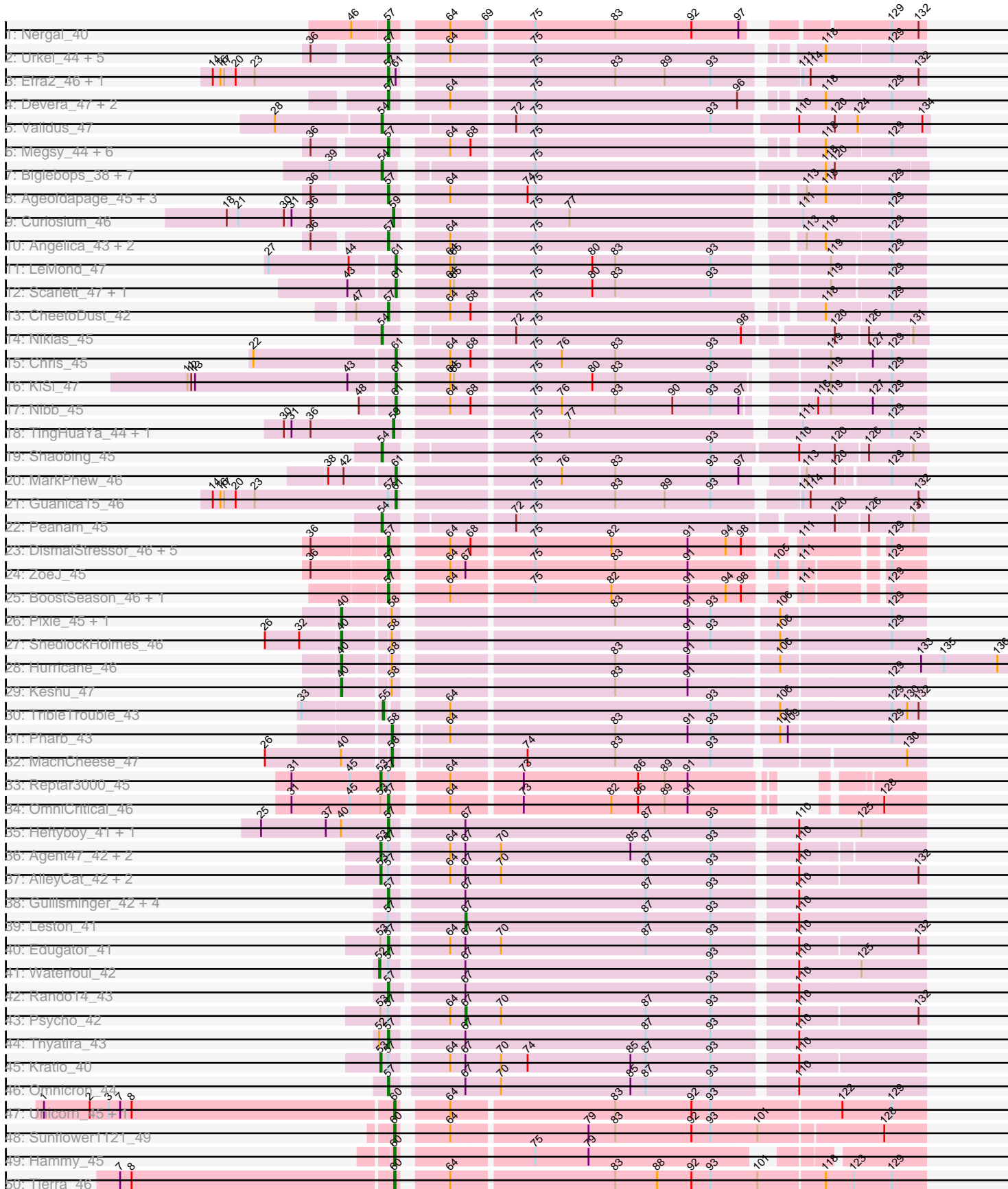
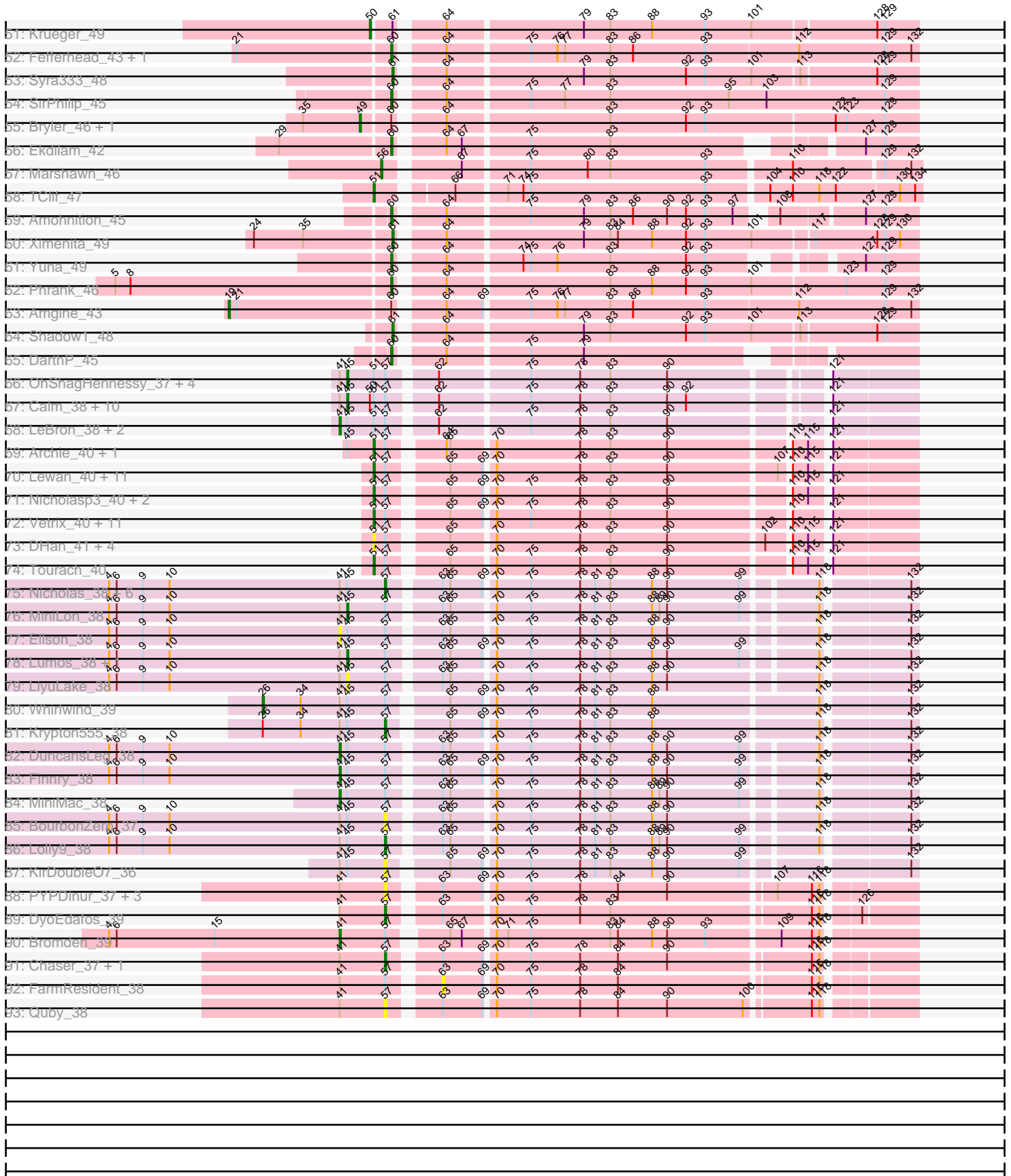


Pham 196303



Pham 196303



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 196303 Report

This analysis was run 12/09/24 on database version 580.

Pham number 196303 has 196 members, 22 are drafts.

Phages represented in each track:

- Track 1 : Nergal\_40
- Track 2 : Urkel\_44, Bella96\_44, Beezoo\_45, SamuelLPlaqson\_44, TiniBug\_44, DrHayes\_44
- Track 3 : Efra2\_46, Yunkel11\_46
- Track 4 : Devera\_47, Illumine\_46, Dole\_46
- Track 5 : Validus\_47
- Track 6 : Megsy\_44, LindNT\_43, Zavala\_44, Prithvi\_44, Mynx\_44, TreyKay\_44, TaiwanKao\_45
- Track 7 : Binglebops\_38, Amelie\_38, Torres\_41, SgtBeansprout\_38, Mdavu\_39, Nikao\_41, Nutello\_38, Enkosi\_41
- Track 8 : Ageofdapage\_45, LaterM\_44, Stinson\_44, Murucutumbu\_44
- Track 9 : Curiosium\_46
- Track 10 : Angelica\_43, Deby\_43, Sulley\_43
- Track 11 : LeMond\_47
- Track 12 : Scarlett\_47, Oscar\_47
- Track 13 : CheetoDust\_42
- Track 14 : Niklas\_45
- Track 15 : Chris\_45
- Track 16 : KiSi\_47
- Track 17 : Nibb\_45
- Track 18 : TingHuaYa\_44, LastHope\_46
- Track 19 : Shaobing\_45
- Track 20 : MarkPhew\_46
- Track 21 : Guanica15\_46
- Track 22 : Peanam\_45
- Track 23 : DismalStressor\_46, Findley\_46, Strobilo\_46, Milly\_46, Marcoliusprime\_46, DismalFunk\_46
- Track 24 : ZoeJ\_45
- Track 25 : BoostSeason\_46, Mufasa\_46
- Track 26 : Pixie\_45, TBond007\_45
- Track 27 : ShedlockHolmes\_46
- Track 28 : Hurricane\_46
- Track 29 : Keshu\_47
- Track 30 : TribbleTrouble\_43
- Track 31 : Pharb\_43
- Track 32 : MacnCheese\_47
- Track 33 : Reptar3000\_45

- Track 34 : OmniCritical\_46
- Track 35 : Heftyboy\_41, SoSeph\_41
- Track 36 : Agent47\_42, InvictusManeo\_41, Collard\_41
- Track 37 : AlleyCat\_42, Larva\_42, Dadosky\_42
- Track 38 : Guillsminger\_42, Gengar\_41, OkIRoe\_41, Paola\_41, Miryou\_43
- Track 39 : Leston\_41
- Track 40 : Edugator\_41
- Track 41 : Waterfoul\_42
- Track 42 : Rando14\_43
- Track 43 : Psycho\_42
- Track 44 : Thyatira\_43
- Track 45 : Kratio\_40
- Track 46 : Omnicron\_44
- Track 47 : Unicorn\_45, PhelpsODU\_45
- Track 48 : Sunflower1121\_49
- Track 49 : Hammy\_45
- Track 50 : Tierra\_46
- Track 51 : Krueger\_49
- Track 52 : Fefferhead\_43, Ellie\_41
- Track 53 : Syra333\_48
- Track 54 : SirPhilip\_45
- Track 55 : Bryler\_46, Cain\_46
- Track 56 : Ekdilam\_42
- Track 57 : Marshawn\_46
- Track 58 : TClif\_47
- Track 59 : Amohnition\_45
- Track 60 : Ximenita\_49
- Track 61 : Yuna\_49
- Track 62 : Phrank\_46
- Track 63 : Amgine\_43
- Track 64 : Shadow1\_48
- Track 65 : DARTH\_45
- Track 66 : OhShagHennessy\_37, Wamburgxpress\_38, DirkDirk\_37, Enceladus\_37, Appletree2\_37
- Track 67 : Calm\_38, Tyson\_37, Rose5\_37, CicholasNage\_38, Halena\_37, Wyatt2\_38, MAckerman\_38, Acquire49\_38, Zaria\_38, Silverleaf\_37, AvadaKedavra\_38
- Track 68 : LeBron\_38, UPIE\_38, JoeDirt\_37
- Track 69 : Archie\_40, Bazzle\_40
- Track 70 : Lewan\_40, Sarshaun\_40, Kahlid\_40, Hafay\_40, GuuelaD\_40, Crossroads\_40, Soap141\_40, Loadrie\_40, Wilder\_40, MkaliMitinis3\_40, Wigglewiggles\_40, Zakai\_40
- Track 71 : Nicholasp3\_40, Finemlucis\_40, Gardann\_40
- Track 72 : Vatrix\_40, DrSeegs\_40, Winky\_40, Breezona\_40, Gabriela\_40, Rumpelstiltskin\_40, BobsGarage\_40, Netyap\_40, BigCheese\_40, Faith1\_40, Miley16\_40, LilDestine\_40
- Track 73 : DHan\_41, Claus\_41, Baoshan\_39, ZhongYanYuan\_39, DanBing\_40
- Track 74 : Tourach\_40
- Track 75 : Nicholas\_38, Jubie\_38, Snenia\_38, Moostard\_38, Clautastrophe\_38, Bellis\_38, MsGreen\_38
- Track 76 : MiniLon\_38
- Track 77 : Ellson\_38
- Track 78 : Lumos\_38, Kingsolomon\_38

