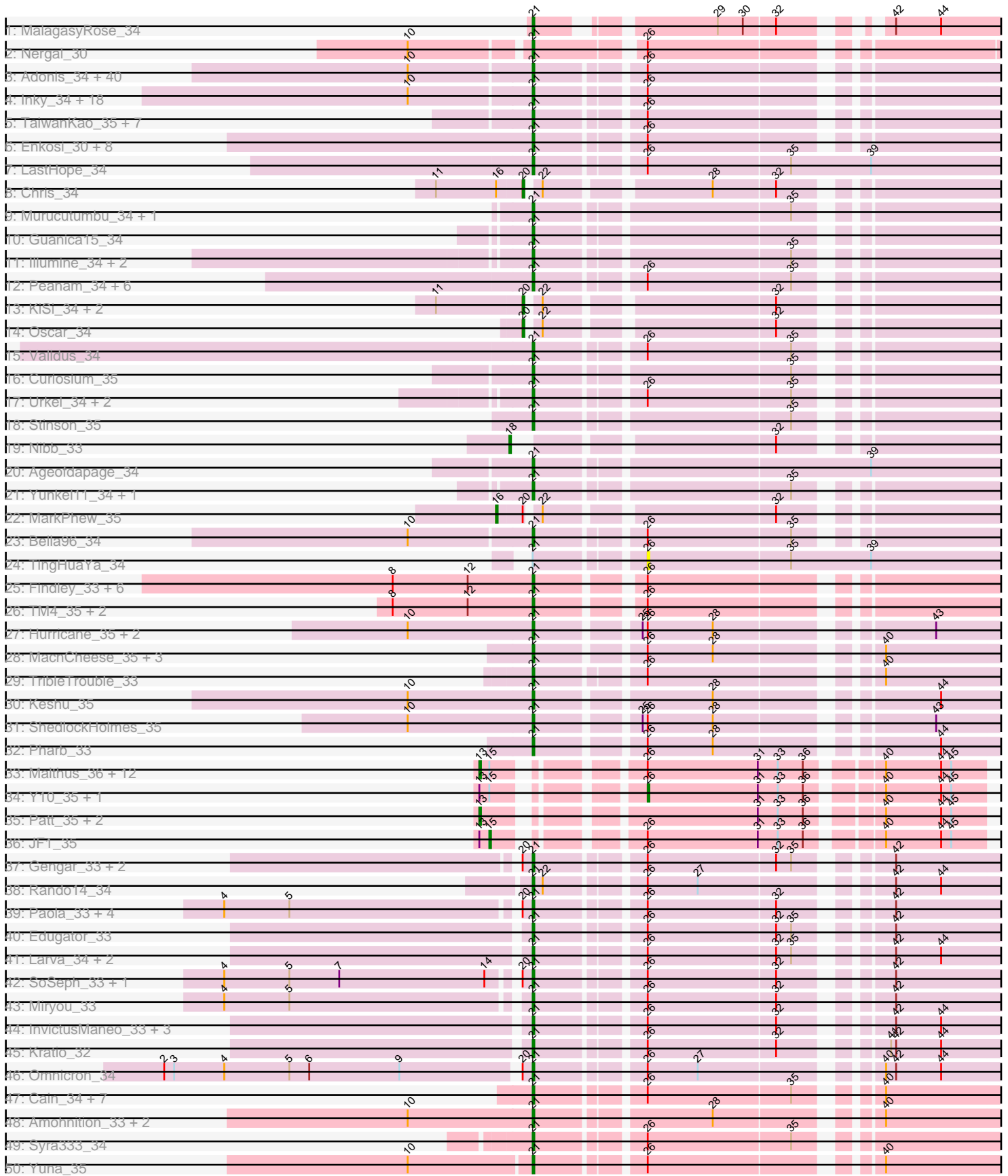
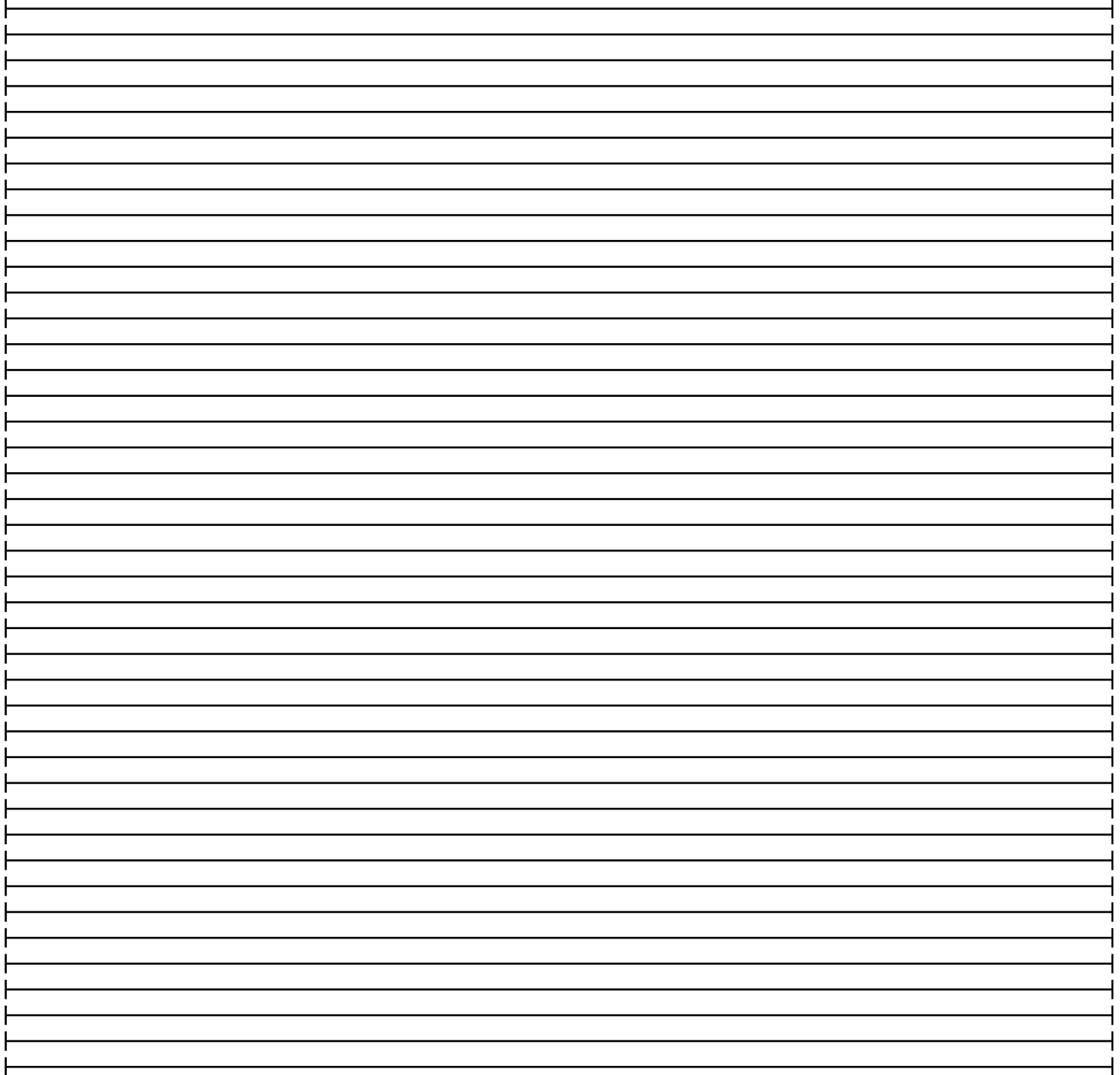
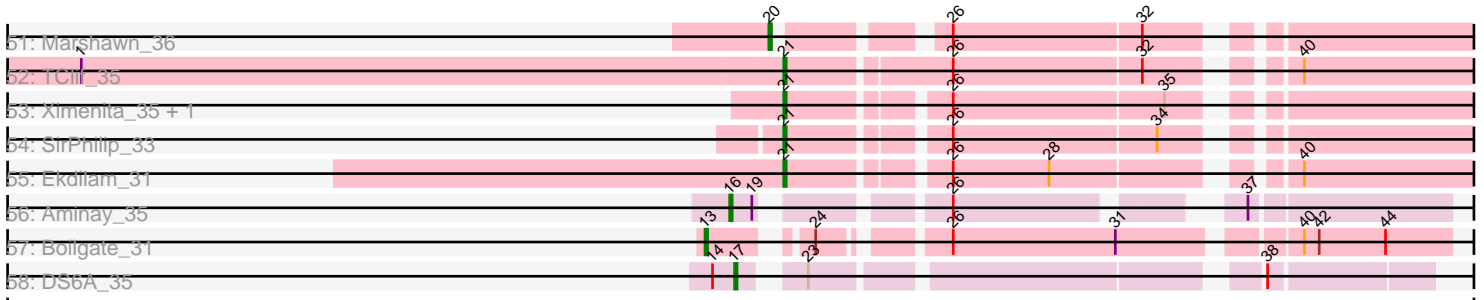


Pham 185317



Pham 185317



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 185317 Report

This analysis was run 11/02/24 on database version 579.

Pham number 185317 has 195 members, 6 are drafts.

