_37, OkiRoe\_41, OmniCritical\_46, Omnicron\_44, Oscar\_47, PYPDinur\_37, Paola\_41, Patt\_44, Peanam\_45, Pharb\_43, PhelpsODU\_45, Phrank\_46, Pixie\_45, Poochiewood\_37, Psycho\_42, Quby\_38, Rando14\_43, Reptar3000\_45, Richo\_45, Rose5\_37, Rumpelstiltskin\_40, Ruthiejr\_48, SamScheppers\_46, Sarshaun\_40, Scarlett\_47, SgtBeansprout\_38, Shadow1\_48, Shaobing\_45, ShedlockHolmes\_46, Sheng711\_38, Silverleaf\_37, SirPhilip\_45, Slarp\_47, Snenia\_38, SoSeph\_41, Soap141\_40, Sunflower1121\_49, Syra333\_48, TBond007\_45, TClif\_47, Taquito\_47, Thyatira\_43, Tierra\_46, TingHuaYa\_44, Torres\_41, Tourach\_40, TriFive\_38, Tyson\_37, UPIE\_38, Underpass\_40, Unicorn\_45, Validus\_47, Vetrix\_40, ViviJ\_41, Wamburgxpress\_38, Waterfoul\_42, Whirlwind\_39, Wigglewiggles\_40, Wilder\_40, Winky\_40, Wintermute\_47, Wyatt2\_38, Ximenita\_49, Y10\_46, Y2\_46, Yuna\_49, Yunkel11\_46, Zakai\_40, Zaria\_38, ZhongYanYuan\_39,

**Summary by start number:**

Start 21:

- Found in 1 of 281 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 246
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amgine\_43 (K6),

Start 25:

- Found in 2 of 281 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 246
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Whirlwind\_39 (L3),

Start 44:

- Found in 95 of 281 ( 33.8% ) of genes in pham
- Manual Annotations of this start: 7 of 246
- Called 8.4% 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 48:

- Found in 43 of 281 ( 15.3% ) of genes in pham
- Manual Annotations of this start: 19 of 246
- Called 48.8% 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), Poochiewood\_37 (L1), Rose5\_37 (L1), Silverleaf\_37 (L1), Tyson\_37 (L1), Wamburgxpress\_38 (L1), Wyatt2\_38 (L1), Zaria\_38 (L1),

Start 49:

- Found in 5 of 281 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 4 of 246
- Called 80.0% 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 1 of 281 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 246
- Called 100.0% of time when present
- Phage (with cluster) where this start called: TClif\_47 (K6),

Start 56:

- Found in 17 of 281 ( 6.0% ) of genes in pham
- Manual Annotations of this start: 13 of 246
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amelie\_38 (K1), Binglebops\_38 (K1), Bryler\_46 (K6), Cain\_46 (K6), 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), Torres\_41 (K1), Validus\_47 (K1),



Start 57:

- Found in 57 of 281 ( 20.3% ) of genes in pham
- Manual Annotations of this start: 28 of 246
- 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), Marshawn\_46 (K6), Miley16\_40 (L2), MkaliMitinis3\_40 (L2), Netyap\_40 (L2), Nicholasp3\_40 (L2), Rumpelstiltskin\_40 (L2), Sarshaun\_40 (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 58:

- Found in 21 of 281 ( 7.5% ) of genes in pham
- Manual Annotations of this start: 14 of 246
- Called 66.7% 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 59:

- Found in 11 of 281 ( 3.9% ) of genes in pham
- Manual Annotations of this start: 7 of 246
- 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 60:

- Found in 1 of 281 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 246
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Krueger\_49 (K6),

Start 61:

- Found in 132 of 281 ( 47.0% ) of genes in pham
- Manual Annotations of this start: 27 of 246
- Called 29.5% of time when present
- Phage (with cluster) where this start called: Bellis\_38 (L3), Boilgate\_42 (K8), BourbonZero\_37 (L3), BrainDrainer\_38 (L4), Chaser\_37 (L4), Clautastrophe\_38 (L3), Douge\_37 (L4), Douzhi\_37 (L4), DyoEdafos\_39 (L4), Edugator\_41 (K5), Gengar\_41 (K5), Guillsminger\_42 (K5), Heftyboy\_41 (K5), Jubie\_38 (L3), KirDoubleO7\_36 (L3), Kropertea\_37 (L4), Krypton555\_38 (L3), Lolly9\_38 (L3), Miryou\_43 (K5), Moostard\_38 (L3), MsGreen\_38 (L3), Neighly\_42 (K3), Nicholas\_38 (L3), OkiRoe\_41 (K5), OmniCritical\_46 (K4), Omnicron\_44 (K5), PYPDinur\_37 (L4), Paola\_41 (K5), Quby\_38 (L4), Rando14\_43 (K5), Sheng711\_38 (L4), Snenia\_38 (L3), SoSeph\_41 (K5), Taquito\_47 (K4), Thyatira\_43 (K5), TriFive\_38 (L3), ViviJ\_41 (K5), Y10\_46 (K4), Y2\_46 (K4),

Start 62:

- Found in 3 of 281 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 2 of 246
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Efra2\_46 (K1), Yunkel11\_46 (K1),

Start 63:

- Found in 90 of 281 ( 32.0% ) of genes in pham
- Manual Annotations of this start: 87 of 246
- Called 100.0% 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), BGIluvia\_43 (K1), BaghaKamala\_42 (K1), BarrelRoll\_43 (K1), Beezoo\_45 (K1), Bella96\_44 (K1), Belladonna\_43 (K1), Blizzard\_43 (K1), Boiiii\_43 (K1), BoostSeason\_46 (K2), CREW\_43 (K1), CallaLilly\_45 (K1), Capricorn\_43 (K1), CaseJules\_44 (K1), CheetoDust\_42 (K1), Clipper\_47 (K1), CrimD\_43 (K1), Dalmuri\_43 (K1), Deby\_43 (K1), Devera\_47 (K1), DismalFunk\_46 (K2), DismalStressor\_46 (K2), Dole\_46 (K1), DrHayes\_44 (K1), Durfee\_43 (K1), Emerson\_44 (K1), Findley\_46 (K2), Ganymede\_44 (K1), Geraldini\_45 (K1), HedwigODU\_43 (K1), Homura\_43 (K1), Hyperbowlee\_43 (K1), Illumine\_46 (K1), Inky\_43 (K1), JAWS\_43 (K1), Jarvi\_43 (K1), Jayhawk\_44 (K1), Jeckyll\_43 (K1), Joy99\_43 (K1), LaterM\_44 (K1), LindNT\_43 (K1), Llorens\_43 (K1), Lunahalos\_43 (K1), Marcoliusprime\_46 (K2), MeaningOfLife\_44 (K1), Megsy\_44 (K1), Milly\_46 (K2), Mufasa\_46 (K2), Murucutumbu\_44 (K1), Mynx\_44 (K1), Nergal\_40 (AG), Padfoot\_43 (K1), Padpat\_44 (K1), Peel\_43 (K1), Piatt\_43 (K1), Pokerus\_42 (K1), Prithvi\_44 (K1), QuincyRose\_42 (K1), Ramen\_43 (K1), Rapunzel97\_43 (K1), Rosmarinus\_43 (K1), SamuelLPlaqson\_44 (K1), ShiaSurprise\_44 (K1), Slimphazie\_43 (K1), Spock\_43 (K1), Stinson\_44 (K1), Strobilo\_46 (K2), Sulley\_43 (K1), Tachez\_43 (K1), TaiwanKao\_45 (K1), TiniBug\_44 (K1), Topper\_43 (K1), TreyKay\_44 (K1), TribbleTrouble\_43 (K3), TruffulaTree\_43 (K1), Twitch\_43 (K1), Urkel\_44 (K1), Veliki\_43 (K1), Zavala\_44 (K1), ZoeJ\_45 (K2),

Start 64:

- Found in 12 of 281 ( 4.3% ) of genes in pham
- Manual Annotations of this start: 5 of 246
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Curiosium\_46 (K1), Guanica15\_46 (K1), LastHope\_46 (K1), MacnCheese\_47 (K3), Pharb\_43 (K3), TingHuaYa\_44 (K1),

Start 65:

- Found in 17 of 281 ( 6.0% ) of genes in pham
- Manual Annotations of this start: 13 of 246
- Called 82.4% of time when present
- Phage (with cluster) where this start called: Amohnition\_45 (K6), DARTH\_P\_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 66:

- Found in 11 of 281 ( 3.9% ) of genes in pham
- Manual Annotations of this start: 10 of 246

- 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 69:

- Found in 28 of 281 ( 10.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 3.6% of time when present
- Phage (with cluster) where this start called: FarmResident\_38 (L4),

Start 70:

- Found in 151 of 281 ( 53.7% ) of genes in pham
- Manual Annotations of this start: 3 of 246
- Called 2.6% of time when present
- Phage (with cluster) where this start called: Aminay\_46 (K7), JF1\_47 (K4), Kraw\_49 (K4), Patt\_44 (K4),

Start 73:

- Found in 28 of 281 ( 10.0% ) of genes in pham
- Manual Annotations of this start: 3 of 246
- Called 10.7% of time when present
- Phage (with cluster) where this start called: Feyre\_41 (K5), Leston\_41 (K5), Psycho\_42 (K5),

### **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 63 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster K1:

- Start number 56 was manually annotated 11 times for cluster K1.
- Start number 62 was manually annotated 2 times for cluster K1.
- Start number 63 was manually annotated 76 times for cluster K1.
- Start number 64 was manually annotated 3 times for cluster K1.
- Start number 66 was manually annotated 7 times for cluster K1.

Info for manual annotations of cluster K2:

- Start number 63 was manually annotated 9 times for cluster K2.

Info for manual annotations of cluster K3:

- Start number 49 was manually annotated 4 times for cluster K3.
- Start number 63 was manually annotated 1 time for cluster K3.
- Start number 64 was manually annotated 2 times for cluster K3.

Info for manual annotations of cluster K4:

- Start number 58 was manually annotated 13 times for cluster K4.
- Start number 61 was manually annotated 4 times for cluster K4.
- Start number 70 was manually annotated 2 times for cluster K4.

Info for manual annotations of cluster K5:

- Start number 58 was manually annotated 1 time for cluster K5.
- Start number 59 was manually annotated 7 times for cluster K5.
- Start number 61 was manually annotated 11 times for cluster K5.
- Start number 73 was manually annotated 3 times for cluster K5.

Info for manual annotations of cluster K6:

- Start number 21 was manually annotated 1 time for cluster K6.
- Start number 53 was manually annotated 1 time for cluster K6.
- Start number 56 was manually annotated 2 times for cluster K6.
- Start number 57 was manually annotated 1 time for cluster K6.
- Start number 60 was manually annotated 1 time for cluster K6.
- Start number 65 was manually annotated 13 times for cluster K6.
- Start number 66 was manually annotated 3 times for cluster K6.

Info for manual annotations of cluster K7:

- Start number 70 was manually annotated 1 time for cluster K7.

Info for manual annotations of cluster K8:

- Start number 61 was manually annotated 1 time for cluster K8.

Info for manual annotations of cluster L1:

- Start number 44 was manually annotated 3 times for cluster L1.
- Start number 48 was manually annotated 16 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 57 was manually annotated 27 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 25 was manually annotated 1 time for cluster L3.
- Start number 44 was manually annotated 3 times for cluster L3.
- Start number 48 was manually annotated 3 times for cluster L3.
- Start number 61 was manually annotated 8 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 44 was manually annotated 1 time for cluster L4.
- Start number 61 was manually annotated 3 times for cluster L4.

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

Gene: Acquire49\_38 Start: 32935, Stop: 32525, Start Num: 48

Candidate Starts for Acquire49\_38:

(Start: 44 @32941 has 7 MA's), (Start: 48 @32935 has 19 MA's), (54, 32917), (Start: 57 @32914 has 28 MA's), (Start: 61 @32905 has 27 MA's), (68, 32872), (82, 32806), (85, 32767), (90, 32743), (98, 32698), (100, 32683), (128, 32590),

Gene: ActinUp\_43 Start: 34981, Stop: 34601, Start Num: 63

Candidate Starts for ActinUp\_43:

(Start: 44 @35017 has 7 MA's), (Start: 63 @34981 has 87 MA's), (Start: 70 @34945 has 3 MA's), (82, 34885), (125, 34675), (136, 34627),

Gene: Adephagia\_43 Start: 34978, Stop: 34598, Start Num: 63

Candidate Starts for Adephagia\_43:

(Start: 44 @35014 has 7 MA's), (Start: 63 @34978 has 87 MA's), (Start: 70 @34942 has 3 MA's), (82, 34882), (125, 34672), (136, 34624),

Gene: Adonis\_43 Start: 35277, Stop: 34897, Start Num: 63

Candidate Starts for Adonis\_43:

(39, 35328), (Start: 63 @35277 has 87 MA's), (Start: 70 @35241 has 3 MA's), (81, 35187), (82, 35181), (117, 34986), (125, 34971), (136, 34923),

Gene: Agent47\_42 Start: 34530, Stop: 34129, Start Num: 59

Candidate Starts for Agent47\_42:

(Start: 59 @34530 has 7 MA's), (Start: 61 @34524 has 27 MA's), (Start: 70 @34485 has 3 MA's), (Start: 73 @34473 has 3 MA's), (77, 34446), (92, 34344), (95, 34332), (101, 34281), (119, 34221),

Gene: Ageofdapage\_45 Start: 35950, Stop: 35573, Start Num: 63

Candidate Starts for Ageofdapage\_45:

(39, 36001), (Start: 63 @35950 has 87 MA's), (Start: 70 @35914 has 3 MA's), (81, 35860), (82, 35854), (117, 35662), (125, 35647), (136, 35599),

Gene: AlishaPH\_43 Start: 35250, Stop: 34873, Start Num: 63

Candidate Starts for AlishaPH\_43:

(Start: 63 @35250 has 87 MA's), (Start: 70 @35217 has 3 MA's), (75, 35190), (81, 35163), (82, 35157), (125, 34947), (136, 34899),

Gene: AlleyCat\_42 Start: 34384, Stop: 33980, Start Num: 59

Candidate Starts for AlleyCat\_42:

(Start: 59 @34384 has 7 MA's), (Start: 61 @34378 has 27 MA's), (Start: 70 @34339 has 3 MA's), (Start: 73 @34327 has 3 MA's), (77, 34300), (95, 34186), (101, 34135), (119, 34075), (140, 33985),

Gene: Amelie\_38 Start: 34527, Stop: 34129, Start Num: 56

Candidate Starts for Amelie\_38:

(41, 34566), (Start: 56 @34527 has 13 MA's), (82, 34431), (124, 34206), (126, 34200),

Gene: Amgine\_43 Start: 36096, Stop: 35581, Start Num: 21

Candidate Starts for Amgine\_43:

(Start: 21 @36096 has 1 MA's), (22, 36090), (Start: 65 @35973 has 13 MA's), (Start: 70 @35943 has 3 MA's), (75, 35916), (82, 35883), (83, 35862), (84, 35856), (90, 35820), (94, 35802), (101, 35745), (122, 35673), (136, 35607), (140, 35586),

Gene: Aminay\_46 Start: 36466, Stop: 36146, Start Num: 70

Candidate Starts for Aminay\_46:

(Start: 61 @36508 has 27 MA's), (67, 36478), (Start: 70 @36466 has 3 MA's), (71, 36463), (82, 36406), (93, 36328), (98, 36298), (100, 36283), (114, 36214),

Gene: Amohndition\_45 Start: 36010, Stop: 35639, Start Num: 65

Candidate Starts for Amohndition\_45:

(Start: 65 @36010 has 13 MA's), (Start: 70 @35980 has 3 MA's), (82, 35920), (86, 35878), (90, 35857), (94, 35839), (98, 35812), (100, 35797), (101, 35782), (104, 35761), (109, 35740), (133, 35680), (136, 35665),

Gene: Anaya\_45 Start: 35589, Stop: 35209, Start Num: 63

Candidate Starts for Anaya\_45:

(39, 35640), (Start: 63 @35589 has 87 MA's), (Start: 70 @35553 has 3 MA's), (82, 35493), (117, 35298), (125, 35283), (136, 35235),

Gene: Angelica\_43 Start: 35209, Stop: 34829, Start Num: 63

Candidate Starts for Angelica\_43:

(39, 35260), (Start: 63 @35209 has 87 MA's), (Start: 70 @35173 has 3 MA's), (82, 35113), (117, 34918), (125, 34903), (136, 34855),

Gene: Apocalypse\_46 Start: 35992, Stop: 35615, Start Num: 63

Candidate Starts for Apocalypse\_46:

(Start: 63 @35992 has 87 MA's), (75, 35932), (81, 35905), (82, 35899), (84, 35872), (125, 35689), (136, 35641),

Gene: Appletree2\_37 Start: 32877, Stop: 32467, Start Num: 48

Candidate Starts for Appletree2\_37:

(Start: 44 @32883 has 7 MA's), (Start: 48 @32877 has 19 MA's), (Start: 57 @32856 has 28 MA's), (Start: 61 @32847 has 27 MA's), (68, 32814), (82, 32748), (85, 32709), (90, 32685), (98, 32640), (128, 32532),

Gene: Archie\_40 Start: 34485, Stop: 34096, Start Num: 57

Candidate Starts for Archie\_40:

(Start: 48 @34506 has 19 MA's), (Start: 57 @34485 has 28 MA's), (Start: 61 @34476 has 27 MA's), (Start: 70 @34440 has 3 MA's), (71, 34437), (77, 34407), (85, 34341), (90, 34317), (98, 34272), (116, 34185), (122, 34173), (125, 34161),

Gene: Asayake\_43 Start: 35293, Stop: 34913, Start Num: 63

Candidate Starts for Asayake\_43:

(Start: 44 @35329 has 7 MA's), (Start: 63 @35293 has 87 MA's), (Start: 70 @35257 has 3 MA's), (82, 35197), (104, 35038), (125, 34987), (136, 34939),

Gene: Atiba\_43 Start: 34941, Stop: 34561, Start Num: 63

Candidate Starts for Atiba\_43:

(Start: 44 @34977 has 7 MA's), (Start: 63 @34941 has 87 MA's), (Start: 70 @34905 has 3 MA's), (82, 34845), (125, 34635), (136, 34587),

Gene: AvadaKedavra\_38 Start: 32944, Stop: 32534, Start Num: 48

Candidate Starts for AvadaKedavra\_38:

(Start: 44 @32950 has 7 MA's), (Start: 48 @32944 has 19 MA's), (54, 32926), (Start: 57 @32923 has 28 MA's), (Start: 61 @32914 has 27 MA's), (68, 32881), (82, 32815), (85, 32776), (90, 32752), (98, 32707), (100, 32692), (128, 32599),

Gene: BEEST\_43 Start: 35293, Stop: 34913, Start Num: 63

Candidate Starts for BEEST\_43:

(Start: 44 @35329 has 7 MA's), (Start: 63 @35293 has 87 MA's), (Start: 70 @35257 has 3 MA's), (82, 35197), (104, 35038), (125, 34987), (136, 34939),

Gene: BGlluviae\_43 Start: 35096, Stop: 34716, Start Num: 63

Candidate Starts for BGlluviae\_43:

(Start: 44 @35132 has 7 MA's), (Start: 63 @35096 has 87 MA's), (Start: 70 @35060 has 3 MA's), (82, 35000), (104, 34841), (125, 34790), (136, 34742),

Gene: BaghaKamala\_42 Start: 34415, Stop: 34038, Start Num: 63

Candidate Starts for BaghaKamala\_42:

(Start: 63 @34415 has 87 MA's), (Start: 70 @34382 has 3 MA's), (75, 34355), (81, 34328), (82, 34322), (125, 34112), (136, 34064),

Gene: Baoshan\_39 Start: 34142, Stop: 33753, Start Num: 57

Candidate Starts for Baoshan\_39:

(Start: 57 @34142 has 28 MA's), (Start: 61 @34133 has 27 MA's), (71, 34094), (77, 34064), (85, 33998), (90, 33974), (98, 33929), (109, 33857), (116, 33842), (122, 33830), (125, 33818),

Gene: BarrelRoll\_43 Start: 34964, Stop: 34584, Start Num: 63

Candidate Starts for BarrelRoll\_43:

(Start: 44 @35000 has 7 MA's), (Start: 63 @34964 has 87 MA's), (Start: 70 @34928 has 3 MA's), (82, 34868), (125, 34658), (136, 34610),

Gene: Bazzle\_40 Start: 34517, Stop: 34128, Start Num: 57

Candidate Starts for Bazzle\_40:

(Start: 48 @34538 has 19 MA's), (Start: 57 @34517 has 28 MA's), (Start: 61 @34508 has 27 MA's), (Start: 70 @34472 has 3 MA's), (71, 34469), (77, 34439), (85, 34373), (90, 34349), (98, 34304), (116, 34217), (122, 34205), (125, 34193),

Gene: Beezoo\_45 Start: 35940, Stop: 35563, Start Num: 63

Candidate Starts for Beezoo\_45:

(39, 35991), (Start: 63 @35940 has 87 MA's), (Start: 70 @35904 has 3 MA's), (82, 35844), (125, 35637), (136, 35589),

Gene: Bella96\_44 Start: 35832, Stop: 35455, Start Num: 63

Candidate Starts for Bella96\_44:

(39, 35883), (Start: 63 @35832 has 87 MA's), (Start: 70 @35796 has 3 MA's), (82, 35736), (125, 35529), (136, 35481),

Gene: Belladonna\_43 Start: 35096, Stop: 34716, Start Num: 63

Candidate Starts for Belladonna\_43:

(Start: 44 @35132 has 7 MA's), (Start: 63 @35096 has 87 MA's), (Start: 70 @35060 has 3 MA's), (82, 35000), (104, 34841), (125, 34790), (136, 34742),

Gene: Bellis\_38 Start: 34518, Stop: 34135, Start Num: 61

Candidate Starts for Bellis\_38:

(3, 34737), (4, 34731), (8, 34710), (10, 34689), (Start: 44 @34554 has 7 MA's), (Start: 48 @34548 has 19 MA's), (Start: 61 @34518 has 27 MA's), (69, 34482), (71, 34476), (76, 34452), (77, 34446), (82, 34419), (85, 34380), (88, 34368), (90, 34356), (96, 34323), (98, 34311), (106, 34254), (125, 34203), (140, 34140),

Gene: BigCheese\_40 Start: 34280, Stop: 33891, Start Num: 57

Candidate Starts for BigCheese\_40:

(Start: 57 @34280 has 28 MA's), (Start: 61 @34271 has 27 MA's), (71, 34232), (76, 34208), (77, 34202), (82, 34175), (85, 34136), (90, 34112), (98, 34067), (116, 33980), (125, 33956),

Gene: Biglebops\_38 Start: 34527, Stop: 34129, Start Num: 56

Candidate Starts for Biglebops\_38:

(41, 34566), (Start: 56 @34527 has 13 MA's), (82, 34431), (124, 34206), (126, 34200),

Gene: Blizzard\_43 Start: 35293, Stop: 34913, Start Num: 63

Candidate Starts for Blizzard\_43:

(Start: 44 @35329 has 7 MA's), (Start: 63 @35293 has 87 MA's), (Start: 70 @35257 has 3 MA's), (82, 35197), (104, 35038), (125, 34987), (136, 34939),

Gene: BobsGarage\_40 Start: 34280, Stop: 33891, Start Num: 57

Candidate Starts for BobsGarage\_40:

(Start: 57 @34280 has 28 MA's), (Start: 61 @34271 has 27 MA's), (71, 34232), (76, 34208), (77, 34202), (82, 34175), (85, 34136), (90, 34112), (98, 34067), (116, 33980), (125, 33956),

Gene: Boiiii\_43 Start: 35295, Stop: 34915, Start Num: 63

Candidate Starts for Boiiii\_43:

(Start: 44 @35331 has 7 MA's), (Start: 63 @35295 has 87 MA's), (Start: 70 @35259 has 3 MA's), (82, 35199), (104, 35040), (125, 34989), (136, 34941),

Gene: Boilgate\_42 Start: 36179, Stop: 35817, Start Num: 61

Candidate Starts for Boilgate\_42:

(17, 36305), (19, 36296), (27, 36266), (29, 36263), (32, 36254), (40, 36230), (43, 36215), (47, 36209), (52, 36197), (Start: 61 @36179 has 27 MA's), (Start: 70 @36140 has 3 MA's), (97, 35978),

Gene: BoostSeason\_46 Start: 36618, Stop: 36250, Start Num: 63

Candidate Starts for BoostSeason\_46:

(Start: 63 @36618 has 87 MA's), (Start: 70 @36582 has 3 MA's), (82, 36522), (89, 36462), (99, 36402), (102, 36372), (105, 36360), (115, 36330), (135, 36276),

Gene: BourbonZero\_37 Start: 34497, Stop: 34114, Start Num: 61

Candidate Starts for BourbonZero\_37:

(3, 34716), (4, 34710), (8, 34689), (10, 34668), (Start: 44 @34533 has 7 MA's), (Start: 48 @34527 has 19 MA's), (Start: 61 @34497 has 27 MA's), (69, 34461), (71, 34455), (77, 34425), (82, 34398), (85, 34359), (88, 34347), (90, 34335), (96, 34302), (98, 34290), (125, 34182), (140, 34119),

Gene: BrainDrainer\_38 Start: 33181, Stop: 32801, Start Num: 61

Candidate Starts for BrainDrainer\_38:

(Start: 44 @33217 has 7 MA's), (Start: 61 @33181 has 27 MA's), (69, 33148), (76, 33118), (77, 33112), (82, 33085), (85, 33046), (91, 33016), (98, 32977), (114, 32899), (125, 32872), (127, 32866),

Gene: Breezona\_40 Start: 34280, Stop: 33891, Start Num: 57

Candidate Starts for Breezona\_40:

(Start: 57 @34280 has 28 MA's), (Start: 61 @34271 has 27 MA's), (71, 34232), (76, 34208), (77, 34202), (82, 34175), (85, 34136), (90, 34112), (98, 34067), (116, 33980), (125, 33956),

Gene: Bromden\_39 Start: 33770, Stop: 33351, Start Num: 44

Candidate Starts for Bromden\_39:

(3, 33953), (4, 33947), (14, 33869), (Start: 44 @33770 has 7 MA's), (Start: 61 @33734 has 27 MA's), (71, 33698), (Start: 73 @33689 has 3 MA's), (77, 33668), (78, 33659), (82, 33641), (90, 33578), (91, 33572), (96, 33545), (98, 33533), (101, 33503), (116, 33449), (125, 33425), (127, 33419),

Gene: Bryler\_46 Start: 34876, Stop: 34463, Start Num: 56

Candidate Starts for Bryler\_46:

(38, 34921), (Start: 56 @34876 has 13 MA's), (Start: 65 @34855 has 13 MA's), (Start: 70 @34825 has 3 MA's), (90, 34702), (100, 34642), (101, 34627), (128, 34528), (130, 34519), (136, 34489),

Gene: CREW\_43 Start: 35096, Stop: 34716, Start Num: 63

Candidate Starts for CREW\_43:



(Start: 44 @35132 has 7 MA's), (Start: 63 @35096 has 87 MA's), (Start: 70 @35060 has 3 MA's), (82, 35000), (104, 34841), (125, 34790), (136, 34742),

Gene: Cain\_46 Start: 34864, Stop: 34451, Start Num: 56

Candidate Starts for Cain\_46:

(38, 34909), (Start: 56 @34864 has 13 MA's), (Start: 65 @34843 has 13 MA's), (Start: 70 @34813 has 3 MA's), (90, 34690), (100, 34630), (101, 34615), (128, 34516), (130, 34507), (136, 34477),

Gene: CallaLilly\_45 Start: 35019, Stop: 34639, Start Num: 63

Candidate Starts for CallaLilly\_45:

(Start: 44 @35055 has 7 MA's), (Start: 63 @35019 has 87 MA's), (Start: 70 @34983 has 3 MA's), (82, 34923), (104, 34764), (125, 34713), (136, 34665),

Gene: Calm\_38 Start: 32950, Stop: 32540, Start Num: 48

Candidate Starts for Calm\_38:

(Start: 44 @32956 has 7 MA's), (Start: 48 @32950 has 19 MA's), (54, 32932), (Start: 57 @32929 has 28 MA's), (Start: 61 @32920 has 27 MA's), (68, 32887), (82, 32821), (85, 32782), (90, 32758), (98, 32713), (100, 32698), (128, 32605),

Gene: Capricorn\_43 Start: 35096, Stop: 34716, Start Num: 63

Candidate Starts for Capricorn\_43:

(Start: 44 @35132 has 7 MA's), (Start: 63 @35096 has 87 MA's), (Start: 70 @35060 has 3 MA's), (82, 35000), (104, 34841), (125, 34790), (136, 34742),

Gene: CaseJules\_44 Start: 35293, Stop: 34913, Start Num: 63

Candidate Starts for CaseJules\_44:

(Start: 44 @35329 has 7 MA's), (Start: 63 @35293 has 87 MA's), (Start: 70 @35257 has 3 MA's), (82, 35197), (104, 35038), (125, 34987), (136, 34939),

Gene: Chancellor\_47 Start: 36038, Stop: 35679, Start Num: 58

Candidate Starts for Chancellor\_47:

(32, 36107), (47, 36062), (Start: 58 @36038 has 14 MA's), (Start: 61 @36032 has 27 MA's), (Start: 70 @35993 has 3 MA's), (80, 35942), (89, 35873), (94, 35852), (97, 35831), (99, 35813), (129, 35711),

Gene: Chaser\_37 Start: 32998, Stop: 32618, Start Num: 61

Candidate Starts for Chaser\_37:

(Start: 44 @33034 has 7 MA's), (Start: 61 @32998 has 27 MA's), (69, 32965), (76, 32935), (77, 32929), (82, 32902), (85, 32863), (91, 32833), (98, 32794), (125, 32689), (127, 32683),

Gene: CheetoDust\_42 Start: 34466, Stop: 34089, Start Num: 63

Candidate Starts for CheetoDust\_42:

(52, 34490), (Start: 63 @34466 has 87 MA's), (Start: 70 @34430 has 3 MA's), (74, 34415), (82, 34370), (125, 34163), (136, 34115),

Gene: Cheetobro\_47 Start: 36035, Stop: 35676, Start Num: 58

Candidate Starts for Cheetobro\_47:

(32, 36104), (47, 36059), (Start: 58 @36035 has 14 MA's), (Start: 61 @36029 has 27 MA's), (Start: 70 @35990 has 3 MA's), (80, 35939), (89, 35870), (94, 35849), (97, 35828), (99, 35810), (129, 35708),

Gene: Chris\_45 Start: 35677, Stop: 35300, Start Num: 66

Candidate Starts for Chris\_45:

(26, 35785), (Start: 66 @35677 has 10 MA's), (Start: 70 @35647 has 3 MA's), (74, 35632), (82, 35587), (83, 35566), (90, 35524), (101, 35449), (125, 35374), (133, 35341), (136, 35326),

Gene: CicholasNage\_38 Start: 32971, Stop: 32561, Start Num: 48

Candidate Starts for CicholasNage\_38:

(Start: 44 @32977 has 7 MA's), (Start: 48 @32971 has 19 MA's), (54, 32953), (Start: 57 @32950 has 28 MA's), (Start: 61 @32941 has 27 MA's), (68, 32908), (82, 32842), (85, 32803), (90, 32779), (98, 32734), (100, 32719), (128, 32626),

Gene: Claus\_41 Start: 34300, Stop: 33911, Start Num: 57

Candidate Starts for Claus\_41:

(Start: 57 @34300 has 28 MA's), (Start: 61 @34291 has 27 MA's), (71, 34252), (77, 34222), (85, 34156), (90, 34132), (98, 34087), (109, 34015), (116, 34000), (122, 33988), (125, 33976),

Gene: Clautastrophe\_38 Start: 34516, Stop: 34133, Start Num: 61

Candidate Starts for Clautastrophe\_38:

(3, 34735), (4, 34729), (8, 34708), (10, 34687), (Start: 44 @34552 has 7 MA's), (Start: 48 @34546 has 19 MA's), (Start: 61 @34516 has 27 MA's), (69, 34480), (71, 34474), (76, 34450), (77, 34444), (82, 34417), (85, 34378), (88, 34366), (90, 34354), (96, 34321), (98, 34309), (106, 34252), (125, 34201), (140, 34138),

Gene: Clipper\_47 Start: 35611, Stop: 35234, Start Num: 63

Candidate Starts for Clipper\_47:

(Start: 63 @35611 has 87 MA's), (Start: 70 @35578 has 3 MA's), (75, 35551), (81, 35524), (82, 35518), (125, 35308), (136, 35260),

Gene: Collard\_41 Start: 34491, Stop: 34090, Start Num: 59

Candidate Starts for Collard\_41:

(Start: 59 @34491 has 7 MA's), (Start: 61 @34485 has 27 MA's), (Start: 70 @34446 has 3 MA's), (Start: 73 @34434 has 3 MA's), (77, 34407), (92, 34305), (95, 34293), (101, 34242), (119, 34182),

Gene: CrimD\_43 Start: 35221, Stop: 34844, Start Num: 63

Candidate Starts for CrimD\_43:

(39, 35272), (Start: 63 @35221 has 87 MA's), (Start: 70 @35185 has 3 MA's), (74, 35170), (82, 35125), (125, 34918), (136, 34870),

Gene: Crossroads\_40 Start: 34282, Stop: 33893, Start Num: 57

Candidate Starts for Crossroads\_40:

(Start: 57 @34282 has 28 MA's), (Start: 61 @34273 has 27 MA's), (71, 34234), (76, 34210), (77, 34204), (85, 34138), (90, 34114), (98, 34069), (113, 33988), (116, 33982), (122, 33970), (125, 33958),

Gene: Curiosium\_46 Start: 34128, Stop: 33742, Start Num: 64

Candidate Starts for Curiosium\_46:

(18, 34254), (20, 34245), (31, 34209), (33, 34203), (36, 34188), (Start: 64 @34128 has 5 MA's), (82, 34035), (84, 34008), (125, 33837), (139, 33768),

Gene: DHan\_41 Start: 34241, Stop: 33852, Start Num: 57

Candidate Starts for DHan\_41:

(Start: 57 @34241 has 28 MA's), (Start: 61 @34232 has 27 MA's), (71, 34193), (77, 34163), (85, 34097), (90, 34073), (98, 34028), (109, 33956), (116, 33941), (122, 33929), (125, 33917),

Gene: Dadosky\_42 Start: 34386, Stop: 33982, Start Num: 59

Candidate Starts for Dadosky\_42:

(Start: 59 @34386 has 7 MA's), (Start: 61 @34380 has 27 MA's), (Start: 70 @34341 has 3 MA's), (Start: 73 @34329 has 3 MA's), (77, 34302), (95, 34188), (101, 34137), (119, 34077), (140, 33987),

Gene: Dalmuri\_43 Start: 35096, Stop: 34716, Start Num: 63

Candidate Starts for Dalmuri\_43:

(Start: 44 @35132 has 7 MA's), (Start: 63 @35096 has 87 MA's), (Start: 70 @35060 has 3 MA's), (82, 35000), (104, 34841), (125, 34790), (136, 34742),

Gene: DanBing\_40 Start: 34133, Stop: 33744, Start Num: 57

Candidate Starts for DanBing\_40:

(Start: 57 @34133 has 28 MA's), (Start: 61 @34124 has 27 MA's), (71, 34085), (77, 34055), (85, 33989), (90, 33965), (98, 33920), (109, 33848), (116, 33833), (122, 33821), (125, 33809),

Gene: DarthP\_45 Start: 35904, Stop: 35545, Start Num: 65

Candidate Starts for DarthP\_45:

(Start: 65 @35904 has 13 MA's), (Start: 70 @35874 has 3 MA's), (82, 35814), (86, 35772),

Gene: Dartin\_45 Start: 35648, Stop: 35256, Start Num: 56

Candidate Starts for Dartin\_45:

(Start: 56 @35648 has 13 MA's), (79, 35564), (82, 35549), (101, 35411), (105, 35387), (126, 35324), (132, 35300), (138, 35267),

Gene: Deby\_43 Start: 35225, Stop: 34845, Start Num: 63

Candidate Starts for Deby\_43:

(39, 35276), (Start: 63 @35225 has 87 MA's), (Start: 70 @35189 has 3 MA's), (82, 35129), (117, 34934), (125, 34919), (136, 34871),

Gene: Devera\_47 Start: 35759, Stop: 35382, Start Num: 63

Candidate Starts for Devera\_47:

(Start: 63 @35759 has 87 MA's), (Start: 70 @35723 has 3 MA's), (82, 35663), (104, 35504), (125, 35456), (136, 35408),

Gene: DirkDirk\_37 Start: 32937, Stop: 32527, Start Num: 48

Candidate Starts for DirkDirk\_37:

(Start: 44 @32943 has 7 MA's), (Start: 48 @32937 has 19 MA's), (Start: 57 @32916 has 28 MA's), (Start: 61 @32907 has 27 MA's), (68, 32874), (82, 32808), (85, 32769), (90, 32745), (98, 32700), (128, 32592),

Gene: DismalFunk\_46 Start: 37051, Stop: 36680, Start Num: 63

Candidate Starts for DismalFunk\_46:

(39, 37105), (Start: 63 @37051 has 87 MA's), (Start: 70 @37015 has 3 MA's), (74, 37000), (82, 36955), (89, 36895), (99, 36835), (102, 36805), (105, 36793), (115, 36763), (135, 36706),

Gene: DismalStressor\_46 Start: 37051, Stop: 36680, Start Num: 63

Candidate Starts for DismalStressor\_46:

(39, 37105), (Start: 63 @37051 has 87 MA's), (Start: 70 @37015 has 3 MA's), (74, 37000), (82, 36955), (89, 36895), (99, 36835), (102, 36805), (105, 36793), (115, 36763), (135, 36706),

Gene: Dole\_46 Start: 35761, Stop: 35384, Start Num: 63

Candidate Starts for Dole\_46:

(Start: 63 @35761 has 87 MA's), (Start: 70 @35725 has 3 MA's), (82, 35665), (104, 35506), (125, 35458), (136, 35410),

Gene: Douge\_37 Start: 32936, Stop: 32556, Start Num: 61

Candidate Starts for Douge\_37:

(Start: 44 @32972 has 7 MA's), (Start: 61 @32936 has 27 MA's), (69, 32903), (76, 32873), (77, 32867), (82, 32840), (85, 32801), (91, 32771), (98, 32732), (125, 32627), (127, 32621),

Gene: Douzhi\_37 Start: 33042, Stop: 32662, Start Num: 61

Candidate Starts for Douzhi\_37:

(Start: 44 @33078 has 7 MA's), (Start: 61 @33042 has 27 MA's), (69, 33009), (76, 32979), (77, 32973), (82, 32946), (85, 32907), (91, 32877), (98, 32838), (114, 32760), (125, 32733), (127, 32727),

Gene: DrHayes\_44 Start: 35877, Stop: 35500, Start Num: 63

Candidate Starts for DrHayes\_44:

(39, 35928), (Start: 63 @35877 has 87 MA's), (Start: 70 @35841 has 3 MA's), (82, 35781), (125, 35574), (136, 35526),

Gene: DrSeegs\_40 Start: 34280, Stop: 33891, Start Num: 57

Candidate Starts for DrSeegs\_40:

(Start: 57 @34280 has 28 MA's), (Start: 61 @34271 has 27 MA's), (71, 34232), (76, 34208), (77, 34202), (82, 34175), (85, 34136), (90, 34112), (98, 34067), (116, 33980), (125, 33956),

Gene: DuncansLeg\_38 Start: 34570, Stop: 34151, Start Num: 44

Candidate Starts for DuncansLeg\_38:

(3, 34753), (4, 34747), (8, 34726), (10, 34705), (Start: 44 @34570 has 7 MA's), (Start: 48 @34564 has 19 MA's), (Start: 61 @34534 has 27 MA's), (69, 34498), (71, 34492), (77, 34462), (82, 34435), (85, 34396), (88, 34384), (90, 34372), (96, 34339), (98, 34327), (106, 34270), (125, 34219), (140, 34156),

Gene: Durfee\_43 Start: 35293, Stop: 34913, Start Num: 63

Candidate Starts for Durfee\_43:

(Start: 44 @35329 has 7 MA's), (Start: 63 @35293 has 87 MA's), (Start: 70 @35257 has 3 MA's), (82, 35197), (104, 35038), (125, 34987), (136, 34939),

Gene: DyoEdafos\_39 Start: 33270, Stop: 32890, Start Num: 61

Candidate Starts for DyoEdafos\_39:

(Start: 44 @33306 has 7 MA's), (Start: 61 @33270 has 27 MA's), (69, 33237), (77, 33201), (82, 33174), (85, 33135), (90, 33111), (125, 32961), (127, 32955), (132, 32931),

Gene: Edugator\_41 Start: 34805, Stop: 34407, Start Num: 61

Candidate Starts for Edugator\_41:

(Start: 59 @34811 has 7 MA's), (Start: 61 @34805 has 27 MA's), (Start: 70 @34766 has 3 MA's), (Start: 73 @34754 has 3 MA's), (77, 34727), (95, 34613), (101, 34562), (119, 34502), (140, 34412),

Gene: Efra2\_46 Start: 35018, Stop: 34629, Start Num: 62

Candidate Starts for Efra2\_46:

(15, 35156), (16, 35150), (18, 35147), (20, 35138), (23, 35123), (Start: 62 @35018 has 2 MA's), (Start: 64 @35012 has 5 MA's), (82, 34922), (90, 34859), (97, 34820), (101, 34784), (120, 34724), (122, 34718), (140, 34634),

Gene: Ekdilam\_42 Start: 35465, Stop: 35106, Start Num: 65

Candidate Starts for Ekdilam\_42:

(30, 35549), (Start: 65 @35465 has 13 MA's), (Start: 70 @35435 has 3 MA's), (Start: 73 @35423 has 3 MA's), (82, 35375), (90, 35312), (133, 35147), (136, 35132),

Gene: Ellie\_41 Start: 35161, Stop: 34769, Start Num: 65

Candidate Starts for Ellie\_41:

(22, 35278), (Start: 65 @35161 has 13 MA's), (Start: 70 @35131 has 3 MA's), (82, 35071), (83, 35050), (84, 35044), (90, 35008), (94, 34990), (101, 34933), (122, 34861), (136, 34795), (140, 34774),

Gene: Ellson\_38 Start: 34546, Stop: 34127, Start Num: 44

Candidate Starts for Ellson\_38:

(3, 34729), (4, 34723), (8, 34702), (10, 34681), (Start: 44 @34546 has 7 MA's), (Start: 48 @34540 has 19 MA's), (Start: 61 @34510 has 27 MA's), (69, 34474), (71, 34468), (77, 34438), (82, 34411), (85, 34372), (88, 34360), (90, 34348), (96, 34315), (98, 34303), (125, 34195), (140, 34132),

Gene: Emerson\_44 Start: 34972, Stop: 34592, Start Num: 63

Candidate Starts for Emerson\_44:

(Start: 44 @35008 has 7 MA's), (Start: 63 @34972 has 87 MA's), (Start: 70 @34936 has 3 MA's), (82, 34876), (125, 34666), (136, 34618),