- Track 79 : LiyuLake\_38
- Track 80 : Whirlwind\_39
- Track 81 : Krypton555\_38
- Track 82 : DuncansLeg\_38
- Track 83 : Finnry\_38
- Track 84 : MiniMac\_38
- Track 85 : BourbonZero\_37
- Track 86 : Lolly9\_38
- Track 87 : KirDoubleO7\_36
- Track 88 : PYPDinur\_37, Douzhi\_37, BrainDrainer\_38, Sheng711\_38
- Track 89 : DyoEdafos\_39
- Track 90 : Bromden\_39
- Track 91 : Chaser\_37, Douge\_37
- Track 92 : FarmResident\_38
- Track 93 : 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 57, it was called in 58 of the 174 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Ageofdapage\_45, Angelica\_43, Beezoo\_45, Bella96\_44, Bellis\_38, BoostSeason\_46, BourbonZero\_37, BrainDrainer\_38, Chaser\_37, CheetoDust\_42, Clautastrophe\_38, Deby\_43, Devera\_47, DismalFunk\_46, DismalStressor\_46, Dole\_46, Douge\_37, Douzhi\_37, DrHayes\_44, DyoEdafos\_39, Edugator\_41, Efra2\_46, Findley\_46, Gengar\_41, Guillsminger\_42, Heftyboy\_41, Illumine\_46, Jubie\_38, KirDoubleO7\_36, Krypton555\_38, LaterM\_44, LindNT\_43, Lolly9\_38, Marcoliusprime\_46, Megsy\_44, Milly\_46, Miryou\_43, Moostard\_38, MsGreen\_38, Mufasa\_46, Murucutumbu\_44, Mynx\_44, Nergal\_40, Nicholas\_38, OkiRoe\_41, OmniCritical\_46, Omnicron\_44, PYPDinur\_37, Paola\_41, Prithvi\_44, Quby\_38, Rando14\_43, SamuelLPlaqson\_44, Sheng711\_38, Snenia\_38, SoSeph\_41, Stinson\_44, Strobilo\_46, Sulley\_43, TaiwanKao\_45, Thyatira\_43, TiniBug\_44, TreyKay\_44, Urkel\_44, Yunkel11\_46, Zavala\_44, ZoeJ\_45,

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

- Acquire49\_38, Agent47\_42, AlleyCat\_42, Appletree2\_37, Archie\_40, AvadaKedavra\_38, Baoshan\_39, Bazzle\_40, BigCheese\_40, BobsGarage\_40, Breezona\_40, Bromden\_39, Calm\_38, CicholasNage\_38, Claus\_41, Collard\_41, Crossroads\_40, DHan\_41, Dadosky\_42, DanBing\_40, DirkDirk\_37, DrSeegs\_40, DuncansLeg\_38, Ellson\_38, Enceladus\_37, Faith1\_40, FarmResident\_38, Finemlucis\_40, Finnry\_38, Gabriela\_40, Gardann\_40, Guanica15\_46, GuuelaD\_40, Hafay\_40, Halena\_37, InvictusManeo\_41, JoeDirt\_37, Kahlid\_40, Kingsolomon\_38, Kratio\_40, Larva\_42, LeBron\_38, Leston\_41, Lewan\_40, LilDestine\_40, LiyuLake\_38, Loadrie\_40, Lumos\_38, MAckerman\_38, Miley16\_40, MiniLon\_38, MiniMac\_38, MkaliMitinis3\_40, Netyap\_40, Nicholasp3\_40, OhShagHennessy\_37, Psycho\_42, Reptar3000\_45, Rose5\_37, Rumpelstiltskin\_40, Sarshaun\_40, Silverleaf\_37, Soap141\_40, Tourach\_40, Tyson\_37, UPIE\_38, Vetrrix\_40, Wamburggrxpress\_38, Waterfoul\_42, Whirlwind\_39, Wigglewiggle\_40, Wilder\_40, Winky\_40, Wyatt2\_38, Zakai\_40, Zaria\_38, ZhongYanYuan\_39,

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

- Amelie\_38, Amgine\_43, Amohnition\_45, Binglebops\_38, Bryler\_46, Cain\_46, Chris\_45, Curiosium\_46, DarthP\_45, Ekdilam\_42, Ellie\_41, Enkosi\_41, Fefferhead\_43, Hammy\_45, Hurricane\_46, Keshu\_47, KiSi\_47, Krueger\_49, LastHope\_46, LeMond\_47, MacnCheese\_47, MarkPheW\_46, Marshawn\_46, Mdavu\_39, Nibb\_45, Nikao\_41, Niklas\_45, Nutello\_38, Oscar\_47, Peanam\_45, Pharb\_43, PhelpsODU\_45, Phrank\_46, Pixie\_45, Scarlett\_47, SgtBeansprout\_38, Shadow1\_48, Shaobing\_45, ShedlockHolmes\_46, SirPhilip\_45, Sunflower1121\_49, Syra333\_48, TBond007\_45, TClif\_47, Tierra\_46, TingHuaYa\_44, Torres\_41, TripleTrouble\_43, Unicorn\_45, Validus\_47, Ximenita\_49, Yuna\_49,

### Summary by start number:

Start 19:

- Found in 1 of 196 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amgine\_43 (K6),

Start 26:

- Found in 4 of 196 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 1 of 174
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Whirlwind\_39 (L3),

Start 40:

- Found in 8 of 196 ( 4.1% ) of genes in pham
- Manual Annotations of this start: 5 of 174
- Called 62.5% of time when present
- Phage (with cluster) where this start called: Hurricane\_46 (K3), Keshu\_47 (K3), Pixie\_45 (K3), ShedlockHolmes\_46 (K3), TBond007\_45 (K3),

Start 41:

- Found in 49 of 196 ( 25.0% ) of genes in pham
- Manual Annotations of this start: 7 of 174
- Called 16.3% 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 45:

- Found in 43 of 196 ( 21.9% ) of genes in pham
- Manual Annotations of this start: 19 of 174
- Called 46.5% 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), Rose5\_37 (L1), Silverleaf\_37 (L1), Tyson\_37 (L1), Wamburgxpress\_38 (L1), Wyatt2\_38 (L1), Zaria\_38 (L1),

Start 49:

- Found in 2 of 196 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 2 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bryler\_46 (K6), Cain\_46 (K6),

#### Start 50:

- Found in 12 of 196 ( 6.1% ) of genes in pham
- Manual Annotations of this start: 1 of 174
- Called 8.3% of time when present
- Phage (with cluster) where this start called: Krueger\_49 (K6),

#### Start 51:

- Found in 55 of 196 ( 28.1% ) of genes in pham
- Manual Annotations of this start: 28 of 174
- Called 65.5% of time when present
- Phage (with cluster) where this start called: Archie\_40 (L2), Baoshan\_39 (L2), Bazzle\_40 (L2), BigCheese\_40 (L2), BobsGarage\_40 (L2), Breezona\_40 (L2), Claus\_41 (L2), Crossroads\_40 (L2), DHan\_41 (L2), DanBing\_40 (L2), DrSeegs\_40 (L2), Faith1\_40 (L2), Finemlucis\_40 (L2), Gabriela\_40 (L2), Gardann\_40 (L2), GuuelaD\_40 (L2), Hafay\_40 (L2), Kahlid\_40 (L2), Lewan\_40 (L2), LilDestine\_40 (L2), Loadrie\_40 (L2), Miley16\_40 (L2), MkaliMitinis3\_40 (L2), Netyap\_40 (L2), Nicholasp3\_40 (L2), Rumpelstiltskin\_40 (L2), Sarshaun\_40 (L2), Soap141\_40 (L2), TClif\_47 (K6), Tourach\_40 (L2), Vetrix\_40 (L2), Wigglewiggle\_40 (L2), Wilder\_40 (L2), Winky\_40 (L2), Zakai\_40 (L2), ZhongYanYuan\_39 (L2),

#### Start 52:

- Found in 2 of 196 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 1 of 174
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Waterfoul\_42 (K5),

#### Start 53:

- Found in 11 of 196 ( 5.6% ) of genes in pham
- Manual Annotations of this start: 8 of 174
- Called 72.7% 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), Reptar3000\_45 (K4),

#### Start 54:

- Found in 12 of 196 ( 6.1% ) of genes in pham
- Manual Annotations of this start: 11 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amelie\_38 (K1), Binglebops\_38 (K1), Enkosi\_41 (K1), Mdavu\_39 (K1), Nikao\_41 (K1), Niklas\_45 (K1), Nutello\_38 (K1), Peanam\_45 (K1), SgtBeansprout\_38 (K1), Shaobing\_45 (K1), Torres\_41 (K1), Validus\_47 (K1),

#### Start 55:

- Found in 1 of 196 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: TripleTrouble\_43 (K3),

Start 56:

- Found in 1 of 196 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Marshawn\_46 (K6),

Start 57:

- Found in 144 of 196 ( 73.5% ) of genes in pham
- Manual Annotations of this start: 58 of 174
- Called 46.5% of time when present
- Phage (with cluster) where this start called: Ageofdapage\_45 (K1), Angelica\_43 (K1), Beezoo\_45 (K1), Bella96\_44 (K1), Bellis\_38 (L3), BoostSeason\_46 (K2), BourbonZero\_37 (L3), BrainDrainer\_38 (L4), Chaser\_37 (L4), CheetoDust\_42 (K1), Clautastrophe\_38 (L3), Deby\_43 (K1), Devera\_47 (K1), DismalFunk\_46 (K2), DismalStressor\_46 (K2), Dole\_46 (K1), Douge\_37 (L4), Douzhi\_37 (L4), DrHayes\_44 (K1), DyoEdafos\_39 (L4), Edugator\_41 (K5), Efra2\_46 (K1), Findley\_46 (K2), Gengar\_41 (K5), Guillsminger\_42 (K5), Heftyboy\_41 (K5), Illumine\_46 (K1), Jubie\_38 (L3), KirDoubleO7\_36 (L3), Krypton555\_38 (L3), LaterM\_44 (K1), LindNT\_43 (K1), Lolly9\_38 (L3), Marcoliusprime\_46 (K2), Megsy\_44 (K1), Milly\_46 (K2), Miryou\_43 (K5), Moostard\_38 (L3), MsGreen\_38 (L3), Mufasa\_46 (K2), Murucutumbu\_44 (K1), Mynx\_44 (K1), Nergal\_40 (AG), Nicholas\_38 (L3), OkiRoe\_41 (K5), OmniCritical\_46 (K4), Omnicron\_44 (K5), PYPDinur\_37 (L4), Paola\_41 (K5), Prithvi\_44 (K1), Quby\_38 (L4), Rando14\_43 (K5), SamuelLPlaqson\_44 (K1), Sheng711\_38 (L4), Snenia\_38 (L3), SoSeph\_41 (K5), Stinson\_44 (K1), Strobilo\_46 (K2), Sulley\_43 (K1), TaiwanKao\_45 (K1), Thyatira\_43 (K5), TiniBug\_44 (K1), TreyKay\_44 (K1), Urkel\_44 (K1), Yunkel11\_46 (K1), Zavala\_44 (K1), ZoeJ\_45 (K2),

Start 58:

- Found in 7 of 196 ( 3.6% ) of genes in pham
- Manual Annotations of this start: 2 of 174
- Called 28.6% of time when present
- Phage (with cluster) where this start called: MacnCheese\_47 (K3), Pharb\_43 (K3),

Start 59:

- Found in 3 of 196 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 2 of 174
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Curiosium\_46 (K1), LastHope\_46 (K1), TingHuaYa\_44 (K1),

Start 60:

- Found in 16 of 196 ( 8.2% ) of genes in pham
- Manual Annotations of this start: 13 of 174
- Called 81.2% 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), PhelpsODU\_45 (K6), Phrank\_46 (K6), SirPhilip\_45 (K6), Sunflower1121\_49 (K6), Tierra\_46 (K6), Unicorn\_45 (K6), Yuna\_49 (K6),

Start 61:

- Found in 14 of 196 ( 7.1% ) of genes in pham
- Manual Annotations of this start: 11 of 174



- Called 78.6% of time when present
- Phage (with cluster) where this start called: Chris\_45 (K1), Guanica15\_46 (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 63:

- Found in 26 of 196 ( 13.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 3.8% of time when present
- Phage (with cluster) where this start called: FarmResident\_38 (L4),

Start 67:

- Found in 25 of 196 ( 12.8% ) of genes in pham
- Manual Annotations of this start: 2 of 174
- Called 8.0% of time when present
- Phage (with cluster) where this start called: Leston\_41 (K5), Psycho\_42 (K5),

### **Summary by clusters:**

There are 11 clusters represented in this pham: AG, K4, K1, K3, K2, L4, L2, L3, K5, L1, K6,

Info for manual annotations of cluster AG:

- Start number 57 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster K1:

- Start number 54 was manually annotated 11 times for cluster K1.
- Start number 57 was manually annotated 25 times for cluster K1.
- Start number 59 was manually annotated 2 times for cluster K1.
- Start number 61 was manually annotated 8 times for cluster K1.