Phages represented in each track:

- Track 1 : MalagasyRose\_34
- Track 2 : Nergal\_30
- Track 3 : Adonis\_34, Blizzard\_34, QuincyRose\_33, Apocalypse\_34, Deby\_34, BEEST\_34, Piatt\_34, Padfoot\_34, Sulley\_34, Zavala\_34, Jayhawk\_34, Slimphazie\_34, Asayake\_34, JAWS\_34, Geraldini\_34, Angelica\_34, Tachez\_34, Mynx\_34, Hyperbowlee\_34, ShiaSurprise\_34, Zabiza\_34, Ganymede\_35, MeaningOfLife\_34, Beezoo\_34, AlishaPH\_34, ActinUp\_34, CaseJules\_34, Veliki\_34, Ramen\_34, BarrelRoll\_34, Pokerus\_33, Emerson\_34, TruffulaTree\_34, Padpat\_34, HedwigODU\_34, Atiba\_34, Rapunzel97\_34, Durfee\_34, Boiiii\_34, Adephagia\_34, YoureAdopted\_33
- Track 4 : Inky\_34, Spock\_34, Anaya\_35, BaghaKamala\_34, Belladonna\_34, Capricorn\_34, BGIluviae\_34, CREW\_34, Joy99\_34, Topper\_34, Jeckyll\_34, Twitch\_34, Rosmarinus\_34, Lunahalos\_34, Peel\_34, Llorens\_34, Dalmuri\_34, Jarvi\_34, Homura\_34
- Track 5 : TaiwanKao\_35, LindNT\_34, Tiri\_34, TreyKay\_34, CheetoDust\_34, Prithvi\_34, Megsy\_34, CrimD\_34
- Track 6 : Enkosi\_30, Binglebops\_30, Amelie\_30, SgtBeansprout\_30, Nikao\_30, Torres\_30, LilPharaoh\_30, Nutello\_30, Mdavu\_30
- Track 7 : LastHope\_34
- Track 8 : Chris\_34
- Track 9 : Murucutumbu\_34, LaterM\_34
- Track 10 : Guanica15\_34
- Track 11 : Illumine\_34, Dole\_34, Devera\_34
- Track 12 : Peanam\_34, McMater\_34, Shadow1\_33, Richo\_34, Dartin\_34, Shaobing\_34, Niklas\_34
- Track 13 : KiSi\_34, LeMond\_34, Scarlett\_34
- Track 14 : Oscar\_34
- Track 15 : Validus\_34
- Track 16 : Curiosium\_35
- Track 17 : Urkel\_34, SamuelLPlaqson\_34, DrHayes\_34
- Track 18 : Stinson\_35
- Track 19 : Nibb\_33
- Track 20 : Ageofdapage\_34
- Track 21 : Yunkel11\_34, Efra2\_34
- Track 22 : MarkPhew\_35
- Track 23 : Bella96\_34
- Track 24 : TingHuaYa\_34

- Track 25 : Findley\_33, Strobilo\_33, Milly\_33, DismalFunk\_33, Marcoliusprime\_33, DismalStressor\_33, ZoeJ\_33
- Track 26 : TM4\_35, Mufasa\_34, BoostSeason\_34
- Track 27 : Hurricane\_35, TBond007\_34, Pixie\_34
- Track 28 : MacnCheese\_35, Fefferhead\_33, Amgine\_32, Ellie\_31
- Track 29 : TribbleTrouble\_33
- Track 30 : Keshu\_35
- Track 31 : ShedlockHolmes\_35
- Track 32 : Pharb\_33
- Track 33 : Malthus\_36, Mitti\_35, Fionnbharth\_35, Chancellor\_35, Wintermute\_35, Slarp\_35, Juliette\_37, SamScheppers\_35, OmniCritical\_35, Cheetobro\_35, Ruthiejr\_36, Taquito\_35, Eponine\_37
- Track 34 : Y10\_35, Y2\_35
- Track 35 : Patt\_35, MissDaisy\_35, Reptar3000\_35
- Track 36 : JF1\_35
- Track 37 : Gengar\_33, OkiRoe\_33, Feyre\_33
- Track 38 : Rando14\_34
- Track 39 : Paola\_33, Waterfoul\_33, Thyatira\_33, Guillsminger\_33, Leston\_33
- Track 40 : Edugator\_33
- Track 41 : Larva\_34, Psycho\_34, Dadosky\_34
- Track 42 : SoSeph\_33, Heftyboy\_33
- Track 43 : Miryou\_33
- Track 44 : InvictusManeo\_33, AlleyCat\_34, Collard\_33, Agent47\_33
- Track 45 : Kratio\_32
- Track 46 : Omnicron\_34
- Track 47 : Cain\_34, Krueger\_34, Phrank\_34, Unicorn\_34, Bryler\_34, Tierra\_34, Sunflower1121\_33, PhelpsODU\_34
- Track 48 : Amohnition\_33, DarthP\_33, Hammy\_33
- Track 49 : Syra333\_34
- Track 50 : Yuna\_35
- Track 51 : Marshawn\_36
- Track 52 : TClif\_35
- Track 53 : Ximenita\_35, TiniBug\_34
- Track 54 : SirPhilip\_33
- Track 55 : Ekdilam\_31
- Track 56 : Aminay\_35
- Track 57 : Boilgate\_31
- Track 58 : DS6A\_35

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

The start number called the most often in the published annotations is 21, it was called in 159 of the 189 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp\_34, Adephegia\_34, Adonis\_34, Agent47\_33, Ageofdapage\_34, AlishaPH\_34, AlleyCat\_34, Amelie\_30, Amgine\_32, Amohnition\_33, Anaya\_35, Angelica\_34, Apocalypse\_34, Asayake\_34, Atiba\_34, BEEST\_34, BGlluviae\_34, BaghaKamala\_34, BarrelRoll\_34, Beezoo\_34, Bella96\_34, Belladonna\_34, Binglebops\_30, Blizzard\_34, Boiiii\_34, BoostSeason\_34, Bryler\_34, CREW\_34,

Cain\_34, Capricorn\_34, CaseJules\_34, CheetoDust\_34, Collard\_33, CrimD\_34, Curiosium\_35, Dadosky\_34, Dalmuri\_34, DarthP\_33, Dartin\_34, Deby\_34, Devera\_34, DismalFunk\_33, DismalStressor\_33, Dole\_34, DrHayes\_34, Durfee\_34, Edugator\_33, Efra2\_34, Ekdilam\_31, Ellie\_31, Emerson\_34, Enkosi\_30, Fefferhead\_33, Feyre\_33, Findley\_33, Ganymede\_35, Gengar\_33, Geraldini\_34, Guanica15\_34, Guillsminger\_33, Hammy\_33, HedwigODU\_34, Heftyboy\_33, Homura\_34, Hurricane\_35, Hyperbowlee\_34, Illumine\_34, Inky\_34, InvictusManeo\_33, JAWS\_34, Jarvi\_34, Jayhawk\_34, Jeckyll\_34, Joy99\_34, Keshu\_35, Kratio\_32, Krueger\_34, Larva\_34, LastHope\_34, LaterM\_34, Leston\_33, LilPharaoh\_30, LindNT\_34, Llorens\_34, Lunahalos\_34, MacnCheese\_35, MalagasyRose\_34, Marcoliusprime\_33, McMater\_34, Mdavu\_30, MeaningOfLife\_34, Megsy\_34, Milly\_33, Miryou\_33, Mufasa\_34, Murucutumbu\_34, Mynx\_34, Nergal\_30, Nikao\_30, Niklas\_34, Nutello\_30, OkiRoe\_33, Omnicron\_34, Padfoot\_34, Padpat\_34, Paola\_33, Peanam\_34, Peel\_34, Pharb\_33, PhelpsODU\_34, Phrank\_34, Piatt\_34, Pixie\_34, Pokerus\_33, Prithvi\_34, Psycho\_34, QuincyRose\_33, Ramen\_34, Rando14\_34, Rapunzel97\_34, Richo\_34, Rosmarinus\_34, SamuelLPlaqsom\_34, SgtBeansprout\_30, Shadow1\_33, Shaobing\_34, ShedlockHolmes\_35, ShiaSurprise\_34, SirPhilip\_33, Slimphazie\_34, SoSeph\_33, Spock\_34, Stinson\_35, Strobilo\_33, Sulley\_34, Sunflower1121\_33, Syra333\_34, TBond007\_34, TCLif\_35, TM4\_35, Tachez\_34, TaiwanKao\_35, Thyatira\_33, Tierra\_34, TiniBug\_34, Tiri\_34, Topper\_34, Torres\_30, TreyKay\_34, TribbleTrouble\_33, TruffulaTree\_34, Twitch\_34, Unicorn\_34, Urkel\_34, Validus\_34, Veliki\_34, Waterfoul\_33, Ximenita\_35, YoureAdopted\_33, Yuna\_35, Yunkel11\_34, Zabiza\_34, Zavala\_34, ZoeJ\_33,

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

- TingHuaYa\_34,

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

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

### Summary by start number:

Start 13:

- Found in 20 of 195 ( 10.3% ) of genes in pham
- Manual Annotations of this start: 17 of 189
- Called 85.0% of time when present
- Phage (with cluster) where this start called: Boilgate\_31 (K8), Chancellor\_35 (K4), Cheetobro\_35 (K4), Eponine\_37 (K4), Fionnbharth\_35 (K4), Juliette\_37 (K4), Malthus\_36 (K4), MissDaisy\_35 (K4), Mitti\_35 (K4), OmniCritical\_35 (K4), Patt\_35 (K4), Reptar3000\_35 (K4), Ruthiejr\_36 (K4), SamScheppers\_35 (K4), Slarp\_35 (K4), Taquito\_35 (K4), Wintermute\_35 (K4),

Start 15:

- Found in 16 of 195 ( 8.2% ) of genes in pham
- Manual Annotations of this start: 1 of 189
- Called 6.2% of time when present
- Phage (with cluster) where this start called: JF1\_35 (K4),

