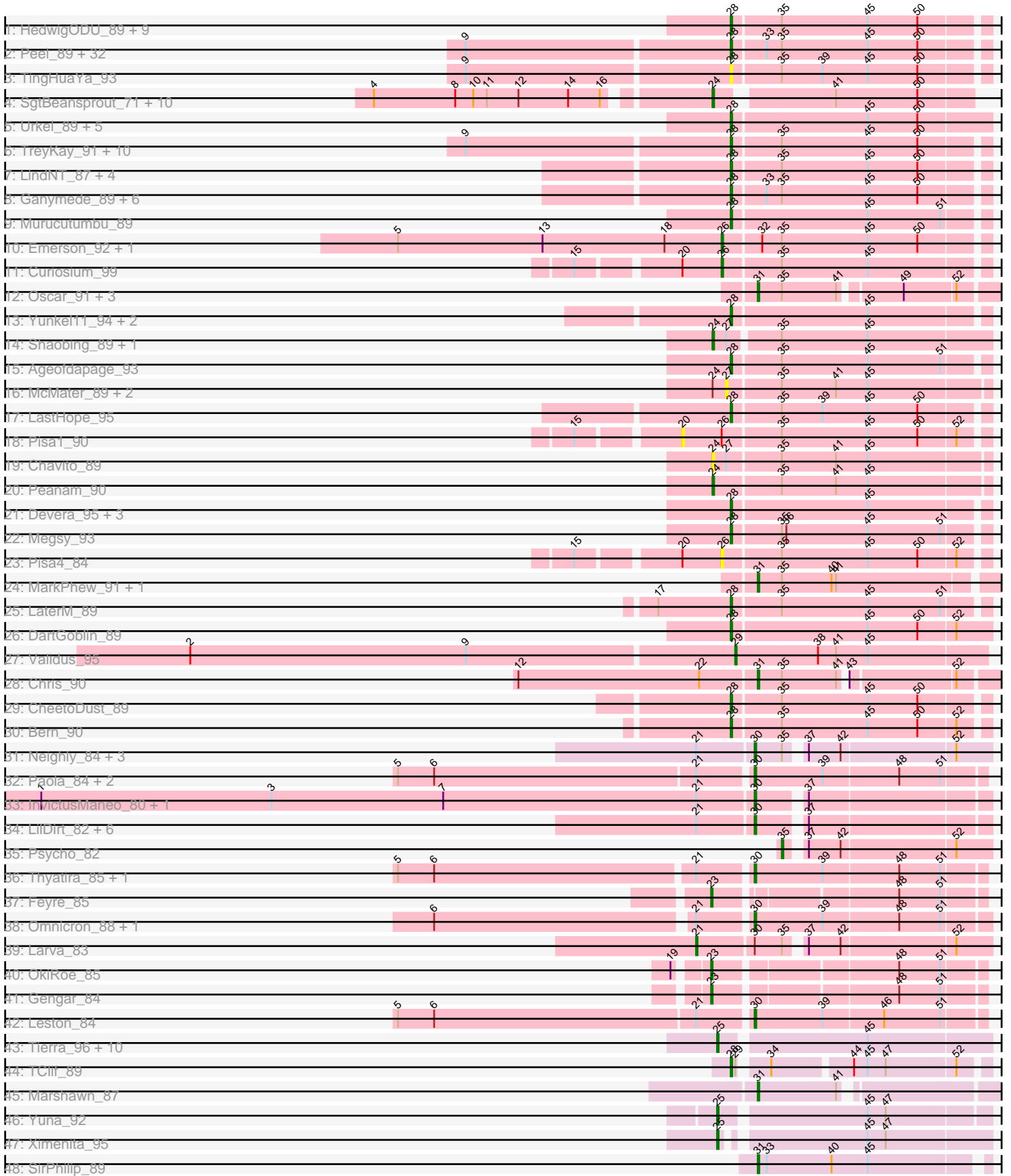


Pham 311304



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 311304 Report

This analysis was run 06/27/26 on database version 652.

Pham number 311304 has 161 members, 13 are drafts.

Phages represented in each track:

- Track 1 : HedwigODU\_89, Adephagia\_88, Clipper\_93, TaiwanKao\_90, JAWS\_88, MacKat\_85, ActinUp\_90, BGlluviae\_88, Zabiza\_85, Veliki\_90
- Track 2 : Peel\_89, Pokerus\_89, BEEEST\_89, ShiaSurprise\_90, Homura\_88, CallaLilly\_89, Lunahalos\_89, Capricorn\_89, MeaningOfLife\_91, Tachez\_89, Twitch\_89, CaseJules\_91, Durfee\_89, Rosmarinus\_89, Topper\_89, Dalmuri\_89, Hyperbowlee\_88, Jarvi\_89, Piatt\_88, Jeckyll\_89, Llorens\_89, Padfoot\_89, CREW\_88, Boiiii\_89, Asayake\_89, Joy99\_90, BaghaKamala\_88, Mynx\_90, Spock\_89, Inky\_89, Atiba\_90, Blizzard\_89, Belladonna\_89
- Track 3 : TingHuaYa\_93
- Track 4 : SgtBeansprout\_71, Nikao\_73, Torres\_73, Nutello\_70, Teejan\_72, Trice\_70, LilPharaoh\_71, Enkosi\_72, Mdavu\_71, Binglebops\_70, Amelie\_70
- Track 5 : Urkel\_89, SamuelLPlaqson\_89, DrHayes\_89, Bella96\_90, Anma\_89, TiniBug\_88
- Track 6 : TreyKay\_91, Anaya\_92, CrimD\_89, Rapunzel97\_91, AlishaPH\_82, TruffulaTree\_91, BarrelRoll\_89, Prithvi\_91, Slimphazie\_91, Jayhawk\_91, Adonis\_89
- Track 7 : LindNT\_87, Deby\_89, Angelica\_86, Sulley\_86, Tiri\_89
- Track 8 : Ganymede\_89, Beezoo\_92, QuincyRose\_87, Ramen\_90, Apocalypse\_91, YoureAdopted\_88, Zavala\_91
- Track 9 : Murucutumbu\_89
- Track 10 : Emerson\_92, Padpat\_93
- Track 11 : Curiosium\_99
- Track 12 : Oscar\_91, KiSi\_91, LeMond\_90, Scarlett\_90
- Track 13 : Yunkel11\_94, Guanica15\_95, Efra2\_96
- Track 14 : Shaobing\_89, Niklas\_90
- Track 15 : Ageofdapage\_93
- Track 16 : McMater\_89, Richo\_89, Dartin\_89
- Track 17 : LastHope\_95
- Track 18 : Pisa1\_90
- Track 19 : Chavito\_89
- Track 20 : Peanam\_90
- Track 21 : Devera\_95, Illumine\_93, Dole\_92, Stinson\_90
- Track 22 : Megsy\_93
- Track 23 : Pisa4\_84
- Track 24 : MarkPhew\_91, Nibb\_91
- Track 25 : LaterM\_89
- Track 26 : DartGoblin\_89
- Track 27 : Validus\_95

- Track 28 : Chris\_90
- Track 29 : CheetoDust\_89
- Track 30 : Bern\_90
- Track 31 : Neighly\_84, Dadosky\_84, Kratio\_84, AlleyCat\_84
- Track 32 : Paola\_84, Miryou\_86, Guillsminger\_85
- Track 33 : InvictusManeo\_80, Agent47\_82
- Track 34 : LilDirt\_82, Collard\_81, DoubleChamp\_80, Heftyboy\_83, ViviJ\_89, BananenDer11\_83, SoSeph\_83
- Track 35 : Psycho\_82
- Track 36 : Thyatira\_85, Waterfoul\_84
- Track 37 : Feyre\_85
- Track 38 : Omnicron\_88, Rando14\_85
- Track 39 : Larva\_83
- Track 40 : OkiRoe\_85
- Track 41 : Gengar\_84
- Track 42 : Leston\_84
- Track 43 : Tierra\_96, PhelpsODU\_86, Cain\_96, Bryler\_88, Shadow1\_93, Unicorn\_96, Sunflower1121\_93, Phrank\_96, Tigress9\_93, Syra333\_92, Krueger\_93
- Track 44 : TClif\_89
- Track 45 : Marshawn\_87
- Track 46 : Yuna\_92
- Track 47 : Ximenita\_95
- Track 48 : SirPhilip\_89

