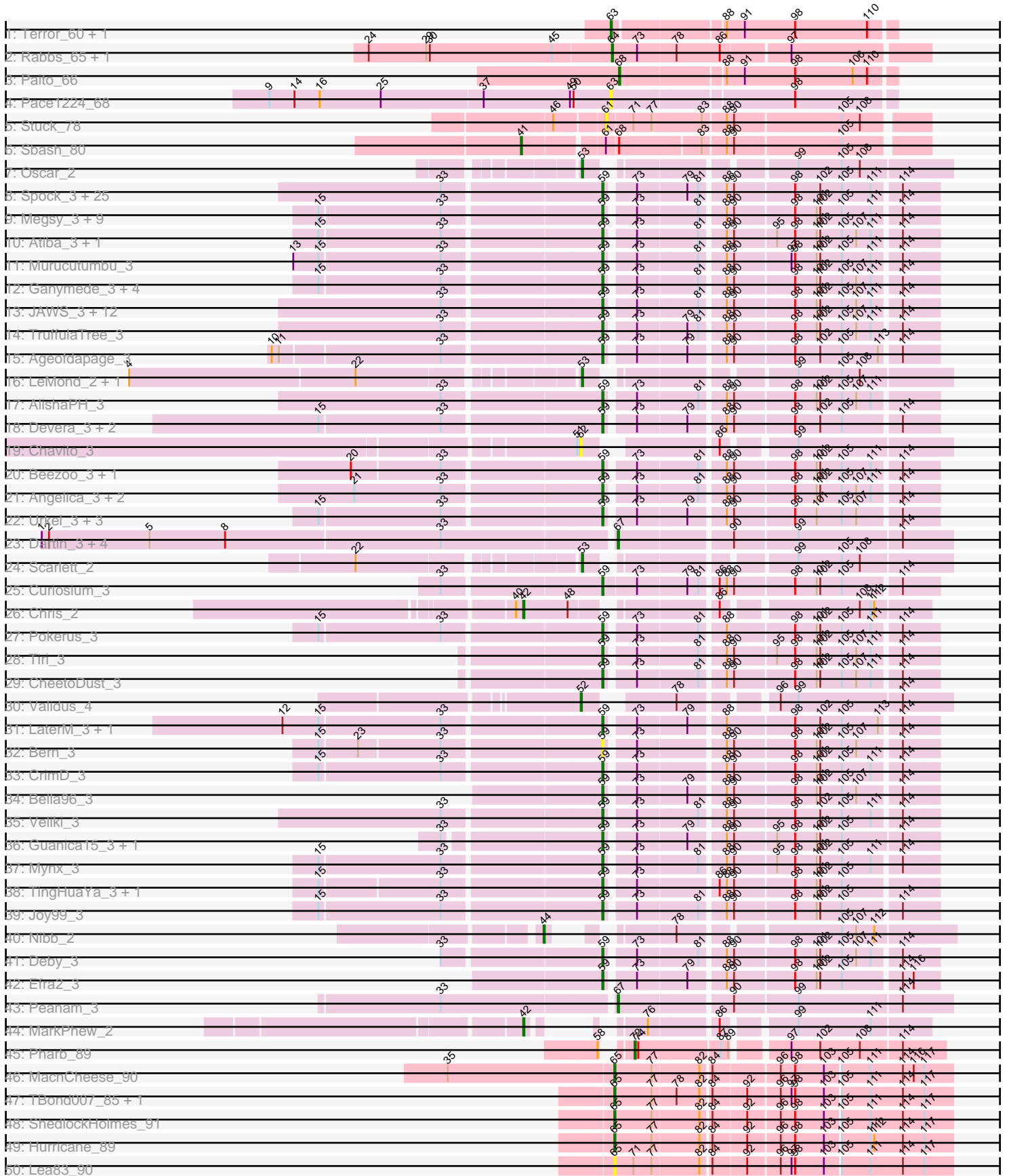
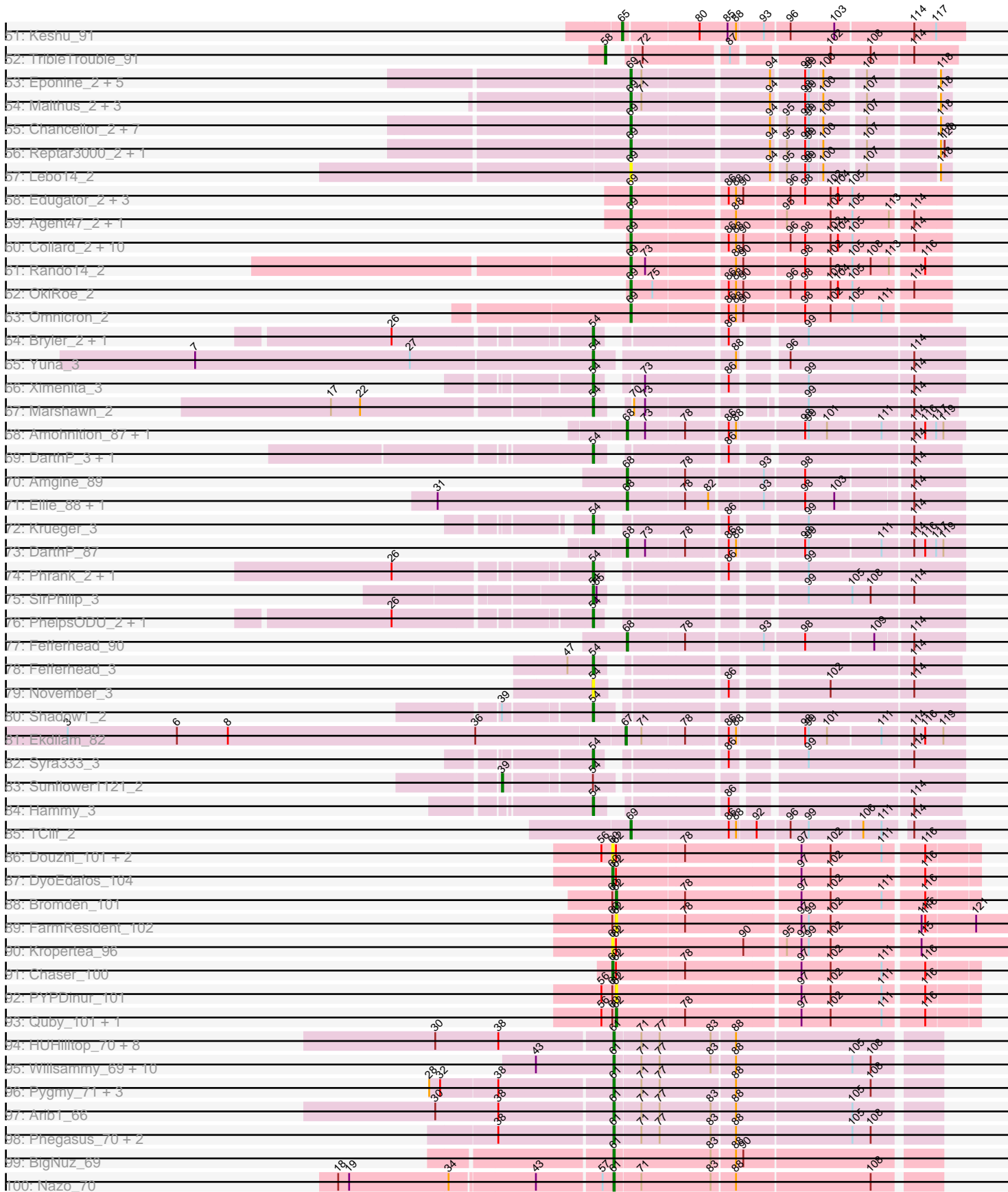
