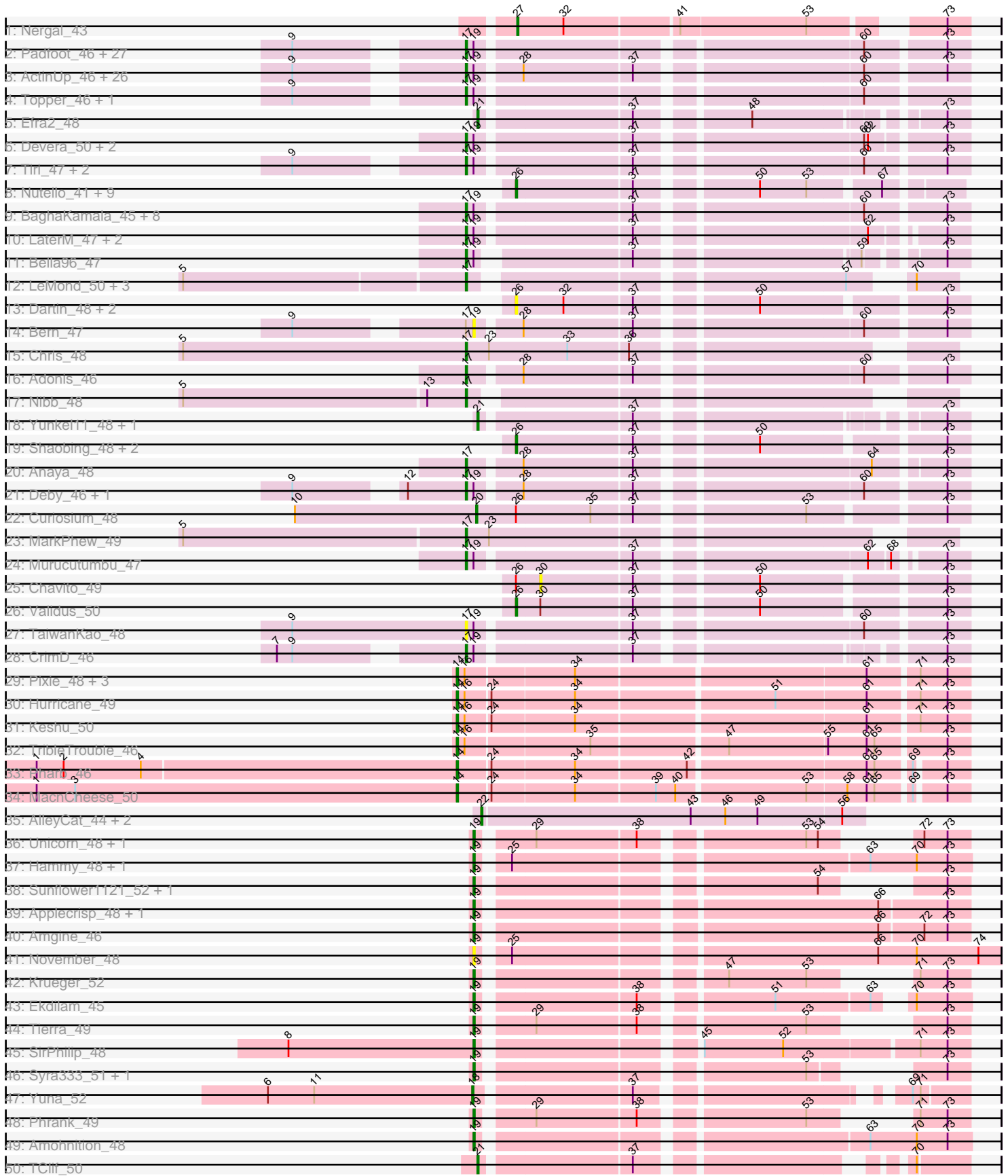
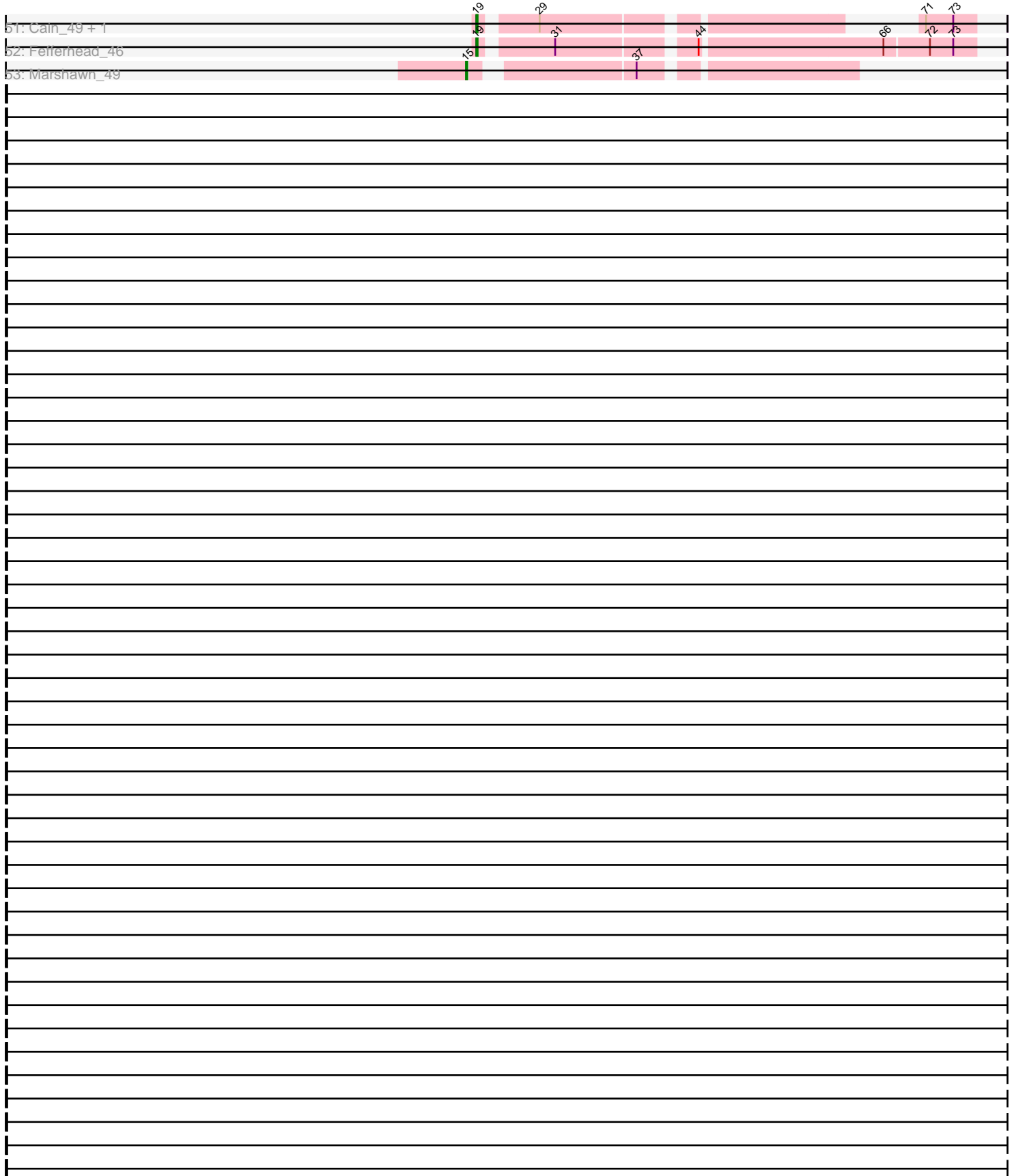


Pham 224357



# Pham 224357



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 224357 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224357 has 150 members, 14 are drafts.