Info for manual annotations of cluster K2:

- Start number 57 was manually annotated 9 times for cluster K2.

Info for manual annotations of cluster K3:

- Start number 40 was manually annotated 5 times for cluster K3.
- Start number 55 was manually annotated 1 time for cluster K3.
- Start number 58 was manually annotated 2 times for cluster K3.

Info for manual annotations of cluster K4:

- Start number 53 was manually annotated 1 time for cluster K4.
- Start number 57 was manually annotated 1 time for cluster K4.

Info for manual annotations of cluster K5:

- Start number 52 was manually annotated 1 time for cluster K5.
- Start number 53 was manually annotated 7 times for cluster K5.
- Start number 57 was manually annotated 11 times for cluster K5.
- Start number 67 was manually annotated 2 times for cluster K5.

Info for manual annotations of cluster K6:

- Start number 19 was manually annotated 1 time for cluster K6.
- Start number 49 was manually annotated 2 times for cluster K6.
- Start number 50 was manually annotated 1 time for cluster K6.

- Start number 51 was manually annotated 1 time for cluster K6.
- Start number 56 was manually annotated 1 time for cluster K6.
- Start number 60 was manually annotated 13 times for cluster K6.
- Start number 61 was manually annotated 3 times for cluster K6.

Info for manual annotations of cluster L1:

- Start number 41 was manually annotated 3 times for cluster L1.
- Start number 45 was manually annotated 16 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 51 was manually annotated 27 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 26 was manually annotated 1 time for cluster L3.
- Start number 41 was manually annotated 3 times for cluster L3.
- Start number 45 was manually annotated 3 times for cluster L3.
- Start number 57 was manually annotated 8 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 41 was manually annotated 1 time for cluster L4.
- Start number 57 was manually annotated 3 times for cluster L4.

### **Gene Information:**

Gene: Acquire49\_38 Start: 32935, Stop: 32525, Start Num: 45

Candidate Starts for Acquire49\_38:

(Start: 41 @32941 has 7 MA's), (Start: 45 @32935 has 19 MA's), (Start: 50 @32917 has 1 MA's), (Start: 51 @32914 has 28 MA's), (Start: 57 @32905 has 58 MA's), (62, 32872), (75, 32806), (78, 32767), (83, 32743), (90, 32698), (92, 32683), (121, 32590),

Gene: Agent47\_42 Start: 34530, Stop: 34129, Start Num: 53

Candidate Starts for Agent47\_42:

(Start: 53 @34530 has 8 MA's), (Start: 57 @34524 has 58 MA's), (64, 34485), (Start: 67 @34473 has 2 MA's), (70, 34446), (85, 34344), (87, 34332), (93, 34281), (110, 34221),

Gene: Ageofdapage\_45 Start: 35950, Stop: 35573, Start Num: 57

Candidate Starts for Ageofdapage\_45:

(36, 36001), (Start: 57 @35950 has 58 MA's), (64, 35914), (74, 35860), (75, 35854), (113, 35662), (118, 35647), (129, 35599),

Gene: AlleyCat\_42 Start: 34384, Stop: 33980, Start Num: 53

Candidate Starts for AlleyCat\_42:

(Start: 53 @34384 has 8 MA's), (Start: 57 @34378 has 58 MA's), (64, 34339), (Start: 67 @34327 has 2 MA's), (70, 34300), (87, 34186), (93, 34135), (110, 34075), (132, 33985),

Gene: Amelie\_38 Start: 34527, Stop: 34129, Start Num: 54

Candidate Starts for Amelie\_38:

(39, 34566), (Start: 54 @34527 has 11 MA's), (75, 34431), (118, 34206), (120, 34200),

Gene: Amgine\_43 Start: 36096, Stop: 35581, Start Num: 19

Candidate Starts for Amgine\_43:

(Start: 19 @36096 has 1 MA's), (21, 36090), (Start: 60 @35973 has 13 MA's), (64, 35943), (69, 35916), (75, 35883), (76, 35862), (77, 35856), (83, 35820), (86, 35802), (93, 35745), (112, 35673), (129, 35607), (132, 35586),

Gene: Amohnition\_45 Start: 36010, Stop: 35639, Start Num: 60

Candidate Starts for Amohnition\_45:

(Start: 60 @36010 has 13 MA's), (64, 35980), (75, 35920), (79, 35878), (83, 35857), (86, 35839), (90, 35812), (92, 35797), (93, 35782), (97, 35761), (108, 35740), (127, 35680), (129, 35665),

Gene: Angelica\_43 Start: 35209, Stop: 34829, Start Num: 57

Candidate Starts for Angelica\_43:

(36, 35260), (Start: 57 @35209 has 58 MA's), (64, 35173), (75, 35113), (113, 34918), (118, 34903), (129, 34855),

Gene: Appletree2\_37 Start: 32877, Stop: 32467, Start Num: 45

Candidate Starts for Appletree2\_37:

(Start: 41 @32883 has 7 MA's), (Start: 45 @32877 has 19 MA's), (Start: 51 @32856 has 28 MA's), (Start: 57 @32847 has 58 MA's), (62, 32814), (75, 32748), (78, 32709), (83, 32685), (90, 32640), (121, 32532),

Gene: Archie\_40 Start: 34485, Stop: 34096, Start Num: 51

Candidate Starts for Archie\_40:

(Start: 45 @34506 has 19 MA's), (Start: 51 @34485 has 28 MA's), (Start: 57 @34476 has 58 MA's), (64, 34440), (65, 34437), (70, 34407), (78, 34341), (83, 34317), (90, 34272), (110, 34185), (115, 34173), (121, 34161),

Gene: AvadaKedavra\_38 Start: 32944, Stop: 32534, Start Num: 45

Candidate Starts for AvadaKedavra\_38:

(Start: 41 @32950 has 7 MA's), (Start: 45 @32944 has 19 MA's), (Start: 50 @32926 has 1 MA's), (Start: 51 @32923 has 28 MA's), (Start: 57 @32914 has 58 MA's), (62, 32881), (75, 32815), (78, 32776), (83, 32752), (90, 32707), (92, 32692), (121, 32599),

Gene: Baoshan\_39 Start: 34142, Stop: 33753, Start Num: 51

Candidate Starts for Baoshan\_39:

(Start: 51 @34142 has 28 MA's), (Start: 57 @34133 has 58 MA's), (65, 34094), (70, 34064), (78, 33998), (83, 33974), (90, 33929), (102, 33857), (110, 33842), (115, 33830), (121, 33818),

Gene: Bazzle\_40 Start: 34517, Stop: 34128, Start Num: 51

Candidate Starts for Bazzle\_40:

(Start: 45 @34538 has 19 MA's), (Start: 51 @34517 has 28 MA's), (Start: 57 @34508 has 58 MA's), (64, 34472), (65, 34469), (70, 34439), (78, 34373), (83, 34349), (90, 34304), (110, 34217), (115, 34205), (121, 34193),

Gene: Beezoo\_45 Start: 35940, Stop: 35563, Start Num: 57

Candidate Starts for Beezoo\_45:

(36, 35991), (Start: 57 @35940 has 58 MA's), (64, 35904), (75, 35844), (118, 35637), (129, 35589),

Gene: Bella96\_44 Start: 35832, Stop: 35455, Start Num: 57

Candidate Starts for Bella96\_44:

(36, 35883), (Start: 57 @35832 has 58 MA's), (64, 35796), (75, 35736), (118, 35529), (129, 35481),

Gene: Bellis\_38 Start: 34518, Stop: 34135, Start Num: 57

Candidate Starts for Bellis\_38:

(4, 34737), (6, 34731), (9, 34710), (10, 34689), (Start: 41 @34554 has 7 MA's), (Start: 45 @34548 has 19 MA's), (Start: 57 @34518 has 58 MA's), (63, 34482), (65, 34476), (69, 34452), (70, 34446), (75, 34419), (78, 34380), (81, 34368), (83, 34356), (88, 34323), (90, 34311), (99, 34254), (118, 34203), (132, 34140),

Gene: BigCheese\_40 Start: 34280, Stop: 33891, Start Num: 51

Candidate Starts for BigCheese\_40:

(Start: 51 @34280 has 28 MA's), (Start: 57 @34271 has 58 MA's), (65, 34232), (69, 34208), (70, 34202), (75, 34175), (78, 34136), (83, 34112), (90, 34067), (110, 33980), (121, 33956),

Gene: Biglebops\_38 Start: 34527, Stop: 34129, Start Num: 54

Candidate Starts for Biglebops\_38:

(39, 34566), (Start: 54 @34527 has 11 MA's), (75, 34431), (118, 34206), (120, 34200),

Gene: BobsGarage\_40 Start: 34280, Stop: 33891, Start Num: 51

Candidate Starts for BobsGarage\_40:

(Start: 51 @34280 has 28 MA's), (Start: 57 @34271 has 58 MA's), (65, 34232), (69, 34208), (70, 34202), (75, 34175), (78, 34136), (83, 34112), (90, 34067), (110, 33980), (121, 33956),

Gene: BoostSeason\_46 Start: 36618, Stop: 36250, Start Num: 57

Candidate Starts for BoostSeason\_46:

(Start: 57 @36618 has 58 MA's), (64, 36582), (75, 36522), (82, 36462), (91, 36402), (94, 36372), (98, 36360), (111, 36330), (129, 36276),

Gene: BourbonZero\_37 Start: 34497, Stop: 34114, Start Num: 57

Candidate Starts for BourbonZero\_37:

(4, 34716), (6, 34710), (9, 34689), (10, 34668), (Start: 41 @34533 has 7 MA's), (Start: 45 @34527 has 19 MA's), (Start: 57 @34497 has 58 MA's), (63, 34461), (65, 34455), (70, 34425), (75, 34398), (78, 34359), (81, 34347), (83, 34335), (88, 34302), (90, 34290), (118, 34182), (132, 34119),

Gene: BrainDrainer\_38 Start: 33181, Stop: 32801, Start Num: 57

Candidate Starts for BrainDrainer\_38:

(Start: 41 @33217 has 7 MA's), (Start: 57 @33181 has 58 MA's), (63, 33148), (69, 33118), (70, 33112), (75, 33085), (78, 33046), (84, 33016), (90, 32977), (107, 32899), (116, 32872), (118, 32866),

Gene: Breezona\_40 Start: 34280, Stop: 33891, Start Num: 51

Candidate Starts for Breezona\_40:

(Start: 51 @34280 has 28 MA's), (Start: 57 @34271 has 58 MA's), (65, 34232), (69, 34208), (70, 34202), (75, 34175), (78, 34136), (83, 34112), (90, 34067), (110, 33980), (121, 33956),

Gene: Bromden\_39 Start: 33770, Stop: 33351, Start Num: 41

Candidate Starts for Bromden\_39:

(4, 33953), (6, 33947), (15, 33869), (Start: 41 @33770 has 7 MA's), (Start: 57 @33734 has 58 MA's), (65, 33698), (Start: 67 @33689 has 2 MA's), (70, 33668), (71, 33659), (75, 33641), (83, 33578), (84, 33572), (88, 33545), (90, 33533), (93, 33503), (109, 33449), (116, 33425), (118, 33419),

Gene: Bryler\_46 Start: 34876, Stop: 34463, Start Num: 49

Candidate Starts for Bryler\_46:

(35, 34921), (Start: 49 @34876 has 2 MA's), (Start: 60 @34855 has 13 MA's), (64, 34825), (83, 34702), (92, 34642), (93, 34627), (122, 34528), (123, 34519), (129, 34489),

Gene: Cain\_46 Start: 34864, Stop: 34451, Start Num: 49

Candidate Starts for Cain\_46:

(35, 34909), (Start: 49 @34864 has 2 MA's), (Start: 60 @34843 has 13 MA's), (64, 34813), (83, 34690), (92, 34630), (93, 34615), (122, 34516), (123, 34507), (129, 34477),

Gene: Calm\_38 Start: 32950, Stop: 32540, Start Num: 45

Candidate Starts for Calm\_38:

(Start: 41 @32956 has 7 MA's), (Start: 45 @32950 has 19 MA's), (Start: 50 @32932 has 1 MA's), (Start: 51 @32929 has 28 MA's), (Start: 57 @32920 has 58 MA's), (62, 32887), (75, 32821), (78, 32782), (83, 32758), (90, 32713), (92, 32698), (121, 32605),

Gene: Chaser\_37 Start: 32998, Stop: 32618, Start Num: 57

Candidate Starts for Chaser\_37:

(Start: 41 @33034 has 7 MA's), (Start: 57 @32998 has 58 MA's), (63, 32965), (69, 32935), (70, 32929), (75, 32902), (78, 32863), (84, 32833), (90, 32794), (116, 32689), (118, 32683),

Gene: CheetoDust\_42 Start: 34466, Stop: 34089, Start Num: 57

Candidate Starts for CheetoDust\_42:

(47, 34490), (Start: 57 @34466 has 58 MA's), (64, 34430), (68, 34415), (75, 34370), (118, 34163), (129, 34115),

Gene: Chris\_45 Start: 35677, Stop: 35300, Start Num: 61

Candidate Starts for Chris\_45:

(22, 35785), (Start: 61 @35677 has 11 MA's), (64, 35647), (68, 35632), (75, 35587), (76, 35566), (83, 35524), (93, 35449), (119, 35374), (127, 35341), (129, 35326),

Gene: CicholasNage\_38 Start: 32971, Stop: 32561, Start Num: 45

Candidate Starts for CicholasNage\_38:

(Start: 41 @32977 has 7 MA's), (Start: 45 @32971 has 19 MA's), (Start: 50 @32953 has 1 MA's), (Start: 51 @32950 has 28 MA's), (Start: 57 @32941 has 58 MA's), (62, 32908), (75, 32842), (78, 32803), (83, 32779), (90, 32734), (92, 32719), (121, 32626),

Gene: Claus\_41 Start: 34300, Stop: 33911, Start Num: 51

Candidate Starts for Claus\_41:

(Start: 51 @34300 has 28 MA's), (Start: 57 @34291 has 58 MA's), (65, 34252), (70, 34222), (78, 34156), (83, 34132), (90, 34087), (102, 34015), (110, 34000), (115, 33988), (121, 33976),

Gene: Clautastrophe\_38 Start: 34516, Stop: 34133, Start Num: 57

Candidate Starts for Clautastrophe\_38:

(4, 34735), (6, 34729), (9, 34708), (10, 34687), (Start: 41 @34552 has 7 MA's), (Start: 45 @34546 has 19 MA's), (Start: 57 @34516 has 58 MA's), (63, 34480), (65, 34474), (69, 34450), (70, 34444), (75, 34417), (78, 34378), (81, 34366), (83, 34354), (88, 34321), (90, 34309), (99, 34252), (118, 34201), (132, 34138),

Gene: Collard\_41 Start: 34491, Stop: 34090, Start Num: 53

Candidate Starts for Collard\_41:

(Start: 53 @34491 has 8 MA's), (Start: 57 @34485 has 58 MA's), (64, 34446), (Start: 67 @34434 has 2 MA's), (70, 34407), (85, 34305), (87, 34293), (93, 34242), (110, 34182),

Gene: Crossroads\_40 Start: 34282, Stop: 33893, Start Num: 51

Candidate Starts for Crossroads\_40:

(Start: 51 @34282 has 28 MA's), (Start: 57 @34273 has 58 MA's), (65, 34234), (69, 34210), (70, 34204), (78, 34138), (83, 34114), (90, 34069), (107, 33988), (110, 33982), (115, 33970), (121, 33958),

Gene: Curiosium\_46 Start: 34128, Stop: 33742, Start Num: 59

Candidate Starts for Curiosium\_46:

(18, 34254), (21, 34245), (30, 34209), (31, 34203), (36, 34188), (Start: 59 @34128 has 2 MA's), (75, 34035), (77, 34008), (111, 33837), (129, 33768),

Gene: DHan\_41 Start: 34241, Stop: 33852, Start Num: 51

Candidate Starts for DHan\_41:

(Start: 51 @34241 has 28 MA's), (Start: 57 @34232 has 58 MA's), (65, 34193), (70, 34163), (78, 34097), (83, 34073), (90, 34028), (102, 33956), (110, 33941), (115, 33929), (121, 33917),

Gene: Dadosky\_42 Start: 34386, Stop: 33982, Start Num: 53

Candidate Starts for Dadosky\_42:

(Start: 53 @34386 has 8 MA's), (Start: 57 @34380 has 58 MA's), (64, 34341), (Start: 67 @34329 has 2 MA's), (70, 34302), (87, 34188), (93, 34137), (110, 34077), (132, 33987),

Gene: DanBing\_40 Start: 34133, Stop: 33744, Start Num: 51

Candidate Starts for DanBing\_40:

(Start: 51 @34133 has 28 MA's), (Start: 57 @34124 has 58 MA's), (65, 34085), (70, 34055), (78, 33989), (83, 33965), (90, 33920), (102, 33848), (110, 33833), (115, 33821), (121, 33809),

Gene: DarthP\_45 Start: 35904, Stop: 35545, Start Num: 60

Candidate Starts for DarthP\_45:

(Start: 60 @35904 has 13 MA's), (64, 35874), (75, 35814), (79, 35772),

Gene: Deby\_43 Start: 35225, Stop: 34845, Start Num: 57

Candidate Starts for Deby\_43:

(36, 35276), (Start: 57 @35225 has 58 MA's), (64, 35189), (75, 35129), (113, 34934), (118, 34919), (129, 34871),

Gene: Devera\_47 Start: 35759, Stop: 35382, Start Num: 57

Candidate Starts for Devera\_47:

(Start: 57 @35759 has 58 MA's), (64, 35723), (75, 35663), (96, 35504), (118, 35456), (129, 35408),

Gene: DirkDirk\_37 Start: 32937, Stop: 32527, Start Num: 45

Candidate Starts for DirkDirk\_37:

(Start: 41 @32943 has 7 MA's), (Start: 45 @32937 has 19 MA's), (Start: 51 @32916 has 28 MA's), (Start: 57 @32907 has 58 MA's), (62, 32874), (75, 32808), (78, 32769), (83, 32745), (90, 32700), (121, 32592),

Gene: DismalFunk\_46 Start: 37051, Stop: 36680, Start Num: 57

Candidate Starts for DismalFunk\_46:

(36, 37105), (Start: 57 @37051 has 58 MA's), (64, 37015), (68, 37000), (75, 36955), (82, 36895), (91, 36835), (94, 36805), (98, 36793), (111, 36763), (129, 36706),

Gene: DismalStressor\_46 Start: 37051, Stop: 36680, Start Num: 57

Candidate Starts for DismalStressor\_46:

(36, 37105), (Start: 57 @37051 has 58 MA's), (64, 37015), (68, 37000), (75, 36955), (82, 36895), (91, 36835), (94, 36805), (98, 36793), (111, 36763), (129, 36706),

Gene: Dole\_46 Start: 35761, Stop: 35384, Start Num: 57

Candidate Starts for Dole\_46:

(Start: 57 @35761 has 58 MA's), (64, 35725), (75, 35665), (96, 35506), (118, 35458), (129, 35410),

Gene: Douge\_37 Start: 32936, Stop: 32556, Start Num: 57

Candidate Starts for Douge\_37:

(Start: 41 @32972 has 7 MA's), (Start: 57 @32936 has 58 MA's), (63, 32903), (69, 32873), (70, 32867), (75, 32840), (78, 32801), (84, 32771), (90, 32732), (116, 32627), (118, 32621),

Gene: Douzhi\_37 Start: 33042, Stop: 32662, Start Num: 57

Candidate Starts for Douzhi\_37:

(Start: 41 @33078 has 7 MA's), (Start: 57 @33042 has 58 MA's), (63, 33009), (69, 32979), (70, 32973), (75, 32946), (78, 32907), (84, 32877), (90, 32838), (107, 32760), (116, 32733), (118, 32727),

Gene: DrHayes\_44 Start: 35877, Stop: 35500, Start Num: 57

Candidate Starts for DrHayes\_44:

(36, 35928), (Start: 57 @35877 has 58 MA's), (64, 35841), (75, 35781), (118, 35574), (129, 35526),

Gene: DrSeegs\_40 Start: 34280, Stop: 33891, Start Num: 51

Candidate Starts for DrSeegs\_40:

(Start: 51 @34280 has 28 MA's), (Start: 57 @34271 has 58 MA's), (65, 34232), (69, 34208), (70, 34202), (75, 34175), (78, 34136), (83, 34112), (90, 34067), (110, 33980), (121, 33956),

Gene: DuncansLeg\_38 Start: 34570, Stop: 34151, Start Num: 41

Candidate Starts for DuncansLeg\_38:

(4, 34753), (6, 34747), (9, 34726), (10, 34705), (Start: 41 @34570 has 7 MA's), (Start: 45 @34564 has 19 MA's), (Start: 57 @34534 has 58 MA's), (63, 34498), (65, 34492), (70, 34462), (75, 34435), (78, 34396), (81, 34384), (83, 34372), (88, 34339), (90, 34327), (99, 34270), (118, 34219), (132, 34156),

Gene: DyoEdafos\_39 Start: 33270, Stop: 32890, Start Num: 57

Candidate Starts for DyoEdafos\_39:

(Start: 41 @33306 has 7 MA's), (Start: 57 @33270 has 58 MA's), (63, 33237), (70, 33201), (75, 33174), (78, 33135), (83, 33111), (116, 32961), (118, 32955), (126, 32931),

Gene: Edugator\_41 Start: 34805, Stop: 34407, Start Num: 57

Candidate Starts for Edugator\_41:

(Start: 53 @34811 has 8 MA's), (Start: 57 @34805 has 58 MA's), (64, 34766), (Start: 67 @34754 has 2 MA's), (70, 34727), (87, 34613), (93, 34562), (110, 34502), (132, 34412),

Gene: Efra2\_46 Start: 35018, Stop: 34629, Start Num: 57

Candidate Starts for Efra2\_46:

(14, 35156), (16, 35150), (17, 35147), (20, 35138), (23, 35123), (Start: 57 @35018 has 58 MA's), (Start: 61 @35012 has 11 MA's), (75, 34922), (83, 34859), (89, 34820), (93, 34784), (111, 34724), (114, 34718), (132, 34634),

Gene: Ekdilam\_42 Start: 35465, Stop: 35106, Start Num: 60

Candidate Starts for Ekdilam\_42:

(29, 35549), (Start: 60 @35465 has 13 MA's), (64, 35435), (Start: 67 @35423 has 2 MA's), (75, 35375), (83, 35312), (127, 35147), (129, 35132),

Gene: Ellie\_41 Start: 35161, Stop: 34769, Start Num: 60

Candidate Starts for Ellie\_41:

(21, 35278), (Start: 60 @35161 has 13 MA's), (64, 35131), (75, 35071), (76, 35050), (77, 35044), (83, 35008), (86, 34990), (93, 34933), (112, 34861), (129, 34795), (132, 34774),

Gene: Ellson\_38 Start: 34546, Stop: 34127, Start Num: 41

Candidate Starts for Ellson\_38:

(4, 34729), (6, 34723), (9, 34702), (10, 34681), (Start: 41 @34546 has 7 MA's), (Start: 45 @34540 has 19 MA's), (Start: 57 @34510 has 58 MA's), (63, 34474), (65, 34468), (70, 34438), (75, 34411), (78, 34372), (81, 34360), (83, 34348), (88, 34315), (90, 34303), (118, 34195), (132, 34132),

Gene: Enceladus\_37 Start: 32920, Stop: 32510, Start Num: 45

Candidate Starts for Enceladus\_37:

(Start: 41 @32926 has 7 MA's), (Start: 45 @32920 has 19 MA's), (Start: 51 @32899 has 28 MA's), (Start: 57 @32890 has 58 MA's), (62, 32857), (75, 32791), (78, 32752), (83, 32728), (90, 32683), (121, 32575),

Gene: Enkosi\_41 Start: 37140, Stop: 36742, Start Num: 54

Candidate Starts for Enkosi\_41:

(39, 37179), (Start: 54 @37140 has 11 MA's), (75, 37044), (118, 36819), (120, 36813),

Gene: Faith1\_40 Start: 34280, Stop: 33891, Start Num: 51

Candidate Starts for Faith1\_40:

(Start: 51 @34280 has 28 MA's), (Start: 57 @34271 has 58 MA's), (65, 34232), (69, 34208), (70, 34202), (75, 34175), (78, 34136), (83, 34112), (90, 34067), (110, 33980), (121, 33956),