Gene: Enceladus\_37 Start: 32920, Stop: 32510, Start Num: 48

Candidate Starts for Enceladus\_37:

(Start: 44 @32926 has 7 MA's), (Start: 48 @32920 has 19 MA's), (Start: 57 @32899 has 28 MA's), (Start: 61 @32890 has 27 MA's), (68, 32857), (82, 32791), (85, 32752), (90, 32728), (98, 32683), (128, 32575),

Gene: Enkosi\_41 Start: 37140, Stop: 36742, Start Num: 56

Candidate Starts for Enkosi\_41:

(41, 37179), (Start: 56 @37140 has 13 MA's), (82, 37044), (124, 36819), (126, 36813),

Gene: Eponine\_49 Start: 36791, Stop: 36432, Start Num: 58

Candidate Starts for Eponine\_49:

(32, 36860), (47, 36815), (Start: 58 @36791 has 14 MA's), (Start: 61 @36785 has 27 MA's), (Start: 70 @36746 has 3 MA's), (80, 36695), (89, 36626), (94, 36605), (97, 36584), (99, 36566), (129, 36464),

Gene: Faith1\_40 Start: 34280, Stop: 33891, Start Num: 57

Candidate Starts for Faith1\_40:

(Start: 57 @34280 has 28 MA's), (Start: 61 @34271 has 27 MA's), (71, 34232), (76, 34208), (77, 34202), (82, 34175), (85, 34136), (90, 34112), (98, 34067), (116, 33980), (125, 33956),

Gene: FarmResident\_38 Start: 32947, Stop: 32600, Start Num: 69

Candidate Starts for FarmResident\_38:

(Start: 44 @33016 has 7 MA's), (Start: 61 @32980 has 27 MA's), (69, 32947), (76, 32917), (77, 32911), (82, 32884), (85, 32845), (91, 32815), (125, 32671), (127, 32665),

Gene: Fefferhead\_43 Start: 35112, Stop: 34720, Start Num: 65

Candidate Starts for Fefferhead\_43:

(22, 35229), (Start: 65 @35112 has 13 MA's), (Start: 70 @35082 has 3 MA's), (82, 35022), (83, 35001), (84, 34995), (90, 34959), (94, 34941), (101, 34884), (122, 34812), (136, 34746), (140, 34725),

Gene: Feyre\_41 Start: 34186, Stop: 33836, Start Num: 73

Candidate Starts for Feyre\_41:

(Start: 73 @34186 has 3 MA's), (95, 34045), (101, 33994), (119, 33934),

Gene: Findley\_46 Start: 37044, Stop: 36673, Start Num: 63

Candidate Starts for Findley\_46:

(39, 37098), (Start: 63 @37044 has 87 MA's), (Start: 70 @37008 has 3 MA's), (74, 36993), (82, 36948), (89, 36888), (99, 36828), (102, 36798), (105, 36786), (115, 36756), (135, 36699),

Gene: Finemlucis\_40 Start: 34556, Stop: 34167, Start Num: 57

Candidate Starts for Finemlucis\_40:

(Start: 57 @34556 has 28 MA's), (Start: 61 @34547 has 27 MA's), (71, 34508), (76, 34484), (77, 34478), (82, 34451), (85, 34412), (90, 34388), (98, 34343), (116, 34256), (122, 34244), (125, 34232),

Gene: Finnry\_38 Start: 34555, Stop: 34136, Start Num: 44

Candidate Starts for Finnry\_38:

(3, 34738), (4, 34732), (8, 34711), (10, 34690), (Start: 44 @34555 has 7 MA's), (Start: 48 @34549 has 19 MA's), (Start: 61 @34519 has 27 MA's), (69, 34483), (71, 34477), (76, 34453), (77, 34447), (82, 34420), (85, 34381), (88, 34369), (90, 34357), (96, 34324), (98, 34312), (106, 34255), (125, 34204), (140, 34141),

Gene: Fionnbharth\_47 Start: 36189, Stop: 35830, Start Num: 58

Candidate Starts for Fionnbharth\_47:

(13, 36321), (32, 36258), (34, 36255), (47, 36213), (Start: 58 @36189 has 14 MA's), (Start: 61 @36183 has 27 MA's), (Start: 70 @36144 has 3 MA's), (80, 36093), (89, 36024), (94, 36003), (97, 35982), (99, 35964), (129, 35862),

Gene: Gabriela\_40 Start: 34542, Stop: 34153, Start Num: 57

Candidate Starts for Gabriela\_40:

(Start: 57 @34542 has 28 MA's), (Start: 61 @34533 has 27 MA's), (71, 34494), (76, 34470), (77, 34464), (82, 34437), (85, 34398), (90, 34374), (98, 34329), (116, 34242), (125, 34218),

Gene: Ganymede\_44 Start: 35413, Stop: 35036, Start Num: 63

Candidate Starts for Ganymede\_44:

(39, 35464), (Start: 63 @35413 has 87 MA's), (Start: 70 @35377 has 3 MA's), (82, 35317), (104, 35158), (125, 35110), (136, 35062),

Gene: Gardann\_40 Start: 34281, Stop: 33892, Start Num: 57

Candidate Starts for Gardann\_40:

(Start: 57 @34281 has 28 MA's), (Start: 61 @34272 has 27 MA's), (71, 34233), (76, 34209), (77, 34203), (82, 34176), (85, 34137), (90, 34113), (98, 34068), (116, 33981), (122, 33969), (125, 33957),

Gene: Gengar\_41 Start: 34347, Stop: 33946, Start Num: 61

Candidate Starts for Gengar\_41:

(Start: 61 @34347 has 27 MA's), (Start: 73 @34296 has 3 MA's), (95, 34155), (101, 34104), (119, 34044),

Gene: Geraldini\_45 Start: 36027, Stop: 35650, Start Num: 63

Candidate Starts for Geraldini\_45:

(Start: 63 @36027 has 87 MA's), (Start: 70 @35994 has 3 MA's), (75, 35967), (81, 35940), (82, 35934), (125, 35724), (136, 35676),

Gene: Guanica15\_46 Start: 34969, Stop: 34586, Start Num: 64

Candidate Starts for Guanica15\_46:

(15, 35113), (16, 35107), (18, 35104), (20, 35095), (23, 35080), (Start: 62 @34975 has 2 MA's), (Start: 64 @34969 has 5 MA's), (82, 34879), (90, 34816), (97, 34777), (101, 34741), (120, 34681), (122, 34675), (140, 34591),

Gene: Guillsminger\_42 Start: 34318, Stop: 33917, Start Num: 61

Candidate Starts for Guillsminger\_42:

(Start: 61 @34318 has 27 MA's), (Start: 73 @34267 has 3 MA's), (95, 34126), (101, 34075), (119, 34015),

Gene: GuuelaD\_40 Start: 34319, Stop: 33930, Start Num: 57

Candidate Starts for GuuelaD\_40:

(Start: 57 @34319 has 28 MA's), (Start: 61 @34310 has 27 MA's), (71, 34271), (76, 34247), (77, 34241), (85, 34175), (90, 34151), (98, 34106), (113, 34025), (116, 34019), (122, 34007), (125, 33995),

Gene: Hafay\_40 Start: 34314, Stop: 33925, Start Num: 57

Candidate Starts for Hafay\_40:

(Start: 57 @34314 has 28 MA's), (Start: 61 @34305 has 27 MA's), (71, 34266), (76, 34242), (77, 34236), (85, 34170), (90, 34146), (98, 34101), (113, 34020), (116, 34014), (122, 34002), (125, 33990),

Gene: Halena\_37 Start: 32946, Stop: 32536, Start Num: 48

Candidate Starts for Halena\_37:

(Start: 44 @32952 has 7 MA's), (Start: 48 @32946 has 19 MA's), (54, 32928), (Start: 57 @32925 has 28 MA's), (Start: 61 @32916 has 27 MA's), (68, 32883), (82, 32817), (85, 32778), (90, 32754), (98, 32709), (100, 32694), (128, 32601),

Gene: Hammy\_45 Start: 35892, Stop: 35533, Start Num: 65

Candidate Starts for Hammy\_45:

(Start: 65 @35892 has 13 MA's), (82, 35802), (86, 35760),

Gene: HedwigODU\_43 Start: 34981, Stop: 34601, Start Num: 63

Candidate Starts for HedwigODU\_43:

(Start: 44 @35017 has 7 MA's), (Start: 63 @34981 has 87 MA's), (Start: 70 @34945 has 3 MA's), (82, 34885), (125, 34675), (136, 34627),

Gene: Heftyboy\_41 Start: 34467, Stop: 34066, Start Num: 61

Candidate Starts for Heftyboy\_41:

(24, 34566), (42, 34515), (45, 34503), (Start: 61 @34467 has 27 MA's), (Start: 73 @34416 has 3 MA's), (95, 34275), (101, 34224), (119, 34164), (130, 34116),

Gene: Homura\_43 Start: 35096, Stop: 34716, Start Num: 63

Candidate Starts for Homura\_43:

(Start: 44 @35132 has 7 MA's), (Start: 63 @35096 has 87 MA's), (Start: 70 @35060 has 3 MA's), (82, 35000), (104, 34841), (125, 34790), (136, 34742),

Gene: Hyperbowlee\_43 Start: 35293, Stop: 34913, Start Num: 63

Candidate Starts for Hyperbowlee\_43:

(Start: 44 @35329 has 7 MA's), (Start: 63 @35293 has 87 MA's), (Start: 70 @35257 has 3 MA's), (82, 35197), (104, 35038), (125, 34987), (136, 34939),

Gene: Illumine\_46 Start: 35761, Stop: 35384, Start Num: 63

Candidate Starts for Illumine\_46:

(Start: 63 @35761 has 87 MA's), (Start: 70 @35725 has 3 MA's), (82, 35665), (104, 35506), (125, 35458), (136, 35410),

Gene: Inky\_43 Start: 35096, Stop: 34716, Start Num: 63

Candidate Starts for Inky\_43:

(Start: 44 @35132 has 7 MA's), (Start: 63 @35096 has 87 MA's), (Start: 70 @35060 has 3 MA's), (82, 35000), (104, 34841), (125, 34790), (136, 34742),

Gene: InvictusManeo\_41 Start: 34534, Stop: 34133, Start Num: 59

Candidate Starts for InvictusManeo\_41:

(Start: 59 @34534 has 7 MA's), (Start: 61 @34528 has 27 MA's), (Start: 70 @34489 has 3 MA's),  
(Start: 73 @34477 has 3 MA's), (77, 34450), (92, 34348), (95, 34336), (101, 34285), (119, 34225),

Gene: JAWS\_43 Start: 34970, Stop: 34590, Start Num: 63

Candidate Starts for JAWS\_43:

(Start: 44 @35006 has 7 MA's), (Start: 63 @34970 has 87 MA's), (Start: 70 @34934 has 3 MA's), (82, 34874), (104, 34715), (125, 34664), (136, 34616),

Gene: JF1\_47 Start: 36061, Stop: 35747, Start Num: 70

Candidate Starts for JF1\_47:

(Start: 70 @36061 has 3 MA's), (80, 36010), (89, 35941), (94, 35920), (97, 35899), (99, 35881), (129, 35779),

Gene: Jarvi\_43 Start: 35096, Stop: 34716, Start Num: 63

Candidate Starts for Jarvi\_43:

(Start: 44 @35132 has 7 MA's), (Start: 63 @35096 has 87 MA's), (Start: 70 @35060 has 3 MA's), (82, 35000), (104, 34841), (125, 34790), (136, 34742),

Gene: Jayhawk\_44 Start: 34979, Stop: 34599, Start Num: 63

Candidate Starts for Jayhawk\_44:

(Start: 44 @35015 has 7 MA's), (Start: 63 @34979 has 87 MA's), (Start: 70 @34943 has 3 MA's), (82, 34883), (125, 34673), (136, 34625),

Gene: Jeckyll\_43 Start: 35096, Stop: 34716, Start Num: 63

Candidate Starts for Jeckyll\_43:

(Start: 44 @35132 has 7 MA's), (Start: 63 @35096 has 87 MA's), (Start: 70 @35060 has 3 MA's), (82, 35000), (104, 34841), (125, 34790), (136, 34742),

Gene: JoeDirt\_37 Start: 32924, Stop: 32508, Start Num: 44

Candidate Starts for JoeDirt\_37:

(Start: 44 @32924 has 7 MA's), (Start: 48 @32918 has 19 MA's), (Start: 57 @32897 has 28 MA's),  
(Start: 61 @32888 has 27 MA's), (68, 32855), (82, 32789), (85, 32750), (90, 32726), (98, 32681), (128, 32573),

Gene: Joy99\_43 Start: 35025, Stop: 34645, Start Num: 63

Candidate Starts for Joy99\_43:

(Start: 44 @35061 has 7 MA's), (Start: 63 @35025 has 87 MA's), (Start: 70 @34989 has 3 MA's), (82, 34929), (104, 34770), (125, 34719), (136, 34671),

Gene: Jubie\_38 Start: 34517, Stop: 34134, Start Num: 61

Candidate Starts for Jubie\_38:

(3, 34736), (4, 34730), (8, 34709), (10, 34688), (Start: 44 @34553 has 7 MA's), (Start: 48 @34547 has 19 MA's), (Start: 61 @34517 has 27 MA's), (69, 34481), (71, 34475), (76, 34451), (77, 34445), (82, 34418), (85, 34379), (88, 34367), (90, 34355), (96, 34322), (98, 34310), (106, 34253), (125, 34202), (140, 34139),

Gene: Juliette\_49 Start: 36262, Stop: 35903, Start Num: 58

Candidate Starts for Juliette\_49:

(32, 36331), (47, 36286), (Start: 58 @36262 has 14 MA's), (Start: 61 @36256 has 27 MA's), (Start: 70 @36217 has 3 MA's), (80, 36166), (89, 36097), (94, 36076), (97, 36055), (99, 36037), (129, 35935),

Gene: Kahlid\_40 Start: 34286, Stop: 33897, Start Num: 57

Candidate Starts for Kahlid\_40:



(Start: 57 @34286 has 28 MA's), (Start: 61 @34277 has 27 MA's), (71, 34238), (76, 34214), (77, 34208), (85, 34142), (90, 34118), (98, 34073), (113, 33992), (116, 33986), (122, 33974), (125, 33962),

Gene: Keshu\_47 Start: 35704, Stop: 35282, Start Num: 49

Candidate Starts for Keshu\_47:

(Start: 49 @35704 has 4 MA's), (Start: 64 @35671 has 5 MA's), (90, 35515), (99, 35458), (136, 35308),

Gene: KiSi\_47 Start: 36100, Stop: 35729, Start Num: 66

Candidate Starts for KiSi\_47:

(11, 36259), (12, 36256), (13, 36253), (51, 36133), (Start: 66 @36100 has 10 MA's), (Start: 70 @36070 has 3 MA's), (71, 36067), (82, 36010), (87, 35965), (90, 35947), (101, 35872), (125, 35800), (136, 35755),

Gene: Kingsolomon\_38 Start: 34546, Stop: 34133, Start Num: 48

Candidate Starts for Kingsolomon\_38:

(3, 34735), (4, 34729), (8, 34708), (10, 34687), (Start: 44 @34552 has 7 MA's), (Start: 48 @34546 has 19 MA's), (Start: 61 @34516 has 27 MA's), (69, 34480), (71, 34474), (76, 34450), (77, 34444), (82, 34417), (85, 34378), (88, 34366), (90, 34354), (96, 34321), (98, 34309), (106, 34252), (125, 34201), (140, 34138),

Gene: KirDoubleO7\_36 Start: 34538, Stop: 34158, Start Num: 61

Candidate Starts for KirDoubleO7\_36:

(Start: 44 @34574 has 7 MA's), (Start: 48 @34568 has 19 MA's), (Start: 61 @34538 has 27 MA's), (71, 34499), (76, 34475), (77, 34469), (82, 34442), (85, 34403), (88, 34391), (90, 34379), (96, 34346), (98, 34334), (106, 34277), (140, 34163),

Gene: Kratio\_40 Start: 34085, Stop: 33681, Start Num: 59

Candidate Starts for Kratio\_40:

(Start: 59 @34085 has 7 MA's), (Start: 61 @34079 has 27 MA's), (Start: 70 @34040 has 3 MA's), (Start: 73 @34028 has 3 MA's), (77, 34001), (81, 33980), (92, 33899), (95, 33887), (101, 33836), (119, 33776),

Gene: Kraw\_49 Start: 35905, Stop: 35591, Start Num: 70

Candidate Starts for Kraw\_49:

(32, 36019), (47, 35974), (Start: 58 @35950 has 14 MA's), (Start: 61 @35944 has 27 MA's), (Start: 70 @35905 has 3 MA's), (80, 35854), (89, 35785), (94, 35764), (97, 35743), (99, 35725), (129, 35623),

Gene: Kropertea\_37 Start: 33093, Stop: 32698, Start Num: 61

Candidate Starts for Kropertea\_37:

(Start: 44 @33129 has 7 MA's), (Start: 61 @33093 has 27 MA's), (69, 33060), (77, 33009), (82, 32982), (85, 32943), (90, 32919), (125, 32769), (127, 32763), (132, 32739),

Gene: Krueger\_49 Start: 35862, Stop: 35461, Start Num: 60

Candidate Starts for Krueger\_49:

(Start: 60 @35862 has 1 MA's), (Start: 66 @35850 has 10 MA's), (Start: 70 @35820 has 3 MA's), (86, 35718), (90, 35697), (96, 35664), (101, 35622), (108, 35586), (134, 35493), (136, 35487),

Gene: Krypton555\_38 Start: 34434, Stop: 34048, Start Num: 61

Candidate Starts for Krypton555\_38:

(Start: 25 @34530 has 1 MA's), (35, 34500), (Start: 44 @34470 has 7 MA's), (Start: 48 @34464 has 19 MA's), (Start: 61 @34434 has 27 MA's), (71, 34395), (76, 34371), (77, 34365), (82, 34338), (85, 34299), (88, 34287), (90, 34275), (96, 34242), (125, 34116), (140, 34053),

Gene: Larva\_42 Start: 34253, Stop: 33849, Start Num: 59

Candidate Starts for Larva\_42:

(Start: 59 @34253 has 7 MA's), (Start: 61 @34247 has 27 MA's), (Start: 70 @34208 has 3 MA's),  
(Start: 73 @34196 has 3 MA's), (77, 34169), (95, 34055), (101, 34004), (119, 33944), (140, 33854),

Gene: LastHope\_46 Start: 34433, Stop: 34047, Start Num: 64

Candidate Starts for LastHope\_46:

(31, 34514), (33, 34508), (36, 34493), (Start: 64 @34433 has 5 MA's), (82, 34340), (84, 34313), (125,  
34142), (139, 34073),

Gene: LaterM\_44 Start: 35874, Stop: 35497, Start Num: 63

Candidate Starts for LaterM\_44:

(39, 35925), (Start: 63 @35874 has 87 MA's), (Start: 70 @35838 has 3 MA's), (81, 35784), (82, 35778),  
(117, 35586), (125, 35571), (136, 35523),

Gene: LeBron\_38 Start: 32968, Stop: 32552, Start Num: 44

Candidate Starts for LeBron\_38:

(Start: 44 @32968 has 7 MA's), (Start: 48 @32962 has 19 MA's), (Start: 57 @32941 has 28 MA's),  
(Start: 61 @32932 has 27 MA's), (68, 32899), (82, 32833), (85, 32794), (90, 32770), (98, 32725), (128,  
32617),

Gene: LeMond\_47 Start: 36084, Stop: 35710, Start Num: 66

Candidate Starts for LeMond\_47:

(30, 36180), (52, 36117), (Start: 66 @36084 has 10 MA's), (Start: 70 @36054 has 3 MA's), (71, 36051),  
(82, 35994), (87, 35949), (90, 35931), (101, 35856), (125, 35781), (136, 35736),

Gene: Leston\_41 Start: 34396, Stop: 34046, Start Num: 73

Candidate Starts for Leston\_41:

(Start: 61 @34447 has 27 MA's), (Start: 73 @34396 has 3 MA's), (95, 34255), (101, 34204), (119,  
34144),

Gene: Lewan\_40 Start: 34274, Stop: 33885, Start Num: 57

Candidate Starts for Lewan\_40:

(Start: 57 @34274 has 28 MA's), (Start: 61 @34265 has 27 MA's), (71, 34226), (76, 34202), (77,  
34196), (85, 34130), (90, 34106), (98, 34061), (113, 33980), (116, 33974), (122, 33962), (125, 33950),

Gene: LilDestine\_40 Start: 34278, Stop: 33889, Start Num: 57

Candidate Starts for LilDestine\_40:

(Start: 57 @34278 has 28 MA's), (Start: 61 @34269 has 27 MA's), (71, 34230), (76, 34206), (77,  
34200), (82, 34173), (85, 34134), (90, 34110), (98, 34065), (116, 33978), (125, 33954),

Gene: LindNT\_43 Start: 35164, Stop: 34787, Start Num: 63

Candidate Starts for LindNT\_43:

(39, 35215), (Start: 63 @35164 has 87 MA's), (Start: 70 @35128 has 3 MA's), (74, 35113), (82, 35068),  
(125, 34861), (136, 34813),

Gene: LiyuLake\_38 Start: 34530, Stop: 34117, Start Num: 48

Candidate Starts for LiyuLake\_38:

(3, 34719), (4, 34713), (8, 34692), (10, 34671), (Start: 44 @34536 has 7 MA's), (Start: 48 @34530 has  
19 MA's), (Start: 61 @34500 has 27 MA's), (69, 34464), (71, 34458), (77, 34428), (82, 34401), (85,  
34362), (88, 34350), (90, 34338), (96, 34305), (98, 34293), (125, 34185), (140, 34122),

Gene: Llorens\_43 Start: 35096, Stop: 34716, Start Num: 63

Candidate Starts for Llorens\_43:

(Start: 44 @35132 has 7 MA's), (Start: 63 @35096 has 87 MA's), (Start: 70 @35060 has 3 MA's), (82, 35000), (104, 34841), (125, 34790), (136, 34742),

Gene: Loadrie\_40 Start: 34312, Stop: 33923, Start Num: 57

Candidate Starts for Loadrie\_40:

(Start: 57 @34312 has 28 MA's), (Start: 61 @34303 has 27 MA's), (71, 34264), (76, 34240), (77, 34234), (85, 34168), (90, 34144), (98, 34099), (113, 34018), (116, 34012), (122, 34000), (125, 33988),

Gene: Lolly9\_38 Start: 34324, Stop: 33941, Start Num: 61

Candidate Starts for Lolly9\_38:

(3, 34543), (4, 34537), (8, 34516), (10, 34495), (Start: 44 @34360 has 7 MA's), (Start: 48 @34354 has 19 MA's), (Start: 61 @34324 has 27 MA's), (69, 34288), (71, 34282), (77, 34252), (82, 34225), (85, 34186), (88, 34174), (90, 34162), (96, 34129), (97, 34123), (98, 34117), (106, 34060), (125, 34009), (140, 33946),

Gene: Lumos\_38 Start: 34543, Stop: 34130, Start Num: 48

Candidate Starts for Lumos\_38:

(3, 34732), (4, 34726), (8, 34705), (10, 34684), (Start: 44 @34549 has 7 MA's), (Start: 48 @34543 has 19 MA's), (Start: 61 @34513 has 27 MA's), (69, 34477), (71, 34471), (76, 34447), (77, 34441), (82, 34414), (85, 34375), (88, 34363), (90, 34351), (96, 34318), (98, 34306), (106, 34249), (125, 34198), (140, 34135),

Gene: Lunahalos\_43 Start: 35096, Stop: 34716, Start Num: 63

Candidate Starts for Lunahalos\_43:

(Start: 44 @35132 has 7 MA's), (Start: 63 @35096 has 87 MA's), (Start: 70 @35060 has 3 MA's), (82, 35000), (104, 34841), (125, 34790), (136, 34742),

Gene: MAckerman\_38 Start: 32940, Stop: 32530, Start Num: 48

Candidate Starts for MAckerman\_38:

(Start: 44 @32946 has 7 MA's), (Start: 48 @32940 has 19 MA's), (54, 32922), (Start: 57 @32919 has 28 MA's), (Start: 61 @32910 has 27 MA's), (68, 32877), (82, 32811), (85, 32772), (90, 32748), (98, 32703), (100, 32688), (128, 32595),

Gene: MacnCheese\_47 Start: 36557, Stop: 36177, Start Num: 64

Candidate Starts for MacnCheese\_47:

(28, 36650), (Start: 49 @36590 has 4 MA's), (Start: 64 @36557 has 5 MA's), (81, 36473), (90, 36404), (101, 36329), (137, 36191),

Gene: Malthus\_48 Start: 35950, Stop: 35591, Start Num: 58

Candidate Starts for Malthus\_48:

(32, 36019), (47, 35974), (Start: 58 @35950 has 14 MA's), (Start: 61 @35944 has 27 MA's), (Start: 70 @35905 has 3 MA's), (80, 35854), (89, 35785), (94, 35764), (97, 35743), (99, 35725), (129, 35623),

Gene: Marcoliusprime\_46 Start: 37051, Stop: 36680, Start Num: 63

Candidate Starts for Marcoliusprime\_46:

(39, 37105), (Start: 63 @37051 has 87 MA's), (Start: 70 @37015 has 3 MA's), (74, 37000), (82, 36955), (89, 36895), (99, 36835), (102, 36805), (105, 36793), (115, 36763), (135, 36706),

Gene: MarkPhew\_46 Start: 35518, Stop: 35147, Start Num: 66

Candidate Starts for MarkPhew\_46:

(46, 35566), (50, 35554), (Start: 66 @35518 has 10 MA's), (82, 35428), (83, 35407), (90, 35365), (101, 35290), (104, 35269), (118, 35233), (126, 35212), (136, 35173),

Gene: Marshawn\_46 Start: 35965, Stop: 35570, Start Num: 57

Candidate Starts for Marshawn\_46:

(Start: 57 @35965 has 28 MA's), (Start: 73 @35914 has 3 MA's), (82, 35866), (87, 35821), (90, 35803), (101, 35728), (120, 35665), (136, 35599), (140, 35578),

Gene: McMater\_45 Start: 35648, Stop: 35256, Start Num: 56

Candidate Starts for McMater\_45:

(Start: 56 @35648 has 13 MA's), (79, 35564), (82, 35549), (101, 35411), (105, 35387), (126, 35324), (132, 35300), (138, 35267),

Gene: Mdavu\_39 Start: 34516, Stop: 34118, Start Num: 56

Candidate Starts for Mdavu\_39:

(41, 34555), (Start: 56 @34516 has 13 MA's), (82, 34420), (124, 34195), (126, 34189),

Gene: MeaningOfLife\_44 Start: 35907, Stop: 35530, Start Num: 63

Candidate Starts for MeaningOfLife\_44:

(39, 35958), (Start: 63 @35907 has 87 MA's), (Start: 70 @35871 has 3 MA's), (82, 35811), (104, 35652), (125, 35604), (136, 35556),

Gene: Megsy\_44 Start: 35223, Stop: 34846, Start Num: 63

Candidate Starts for Megsy\_44:

(39, 35274), (Start: 63 @35223 has 87 MA's), (Start: 70 @35187 has 3 MA's), (74, 35172), (82, 35127), (125, 34920), (136, 34872),

Gene: Miley16\_40 Start: 34280, Stop: 33891, Start Num: 57

Candidate Starts for Miley16\_40:

(Start: 57 @34280 has 28 MA's), (Start: 61 @34271 has 27 MA's), (71, 34232), (76, 34208), (77, 34202), (82, 34175), (85, 34136), (90, 34112), (98, 34067), (116, 33980), (125, 33956),

Gene: Milly\_46 Start: 37024, Stop: 36653, Start Num: 63

Candidate Starts for Milly\_46:

(39, 37078), (Start: 63 @37024 has 87 MA's), (Start: 70 @36988 has 3 MA's), (74, 36973), (82, 36928), (89, 36868), (99, 36808), (102, 36778), (105, 36766), (115, 36736), (135, 36679),

Gene: MiniLon\_38 Start: 34355, Stop: 33942, Start Num: 48

Candidate Starts for MiniLon\_38:

(3, 34544), (4, 34538), (8, 34517), (10, 34496), (Start: 44 @34361 has 7 MA's), (Start: 48 @34355 has 19 MA's), (Start: 61 @34325 has 27 MA's), (69, 34289), (71, 34283), (77, 34253), (82, 34226), (85, 34187), (88, 34175), (90, 34163), (96, 34130), (97, 34124), (98, 34118), (106, 34061), (125, 34010), (140, 33947),

Gene: MiniMac\_38 Start: 34358, Stop: 33939, Start Num: 44

Candidate Starts for MiniMac\_38:

(Start: 44 @34358 has 7 MA's), (Start: 48 @34352 has 19 MA's), (Start: 61 @34322 has 27 MA's), (69, 34286), (71, 34280), (77, 34250), (82, 34223), (85, 34184), (88, 34172), (90, 34160), (96, 34127), (97, 34121), (98, 34115), (106, 34058), (125, 34007), (140, 33944),