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

The start number called the most often in the published annotations is 28, it was called in 86 of the 148 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp\_90, Adephegia\_88, Adonis\_89, Ageofdapage\_93, AlishaPH\_82, Anaya\_92, Angelica\_86, Anma\_89, Apocalypse\_91, Asayake\_89, Atiba\_90, BEEST\_89, BGlluviae\_88, BaghaKamala\_88, BarrelRoll\_89, Beezoo\_92, Bella96\_90, Belladonna\_89, Bern\_90, Blizzard\_89, Boiiii\_89, CREW\_88, CallaLilly\_89, Capricorn\_89, CaseJules\_91, CheetoDust\_89, Clipper\_93, CrimD\_89, Dalmuri\_89, DartGoblin\_89, Deby\_89, Devera\_95, Dole\_92, DrHayes\_89, Durfee\_89, Efra2\_96, Ganymede\_89, Guanica15\_95, HedwigODU\_89, Homura\_88, Hyperbowlee\_88, Illumine\_93, Inky\_89, JAWS\_88, Jarvi\_89, Jayhawk\_91, Jeckyll\_89, Joy99\_90, LastHope\_95, LaterM\_89, LindNT\_87, Llorens\_89, Lunahalos\_89, MacKat\_85, MeaningOfLife\_91, Megsy\_93, Murucutumbu\_89, Mynx\_90, Padfoot\_89, Peel\_89, Piatt\_88, Pokerus\_89, Prithvi\_91, QuincyRose\_87, Ramen\_90, Rapunzel97\_91, Rosmarinus\_89, SamuelLPlaqson\_89, ShiaSurprise\_90, Slimphazie\_91, Spock\_89, Stinson\_90, Sulley\_86, TClif\_89, Tachez\_89, TaiwanKao\_90, TingHuaYa\_93, TiniBug\_88, Tiri\_89, Topper\_89, TreyKay\_91, TruffulaTree\_91, Twitch\_89, Urkel\_89, Veliki\_90, YoureAdopted\_88, Yunkel11\_94, Zabiza\_85, Zavala\_91,

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

- 

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

- Agent47\_82, AlleyCat\_84, Amelie\_70, BananenDer11\_83, Biglebops\_70, Bryler\_88, Cain\_96, Chavito\_89, Chris\_90, Collard\_81, Curiosium\_99, Dadosky\_84, Dartin\_89, DoubleChamp\_80, Emerson\_92, Enkosi\_72, Feyre\_85, Gengar\_84, Guillsminger\_85, Heftyboy\_83, InvictusManeo\_80, KiSi\_91, Kratio\_84, Krueger\_93, Larva\_83, LeMond\_90, Leston\_84, LilDirt\_82, LilPharaoh\_71, MarkPhew\_91, Marshawn\_87, McMater\_89, Mdavu\_71, Miryou\_86, Neighly\_84, Nibb\_91, Nikao\_73, Niklas\_90, Nutello\_70, OkiRoe\_85, Omnicron\_88, Oscar\_91, Padpat\_93, Paola\_84, Peanam\_90, PhelpsODU\_86, Phrank\_96, Pisa1\_90, Pisa4\_84, Psycho\_82, Rando14\_85, Richo\_89, Scarlett\_90, SgtBeansprout\_71, Shadow1\_93, Shaobing\_89, SirPhilip\_89, SoSeph\_83, Sunflower1121\_93, Syra333\_92, Teejan\_72, Thyatira\_85, Tierra\_96, Tigress9\_93, Torres\_73, Trice\_70, Unicorn\_96, Validus\_95, ViviJ\_89, Waterfoul\_84, Ximenita\_95, Yuna\_92,

### Summary by start number:

#### Start 20:

- Found in 3 of 161 ( 1.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Pisa1\_90 (K1),

#### Start 21:

- Found in 22 of 161 ( 13.7% ) of genes in pham
- Manual Annotations of this start: 1 of 148
- Called 4.5% of time when present
- Phage (with cluster) where this start called: Larva\_83 (K5),

#### Start 23:

- Found in 3 of 161 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 3 of 148
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Feyre\_85 (K5), Gengar\_84 (K5), OkiRoe\_85 (K5),

#### Start 24:

- Found in 18 of 161 ( 11.2% ) of genes in pham
- Manual Annotations of this start: 12 of 148
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Amelie\_70 (K1), Biglebops\_70 (K1), Chavito\_89 (K1), Enkosi\_72 (K1), LilPharaoh\_71 (K1), Mdavu\_71 (K1), Nikao\_73 (K1), Niklas\_90 (K1), Nutello\_70 (K1), Peanam\_90 (K1), SgtBeansprout\_71 (K1), Shaobing\_89 (K1), Teejan\_72 (K1), Torres\_73 (K1), Trice\_70 (K1),

#### Start 25:

- Found in 13 of 161 ( 8.1% ) of genes in pham
- Manual Annotations of this start: 13 of 148
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bryler\_88 (K6), Cain\_96 (K6), Krueger\_93 (K6), PhelpsODU\_86 (K6), Phrank\_96 (K6), Shadow1\_93 (K6), Sunflower1121\_93 (K6), Syra333\_92 (K6), Tierra\_96 (K6), Tigress9\_93 (K6), Unicorn\_96 (K6), Ximenita\_95 (K6), Yuna\_92 (K6),

#### Start 26:

- Found in 5 of 161 ( 3.1% ) of genes in pham
- Manual Annotations of this start: 3 of 148
- Called 80.0% of time when present
- Phage (with cluster) where this start called: Curiosium\_99 (K1), Emerson\_92 (K1), Padpat\_93 (K1), Pisa4\_84 (K1),

#### Start 27:

- Found in 6 of 161 ( 3.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Dartin\_89 (K1), McMater\_89 (K1), Richo\_89 (K1),

#### Start 28:

- Found in 89 of 161 ( 55.3% ) of genes in pham
- Manual Annotations of this start: 86 of 148
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ActinUp\_90 (K1), Adephegia\_88 (K1), Adonis\_89 (K1), Ageofdapage\_93 (K1), AlishaPH\_82 (K1), Anaya\_92 (K1), Angelica\_86 (K1), Anma\_89 (K1), Apocalypse\_91 (K1), Asayake\_89 (K1), Atiba\_90 (K1), BEEST\_89 (K1), BGlluviae\_88 (K1), BaghaKamala\_88 (K1), BarrelRoll\_89 (K1), Beezoo\_92 (K1), Bella96\_90 (K1), Belladonna\_89 (K1), Bern\_90 (K1), Blizzard\_89 (K1), Boiiii\_89 (K1), CREW\_88 (K1), CallaLilly\_89 (K1), Capricorn\_89 (K1), CaseJules\_91 (K1), CheetoDust\_89 (K1), Clipper\_93 (K1), CrimD\_89 (K1), Dalmuri\_89 (K1), DartGoblin\_89 (K1), Deby\_89 (K1), Devera\_95 (K1), Dole\_92 (K1), DrHayes\_89 (K1), Durfee\_89 (K1), Efra2\_96 (K1), Ganymede\_89 (K1), Guanica15\_95 (K1), HedwigODU\_89 (K1), Homura\_88 (K1), Hyperbowlee\_88 (K1), Illumine\_93 (K1), Inky\_89 (K1), JAWS\_88 (K1), Jarvi\_89 (K1), Jayhawk\_91 (K1), Jeckyll\_89 (K1), Joy99\_90 (K1), LastHope\_95 (K1), LaterM\_89 (K1), LindNT\_87 (K1), Llorens\_89 (K1), Lunahalos\_89 (K1), MacKat\_85 (K1), MeaningOfLife\_91 (K1), Megsy\_93 (K1), Murucutumbu\_89 (K1), Mynx\_90 (K1), Padfoot\_89 (K1), Peel\_89 (K1), Piatt\_88 (K1), Pokerus\_89 (K1), Prithvi\_91 (K1), QuincyRose\_87 (K1), Ramen\_90 (K1), Rapunzel97\_91 (K1), Rosmarinus\_89 (K1), SamuelLPlaqson\_89 (K1), ShiaSurprise\_90 (K1), Slimphazie\_91 (K1), Spock\_89 (K1), Stinson\_90 (K1), Sulley\_86 (K1), TClif\_89 (K6), Tachez\_89 (K1), TaiwanKao\_90 (K1), TingHuaYa\_93 (K1), TiniBug\_88 (K1), Tiri\_89 (K1), Topper\_89 (K1), TreyKay\_91 (K1), TruffulaTree\_91 (K1), Twitch\_89 (K1), Urkel\_89 (K1), Veliki\_90 (K1), YoureAdopted\_88 (K1), Yunkel11\_94 (K1), Zabiza\_85 (K1), Zavala\_91 (K1),