Phages represented in each track:

- Track 1 : Nergal\_43
- Track 2 : Padfoot\_46, Llorens\_46, BEEST\_46, Dalmuri\_46, CaseJules\_47, Jeckyll\_46, Rosmarinus\_46, CREW\_46, Boiiii\_46, Joy99\_46, Asayake\_46, Blizzard\_46, BGlluviae\_46, Adephegia\_46, Homura\_46, Inky\_46, JAWS\_46, Spock\_46, Capricorn\_46, Hyperbowlee\_46, CallaLilly\_48, ShiaSurprise\_47, Durfee\_46, Piatt\_46, Belladonna\_46, Jarvi\_46, Twitch\_46, Peel\_46
- Track 3 : ActinUp\_46, Jayhawk\_47, Ramen\_46, BarrelRoll\_46, AlishaPH\_46, Geraldini\_48, TruffulaTree\_46, Apocalypse\_49, CheetoDust\_45, Zabiza\_41, Atiba\_46, Veliki\_46, Beezoo\_48, Rapunzel97\_46, Zavala\_47, Angelica\_46, Mynx\_47, Pokerus\_45, HedwigODU\_46, MeaningOfLife\_47, Ganymede\_47, QuincyRose\_45, YoureAdopted\_45, Padpat\_47, Tachez\_46, Emerson\_47, Slimphazie\_46
- Track 4 : Topper\_46, Lunahalos\_46
- Track 5 : Efra2\_48
- Track 6 : Devera\_50, Illumine\_49, Dole\_49
- Track 7 : Tiri\_47, MacKat\_41, Clipper\_50
- Track 8 : Nutello\_41, Teejan\_43, LilPharaoh\_41, SgtBeansprout\_41, Amelie\_41, Torres\_43, Binglebops\_41, Nikao\_44, Enkosi\_43, Mdavu\_42
- Track 9 : BaghaKamala\_45, LindNT\_45, Megsy\_47, Urkel\_47, TreyKay\_47, Prithvi\_47, SamuelLPlaqson\_47, TiniBug\_47, DrHayes\_47
- Track 10 : LaterM\_47, Ageofdapage\_48, Stinson\_47
- Track 11 : Bella96\_47
- Track 12 : LeMond\_50, Scarlett\_50, KiSi\_50, Oscar\_50
- Track 13 : Dartin\_48, McMater\_48, Richo\_48
- Track 14 : Bern\_47
- Track 15 : Chris\_48
- Track 16 : Adonis\_46
- Track 17 : Nibb\_48
- Track 18 : Yunkel11\_48, Guanica15\_48
- Track 19 : Shaobing\_48, Niklas\_48, Peanam\_48
- Track 20 : Anaya\_48
- Track 21 : Deby\_46, Sulley\_46
- Track 22 : Curiosium\_48
- Track 23 : MarkPhew\_49
- Track 24 : Murucutumbu\_47
- Track 25 : Chavito\_49
- Track 26 : Validus\_50
- Track 27 : TaiwanKao\_48

- Track 28 : CrimD\_46
- Track 29 : Pixie\_48, Lea83\_50, ShedlockHolmes\_49, TBond007\_48
- Track 30 : Hurricane\_49
- Track 31 : Keshu\_50
- Track 32 : TribbleTrouble\_46
- Track 33 : Pharb\_46
- Track 34 : MacnCheese\_50
- Track 35 : AlleyCat\_44, Larva\_44, Dadosky\_44
- Track 36 : Unicorn\_48, PhelpsODU\_48
- Track 37 : Hammy\_48, DarthP\_48
- Track 38 : Sunflower1121\_52, Shadow1\_51
- Track 39 : Applecrisp\_48, Ellie\_44
- Track 40 : Amgine\_46
- Track 41 : November\_48
- Track 42 : Krueger\_52
- Track 43 : Ekdilam\_45
- Track 44 : Tierra\_49
- Track 45 : SirPhilip\_48
- Track 46 : Syra333\_51, Ximenita\_52
- Track 47 : Yuna\_52
- Track 48 : Phrank\_49
- Track 49 : Amohnition\_48
- Track 50 : TClif\_50
- Track 51 : Cain\_49, Bryler\_49
- Track 52 : Fefferhead\_46
- Track 53 : Marshawn\_49

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

The start number called the most often in the published annotations is 17, it was called in 86 of the 136 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• ActinUp\_46, Adephagia\_46, Adonis\_46, Ageofdapage\_48, AlishaPH\_46, Anaya\_48, Angelica\_46, Apocalypse\_49, Asayake\_46, Atiba\_46, BEEST\_46, BGlluviae\_46, BaghaKamala\_45, BarrelRoll\_46, Beezoo\_48, Bella96\_47, Belladonna\_46, Blizzard\_46, Boiiii\_46, CREW\_46, CallaLilly\_48, Capricorn\_46, CaseJules\_47, CheetoDust\_45, Chris\_48, Clipper\_50, CrimD\_46, Dalmuri\_46, Deby\_46, Devera\_50, Dole\_49, DrHayes\_47, Durfee\_46, Emerson\_47, Ganymede\_47, Geraldini\_48, HedwigODU\_46, Homura\_46, Hyperbowlee\_46, Illumine\_49, Inky\_46, JAWS\_46, Jarvi\_46, Jayhawk\_47, Jeckyll\_46, Joy99\_46, KiSi\_50, LaterM\_47, LeMond\_50, LindNT\_45, Llorens\_46, Lunahalos\_46, MacKat\_41, MarkPhew\_49, MeaningOfLife\_47, Megsy\_47, Murucutumbu\_47, Mynx\_47, Nibb\_48, Oscar\_50, Padfoot\_46, Padpat\_47, Peel\_46, Piatt\_46, Pokerus\_45, Prithvi\_47, QuincyRose\_45, Ramen\_46, Rapunzel97\_46, Rosmarinus\_46, SamuelLPlaqson\_47, Scarlett\_50, ShiaSurprise\_47, Slimphazie\_46, Spock\_46, Stinson\_47, Sulley\_46, Tachez\_46, TaiwanKao\_48, TiniBug\_47, Tiri\_47, Topper\_46, TreyKay\_47, TruffulaTree\_46, Twitch\_46, Urkel\_47, Veliki\_46, YoureAdopted\_45, Zabiza\_41, Zavala\_47,

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

- Bern\_47,

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

- AlleyCat\_44, Amelie\_41, Amgine\_46, Amohnition\_48, Applecrisp\_48, Binglebops\_41, Bryler\_49, Cain\_49, Chavito\_49, Curiosium\_48, Dadosky\_44, DarthP\_48, Dartin\_48, Efra2\_48, Ekdilam\_45, Ellie\_44, Enkosi\_43, Fefferhead\_46, Guanica15\_48, Hammy\_48, Hurricane\_49, Keshu\_50, Krueger\_52, Larva\_44, Lea83\_50, LilPharaoh\_41, MacnCheese\_50, Marshawn\_49, McMater\_48, Mdavu\_42, Nergal\_43, Nikao\_44, Niklas\_48, November\_48, Nutello\_41, Peanam\_48, Pharb\_46, PhelpsODU\_48, Phrank\_49, Pixie\_48, Richo\_48, SgtBeansprout\_41, Shadow1\_51, Shaobing\_48, ShedlockHolmes\_49, SirPhilip\_48, Sunflower1121\_52, Syra333\_51, TBond007\_48, TClif\_50, Teejan\_43, Tierra\_49, Torres\_43, TripleTrouble\_46, Unicorn\_48, Validus\_50, Ximenita\_52, Yuna\_52, Yunkel11\_48,

### Summary by start number:

Start 14:

- Found in 9 of 150 ( 6.0% ) of genes in pham
- Manual Annotations of this start: 8 of 136
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hurricane\_49 (K3), Keshu\_50 (K3), Lea83\_50 (K3), MacnCheese\_50 (K3), Pharb\_46 (K3), Pixie\_48 (K3), ShedlockHolmes\_49 (K3), TBond007\_48 (K3), TripleTrouble\_46 (K3),

Start 15:

- Found in 1 of 150 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 136
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Marshawn\_49 (K6),

Start 17:

- Found in 91 of 150 ( 60.7% ) of genes in pham
- Manual Annotations of this start: 86 of 136
- Called 98.9% of time when present
- Phage (with cluster) where this start called: ActinUp\_46 (K1), Adephagia\_46 (K1), Adonis\_46 (K1), Ageofdapage\_48 (K1), AlishaPH\_46 (K1), Anaya\_48 (K1), Angelica\_46 (K1), Apocalypse\_49 (K1), Asayake\_46 (K1), Atiba\_46 (K1), BEEST\_46 (K1), BGIluviae\_46 (K1), BaghaKamala\_45 (K1), BarrelRoll\_46 (K1), Beezoo\_48 (K1), Bella96\_47 (K1), Belladonna\_46 (K1), Blizzard\_46 (K1), Boiiii\_46 (K1), CREW\_46 (K1), CallaLilly\_48 (K1), Capricorn\_46 (K1), CaseJules\_47 (K1), CheetoDust\_45 (K1), Chris\_48 (K1), Clipper\_50 (K1), CrimD\_46 (K1), Dalmuri\_46 (K1), Deby\_46 (K1), Devera\_50 (K1), Dole\_49 (K1), DrHayes\_47 (K1), Durfee\_46 (K1), Emerson\_47 (K1), Ganymede\_47 (K1), Geraldini\_48 (K1), HedwigODU\_46 (K1), Homura\_46 (K1), Hyperbowlee\_46 (K1), Illumine\_49 (K1), Inky\_46 (K1), JAWS\_46 (K1), Jarvi\_46 (K1), Jayhawk\_47 (K1), Jeckyll\_46 (K1), Joy99\_46 (K1), KiSi\_50 (K1), LaterM\_47 (K1), LeMond\_50 (K1), LindNT\_45 (K1), Llorens\_46 (K1), Lunahalos\_46 (K1), MacKat\_41 (K1), MarkPhew\_49 (K1), MeaningOfLife\_47 (K1), Megsy\_47 (K1), Murucutumbu\_47 (K1), Mynx\_47 (K1), Nibb\_48 (K1), Oscar\_50 (K1), Padfoot\_46 (K1), Padpat\_47 (K1), Peel\_46 (K1), Piatt\_46 (K1), Pokerus\_45 (K1), Prithvi\_47 (K1), QuincyRose\_45 (K1), Ramen\_46 (K1), Rapunzel97\_46 (K1), Rosmarinus\_46 (K1), SamuelLPlaqson\_47 (K1), Scarlett\_50 (K1), ShiaSurprise\_47 (K1), Slimphazie\_46 (K1), Spock\_46 (K1), Stinson\_47 (K1), Sulley\_46 (K1), Tachez\_46 (K1), TaiwanKao\_48 (K1), TiniBug\_47 (K1), Tiri\_47 (K1), Topper\_46 (K1), TreyKay\_47 (K1), TruffulaTree\_46 (K1),

Twitch\_46 (K1), Urkel\_47 (K1), Veliki\_46 (K1), YoureAdopted\_45 (K1), Zabiza\_41 (K1), Zavala\_47 (K1),

Start 18:

- Found in 1 of 150 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 136
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Yuna\_52 (K6),

Start 19:

- Found in 103 of 150 ( 68.7% ) of genes in pham
- Manual Annotations of this start: 19 of 136
- Called 21.4% of time when present
- Phage (with cluster) where this start called: Amgine\_46 (K6), Amohnition\_48 (K6), Applecrisp\_48 (K6), Bern\_47 (K1), Bryler\_49 (K6), Cain\_49 (K6), DarthP\_48 (K6), Ekdilam\_45 (K6), Ellie\_44 (K6), Fefferhead\_46 (K6), Hammy\_48 (K6), Krueger\_52 (K6), November\_48 (K6), PhelpsODU\_48 (K6), Phrank\_49 (K6), Shadow1\_51 (K6), SirPhilip\_48 (K6), Sunflower1121\_52 (K6), Syra333\_51 (K6), Tierra\_49 (K6), Unicorn\_48 (K6), Ximenita\_52 (K6),

Start 20:

- Found in 1 of 150 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 136
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Curiosium\_48 (K1),

Start 21:

- Found in 4 of 150 ( 2.7% ) of genes in pham
- Manual Annotations of this start: 4 of 136
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Efra2\_48 (K1), Guanica15\_48 (K1), TClif\_50 (K6), Yunkel11\_48 (K1),

Start 22:

- Found in 3 of 150 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 3 of 136
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AlleyCat\_44 (K5), Dadosky\_44 (K5), Larva\_44 (K5),

Start 26:

- Found in 19 of 150 ( 12.7% ) of genes in pham
- Manual Annotations of this start: 12 of 136
- Called 89.5% of time when present
- Phage (with cluster) where this start called: Amelie\_41 (K1), Binglebops\_41 (K1), Dartin\_48 (K1), Enkosi\_43 (K1), LilPharaoh\_41 (K1), McMater\_48 (K1), Mdavu\_42 (K1), Nikao\_44 (K1), Niklas\_48 (K1), Nutello\_41 (K1), Peanam\_48 (K1), Richo\_48 (K1), SgtBeansprout\_41 (K1), Shaobing\_48 (K1), Teejan\_43 (K1), Torres\_43 (K1), Validus\_50 (K1),

Start 27:

- Found in 1 of 150 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 136

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Nergal\_43 (AG),

Start 30:

- Found in 2 of 150 ( 1.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Chavito\_49 (K1),

### **Summary by clusters:**

There are 5 clusters represented in this pham: K3, K1, AG, K6, K5,

Info for manual annotations of cluster AG:

- Start number 27 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster K1:

- Start number 17 was manually annotated 86 times for cluster K1.
- Start number 20 was manually annotated 1 time for cluster K1.
- Start number 21 was manually annotated 3 times for cluster K1.
- Start number 26 was manually annotated 12 times for cluster K1.

Info for manual annotations of cluster K3:

- Start number 14 was manually annotated 8 times for cluster K3.

Info for manual annotations of cluster K5:

- Start number 22 was manually annotated 3 times for cluster K5.

Info for manual annotations of cluster K6:

- Start number 15 was manually annotated 1 time for cluster K6.
- Start number 18 was manually annotated 1 time for cluster K6.
- Start number 19 was manually annotated 19 times for cluster K6.
- Start number 21 was manually annotated 1 time for cluster K6.

### **Gene Information:**

Gene: ActinUp\_46 Start: 35666, Stop: 36016, Start Num: 17

Candidate Starts for ActinUp\_46:

(9, 35555), (Start: 17 @35666 has 86 MA's), (Start: 19 @35672 has 19 MA's), (28, 35702), (37, 35783), (60, 35942), (73, 35999),

Gene: Adephagia\_46 Start: 35663, Stop: 36013, Start Num: 17

Candidate Starts for Adephagia\_46:

(9, 35552), (Start: 17 @35663 has 86 MA's), (Start: 19 @35669 has 19 MA's), (60, 35939), (73, 35996),

Gene: Adonis\_46 Start: 35961, Stop: 36311, Start Num: 17

Candidate Starts for Adonis\_46:

(Start: 17 @35961 has 86 MA's), (28, 35997), (37, 36078), (60, 36237), (73, 36294),

Gene: Ageofdapage\_48 Start: 36661, Stop: 37002, Start Num: 17

Candidate Starts for Ageofdapage\_48:

(Start: 17 @36661 has 86 MA's), (Start: 19 @36667 has 19 MA's), (37, 36778), (62, 36940), (73, 36985),

Gene: AlishaPH\_46 Start: 35936, Stop: 36286, Start Num: 17

Candidate Starts for AlishaPH\_46:

(9, 35825), (Start: 17 @35936 has 86 MA's), (Start: 19 @35942 has 19 MA's), (28, 35972), (37, 36053), (60, 36212), (73, 36269),

Gene: AlleyCat\_44 Start: 34871, Stop: 35161, Start Num: 22

Candidate Starts for AlleyCat\_44:

(Start: 22 @34871 has 3 MA's), (43, 35030), (46, 35057), (49, 35081), (56, 35144),