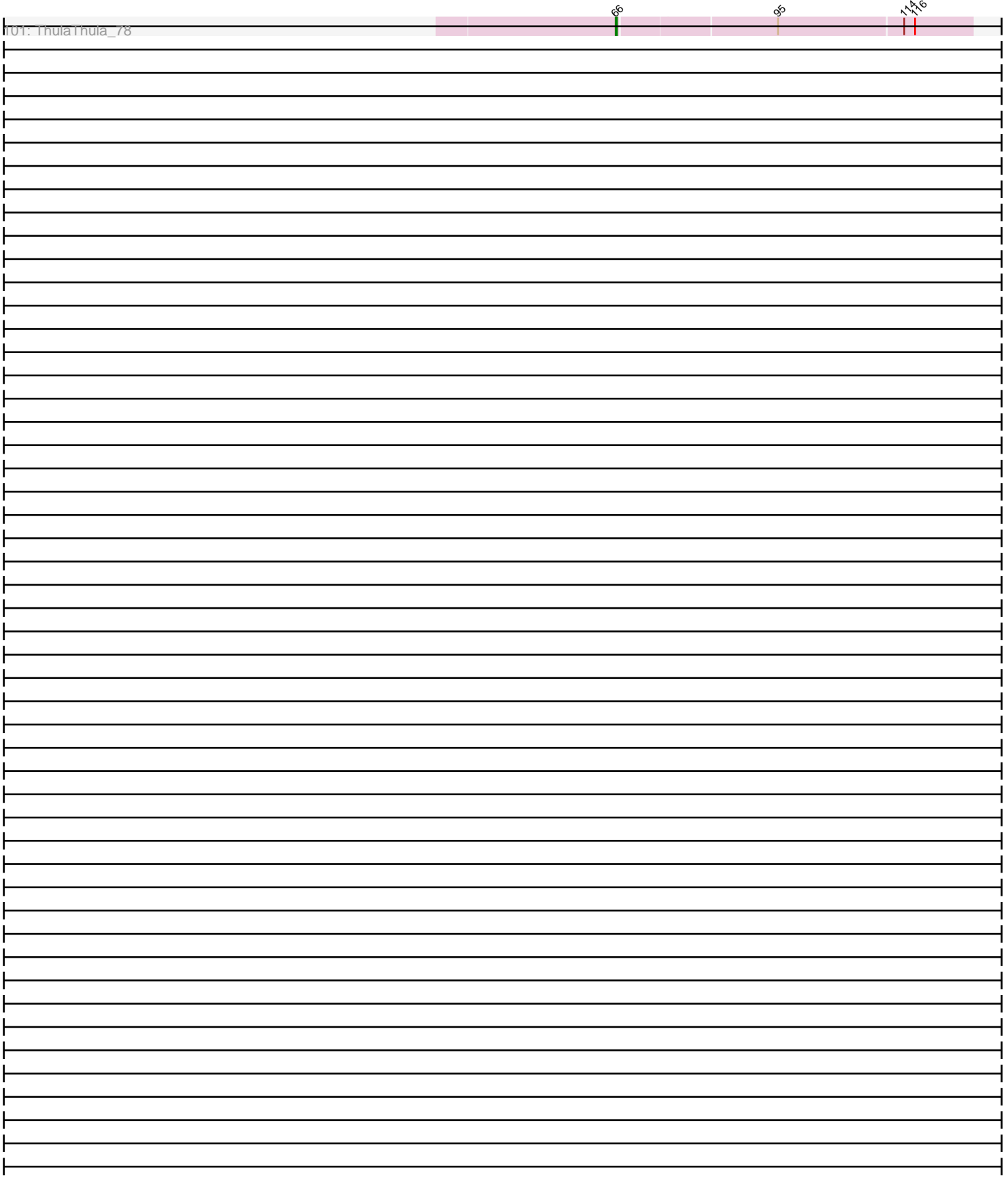