#### Start 29:

- Found in 2 of 161 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 148
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Validus\_95 (K1),

#### Start 30:

- Found in 22 of 161 ( 13.7% ) of genes in pham
- Manual Annotations of this start: 19 of 148
- Called 95.5% of time when present
- Phage (with cluster) where this start called: Agent47\_82 (K5), AlleyCat\_84 (K5), BananenDer11\_83 (K5), Collard\_81 (K5), Dadosky\_84 (K5), DoubleChamp\_80 (K5), Guillsminger\_85 (K5), Heftyboy\_83 (K5), InvictusManeo\_80 (K5), Kratio\_84 (K5), Leston\_84 (K5), LilDirt\_82 (K5), Miryou\_86 (K5), Neighly\_84 (K3), Omnicron\_88 (K5),

Paola\_84 (K5), Rando14\_85 (K5), SoSeph\_83 (K5), Thyatira\_85 (K5), ViviJ\_89 (K5), Waterfoul\_84 (K5),

Start 31:

- Found in 9 of 161 ( 5.6% ) of genes in pham
- Manual Annotations of this start: 9 of 148
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chris\_90 (K1), KiSi\_91 (K1), LeMond\_90 (K1), MarkPhew\_91 (K1), Marshawn\_87 (K6), Nibb\_91 (K1), Oscar\_91 (K1), Scarlett\_90 (K1), SirPhilip\_89 (K6),

Start 35:

- Found in 98 of 161 ( 60.9% ) of genes in pham
- Manual Annotations of this start: 1 of 148
- Called 1.0% of time when present
- Phage (with cluster) where this start called: Psycho\_82 (K5),

### **Summary by clusters:**

There are 4 clusters represented in this pham: K3, K1, K6, K5,

Info for manual annotations of cluster K1:

- Start number 24 was manually annotated 12 times for cluster K1.
- Start number 26 was manually annotated 3 times for cluster K1.
- Start number 28 was manually annotated 85 times for cluster K1.
- Start number 29 was manually annotated 1 time for cluster K1.
- Start number 31 was manually annotated 7 times for cluster K1.

Info for manual annotations of cluster K5:

- Start number 21 was manually annotated 1 time for cluster K5.
- Start number 23 was manually annotated 3 times for cluster K5.
- Start number 30 was manually annotated 19 times for cluster K5.
- Start number 35 was manually annotated 1 time for cluster K5.

Info for manual annotations of cluster K6:

- Start number 25 was manually annotated 13 times for cluster K6.
- Start number 28 was manually annotated 1 time for cluster K6.
- Start number 31 was manually annotated 2 times for cluster K6.

### **Gene Information:**

Gene: ActinUp\_90 Start: 56657, Stop: 56818, Start Num: 28

Candidate Starts for ActinUp\_90:

(Start: 28 @56657 has 86 MA's), (Start: 35 @56687 has 1 MA's), (45, 56744), (50, 56777),

Gene: Adephagia\_88 Start: 56500, Stop: 56661, Start Num: 28

Candidate Starts for Adephagia\_88:

(Start: 28 @56500 has 86 MA's), (Start: 35 @56530 has 1 MA's), (45, 56587), (50, 56620),

Gene: Adonis\_89 Start: 56698, Stop: 56859, Start Num: 28

Candidate Starts for Adonis\_89:

(9, 56527), (Start: 28 @56698 has 86 MA's), (Start: 35 @56728 has 1 MA's), (45, 56785), (50, 56818),

Gene: Agent47\_82 Start: 53328, Stop: 53468, Start Num: 30

Candidate Starts for Agent47\_82:

(1, 52857), (3, 53010), (7, 53124), (Start: 21 @53292 has 1 MA's), (Start: 30 @53328 has 19 MA's), (37, 53355),

Gene: Ageofdapage\_93 Start: 57508, Stop: 57669, Start Num: 28

Candidate Starts for Ageofdapage\_93:

(Start: 28 @57508 has 86 MA's), (Start: 35 @57538 has 1 MA's), (45, 57595), (51, 57643),

Gene: AlishaPH\_82 Start: 53889, Stop: 54050, Start Num: 28

Candidate Starts for AlishaPH\_82:

(9, 53718), (Start: 28 @53889 has 86 MA's), (Start: 35 @53919 has 1 MA's), (45, 53976), (50, 54009),

Gene: AlleyCat\_84 Start: 54468, Stop: 54611, Start Num: 30

Candidate Starts for AlleyCat\_84:

(Start: 21 @54432 has 1 MA's), (Start: 30 @54468 has 19 MA's), (Start: 35 @54486 has 1 MA's), (37, 54495), (42, 54516), (52, 54588),

Gene: Amelie\_70 Start: 52418, Stop: 52576, Start Num: 24

Candidate Starts for Amelie\_70:

(4, 52208), (8, 52262), (10, 52274), (11, 52283), (12, 52304), (14, 52337), (16, 52358), (Start: 24 @52418 has 12 MA's), (41, 52487), (50, 52541),

Gene: Anaya\_92 Start: 57721, Stop: 57882, Start Num: 28

Candidate Starts for Anaya\_92:

(9, 57550), (Start: 28 @57721 has 86 MA's), (Start: 35 @57751 has 1 MA's), (45, 57808), (50, 57841),

Gene: Angelica\_86 Start: 55917, Stop: 56078, Start Num: 28

Candidate Starts for Angelica\_86:

(Start: 28 @55917 has 86 MA's), (Start: 35 @55947 has 1 MA's), (45, 56004), (50, 56037),

Gene: Anma\_89 Start: 56880, Stop: 57047, Start Num: 28

Candidate Starts for Anma\_89:

(Start: 28 @56880 has 86 MA's), (45, 56967), (50, 57000),

Gene: Apocalypse\_91 Start: 56863, Stop: 57024, Start Num: 28

Candidate Starts for Apocalypse\_91:

(Start: 28 @56863 has 86 MA's), (33, 56884), (Start: 35 @56893 has 1 MA's), (45, 56950), (50, 56983),

Gene: Asayake\_89 Start: 56818, Stop: 56979, Start Num: 28

Candidate Starts for Asayake\_89:

(9, 56647), (Start: 28 @56818 has 86 MA's), (33, 56839), (Start: 35 @56848 has 1 MA's), (45, 56905), (50, 56938),

Gene: Atiba\_90 Start: 56466, Stop: 56627, Start Num: 28

Candidate Starts for Atiba\_90:

(9, 56295), (Start: 28 @56466 has 86 MA's), (33, 56487), (Start: 35 @56496 has 1 MA's), (45, 56553), (50, 56586),

Gene: BEEST\_89 Start: 56818, Stop: 56979, Start Num: 28

Candidate Starts for BEEST\_89:

(9, 56647), (Start: 28 @56818 has 86 MA's), (33, 56839), (Start: 35 @56848 has 1 MA's), (45, 56905), (50, 56938),

Gene: BGlluviae\_88 Start: 56198, Stop: 56359, Start Num: 28

Candidate Starts for BGlluviae\_88:

(Start: 28 @56198 has 86 MA's), (Start: 35 @56228 has 1 MA's), (45, 56285), (50, 56318),

Gene: BaghaKamala\_88 Start: 56046, Stop: 56207, Start Num: 28

Candidate Starts for BaghaKamala\_88:

(9, 55875), (Start: 28 @56046 has 86 MA's), (33, 56067), (Start: 35 @56076 has 1 MA's), (45, 56133), (50, 56166),

Gene: BananenDer11\_83 Start: 53578, Stop: 53718, Start Num: 30

Candidate Starts for BananenDer11\_83:

(Start: 21 @53542 has 1 MA's), (Start: 30 @53578 has 19 MA's), (37, 53605),

Gene: BarrelRoll\_89 Start: 56574, Stop: 56735, Start Num: 28

Candidate Starts for BarrelRoll\_89:

(9, 56403), (Start: 28 @56574 has 86 MA's), (Start: 35 @56604 has 1 MA's), (45, 56661), (50, 56694),

Gene: Beezoo\_92 Start: 57404, Stop: 57565, Start Num: 28

Candidate Starts for Beezoo\_92:

(Start: 28 @57404 has 86 MA's), (33, 57425), (Start: 35 @57434 has 1 MA's), (45, 57491), (50, 57524),

Gene: Bella96\_90 Start: 57068, Stop: 57235, Start Num: 28

Candidate Starts for Bella96\_90:

(Start: 28 @57068 has 86 MA's), (45, 57155), (50, 57188),

Gene: Belladonna\_89 Start: 56621, Stop: 56782, Start Num: 28

Candidate Starts for Belladonna\_89:

(9, 56450), (Start: 28 @56621 has 86 MA's), (33, 56642), (Start: 35 @56651 has 1 MA's), (45, 56708), (50, 56741),

Gene: Bern\_90 Start: 55076, Stop: 55237, Start Num: 28

Candidate Starts for Bern\_90:

(Start: 28 @55076 has 86 MA's), (Start: 35 @55106 has 1 MA's), (45, 55163), (50, 55196), (52, 55220),

Gene: Biglebops\_70 Start: 52433, Stop: 52591, Start Num: 24

Candidate Starts for Biglebops\_70:

(4, 52223), (8, 52277), (10, 52289), (11, 52298), (12, 52319), (14, 52352), (16, 52373), (Start: 24 @52433 has 12 MA's), (41, 52502), (50, 52556),

Gene: Blizzard\_89 Start: 56818, Stop: 56979, Start Num: 28

Candidate Starts for Blizzard\_89:

(9, 56647), (Start: 28 @56818 has 86 MA's), (33, 56839), (Start: 35 @56848 has 1 MA's), (45, 56905), (50, 56938),

Gene: Boiiii\_89 Start: 56820, Stop: 56981, Start Num: 28

Candidate Starts for Boiiii\_89:

(9, 56649), (Start: 28 @56820 has 86 MA's), (33, 56841), (Start: 35 @56850 has 1 MA's), (45, 56907), (50, 56940),

Gene: Bryler\_88 Start: 54748, Stop: 54918, Start Num: 25

Candidate Starts for Bryler\_88:

(Start: 25 @54748 has 13 MA's), (45, 54838),

Gene: CREW\_88 Start: 56621, Stop: 56782, Start Num: 28

Candidate Starts for CREW\_88:

(9, 56450), (Start: 28 @56621 has 86 MA's), (33, 56642), (Start: 35 @56651 has 1 MA's), (45, 56708), (50, 56741),

Gene: Cain\_96 Start: 57895, Stop: 58065, Start Num: 25

Candidate Starts for Cain\_96:

(Start: 25 @57895 has 13 MA's), (45, 57985),

Gene: CallaLilly\_89 Start: 56544, Stop: 56705, Start Num: 28

Candidate Starts for CallaLilly\_89:

(9, 56373), (Start: 28 @56544 has 86 MA's), (33, 56565), (Start: 35 @56574 has 1 MA's), (45, 56631), (50, 56664),

Gene: Capricorn\_89 Start: 56621, Stop: 56782, Start Num: 28

Candidate Starts for Capricorn\_89:

(9, 56450), (Start: 28 @56621 has 86 MA's), (33, 56642), (Start: 35 @56651 has 1 MA's), (45, 56708), (50, 56741),

Gene: CaseJules\_91 Start: 56818, Stop: 56979, Start Num: 28

Candidate Starts for CaseJules\_91:

(9, 56647), (Start: 28 @56818 has 86 MA's), (33, 56839), (Start: 35 @56848 has 1 MA's), (45, 56905), (50, 56938),

Gene: Chavito\_89 Start: 57982, Stop: 58158, Start Num: 24

Candidate Starts for Chavito\_89:

(Start: 24 @57982 has 12 MA's), (27, 57991), (Start: 35 @58024 has 1 MA's), (41, 58060), (45, 58081),

Gene: CheetoDust\_89 Start: 56016, Stop: 56177, Start Num: 28

Candidate Starts for CheetoDust\_89:

(Start: 28 @56016 has 86 MA's), (Start: 35 @56046 has 1 MA's), (45, 56103), (50, 56136),

Gene: Chris\_90 Start: 57170, Stop: 57322, Start Num: 31

Candidate Starts for Chris\_90:

(12, 57014), (22, 57134), (Start: 31 @57170 has 9 MA's), (Start: 35 @57185 has 1 MA's), (41, 57221), (43, 57224), (52, 57290),

Gene: Clipper\_93 Start: 57298, Stop: 57459, Start Num: 28

Candidate Starts for Clipper\_93:

(Start: 28 @57298 has 86 MA's), (Start: 35 @57328 has 1 MA's), (45, 57385), (50, 57418),

Gene: Collard\_81 Start: 53578, Stop: 53718, Start Num: 30

Candidate Starts for Collard\_81:

(Start: 21 @53542 has 1 MA's), (Start: 30 @53578 has 19 MA's), (37, 53605),

Gene: CrimD\_89 Start: 56666, Stop: 56827, Start Num: 28

Candidate Starts for CrimD\_89:

(9, 56495), (Start: 28 @56666 has 86 MA's), (Start: 35 @56696 has 1 MA's), (45, 56753), (50, 56786),

Gene: Curiosium\_99 Start: 58643, Stop: 58810, Start Num: 26  
Candidate Starts for Curiosium\_99:  
(15, 58559), (20, 58619), (Start: 26 @58643 has 3 MA's), (Start: 35 @58679 has 1 MA's), (45, 58736),

Gene: Dadosky\_84 Start: 54469, Stop: 54612, Start Num: 30  
Candidate Starts for Dadosky\_84:  
(Start: 21 @54433 has 1 MA's), (Start: 30 @54469 has 19 MA's), (Start: 35 @54487 has 1 MA's), (37, 54496), (42, 54517), (52, 54589),

Gene: Dalmuri\_89 Start: 56621, Stop: 56782, Start Num: 28  
Candidate Starts for Dalmuri\_89:  
(9, 56450), (Start: 28 @56621 has 86 MA's), (33, 56642), (Start: 35 @56651 has 1 MA's), (45, 56708), (50, 56741),

Gene: DartGoblin\_89 Start: 56728, Stop: 56895, Start Num: 28  
Candidate Starts for DartGoblin\_89:  
(Start: 28 @56728 has 86 MA's), (45, 56815), (50, 56848), (52, 56872),

Gene: Dartin\_89 Start: 57633, Stop: 57800, Start Num: 27  
Candidate Starts for Dartin\_89:  
(Start: 24 @57624 has 12 MA's), (27, 57633), (Start: 35 @57666 has 1 MA's), (41, 57702), (45, 57723),

Gene: Deby\_89 Start: 57192, Stop: 57353, Start Num: 28  
Candidate Starts for Deby\_89:  
(Start: 28 @57192 has 86 MA's), (Start: 35 @57222 has 1 MA's), (45, 57279), (50, 57312),