Gene: FarmResident\_38 Start: 32947, Stop: 32600, Start Num: 63

Candidate Starts for FarmResident\_38:

(Start: 41 @33016 has 7 MA's), (Start: 57 @32980 has 58 MA's), (63, 32947), (69, 32917), (70, 32911), (75, 32884), (78, 32845), (84, 32815), (116, 32671), (118, 32665),

Gene: Fefferhead\_43 Start: 35112, Stop: 34720, Start Num: 60

Candidate Starts for Fefferhead\_43:

(21, 35229), (Start: 60 @35112 has 13 MA's), (64, 35082), (75, 35022), (76, 35001), (77, 34995), (83, 34959), (86, 34941), (93, 34884), (112, 34812), (129, 34746), (132, 34725),

Gene: Findley\_46 Start: 37044, Stop: 36673, Start Num: 57

Candidate Starts for Findley\_46:

(36, 37098), (Start: 57 @37044 has 58 MA's), (64, 37008), (68, 36993), (75, 36948), (82, 36888), (91, 36828), (94, 36798), (98, 36786), (111, 36756), (129, 36699),

Gene: Finemlucis\_40 Start: 34556, Stop: 34167, Start Num: 51

Candidate Starts for Finemlucis\_40:

(Start: 51 @34556 has 28 MA's), (Start: 57 @34547 has 58 MA's), (65, 34508), (69, 34484), (70, 34478), (75, 34451), (78, 34412), (83, 34388), (90, 34343), (110, 34256), (115, 34244), (121, 34232),

Gene: Finnry\_38 Start: 34555, Stop: 34136, Start Num: 41

Candidate Starts for Finnry\_38:

(4, 34738), (6, 34732), (9, 34711), (10, 34690), (Start: 41 @34555 has 7 MA's), (Start: 45 @34549 has 19 MA's), (Start: 57 @34519 has 58 MA's), (63, 34483), (65, 34477), (69, 34453), (70, 34447), (75, 34420), (78, 34381), (81, 34369), (83, 34357), (88, 34324), (90, 34312), (99, 34255), (118, 34204), (132, 34141),

Gene: Gabriela\_40 Start: 34542, Stop: 34153, Start Num: 51

Candidate Starts for Gabriela\_40:

(Start: 51 @34542 has 28 MA's), (Start: 57 @34533 has 58 MA's), (65, 34494), (69, 34470), (70, 34464), (75, 34437), (78, 34398), (83, 34374), (90, 34329), (110, 34242), (121, 34218),

Gene: Gardann\_40 Start: 34281, Stop: 33892, Start Num: 51

Candidate Starts for Gardann\_40:



(Start: 51 @34281 has 28 MA's), (Start: 57 @34272 has 58 MA's), (65, 34233), (69, 34209), (70, 34203), (75, 34176), (78, 34137), (83, 34113), (90, 34068), (110, 33981), (115, 33969), (121, 33957),

Gene: Gengar\_41 Start: 34347, Stop: 33946, Start Num: 57

Candidate Starts for Gengar\_41:

(Start: 57 @34347 has 58 MA's), (Start: 67 @34296 has 2 MA's), (87, 34155), (93, 34104), (110, 34044),

Gene: Guanica15\_46 Start: 34969, Stop: 34586, Start Num: 61

Candidate Starts for Guanica15\_46:

(14, 35113), (16, 35107), (17, 35104), (20, 35095), (23, 35080), (Start: 57 @34975 has 58 MA's), (Start: 61 @34969 has 11 MA's), (75, 34879), (83, 34816), (89, 34777), (93, 34741), (111, 34681), (114, 34675), (132, 34591),

Gene: Guillsminger\_42 Start: 34318, Stop: 33917, Start Num: 57

Candidate Starts for Guillsminger\_42:

(Start: 57 @34318 has 58 MA's), (Start: 67 @34267 has 2 MA's), (87, 34126), (93, 34075), (110, 34015),

Gene: GuuelaD\_40 Start: 34319, Stop: 33930, Start Num: 51

Candidate Starts for GuuelaD\_40:

(Start: 51 @34319 has 28 MA's), (Start: 57 @34310 has 58 MA's), (65, 34271), (69, 34247), (70, 34241), (78, 34175), (83, 34151), (90, 34106), (107, 34025), (110, 34019), (115, 34007), (121, 33995),

Gene: Hafay\_40 Start: 34314, Stop: 33925, Start Num: 51

Candidate Starts for Hafay\_40:

(Start: 51 @34314 has 28 MA's), (Start: 57 @34305 has 58 MA's), (65, 34266), (69, 34242), (70, 34236), (78, 34170), (83, 34146), (90, 34101), (107, 34020), (110, 34014), (115, 34002), (121, 33990),

Gene: Halena\_37 Start: 32946, Stop: 32536, Start Num: 45

Candidate Starts for Halena\_37:

(Start: 41 @32952 has 7 MA's), (Start: 45 @32946 has 19 MA's), (Start: 50 @32928 has 1 MA's), (Start: 51 @32925 has 28 MA's), (Start: 57 @32916 has 58 MA's), (62, 32883), (75, 32817), (78, 32778), (83, 32754), (90, 32709), (92, 32694), (121, 32601),

Gene: Hammy\_45 Start: 35892, Stop: 35533, Start Num: 60

Candidate Starts for Hammy\_45:

(Start: 60 @35892 has 13 MA's), (75, 35802), (79, 35760),

Gene: Heftyboy\_41 Start: 34467, Stop: 34066, Start Num: 57

Candidate Starts for Heftyboy\_41:

(25, 34566), (37, 34515), (Start: 40 @34503 has 5 MA's), (Start: 57 @34467 has 58 MA's), (Start: 67 @34416 has 2 MA's), (87, 34275), (93, 34224), (110, 34164), (125, 34116),

Gene: Hurricane\_46 Start: 35646, Stop: 35155, Start Num: 40

Candidate Starts for Hurricane\_46:

(Start: 40 @35646 has 5 MA's), (Start: 58 @35613 has 2 MA's), (83, 35457), (91, 35400), (106, 35334), (133, 35226), (135, 35208), (136, 35166),

Gene: Illumine\_46 Start: 35761, Stop: 35384, Start Num: 57

Candidate Starts for Illumine\_46:

(Start: 57 @35761 has 58 MA's), (64, 35725), (75, 35665), (96, 35506), (118, 35458), (129, 35410),

Gene: InvictusManeo\_41 Start: 34534, Stop: 34133, Start Num: 53

Candidate Starts for InvictusManeo\_41:

(Start: 53 @34534 has 8 MA's), (Start: 57 @34528 has 58 MA's), (64, 34489), (Start: 67 @34477 has 2 MA's), (70, 34450), (85, 34348), (87, 34336), (93, 34285), (110, 34225),

Gene: JoeDirt\_37 Start: 32924, Stop: 32508, Start Num: 41

Candidate Starts for JoeDirt\_37:

(Start: 41 @32924 has 7 MA's), (Start: 45 @32918 has 19 MA's), (Start: 51 @32897 has 28 MA's), (Start: 57 @32888 has 58 MA's), (62, 32855), (75, 32789), (78, 32750), (83, 32726), (90, 32681), (121, 32573),

Gene: Jubie\_38 Start: 34517, Stop: 34134, Start Num: 57

Candidate Starts for Jubie\_38:

(4, 34736), (6, 34730), (9, 34709), (10, 34688), (Start: 41 @34553 has 7 MA's), (Start: 45 @34547 has 19 MA's), (Start: 57 @34517 has 58 MA's), (63, 34481), (65, 34475), (69, 34451), (70, 34445), (75, 34418), (78, 34379), (81, 34367), (83, 34355), (88, 34322), (90, 34310), (99, 34253), (118, 34202), (132, 34139),

Gene: Kahlid\_40 Start: 34286, Stop: 33897, Start Num: 51

Candidate Starts for Kahlid\_40:

(Start: 51 @34286 has 28 MA's), (Start: 57 @34277 has 58 MA's), (65, 34238), (69, 34214), (70, 34208), (78, 34142), (83, 34118), (90, 34073), (107, 33992), (110, 33986), (115, 33974), (121, 33962),

Gene: Keshu\_47 Start: 35704, Stop: 35282, Start Num: 40

Candidate Starts for Keshu\_47:

(Start: 40 @35704 has 5 MA's), (Start: 58 @35671 has 2 MA's), (83, 35515), (91, 35458), (129, 35308),

Gene: KiSi\_47 Start: 36100, Stop: 35729, Start Num: 61

Candidate Starts for KiSi\_47:

(11, 36259), (12, 36256), (13, 36253), (43, 36133), (Start: 61 @36100 has 11 MA's), (64, 36070), (65, 36067), (75, 36010), (80, 35965), (83, 35947), (93, 35872), (119, 35800), (129, 35755),

Gene: Kingsolomon\_38 Start: 34546, Stop: 34133, Start Num: 45

Candidate Starts for Kingsolomon\_38:

(4, 34735), (6, 34729), (9, 34708), (10, 34687), (Start: 41 @34552 has 7 MA's), (Start: 45 @34546 has 19 MA's), (Start: 57 @34516 has 58 MA's), (63, 34480), (65, 34474), (69, 34450), (70, 34444), (75, 34417), (78, 34378), (81, 34366), (83, 34354), (88, 34321), (90, 34309), (99, 34252), (118, 34201), (132, 34138),

Gene: KirDoubleO7\_36 Start: 34538, Stop: 34158, Start Num: 57

Candidate Starts for KirDoubleO7\_36:

(Start: 41 @34574 has 7 MA's), (Start: 45 @34568 has 19 MA's), (Start: 57 @34538 has 58 MA's), (65, 34499), (69, 34475), (70, 34469), (75, 34442), (78, 34403), (81, 34391), (83, 34379), (88, 34346), (90, 34334), (99, 34277), (132, 34163),

Gene: Kratio\_40 Start: 34085, Stop: 33681, Start Num: 53

Candidate Starts for Kratio\_40:

(Start: 53 @34085 has 8 MA's), (Start: 57 @34079 has 58 MA's), (64, 34040), (Start: 67 @34028 has 2 MA's), (70, 34001), (74, 33980), (85, 33899), (87, 33887), (93, 33836), (110, 33776),

Gene: Krueger\_49 Start: 35862, Stop: 35461, Start Num: 50

Candidate Starts for Krueger\_49:

(Start: 50 @35862 has 1 MA's), (Start: 61 @35850 has 11 MA's), (64, 35820), (79, 35718), (83, 35697), (88, 35664), (93, 35622), (101, 35586), (128, 35493), (129, 35487),

Gene: Krypton555\_38 Start: 34434, Stop: 34048, Start Num: 57

Candidate Starts for Krypton555\_38:

(Start: 26 @34530 has 1 MA's), (34, 34500), (Start: 41 @34470 has 7 MA's), (Start: 45 @34464 has 19 MA's), (Start: 57 @34434 has 58 MA's), (65, 34395), (69, 34371), (70, 34365), (75, 34338), (78, 34299), (81, 34287), (83, 34275), (88, 34242), (118, 34116), (132, 34053),

Gene: Larva\_42 Start: 34253, Stop: 33849, Start Num: 53

Candidate Starts for Larva\_42:

(Start: 53 @34253 has 8 MA's), (Start: 57 @34247 has 58 MA's), (64, 34208), (Start: 67 @34196 has 2 MA's), (70, 34169), (87, 34055), (93, 34004), (110, 33944), (132, 33854),

Gene: LastHope\_46 Start: 34433, Stop: 34047, Start Num: 59

Candidate Starts for LastHope\_46:

(30, 34514), (31, 34508), (36, 34493), (Start: 59 @34433 has 2 MA's), (75, 34340), (77, 34313), (111, 34142), (129, 34073),

Gene: LaterM\_44 Start: 35874, Stop: 35497, Start Num: 57

Candidate Starts for LaterM\_44:

(36, 35925), (Start: 57 @35874 has 58 MA's), (64, 35838), (74, 35784), (75, 35778), (113, 35586), (118, 35571), (129, 35523),

Gene: LeBron\_38 Start: 32968, Stop: 32552, Start Num: 41

Candidate Starts for LeBron\_38:

(Start: 41 @32968 has 7 MA's), (Start: 45 @32962 has 19 MA's), (Start: 51 @32941 has 28 MA's), (Start: 57 @32932 has 58 MA's), (62, 32899), (75, 32833), (78, 32794), (83, 32770), (90, 32725), (121, 32617),

Gene: LeMond\_47 Start: 36084, Stop: 35710, Start Num: 61

Candidate Starts for LeMond\_47:

(27, 36180), (44, 36117), (Start: 61 @36084 has 11 MA's), (64, 36054), (65, 36051), (75, 35994), (80, 35949), (83, 35931), (93, 35856), (119, 35781), (129, 35736),