Start 16:

- Found in 3 of 195 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 2 of 189
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Aminay\_35 (K7), MarkPhew\_35 (K1),

Start 17:

- Found in 1 of 195 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 189
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DS6A\_35 (singleton),

Start 18:

- Found in 1 of 195 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 189
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Nibb\_33 (K1),

Start 20:

- Found in 18 of 195 ( 9.2% ) of genes in pham
- Manual Annotations of this start: 6 of 189
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Chris\_34 (K1), KiSi\_34 (K1), LeMond\_34 (K1), Marshawn\_36 (K6), Oscar\_34 (K1), Scarlett\_34 (K1),

Start 21:

- Found in 165 of 195 ( 84.6% ) of genes in pham
- Manual Annotations of this start: 159 of 189
- Called 99.4% of time when present
- Phage (with cluster) where this start called: ActinUp\_34 (K1), Adephagia\_34 (K1), Adonis\_34 (K1), Agent47\_33 (K5), Ageofdapage\_34 (K1), AlishaPH\_34 (K1), AlleyCat\_34 (K5), Amelie\_30 (K1), Amgine\_32 (K6), Amohnition\_33 (K6), Anaya\_35 (K1), Angelica\_34 (K1), Apocalypse\_34 (K1), Asayake\_34 (K1), Atiba\_34 (K1), BEEST\_34 (K1), BGlluviae\_34 (K1), BaghaKamala\_34 (K1), BarrelRoll\_34 (K1), Beezoo\_34 (K1), Bella96\_34 (K1), Belladonna\_34 (K1), Binglebops\_30 (K1), Blizzard\_34 (K1), Boiiii\_34 (K1), BoostSeason\_34 (K2), Bryler\_34 (K6), CREW\_34 (K1), Cain\_34 (K6), Capricorn\_34 (K1), CaseJules\_34 (K1), CheetoDust\_34 (K1), Collard\_33 (K5), CrimD\_34 (K1), Curiosium\_35 (K1), Dadosky\_34 (K5), Dalmuri\_34 (K1), DARTH\_33 (K6), Dartin\_34 (K1), Deby\_34 (K1), Devera\_34 (K1), DismalFunk\_33 (K2), DismalStressor\_33 (K2), Dole\_34 (K1), DrHayes\_34 (K1), Durfee\_34 (K1), Edugator\_33 (K5), Efra2\_34 (K1), Ekdilam\_31 (K6), Ellie\_31 (K6), Emerson\_34 (K1), Enkosi\_30 (K1), Fefferhead\_33 (K6), Feyre\_33 (K5), Findley\_33 (K2), Ganymede\_35 (K1), Gengar\_33 (K5), Geraldini\_34 (K1), Guanica15\_34 (K1), Guillsminger\_33 (K5), Hammy\_33 (K6), HedwigODU\_34 (K1), Heftyboy\_33 (K5), Homura\_34 (K1), Hurricane\_35 (K3), Hyperbowlee\_34 (K1), Illumine\_34 (K1), Inky\_34 (K1), InvictusManeo\_33 (K5), JAWS\_34 (K1), Jarvi\_34 (K1), Jayhawk\_34 (K1), Jeckyll\_34 (K1), Joy99\_34 (K1), Keshu\_35 (K3), Kratio\_32 (K5), Krueger\_34 (K6), Larva\_34 (K5), LastHope\_34 (K1), LaterM\_34 (K1), Leston\_33 (K5), LilPharaoh\_30 (K1), LindNT\_34 (K1), Llorens\_34 (K1), Lunahalos\_34 (K1), MacnCheese\_35 (K3), MalagasyRose\_34 (AG), Marcoliusprime\_33 (K2), McMater\_34 (K1), Mdavu\_30 (K1), MeaningOfLife\_34 (K1), Megsy\_34 (K1), Milly\_33 (K2), Miryou\_33 (K5), Mufasa\_34 (K2), Murucutumbu\_34 (K1), Mynx\_34 (K1), Nergal\_30 (AG), Nikao\_30 (K1), Niklas\_34 (K1), Nutello\_30 (K1), OkiRoe\_33 (K5),

Omicron\_34 (K5), Padfoot\_34 (K1), Padpat\_34 (K1), Paola\_33 (K5), Peanam\_34 (K1), Peel\_34 (K1), Pharb\_33 (K3), PhelpsODU\_34 (K6), Phrank\_34 (K6), Piatt\_34 (K1), Pixie\_34 (K3), Pokerus\_33 (K1), Prithvi\_34 (K1), Psycho\_34 (K5), QuincyRose\_33 (K1), Ramen\_34 (K1), Rando14\_34 (K5), Rapunzel97\_34 (K1), Richo\_34 (K1), Rosmarinus\_34 (K1), SamuelLPlaqson\_34 (K1), SgtBeansprout\_30 (K1), Shadow1\_33 (K6), Shaobing\_34 (K1), ShedlockHolmes\_35 (K3), ShiaSurprise\_34 (K1), SirPhilip\_33 (K6), Slimphazie\_34 (K1), SoSeph\_33 (K5), Spock\_34 (K1), Stinson\_35 (K1), Strobilo\_33 (K2), Sulley\_34 (K1), Sunflower1121\_33 (K6), Syra333\_34 (K6), TBond007\_34 (K3), TClif\_35 (K6), TM4\_35 (K2), Tachez\_34 (K1), TaiwanKao\_35 (K1), Thyatira\_33 (K5), Tierra\_34 (K6), TiniBug\_34 (K1), Tiri\_34 (K1), Topper\_34 (K1), Torres\_30 (K1), TreyKay\_34 (K1), TribbleTrouble\_33 (K3), TruffulaTree\_34 (K1), Twitch\_34 (K1), Unicorn\_34 (K6), Urkel\_34 (K1), Validus\_34 (K1), Veliki\_34 (K1), Waterfoul\_33 (K5), Ximenita\_35 (K6), YoureAdopted\_33 (K1), Yuna\_35 (K6), Yunkel11\_34 (K1), Zabiza\_34 (K1), Zavala\_34 (K1), ZoeJ\_33 (K2),

Start 26:

- Found in 168 of 195 ( 86.2% ) of genes in pham
- Manual Annotations of this start: 2 of 189
- Called 1.8% of time when present
- Phage (with cluster) where this start called: TingHuaYa\_34 (K1), Y10\_35 (K4), Y2\_35 (K4),

### Summary by clusters:

There are 10 clusters represented in this pham: singleton, AG, K3, K2, K1, K7, K6, K5, K4, K8,

Info for manual annotations of cluster AG:

- Start number 21 was manually annotated 2 times for cluster AG.

Info for manual annotations of cluster K1:

- Start number 16 was manually annotated 1 time for cluster K1.
- Start number 18 was manually annotated 1 time for cluster K1.
- Start number 20 was manually annotated 5 times for cluster K1.
- Start number 21 was manually annotated 96 times for cluster K1.

Info for manual annotations of cluster K2:

- Start number 21 was manually annotated 10 times for cluster K2.

Info for manual annotations of cluster K3:

- Start number 21 was manually annotated 8 times for cluster K3.

Info for manual annotations of cluster K4:

- Start number 13 was manually annotated 16 times for cluster K4.
- Start number 15 was manually annotated 1 time for cluster K4.
- Start number 26 was manually annotated 2 times for cluster K4.

Info for manual annotations of cluster K5:

- Start number 21 was manually annotated 22 times for cluster K5.

Info for manual annotations of cluster K6:

- Start number 20 was manually annotated 1 time for cluster K6.

- Start number 21 was manually annotated 21 times for cluster K6.

Info for manual annotations of cluster K7:

- Start number 16 was manually annotated 1 time for cluster K7.

Info for manual annotations of cluster K8:

- Start number 13 was manually annotated 1 time for cluster K8.

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

Gene: ActinUp\_34 Start: 28124, Stop: 28375, Start Num: 21

Candidate Starts for ActinUp\_34:

(10, 28064), (Start: 21 @28124 has 159 MA's), (Start: 26 @28181 has 2 MA's),

Gene: Adephagia\_34 Start: 28121, Stop: 28372, Start Num: 21

Candidate Starts for Adephagia\_34:

(10, 28061), (Start: 21 @28121 has 159 MA's), (Start: 26 @28178 has 2 MA's),

Gene: Adonis\_34 Start: 28136, Stop: 28387, Start Num: 21

Candidate Starts for Adonis\_34:

(10, 28076), (Start: 21 @28136 has 159 MA's), (Start: 26 @28193 has 2 MA's),

Gene: Agent47\_33 Start: 28760, Stop: 29011, Start Num: 21

Candidate Starts for Agent47\_33:

(Start: 21 @28760 has 159 MA's), (Start: 26 @28817 has 2 MA's), (32, 28892), (42, 28943), (44, 28970),

Gene: Ageofdapage\_34 Start: 28061, Stop: 28333, Start Num: 21

Candidate Starts for Ageofdapage\_34:

(Start: 21 @28061 has 159 MA's), (39, 28250),

Gene: AlishaPH\_34 Start: 28114, Stop: 28365, Start Num: 21

Candidate Starts for AlishaPH\_34:

(10, 28054), (Start: 21 @28114 has 159 MA's), (Start: 26 @28171 has 2 MA's),

Gene: AlleyCat\_34 Start: 28691, Stop: 28942, Start Num: 21

Candidate Starts for AlleyCat\_34:

(Start: 21 @28691 has 159 MA's), (Start: 26 @28748 has 2 MA's), (32, 28823), (42, 28874), (44, 28901),