Gene: Miryou\_43 Start: 36650, Stop: 36249, Start Num: 61

Candidate Starts for Miryou\_43:

(Start: 61 @36650 has 27 MA's), (Start: 73 @36599 has 3 MA's), (95, 36458), (101, 36407), (119, 36347),

Gene: MissDaisy\_45 Start: 35425, Stop: 35069, Start Num: 58

Candidate Starts for MissDaisy\_45:

(40, 35470), (46, 35452), (47, 35449), (Start: 58 @35425 has 14 MA's), (Start: 61 @35419 has 27 MA's), (Start: 70 @35380 has 3 MA's), (80, 35329), (94, 35239), (97, 35218), (99, 35200),

Gene: Mitti\_47 Start: 36126, Stop: 35767, Start Num: 58

Candidate Starts for Mitti\_47:

(32, 36195), (47, 36150), (Start: 58 @36126 has 14 MA's), (Start: 61 @36120 has 27 MA's), (Start: 70 @36081 has 3 MA's), (80, 36030), (89, 35961), (94, 35940), (97, 35919), (99, 35901), (129, 35799),

Gene: MkaliMitinis3\_40 Start: 34282, Stop: 33893, Start Num: 57

Candidate Starts for MkaliMitinis3\_40:

(Start: 57 @34282 has 28 MA's), (Start: 61 @34273 has 27 MA's), (71, 34234), (76, 34210), (77, 34204), (85, 34138), (90, 34114), (98, 34069), (113, 33988), (116, 33982), (122, 33970), (125, 33958),

Gene: Moostard\_38 Start: 34518, Stop: 34135, Start Num: 61

Candidate Starts for Moostard\_38:

(3, 34737), (4, 34731), (8, 34710), (10, 34689), (Start: 44 @34554 has 7 MA's), (Start: 48 @34548 has 19 MA's), (Start: 61 @34518 has 27 MA's), (69, 34482), (71, 34476), (76, 34452), (77, 34446), (82, 34419), (85, 34380), (88, 34368), (90, 34356), (96, 34323), (98, 34311), (106, 34254), (125, 34203), (140, 34140),

Gene: MsGreen\_38 Start: 34516, Stop: 34133, Start Num: 61

Candidate Starts for MsGreen\_38:

(3, 34735), (4, 34729), (8, 34708), (10, 34687), (Start: 44 @34552 has 7 MA's), (Start: 48 @34546 has 19 MA's), (Start: 61 @34516 has 27 MA's), (69, 34480), (71, 34474), (76, 34450), (77, 34444), (82, 34417), (85, 34378), (88, 34366), (90, 34354), (96, 34321), (98, 34309), (106, 34252), (125, 34201), (140, 34138),

Gene: Mufasa\_46 Start: 36609, Stop: 36241, Start Num: 63

Candidate Starts for Mufasa\_46:

(Start: 63 @36609 has 87 MA's), (Start: 70 @36573 has 3 MA's), (82, 36513), (89, 36453), (99, 36393), (102, 36363), (105, 36351), (115, 36321), (135, 36267),

Gene: Murucutumbu\_44 Start: 35967, Stop: 35590, Start Num: 63

Candidate Starts for Murucutumbu\_44:

(39, 36018), (Start: 63 @35967 has 87 MA's), (Start: 70 @35931 has 3 MA's), (81, 35877), (82, 35871), (117, 35679), (125, 35664), (136, 35616),

Gene: Mynx\_44 Start: 35298, Stop: 34921, Start Num: 63

Candidate Starts for Mynx\_44:

(39, 35349), (Start: 63 @35298 has 87 MA's), (Start: 70 @35262 has 3 MA's), (74, 35247), (82, 35202), (125, 34995), (136, 34947),

Gene: Neighly\_42 Start: 34246, Stop: 33848, Start Num: 61

Candidate Starts for Neighly\_42:

(Start: 59 @34252 has 7 MA's), (Start: 61 @34246 has 27 MA's), (Start: 70 @34207 has 3 MA's), (Start: 73 @34195 has 3 MA's), (77, 34168), (95, 34054), (101, 34003), (119, 33943), (140, 33853),

Gene: Nergal\_40 Start: 33595, Stop: 33221, Start Num: 63

Candidate Starts for Nergal\_40:

(51, 33622), (Start: 63 @33595 has 87 MA's), (Start: 70 @33559 has 3 MA's), (75, 33532), (82, 33499), (90, 33436), (100, 33376), (104, 33340), (136, 33247), (140, 33226),

Gene: Netyap\_40 Start: 34280, Stop: 33891, Start Num: 57

Candidate Starts for Netyap\_40:

(Start: 57 @34280 has 28 MA's), (Start: 61 @34271 has 27 MA's), (71, 34232), (76, 34208), (77, 34202), (82, 34175), (85, 34136), (90, 34112), (98, 34067), (116, 33980), (125, 33956),

Gene: Nibb\_45 Start: 35241, Stop: 34867, Start Num: 66

Candidate Starts for Nibb\_45:

(55, 35265), (Start: 66 @35241 has 10 MA's), (Start: 70 @35211 has 3 MA's), (74, 35196), (82, 35151), (83, 35130), (90, 35088), (98, 35043), (101, 35013), (104, 34992), (121, 34950), (125, 34941), (133, 34908), (136, 34893),

Gene: Nicholas\_38 Start: 34516, Stop: 34133, Start Num: 61

Candidate Starts for Nicholas\_38:

(3, 34735), (4, 34729), (8, 34708), (10, 34687), (Start: 44 @34552 has 7 MA's), (Start: 48 @34546 has 19 MA's), (Start: 61 @34516 has 27 MA's), (69, 34480), (71, 34474), (76, 34450), (77, 34444), (82, 34417), (85, 34378), (88, 34366), (90, 34354), (96, 34321), (98, 34309), (106, 34252), (125, 34201), (140, 34138),

Gene: Nicholasp3\_40 Start: 34281, Stop: 33892, Start Num: 57

Candidate Starts for Nicholasp3\_40:

(Start: 57 @34281 has 28 MA's), (Start: 61 @34272 has 27 MA's), (71, 34233), (76, 34209), (77, 34203), (82, 34176), (85, 34137), (90, 34113), (98, 34068), (116, 33981), (122, 33969), (125, 33957),

Gene: Nikao\_41 Start: 37140, Stop: 36742, Start Num: 56

Candidate Starts for Nikao\_41:

(41, 37179), (Start: 56 @37140 has 13 MA's), (82, 37044), (124, 36819), (126, 36813),

Gene: Niklas\_45 Start: 35707, Stop: 35315, Start Num: 56

Candidate Starts for Niklas\_45:

(Start: 56 @35707 has 13 MA's), (79, 35623), (82, 35608), (105, 35446), (126, 35383), (132, 35359), (138, 35326),

Gene: November\_45 Start: 35619, Stop: 35248, Start Num: 65

Candidate Starts for November\_45:

(Start: 65 @35619 has 13 MA's), (Start: 70 @35589 has 3 MA's), (82, 35529), (90, 35466), (94, 35448), (98, 35421), (100, 35406), (101, 35391), (104, 35370), (109, 35349), (133, 35289), (136, 35274),

Gene: Nutello\_38 Start: 34527, Stop: 34129, Start Num: 56

Candidate Starts for Nutello\_38:

(41, 34566), (Start: 56 @34527 has 13 MA's), (82, 34431), (124, 34206), (126, 34200),

Gene: OhShagHennessy\_37 Start: 32908, Stop: 32498, Start Num: 48

Candidate Starts for OhShagHennessy\_37:

(Start: 44 @32914 has 7 MA's), (Start: 48 @32908 has 19 MA's), (Start: 57 @32887 has 28 MA's), (Start: 61 @32878 has 27 MA's), (68, 32845), (82, 32779), (85, 32740), (90, 32716), (98, 32671), (128, 32563),

Gene: OkiRoe\_41 Start: 34320, Stop: 33919, Start Num: 61

Candidate Starts for OkiRoe\_41:

(Start: 61 @34320 has 27 MA's), (Start: 73 @34269 has 3 MA's), (95, 34128), (101, 34077), (119, 34017),

Gene: OmniCritical\_46 Start: 35929, Stop: 35576, Start Num: 61

Candidate Starts for OmniCritical\_46:

(32, 36004), (47, 35959), (Start: 58 @35935 has 14 MA's), (Start: 61 @35929 has 27 MA's), (Start: 70 @35890 has 3 MA's), (80, 35839), (89, 35770), (94, 35749), (97, 35728), (99, 35710), (129, 35608),

Gene: Omnicron\_44 Start: 33930, Stop: 33529, Start Num: 61

Candidate Starts for Omnicron\_44:

(Start: 61 @33930 has 27 MA's), (Start: 73 @33879 has 3 MA's), (77, 33852), (92, 33750), (95, 33738), (101, 33687), (119, 33627),

Gene: Oscar\_47 Start: 35987, Stop: 35613, Start Num: 66

Candidate Starts for Oscar\_47:

(51, 36020), (Start: 66 @35987 has 10 MA's), (Start: 70 @35957 has 3 MA's), (71, 35954), (82, 35897), (87, 35852), (90, 35834), (101, 35759), (125, 35684), (136, 35639),

Gene: PYPDinur\_37 Start: 33042, Stop: 32662, Start Num: 61

Candidate Starts for PYPDinur\_37:

(Start: 44 @33078 has 7 MA's), (Start: 61 @33042 has 27 MA's), (69, 33009), (76, 32979), (77, 32973), (82, 32946), (85, 32907), (91, 32877), (98, 32838), (114, 32760), (125, 32733), (127, 32727),

Gene: Padfoot\_43 Start: 35293, Stop: 34913, Start Num: 63

Candidate Starts for Padfoot\_43:

(Start: 44 @35329 has 7 MA's), (Start: 63 @35293 has 87 MA's), (Start: 70 @35257 has 3 MA's), (82, 35197), (104, 35038), (125, 34987), (136, 34939),

Gene: Padpat\_44 Start: 34972, Stop: 34592, Start Num: 63

Candidate Starts for Padpat\_44:

(Start: 44 @35008 has 7 MA's), (Start: 63 @34972 has 87 MA's), (Start: 70 @34936 has 3 MA's), (82, 34876), (125, 34666), (136, 34618),

Gene: Paola\_41 Start: 34318, Stop: 33917, Start Num: 61

Candidate Starts for Paola\_41:

(Start: 61 @34318 has 27 MA's), (Start: 73 @34267 has 3 MA's), (95, 34126), (101, 34075), (119, 34015),

Gene: Patt\_44 Start: 35104, Stop: 34793, Start Num: 70

Candidate Starts for Patt\_44:

(29, 35227), (32, 35218), (34, 35215), (35, 35209), (40, 35194), (46, 35176), (47, 35173), (Start: 58 @35149 has 14 MA's), (Start: 61 @35143 has 27 MA's), (Start: 70 @35104 has 3 MA's), (80, 35053), (94, 34963), (97, 34942), (99, 34924),

Gene: Peanam\_45 Start: 35664, Stop: 35272, Start Num: 56

Candidate Starts for Peanam\_45:

(Start: 56 @35664 has 13 MA's), (79, 35580), (82, 35565), (126, 35340), (132, 35316), (138, 35283),

Gene: Peel\_43 Start: 35098, Stop: 34718, Start Num: 63

Candidate Starts for Peel\_43:

(Start: 44 @35134 has 7 MA's), (Start: 63 @35098 has 87 MA's), (Start: 70 @35062 has 3 MA's), (82, 35002), (104, 34843), (125, 34792), (136, 34744),

Gene: Pharb\_43 Start: 34363, Stop: 33977, Start Num: 64

Candidate Starts for Pharb\_43:

(Start: 64 @34363 has 5 MA's), (Start: 70 @34333 has 3 MA's), (90, 34210), (99, 34153), (101, 34135), (111, 34087), (114, 34081), (136, 34003),

Gene: PhelpsODU\_45 Start: 34877, Stop: 34485, Start Num: 65

Candidate Starts for PhelpsODU\_45:

(1, 35147), (2, 35111), (5, 35096), (7, 35087), (9, 35078), (Start: 65 @34877 has 13 MA's), (Start: 70 @34847 has 3 MA's), (90, 34724), (100, 34664), (101, 34649), (128, 34550), (136, 34511),

Gene: Phrank\_46 Start: 34834, Stop: 34442, Start Num: 65

Candidate Starts for Phrank\_46:

(6, 35047), (9, 35035), (Start: 65 @34834 has 13 MA's), (Start: 70 @34804 has 3 MA's), (90, 34681), (96, 34648), (100, 34621), (101, 34606), (108, 34570), (130, 34498), (136, 34468),

Gene: Piatt\_43 Start: 35293, Stop: 34913, Start Num: 63

Candidate Starts for Piatt\_43:

(Start: 44 @35329 has 7 MA's), (Start: 63 @35293 has 87 MA's), (Start: 70 @35257 has 3 MA's), (82, 35197), (104, 35038), (125, 34987), (136, 34939),

Gene: Pixie\_45 Start: 35157, Stop: 34735, Start Num: 49

Candidate Starts for Pixie\_45:

(Start: 49 @35157 has 4 MA's), (Start: 64 @35124 has 5 MA's), (90, 34968), (99, 34911), (101, 34893), (111, 34845), (136, 34761),

Gene: Pokerus\_42 Start: 35018, Stop: 34638, Start Num: 63

Candidate Starts for Pokerus\_42:

(Start: 63 @35018 has 87 MA's), (Start: 70 @34985 has 3 MA's), (75, 34958), (81, 34931), (82, 34925), (125, 34712), (136, 34664),

Gene: Pochiewood\_37 Start: 32936, Stop: 32526, Start Num: 48

Candidate Starts for Pochiewood\_37:

(Start: 44 @32942 has 7 MA's), (Start: 48 @32936 has 19 MA's), (Start: 57 @32915 has 28 MA's), (Start: 61 @32906 has 27 MA's), (68, 32873), (82, 32807), (85, 32768), (90, 32744), (98, 32699), (128, 32591),

Gene: Prithvi\_44 Start: 35164, Stop: 34787, Start Num: 63

Candidate Starts for Prithvi\_44:

(39, 35215), (Start: 63 @35164 has 87 MA's), (Start: 70 @35128 has 3 MA's), (74, 35113), (82, 35068), (125, 34861), (136, 34813),

Gene: Psycho\_42 Start: 34326, Stop: 33979, Start Num: 73

Candidate Starts for Psycho\_42:

(Start: 59 @34383 has 7 MA's), (Start: 61 @34377 has 27 MA's), (Start: 70 @34338 has 3 MA's), (Start: 73 @34326 has 3 MA's), (77, 34299), (95, 34185), (101, 34134), (119, 34074), (140, 33984),

Gene: Quby\_38 Start: 32936, Stop: 32556, Start Num: 61

Candidate Starts for Quby\_38:

(Start: 44 @32972 has 7 MA's), (Start: 61 @32936 has 27 MA's), (69, 32903), (76, 32873), (77, 32867), (82, 32840), (85, 32801), (91, 32771), (98, 32732), (107, 32672), (125, 32627), (127, 32621),

Gene: QuincyRose\_42 Start: 35413, Stop: 35036, Start Num: 63

Candidate Starts for QuincyRose\_42:

(39, 35464), (Start: 63 @35413 has 87 MA's), (Start: 70 @35377 has 3 MA's), (82, 35317), (104, 35158), (125, 35110), (136, 35062),



Gene: Ramen\_43 Start: 34983, Stop: 34603, Start Num: 63

Candidate Starts for Ramen\_43:

(Start: 44 @35019 has 7 MA's), (Start: 63 @34983 has 87 MA's), (Start: 70 @34947 has 3 MA's), (82, 34887), (125, 34677), (136, 34629),

Gene: Rando14\_43 Start: 33501, Stop: 33097, Start Num: 61

Candidate Starts for Rando14\_43:

(Start: 61 @33501 has 27 MA's), (Start: 73 @33447 has 3 MA's), (101, 33255), (119, 33195),

Gene: Rapunzel97\_43 Start: 34979, Stop: 34599, Start Num: 63

Candidate Starts for Rapunzel97\_43:

(Start: 44 @35015 has 7 MA's), (Start: 63 @34979 has 87 MA's), (Start: 70 @34943 has 3 MA's), (82, 34883), (125, 34673), (136, 34625),

Gene: Reptar3000\_45 Start: 35140, Stop: 34784, Start Num: 58

Candidate Starts for Reptar3000\_45:

(32, 35209), (47, 35164), (Start: 58 @35140 has 14 MA's), (Start: 61 @35134 has 27 MA's), (Start: 70 @35095 has 3 MA's), (80, 35044), (94, 34954), (97, 34933), (99, 34915),

Gene: Richo\_45 Start: 35648, Stop: 35256, Start Num: 56

Candidate Starts for Richo\_45:

(Start: 56 @35648 has 13 MA's), (79, 35564), (82, 35549), (101, 35411), (105, 35387), (126, 35324), (132, 35300), (138, 35267),

Gene: Rose5\_37 Start: 32935, Stop: 32525, Start Num: 48

Candidate Starts for Rose5\_37:

(Start: 44 @32941 has 7 MA's), (Start: 48 @32935 has 19 MA's), (54, 32917), (Start: 57 @32914 has 28 MA's), (Start: 61 @32905 has 27 MA's), (68, 32872), (82, 32806), (85, 32767), (90, 32743), (98, 32698), (100, 32683), (128, 32590),

Gene: Rosmarinus\_43 Start: 35084, Stop: 34704, Start Num: 63

Candidate Starts for Rosmarinus\_43:

(Start: 44 @35120 has 7 MA's), (Start: 63 @35084 has 87 MA's), (Start: 70 @35048 has 3 MA's), (82, 34988), (104, 34829), (125, 34778), (136, 34730),

Gene: Rumpelstiltskin\_40 Start: 34547, Stop: 34158, Start Num: 57

Candidate Starts for Rumpelstiltskin\_40:

(Start: 57 @34547 has 28 MA's), (Start: 61 @34538 has 27 MA's), (71, 34499), (76, 34475), (77, 34469), (82, 34442), (85, 34403), (90, 34379), (98, 34334), (116, 34247), (125, 34223),

Gene: Ruthiejr\_48 Start: 36000, Stop: 35641, Start Num: 58

Candidate Starts for Ruthiejr\_48:

(32, 36069), (47, 36024), (Start: 58 @36000 has 14 MA's), (Start: 61 @35994 has 27 MA's), (Start: 70 @35955 has 3 MA's), (80, 35904), (89, 35835), (94, 35814), (97, 35793), (99, 35775), (129, 35673),

Gene: SamScheppers\_46 Start: 36429, Stop: 36070, Start Num: 58

Candidate Starts for SamScheppers\_46:

(32, 36498), (47, 36453), (Start: 58 @36429 has 14 MA's), (Start: 61 @36423 has 27 MA's), (Start: 70 @36384 has 3 MA's), (80, 36333), (89, 36264), (94, 36243), (97, 36222), (99, 36204), (129, 36102),

Gene: SamuelLPlaqson\_44 Start: 35877, Stop: 35500, Start Num: 63

Candidate Starts for SamuelLPlaqson\_44:

(39, 35928), (Start: 63 @35877 has 87 MA's), (Start: 70 @35841 has 3 MA's), (82, 35781), (125, 35574), (136, 35526),

Gene: Sarshaun\_40 Start: 34314, Stop: 33925, Start Num: 57

Candidate Starts for Sarshaun\_40:

(Start: 57 @34314 has 28 MA's), (Start: 61 @34305 has 27 MA's), (71, 34266), (76, 34242), (77, 34236), (85, 34170), (90, 34146), (98, 34101), (113, 34020), (116, 34014), (122, 34002), (125, 33990),

Gene: Scarlett\_47 Start: 35979, Stop: 35605, Start Num: 66

Candidate Starts for Scarlett\_47:

(51, 36012), (Start: 66 @35979 has 10 MA's), (Start: 70 @35949 has 3 MA's), (71, 35946), (82, 35889), (87, 35844), (90, 35826), (101, 35751), (125, 35676), (136, 35631),

Gene: SgtBeansprout\_38 Start: 34527, Stop: 34063, Start Num: 56

Candidate Starts for SgtBeansprout\_38:

(41, 34566), (Start: 56 @34527 has 13 MA's), (82, 34431), (124, 34206), (126, 34200),

Gene: Shadow1\_48 Start: 35996, Stop: 35607, Start Num: 66

Candidate Starts for Shadow1\_48:

(Start: 66 @35996 has 10 MA's), (Start: 70 @35966 has 3 MA's), (86, 35864), (90, 35843), (100, 35783), (101, 35768), (108, 35732), (122, 35696), (134, 35639), (136, 35633),

Gene: Shaobing\_45 Start: 35682, Stop: 35284, Start Num: 56

Candidate Starts for Shaobing\_45:

(Start: 56 @35682 has 13 MA's), (82, 35583), (101, 35445), (120, 35379), (126, 35352), (132, 35328), (138, 35295),

Gene: ShedlockHolmes\_46 Start: 35683, Stop: 35261, Start Num: 49

Candidate Starts for ShedlockHolmes\_46:

(28, 35740), (36, 35713), (Start: 49 @35683 has 4 MA's), (Start: 64 @35650 has 5 MA's), (99, 35437), (101, 35419), (111, 35371), (136, 35287),

Gene: Sheng711\_38 Start: 33042, Stop: 32662, Start Num: 61

Candidate Starts for Sheng711\_38:

(Start: 44 @33078 has 7 MA's), (Start: 61 @33042 has 27 MA's), (69, 33009), (76, 32979), (77, 32973), (82, 32946), (85, 32907), (91, 32877), (98, 32838), (114, 32760), (125, 32733), (127, 32727),

Gene: ShiaSurprise\_44 Start: 35293, Stop: 34913, Start Num: 63

Candidate Starts for ShiaSurprise\_44:

(Start: 44 @35329 has 7 MA's), (Start: 63 @35293 has 87 MA's), (Start: 70 @35257 has 3 MA's), (82, 35197), (104, 35038), (125, 34987), (136, 34939),

Gene: Silverleaf\_37 Start: 32935, Stop: 32525, Start Num: 48

Candidate Starts for Silverleaf\_37:

(Start: 44 @32941 has 7 MA's), (Start: 48 @32935 has 19 MA's), (54, 32917), (Start: 57 @32914 has 28 MA's), (Start: 61 @32905 has 27 MA's), (68, 32872), (82, 32806), (85, 32767), (90, 32743), (98, 32698), (100, 32683), (128, 32590),

Gene: SirPhilip\_45 Start: 36219, Stop: 35824, Start Num: 65

Candidate Starts for SirPhilip\_45:

(Start: 65 @36219 has 13 MA's), (Start: 70 @36189 has 3 MA's), (82, 36129), (84, 36102), (90, 36066), (103, 35973), (112, 35943), (142, 35850),

Gene: Slarp\_47 Start: 36038, Stop: 35679, Start Num: 58

Candidate Starts for Slarp\_47:

(32, 36107), (47, 36062), (Start: 58 @36038 has 14 MA's), (Start: 61 @36032 has 27 MA's), (Start: 70 @35993 has 3 MA's), (80, 35942), (89, 35873), (94, 35852), (97, 35831), (99, 35813), (129, 35711),

Gene: Slimphazie\_43 Start: 34979, Stop: 34599, Start Num: 63

Candidate Starts for Slimphazie\_43:

(Start: 44 @35015 has 7 MA's), (Start: 63 @34979 has 87 MA's), (Start: 70 @34943 has 3 MA's), (82, 34883), (125, 34673), (136, 34625),

Gene: Snenia\_38 Start: 34517, Stop: 34134, Start Num: 61

Candidate Starts for Snenia\_38:

(3, 34736), (4, 34730), (8, 34709), (10, 34688), (Start: 44 @34553 has 7 MA's), (Start: 48 @34547 has 19 MA's), (Start: 61 @34517 has 27 MA's), (69, 34481), (71, 34475), (76, 34451), (77, 34445), (82, 34418), (85, 34379), (88, 34367), (90, 34355), (96, 34322), (98, 34310), (106, 34253), (125, 34202), (140, 34139),

Gene: SoSeph\_41 Start: 34467, Stop: 34066, Start Num: 61

Candidate Starts for SoSeph\_41:

(24, 34566), (42, 34515), (45, 34503), (Start: 61 @34467 has 27 MA's), (Start: 73 @34416 has 3 MA's), (95, 34275), (101, 34224), (119, 34164), (130, 34116),

Gene: Soap141\_40 Start: 34314, Stop: 33925, Start Num: 57

Candidate Starts for Soap141\_40:

(Start: 57 @34314 has 28 MA's), (Start: 61 @34305 has 27 MA's), (71, 34266), (76, 34242), (77, 34236), (85, 34170), (90, 34146), (98, 34101), (113, 34020), (116, 34014), (122, 34002), (125, 33990),

Gene: Spock\_43 Start: 35097, Stop: 34717, Start Num: 63

Candidate Starts for Spock\_43:

(Start: 44 @35133 has 7 MA's), (Start: 63 @35097 has 87 MA's), (Start: 70 @35061 has 3 MA's), (82, 35001), (104, 34842), (125, 34791), (136, 34743),

Gene: Stinson\_44 Start: 35487, Stop: 35110, Start Num: 63

Candidate Starts for Stinson\_44:

(39, 35538), (Start: 63 @35487 has 87 MA's), (Start: 70 @35451 has 3 MA's), (81, 35397), (82, 35391), (117, 35199), (125, 35184), (136, 35136),

Gene: Strobilo\_46 Start: 37026, Stop: 36655, Start Num: 63

Candidate Starts for Strobilo\_46:

(39, 37080), (Start: 63 @37026 has 87 MA's), (Start: 70 @36990 has 3 MA's), (74, 36975), (82, 36930), (89, 36870), (99, 36810), (102, 36780), (105, 36768), (115, 36738), (135, 36681),

Gene: Sulley\_43 Start: 35224, Stop: 34844, Start Num: 63

Candidate Starts for Sulley\_43:

(39, 35275), (Start: 63 @35224 has 87 MA's), (Start: 70 @35188 has 3 MA's), (82, 35128), (117, 34933), (125, 34918), (136, 34870),

Gene: Sunflower1121\_49 Start: 36097, Stop: 35708, Start Num: 65

Candidate Starts for Sunflower1121\_49:

(Start: 65 @36097 has 13 MA's), (Start: 70 @36067 has 3 MA's), (86, 35965), (90, 35944), (100, 35884), (101, 35869), (108, 35833), (134, 35740),

Gene: Syra333\_48 Start: 35764, Stop: 35375, Start Num: 66

Candidate Starts for Syra333\_48:

(Start: 66 @35764 has 10 MA's), (Start: 70 @35734 has 3 MA's), (86, 35632), (90, 35611), (100, 35551), (101, 35536), (108, 35500), (122, 35464), (134, 35407), (136, 35401),

Gene: TBond007\_45 Start: 35156, Stop: 34734, Start Num: 49

Candidate Starts for TBond007\_45:

(Start: 49 @35156 has 4 MA's), (Start: 64 @35123 has 5 MA's), (90, 34967), (99, 34910), (101, 34892), (111, 34844), (136, 34760),

Gene: TClif\_47 Start: 36099, Stop: 35698, Start Num: 53

Candidate Starts for TClif\_47:

(Start: 53 @36099 has 1 MA's), (72, 36051), (78, 36015), (81, 36003), (82, 35997), (101, 35859), (112, 35814), (120, 35796), (124, 35775), (128, 35763), (137, 35715), (141, 35703),

Gene: Tachez\_43 Start: 34941, Stop: 34561, Start Num: 63

Candidate Starts for Tachez\_43:

(Start: 44 @34977 has 7 MA's), (Start: 63 @34941 has 87 MA's), (Start: 70 @34905 has 3 MA's), (82, 34845), (125, 34635), (136, 34587),

Gene: TaiwanKao\_45 Start: 35220, Stop: 34843, Start Num: 63

Candidate Starts for TaiwanKao\_45:

(39, 35271), (Start: 63 @35220 has 87 MA's), (Start: 70 @35184 has 3 MA's), (74, 35169), (82, 35124), (125, 34917), (136, 34869),

Gene: Taquito\_47 Start: 36279, Stop: 35926, Start Num: 61

Candidate Starts for Taquito\_47:

(32, 36354), (47, 36309), (Start: 58 @36285 has 14 MA's), (Start: 61 @36279 has 27 MA's), (Start: 70 @36240 has 3 MA's), (80, 36189), (89, 36120), (94, 36099), (97, 36078), (99, 36060), (129, 35958),

Gene: Thyatira\_43 Start: 36667, Stop: 36266, Start Num: 61

Candidate Starts for Thyatira\_43:

(Start: 58 @36673 has 14 MA's), (Start: 61 @36667 has 27 MA's), (Start: 73 @36616 has 3 MA's), (95, 36475), (101, 36424), (119, 36364),