Gene: Leston\_41 Start: 34396, Stop: 34046, Start Num: 67

Candidate Starts for Leston\_41:

(Start: 57 @34447 has 58 MA's), (Start: 67 @34396 has 2 MA's), (87, 34255), (93, 34204), (110, 34144),

Gene: Lewan\_40 Start: 34274, Stop: 33885, Start Num: 51

Candidate Starts for Lewan\_40:

(Start: 51 @34274 has 28 MA's), (Start: 57 @34265 has 58 MA's), (65, 34226), (69, 34202), (70, 34196), (78, 34130), (83, 34106), (90, 34061), (107, 33980), (110, 33974), (115, 33962), (121, 33950),

Gene: LilDestine\_40 Start: 34278, Stop: 33889, Start Num: 51

Candidate Starts for LilDestine\_40:

(Start: 51 @34278 has 28 MA's), (Start: 57 @34269 has 58 MA's), (65, 34230), (69, 34206), (70, 34200), (75, 34173), (78, 34134), (83, 34110), (90, 34065), (110, 33978), (121, 33954),

Gene: LindNT\_43 Start: 35164, Stop: 34787, Start Num: 57

Candidate Starts for LindNT\_43:

(36, 35215), (Start: 57 @35164 has 58 MA's), (64, 35128), (68, 35113), (75, 35068), (118, 34861), (129, 34813),

Gene: LiyuLake\_38 Start: 34530, Stop: 34117, Start Num: 45

Candidate Starts for LiyuLake\_38:

(4, 34719), (6, 34713), (9, 34692), (10, 34671), (Start: 41 @34536 has 7 MA's), (Start: 45 @34530 has 19 MA's), (Start: 57 @34500 has 58 MA's), (63, 34464), (65, 34458), (70, 34428), (75, 34401), (78, 34362), (81, 34350), (83, 34338), (88, 34305), (90, 34293), (118, 34185), (132, 34122),

Gene: Loadrie\_40 Start: 34312, Stop: 33923, Start Num: 51

Candidate Starts for Loadrie\_40:

(Start: 51 @34312 has 28 MA's), (Start: 57 @34303 has 58 MA's), (65, 34264), (69, 34240), (70, 34234), (78, 34168), (83, 34144), (90, 34099), (107, 34018), (110, 34012), (115, 34000), (121, 33988),

Gene: Lolly9\_38 Start: 34324, Stop: 33941, Start Num: 57

Candidate Starts for Lolly9\_38:

(4, 34543), (6, 34537), (9, 34516), (10, 34495), (Start: 41 @34360 has 7 MA's), (Start: 45 @34354 has 19 MA's), (Start: 57 @34324 has 58 MA's), (63, 34288), (65, 34282), (70, 34252), (75, 34225), (78, 34186), (81, 34174), (83, 34162), (88, 34129), (89, 34123), (90, 34117), (99, 34060), (118, 34009), (132, 33946),

Gene: Lumos\_38 Start: 34543, Stop: 34130, Start Num: 45

Candidate Starts for Lumos\_38:

(4, 34732), (6, 34726), (9, 34705), (10, 34684), (Start: 41 @34549 has 7 MA's), (Start: 45 @34543 has 19 MA's), (Start: 57 @34513 has 58 MA's), (63, 34477), (65, 34471), (69, 34447), (70, 34441), (75, 34414), (78, 34375), (81, 34363), (83, 34351), (88, 34318), (90, 34306), (99, 34249), (118, 34198), (132, 34135),

Gene: MAckerman\_38 Start: 32940, Stop: 32530, Start Num: 45

Candidate Starts for MAckerman\_38:

(Start: 41 @32946 has 7 MA's), (Start: 45 @32940 has 19 MA's), (Start: 50 @32922 has 1 MA's), (Start: 51 @32919 has 28 MA's), (Start: 57 @32910 has 58 MA's), (62, 32877), (75, 32811), (78, 32772), (83, 32748), (90, 32703), (92, 32688), (121, 32595),

Gene: MacnCheese\_47 Start: 36557, Stop: 36177, Start Num: 58

Candidate Starts for MacnCheese\_47:

(Start: 26 @36650 has 1 MA's), (Start: 40 @36590 has 5 MA's), (Start: 58 @36557 has 2 MA's), (74, 36473), (83, 36404), (93, 36329), (130, 36191),

Gene: Marcoliusprime\_46 Start: 37051, Stop: 36680, Start Num: 57

Candidate Starts for Marcoliusprime\_46:

(36, 37105), (Start: 57 @37051 has 58 MA's), (64, 37015), (68, 37000), (75, 36955), (82, 36895), (91, 36835), (94, 36805), (98, 36793), (111, 36763), (129, 36706),

Gene: MarkPhew\_46 Start: 35518, Stop: 35147, Start Num: 61

Candidate Starts for MarkPhew\_46:

(38, 35566), (42, 35554), (Start: 61 @35518 has 11 MA's), (75, 35428), (76, 35407), (83, 35365), (93, 35290), (97, 35269), (113, 35233), (120, 35212), (129, 35173),

Gene: Marshawn\_46 Start: 35965, Stop: 35570, Start Num: 56

Candidate Starts for Marshawn\_46:

(Start: 56 @35965 has 1 MA's), (Start: 67 @35914 has 2 MA's), (75, 35866), (80, 35821), (83, 35803), (93, 35728), (110, 35665), (129, 35599), (132, 35578),

Gene: Mdavu\_39 Start: 34516, Stop: 34118, Start Num: 54

Candidate Starts for Mdavu\_39:

(39, 34555), (Start: 54 @34516 has 11 MA's), (75, 34420), (118, 34195), (120, 34189),

Gene: Megsy\_44 Start: 35223, Stop: 34846, Start Num: 57

Candidate Starts for Megsy\_44:

(36, 35274), (Start: 57 @35223 has 58 MA's), (64, 35187), (68, 35172), (75, 35127), (118, 34920), (129, 34872),

Gene: Miley16\_40 Start: 34280, Stop: 33891, Start Num: 51

Candidate Starts for Miley16\_40:

(Start: 51 @34280 has 28 MA's), (Start: 57 @34271 has 58 MA's), (65, 34232), (69, 34208), (70, 34202), (75, 34175), (78, 34136), (83, 34112), (90, 34067), (110, 33980), (121, 33956),

Gene: Milly\_46 Start: 37024, Stop: 36653, Start Num: 57

Candidate Starts for Milly\_46:

(36, 37078), (Start: 57 @37024 has 58 MA's), (64, 36988), (68, 36973), (75, 36928), (82, 36868), (91, 36808), (94, 36778), (98, 36766), (111, 36736), (129, 36679),

Gene: MiniLon\_38 Start: 34355, Stop: 33942, Start Num: 45

Candidate Starts for MiniLon\_38:

(4, 34544), (6, 34538), (9, 34517), (10, 34496), (Start: 41 @34361 has 7 MA's), (Start: 45 @34355 has 19 MA's), (Start: 57 @34325 has 58 MA's), (63, 34289), (65, 34283), (70, 34253), (75, 34226), (78, 34187), (81, 34175), (83, 34163), (88, 34130), (89, 34124), (90, 34118), (99, 34061), (118, 34010), (132, 33947),

Gene: MiniMac\_38 Start: 34358, Stop: 33939, Start Num: 41

Candidate Starts for MiniMac\_38:

(Start: 41 @34358 has 7 MA's), (Start: 45 @34352 has 19 MA's), (Start: 57 @34322 has 58 MA's), (63, 34286), (65, 34280), (70, 34250), (75, 34223), (78, 34184), (81, 34172), (83, 34160), (88, 34127), (89, 34121), (90, 34115), (99, 34058), (118, 34007), (132, 33944),

Gene: Miryou\_43 Start: 36650, Stop: 36249, Start Num: 57

Candidate Starts for Miryou\_43:

(Start: 57 @36650 has 58 MA's), (Start: 67 @36599 has 2 MA's), (87, 36458), (93, 36407), (110, 36347),

Gene: MkaliMitinis3\_40 Start: 34282, Stop: 33893, Start Num: 51

Candidate Starts for MkaliMitinis3\_40:

(Start: 51 @34282 has 28 MA's), (Start: 57 @34273 has 58 MA's), (65, 34234), (69, 34210), (70, 34204), (78, 34138), (83, 34114), (90, 34069), (107, 33988), (110, 33982), (115, 33970), (121, 33958),

Gene: Moostard\_38 Start: 34518, Stop: 34135, Start Num: 57

Candidate Starts for Moostard\_38:

(4, 34737), (6, 34731), (9, 34710), (10, 34689), (Start: 41 @34554 has 7 MA's), (Start: 45 @34548 has 19 MA's), (Start: 57 @34518 has 58 MA's), (63, 34482), (65, 34476), (69, 34452), (70, 34446), (75, 34419), (78, 34380), (81, 34368), (83, 34356), (88, 34323), (90, 34311), (99, 34254), (118, 34203), (132, 34140),

Gene: MsGreen\_38 Start: 34516, Stop: 34133, Start Num: 57

Candidate Starts for MsGreen\_38:

(4, 34735), (6, 34729), (9, 34708), (10, 34687), (Start: 41 @34552 has 7 MA's), (Start: 45 @34546 has 19 MA's), (Start: 57 @34516 has 58 MA's), (63, 34480), (65, 34474), (69, 34450), (70, 34444), (75, 34417), (78, 34378), (81, 34366), (83, 34354), (88, 34321), (90, 34309), (99, 34252), (118, 34201), (132, 34138),

Gene: Mufasa\_46 Start: 36609, Stop: 36241, Start Num: 57

Candidate Starts for Mufasa\_46:

(Start: 57 @36609 has 58 MA's), (64, 36573), (75, 36513), (82, 36453), (91, 36393), (94, 36363), (98, 36351), (111, 36321), (129, 36267),

Gene: Murucutumbu\_44 Start: 35967, Stop: 35590, Start Num: 57

Candidate Starts for Murucutumbu\_44:

(36, 36018), (Start: 57 @35967 has 58 MA's), (64, 35931), (74, 35877), (75, 35871), (113, 35679), (118, 35664), (129, 35616),

Gene: Mynx\_44 Start: 35298, Stop: 34921, Start Num: 57

Candidate Starts for Mynx\_44:

(36, 35349), (Start: 57 @35298 has 58 MA's), (64, 35262), (68, 35247), (75, 35202), (118, 34995), (129, 34947),

Gene: Nergal\_40 Start: 33595, Stop: 33221, Start Num: 57

Candidate Starts for Nergal\_40:

(46, 33622), (Start: 57 @33595 has 58 MA's), (64, 33559), (69, 33532), (75, 33499), (83, 33436), (92, 33376), (97, 33340), (129, 33247), (132, 33226),

Gene: Netyap\_40 Start: 34280, Stop: 33891, Start Num: 51

Candidate Starts for Netyap\_40:

(Start: 51 @34280 has 28 MA's), (Start: 57 @34271 has 58 MA's), (65, 34232), (69, 34208), (70, 34202), (75, 34175), (78, 34136), (83, 34112), (90, 34067), (110, 33980), (121, 33956),

Gene: Nibb\_45 Start: 35241, Stop: 34867, Start Num: 61

Candidate Starts for Nibb\_45:

(48, 35265), (Start: 61 @35241 has 11 MA's), (64, 35211), (68, 35196), (75, 35151), (76, 35130), (83, 35088), (90, 35043), (93, 35013), (97, 34992), (116, 34950), (119, 34941), (127, 34908), (129, 34893),

Gene: Nicholas\_38 Start: 34516, Stop: 34133, Start Num: 57

Candidate Starts for Nicholas\_38:

(4, 34735), (6, 34729), (9, 34708), (10, 34687), (Start: 41 @34552 has 7 MA's), (Start: 45 @34546 has 19 MA's), (Start: 57 @34516 has 58 MA's), (63, 34480), (65, 34474), (69, 34450), (70, 34444), (75, 34417), (78, 34378), (81, 34366), (83, 34354), (88, 34321), (90, 34309), (99, 34252), (118, 34201), (132, 34138),

Gene: Nicholasp3\_40 Start: 34281, Stop: 33892, Start Num: 51

Candidate Starts for Nicholasp3\_40:

(Start: 51 @34281 has 28 MA's), (Start: 57 @34272 has 58 MA's), (65, 34233), (69, 34209), (70, 34203), (75, 34176), (78, 34137), (83, 34113), (90, 34068), (110, 33981), (115, 33969), (121, 33957),

Gene: Nikao\_41 Start: 37140, Stop: 36742, Start Num: 54

Candidate Starts for Nikao\_41:

(39, 37179), (Start: 54 @37140 has 11 MA's), (75, 37044), (118, 36819), (120, 36813),