Gene: Amelie\_30 Start: 27546, Stop: 27797, Start Num: 21

Candidate Starts for Amelie\_30:

(Start: 21 @27546 has 159 MA's), (Start: 26 @27603 has 2 MA's),

Gene: Amgine\_32 Start: 28083, Stop: 28340, Start Num: 21

Candidate Starts for Amgine\_32:

(Start: 21 @28083 has 159 MA's), (Start: 26 @28146 has 2 MA's), (28, 28185), (40, 28266),

Gene: Aminay\_35 Start: 29809, Stop: 30045, Start Num: 16

Candidate Starts for Aminay\_35:

(Start: 16 @29809 has 2 MA's), (19, 29818), (Start: 26 @29875 has 2 MA's), (37, 29968),



Gene: Amohnition\_33 Start: 28517, Stop: 28768, Start Num: 21

Candidate Starts for Amohnition\_33:

(10, 28454), (Start: 21 @28517 has 159 MA's), (28, 28613), (40, 28694),

Gene: Anaya\_35 Start: 28149, Stop: 28400, Start Num: 21

Candidate Starts for Anaya\_35:

(10, 28089), (Start: 21 @28149 has 159 MA's), (Start: 26 @28206 has 2 MA's),

Gene: Angelica\_34 Start: 28071, Stop: 28322, Start Num: 21

Candidate Starts for Angelica\_34:

(10, 28011), (Start: 21 @28071 has 159 MA's), (Start: 26 @28128 has 2 MA's),

Gene: Apocalypse\_34 Start: 28092, Stop: 28343, Start Num: 21

Candidate Starts for Apocalypse\_34:

(10, 28032), (Start: 21 @28092 has 159 MA's), (Start: 26 @28149 has 2 MA's),

Gene: Asayake\_34 Start: 28155, Stop: 28406, Start Num: 21

Candidate Starts for Asayake\_34:

(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: Atiba\_34 Start: 28084, Stop: 28335, Start Num: 21

Candidate Starts for Atiba\_34:

(10, 28024), (Start: 21 @28084 has 159 MA's), (Start: 26 @28141 has 2 MA's),

Gene: BEEST\_34 Start: 28155, Stop: 28406, Start Num: 21

Candidate Starts for BEEST\_34:

(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: BGlluviae\_34 Start: 28155, Stop: 28406, Start Num: 21

Candidate Starts for BGlluviae\_34:

(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: BaghaKamala\_34 Start: 28084, Stop: 28335, Start Num: 21

Candidate Starts for BaghaKamala\_34:

(10, 28024), (Start: 21 @28084 has 159 MA's), (Start: 26 @28141 has 2 MA's),

Gene: BarrelRoll\_34 Start: 28107, Stop: 28358, Start Num: 21

Candidate Starts for BarrelRoll\_34:

(10, 28047), (Start: 21 @28107 has 159 MA's), (Start: 26 @28164 has 2 MA's),

Gene: Beezoo\_34 Start: 28132, Stop: 28383, Start Num: 21

Candidate Starts for Beezoo\_34:

(10, 28072), (Start: 21 @28132 has 159 MA's), (Start: 26 @28189 has 2 MA's),

Gene: Bella96\_34 Start: 28025, Stop: 28276, Start Num: 21

Candidate Starts for Bella96\_34:

(10, 27965), (Start: 21 @28025 has 159 MA's), (Start: 26 @28082 has 2 MA's), (35, 28166),

Gene: Belladonna\_34 Start: 28155, Stop: 28406, Start Num: 21

Candidate Starts for Belladonna\_34:

(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: Biglebops\_30 Start: 27546, Stop: 27797, Start Num: 21  
Candidate Starts for Biglebops\_30:  
(Start: 21 @27546 has 159 MA's), (Start: 26 @27603 has 2 MA's),

Gene: Blizzard\_34 Start: 28155, Stop: 28406, Start Num: 21  
Candidate Starts for Blizzard\_34:  
(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: Boiiii\_34 Start: 28157, Stop: 28408, Start Num: 21  
Candidate Starts for Boiiii\_34:  
(10, 28097), (Start: 21 @28157 has 159 MA's), (Start: 26 @28214 has 2 MA's),

Gene: Boilgate\_31 Start: 29990, Stop: 30247, Start Num: 13  
Candidate Starts for Boilgate\_31:  
(Start: 13 @29990 has 17 MA's), (24, 30020), (Start: 26 @30059 has 2 MA's), (31, 30125), (40, 30188), (42, 30194), (44, 30221),

Gene: BoostSeason\_34 Start: 27482, Stop: 27730, Start Num: 21  
Candidate Starts for BoostSeason\_34:  
(8, 27398), (12, 27443), (Start: 21 @27482 has 159 MA's), (Start: 26 @27536 has 2 MA's),

Gene: Bryler\_34 Start: 27447, Stop: 27698, Start Num: 21  
Candidate Starts for Bryler\_34:  
(Start: 21 @27447 has 159 MA's), (Start: 26 @27504 has 2 MA's), (35, 27588), (40, 27624),

Gene: CREW\_34 Start: 28155, Stop: 28406, Start Num: 21  
Candidate Starts for CREW\_34:  
(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: Cain\_34 Start: 27435, Stop: 27686, Start Num: 21  
Candidate Starts for Cain\_34:  
(Start: 21 @27435 has 159 MA's), (Start: 26 @27492 has 2 MA's), (35, 27576), (40, 27612),

Gene: Capricorn\_34 Start: 28155, Stop: 28406, Start Num: 21  
Candidate Starts for Capricorn\_34:  
(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: CaseJules\_34 Start: 28155, Stop: 28406, Start Num: 21  
Candidate Starts for CaseJules\_34:  
(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: Chancellor\_35 Start: 29198, Stop: 29458, Start Num: 13  
Candidate Starts for Chancellor\_35:  
(Start: 13 @29198 has 17 MA's), (Start: 15 @29204 has 1 MA's), (Start: 26 @29270 has 2 MA's), (31, 29336), (33, 29348), (36, 29363), (40, 29399), (44, 29432), (45, 29438),

Gene: CheetoDust\_34 Start: 28132, Stop: 28383, Start Num: 21  
Candidate Starts for CheetoDust\_34:  
(Start: 21 @28132 has 159 MA's), (Start: 26 @28189 has 2 MA's),

Gene: Cheetobro\_35 Start: 29195, Stop: 29455, Start Num: 13  
Candidate Starts for Cheetobro\_35:

(Start: 13 @29195 has 17 MA's), (Start: 15 @29201 has 1 MA's), (Start: 26 @29267 has 2 MA's), (31, 29333), (33, 29345), (36, 29360), (40, 29396), (44, 29429), (45, 29435),

Gene: Chris\_34 Start: 27872, Stop: 28120, Start Num: 20

Candidate Starts for Chris\_34:

(11, 27821), (Start: 16 @27857 has 2 MA's), (Start: 20 @27872 has 6 MA's), (22, 27878), (28, 27965), (32, 28001),

Gene: Collard\_33 Start: 28721, Stop: 28972, Start Num: 21

Candidate Starts for Collard\_33:

(Start: 21 @28721 has 159 MA's), (Start: 26 @28778 has 2 MA's), (32, 28853), (42, 28904), (44, 28931),

Gene: CrimD\_34 Start: 28089, Stop: 28340, Start Num: 21

Candidate Starts for CrimD\_34:

(Start: 21 @28089 has 159 MA's), (Start: 26 @28146 has 2 MA's),

Gene: Curiosium\_35 Start: 27915, Stop: 28166, Start Num: 21

Candidate Starts for Curiosium\_35:

(Start: 21 @27915 has 159 MA's), (35, 28056),

Gene: DS6A\_35 Start: 29978, Stop: 30217, Start Num: 17

Candidate Starts for DS6A\_35:

(14, 29969), (Start: 17 @29978 has 1 MA's), (23, 29996), (38, 30155),

Gene: Dadosky\_34 Start: 28692, Stop: 28943, Start Num: 21

Candidate Starts for Dadosky\_34:

(Start: 21 @28692 has 159 MA's), (Start: 26 @28749 has 2 MA's), (32, 28824), (35, 28833), (42, 28875), (44, 28902),

Gene: Dalmuri\_34 Start: 28155, Stop: 28406, Start Num: 21

Candidate Starts for Dalmuri\_34:

(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: DarthP\_33 Start: 28439, Stop: 28690, Start Num: 21

Candidate Starts for DarthP\_33:

(10, 28376), (Start: 21 @28439 has 159 MA's), (28, 28535), (40, 28616),

Gene: Dartin\_34 Start: 27442, Stop: 27693, Start Num: 21

Candidate Starts for Dartin\_34:

(Start: 21 @27442 has 159 MA's), (Start: 26 @27499 has 2 MA's), (35, 27583),

Gene: Deby\_34 Start: 28089, Stop: 28340, Start Num: 21

Candidate Starts for Deby\_34:

(10, 28029), (Start: 21 @28089 has 159 MA's), (Start: 26 @28146 has 2 MA's),

Gene: Devera\_34 Start: 28150, Stop: 28401, Start Num: 21

Candidate Starts for Devera\_34:

(Start: 21 @28150 has 159 MA's), (35, 28291),

Gene: DismalFunk\_33 Start: 27394, Stop: 27642, Start Num: 21

Candidate Starts for DismalFunk\_33:

(8, 27310), (12, 27355), (Start: 21 @27394 has 159 MA's), (Start: 26 @27448 has 2 MA's),