Pham 224270



Pham 224270





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 224270 Report

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

Pham number 224270 has 233 members, 26 are drafts.

Phages represented in each track:

- Track 1 : Terror\_60, Taheera\_60
- Track 2 : Rabbs\_65, Sneezee\_64
- Track 3 : Paito\_66
- Track 4 : Pace1224\_68
- Track 5 : Stuck\_78
- Track 6 : Sbash\_80
- Track 7 : Oscar\_2
- Track 8 : Spock\_3, Llorens\_3, Capricorn\_3, Durfee\_3, ShiaSurprise\_3, Homura\_3, Boiiii\_3, Topper\_3, Twitch\_3, Blizzard\_3, Piatt\_3, Dalmuri\_3, Asayake\_3, Jarvi\_3, Belladonna\_3, BEEST\_3, Lunahalos\_3, Hyperbowlee\_3, BGIlluviae\_3, Jeckyll\_3, Rosmarinus\_3, Peel\_3, CREW\_3, Padfoot\_3, Inky\_3, CaseJules\_3
- Track 9 : Megsy\_3, BaghaKamala\_3, Prithvi\_3, Clipper\_3, LindNT\_3, TreyKay\_3, MacKat\_3, YoureAdopted\_3, TaiwanKao\_3, MeaningOfLife\_3
- Track 10 : Atiba\_3, Tachez\_3
- Track 11 : Murucutumbu\_3
- Track 12 : Ganymede\_3, Adonis\_3, CallaLilly\_3, QuincyRose\_3, Zavala\_3
- Track 13 : JAWS\_3, BarrelRoll\_3, Anaya\_3, Adephagia\_3, Zabiza\_3, Emerson\_3, Padpat\_3, ActinUp\_3, HedwigODU\_3, Slimphazie\_3, Jayhawk\_3, Rapunzel97\_3, Ramen\_3
- Track 14 : TruffulaTree\_3
- Track 15 : Ageofdapage\_3
- Track 16 : LeMond\_2, KiSi\_2
- Track 17 : AlishaPH\_3
- Track 18 : Devera\_3, Dole\_3, Illumine\_3
- Track 19 : Chavito\_3
- Track 20 : Beezoo\_3, Geraldini\_3
- Track 21 : Angelica\_3, Apocalypse\_3, Sulley\_3
- Track 22 : Urkel\_3, DrHayes\_3, TiniBug\_3, SamuelLPlaqson\_3
- Track 23 : Dartin\_3, McMater\_3, Shaobing\_3, Niklas\_3, Richo\_3
- Track 24 : Scarlett\_2
- Track 25 : Curiosium\_3
- Track 26 : Chris\_2
- Track 27 : Pokerus\_3
- Track 28 : Tiri\_3
- Track 29 : CheetoDust\_3
- Track 30 : Validus\_4
- Track 31 : LaterM\_3, Stinson\_3