Gene: Niklas\_45 Start: 35707, Stop: 35315, Start Num: 54

Candidate Starts for Niklas\_45:

(Start: 54 @35707 has 11 MA's), (72, 35623), (75, 35608), (98, 35446), (120, 35383), (126, 35359), (131, 35326),

Gene: Nutello\_38 Start: 34527, Stop: 34129, Start Num: 54

Candidate Starts for Nutello\_38:

(39, 34566), (Start: 54 @34527 has 11 MA's), (75, 34431), (118, 34206), (120, 34200),

Gene: OhShagHennessy\_37 Start: 32908, Stop: 32498, Start Num: 45

Candidate Starts for OhShagHennessy\_37:

(Start: 41 @32914 has 7 MA's), (Start: 45 @32908 has 19 MA's), (Start: 51 @32887 has 28 MA's), (Start: 57 @32878 has 58 MA's), (62, 32845), (75, 32779), (78, 32740), (83, 32716), (90, 32671), (121, 32563),

Gene: OkiRoe\_41 Start: 34320, Stop: 33919, Start Num: 57

Candidate Starts for OkiRoe\_41:

(Start: 57 @34320 has 58 MA's), (Start: 67 @34269 has 2 MA's), (87, 34128), (93, 34077), (110, 34017),

Gene: OmniCritical\_46 Start: 35929, Stop: 35576, Start Num: 57

Candidate Starts for OmniCritical\_46:

(31, 36004), (Start: 45 @35959 has 19 MA's), (Start: 53 @35935 has 8 MA's), (Start: 57 @35929 has 58 MA's), (64, 35890), (73, 35839), (82, 35770), (86, 35749), (89, 35728), (91, 35710), (128, 35608),

Gene: Omnicron\_44 Start: 33930, Stop: 33529, Start Num: 57

Candidate Starts for Omnicron\_44:

(Start: 57 @33930 has 58 MA's), (Start: 67 @33879 has 2 MA's), (70, 33852), (85, 33750), (87, 33738), (93, 33687), (110, 33627),

Gene: Oscar\_47 Start: 35987, Stop: 35613, Start Num: 61

Candidate Starts for Oscar\_47:

(43, 36020), (Start: 61 @35987 has 11 MA's), (64, 35957), (65, 35954), (75, 35897), (80, 35852), (83, 35834), (93, 35759), (119, 35684), (129, 35639),

Gene: PYPDinur\_37 Start: 33042, Stop: 32662, Start Num: 57

Candidate Starts for PYPDinur\_37:

(Start: 41 @33078 has 7 MA's), (Start: 57 @33042 has 58 MA's), (63, 33009), (69, 32979), (70, 32973), (75, 32946), (78, 32907), (84, 32877), (90, 32838), (107, 32760), (116, 32733), (118, 32727),

Gene: Paola\_41 Start: 34318, Stop: 33917, Start Num: 57

Candidate Starts for Paola\_41:

(Start: 57 @34318 has 58 MA's), (Start: 67 @34267 has 2 MA's), (87, 34126), (93, 34075), (110, 34015),

Gene: Peanam\_45 Start: 35664, Stop: 35272, Start Num: 54

Candidate Starts for Peanam\_45:

(Start: 54 @35664 has 11 MA's), (72, 35580), (75, 35565), (120, 35340), (126, 35316), (131, 35283),

Gene: Pharb\_43 Start: 34363, Stop: 33977, Start Num: 58

Candidate Starts for Pharb\_43:

(Start: 58 @34363 has 2 MA's), (64, 34333), (83, 34210), (91, 34153), (93, 34135), (106, 34087), (109, 34081), (129, 34003),

Gene: PhelpsODU\_45 Start: 34877, Stop: 34485, Start Num: 60

Candidate Starts for PhelpsODU\_45:

(1, 35147), (2, 35111), (3, 35096), (7, 35087), (8, 35078), (Start: 60 @34877 has 13 MA's), (64, 34847), (83, 34724), (92, 34664), (93, 34649), (122, 34550), (129, 34511),

Gene: Phrank\_46 Start: 34834, Stop: 34442, Start Num: 60

Candidate Starts for Phrank\_46:

(5, 35047), (8, 35035), (Start: 60 @34834 has 13 MA's), (64, 34804), (83, 34681), (88, 34648), (92, 34621), (93, 34606), (101, 34570), (123, 34498), (129, 34468),

Gene: Pixie\_45 Start: 35157, Stop: 34735, Start Num: 40

Candidate Starts for Pixie\_45:

(Start: 40 @35157 has 5 MA's), (Start: 58 @35124 has 2 MA's), (83, 34968), (91, 34911), (93, 34893), (106, 34845), (129, 34761),

Gene: Prithvi\_44 Start: 35164, Stop: 34787, Start Num: 57

Candidate Starts for Prithvi\_44:

(36, 35215), (Start: 57 @35164 has 58 MA's), (64, 35128), (68, 35113), (75, 35068), (118, 34861), (129, 34813),

Gene: Psycho\_42 Start: 34326, Stop: 33979, Start Num: 67

Candidate Starts for Psycho\_42:

(Start: 53 @34383 has 8 MA's), (Start: 57 @34377 has 58 MA's), (64, 34338), (Start: 67 @34326 has 2 MA's), (70, 34299), (87, 34185), (93, 34134), (110, 34074), (132, 33984),

Gene: Quby\_38 Start: 32936, Stop: 32556, Start Num: 57

Candidate Starts for Quby\_38:

(Start: 41 @32972 has 7 MA's), (Start: 57 @32936 has 58 MA's), (63, 32903), (69, 32873), (70, 32867), (75, 32840), (78, 32801), (84, 32771), (90, 32732), (100, 32672), (116, 32627), (118, 32621),

Gene: Rando14\_43 Start: 33501, Stop: 33097, Start Num: 57

Candidate Starts for Rando14\_43:

(Start: 57 @33501 has 58 MA's), (Start: 67 @33447 has 2 MA's), (93, 33255), (110, 33195),

Gene: Reptar3000\_45 Start: 35140, Stop: 34784, Start Num: 53

Candidate Starts for Reptar3000\_45:

(31, 35209), (Start: 45 @35164 has 19 MA's), (Start: 53 @35140 has 8 MA's), (Start: 57 @35134 has 58 MA's), (64, 35095), (73, 35044), (86, 34954), (89, 34933), (91, 34915),

Gene: Rose5\_37 Start: 32935, Stop: 32525, Start Num: 45

Candidate Starts for Rose5\_37:

(Start: 41 @32941 has 7 MA's), (Start: 45 @32935 has 19 MA's), (Start: 50 @32917 has 1 MA's), (Start: 51 @32914 has 28 MA's), (Start: 57 @32905 has 58 MA's), (62, 32872), (75, 32806), (78, 32767), (83, 32743), (90, 32698), (92, 32683), (121, 32590),

Gene: Rumpelstiltskin\_40 Start: 34547, Stop: 34158, Start Num: 51

Candidate Starts for Rumpelstiltskin\_40:

(Start: 51 @34547 has 28 MA's), (Start: 57 @34538 has 58 MA's), (65, 34499), (69, 34475), (70, 34469), (75, 34442), (78, 34403), (83, 34379), (90, 34334), (110, 34247), (121, 34223),

Gene: SamuelLPlaqson\_44 Start: 35877, Stop: 35500, Start Num: 57

Candidate Starts for SamuelLPlaqson\_44:

(36, 35928), (Start: 57 @35877 has 58 MA's), (64, 35841), (75, 35781), (118, 35574), (129, 35526),



Gene: Sarshaun\_40 Start: 34314, Stop: 33925, Start Num: 51

Candidate Starts for Sarshaun\_40:

(Start: 51 @34314 has 28 MA's), (Start: 57 @34305 has 58 MA's), (65, 34266), (69, 34242), (70, 34236), (78, 34170), (83, 34146), (90, 34101), (107, 34020), (110, 34014), (115, 34002), (121, 33990),

Gene: Scarlett\_47 Start: 35979, Stop: 35605, Start Num: 61

Candidate Starts for Scarlett\_47:

(43, 36012), (Start: 61 @35979 has 11 MA's), (64, 35949), (65, 35946), (75, 35889), (80, 35844), (83, 35826), (93, 35751), (119, 35676), (129, 35631),

Gene: SgtBeansprout\_38 Start: 34527, Stop: 34063, Start Num: 54

Candidate Starts for SgtBeansprout\_38:

(39, 34566), (Start: 54 @34527 has 11 MA's), (75, 34431), (118, 34206), (120, 34200),

Gene: Shadow1\_48 Start: 35996, Stop: 35607, Start Num: 61

Candidate Starts for Shadow1\_48:

(Start: 61 @35996 has 11 MA's), (64, 35966), (79, 35864), (83, 35843), (92, 35783), (93, 35768), (101, 35732), (113, 35696), (128, 35639), (129, 35633),

Gene: Shaobing\_45 Start: 35682, Stop: 35284, Start Num: 54

Candidate Starts for Shaobing\_45:

(Start: 54 @35682 has 11 MA's), (75, 35583), (93, 35445), (110, 35379), (120, 35352), (126, 35328), (131, 35295),

Gene: ShedlockHolmes\_46 Start: 35683, Stop: 35261, Start Num: 40

Candidate Starts for ShedlockHolmes\_46:

(Start: 26 @35740 has 1 MA's), (32, 35713), (Start: 40 @35683 has 5 MA's), (Start: 58 @35650 has 2 MA's), (91, 35437), (93, 35419), (106, 35371), (129, 35287),

Gene: Sheng711\_38 Start: 33042, Stop: 32662, Start Num: 57

Candidate Starts for Sheng711\_38:

(Start: 41 @33078 has 7 MA's), (Start: 57 @33042 has 58 MA's), (63, 33009), (69, 32979), (70, 32973), (75, 32946), (78, 32907), (84, 32877), (90, 32838), (107, 32760), (116, 32733), (118, 32727),

Gene: Silverleaf\_37 Start: 32935, Stop: 32525, Start Num: 45

Candidate Starts for Silverleaf\_37:

(Start: 41 @32941 has 7 MA's), (Start: 45 @32935 has 19 MA's), (Start: 50 @32917 has 1 MA's), (Start: 51 @32914 has 28 MA's), (Start: 57 @32905 has 58 MA's), (62, 32872), (75, 32806), (78, 32767), (83, 32743), (90, 32698), (92, 32683), (121, 32590),

Gene: SirPhilip\_45 Start: 36219, Stop: 35824, Start Num: 60

Candidate Starts for SirPhilip\_45:

(Start: 60 @36219 has 13 MA's), (64, 36189), (75, 36129), (77, 36102), (83, 36066), (95, 35973), (103, 35943), (129, 35850),

Gene: Snenia\_38 Start: 34517, Stop: 34134, Start Num: 57

Candidate Starts for Snenia\_38:

(4, 34736), (6, 34730), (9, 34709), (10, 34688), (Start: 41 @34553 has 7 MA's), (Start: 45 @34547 has 19 MA's), (Start: 57 @34517 has 58 MA's), (63, 34481), (65, 34475), (69, 34451), (70, 34445), (75, 34418), (78, 34379), (81, 34367), (83, 34355), (88, 34322), (90, 34310), (99, 34253), (118, 34202), (132, 34139),

Gene: SoSeph\_41 Start: 34467, Stop: 34066, Start Num: 57

Candidate Starts for SoSeph\_41:

(25, 34566), (37, 34515), (Start: 40 @34503 has 5 MA's), (Start: 57 @34467 has 58 MA's), (Start: 67 @34416 has 2 MA's), (87, 34275), (93, 34224), (110, 34164), (125, 34116),

Gene: Soap141\_40 Start: 34314, Stop: 33925, Start Num: 51

Candidate Starts for Soap141\_40:

(Start: 51 @34314 has 28 MA's), (Start: 57 @34305 has 58 MA's), (65, 34266), (69, 34242), (70, 34236), (78, 34170), (83, 34146), (90, 34101), (107, 34020), (110, 34014), (115, 34002), (121, 33990),

Gene: Stinson\_44 Start: 35487, Stop: 35110, Start Num: 57

Candidate Starts for Stinson\_44:

(36, 35538), (Start: 57 @35487 has 58 MA's), (64, 35451), (74, 35397), (75, 35391), (113, 35199), (118, 35184), (129, 35136),

Gene: Strobilo\_46 Start: 37026, Stop: 36655, Start Num: 57

Candidate Starts for Strobilo\_46:

(36, 37080), (Start: 57 @37026 has 58 MA's), (64, 36990), (68, 36975), (75, 36930), (82, 36870), (91, 36810), (94, 36780), (98, 36768), (111, 36738), (129, 36681),