Gene: Devera\_95 Start: 57498, Stop: 57659, Start Num: 28  
Candidate Starts for Devera\_95:  
(Start: 28 @57498 has 86 MA's), (45, 57585),

Gene: Dole\_92 Start: 57501, Stop: 57662, Start Num: 28  
Candidate Starts for Dole\_92:  
(Start: 28 @57501 has 86 MA's), (45, 57588),

Gene: DoubleChamp\_80 Start: 53578, Stop: 53718, Start Num: 30  
Candidate Starts for DoubleChamp\_80:  
(Start: 21 @53542 has 1 MA's), (Start: 30 @53578 has 19 MA's), (37, 53605),

Gene: DrHayes\_89 Start: 56880, Stop: 57047, Start Num: 28  
Candidate Starts for DrHayes\_89:  
(Start: 28 @56880 has 86 MA's), (45, 56967), (50, 57000),

Gene: Durfee\_89 Start: 56818, Stop: 56979, Start Num: 28  
Candidate Starts for Durfee\_89:  
(9, 56647), (Start: 28 @56818 has 86 MA's), (33, 56839), (Start: 35 @56848 has 1 MA's), (45, 56905), (50, 56938),

Gene: Efra2\_96 Start: 57967, Stop: 58128, Start Num: 28  
Candidate Starts for Efra2\_96:  
(Start: 28 @57967 has 86 MA's), (45, 58054),

Gene: Emerson\_92 Start: 57216, Stop: 57383, Start Num: 26  
Candidate Starts for Emerson\_92:

(5, 57003), (13, 57099), (18, 57180), (Start: 26 @57216 has 3 MA's), (32, 57240), (Start: 35 @57252 has 1 MA's), (45, 57309), (50, 57342),

Gene: Enkosi\_72 Start: 55031, Stop: 55189, Start Num: 24

Candidate Starts for Enkosi\_72:

(4, 54821), (8, 54875), (10, 54887), (11, 54896), (12, 54917), (14, 54950), (16, 54971), (Start: 24 @55031 has 12 MA's), (41, 55100), (50, 55154),

Gene: Feyre\_85 Start: 56970, Stop: 57128, Start Num: 23

Candidate Starts for Feyre\_85:

(Start: 23 @56970 has 3 MA's), (48, 57075), (51, 57102),

Gene: Ganymede\_89 Start: 56630, Stop: 56791, Start Num: 28

Candidate Starts for Ganymede\_89:

(Start: 28 @56630 has 86 MA's), (33, 56651), (Start: 35 @56660 has 1 MA's), (45, 56717), (50, 56750),

Gene: Gengar\_84 Start: 55837, Stop: 55998, Start Num: 23

Candidate Starts for Gengar\_84:

(Start: 23 @55837 has 3 MA's), (48, 55945), (51, 55972),

Gene: Guanica15\_95 Start: 57656, Stop: 57817, Start Num: 28

Candidate Starts for Guanica15\_95:

(Start: 28 @57656 has 86 MA's), (45, 57743),

Gene: Guillsminger\_85 Start: 55691, Stop: 55837, Start Num: 30

Candidate Starts for Guillsminger\_85:

(5, 55463), (6, 55487), (Start: 21 @55658 has 1 MA's), (Start: 30 @55691 has 19 MA's), (39, 55736), (48, 55784), (51, 55811),

Gene: HedwigODU\_89 Start: 56657, Stop: 56818, Start Num: 28

Candidate Starts for HedwigODU\_89:

(Start: 28 @56657 has 86 MA's), (Start: 35 @56687 has 1 MA's), (45, 56744), (50, 56777),

Gene: Heftyboy\_83 Start: 55305, Stop: 55445, Start Num: 30

Candidate Starts for Heftyboy\_83:

(Start: 21 @55269 has 1 MA's), (Start: 30 @55305 has 19 MA's), (37, 55332),

Gene: Homura\_88 Start: 56621, Stop: 56782, Start Num: 28

Candidate Starts for Homura\_88:

(9, 56450), (Start: 28 @56621 has 86 MA's), (33, 56642), (Start: 35 @56651 has 1 MA's), (45, 56708), (50, 56741),

Gene: Hyperbowlee\_88 Start: 56818, Stop: 56979, Start Num: 28

Candidate Starts for Hyperbowlee\_88:

(9, 56647), (Start: 28 @56818 has 86 MA's), (33, 56839), (Start: 35 @56848 has 1 MA's), (45, 56905), (50, 56938),

Gene: Illumine\_93 Start: 57500, Stop: 57661, Start Num: 28

Candidate Starts for Illumine\_93:

(Start: 28 @57500 has 86 MA's), (45, 57587),

Gene: Inky\_89 Start: 56621, Stop: 56782, Start Num: 28

Candidate Starts for Inky\_89:

(9, 56450), (Start: 28 @56621 has 86 MA's), (33, 56642), (Start: 35 @56651 has 1 MA's), (45, 56708), (50, 56741),

Gene: InvictusManeo\_80 Start: 53332, Stop: 53472, Start Num: 30

Candidate Starts for InvictusManeo\_80:

(1, 52861), (3, 53014), (7, 53128), (Start: 21 @53296 has 1 MA's), (Start: 30 @53332 has 19 MA's), (37, 53359),

Gene: JAWS\_88 Start: 56604, Stop: 56765, Start Num: 28

Candidate Starts for JAWS\_88:

(Start: 28 @56604 has 86 MA's), (Start: 35 @56634 has 1 MA's), (45, 56691), (50, 56724),

Gene: Jarvi\_89 Start: 56621, Stop: 56782, Start Num: 28

Candidate Starts for Jarvi\_89:

(9, 56450), (Start: 28 @56621 has 86 MA's), (33, 56642), (Start: 35 @56651 has 1 MA's), (45, 56708), (50, 56741),

Gene: Jayhawk\_91 Start: 56634, Stop: 56795, Start Num: 28

Candidate Starts for Jayhawk\_91:

(9, 56463), (Start: 28 @56634 has 86 MA's), (Start: 35 @56664 has 1 MA's), (45, 56721), (50, 56754),

Gene: Jeckyll\_89 Start: 56621, Stop: 56782, Start Num: 28

Candidate Starts for Jeckyll\_89:

(9, 56450), (Start: 28 @56621 has 86 MA's), (33, 56642), (Start: 35 @56651 has 1 MA's), (45, 56708), (50, 56741),

Gene: Joy99\_90 Start: 56750, Stop: 56911, Start Num: 28

Candidate Starts for Joy99\_90:

(9, 56579), (Start: 28 @56750 has 86 MA's), (33, 56771), (Start: 35 @56780 has 1 MA's), (45, 56837), (50, 56870),

Gene: KiSi\_91 Start: 56904, Stop: 57056, Start Num: 31

Candidate Starts for KiSi\_91:

(Start: 31 @56904 has 9 MA's), (Start: 35 @56919 has 1 MA's), (41, 56955), (49, 56991), (52, 57024),

Gene: Kratio\_84 Start: 54363, Stop: 54506, Start Num: 30

Candidate Starts for Kratio\_84:

(Start: 21 @54327 has 1 MA's), (Start: 30 @54363 has 19 MA's), (Start: 35 @54381 has 1 MA's), (37, 54390), (42, 54411), (52, 54483),

Gene: Krueger\_93 Start: 57088, Stop: 57258, Start Num: 25

Candidate Starts for Krueger\_93:

(Start: 25 @57088 has 13 MA's), (45, 57178),

Gene: Larva\_83 Start: 55305, Stop: 55484, Start Num: 21

Candidate Starts for Larva\_83:

(Start: 21 @55305 has 1 MA's), (Start: 30 @55341 has 19 MA's), (Start: 35 @55359 has 1 MA's), (37, 55368), (42, 55389), (52, 55461),

Gene: LastHope\_95 Start: 57401, Stop: 57562, Start Num: 28

Candidate Starts for LastHope\_95:

(Start: 28 @57401 has 86 MA's), (Start: 35 @57431 has 1 MA's), (39, 57458), (45, 57488), (50, 57521),