- Track 32 : Bern\_3
- Track 33 : CrimD\_3
- Track 34 : Bella96\_3
- Track 35 : Veliki\_3
- Track 36 : Guanica15\_3, Yunkel11\_3
- Track 37 : Mynx\_3
- Track 38 : TingHuaYa\_3, LastHope\_3
- Track 39 : Joy99\_3
- Track 40 : Nibb\_2
- Track 41 : Deby\_3
- Track 42 : Efra2\_3
- Track 43 : Peanam\_3
- Track 44 : MarkPhew\_2
- Track 45 : Pharb\_89
- Track 46 : MacnCheese\_90
- Track 47 : TBond007\_85, Pixie\_88
- Track 48 : ShedlockHolmes\_91
- Track 49 : Hurricane\_89
- Track 50 : Lea83\_90
- Track 51 : Keshu\_91
- Track 52 : TribbleTrouble\_91
- Track 53 : Eponine\_2, Y2\_02, Y10\_02, Wintermute\_2, Fionnbharth\_2, JF1\_2
- Track 54 : Malthus\_2, Kraw\_2, Juliette\_2, Ruthiejr\_2
- Track 55 : Chancellor\_2, Cheetobro\_2, Patt\_2, Taquito\_2, OmniCritical\_2, Slarp\_2, Mitti\_2, SamScheppers\_2
- Track 56 : Reptar3000\_2, Bobquesha\_2
- Track 57 : Lebo14\_2
- Track 58 : Edugator\_2, AlleyCat\_2, Psycho\_2, Dadosky\_2
- Track 59 : Agent47\_2, InvictusManeo\_2
- Track 60 : Collard\_2, Heftyboy\_2, Paola\_2, Waterfoul\_2, Leston\_2, Thyatira\_2, Gengar\_2, SoSeph\_2, Guillsminger\_2, Feyre\_2, Miryou\_2
- Track 61 : Rando14\_2
- Track 62 : OkiRoe\_2
- Track 63 : Omnicron\_2
- Track 64 : Bryler\_2, Cain\_2
- Track 65 : Yuna\_3
- Track 66 : Ximenita\_3
- Track 67 : Marshawn\_2
- Track 68 : Amohnition\_87, Hammy\_87
- Track 69 : DARTH\_P\_3, Amohnition\_3
- Track 70 : Amgine\_89
- Track 71 : Ellie\_88, Applecrisp\_89
- Track 72 : Krueger\_3
- Track 73 : DARTH\_P\_87
- Track 74 : Phrank\_2, Tierra\_2
- Track 75 : SirPhilip\_3
- Track 76 : PhelpsODU\_2, Unicorn\_2
- Track 77 : Fefferhead\_90
- Track 78 : Fefferhead\_3
- Track 79 : November\_3
- Track 80 : Shadow1\_2
- Track 81 : Ekdilam\_82
- Track 82 : Syra333\_3