Gene: DismalStressor\_33 Start: 27394, Stop: 27642, Start Num: 21  
Candidate Starts for DismalStressor\_33:  
(8, 27310), (12, 27355), (Start: 21 @27394 has 159 MA's), (Start: 26 @27448 has 2 MA's),

Gene: Dole\_34 Start: 28152, Stop: 28403, Start Num: 21  
Candidate Starts for Dole\_34:  
(Start: 21 @28152 has 159 MA's), (35, 28293),

Gene: DrHayes\_34 Start: 28065, Stop: 28316, Start Num: 21  
Candidate Starts for DrHayes\_34:  
(Start: 21 @28065 has 159 MA's), (Start: 26 @28122 has 2 MA's), (35, 28206),

Gene: Durfee\_34 Start: 28155, Stop: 28406, Start Num: 21  
Candidate Starts for Durfee\_34:  
(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: Edugator\_33 Start: 28691, Stop: 28945, Start Num: 21  
Candidate Starts for Edugator\_33:  
(Start: 21 @28691 has 159 MA's), (Start: 26 @28748 has 2 MA's), (32, 28823), (35, 28832), (42, 28874),

Gene: Efra2\_34 Start: 27390, Stop: 27641, Start Num: 21  
Candidate Starts for Efra2\_34:  
(Start: 21 @27390 has 159 MA's), (35, 27531),

Gene: Ekdilam\_31 Start: 28197, Stop: 28448, Start Num: 21  
Candidate Starts for Ekdilam\_31:  
(Start: 21 @28197 has 159 MA's), (Start: 26 @28254 has 2 MA's), (28, 28293), (40, 28374),

Gene: Ellie\_31 Start: 28196, Stop: 28453, Start Num: 21  
Candidate Starts for Ellie\_31:  
(Start: 21 @28196 has 159 MA's), (Start: 26 @28259 has 2 MA's), (28, 28298), (40, 28379),

Gene: Emerson\_34 Start: 28115, Stop: 28366, Start Num: 21  
Candidate Starts for Emerson\_34:  
(10, 28055), (Start: 21 @28115 has 159 MA's), (Start: 26 @28172 has 2 MA's),

Gene: Enkosi\_30 Start: 27546, Stop: 27797, Start Num: 21  
Candidate Starts for Enkosi\_30:  
(Start: 21 @27546 has 159 MA's), (Start: 26 @27603 has 2 MA's),

Gene: Eponine\_37 Start: 29951, Stop: 30211, Start Num: 13  
Candidate Starts for Eponine\_37:  
(Start: 13 @29951 has 17 MA's), (Start: 15 @29957 has 1 MA's), (Start: 26 @30023 has 2 MA's), (31, 30089), (33, 30101), (36, 30116), (40, 30152), (44, 30185), (45, 30191),

Gene: Fefferhead\_33 Start: 28396, Stop: 28653, Start Num: 21  
Candidate Starts for Fefferhead\_33:  
(Start: 21 @28396 has 159 MA's), (Start: 26 @28459 has 2 MA's), (28, 28498), (40, 28579),

Gene: Feyre\_33 Start: 28605, Stop: 28859, Start Num: 21  
Candidate Starts for Feyre\_33:

(Start: 20 @28599 has 6 MA's), (Start: 21 @28605 has 159 MA's), (Start: 26 @28662 has 2 MA's), (32, 28737), (35, 28746), (42, 28788),

Gene: Findley\_33 Start: 27386, Stop: 27631, Start Num: 21

Candidate Starts for Findley\_33:

(8, 27302), (12, 27347), (Start: 21 @27386 has 159 MA's), (Start: 26 @27440 has 2 MA's),

Gene: Fionnbharth\_35 Start: 29186, Stop: 29446, Start Num: 13

Candidate Starts for Fionnbharth\_35:

(Start: 13 @29186 has 17 MA's), (Start: 15 @29192 has 1 MA's), (Start: 26 @29258 has 2 MA's), (31, 29324), (33, 29336), (36, 29351), (40, 29387), (44, 29420), (45, 29426),

Gene: Ganymede\_35 Start: 28144, Stop: 28395, Start Num: 21

Candidate Starts for Ganymede\_35:

(10, 28084), (Start: 21 @28144 has 159 MA's), (Start: 26 @28201 has 2 MA's),

Gene: Gengar\_33 Start: 28715, Stop: 28969, Start Num: 21

Candidate Starts for Gengar\_33:

(Start: 20 @28709 has 6 MA's), (Start: 21 @28715 has 159 MA's), (Start: 26 @28772 has 2 MA's), (32, 28847), (35, 28856), (42, 28898),

Gene: Geraldini\_34 Start: 28132, Stop: 28383, Start Num: 21

Candidate Starts for Geraldini\_34:

(10, 28072), (Start: 21 @28132 has 159 MA's), (Start: 26 @28189 has 2 MA's),

Gene: Guanica15\_34 Start: 27407, Stop: 27658, Start Num: 21

Candidate Starts for Guanica15\_34:

(Start: 21 @27407 has 159 MA's),

Gene: Guillsminger\_33 Start: 28686, Stop: 28940, Start Num: 21

Candidate Starts for Guillsminger\_33:

(4, 28512), (5, 28551), (Start: 20 @28680 has 6 MA's), (Start: 21 @28686 has 159 MA's), (Start: 26 @28743 has 2 MA's), (32, 28818), (42, 28869),

Gene: Hammy\_33 Start: 28430, Stop: 28681, Start Num: 21

Candidate Starts for Hammy\_33:

(10, 28367), (Start: 21 @28430 has 159 MA's), (28, 28526), (40, 28607),

Gene: HedwigODU\_34 Start: 28124, Stop: 28375, Start Num: 21

Candidate Starts for HedwigODU\_34:

(10, 28064), (Start: 21 @28124 has 159 MA's), (Start: 26 @28181 has 2 MA's),

Gene: Heftyboy\_33 Start: 28832, Stop: 29086, Start Num: 21

Candidate Starts for Heftyboy\_33:

(4, 28658), (5, 28697), (7, 28727), (14, 28814), (Start: 20 @28826 has 6 MA's), (Start: 21 @28832 has 159 MA's), (Start: 26 @28889 has 2 MA's), (32, 28964), (42, 29015),

Gene: Homura\_34 Start: 28155, Stop: 28406, Start Num: 21

Candidate Starts for Homura\_34:

(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: Hurricane\_35 Start: 28982, Stop: 29233, Start Num: 21

Candidate Starts for Hurricane\_35:

(10, 28919), (Start: 21 @28982 has 159 MA's), (25, 29036), (Start: 26 @29039 has 2 MA's), (28, 29078), (43, 29189),

Gene: Hyperbowlee\_34 Start: 28155, Stop: 28406, Start Num: 21

Candidate Starts for Hyperbowlee\_34:

(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: Illumine\_34 Start: 28152, Stop: 28403, Start Num: 21

Candidate Starts for Illumine\_34:

(Start: 21 @28152 has 159 MA's), (35, 28293),

Gene: Inky\_34 Start: 28155, Stop: 28406, Start Num: 21

Candidate Starts for Inky\_34:

(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: InvictusManeo\_33 Start: 28764, Stop: 29015, Start Num: 21

Candidate Starts for InvictusManeo\_33:

(Start: 21 @28764 has 159 MA's), (Start: 26 @28821 has 2 MA's), (32, 28896), (42, 28947), (44, 28974),

Gene: JAWS\_34 Start: 28109, Stop: 28360, Start Num: 21

Candidate Starts for JAWS\_34:

(10, 28049), (Start: 21 @28109 has 159 MA's), (Start: 26 @28166 has 2 MA's),

Gene: JF1\_35 Start: 29191, Stop: 29445, Start Num: 15

Candidate Starts for JF1\_35:

(Start: 13 @29185 has 17 MA's), (Start: 15 @29191 has 1 MA's), (Start: 26 @29257 has 2 MA's), (31, 29323), (33, 29335), (36, 29350), (40, 29386), (44, 29419), (45, 29425),

Gene: Jarvi\_34 Start: 28155, Stop: 28406, Start Num: 21

Candidate Starts for Jarvi\_34:

(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: Jayhawk\_34 Start: 28122, Stop: 28373, Start Num: 21

Candidate Starts for Jayhawk\_34:

(10, 28062), (Start: 21 @28122 has 159 MA's), (Start: 26 @28179 has 2 MA's),

Gene: Jeckyll\_34 Start: 28155, Stop: 28406, Start Num: 21

Candidate Starts for Jeckyll\_34:

(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: Joy99\_34 Start: 28084, Stop: 28335, Start Num: 21

Candidate Starts for Joy99\_34:

(10, 28024), (Start: 21 @28084 has 159 MA's), (Start: 26 @28141 has 2 MA's),

Gene: Juliette\_37 Start: 29344, Stop: 29604, Start Num: 13

Candidate Starts for Juliette\_37:

(Start: 13 @29344 has 17 MA's), (Start: 15 @29350 has 1 MA's), (Start: 26 @29416 has 2 MA's), (31, 29482), (33, 29494), (36, 29509), (40, 29545), (44, 29578), (45, 29584),

Gene: Keshu\_35 Start: 28970, Stop: 29221, Start Num: 21

Candidate Starts for Keshu\_35:

(10, 28907), (Start: 21 @28970 has 159 MA's), (28, 29066), (44, 29180),

Gene: KiSi\_34 Start: 27747, Stop: 27995, Start Num: 20  
Candidate Starts for KiSi\_34:  
(11, 27696), (Start: 20 @27747 has 6 MA's), (22, 27753), (32, 27876),