Gene: LaterM\_89 Start: 57037, Stop: 57198, Start Num: 28  
Candidate Starts for LaterM\_89:  
(17, 56989), (Start: 28 @57037 has 86 MA's), (Start: 35 @57067 has 1 MA's), (45, 57124), (51, 57172),

Gene: LeMond\_90 Start: 56860, Stop: 57012, Start Num: 31  
Candidate Starts for LeMond\_90:  
(Start: 31 @56860 has 9 MA's), (Start: 35 @56875 has 1 MA's), (41, 56911), (49, 56947), (52, 56980),

Gene: Leston\_84 Start: 55808, Stop: 55954, Start Num: 30  
Candidate Starts for Leston\_84:  
(5, 55580), (6, 55604), (Start: 21 @55775 has 1 MA's), (Start: 30 @55808 has 19 MA's), (39, 55853),  
(46, 55892), (51, 55928),

Gene: LilDirt\_82 Start: 53379, Stop: 53519, Start Num: 30  
Candidate Starts for LilDirt\_82:  
(Start: 21 @53343 has 1 MA's), (Start: 30 @53379 has 19 MA's), (37, 53406),

Gene: LilPharaoh\_71 Start: 52146, Stop: 52304, Start Num: 24  
Candidate Starts for LilPharaoh\_71:  
(4, 51936), (8, 51990), (10, 52002), (11, 52011), (12, 52032), (14, 52065), (16, 52086), (Start: 24  
@52146 has 12 MA's), (41, 52215), (50, 52269),

Gene: LindNT\_87 Start: 56732, Stop: 56893, Start Num: 28  
Candidate Starts for LindNT\_87:  
(Start: 28 @56732 has 86 MA's), (Start: 35 @56762 has 1 MA's), (45, 56819), (50, 56852),

Gene: Llorens\_89 Start: 56621, Stop: 56782, Start Num: 28  
Candidate Starts for Llorens\_89:  
(9, 56450), (Start: 28 @56621 has 86 MA's), (33, 56642), (Start: 35 @56651 has 1 MA's), (45, 56708),  
(50, 56741),

Gene: Lunahalos\_89 Start: 56621, Stop: 56782, Start Num: 28  
Candidate Starts for Lunahalos\_89:  
(9, 56450), (Start: 28 @56621 has 86 MA's), (33, 56642), (Start: 35 @56651 has 1 MA's), (45, 56708),  
(50, 56741),

Gene: MacKat\_85 Start: 52182, Stop: 52343, Start Num: 28  
Candidate Starts for MacKat\_85:  
(Start: 28 @52182 has 86 MA's), (Start: 35 @52212 has 1 MA's), (45, 52269), (50, 52302),

Gene: MarkPhew\_91 Start: 56993, Stop: 57151, Start Num: 31  
Candidate Starts for MarkPhew\_91:  
(Start: 31 @56993 has 9 MA's), (Start: 35 @57008 has 1 MA's), (40, 57041), (41, 57044),

Gene: Marshawn\_87 Start: 57119, Stop: 57271, Start Num: 31  
Candidate Starts for Marshawn\_87:  
(Start: 31 @57119 has 9 MA's), (41, 57170),

Gene: McMater\_89 Start: 57633, Stop: 57800, Start Num: 27  
Candidate Starts for McMater\_89:  
(Start: 24 @57624 has 12 MA's), (27, 57633), (Start: 35 @57666 has 1 MA's), (41, 57702), (45, 57723),

Gene: Mdavu\_71 Start: 52422, Stop: 52580, Start Num: 24

Candidate Starts for Mdavu\_71:

(4, 52212), (8, 52266), (10, 52278), (11, 52287), (12, 52308), (14, 52341), (16, 52362), (Start: 24 @52422 has 12 MA's), (41, 52491), (50, 52545),

Gene: MeaningOfLife\_91 Start: 57306, Stop: 57467, Start Num: 28

Candidate Starts for MeaningOfLife\_91:

(9, 57135), (Start: 28 @57306 has 86 MA's), (33, 57327), (Start: 35 @57336 has 1 MA's), (45, 57393), (50, 57426),

Gene: Megsy\_93 Start: 56961, Stop: 57122, Start Num: 28

Candidate Starts for Megsy\_93:

(Start: 28 @56961 has 86 MA's), (Start: 35 @56991 has 1 MA's), (36, 56994), (45, 57048), (51, 57096),

Gene: Miryou\_86 Start: 57666, Stop: 57812, Start Num: 30

Candidate Starts for Miryou\_86:

(5, 57438), (6, 57462), (Start: 21 @57633 has 1 MA's), (Start: 30 @57666 has 19 MA's), (39, 57711), (48, 57759), (51, 57786),

Gene: Murucutumbu\_89 Start: 57519, Stop: 57680, Start Num: 28

Candidate Starts for Murucutumbu\_89:

(Start: 28 @57519 has 86 MA's), (45, 57606), (51, 57654),

Gene: Mynx\_90 Start: 56929, Stop: 57090, Start Num: 28

Candidate Starts for Mynx\_90:

(9, 56758), (Start: 28 @56929 has 86 MA's), (33, 56950), (Start: 35 @56959 has 1 MA's), (45, 57016), (50, 57049),

Gene: Neighly\_84 Start: 55340, Stop: 55483, Start Num: 30

Candidate Starts for Neighly\_84:

(Start: 21 @55304 has 1 MA's), (Start: 30 @55340 has 19 MA's), (Start: 35 @55358 has 1 MA's), (37, 55367), (42, 55388), (52, 55460),

Gene: Nibb\_91 Start: 56666, Stop: 56824, Start Num: 31

Candidate Starts for Nibb\_91:

(Start: 31 @56666 has 9 MA's), (Start: 35 @56681 has 1 MA's), (40, 56714), (41, 56717),

Gene: Nikao\_73 Start: 55031, Stop: 55189, Start Num: 24

Candidate Starts for Nikao\_73:

(4, 54821), (8, 54875), (10, 54887), (11, 54896), (12, 54917), (14, 54950), (16, 54971), (Start: 24 @55031 has 12 MA's), (41, 55100), (50, 55154),

Gene: Niklas\_90 Start: 57664, Stop: 57840, Start Num: 24

Candidate Starts for Niklas\_90:

(Start: 24 @57664 has 12 MA's), (27, 57673), (Start: 35 @57703 has 1 MA's), (45, 57760),

Gene: Nutello\_70 Start: 52418, Stop: 52576, Start Num: 24

Candidate Starts for Nutello\_70:

(4, 52208), (8, 52262), (10, 52274), (11, 52283), (12, 52304), (14, 52337), (16, 52358), (Start: 24 @52418 has 12 MA's), (41, 52487), (50, 52541),

Gene: OkiRoe\_85 Start: 56800, Stop: 56961, Start Num: 23

Candidate Starts for OkiRoe\_85:

(19, 56782), (Start: 23 @56800 has 3 MA's), (48, 56908), (51, 56935),

Gene: Omnicron\_88 Start: 57883, Stop: 58032, Start Num: 30

Candidate Starts for Omnicron\_88:

(6, 57685), (Start: 21 @57850 has 1 MA's), (Start: 30 @57883 has 19 MA's), (39, 57928), (48, 57976), (51, 58003),

Gene: Oscar\_91 Start: 56784, Stop: 56936, Start Num: 31

Candidate Starts for Oscar\_91:

(Start: 31 @56784 has 9 MA's), (Start: 35 @56799 has 1 MA's), (41, 56835), (49, 56871), (52, 56904),

Gene: Padfoot\_89 Start: 56818, Stop: 56979, Start Num: 28

Candidate Starts for Padfoot\_89:

(9, 56647), (Start: 28 @56818 has 86 MA's), (33, 56839), (Start: 35 @56848 has 1 MA's), (45, 56905), (50, 56938),

Gene: Padpat\_93 Start: 57216, Stop: 57383, Start Num: 26

Candidate Starts for Padpat\_93:

(5, 57003), (13, 57099), (18, 57180), (Start: 26 @57216 has 3 MA's), (32, 57240), (Start: 35 @57252 has 1 MA's), (45, 57309), (50, 57342),