- Track 83 : Sunflower1121\_2
- Track 84 : Hammy\_3
- Track 85 : TClif\_2
- Track 86 : Douzhi\_101, BrainDrainer\_102, Sheng711\_102
- Track 87 : DyoEdafos\_104
- Track 88 : Bromden\_101
- Track 89 : FarmResident\_102
- Track 90 : Kropertea\_96
- Track 91 : Chaser\_100
- Track 92 : PYPDinur\_101
- Track 93 : Quby\_101, Douge\_101
- Track 94 : HUHilltop\_70, Malithi\_67, Bogie\_70, Sonah\_68, Dynamo\_67, Camster\_68, Necropolis\_65, Phineas\_68, Shipwreck\_70
- Track 95 : Willsammy\_69, Megiddo\_67, Donovan\_67, Gavriela\_67, Kari\_64, Fishburne\_66, StressBall\_67, KilKor\_68, Glaske\_67, CactusJack\_68, Phalm\_68
- Track 96 : Pygmy\_71, Techage\_68, Bartholomew\_63, Venti\_65
- Track 97 : Arib1\_66
- Track 98 : Phegasus\_70, Majeke\_70, Mangethe\_70
- Track 99 : BigNuz\_69
- Track 100 : Nazo\_70
- Track 101 : ThulaThula\_78

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

The start number called the most often in the published annotations is 59, it was called in 84 of the 207 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp\_3, Adephagia\_3, Adonis\_3, Ageofdapage\_3, AlishaPH\_3, Anaya\_3, Angelica\_3, Apocalypse\_3, Asayake\_3, Atiba\_3, BEEST\_3, BGlluviae\_3, BaghaKamala\_3, BarrelRoll\_3, Beezoo\_3, Bella96\_3, Belladonna\_3, Bern\_3, Blizzard\_3, Boiiii\_3, CREW\_3, CallaLilly\_3, Capricorn\_3, CaseJules\_3, CheetoDust\_3, Clipper\_3, CrimD\_3, Curiosium\_3, Dalmuri\_3, Deby\_3, Devera\_3, Dole\_3, DrHayes\_3, Durfee\_3, Efra2\_3, Emerson\_3, Ganymede\_3, Geraldini\_3, Guanica15\_3, HedwigODU\_3, Homura\_3, Hyperbowlee\_3, Illumine\_3, Inky\_3, JAWS\_3, Jarvi\_3, Jayhawk\_3, Jeckyll\_3, Joy99\_3, LastHope\_3, LaterM\_3, LindNT\_3, Llorens\_3, Lunahalos\_3, MacKat\_3, MeaningOfLife\_3, Megsy\_3, Murucutumbu\_3, Mynx\_3, Padfoot\_3, Padpat\_3, Peel\_3, Piatt\_3, Pokerus\_3, Prithvi\_3, QuincyRose\_3, Ramen\_3, Rapunzel97\_3, Rosmarinus\_3, SamuelLPlaqsom\_3, ShiaSurprise\_3, Slimphazie\_3, Spock\_3, Stinson\_3, Sulley\_3, Tachez\_3, TaiwanKao\_3, TingHuaYa\_3, TiniBug\_3, Tiri\_3, Topper\_3, TreyKay\_3, TruffulaTree\_3, Twitch\_3, Urkel\_3, Veliki\_3, YoureAdopted\_3, Yunkel11\_3, Zabiza\_3, Zavala\_3,

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

- 

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

- Agent47\_2, AlleyCat\_2, Amgine\_89, Amohnition\_3, Amohnition\_87, Applecrisp\_89, Arib1\_66, Bartholomew\_63, BigNuz\_69, Bobquesha\_2, Bogie\_70, BrainDrainer\_102,