Gene: Kratio\_32 Start: 28395, Stop: 28646, Start Num: 21  
Candidate Starts for Kratio\_32:  
(Start: 21 @28395 has 159 MA's), (Start: 26 @28452 has 2 MA's), (32, 28527), (41, 28575), (42, 28578), (44, 28605),

Gene: Krueger\_34 Start: 27308, Stop: 27559, Start Num: 21  
Candidate Starts for Krueger\_34:  
(Start: 21 @27308 has 159 MA's), (Start: 26 @27365 has 2 MA's), (35, 27449), (40, 27485),

Gene: Larva\_34 Start: 28559, Stop: 28810, Start Num: 21  
Candidate Starts for Larva\_34:  
(Start: 21 @28559 has 159 MA's), (Start: 26 @28616 has 2 MA's), (32, 28691), (35, 28700), (42, 28742), (44, 28769),

Gene: LastHope\_34 Start: 27271, Stop: 27543, Start Num: 21  
Candidate Starts for LastHope\_34:  
(Start: 21 @27271 has 159 MA's), (Start: 26 @27328 has 2 MA's), (35, 27412), (39, 27460),

Gene: LaterM\_34 Start: 28069, Stop: 28320, Start Num: 21  
Candidate Starts for LaterM\_34:  
(Start: 21 @28069 has 159 MA's), (35, 28210),

Gene: LeMond\_34 Start: 27818, Stop: 28066, Start Num: 20  
Candidate Starts for LeMond\_34:  
(11, 27767), (Start: 20 @27818 has 6 MA's), (22, 27824), (32, 27947),

Gene: Leston\_33 Start: 28816, Stop: 29070, Start Num: 21  
Candidate Starts for Leston\_33:  
(4, 28642), (5, 28681), (Start: 20 @28810 has 6 MA's), (Start: 21 @28816 has 159 MA's), (Start: 26 @28873 has 2 MA's), (32, 28948), (42, 28999),

Gene: LilPharaoh\_30 Start: 27546, Stop: 27797, Start Num: 21  
Candidate Starts for LilPharaoh\_30:  
(Start: 21 @27546 has 159 MA's), (Start: 26 @27603 has 2 MA's),

Gene: LindNT\_34 Start: 28085, Stop: 28336, Start Num: 21  
Candidate Starts for LindNT\_34:  
(Start: 21 @28085 has 159 MA's), (Start: 26 @28142 has 2 MA's),

Gene: Llorens\_34 Start: 28155, Stop: 28406, Start Num: 21  
Candidate Starts for Llorens\_34:  
(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: Lunahalos\_34 Start: 28155, Stop: 28406, Start Num: 21  
Candidate Starts for Lunahalos\_34:  
(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: MacnCheese\_35 Start: 29023, Stop: 29301, Start Num: 21

Candidate Starts for MacnCheese\_35:

(Start: 21 @29023 has 159 MA's), (Start: 26 @29080 has 2 MA's), (28, 29119), (40, 29200),

Gene: MalagasyRose\_34 Start: 27443, Stop: 27676, Start Num: 21

Candidate Starts for MalagasyRose\_34:

(Start: 21 @27443 has 159 MA's), (29, 27530), (30, 27545), (32, 27563), (42, 27605), (44, 27632),

Gene: Malthus\_36 Start: 29110, Stop: 29370, Start Num: 13

Candidate Starts for Malthus\_36:

(Start: 13 @29110 has 17 MA's), (Start: 15 @29116 has 1 MA's), (Start: 26 @29182 has 2 MA's), (31, 29248), (33, 29260), (36, 29275), (40, 29311), (44, 29344), (45, 29350),

Gene: Marcoliusprime\_33 Start: 27394, Stop: 27642, Start Num: 21

Candidate Starts for Marcoliusprime\_33:

(8, 27310), (12, 27355), (Start: 21 @27394 has 159 MA's), (Start: 26 @27448 has 2 MA's),

Gene: MarkPhew\_35 Start: 27704, Stop: 27967, Start Num: 16

Candidate Starts for MarkPhew\_35:

(Start: 16 @27704 has 2 MA's), (Start: 20 @27719 has 6 MA's), (22, 27725), (32, 27848),

Gene: Marshawn\_36 Start: 28360, Stop: 28608, Start Num: 20

Candidate Starts for Marshawn\_36:

(Start: 20 @28360 has 6 MA's), (Start: 26 @28414 has 2 MA's), (32, 28489),

Gene: McMater\_34 Start: 27442, Stop: 27693, Start Num: 21

Candidate Starts for McMater\_34:

(Start: 21 @27442 has 159 MA's), (Start: 26 @27499 has 2 MA's), (35, 27583),

Gene: Mdavu\_30 Start: 27534, Stop: 27785, Start Num: 21

Candidate Starts for Mdavu\_30:

(Start: 21 @27534 has 159 MA's), (Start: 26 @27591 has 2 MA's),

Gene: MeaningOfLife\_34 Start: 28100, Stop: 28351, Start Num: 21

Candidate Starts for MeaningOfLife\_34:

(10, 28040), (Start: 21 @28100 has 159 MA's), (Start: 26 @28157 has 2 MA's),

Gene: Megsy\_34 Start: 28088, Stop: 28339, Start Num: 21

Candidate Starts for Megsy\_34:

(Start: 21 @28088 has 159 MA's), (Start: 26 @28145 has 2 MA's),

Gene: Milly\_33 Start: 27367, Stop: 27615, Start Num: 21

Candidate Starts for Milly\_33:

(8, 27283), (12, 27328), (Start: 21 @27367 has 159 MA's), (Start: 26 @27421 has 2 MA's),

Gene: Miryou\_33 Start: 28671, Stop: 28925, Start Num: 21

Candidate Starts for Miryou\_33:

(4, 28497), (5, 28536), (Start: 21 @28671 has 159 MA's), (Start: 26 @28728 has 2 MA's), (32, 28803), (42, 28854),

Gene: MissDaisy\_35 Start: 28953, Stop: 29213, Start Num: 13

Candidate Starts for MissDaisy\_35:

(Start: 13 @28953 has 17 MA's), (31, 29091), (33, 29103), (36, 29118), (40, 29154), (44, 29187), (45, 29193),



Gene: Mitti\_35 Start: 29111, Stop: 29371, Start Num: 13

Candidate Starts for Mitti\_35:

(Start: 13 @29111 has 17 MA's), (Start: 15 @29117 has 1 MA's), (Start: 26 @29183 has 2 MA's), (31, 29249), (33, 29261), (36, 29276), (40, 29312), (44, 29345), (45, 29351),

Gene: Mufasa\_34 Start: 27475, Stop: 27723, Start Num: 21

Candidate Starts for Mufasa\_34:

(8, 27391), (12, 27436), (Start: 21 @27475 has 159 MA's), (Start: 26 @27529 has 2 MA's),

Gene: Murucutumbu\_34 Start: 28088, Stop: 28339, Start Num: 21

Candidate Starts for Murucutumbu\_34:

(Start: 21 @28088 has 159 MA's), (35, 28229),

Gene: Mynx\_34 Start: 28138, Stop: 28389, Start Num: 21

Candidate Starts for Mynx\_34:

(10, 28078), (Start: 21 @28138 has 159 MA's), (Start: 26 @28195 has 2 MA's),

Gene: Nergal\_30 Start: 25836, Stop: 26081, Start Num: 21

Candidate Starts for Nergal\_30:

(10, 25770), (Start: 21 @25836 has 159 MA's), (Start: 26 @25893 has 2 MA's),

Gene: Nibb\_33 Start: 27286, Stop: 27534, Start Num: 18

Candidate Starts for Nibb\_33:

(Start: 18 @27286 has 1 MA's), (32, 27415),

Gene: Nikao\_30 Start: 27546, Stop: 27797, Start Num: 21

Candidate Starts for Nikao\_30:

(Start: 21 @27546 has 159 MA's), (Start: 26 @27603 has 2 MA's),

Gene: Niklas\_34 Start: 27445, Stop: 27696, Start Num: 21

Candidate Starts for Niklas\_34:

(Start: 21 @27445 has 159 MA's), (Start: 26 @27502 has 2 MA's), (35, 27586),

Gene: Nutello\_30 Start: 27546, Stop: 27797, Start Num: 21

Candidate Starts for Nutello\_30:

(Start: 21 @27546 has 159 MA's), (Start: 26 @27603 has 2 MA's),

Gene: OkiRoe\_33 Start: 28688, Stop: 28942, Start Num: 21

Candidate Starts for OkiRoe\_33:

(Start: 20 @28682 has 6 MA's), (Start: 21 @28688 has 159 MA's), (Start: 26 @28745 has 2 MA's), (32, 28820), (35, 28829), (42, 28871),

Gene: OmniCritical\_35 Start: 29095, Stop: 29355, Start Num: 13

Candidate Starts for OmniCritical\_35:

(Start: 13 @29095 has 17 MA's), (Start: 15 @29101 has 1 MA's), (Start: 26 @29167 has 2 MA's), (31, 29233), (33, 29245), (36, 29260), (40, 29296), (44, 29329), (45, 29335),

Gene: Omnicron\_34 Start: 27596, Stop: 27847, Start Num: 21

Candidate Starts for Omnicron\_34:

(2, 27383), (3, 27389), (4, 27419), (5, 27458), (6, 27470), (9, 27524), (Start: 20 @27590 has 6 MA's), (Start: 21 @27596 has 159 MA's), (Start: 26 @27653 has 2 MA's), (27, 27683), (40, 27773), (42, 27779), (44, 27806),