Gene: Paola\_84 Start: 55691, Stop: 55837, Start Num: 30

Candidate Starts for Paola\_84:

(5, 55463), (6, 55487), (Start: 21 @55658 has 1 MA's), (Start: 30 @55691 has 19 MA's), (39, 55736), (48, 55784), (51, 55811),

Gene: Peanam\_90 Start: 57643, Stop: 57819, Start Num: 24

Candidate Starts for Peanam\_90:

(Start: 24 @57643 has 12 MA's), (Start: 35 @57685 has 1 MA's), (41, 57721), (45, 57742),

Gene: Peel\_89 Start: 56623, Stop: 56784, Start Num: 28

Candidate Starts for Peel\_89:

(9, 56452), (Start: 28 @56623 has 86 MA's), (33, 56644), (Start: 35 @56653 has 1 MA's), (45, 56710), (50, 56743),

Gene: PhelpsODU\_86 Start: 53663, Stop: 53833, Start Num: 25

Candidate Starts for PhelpsODU\_86:

(Start: 25 @53663 has 13 MA's), (45, 53753),

Gene: Phrank\_96 Start: 57882, Stop: 58046, Start Num: 25

Candidate Starts for Phrank\_96:

(Start: 25 @57882 has 13 MA's), (45, 57972),

Gene: Piatt\_88 Start: 56818, Stop: 56979, Start Num: 28

Candidate Starts for Piatt\_88:

(9, 56647), (Start: 28 @56818 has 86 MA's), (33, 56839), (Start: 35 @56848 has 1 MA's), (45, 56905), (50, 56938),

Gene: Pisa1\_90 Start: 57122, Stop: 57313, Start Num: 20

Candidate Starts for Pisa1\_90:

(15, 57062), (20, 57122), (Start: 26 @57146 has 3 MA's), (Start: 35 @57182 has 1 MA's), (45, 57239), (50, 57272), (52, 57296),

Gene: Pisa4\_84 Start: 52515, Stop: 52682, Start Num: 26

Candidate Starts for Pisa4\_84:

(15, 52431), (20, 52491), (Start: 26 @52515 has 3 MA's), (Start: 35 @52551 has 1 MA's), (45, 52608), (50, 52641), (52, 52665),

Gene: Pokerus\_89 Start: 56627, Stop: 56788, Start Num: 28

Candidate Starts for Pokerus\_89:

(9, 56456), (Start: 28 @56627 has 86 MA's), (33, 56648), (Start: 35 @56657 has 1 MA's), (45, 56714), (50, 56747),

Gene: Prithvi\_91 Start: 57030, Stop: 57191, Start Num: 28

Candidate Starts for Prithvi\_91:

(9, 56859), (Start: 28 @57030 has 86 MA's), (Start: 35 @57060 has 1 MA's), (45, 57117), (50, 57150),

Gene: Psycho\_82 Start: 54484, Stop: 54609, Start Num: 35

Candidate Starts for Psycho\_82:

(Start: 35 @54484 has 1 MA's), (37, 54493), (42, 54514), (52, 54586),

Gene: QuincyRose\_87 Start: 56630, Stop: 56791, Start Num: 28

Candidate Starts for QuincyRose\_87:

(Start: 28 @56630 has 86 MA's), (33, 56651), (Start: 35 @56660 has 1 MA's), (45, 56717), (50, 56750),

Gene: Ramen\_90 Start: 56373, Stop: 56534, Start Num: 28

Candidate Starts for Ramen\_90:

(Start: 28 @56373 has 86 MA's), (33, 56394), (Start: 35 @56403 has 1 MA's), (45, 56460), (50, 56493),

Gene: Rando14\_85 Start: 56294, Stop: 56443, Start Num: 30

Candidate Starts for Rando14\_85:

(6, 56096), (Start: 21 @56261 has 1 MA's), (Start: 30 @56294 has 19 MA's), (39, 56339), (48, 56387), (51, 56414),

Gene: Rapunzel97\_91 Start: 56589, Stop: 56750, Start Num: 28

Candidate Starts for Rapunzel97\_91:

(9, 56418), (Start: 28 @56589 has 86 MA's), (Start: 35 @56619 has 1 MA's), (45, 56676), (50, 56709),

Gene: Richo\_89 Start: 57633, Stop: 57800, Start Num: 27

Candidate Starts for Richo\_89:

(Start: 24 @57624 has 12 MA's), (27, 57633), (Start: 35 @57666 has 1 MA's), (41, 57702), (45, 57723),

Gene: Rosmarinus\_89 Start: 56609, Stop: 56770, Start Num: 28

Candidate Starts for Rosmarinus\_89:

(9, 56438), (Start: 28 @56609 has 86 MA's), (33, 56630), (Start: 35 @56639 has 1 MA's), (45, 56696), (50, 56729),

Gene: SamuelLPlaqson\_89 Start: 56880, Stop: 57047, Start Num: 28

Candidate Starts for SamuelLPlaqson\_89:

(Start: 28 @56880 has 86 MA's), (45, 56967), (50, 57000),

Gene: Scarlett\_90 Start: 56652, Stop: 56804, Start Num: 31

Candidate Starts for Scarlett\_90:

(Start: 31 @56652 has 9 MA's), (Start: 35 @56667 has 1 MA's), (41, 56703), (49, 56739), (52, 56772),

Gene: SgtBeansprout\_71 Start: 52418, Stop: 52576, Start Num: 24

Candidate Starts for SgtBeansprout\_71:

(4, 52208), (8, 52262), (10, 52274), (11, 52283), (12, 52304), (14, 52337), (16, 52358), (Start: 24 @52418 has 12 MA's), (41, 52487), (50, 52541),

Gene: Shadow1\_93 Start: 57228, Stop: 57392, Start Num: 25  
Candidate Starts for Shadow1\_93:  
(Start: 25 @57228 has 13 MA's), (45, 57318),

Gene: Shaobing\_89 Start: 57705, Stop: 57881, Start Num: 24  
Candidate Starts for Shaobing\_89:  
(Start: 24 @57705 has 12 MA's), (27, 57714), (Start: 35 @57744 has 1 MA's), (45, 57801),

Gene: ShiaSurprise\_90 Start: 56818, Stop: 56979, Start Num: 28  
Candidate Starts for ShiaSurprise\_90:  
(9, 56647), (Start: 28 @56818 has 86 MA's), (33, 56839), (Start: 35 @56848 has 1 MA's), (45, 56905), (50, 56938),

Gene: SirPhilip\_89 Start: 56815, Stop: 56958, Start Num: 31  
Candidate Starts for SirPhilip\_89:  
(Start: 31 @56815 has 9 MA's), (33, 56821), (40, 56863), (45, 56887),

Gene: Slimphazie\_91 Start: 57045, Stop: 57206, Start Num: 28  
Candidate Starts for Slimphazie\_91:  
(9, 56874), (Start: 28 @57045 has 86 MA's), (Start: 35 @57075 has 1 MA's), (45, 57132), (50, 57165),

Gene: SoSeph\_83 Start: 55305, Stop: 55445, Start Num: 30  
Candidate Starts for SoSeph\_83:  
(Start: 21 @55269 has 1 MA's), (Start: 30 @55305 has 19 MA's), (37, 55332),

Gene: Spock\_89 Start: 56622, Stop: 56783, Start Num: 28  
Candidate Starts for Spock\_89:  
(9, 56451), (Start: 28 @56622 has 86 MA's), (33, 56643), (Start: 35 @56652 has 1 MA's), (45, 56709), (50, 56742),

Gene: Stinson\_90 Start: 56798, Stop: 56959, Start Num: 28  
Candidate Starts for Stinson\_90:  
(Start: 28 @56798 has 86 MA's), (45, 56885),

Gene: Sulley\_86 Start: 56193, Stop: 56354, Start Num: 28  
Candidate Starts for Sulley\_86:  
(Start: 28 @56193 has 86 MA's), (Start: 35 @56223 has 1 MA's), (45, 56280), (50, 56313),