Bromden\_101, Bryler\_2, CactusJack\_68, Cain\_2, Camster\_68, Chancellor\_2, Chaser\_100, Chavito\_3, Cheetobro\_2, Chris\_2, Collard\_2, Dadosky\_2, DarthP\_3, DarthP\_87, Dartin\_3, Donovan\_67, Douge\_101, Douzhi\_101, Dynamo\_67, DyoEdafos\_104, Edugator\_2, Ekdilam\_82, Ellie\_88, Eponine\_2, FarmResident\_102, Fefferhead\_3, Fefferhead\_90, Feyre\_2, Fionnbharth\_2, Fishburne\_66, Gavriela\_67, Gengar\_2, Glaske\_67, Guillsminger\_2, HUHilltop\_70, Hammy\_3, Hammy\_87, Heftyboy\_2, Hurricane\_89, InvictusManeo\_2, JF1\_2, Juliette\_2, Kari\_64, Keshu\_91, KiSi\_2, KilKor\_68, Kraw\_2, Kropertea\_96, Krueger\_3, LeMond\_2, Lea83\_90, Lebo14\_2, Leston\_2, MacnCheese\_90, Majeke\_70, Malithi\_67, Malthus\_2, Mangethe\_70, MarkPhew\_2, Marshawn\_2, McMater\_3, Megiddo\_67, Miryou\_2, Mitti\_2, Nazo\_70, Necropolis\_65, Nibb\_2, Niklas\_3, November\_3, OkiRoe\_2, OmniCritical\_2, Omnicron\_2, Oscar\_2, PYPDinur\_101, Pace1224\_68, Paito\_66, Paola\_2, Patt\_2, Peanam\_3, Phalm\_68, Pharb\_89, Phegasus\_70, PhelpsODU\_2, Phineas\_68, Phrank\_2, Pixie\_88, Psycho\_2, Pygmy\_71, Quby\_101, Rabbs\_65, Rando14\_2, Reptar3000\_2, Richo\_3, Ruthiejr\_2, SamScheppers\_2, Sbash\_80, Scarlett\_2, Shadow1\_2, Shaobing\_3, ShedlockHolmes\_91, Sheng711\_102, Shipwreck\_70, SirPhilip\_3, Slarp\_2, Sneeze\_64, SoSeph\_2, Sonah\_68, StressBall\_67, Stuck\_78, Sunflower1121\_2, Syra333\_3, TBond007\_85, TClif\_2, Taheera\_60, Taquito\_2, Techage\_68, Terror\_60, ThulaThula\_78, Thyatira\_2, Tierra\_2, TripleTrouble\_91, Unicorn\_2, Validus\_4, Venti\_65, Waterfoul\_2, Willsammy\_69, Wintermute\_2, Ximenita\_3, Y10\_02, Y2\_02, Yuna\_3,

### Summary by start number:

#### Start 39:

- Found in 2 of 233 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 1 of 207
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Sunflower1121\_2 (K6),

#### Start 41:

- Found in 1 of 233 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 207
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sbash\_80 (I2),

#### Start 42:

- Found in 2 of 233 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 2 of 207
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chris\_2 (K1), MarkPhew\_2 (K1),

#### Start 44:

- Found in 1 of 233 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 207
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Nibb\_2 (K1),

#### Start 52:

- Found in 2 of 233 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 1 of 207
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chavito\_3 (K1), Validus\_4 (K1),

Start 53:

- Found in 4 of 233 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 4 of 207
- Called 100.0% of time when present
- Phage (with cluster) where this start called: KiSi\_2 (K1), LeMond\_2 (K1), Oscar\_2 (K1), Scarlett\_2 (K1),

Start 54:

- Found in 19 of 233 ( 8.2% ) of genes in pham
- Manual Annotations of this start: 17 of 207
- Called 94.7% of time when present
- Phage (with cluster) where this start called: Amohnition\_3 (K6), Bryler\_2 (K6), Cain\_2 (K6), DarthP\_3 (K6), Fefferhead\_3 (K6), Hammy\_3 (K6), Krueger\_3 (K6), Marshawn\_2 (K6), November\_3 (K6), PhelpsODU\_2 (K6), Phrank\_2 (K6), Shadow1\_2 (K6), SirPhilip\_3 (K6), Syra333\_3 (K6), Tierra\_2 (K6), Unicorn\_2 (K6), Ximenita\_3 (K6), Yuna\_3 (K6),

Start 58:

- Found in 2 of 233 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 1 of 207
- Called 50.0% of time when present
- Phage (with cluster) where this start called: TribleTrouble\_91 (K3),

Start 59:

- Found in 90 of 233 ( 38.6% ) of genes in pham
- Manual Annotations of this start: 84 of 207
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ActinUp\_3 (K1), Adephagia\_3 (K1), Adonis\_3 (K1), Ageofdapage\_3 (K1), AlishaPH\_3 (K1), Anaya\_3 (K1), Angelica\_3 (K1), Apocalypse\_3 (K1), Asayake\_3 (K1), Atiba\_3 (K1), BEEST\_3 (K1), BGIlluviae\_3 (K1), BaghaKamala\_3 (K1), BarrelRoll\_3 (K1), Beezoo\_3 (K1), Bella96\_3 (K1), Belladonna\_3 (K1), Bern\_3 (K1), Blizzard\_3 (K1), Boiiii\_3 (K1), CREW\_3 (K1), CallaLilly\_3 (K1), Capricorn\_3 (K1), CaseJules\_3 (K1), CheetoDust\_3 (K1), Clipper\_3 (K1), CrimD\_3 (K1), Curiosium\_3 (K1), Dalmuri\_3 (K1), Deby\_3 (K1), Devera\_3 (K1), Dole\_3 (K1), DrHayes\_3 (K1), Durfee\_3 (K1), Efra2\_3 (K1), Emerson\_3 (K1), Ganymede\_3 (K1), Geraldini\_3 (K1), Guanica15\_3 (K1), HedwigODU\_3 (K1), Homura\_3 (K1), Hyperbowlee\_3 (K1), Illumine\_3 (K1), Inky\_3 (K1), JAWS\_3 (K1), Jarvi\_3 (K1), Jayhawk\_3 (K1), Jeckyll\_3 (K1), Joy99\_3 (K1), LastHope\_3 (K1), LaterM\_3 (K1), LindNT\_3 (K1), Llorens\_3 (K1), Lunahalos\_3 (K1), MacKat\_3 (K1), MeaningOfLife\_3 (K1), Megsy\_3 (K1), Murucutumbu\_3 (K1), Mynx\_3 (K1), Padfoot\_3 (K1), Padpat\_3 (K1), Peel\_3 (K1), Piatt\_3 (K1), Pokerus\_3 (K1), Prithvi\_3 (K1), QuincyRose\_3 (K1), Ramen\_3 (K1), Rapunzel97\_3 (K1), Rosmarinus\_3 (K1), SamuelLPlaqson\_3 (K1), ShiaSurprise\_3 (K1), Slimphazie\_3 (K1), Spock\_3 (K1), Stinson\_3 (K1), Sulley\_3 (K1), Tachez\_3 (K1), TaiwanKao\_3 (K1), TingHuaYa\_3 (K1), TiniBug\_3 (K1), Tiri\_3 (K1), Topper\_3 (K1), TreyKay\_3 (K1), TruffulaTree\_3 (K1), Twitch\_3 (K1), Urkel\_3 (K1), Veliki\_3 (K1), YoureAdopted\_3 (K1), Yunkel11\_3 (K1), Zabiza\_3 (K1), Zavala\_3 (K1),

Start 60:

- Found in 11 of 233 ( 4.7% ) of genes in pham
- Manual Annotations of this start: 2 of 207
- Called 54.5% of time when present



- Phage (with cluster) where this start called: BrainDrainer\_102 (L4), Chaser\_100 (L4), Douzhi\_101 (L4), DyoEdafos\_104 (L4), Kropertea\_96 (L4), Sheng711\_102 (L4),

#### Start 61:

- Found in 32 of 233 ( 13.7% ) of genes in pham
- Manual Annotations of this start: 29 of 207
- Called 96.9% of time when present
- Phage (with cluster) where this start called: Arib1\_66 (P1), Bartholomew\_63 (P1), BigNuz\_69 (P4), Bogie\_70 (P1), CactusJack\_68 (P1), Camster\_68 (P1), Donovan\_67 (P1), Dynamo\_67 (P1), Fishburne\_66 (P1), Gavriela\_67 (P1), Glaske\_67 (P1), HUHilltop\_70 (P1), Kari\_64 (P1), KilKor\_68 (P1), Majeke\_70 (P1), Malithi\_67 (P1), Mangethe\_70 (P1), Megiddo\_67 (P1), Nazo\_70 (P4), Necropolis\_65 (P1), Phalm\_68 (P1), Phegasus\_70 (P1), Phineas\_68 (P1), Pygmy\_71 (P1), Shipwreck\_70 (P1), Sonah\_68 (P1), StressBall\_67 (P1), Stuck\_78 (I2), Techage\_68 (P1), Venti\_65 (P1), Willsammy\_69 (P1),

#### Start 62:

- Found in 11 of 233 ( 4.7% ) of genes in pham
- Manual Annotations of this start: 2 of 207
- Called 45.5% of time when present
- Phage (with cluster) where this start called: Bromden\_101 (L4), Douge\_101 (L4), FarmResident\_102 (L4), PYPDinur\_101 (L4), Quby\_101 (L4),

#### Start 63:

- Found in 3 of 233 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 2 of 207
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Pace1224\_68 (G2), Taheera\_60 (G1), Terror\_60 (G1),

#### Start 64:

- Found in 2 of 233 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 2 of 207
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Rabbs\_65 (G1), Sneeze\_64 (G1),