Gene: Amelie\_41 Start: 35256, Stop: 35561, Start Num: 26

Candidate Starts for Amelie\_41:

(Start: 26 @35256 has 12 MA's), (37, 35343), (50, 35424), (53, 35460), (67, 35508),

Gene: Amgine\_46 Start: 36691, Stop: 37038, Start Num: 19

Candidate Starts for Amgine\_46:

(Start: 19 @36691 has 19 MA's), (66, 36970), (72, 37003), (73, 37021),

Gene: Amohndition\_48 Start: 36704, Stop: 37051, Start Num: 19

Candidate Starts for Amohndition\_48:

(Start: 19 @36704 has 19 MA's), (63, 36974), (70, 37010), (73, 37034),

Gene: Anaya\_48 Start: 36273, Stop: 36620, Start Num: 17

Candidate Starts for Anaya\_48:

(Start: 17 @36273 has 86 MA's), (28, 36309), (37, 36390), (64, 36555), (73, 36603),

Gene: Angelica\_46 Start: 35893, Stop: 36243, Start Num: 17

Candidate Starts for Angelica\_46:

(9, 35782), (Start: 17 @35893 has 86 MA's), (Start: 19 @35899 has 19 MA's), (28, 35929), (37, 36010), (60, 36169), (73, 36226),

Gene: Apocalypse\_49 Start: 36678, Stop: 37022, Start Num: 17

Candidate Starts for Apocalypse\_49:

(9, 36567), (Start: 17 @36678 has 86 MA's), (Start: 19 @36684 has 19 MA's), (28, 36714), (37, 36795), (60, 36954), (73, 37005),

Gene: Applecrisp\_48 Start: 36187, Stop: 36534, Start Num: 19

Candidate Starts for Applecrisp\_48:

(Start: 19 @36187 has 19 MA's), (66, 36466), (73, 36517),

Gene: Asayake\_46 Start: 35978, Stop: 36328, Start Num: 17

Candidate Starts for Asayake\_46:

(9, 35867), (Start: 17 @35978 has 86 MA's), (Start: 19 @35984 has 19 MA's), (60, 36254), (73, 36311),

Gene: Atiba\_46 Start: 35626, Stop: 35976, Start Num: 17

Candidate Starts for Atiba\_46:

(9, 35515), (Start: 17 @35626 has 86 MA's), (Start: 19 @35632 has 19 MA's), (28, 35662), (37, 35743), (60, 35902), (73, 35959),

Gene: BEEST\_46 Start: 35978, Stop: 36328, Start Num: 17

Candidate Starts for BEEST\_46:



(9, 35867), (Start: 17 @35978 has 86 MA's), (Start: 19 @35984 has 19 MA's), (60, 36254), (73, 36311),

Gene: BGlluviae\_46 Start: 35781, Stop: 36131, Start Num: 17

Candidate Starts for BGlluviae\_46:

(9, 35670), (Start: 17 @35781 has 86 MA's), (Start: 19 @35787 has 19 MA's), (60, 36057), (73, 36114),

Gene: BaghaKamala\_45 Start: 35101, Stop: 35451, Start Num: 17

Candidate Starts for BaghaKamala\_45:

(Start: 17 @35101 has 86 MA's), (Start: 19 @35107 has 19 MA's), (37, 35218), (60, 35377), (73, 35434),

Gene: BarrelRoll\_46 Start: 35649, Stop: 35999, Start Num: 17

Candidate Starts for BarrelRoll\_46:

(9, 35538), (Start: 17 @35649 has 86 MA's), (Start: 19 @35655 has 19 MA's), (28, 35685), (37, 35766), (60, 35925), (73, 35982),

Gene: Beezoo\_48 Start: 36624, Stop: 36974, Start Num: 17

Candidate Starts for Beezoo\_48:

(9, 36513), (Start: 17 @36624 has 86 MA's), (Start: 19 @36630 has 19 MA's), (28, 36660), (37, 36741), (60, 36900), (73, 36957),

Gene: Bella96\_47 Start: 36515, Stop: 36841, Start Num: 17

Candidate Starts for Bella96\_47:

(Start: 17 @36515 has 86 MA's), (Start: 19 @36521 has 19 MA's), (37, 36623), (59, 36776), (73, 36824),

Gene: Belladonna\_46 Start: 35781, Stop: 36131, Start Num: 17

Candidate Starts for Belladonna\_46:

(9, 35670), (Start: 17 @35781 has 86 MA's), (Start: 19 @35787 has 19 MA's), (60, 36057), (73, 36114),

Gene: Bern\_47 Start: 34702, Stop: 35046, Start Num: 19

Candidate Starts for Bern\_47:

(9, 34585), (Start: 17 @34696 has 86 MA's), (Start: 19 @34702 has 19 MA's), (28, 34732), (37, 34813), (60, 34972), (73, 35029),

Gene: Biglebops\_41 Start: 35256, Stop: 35561, Start Num: 26

Candidate Starts for Biglebops\_41:

(Start: 26 @35256 has 12 MA's), (37, 35343), (50, 35424), (53, 35460), (67, 35508),

Gene: Blizzard\_46 Start: 35978, Stop: 36328, Start Num: 17

Candidate Starts for Blizzard\_46:

(9, 35867), (Start: 17 @35978 has 86 MA's), (Start: 19 @35984 has 19 MA's), (60, 36254), (73, 36311),

Gene: Boiiii\_46 Start: 35980, Stop: 36330, Start Num: 17

Candidate Starts for Boiiii\_46:

(9, 35869), (Start: 17 @35980 has 86 MA's), (Start: 19 @35986 has 19 MA's), (60, 36256), (73, 36313),

Gene: Bryler\_49 Start: 35565, Stop: 35858, Start Num: 19

Candidate Starts for Bryler\_49:

(Start: 19 @35565 has 19 MA's), (29, 35601), (71, 35820), (73, 35841),

Gene: CREW\_46 Start: 35781, Stop: 36131, Start Num: 17

Candidate Starts for CREW\_46:

(9, 35670), (Start: 17 @35781 has 86 MA's), (Start: 19 @35787 has 19 MA's), (60, 36057), (73, 36114),

Gene: Cain\_49 Start: 35553, Stop: 35846, Start Num: 19

Candidate Starts for Cain\_49:

(Start: 19 @35553 has 19 MA's), (29, 35589), (71, 35808), (73, 35829),

Gene: CallaLilly\_48 Start: 35704, Stop: 36054, Start Num: 17

Candidate Starts for CallaLilly\_48:

(9, 35593), (Start: 17 @35704 has 86 MA's), (Start: 19 @35710 has 19 MA's), (60, 35980), (73, 36037),

Gene: Capricorn\_46 Start: 35781, Stop: 36131, Start Num: 17

Candidate Starts for Capricorn\_46:

(9, 35670), (Start: 17 @35781 has 86 MA's), (Start: 19 @35787 has 19 MA's), (60, 36057), (73, 36114),

Gene: CaseJules\_47 Start: 35978, Stop: 36328, Start Num: 17

Candidate Starts for CaseJules\_47:

(9, 35867), (Start: 17 @35978 has 86 MA's), (Start: 19 @35984 has 19 MA's), (60, 36254), (73, 36311),

Gene: Chavito\_49 Start: 37057, Stop: 37350, Start Num: 30

Candidate Starts for Chavito\_49:

(Start: 26 @37039 has 12 MA's), (30, 37057), (37, 37126), (50, 37207), (73, 37333),

Gene: CheetoDust\_45 Start: 35150, Stop: 35500, Start Num: 17

Candidate Starts for CheetoDust\_45:

(9, 35039), (Start: 17 @35150 has 86 MA's), (Start: 19 @35156 has 19 MA's), (28, 35186), (37, 35267), (60, 35426), (73, 35483),

Gene: Chris\_48 Start: 36479, Stop: 36811, Start Num: 17

Candidate Starts for Chris\_48:

(5, 36260), (Start: 17 @36479 has 86 MA's), (23, 36497), (33, 36557), (36, 36602),