Gene: Tierra\_46 Start: 35645, Stop: 35253, Start Num: 65

Candidate Starts for Tierra\_46:

(7, 35855), (9, 35846), (Start: 65 @35645 has 13 MA's), (Start: 70 @35615 has 3 MA's), (90, 35492), (96, 35459), (100, 35432), (101, 35417), (108, 35381), (124, 35330), (130, 35309), (136, 35279),

Gene: TingHuaYa\_44 Start: 34216, Stop: 33830, Start Num: 64

Candidate Starts for TingHuaYa\_44:

(31, 34297), (33, 34291), (36, 34276), (Start: 64 @34216 has 5 MA's), (82, 34123), (84, 34096), (125, 33925), (139, 33856),

Gene: TiniBug\_44 Start: 35873, Stop: 35496, Start Num: 63

Candidate Starts for TiniBug\_44:

(39, 35924), (Start: 63 @35873 has 87 MA's), (Start: 70 @35837 has 3 MA's), (82, 35777), (125, 35570), (136, 35522),

Gene: Topper\_43 Start: 35096, Stop: 34716, Start Num: 63

Candidate Starts for Topper\_43:

(Start: 44 @35132 has 7 MA's), (Start: 63 @35096 has 87 MA's), (Start: 70 @35060 has 3 MA's), (82, 35000), (104, 34841), (125, 34790), (136, 34742),

Gene: Torres\_41 Start: 37141, Stop: 36743, Start Num: 56

Candidate Starts for Torres\_41:

(41, 37180), (Start: 56 @37141 has 13 MA's), (82, 37045), (124, 36820), (126, 36814),

Gene: Tourach\_40 Start: 34296, Stop: 33907, Start Num: 57

Candidate Starts for Tourach\_40:

(Start: 57 @34296 has 28 MA's), (Start: 61 @34287 has 27 MA's), (71, 34248), (77, 34218), (82, 34191), (85, 34152), (90, 34128), (98, 34083), (116, 33996), (122, 33984), (125, 33972),

Gene: TreyKay\_44 Start: 35164, Stop: 34787, Start Num: 63

Candidate Starts for TreyKay\_44:

(39, 35215), (Start: 63 @35164 has 87 MA's), (Start: 70 @35128 has 3 MA's), (74, 35113), (82, 35068), (125, 34861), (136, 34813),

Gene: TriFive\_38 Start: 34516, Stop: 34133, Start Num: 61

Candidate Starts for TriFive\_38:

(3, 34735), (4, 34729), (8, 34708), (10, 34687), (Start: 44 @34552 has 7 MA's), (Start: 48 @34546 has 19 MA's), (Start: 61 @34516 has 27 MA's), (69, 34480), (71, 34474), (76, 34450), (77, 34444), (82, 34417), (85, 34378), (88, 34366), (90, 34354), (96, 34321), (98, 34309), (106, 34252), (125, 34201), (140, 34138),

Gene: TribbleTrouble\_43 Start: 35018, Stop: 34626, Start Num: 63

Candidate Starts for TribbleTrouble\_43:

(37, 35075), (Start: 63 @35018 has 87 MA's), (Start: 70 @34982 has 3 MA's), (101, 34784), (111, 34736), (136, 34652), (137, 34640), (140, 34631),

Gene: TruffulaTree\_43 Start: 34975, Stop: 34595, Start Num: 63

Candidate Starts for TruffulaTree\_43:

(Start: 44 @35011 has 7 MA's), (Start: 63 @34975 has 87 MA's), (Start: 70 @34939 has 3 MA's), (82, 34879), (125, 34669), (136, 34621),

Gene: Twitch\_43 Start: 35098, Stop: 34718, Start Num: 63

Candidate Starts for Twitch\_43:

(Start: 44 @35134 has 7 MA's), (Start: 63 @35098 has 87 MA's), (Start: 70 @35062 has 3 MA's), (82, 35002), (104, 34843), (125, 34792), (136, 34744),

Gene: Tyson\_37 Start: 32936, Stop: 32526, Start Num: 48

Candidate Starts for Tyson\_37:

(Start: 44 @32942 has 7 MA's), (Start: 48 @32936 has 19 MA's), (54, 32918), (Start: 57 @32915 has 28 MA's), (Start: 61 @32906 has 27 MA's), (68, 32873), (82, 32807), (85, 32768), (90, 32744), (98, 32699), (100, 32684), (128, 32591),

Gene: UPIE\_38 Start: 32940, Stop: 32524, Start Num: 44

Candidate Starts for UPIE\_38:

(Start: 44 @32940 has 7 MA's), (Start: 48 @32934 has 19 MA's), (Start: 57 @32913 has 28 MA's), (Start: 61 @32904 has 27 MA's), (68, 32871), (82, 32805), (85, 32766), (90, 32742), (98, 32697), (128, 32589),

Gene: Underpass\_40 Start: 34281, Stop: 33892, Start Num: 57

Candidate Starts for Underpass\_40:

(Start: 57 @34281 has 28 MA's), (Start: 61 @34272 has 27 MA's), (71, 34233), (76, 34209), (77, 34203), (82, 34176), (85, 34137), (90, 34113), (98, 34068), (116, 33981), (122, 33969), (125, 33957),

Gene: Unicorn\_45 Start: 34877, Stop: 34485, Start Num: 65

Candidate Starts for Unicorn\_45:

(1, 35147), (2, 35111), (5, 35096), (7, 35087), (9, 35078), (Start: 65 @34877 has 13 MA's), (Start: 70 @34847 has 3 MA's), (90, 34724), (100, 34664), (101, 34649), (128, 34550), (136, 34511),

Gene: Urkel\_44 Start: 35877, Stop: 35500, Start Num: 63

Candidate Starts for Urkel\_44:

(39, 35928), (Start: 63 @35877 has 87 MA's), (Start: 70 @35841 has 3 MA's), (82, 35781), (125, 35574), (136, 35526),

Gene: Validus\_47 Start: 35733, Stop: 35320, Start Num: 56

Candidate Starts for Validus\_47:

(26, 35814), (Start: 56 @35733 has 13 MA's), (79, 35637), (82, 35622), (101, 35484), (120, 35421), (126, 35394), (131, 35376), (141, 35325),

Gene: Veliki\_43 Start: 35015, Stop: 34635, Start Num: 63

Candidate Starts for Veliki\_43:

(Start: 44 @35051 has 7 MA's), (Start: 63 @35015 has 87 MA's), (Start: 70 @34979 has 3 MA's), (82, 34919), (125, 34709), (136, 34661),

Gene: Vetrix\_40 Start: 34287, Stop: 33898, Start Num: 57

Candidate Starts for Vetrix\_40:

(Start: 57 @34287 has 28 MA's), (Start: 61 @34278 has 27 MA's), (71, 34239), (76, 34215), (77, 34209), (82, 34182), (85, 34143), (90, 34119), (98, 34074), (116, 33987), (125, 33963),

Gene: ViviJ\_41 Start: 34285, Stop: 33890, Start Num: 61

Candidate Starts for ViviJ\_41:

(Start: 59 @34291 has 7 MA's), (Start: 61 @34285 has 27 MA's), (Start: 70 @34246 has 3 MA's), (Start: 73 @34234 has 3 MA's), (77, 34207), (92, 34105), (95, 34093), (101, 34042), (119, 33982),

Gene: Wamburgrxpress\_38 Start: 32949, Stop: 32539, Start Num: 48

Candidate Starts for Wamburgrxpress\_38:

(Start: 44 @32955 has 7 MA's), (Start: 48 @32949 has 19 MA's), (Start: 57 @32928 has 28 MA's), (Start: 61 @32919 has 27 MA's), (68, 32886), (82, 32820), (85, 32781), (90, 32757), (98, 32712), (128, 32604),

Gene: Waterfoul\_42 Start: 34567, Stop: 34160, Start Num: 58

Candidate Starts for Waterfoul\_42:

(Start: 58 @34567 has 14 MA's), (Start: 61 @34561 has 27 MA's), (Start: 73 @34510 has 3 MA's), (101, 34318), (119, 34258), (130, 34210),

Gene: Whirlwind\_39 Start: 34372, Stop: 33890, Start Num: 25

Candidate Starts for Whirlwind\_39:

(Start: 25 @34372 has 1 MA's), (35, 34342), (Start: 44 @34312 has 7 MA's), (Start: 48 @34306 has 19 MA's), (Start: 61 @34276 has 27 MA's), (71, 34237), (76, 34213), (77, 34207), (82, 34180), (85, 34141), (88, 34129), (90, 34117), (96, 34084), (125, 33958), (140, 33895),

Gene: Wigglewigggle\_40 Start: 34313, Stop: 33924, Start Num: 57

Candidate Starts for Wigglewigggle\_40:

(Start: 57 @34313 has 28 MA's), (Start: 61 @34304 has 27 MA's), (71, 34265), (76, 34241), (77, 34235), (85, 34169), (90, 34145), (98, 34100), (113, 34019), (116, 34013), (122, 34001), (125, 33989),

Gene: Wilder\_40 Start: 34286, Stop: 33897, Start Num: 57

Candidate Starts for Wilder\_40:

(Start: 57 @34286 has 28 MA's), (Start: 61 @34277 has 27 MA's), (71, 34238), (76, 34214), (77, 34208), (85, 34142), (90, 34118), (98, 34073), (113, 33992), (116, 33986), (122, 33974), (125, 33962),

Gene: Winky\_40 Start: 34280, Stop: 33891, Start Num: 57

Candidate Starts for Winky\_40:

(Start: 57 @34280 has 28 MA's), (Start: 61 @34271 has 27 MA's), (71, 34232), (76, 34208), (77, 34202), (82, 34175), (85, 34136), (90, 34112), (98, 34067), (116, 33980), (125, 33956),

Gene: Wintermute\_47 Start: 36187, Stop: 35828, Start Num: 58

Candidate Starts for Wintermute\_47:

(32, 36256), (47, 36211), (Start: 58 @36187 has 14 MA's), (Start: 61 @36181 has 27 MA's), (Start: 70 @36142 has 3 MA's), (80, 36091), (89, 36022), (94, 36001), (97, 35980), (99, 35962), (129, 35860),

Gene: Wyatt2\_38 Start: 32935, Stop: 32525, Start Num: 48

Candidate Starts for Wyatt2\_38:

(Start: 44 @32941 has 7 MA's), (Start: 48 @32935 has 19 MA's), (54, 32917), (Start: 57 @32914 has 28 MA's), (Start: 61 @32905 has 27 MA's), (68, 32872), (82, 32806), (85, 32767), (90, 32743), (98, 32698), (100, 32683), (128, 32590),

Gene: Ximenita\_49 Start: 35950, Stop: 35561, Start Num: 66

Candidate Starts for Ximenita\_49:

(26, 36055), (38, 36016), (Start: 66 @35950 has 10 MA's), (Start: 70 @35920 has 3 MA's), (86, 35818), (90, 35797), (91, 35791), (96, 35764), (100, 35737), (101, 35722), (108, 35686), (123, 35641), (134, 35593), (136, 35587), (137, 35575),

Gene: Y10\_46 Start: 36100, Stop: 35747, Start Num: 61

Candidate Starts for Y10\_46:

(32, 36175), (47, 36130), (Start: 58 @36106 has 14 MA's), (Start: 61 @36100 has 27 MA's), (Start: 70 @36061 has 3 MA's), (80, 36010), (89, 35941), (94, 35920), (97, 35899), (99, 35881), (129, 35779),

Gene: Y2\_46 Start: 36100, Stop: 35747, Start Num: 61

Candidate Starts for Y2\_46:

(32, 36175), (47, 36130), (Start: 58 @36106 has 14 MA's), (Start: 61 @36100 has 27 MA's), (Start: 70 @36061 has 3 MA's), (80, 36010), (89, 35941), (94, 35920), (97, 35899), (99, 35881), (129, 35779),

Gene: Yuna\_49 Start: 36719, Stop: 36363, Start Num: 65

Candidate Starts for Yuna\_49:

(Start: 65 @36719 has 13 MA's), (Start: 70 @36689 has 3 MA's), (81, 36635), (82, 36629), (83, 36608), (90, 36566), (100, 36506), (101, 36491), (133, 36404), (136, 36389),

Gene: Yunkel11\_46 Start: 34974, Stop: 34585, Start Num: 62

Candidate Starts for Yunkel11\_46:

(15, 35112), (16, 35106), (18, 35103), (20, 35094), (23, 35079), (Start: 62 @34974 has 2 MA's), (Start: 64 @34968 has 5 MA's), (82, 34878), (90, 34815), (97, 34776), (101, 34740), (120, 34680), (122, 34674), (140, 34590),

Gene: Zakai\_40 Start: 34538, Stop: 34149, Start Num: 57

Candidate Starts for Zakai\_40:

(Start: 57 @34538 has 28 MA's), (Start: 61 @34529 has 27 MA's), (71, 34490), (76, 34466), (77, 34460), (85, 34394), (90, 34370), (98, 34325), (113, 34244), (116, 34238), (122, 34226), (125, 34214),

Gene: Zaria\_38 Start: 32950, Stop: 32540, Start Num: 48

Candidate Starts for Zaria\_38:

(Start: 44 @32956 has 7 MA's), (Start: 48 @32950 has 19 MA's), (54, 32932), (Start: 57 @32929 has 28 MA's), (Start: 61 @32920 has 27 MA's), (68, 32887), (82, 32821), (85, 32782), (90, 32758), (98, 32713), (100, 32698), (128, 32605),

Gene: Zavala\_44 Start: 35258, Stop: 34881, Start Num: 63

Candidate Starts for Zavala\_44:

(39, 35309), (Start: 63 @35258 has 87 MA's), (Start: 70 @35222 has 3 MA's), (74, 35207), (82, 35162), (125, 34955), (136, 34907),

Gene: ZhongYanYuan\_39 Start: 34142, Stop: 33753, Start Num: 57

Candidate Starts for ZhongYanYuan\_39:

(Start: 57 @34142 has 28 MA's), (Start: 61 @34133 has 27 MA's), (71, 34094), (77, 34064), (85, 33998), (90, 33974), (98, 33929), (109, 33857), (116, 33842), (122, 33830), (125, 33818),

Gene: ZoeJ\_45 Start: 36489, Stop: 36121, Start Num: 63

Candidate Starts for ZoeJ\_45:

(39, 36546), (Start: 63 @36489 has 87 MA's), (Start: 70 @36453 has 3 MA's), (Start: 73 @36441 has 3 MA's), (82, 36393), (90, 36330), (99, 36273), (110, 36213), (115, 36201), (135, 36147),