Gene: Sulley\_43 Start: 35224, Stop: 34844, Start Num: 57

Candidate Starts for Sulley\_43:

(36, 35275), (Start: 57 @35224 has 58 MA's), (64, 35188), (75, 35128), (113, 34933), (118, 34918), (129, 34870),

Gene: Sunflower1121\_49 Start: 36097, Stop: 35708, Start Num: 60

Candidate Starts for Sunflower1121\_49:

(Start: 60 @36097 has 13 MA's), (64, 36067), (79, 35965), (83, 35944), (92, 35884), (93, 35869), (101, 35833), (128, 35740),

Gene: Syra333\_48 Start: 35764, Stop: 35375, Start Num: 61

Candidate Starts for Syra333\_48:

(Start: 61 @35764 has 11 MA's), (64, 35734), (79, 35632), (83, 35611), (92, 35551), (93, 35536), (101, 35500), (113, 35464), (128, 35407), (129, 35401),

Gene: TBond007\_45 Start: 35156, Stop: 34734, Start Num: 40

Candidate Starts for TBond007\_45:

(Start: 40 @35156 has 5 MA's), (Start: 58 @35123 has 2 MA's), (83, 34967), (91, 34910), (93, 34892), (106, 34844), (129, 34760),

Gene: TClif\_47 Start: 36099, Stop: 35698, Start Num: 51

Candidate Starts for TClif\_47:

(Start: 51 @36099 has 28 MA's), (66, 36051), (71, 36015), (74, 36003), (75, 35997), (93, 35859), (104, 35814), (110, 35796), (118, 35775), (122, 35763), (130, 35715), (134, 35703),

Gene: TaiwanKao\_45 Start: 35220, Stop: 34843, Start Num: 57

Candidate Starts for TaiwanKao\_45:

(36, 35271), (Start: 57 @35220 has 58 MA's), (64, 35184), (68, 35169), (75, 35124), (118, 34917), (129, 34869),

Gene: Thyatira\_43 Start: 36667, Stop: 36266, Start Num: 57

Candidate Starts for Thyatira\_43:

(Start: 52 @36673 has 1 MA's), (Start: 57 @36667 has 58 MA's), (Start: 67 @36616 has 2 MA's), (87, 36475), (93, 36424), (110, 36364),

Gene: Tierra\_46 Start: 35645, Stop: 35253, Start Num: 60

Candidate Starts for Tierra\_46:

(7, 35855), (8, 35846), (Start: 60 @35645 has 13 MA's), (64, 35615), (83, 35492), (88, 35459), (92, 35432), (93, 35417), (101, 35381), (118, 35330), (123, 35309), (129, 35279),

Gene: TingHuaYa\_44 Start: 34216, Stop: 33830, Start Num: 59

Candidate Starts for TingHuaYa\_44:

(30, 34297), (31, 34291), (36, 34276), (Start: 59 @34216 has 2 MA's), (75, 34123), (77, 34096), (111, 33925), (129, 33856),

Gene: TiniBug\_44 Start: 35873, Stop: 35496, Start Num: 57

Candidate Starts for TiniBug\_44:

(36, 35924), (Start: 57 @35873 has 58 MA's), (64, 35837), (75, 35777), (118, 35570), (129, 35522),

Gene: Torres\_41 Start: 37141, Stop: 36743, Start Num: 54

Candidate Starts for Torres\_41:

(39, 37180), (Start: 54 @37141 has 11 MA's), (75, 37045), (118, 36820), (120, 36814),

Gene: Tourach\_40 Start: 34296, Stop: 33907, Start Num: 51

Candidate Starts for Tourach\_40:

(Start: 51 @34296 has 28 MA's), (Start: 57 @34287 has 58 MA's), (65, 34248), (70, 34218), (75, 34191), (78, 34152), (83, 34128), (90, 34083), (110, 33996), (115, 33984), (121, 33972),

Gene: TreyKay\_44 Start: 35164, Stop: 34787, Start Num: 57

Candidate Starts for TreyKay\_44:

(36, 35215), (Start: 57 @35164 has 58 MA's), (64, 35128), (68, 35113), (75, 35068), (118, 34861), (129, 34813),

Gene: TribleTrouble\_43 Start: 35018, Stop: 34626, Start Num: 55

Candidate Starts for TribleTrouble\_43:

(33, 35075), (Start: 55 @35018 has 1 MA's), (64, 34982), (93, 34784), (106, 34736), (129, 34652), (130, 34640), (132, 34631),

Gene: Tyson\_37 Start: 32936, Stop: 32526, Start Num: 45

Candidate Starts for Tyson\_37:

(Start: 41 @32942 has 7 MA's), (Start: 45 @32936 has 19 MA's), (Start: 50 @32918 has 1 MA's), (Start: 51 @32915 has 28 MA's), (Start: 57 @32906 has 58 MA's), (62, 32873), (75, 32807), (78, 32768), (83, 32744), (90, 32699), (92, 32684), (121, 32591),

Gene: UPIE\_38 Start: 32940, Stop: 32524, Start Num: 41

Candidate Starts for UPIE\_38:

(Start: 41 @32940 has 7 MA's), (Start: 45 @32934 has 19 MA's), (Start: 51 @32913 has 28 MA's), (Start: 57 @32904 has 58 MA's), (62, 32871), (75, 32805), (78, 32766), (83, 32742), (90, 32697), (121, 32589),

Gene: Unicorn\_45 Start: 34877, Stop: 34485, Start Num: 60

Candidate Starts for Unicorn\_45:

(1, 35147), (2, 35111), (3, 35096), (7, 35087), (8, 35078), (Start: 60 @34877 has 13 MA's), (64, 34847), (83, 34724), (92, 34664), (93, 34649), (122, 34550), (129, 34511),

Gene: Urkel\_44 Start: 35877, Stop: 35500, Start Num: 57

Candidate Starts for Urkel\_44:

(36, 35928), (Start: 57 @35877 has 58 MA's), (64, 35841), (75, 35781), (118, 35574), (129, 35526),

Gene: Validus\_47 Start: 35733, Stop: 35320, Start Num: 54

Candidate Starts for Validus\_47:

(28, 35814), (Start: 54 @35733 has 11 MA's), (72, 35637), (75, 35622), (93, 35484), (110, 35421), (120, 35394), (124, 35376), (134, 35325),

Gene: Vetric\_40 Start: 34287, Stop: 33898, Start Num: 51

Candidate Starts for Vetric\_40:

(Start: 51 @34287 has 28 MA's), (Start: 57 @34278 has 58 MA's), (65, 34239), (69, 34215), (70, 34209), (75, 34182), (78, 34143), (83, 34119), (90, 34074), (110, 33987), (121, 33963),

Gene: Wamburgexpress\_38 Start: 32949, Stop: 32539, Start Num: 45

Candidate Starts for Wamburgexpress\_38:

(Start: 41 @32955 has 7 MA's), (Start: 45 @32949 has 19 MA's), (Start: 51 @32928 has 28 MA's), (Start: 57 @32919 has 58 MA's), (62, 32886), (75, 32820), (78, 32781), (83, 32757), (90, 32712), (121, 32604),

Gene: Waterfoul\_42 Start: 34567, Stop: 34160, Start Num: 52

Candidate Starts for Waterfoul\_42:

(Start: 52 @34567 has 1 MA's), (Start: 57 @34561 has 58 MA's), (Start: 67 @34510 has 2 MA's), (93, 34318), (110, 34258), (125, 34210),

Gene: Whirlwind\_39 Start: 34372, Stop: 33890, Start Num: 26

Candidate Starts for Whirlwind\_39:

(Start: 26 @34372 has 1 MA's), (34, 34342), (Start: 41 @34312 has 7 MA's), (Start: 45 @34306 has 19 MA's), (Start: 57 @34276 has 58 MA's), (65, 34237), (69, 34213), (70, 34207), (75, 34180), (78, 34141), (81, 34129), (83, 34117), (88, 34084), (118, 33958), (132, 33895),

Gene: Wigglewobble\_40 Start: 34313, Stop: 33924, Start Num: 51

Candidate Starts for Wigglewobble\_40:

(Start: 51 @34313 has 28 MA's), (Start: 57 @34304 has 58 MA's), (65, 34265), (69, 34241), (70, 34235), (78, 34169), (83, 34145), (90, 34100), (107, 34019), (110, 34013), (115, 34001), (121, 33989),

Gene: Wilder\_40 Start: 34286, Stop: 33897, Start Num: 51

Candidate Starts for Wilder\_40:

(Start: 51 @34286 has 28 MA's), (Start: 57 @34277 has 58 MA's), (65, 34238), (69, 34214), (70, 34208), (78, 34142), (83, 34118), (90, 34073), (107, 33992), (110, 33986), (115, 33974), (121, 33962),

Gene: Winky\_40 Start: 34280, Stop: 33891, Start Num: 51

Candidate Starts for Winky\_40:

(Start: 51 @34280 has 28 MA's), (Start: 57 @34271 has 58 MA's), (65, 34232), (69, 34208), (70, 34202), (75, 34175), (78, 34136), (83, 34112), (90, 34067), (110, 33980), (121, 33956),

Gene: Wyatt2\_38 Start: 32935, Stop: 32525, Start Num: 45

Candidate Starts for Wyatt2\_38:

(Start: 41 @32941 has 7 MA's), (Start: 45 @32935 has 19 MA's), (Start: 50 @32917 has 1 MA's), (Start: 51 @32914 has 28 MA's), (Start: 57 @32905 has 58 MA's), (62, 32872), (75, 32806), (78, 32767), (83, 32743), (90, 32698), (92, 32683), (121, 32590),

Gene: Ximenita\_49 Start: 35950, Stop: 35561, Start Num: 61

Candidate Starts for Ximenita\_49:

(24, 36055), (35, 36016), (Start: 61 @35950 has 11 MA's), (64, 35920), (79, 35818), (83, 35797), (84, 35791), (88, 35764), (92, 35737), (93, 35722), (101, 35686), (117, 35641), (128, 35593), (129, 35587), (130, 35575),

Gene: Yuna\_49 Start: 36719, Stop: 36363, Start Num: 60

Candidate Starts for Yuna\_49:

(Start: 60 @36719 has 13 MA's), (64, 36689), (74, 36635), (75, 36629), (76, 36608), (83, 36566), (92, 36506), (93, 36491), (127, 36404), (129, 36389),

Gene: Yunkel11\_46 Start: 34974, Stop: 34585, Start Num: 57

Candidate Starts for Yunkel11\_46:

(14, 35112), (16, 35106), (17, 35103), (20, 35094), (23, 35079), (Start: 57 @34974 has 58 MA's), (Start: 61 @34968 has 11 MA's), (75, 34878), (83, 34815), (89, 34776), (93, 34740), (111, 34680), (114, 34674), (132, 34590),

Gene: Zakai\_40 Start: 34538, Stop: 34149, Start Num: 51

Candidate Starts for Zakai\_40:

(Start: 51 @34538 has 28 MA's), (Start: 57 @34529 has 58 MA's), (65, 34490), (69, 34466), (70, 34460), (78, 34394), (83, 34370), (90, 34325), (107, 34244), (110, 34238), (115, 34226), (121, 34214),

Gene: Zaria\_38 Start: 32950, Stop: 32540, Start Num: 45

Candidate Starts for Zaria\_38:

(Start: 41 @32956 has 7 MA's), (Start: 45 @32950 has 19 MA's), (Start: 50 @32932 has 1 MA's), (Start: 51 @32929 has 28 MA's), (Start: 57 @32920 has 58 MA's), (62, 32887), (75, 32821), (78, 32782), (83, 32758), (90, 32713), (92, 32698), (121, 32605),

Gene: Zavala\_44 Start: 35258, Stop: 34881, Start Num: 57

Candidate Starts for Zavala\_44:

(36, 35309), (Start: 57 @35258 has 58 MA's), (64, 35222), (68, 35207), (75, 35162), (118, 34955), (129, 34907),

Gene: ZhongYanYuan\_39 Start: 34142, Stop: 33753, Start Num: 51

Candidate Starts for ZhongYanYuan\_39:

(Start: 51 @34142 has 28 MA's), (Start: 57 @34133 has 58 MA's), (65, 34094), (70, 34064), (78, 33998), (83, 33974), (90, 33929), (102, 33857), (110, 33842), (115, 33830), (121, 33818),

Gene: ZoeJ\_45 Start: 36489, Stop: 36121, Start Num: 57

Candidate Starts for ZoeJ\_45:

(36, 36546), (Start: 57 @36489 has 58 MA's), (64, 36453), (Start: 67 @36441 has 2 MA's), (75, 36393), (83, 36330), (91, 36273), (105, 36213), (111, 36201), (129, 36147),