Gene: Clipper\_50 Start: 36297, Stop: 36647, Start Num: 17

Candidate Starts for Clipper\_50:

(9, 36186), (Start: 17 @36297 has 86 MA's), (Start: 19 @36303 has 19 MA's), (37, 36414), (60, 36573), (73, 36630),

Gene: CrimD\_46 Start: 35904, Stop: 36242, Start Num: 17

Candidate Starts for CrimD\_46:

(7, 35781), (9, 35793), (Start: 17 @35904 has 86 MA's), (Start: 19 @35910 has 19 MA's), (37, 36021), (73, 36225),

Gene: Curiosium\_48 Start: 34631, Stop: 34975, Start Num: 20

Candidate Starts for Curiosium\_48:

(10, 34490), (Start: 20 @34631 has 1 MA's), (Start: 26 @34661 has 12 MA's), (35, 34718), (37, 34748), (53, 34865), (73, 34958),

Gene: Dadosky\_44 Start: 34873, Stop: 35163, Start Num: 22

Candidate Starts for Dadosky\_44:

(Start: 22 @34873 has 3 MA's), (43, 35032), (46, 35059), (49, 35083), (56, 35146),

Gene: Dalmuri\_46 Start: 35781, Stop: 36131, Start Num: 17

Candidate Starts for Dalmuri\_46:

(9, 35670), (Start: 17 @35781 has 86 MA's), (Start: 19 @35787 has 19 MA's), (60, 36057), (73, 36114),

Gene: DarthP\_48 Start: 36588, Stop: 36935, Start Num: 19

Candidate Starts for DarthP\_48:

(Start: 19 @36588 has 19 MA's), (25, 36606), (63, 36858), (70, 36894), (73, 36918),

Gene: Dartin\_48 Start: 36377, Stop: 36688, Start Num: 26

Candidate Starts for Dartin\_48:

(Start: 26 @36377 has 12 MA's), (32, 36413), (37, 36464), (50, 36545), (73, 36671),

Gene: Deby\_46 Start: 35909, Stop: 36259, Start Num: 17

Candidate Starts for Deby\_46:

(9, 35798), (12, 35864), (Start: 17 @35909 has 86 MA's), (Start: 19 @35915 has 19 MA's), (28, 35945), (37, 36026), (60, 36185), (73, 36242),

Gene: Devera\_50 Start: 36442, Stop: 36789, Start Num: 17

Candidate Starts for Devera\_50:

(Start: 17 @36442 has 86 MA's), (Start: 19 @36448 has 19 MA's), (37, 36559), (60, 36718), (62, 36721), (73, 36772),

Gene: Dole\_49 Start: 36444, Stop: 36791, Start Num: 17

Candidate Starts for Dole\_49:

(Start: 17 @36444 has 86 MA's), (Start: 19 @36450 has 19 MA's), (37, 36561), (60, 36720), (62, 36723), (73, 36774),

Gene: DrHayes\_47 Start: 36560, Stop: 36904, Start Num: 17

Candidate Starts for DrHayes\_47:

(Start: 17 @36560 has 86 MA's), (Start: 19 @36566 has 19 MA's), (37, 36677), (60, 36836), (73, 36887),

Gene: Durfee\_46 Start: 35978, Stop: 36328, Start Num: 17

Candidate Starts for Durfee\_46:

(9, 35867), (Start: 17 @35978 has 86 MA's), (Start: 19 @35984 has 19 MA's), (60, 36254), (73, 36311),

Gene: Efra2\_48 Start: 35532, Stop: 35858, Start Num: 21

Candidate Starts for Efra2\_48:

(Start: 21 @35532 has 4 MA's), (37, 35640), (48, 35715), (73, 35841),

Gene: Ekdilam\_45 Start: 36153, Stop: 36479, Start Num: 19

Candidate Starts for Ekdilam\_45:

(Start: 19 @36153 has 19 MA's), (38, 36264), (51, 36354), (63, 36423), (70, 36438), (73, 36462),

Gene: Ellie\_44 Start: 35879, Stop: 36226, Start Num: 19

Candidate Starts for Ellie\_44:

(Start: 19 @35879 has 19 MA's), (66, 36158), (73, 36209),

Gene: Emerson\_47 Start: 35657, Stop: 36007, Start Num: 17

Candidate Starts for Emerson\_47:

(9, 35546), (Start: 17 @35657 has 86 MA's), (Start: 19 @35663 has 19 MA's), (28, 35693), (37, 35774), (60, 35933), (73, 35990),

Gene: Enkosi\_43 Start: 37869, Stop: 38174, Start Num: 26

Candidate Starts for Enkosi\_43:

(Start: 26 @37869 has 12 MA's), (37, 37956), (50, 38037), (53, 38073), (67, 38121),

Gene: Fefferhead\_46 Start: 35830, Stop: 36177, Start Num: 19

Candidate Starts for Fefferhead\_46:

(Start: 19 @35830 has 19 MA's), (31, 35878), (44, 35974), (66, 36109), (72, 36142), (73, 36160),

Gene: Ganymede\_47 Start: 36096, Stop: 36446, Start Num: 17

Candidate Starts for Ganymede\_47:

(9, 35985), (Start: 17 @36096 has 86 MA's), (Start: 19 @36102 has 19 MA's), (28, 36132), (37, 36213), (60, 36372), (73, 36429),

Gene: Geraldini\_48 Start: 36713, Stop: 37063, Start Num: 17

Candidate Starts for Geraldini\_48:

(9, 36602), (Start: 17 @36713 has 86 MA's), (Start: 19 @36719 has 19 MA's), (28, 36749), (37, 36830), (60, 36989), (73, 37046),

Gene: Guanica15\_48 Start: 35489, Stop: 35815, Start Num: 21

Candidate Starts for Guanica15\_48:

(Start: 21 @35489 has 4 MA's), (37, 35597), (73, 35798),

Gene: Hammy\_48 Start: 36576, Stop: 36923, Start Num: 19

Candidate Starts for Hammy\_48:

(Start: 19 @36576 has 19 MA's), (25, 36594), (63, 36846), (70, 36882), (73, 36906),

Gene: HedwigODU\_46 Start: 35666, Stop: 36016, Start Num: 17

Candidate Starts for HedwigODU\_46:

(9, 35555), (Start: 17 @35666 has 86 MA's), (Start: 19 @35672 has 19 MA's), (28, 35702), (37, 35783), (60, 35942), (73, 35999),

Gene: Homura\_46 Start: 35781, Stop: 36131, Start Num: 17

Candidate Starts for Homura\_46:

(9, 35670), (Start: 17 @35781 has 86 MA's), (Start: 19 @35787 has 19 MA's), (60, 36057), (73, 36114),

Gene: Hurricane\_49 Start: 36312, Stop: 36689, Start Num: 14

Candidate Starts for Hurricane\_49:

(Start: 14 @36312 has 8 MA's), (16, 36318), (24, 36336), (34, 36399), (51, 36546), (61, 36615), (71, 36651), (73, 36672),

Gene: Hyperbowlee\_46 Start: 35978, Stop: 36328, Start Num: 17

Candidate Starts for Hyperbowlee\_46:

(9, 35867), (Start: 17 @35978 has 86 MA's), (Start: 19 @35984 has 19 MA's), (60, 36254), (73, 36311),

Gene: Illumine\_49 Start: 36444, Stop: 36791, Start Num: 17

Candidate Starts for Illumine\_49:

(Start: 17 @36444 has 86 MA's), (Start: 19 @36450 has 19 MA's), (37, 36561), (60, 36720), (62, 36723), (73, 36774),

Gene: Inky\_46 Start: 35781, Stop: 36131, Start Num: 17

Candidate Starts for Inky\_46:

(9, 35670), (Start: 17 @35781 has 86 MA's), (Start: 19 @35787 has 19 MA's), (60, 36057), (73, 36114),

Gene: JAWS\_46 Start: 35655, Stop: 36005, Start Num: 17

Candidate Starts for JAWS\_46:

(9, 35544), (Start: 17 @35655 has 86 MA's), (Start: 19 @35661 has 19 MA's), (60, 35931), (73, 35988),

Gene: Jarvi\_46 Start: 35781, Stop: 36131, Start Num: 17

Candidate Starts for Jarvi\_46:

(9, 35670), (Start: 17 @35781 has 86 MA's), (Start: 19 @35787 has 19 MA's), (60, 36057), (73, 36114),

Gene: Jayhawk\_47 Start: 35664, Stop: 36014, Start Num: 17

Candidate Starts for Jayhawk\_47:

(9, 35553), (Start: 17 @35664 has 86 MA's), (Start: 19 @35670 has 19 MA's), (28, 35700), (37, 35781), (60, 35940), (73, 35997),

Gene: Jeckyll\_46 Start: 35781, Stop: 36131, Start Num: 17

Candidate Starts for Jeckyll\_46:

(9, 35670), (Start: 17 @35781 has 86 MA's), (Start: 19 @35787 has 19 MA's), (60, 36057), (73, 36114),

Gene: Joy99\_46 Start: 35710, Stop: 36060, Start Num: 17

Candidate Starts for Joy99\_46:

(9, 35599), (Start: 17 @35710 has 86 MA's), (Start: 19 @35716 has 19 MA's), (60, 35986), (73, 36043),

Gene: Keshu\_50 Start: 36370, Stop: 36747, Start Num: 14

Candidate Starts for Keshu\_50:

(Start: 14 @36370 has 8 MA's), (16, 36376), (24, 36394), (34, 36457), (61, 36673), (71, 36709), (73, 36730),

Gene: KiSi\_50 Start: 36878, Stop: 37192, Start Num: 17

Candidate Starts for KiSi\_50:

(5, 36665), (Start: 17 @36878 has 86 MA's), (57, 37133), (70, 37160),

Gene: Krueger\_52 Start: 36559, Stop: 36852, Start Num: 19

Candidate Starts for Krueger\_52:

(Start: 19 @36559 has 19 MA's), (47, 36724), (53, 36784), (71, 36814), (73, 36835),

Gene: Larva\_44 Start: 34740, Stop: 35030, Start Num: 22

Candidate Starts for Larva\_44:

(Start: 22 @34740 has 3 MA's), (43, 34899), (46, 34926), (49, 34950), (56, 35013),

Gene: LaterM\_47 Start: 36558, Stop: 36899, Start Num: 17

Candidate Starts for LaterM\_47:

(Start: 17 @36558 has 86 MA's), (Start: 19 @36564 has 19 MA's), (37, 36675), (62, 36837), (73, 36882),

Gene: LeMond\_50 Start: 36862, Stop: 37176, Start Num: 17

Candidate Starts for LeMond\_50:

(5, 36649), (Start: 17 @36862 has 86 MA's), (57, 37117), (70, 37144),

Gene: Lea83\_50 Start: 36344, Stop: 36721, Start Num: 14

Candidate Starts for Lea83\_50:

(Start: 14 @36344 has 8 MA's), (16, 36350), (34, 36431), (61, 36647), (71, 36683), (73, 36704),

Gene: LilPharaoh\_41 Start: 34984, Stop: 35289, Start Num: 26

Candidate Starts for LilPharaoh\_41:

(Start: 26 @34984 has 12 MA's), (37, 35071), (50, 35152), (53, 35188), (67, 35236),

Gene: LindNT\_45 Start: 35871, Stop: 36221, Start Num: 17

Candidate Starts for LindNT\_45:

(Start: 17 @35871 has 86 MA's), (Start: 19 @35877 has 19 MA's), (37, 35988), (60, 36147), (73, 36204),

Gene: Llorens\_46 Start: 35781, Stop: 36131, Start Num: 17

Candidate Starts for Llorens\_46:

(9, 35670), (Start: 17 @35781 has 86 MA's), (Start: 19 @35787 has 19 MA's), (60, 36057), (73, 36114),

Gene: Lunahalos\_46 Start: 35781, Stop: 36131, Start Num: 17

Candidate Starts for Lunahalos\_46:

(9, 35670), (Start: 17 @35781 has 86 MA's), (Start: 19 @35787 has 19 MA's), (60, 36057),

Gene: MacKat\_41 Start: 31181, Stop: 31531, Start Num: 17

Candidate Starts for MacKat\_41:

(9, 31070), (Start: 17 @31181 has 86 MA's), (Start: 19 @31187 has 19 MA's), (37, 31298), (60, 31457), (73, 31514),

Gene: MacnCheese\_50 Start: 37267, Stop: 37638, Start Num: 14

Candidate Starts for MacnCheese\_50:

(1, 36940), (3, 36970), (Start: 14 @37267 has 8 MA's), (24, 37291), (34, 37354), (39, 37414), (40, 37429), (53, 37525), (58, 37555), (61, 37570), (65, 37576), (69, 37600), (73, 37621),

Gene: MarkPhew\_49 Start: 36307, Stop: 36639, Start Num: 17

Candidate Starts for MarkPhew\_49:

(5, 36091), (Start: 17 @36307 has 86 MA's), (23, 36325),

Gene: Marshawn\_49 Start: 36704, Stop: 36964, Start Num: 15

Candidate Starts for Marshawn\_49:

(Start: 15 @36704 has 1 MA's), (37, 36812),

Gene: McMater\_48 Start: 36377, Stop: 36688, Start Num: 26

Candidate Starts for McMater\_48:

(Start: 26 @36377 has 12 MA's), (32, 36413), (37, 36464), (50, 36545), (73, 36671),

Gene: Mdavu\_42 Start: 35245, Stop: 35550, Start Num: 26

Candidate Starts for Mdavu\_42:

(Start: 26 @35245 has 12 MA's), (37, 35332), (50, 35413), (53, 35449), (67, 35497),

Gene: MeaningOfLife\_47 Start: 36590, Stop: 36940, Start Num: 17

Candidate Starts for MeaningOfLife\_47:

(9, 36479), (Start: 17 @36590 has 86 MA's), (Start: 19 @36596 has 19 MA's), (28, 36626), (37, 36707), (60, 36866), (73, 36923),

Gene: Megsy\_47 Start: 35930, Stop: 36280, Start Num: 17

Candidate Starts for Megsy\_47:

(Start: 17 @35930 has 86 MA's), (Start: 19 @35936 has 19 MA's), (37, 36047), (60, 36206), (73, 36263),

Gene: Murucutumbu\_47 Start: 36651, Stop: 36992, Start Num: 17

Candidate Starts for Murucutumbu\_47:

(Start: 17 @36651 has 86 MA's), (Start: 19 @36657 has 19 MA's), (37, 36768), (62, 36930), (68, 36945), (73, 36975),

Gene: Mynx\_47 Start: 35982, Stop: 36332, Start Num: 17

Candidate Starts for Mynx\_47:

(9, 35871), (Start: 17 @35982 has 86 MA's), (Start: 19 @35988 has 19 MA's), (28, 36018), (37, 36099), (60, 36258), (73, 36315),

Gene: Nergal\_43 Start: 34330, Stop: 34641, Start Num: 27

Candidate Starts for Nergal\_43:

(Start: 27 @34330 has 1 MA's), (32, 34366), (41, 34450), (53, 34546), (73, 34624),

Gene: Nibb\_48 Start: 36019, Stop: 36333, Start Num: 17

Candidate Starts for Nibb\_48:

(5, 35803), (13, 35989), (Start: 17 @36019 has 86 MA's),

Gene: Nikao\_44 Start: 37869, Stop: 38174, Start Num: 26

Candidate Starts for Nikao\_44:

(Start: 26 @37869 has 12 MA's), (37, 37956), (50, 38037), (53, 38073), (67, 38121),

Gene: Niklas\_48 Start: 36438, Stop: 36749, Start Num: 26

Candidate Starts for Niklas\_48:

(Start: 26 @36438 has 12 MA's), (37, 36525), (50, 36606), (73, 36732),

Gene: November\_48 Start: 36312, Stop: 36686, Start Num: 19

Candidate Starts for November\_48:

(Start: 19 @36312 has 19 MA's), (25, 36330), (66, 36591), (70, 36621), (74, 36669),

Gene: Nutello\_41 Start: 35256, Stop: 35561, Start Num: 26

Candidate Starts for Nutello\_41:

(Start: 26 @35256 has 12 MA's), (37, 35343), (50, 35424), (53, 35460), (67, 35508),

Gene: Oscar\_50 Start: 36764, Stop: 37078, Start Num: 17

Candidate Starts for Oscar\_50:

(5, 36551), (Start: 17 @36764 has 86 MA's), (57, 37019), (70, 37046),

Gene: Padfoot\_46 Start: 35978, Stop: 36328, Start Num: 17

Candidate Starts for Padfoot\_46:

(9, 35867), (Start: 17 @35978 has 86 MA's), (Start: 19 @35984 has 19 MA's), (60, 36254), (73, 36311),

Gene: Padpat\_47 Start: 35657, Stop: 36007, Start Num: 17

Candidate Starts for Padpat\_47:

(9, 35546), (Start: 17 @35657 has 86 MA's), (Start: 19 @35663 has 19 MA's), (28, 35693), (37, 35774), (60, 35933), (73, 35990),

Gene: Peanam\_48 Start: 36396, Stop: 36707, Start Num: 26

Candidate Starts for Peanam\_48:

(Start: 26 @36396 has 12 MA's), (37, 36483), (50, 36564), (73, 36690),

Gene: Peel\_46 Start: 35783, Stop: 36133, Start Num: 17

Candidate Starts for Peel\_46:

(9, 35672), (Start: 17 @35783 has 86 MA's), (Start: 19 @35789 has 19 MA's), (60, 36059), (73, 36116),

Gene: Pharb\_46 Start: 35070, Stop: 35441, Start Num: 14

Candidate Starts for Pharb\_46:

(1, 34746), (2, 34767), (4, 34827), (Start: 14 @35070 has 8 MA's), (24, 35094), (34, 35157), (42, 35241), (61, 35373), (65, 35379), (69, 35403), (73, 35424),

Gene: PhelpsODU\_48 Start: 35586, Stop: 35879, Start Num: 19

Candidate Starts for PhelpsODU\_48:

(Start: 19 @35586 has 19 MA's), (29, 35622), (38, 35697), (53, 35811), (54, 35820), (72, 35844), (73, 35862),

Gene: Phrank\_49 Start: 35543, Stop: 35836, Start Num: 19

Candidate Starts for Phrank\_49:

(Start: 19 @35543 has 19 MA's), (29, 35579), (38, 35654), (53, 35768), (71, 35798), (73, 35819),

Gene: Piatt\_46 Start: 35978, Stop: 36328, Start Num: 17

Candidate Starts for Piatt\_46:

(9, 35867), (Start: 17 @35978 has 86 MA's), (Start: 19 @35984 has 19 MA's), (60, 36254), (73, 36311),

Gene: Pixie\_48 Start: 35823, Stop: 36200, Start Num: 14

Candidate Starts for Pixie\_48:

(Start: 14 @35823 has 8 MA's), (16, 35829), (34, 35910), (61, 36126), (71, 36162), (73, 36183),

Gene: Pokerus\_45 Start: 35704, Stop: 36054, Start Num: 17

Candidate Starts for Pokerus\_45:

(9, 35593), (Start: 17 @35704 has 86 MA's), (Start: 19 @35710 has 19 MA's), (28, 35740), (37, 35821), (60, 35980), (73, 36037),

Gene: Prithvi\_47 Start: 35871, Stop: 36221, Start Num: 17

Candidate Starts for Prithvi\_47:

(Start: 17 @35871 has 86 MA's), (Start: 19 @35877 has 19 MA's), (37, 35988), (60, 36147), (73, 36204),

Gene: QuincyRose\_45 Start: 36096, Stop: 36446, Start Num: 17

Candidate Starts for QuincyRose\_45:

(9, 35985), (Start: 17 @36096 has 86 MA's), (Start: 19 @36102 has 19 MA's), (28, 36132), (37, 36213), (60, 36372), (73, 36429),

Gene: Ramen\_46 Start: 35668, Stop: 36018, Start Num: 17

Candidate Starts for Ramen\_46:

(9, 35557), (Start: 17 @35668 has 86 MA's), (Start: 19 @35674 has 19 MA's), (28, 35704), (37, 35785), (60, 35944), (73, 36001),

Gene: Rapunzel97\_46 Start: 35664, Stop: 36014, Start Num: 17

Candidate Starts for Rapunzel97\_46:

(9, 35553), (Start: 17 @35664 has 86 MA's), (Start: 19 @35670 has 19 MA's), (28, 35700), (37, 35781), (60, 35940), (73, 35997),

Gene: Richo\_48 Start: 36377, Stop: 36688, Start Num: 26

Candidate Starts for Richo\_48:

(Start: 26 @36377 has 12 MA's), (32, 36413), (37, 36464), (50, 36545), (73, 36671),

Gene: Rosmarinus\_46 Start: 35769, Stop: 36119, Start Num: 17

Candidate Starts for Rosmarinus\_46:

(9, 35658), (Start: 17 @35769 has 86 MA's), (Start: 19 @35775 has 19 MA's), (60, 36045), (73, 36102),



Gene: SamuelLPlaqson\_47 Start: 36560, Stop: 36904, Start Num: 17  
Candidate Starts for SamuelLPlaqson\_47:  
(Start: 17 @36560 has 86 MA's), (Start: 19 @36566 has 19 MA's), (37, 36677), (60, 36836), (73, 36887),

Gene: Scarlett\_50 Start: 36756, Stop: 37070, Start Num: 17  
Candidate Starts for Scarlett\_50:  
(5, 36543), (Start: 17 @36756 has 86 MA's), (57, 37011), (70, 37038),

Gene: SgtBeansprout\_41 Start: 35256, Stop: 35561, Start Num: 26  
Candidate Starts for SgtBeansprout\_41:  
(Start: 26 @35256 has 12 MA's), (37, 35343), (50, 35424), (53, 35460), (67, 35508),

Gene: Shadow1\_51 Start: 36704, Stop: 36997, Start Num: 19  
Candidate Starts for Shadow1\_51:  
(Start: 19 @36704 has 19 MA's), (54, 36938), (73, 36980),

Gene: Shaobing\_48 Start: 36413, Stop: 36724, Start Num: 26  
Candidate Starts for Shaobing\_48:  
(Start: 26 @36413 has 12 MA's), (37, 36500), (50, 36581), (73, 36707),

Gene: ShedlockHolmes\_49 Start: 36348, Stop: 36725, Start Num: 14  
Candidate Starts for ShedlockHolmes\_49:  
(Start: 14 @36348 has 8 MA's), (16, 36354), (34, 36435), (61, 36651), (71, 36687), (73, 36708),

Gene: ShiaSurprise\_47 Start: 35978, Stop: 36328, Start Num: 17  
Candidate Starts for ShiaSurprise\_47:  
(9, 35867), (Start: 17 @35978 has 86 MA's), (Start: 19 @35984 has 19 MA's), (60, 36254), (73, 36311),

Gene: SirPhilip\_48 Start: 36922, Stop: 37266, Start Num: 19  
Candidate Starts for SirPhilip\_48:  
(8, 36778), (Start: 19 @36922 has 19 MA's), (45, 37069), (52, 37129), (71, 37228), (73, 37249),

Gene: Slimphazie\_46 Start: 35664, Stop: 36014, Start Num: 17  
Candidate Starts for Slimphazie\_46:  
(9, 35553), (Start: 17 @35664 has 86 MA's), (Start: 19 @35670 has 19 MA's), (28, 35700), (37, 35781), (60, 35940), (73, 35997),