Gene: Sunflower1121\_93 Start: 56987, Stop: 57151, Start Num: 25  
Candidate Starts for Sunflower1121\_93:  
(Start: 25 @56987 has 13 MA's), (45, 57077),

Gene: Syra333\_92 Start: 57044, Stop: 57214, Start Num: 25  
Candidate Starts for Syra333\_92:  
(Start: 25 @57044 has 13 MA's), (45, 57134),

Gene: TClif\_89 Start: 56195, Stop: 56344, Start Num: 28  
Candidate Starts for TClif\_89:  
(Start: 28 @56195 has 86 MA's), (Start: 29 @56198 has 1 MA's), (34, 56213), (44, 56261), (45, 56270), (47, 56282), (52, 56327),

Gene: Tachez\_89 Start: 56466, Stop: 56627, Start Num: 28  
Candidate Starts for Tachez\_89:  
(9, 56295), (Start: 28 @56466 has 86 MA's), (33, 56487), (Start: 35 @56496 has 1 MA's), (45, 56553),  
(50, 56586),

Gene: TaiwanKao\_90 Start: 56670, Stop: 56831, Start Num: 28  
Candidate Starts for TaiwanKao\_90:  
(Start: 28 @56670 has 86 MA's), (Start: 35 @56700 has 1 MA's), (45, 56757), (50, 56790),

Gene: Teejan\_72 Start: 55031, Stop: 55189, Start Num: 24  
Candidate Starts for Teejan\_72:  
(4, 54821), (8, 54875), (10, 54887), (11, 54896), (12, 54917), (14, 54950), (16, 54971), (Start: 24  
@55031 has 12 MA's), (41, 55100), (50, 55154),

Gene: Thyatira\_85 Start: 57400, Stop: 57546, Start Num: 30  
Candidate Starts for Thyatira\_85:  
(5, 57175), (6, 57199), (Start: 21 @57367 has 1 MA's), (Start: 30 @57400 has 19 MA's), (39, 57445),  
(48, 57493), (51, 57520),

Gene: Tierra\_96 Start: 58508, Stop: 58678, Start Num: 25  
Candidate Starts for Tierra\_96:  
(Start: 25 @58508 has 13 MA's), (45, 58598),

Gene: Tigress9\_93 Start: 57416, Stop: 57586, Start Num: 25  
Candidate Starts for Tigress9\_93:  
(Start: 25 @57416 has 13 MA's), (45, 57506),

Gene: TingHuaYa\_93 Start: 57729, Stop: 57890, Start Num: 28  
Candidate Starts for TingHuaYa\_93:  
(9, 57558), (Start: 28 @57729 has 86 MA's), (Start: 35 @57759 has 1 MA's), (39, 57786), (45, 57816),  
(50, 57849),

Gene: TiniBug\_88 Start: 56996, Stop: 57163, Start Num: 28  
Candidate Starts for TiniBug\_88:  
(Start: 28 @56996 has 86 MA's), (45, 57083), (50, 57116),

Gene: Tiri\_89 Start: 56360, Stop: 56521, Start Num: 28  
Candidate Starts for Tiri\_89:  
(Start: 28 @56360 has 86 MA's), (Start: 35 @56390 has 1 MA's), (45, 56447), (50, 56480),

Gene: Topper\_89 Start: 56621, Stop: 56782, Start Num: 28  
Candidate Starts for Topper\_89:  
(9, 56450), (Start: 28 @56621 has 86 MA's), (33, 56642), (Start: 35 @56651 has 1 MA's), (45, 56708),  
(50, 56741),

Gene: Torres\_73 Start: 55032, Stop: 55190, Start Num: 24  
Candidate Starts for Torres\_73:  
(4, 54822), (8, 54876), (10, 54888), (11, 54897), (12, 54918), (14, 54951), (16, 54972), (Start: 24  
@55032 has 12 MA's), (41, 55101), (50, 55155),

Gene: TreyKay\_91 Start: 57030, Stop: 57191, Start Num: 28  
Candidate Starts for TreyKay\_91:

(9, 56859), (Start: 28 @57030 has 86 MA's), (Start: 35 @57060 has 1 MA's), (45, 57117), (50, 57150),

Gene: Trice\_70 Start: 52419, Stop: 52577, Start Num: 24

Candidate Starts for Trice\_70:

(4, 52209), (8, 52263), (10, 52275), (11, 52284), (12, 52305), (14, 52338), (16, 52359), (Start: 24 @52419 has 12 MA's), (41, 52488), (50, 52542),

Gene: TruffulaTree\_91 Start: 57011, Stop: 57172, Start Num: 28

Candidate Starts for TruffulaTree\_91:

(9, 56840), (Start: 28 @57011 has 86 MA's), (Start: 35 @57041 has 1 MA's), (45, 57098), (50, 57131),

Gene: Twitch\_89 Start: 56623, Stop: 56784, Start Num: 28

Candidate Starts for Twitch\_89:

(9, 56452), (Start: 28 @56623 has 86 MA's), (33, 56644), (Start: 35 @56653 has 1 MA's), (45, 56710), (50, 56743),

Gene: Unicorn\_96 Start: 58291, Stop: 58461, Start Num: 25

Candidate Starts for Unicorn\_96:

(Start: 25 @58291 has 13 MA's), (45, 58381),

Gene: Urkel\_89 Start: 56880, Stop: 57047, Start Num: 28

Candidate Starts for Urkel\_89:

(Start: 28 @56880 has 86 MA's), (45, 56967), (50, 57000),

Gene: Validus\_95 Start: 58505, Stop: 58669, Start Num: 29

Candidate Starts for Validus\_95:

(2, 58148), (9, 58331), (Start: 29 @58505 has 1 MA's), (38, 58559), (41, 58571), (45, 58592),

Gene: Veliki\_90 Start: 56589, Stop: 56750, Start Num: 28

Candidate Starts for Veliki\_90:

(Start: 28 @56589 has 86 MA's), (Start: 35 @56619 has 1 MA's), (45, 56676), (50, 56709),

Gene: ViviJ\_89 Start: 55667, Stop: 55807, Start Num: 30

Candidate Starts for ViviJ\_89:

(Start: 21 @55631 has 1 MA's), (Start: 30 @55667 has 19 MA's), (37, 55694),

Gene: Waterfoul\_84 Start: 55470, Stop: 55616, Start Num: 30

Candidate Starts for Waterfoul\_84:

(5, 55245), (6, 55269), (Start: 21 @55437 has 1 MA's), (Start: 30 @55470 has 19 MA's), (39, 55515), (48, 55563), (51, 55590),

Gene: Ximenita\_95 Start: 57796, Stop: 57960, Start Num: 25

Candidate Starts for Ximenita\_95:

(Start: 25 @57796 has 13 MA's), (45, 57880), (47, 57892),

Gene: YoureAdopted\_88 Start: 56415, Stop: 56576, Start Num: 28

Candidate Starts for YoureAdopted\_88:

(Start: 28 @56415 has 86 MA's), (33, 56436), (Start: 35 @56445 has 1 MA's), (45, 56502), (50, 56535),

Gene: Yuna\_92 Start: 58580, Stop: 58747, Start Num: 25

Candidate Starts for Yuna\_92:

(Start: 25 @58580 has 13 MA's), (45, 58670), (47, 58682),

Gene: Yunkel11\_94 Start: 57232, Stop: 57393, Start Num: 28

Candidate Starts for Yunkel11\_94:

(Start: 28 @57232 has 86 MA's), (45, 57319),

Gene: Zabiza\_85 Start: 52962, Stop: 53123, Start Num: 28

Candidate Starts for Zabiza\_85:

(Start: 28 @52962 has 86 MA's), (Start: 35 @52992 has 1 MA's), (45, 53049), (50, 53082),

Gene: Zavala\_91 Start: 56880, Stop: 57041, Start Num: 28

Candidate Starts for Zavala\_91:

(Start: 28 @56880 has 86 MA's), (33, 56901), (Start: 35 @56910 has 1 MA's), (45, 56967), (50, 57000),