Gene: Oscar\_34 Start: 27820, Stop: 28068, Start Num: 20

Candidate Starts for Oscar\_34:

(Start: 20 @27820 has 6 MA's), (22, 27826), (32, 27949),

Gene: Padfoot\_34 Start: 28155, Stop: 28406, Start Num: 21

Candidate Starts for Padfoot\_34:

(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: Padpat\_34 Start: 28115, Stop: 28366, Start Num: 21

Candidate Starts for Padpat\_34:

(10, 28055), (Start: 21 @28115 has 159 MA's), (Start: 26 @28172 has 2 MA's),

Gene: Paola\_33 Start: 28686, Stop: 28940, Start Num: 21

Candidate Starts for Paola\_33:

(4, 28512), (5, 28551), (Start: 20 @28680 has 6 MA's), (Start: 21 @28686 has 159 MA's), (Start: 26 @28743 has 2 MA's), (32, 28818), (42, 28869),

Gene: Patt\_35 Start: 28929, Stop: 29189, Start Num: 13

Candidate Starts for Patt\_35:

(Start: 13 @28929 has 17 MA's), (31, 29067), (33, 29079), (36, 29094), (40, 29130), (44, 29163), (45, 29169),

Gene: Peanam\_34 Start: 27442, Stop: 27693, Start Num: 21

Candidate Starts for Peanam\_34:

(Start: 21 @27442 has 159 MA's), (Start: 26 @27499 has 2 MA's), (35, 27583),

Gene: Peel\_34 Start: 28155, Stop: 28406, Start Num: 21

Candidate Starts for Peel\_34:

(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: Pharb\_33 Start: 28285, Stop: 28536, Start Num: 21

Candidate Starts for Pharb\_33:

(Start: 21 @28285 has 159 MA's), (Start: 26 @28342 has 2 MA's), (28, 28381), (44, 28495),

Gene: PhelpsODU\_34 Start: 27473, Stop: 27724, Start Num: 21

Candidate Starts for PhelpsODU\_34:

(Start: 21 @27473 has 159 MA's), (Start: 26 @27530 has 2 MA's), (35, 27614), (40, 27650),

Gene: Phrank\_34 Start: 27423, Stop: 27674, Start Num: 21

Candidate Starts for Phrank\_34:

(Start: 21 @27423 has 159 MA's), (Start: 26 @27480 has 2 MA's), (35, 27564), (40, 27600),

Gene: Piatt\_34 Start: 28155, Stop: 28406, Start Num: 21

Candidate Starts for Piatt\_34:

(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: Pixie\_34 Start: 28524, Stop: 28775, Start Num: 21

Candidate Starts for Pixie\_34:

(10, 28461), (Start: 21 @28524 has 159 MA's), (25, 28578), (Start: 26 @28581 has 2 MA's), (28, 28620), (43, 28731),

Gene: Pokerus\_33 Start: 28072, Stop: 28323, Start Num: 21

Candidate Starts for Pokerus\_33:  
(10, 28012), (Start: 21 @28072 has 159 MA's), (Start: 26 @28129 has 2 MA's),

Gene: Prithvi\_34 Start: 28085, Stop: 28336, Start Num: 21  
Candidate Starts for Prithvi\_34:  
(Start: 21 @28085 has 159 MA's), (Start: 26 @28142 has 2 MA's),

Gene: Psycho\_34 Start: 28689, Stop: 28940, Start Num: 21  
Candidate Starts for Psycho\_34:  
(Start: 21 @28689 has 159 MA's), (Start: 26 @28746 has 2 MA's), (32, 28821), (35, 28830), (42, 28872), (44, 28899),

Gene: QuincyRose\_33 Start: 28144, Stop: 28395, Start Num: 21  
Candidate Starts for QuincyRose\_33:  
(10, 28084), (Start: 21 @28144 has 159 MA's), (Start: 26 @28201 has 2 MA's),

Gene: Ramen\_34 Start: 28121, Stop: 28372, Start Num: 21  
Candidate Starts for Ramen\_34:  
(10, 28061), (Start: 21 @28121 has 159 MA's), (Start: 26 @28178 has 2 MA's),

Gene: Rando14\_34 Start: 27550, Stop: 27801, Start Num: 21  
Candidate Starts for Rando14\_34:  
(Start: 21 @27550 has 159 MA's), (22, 27556), (Start: 26 @27607 has 2 MA's), (27, 27637), (42, 27733), (44, 27760),

Gene: Rapunzel97\_34 Start: 28122, Stop: 28373, Start Num: 21  
Candidate Starts for Rapunzel97\_34:  
(10, 28062), (Start: 21 @28122 has 159 MA's), (Start: 26 @28179 has 2 MA's),

Gene: Reptar3000\_35 Start: 28920, Stop: 29180, Start Num: 13  
Candidate Starts for Reptar3000\_35:  
(Start: 13 @28920 has 17 MA's), (31, 29058), (33, 29070), (36, 29085), (40, 29121), (44, 29154), (45, 29160),

Gene: Richo\_34 Start: 27442, Stop: 27693, Start Num: 21  
Candidate Starts for Richo\_34:  
(Start: 21 @27442 has 159 MA's), (Start: 26 @27499 has 2 MA's), (35, 27583),

Gene: Rosmarinus\_34 Start: 28143, Stop: 28394, Start Num: 21  
Candidate Starts for Rosmarinus\_34:  
(10, 28083), (Start: 21 @28143 has 159 MA's), (Start: 26 @28200 has 2 MA's),

Gene: Ruthiejr\_36 Start: 29076, Stop: 29336, Start Num: 13  
Candidate Starts for Ruthiejr\_36:  
(Start: 13 @29076 has 17 MA's), (Start: 15 @29082 has 1 MA's), (Start: 26 @29148 has 2 MA's), (31, 29214), (33, 29226), (36, 29241), (40, 29277), (44, 29310), (45, 29316),

Gene: SamScheppers\_35 Start: 29589, Stop: 29849, Start Num: 13  
Candidate Starts for SamScheppers\_35:  
(Start: 13 @29589 has 17 MA's), (Start: 15 @29595 has 1 MA's), (Start: 26 @29661 has 2 MA's), (31, 29727), (33, 29739), (36, 29754), (40, 29790), (44, 29823), (45, 29829),

Gene: SamuelLPlaqson\_34 Start: 28065, Stop: 28316, Start Num: 21

Candidate Starts for SamuelLPlaqson\_34:

(Start: 21 @28065 has 159 MA's), (Start: 26 @28122 has 2 MA's), (35, 28206),

Gene: Scarlett\_34 Start: 27820, Stop: 28068, Start Num: 20

Candidate Starts for Scarlett\_34:

(11, 27769), (Start: 20 @27820 has 6 MA's), (22, 27826), (32, 27949),

Gene: SgtBeansprout\_30 Start: 27546, Stop: 27797, Start Num: 21

Candidate Starts for SgtBeansprout\_30:

(Start: 21 @27546 has 159 MA's), (Start: 26 @27603 has 2 MA's),

Gene: Shadow1\_33 Start: 27290, Stop: 27541, Start Num: 21

Candidate Starts for Shadow1\_33:

(Start: 21 @27290 has 159 MA's), (Start: 26 @27347 has 2 MA's), (35, 27431),

Gene: Shaobing\_34 Start: 27442, Stop: 27693, Start Num: 21

Candidate Starts for Shaobing\_34:

(Start: 21 @27442 has 159 MA's), (Start: 26 @27499 has 2 MA's), (35, 27583),

Gene: ShedlockHolmes\_35 Start: 29046, Stop: 29297, Start Num: 21

Candidate Starts for ShedlockHolmes\_35:

(10, 28983), (Start: 21 @29046 has 159 MA's), (25, 29100), (Start: 26 @29103 has 2 MA's), (28, 29142), (43, 29253),

Gene: ShiaSurprise\_34 Start: 28155, Stop: 28406, Start Num: 21

Candidate Starts for ShiaSurprise\_34:

(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: SirPhilip\_33 Start: 26921, Stop: 27172, Start Num: 21

Candidate Starts for SirPhilip\_33:

(Start: 21 @26921 has 159 MA's), (Start: 26 @26978 has 2 MA's), (34, 27059),

Gene: Slarp\_35 Start: 29198, Stop: 29458, Start Num: 13

Candidate Starts for Slarp\_35:

(Start: 13 @29198 has 17 MA's), (Start: 15 @29204 has 1 MA's), (Start: 26 @29270 has 2 MA's), (31, 29336), (33, 29348), (36, 29363), (40, 29399), (44, 29432), (45, 29438),

Gene: Slimphazie\_34 Start: 28122, Stop: 28373, Start Num: 21

Candidate Starts for Slimphazie\_34:

(10, 28062), (Start: 21 @28122 has 159 MA's), (Start: 26 @28179 has 2 MA's),

Gene: SoSeph\_33 Start: 28832, Stop: 29086, Start Num: 21

Candidate Starts for SoSeph\_33:

(4, 28658), (5, 28697), (7, 28727), (14, 28814), (Start: 20 @28826 has 6 MA's), (Start: 21 @28832 has 159 MA's), (Start: 26 @28889 has 2 MA's), (32, 28964), (42, 29015),

Gene: Spock\_34 Start: 28155, Stop: 28406, Start Num: 21

Candidate Starts for Spock\_34:

(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: Stinson\_35 Start: 28357, Stop: 28608, Start Num: 21

Candidate Starts for Stinson\_35:

(Start: 21 @28357 has 159 MA's), (35, 28498),

Gene: Strobilo\_33 Start: 27367, Stop: 27612, Start Num: 21

Candidate Starts for Strobilo\_33:

(8, 27283), (12, 27328), (Start: 21 @27367 has 159 MA's), (Start: 26 @27421 has 2 MA's),

Gene: Sulley\_34 Start: 28088, Stop: 28339, Start Num: 21

Candidate Starts for Sulley\_34:

(10, 28028), (Start: 21 @28088 has 159 MA's), (Start: 26 @28145 has 2 MA's),

Gene: Sunflower1121\_33 Start: 27308, Stop: 27559, Start Num: 21

Candidate Starts for Sunflower1121\_33:

(Start: 21 @27308 has 159 MA's), (Start: 26 @27365 has 2 MA's), (35, 27449), (40, 27485),

Gene: Syra333\_34 Start: 27309, Stop: 27560, Start Num: 21

Candidate Starts for Syra333\_34:

(Start: 21 @27309 has 159 MA's), (Start: 26 @27366 has 2 MA's), (35, 27450),

Gene: TBond007\_34 Start: 28523, Stop: 28774, Start Num: 21

Candidate Starts for TBond007\_34:

(10, 28460), (Start: 21 @28523 has 159 MA's), (25, 28577), (Start: 26 @28580 has 2 MA's), (28, 28619), (43, 28730),

Gene: TClif\_35 Start: 27881, Stop: 28138, Start Num: 21

Candidate Starts for TClif\_35:

(1, 27608), (Start: 21 @27881 has 159 MA's), (Start: 26 @27944 has 2 MA's), (32, 28019), (40, 28064),

Gene: TM4\_35 Start: 27573, Stop: 27821, Start Num: 21

Candidate Starts for TM4\_35:

(8, 27489), (12, 27534), (Start: 21 @27573 has 159 MA's), (Start: 26 @27627 has 2 MA's),

Gene: Tachez\_34 Start: 28084, Stop: 28335, Start Num: 21

Candidate Starts for Tachez\_34:

(10, 28024), (Start: 21 @28084 has 159 MA's), (Start: 26 @28141 has 2 MA's),

Gene: TaiwanKao\_35 Start: 28085, Stop: 28336, Start Num: 21

Candidate Starts for TaiwanKao\_35:

(Start: 21 @28085 has 159 MA's), (Start: 26 @28142 has 2 MA's),

Gene: Taquito\_35 Start: 29636, Stop: 29896, Start Num: 13

Candidate Starts for Taquito\_35:

(Start: 13 @29636 has 17 MA's), (Start: 15 @29642 has 1 MA's), (Start: 26 @29708 has 2 MA's), (31, 29774), (33, 29786), (36, 29801), (40, 29837), (44, 29870), (45, 29876),

Gene: Thyatira\_33 Start: 28686, Stop: 28940, Start Num: 21

Candidate Starts for Thyatira\_33:

(4, 28512), (5, 28551), (Start: 20 @28680 has 6 MA's), (Start: 21 @28686 has 159 MA's), (Start: 26 @28743 has 2 MA's), (32, 28818), (42, 28869),

Gene: Tierra\_34 Start: 28144, Stop: 28395, Start Num: 21

Candidate Starts for Tierra\_34:

(Start: 21 @28144 has 159 MA's), (Start: 26 @28201 has 2 MA's), (35, 28285), (40, 28321),

Gene: TingHuaYa\_34 Start: 27313, Stop: 27528, Start Num: 26  
Candidate Starts for TingHuaYa\_34:  
(Start: 21 @27256 has 159 MA's), (Start: 26 @27313 has 2 MA's), (35, 27397), (39, 27445),

Gene: TiniBug\_34 Start: 28061, Stop: 28312, Start Num: 21  
Candidate Starts for TiniBug\_34:  
(Start: 21 @28061 has 159 MA's), (Start: 26 @28118 has 2 MA's), (35, 28202),

Gene: Tiri\_34 Start: 28136, Stop: 28387, Start Num: 21  
Candidate Starts for Tiri\_34:  
(Start: 21 @28136 has 159 MA's), (Start: 26 @28193 has 2 MA's),

Gene: Topper\_34 Start: 28155, Stop: 28406, Start Num: 21  
Candidate Starts for Topper\_34:  
(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: Torres\_30 Start: 27546, Stop: 27797, Start Num: 21  
Candidate Starts for Torres\_30:  
(Start: 21 @27546 has 159 MA's), (Start: 26 @27603 has 2 MA's),

Gene: TreyKay\_34 Start: 28085, Stop: 28336, Start Num: 21  
Candidate Starts for TreyKay\_34:  
(Start: 21 @28085 has 159 MA's), (Start: 26 @28142 has 2 MA's),

Gene: TribbleTrouble\_33 Start: 28580, Stop: 28831, Start Num: 21  
Candidate Starts for TribbleTrouble\_33:  
(Start: 21 @28580 has 159 MA's), (Start: 26 @28637 has 2 MA's), (40, 28757),

Gene: TruffulaTree\_34 Start: 28118, Stop: 28369, Start Num: 21  
Candidate Starts for TruffulaTree\_34:  
(10, 28058), (Start: 21 @28118 has 159 MA's), (Start: 26 @28175 has 2 MA's),

Gene: Twitch\_34 Start: 28155, Stop: 28406, Start Num: 21  
Candidate Starts for Twitch\_34:  
(10, 28095), (Start: 21 @28155 has 159 MA's), (Start: 26 @28212 has 2 MA's),

Gene: Unicorn\_34 Start: 27473, Stop: 27724, Start Num: 21  
Candidate Starts for Unicorn\_34:  
(Start: 21 @27473 has 159 MA's), (Start: 26 @27530 has 2 MA's), (35, 27614), (40, 27650),

Gene: Urkel\_34 Start: 28065, Stop: 28316, Start Num: 21  
Candidate Starts for Urkel\_34:  
(Start: 21 @28065 has 159 MA's), (Start: 26 @28122 has 2 MA's), (35, 28206),

Gene: Validus\_34 Start: 27374, Stop: 27625, Start Num: 21  
Candidate Starts for Validus\_34:  
(Start: 21 @27374 has 159 MA's), (Start: 26 @27431 has 2 MA's), (35, 27515),

Gene: Veliki\_34 Start: 28158, Stop: 28409, Start Num: 21  
Candidate Starts for Veliki\_34:  
(10, 28098), (Start: 21 @28158 has 159 MA's), (Start: 26 @28215 has 2 MA's),

Gene: Waterfoul\_33 Start: 28710, Stop: 28964, Start Num: 21

Candidate Starts for Waterfoul\_33:

(4, 28536), (5, 28575), (Start: 20 @28704 has 6 MA's), (Start: 21 @28710 has 159 MA's), (Start: 26 @28767 has 2 MA's), (32, 28842), (42, 28893),

Gene: Wintermute\_35 Start: 29185, Stop: 29445, Start Num: 13

Candidate Starts for Wintermute\_35:

(Start: 13 @29185 has 17 MA's), (Start: 15 @29191 has 1 MA's), (Start: 26 @29257 has 2 MA's), (31, 29323), (33, 29335), (36, 29350), (40, 29386), (44, 29419), (45, 29425),

Gene: Ximenita\_35 Start: 27494, Stop: 27745, Start Num: 21

Candidate Starts for Ximenita\_35:

(Start: 21 @27494 has 159 MA's), (Start: 26 @27551 has 2 MA's), (35, 27635),

Gene: Y10\_35 Start: 29257, Stop: 29445, Start Num: 26

Candidate Starts for Y10\_35:

(Start: 13 @29185 has 17 MA's), (Start: 15 @29191 has 1 MA's), (Start: 26 @29257 has 2 MA's), (31, 29323), (33, 29335), (36, 29350), (40, 29386), (44, 29419), (45, 29425),

Gene: Y2\_35 Start: 29257, Stop: 29445, Start Num: 26

Candidate Starts for Y2\_35:

(Start: 13 @29185 has 17 MA's), (Start: 15 @29191 has 1 MA's), (Start: 26 @29257 has 2 MA's), (31, 29323), (33, 29335), (36, 29350), (40, 29386), (44, 29419), (45, 29425),

Gene: YoureAdopted\_33 Start: 28091, Stop: 28342, Start Num: 21

Candidate Starts for YoureAdopted\_33:

(10, 28031), (Start: 21 @28091 has 159 MA's), (Start: 26 @28148 has 2 MA's),

Gene: Yuna\_35 Start: 27890, Stop: 28141, Start Num: 21

Candidate Starts for Yuna\_35:

(10, 27818), (Start: 21 @27890 has 159 MA's), (Start: 26 @27947 has 2 MA's), (40, 28067),

Gene: Yunkel11\_34 Start: 27406, Stop: 27657, Start Num: 21

Candidate Starts for Yunkel11\_34:

(Start: 21 @27406 has 159 MA's), (35, 27547),

Gene: Zabiza\_34 Start: 28122, Stop: 28373, Start Num: 21

Candidate Starts for Zabiza\_34:

(10, 28062), (Start: 21 @28122 has 159 MA's), (Start: 26 @28179 has 2 MA's),

Gene: Zavala\_34 Start: 28097, Stop: 28348, Start Num: 21

Candidate Starts for Zavala\_34:

(10, 28037), (Start: 21 @28097 has 159 MA's), (Start: 26 @28154 has 2 MA's),

Gene: ZoeJ\_33 Start: 27372, Stop: 27620, Start Num: 21

Candidate Starts for ZoeJ\_33:

(8, 27288), (12, 27333), (Start: 21 @27372 has 159 MA's), (Start: 26 @27426 has 2 MA's),