Gene: Spock\_46 Start: 35782, Stop: 36132, Start Num: 17  
Candidate Starts for Spock\_46:  
(9, 35671), (Start: 17 @35782 has 86 MA's), (Start: 19 @35788 has 19 MA's), (60, 36058), (73, 36115),

Gene: Stinson\_47 Start: 36171, Stop: 36512, Start Num: 17  
Candidate Starts for Stinson\_47:  
(Start: 17 @36171 has 86 MA's), (Start: 19 @36177 has 19 MA's), (37, 36288), (62, 36450), (73, 36495),

Gene: Sulley\_46 Start: 35908, Stop: 36258, Start Num: 17  
Candidate Starts for Sulley\_46:  
(9, 35797), (12, 35863), (Start: 17 @35908 has 86 MA's), (Start: 19 @35914 has 19 MA's), (28, 35944), (37, 36025), (60, 36184), (73, 36241),

Gene: Sunflower1121\_52 Start: 36805, Stop: 37098, Start Num: 19

Candidate Starts for Sunflower1121\_52:  
(Start: 19 @36805 has 19 MA's), (54, 37039), (73, 37081),

Gene: Syra333\_51 Start: 36472, Stop: 36762, Start Num: 19  
Candidate Starts for Syra333\_51:  
(Start: 19 @36472 has 19 MA's), (53, 36697), (73, 36745),

Gene: TBond007\_48 Start: 35822, Stop: 36199, Start Num: 14  
Candidate Starts for TBond007\_48:  
(Start: 14 @35822 has 8 MA's), (16, 35828), (34, 35909), (61, 36125), (71, 36161), (73, 36182),

Gene: TClif\_50 Start: 36845, Stop: 37159, Start Num: 21  
Candidate Starts for TClif\_50:  
(Start: 21 @36845 has 4 MA's), (37, 36953), (70, 37121),

Gene: Tachez\_46 Start: 35626, Stop: 35976, Start Num: 17  
Candidate Starts for Tachez\_46:  
(9, 35515), (Start: 17 @35626 has 86 MA's), (Start: 19 @35632 has 19 MA's), (28, 35662), (37, 35743),  
(60, 35902), (73, 35959),

Gene: TaiwanKao\_48 Start: 35927, Stop: 36277, Start Num: 17  
Candidate Starts for TaiwanKao\_48:  
(9, 35792), (Start: 17 @35927 has 86 MA's), (Start: 19 @35933 has 19 MA's), (37, 36044), (60, 36203),  
(73, 36260),

Gene: Teejan\_43 Start: 37869, Stop: 38174, Start Num: 26  
Candidate Starts for Teejan\_43:  
(Start: 26 @37869 has 12 MA's), (37, 37956), (50, 38037), (53, 38073), (67, 38121),

Gene: Tierra\_49 Start: 36354, Stop: 36647, Start Num: 19  
Candidate Starts for Tierra\_49:  
(Start: 19 @36354 has 19 MA's), (29, 36390), (38, 36465), (53, 36579), (73, 36630),

Gene: TiniBug\_47 Start: 36556, Stop: 36900, Start Num: 17  
Candidate Starts for TiniBug\_47:  
(Start: 17 @36556 has 86 MA's), (Start: 19 @36562 has 19 MA's), (37, 36673), (60, 36832), (73,  
36883),

Gene: Tiri\_47 Start: 35956, Stop: 36306, Start Num: 17  
Candidate Starts for Tiri\_47:  
(9, 35845), (Start: 17 @35956 has 86 MA's), (Start: 19 @35962 has 19 MA's), (37, 36073), (60, 36232),  
(73, 36289),

Gene: Topper\_46 Start: 35781, Stop: 36131, Start Num: 17  
Candidate Starts for Topper\_46:  
(9, 35670), (Start: 17 @35781 has 86 MA's), (Start: 19 @35787 has 19 MA's), (60, 36057),

Gene: Torres\_43 Start: 37870, Stop: 38175, Start Num: 26  
Candidate Starts for Torres\_43:  
(Start: 26 @37870 has 12 MA's), (37, 37957), (50, 38038), (53, 38074), (67, 38122),

Gene: TreyKay\_47 Start: 35871, Stop: 36221, Start Num: 17  
Candidate Starts for TreyKay\_47:

(Start: 17 @35871 has 86 MA's), (Start: 19 @35877 has 19 MA's), (37, 35988), (60, 36147), (73, 36204),

Gene: TribelTrouble\_46 Start: 35713, Stop: 36090, Start Num: 14

Candidate Starts for TribelTrouble\_46:

(Start: 14 @35713 has 8 MA's), (16, 35719), (35, 35812), (47, 35911), (55, 35986), (61, 36016), (65, 36022), (73, 36073),

Gene: TruffulaTree\_46 Start: 35660, Stop: 36010, Start Num: 17

Candidate Starts for TruffulaTree\_46:

(9, 35549), (Start: 17 @35660 has 86 MA's), (Start: 19 @35666 has 19 MA's), (28, 35696), (37, 35777), (60, 35936), (73, 35993),

Gene: Twitch\_46 Start: 35783, Stop: 36133, Start Num: 17

Candidate Starts for Twitch\_46:

(9, 35672), (Start: 17 @35783 has 86 MA's), (Start: 19 @35789 has 19 MA's), (60, 36059), (73, 36116),

Gene: Unicorn\_48 Start: 35586, Stop: 35879, Start Num: 19

Candidate Starts for Unicorn\_48:

(Start: 19 @35586 has 19 MA's), (29, 35622), (38, 35697), (53, 35811), (54, 35820), (72, 35844), (73, 35862),

Gene: Urkel\_47 Start: 36560, Stop: 36904, Start Num: 17

Candidate Starts for Urkel\_47:

(Start: 17 @36560 has 86 MA's), (Start: 19 @36566 has 19 MA's), (37, 36677), (60, 36836), (73, 36887),

Gene: Validus\_50 Start: 36462, Stop: 36773, Start Num: 26

Candidate Starts for Validus\_50:

(Start: 26 @36462 has 12 MA's), (30, 36480), (37, 36549), (50, 36630), (73, 36756),

Gene: Veliki\_46 Start: 35700, Stop: 36050, Start Num: 17

Candidate Starts for Veliki\_46:

(9, 35589), (Start: 17 @35700 has 86 MA's), (Start: 19 @35706 has 19 MA's), (28, 35736), (37, 35817), (60, 35976), (73, 36033),

Gene: Ximenita\_52 Start: 36658, Stop: 36951, Start Num: 19

Candidate Starts for Ximenita\_52:

(Start: 19 @36658 has 19 MA's), (53, 36883), (73, 36934),

Gene: YoureAdopted\_45 Start: 35865, Stop: 36215, Start Num: 17

Candidate Starts for YoureAdopted\_45:

(9, 35754), (Start: 17 @35865 has 86 MA's), (Start: 19 @35871 has 19 MA's), (28, 35901), (37, 35982), (60, 36141), (73, 36198),

Gene: Yuna\_52 Start: 37415, Stop: 37738, Start Num: 18

Candidate Starts for Yuna\_52:

(6, 37256), (11, 37292), (Start: 18 @37415 has 1 MA's), (37, 37526), (69, 37697), (71, 37703),

Gene: Yunkel11\_48 Start: 35488, Stop: 35814, Start Num: 21

Candidate Starts for Yunkel11\_48:

(Start: 21 @35488 has 4 MA's), (37, 35596), (73, 35797),

Gene: Zabiza\_41 Start: 31971, Stop: 32321, Start Num: 17

Candidate Starts for Zabiza\_41:

(9, 31860), (Start: 17 @31971 has 86 MA's), (Start: 19 @31977 has 19 MA's), (28, 32007), (37, 32088), (60, 32247), (73, 32304),

Gene: Zavala\_47 Start: 35942, Stop: 36292, Start Num: 17

Candidate Starts for Zavala\_47:

(9, 35831), (Start: 17 @35942 has 86 MA's), (Start: 19 @35948 has 19 MA's), (28, 35978), (37, 36059), (60, 36218), (73, 36275),