#### Start 65:

- Found in 7 of 233 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 6 of 207
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hurricane\_89 (K3), Keshu\_91 (K3), Lea83\_90 (K3), MacnCheese\_90 (K3), Pixie\_88 (K3), ShedlockHolmes\_91 (K3), TBond007\_85 (K3),

#### Start 66:

- Found in 1 of 233 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 207
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ThulaThula\_78 (P5),

#### Start 67:

- Found in 7 of 233 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 4 of 207

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dartin\_3 (K1), Ekdilam\_82 (K6), McMater\_3 (K1), Niklas\_3 (K1), Peanam\_3 (K1), Richo\_3 (K1), Shaobing\_3 (K1),

Start 68:

- Found in 9 of 233 ( 3.9% ) of genes in pham
- Manual Annotations of this start: 7 of 207
- Called 88.9% of time when present
- Phage (with cluster) where this start called: Amgine\_89 (K6), Amohnition\_87 (K6), Applecrisp\_89 (K6), DarthP\_87 (K6), Ellie\_88 (K6), Fefferhead\_90 (K6), Hammy\_87 (K6), Paito\_66 (G1),

Start 69:

- Found in 42 of 233 ( 18.0% ) of genes in pham
- Manual Annotations of this start: 39 of 207
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agent47\_2 (K5), AlleyCat\_2 (K5), Bobquesha\_2 (K4), Chancellor\_2 (K4), Cheetobro\_2 (K4), Collard\_2 (K5), Dadosky\_2 (K5), Edugator\_2 (K5), Eponine\_2 (K4), Feyre\_2 (K5), Fionnbharth\_2 (K4), Gengar\_2 (K5), Guillsminger\_2 (K5), Heftyboy\_2 (K5), InvictusManeo\_2 (K5), JF1\_2 (K4), Juliette\_2 (K4), Kraw\_2 (K4), Lebo14\_2 (K4), Leston\_2 (K5), Malthus\_2 (K4), Miryou\_2 (K5), Mitti\_2 (K4), OkiRoe\_2 (K5), OmniCritical\_2 (K4), Omnicron\_2 (K5), Paola\_2 (K5), Patt\_2 (K4), Psycho\_2 (K5), Rando14\_2 (K5), Reptar3000\_2 (K4), Ruthiejr\_2 (K4), SamScheppers\_2 (K4), Slarp\_2 (K4), SoSeph\_2 (K5), TClif\_2 (K6), Taquito\_2 (K4), Thyatira\_2 (K5), Waterfoul\_2 (K5), Wintermute\_2 (K4), Y10\_02 (K4), Y2\_02 (K4),

Start 72:

- Found in 2 of 233 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 1 of 207
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Pharb\_89 (K3),

### Summary by clusters:

There are 12 clusters represented in this pham: P1, P4, G1, P5, I2, L4, K3, K1, K6, K5, K4, G2,

Info for manual annotations of cluster G1:

- Start number 63 was manually annotated 2 times for cluster G1.
- Start number 64 was manually annotated 2 times for cluster G1.
- Start number 68 was manually annotated 1 time for cluster G1.

Info for manual annotations of cluster I2:

- Start number 41 was manually annotated 1 time for cluster I2.

Info for manual annotations of cluster K1:

- Start number 42 was manually annotated 2 times for cluster K1.
- Start number 44 was manually annotated 1 time for cluster K1.
- Start number 52 was manually annotated 1 time for cluster K1.
- Start number 53 was manually annotated 4 times for cluster K1.
- Start number 59 was manually annotated 84 times for cluster K1.

- Start number 67 was manually annotated 3 times for cluster K1.

Info for manual annotations of cluster K3:

- Start number 58 was manually annotated 1 time for cluster K3.
- Start number 65 was manually annotated 6 times for cluster K3.
- Start number 72 was manually annotated 1 time for cluster K3.

Info for manual annotations of cluster K4:

- Start number 69 was manually annotated 18 times for cluster K4.

Info for manual annotations of cluster K5:

- Start number 69 was manually annotated 20 times for cluster K5.

Info for manual annotations of cluster K6:

- Start number 39 was manually annotated 1 time for cluster K6.
- Start number 54 was manually annotated 17 times for cluster K6.
- Start number 67 was manually annotated 1 time for cluster K6.
- Start number 68 was manually annotated 6 times for cluster K6.
- Start number 69 was manually annotated 1 time for cluster K6.

Info for manual annotations of cluster L4:

- Start number 60 was manually annotated 2 times for cluster L4.
- Start number 62 was manually annotated 2 times for cluster L4.

Info for manual annotations of cluster P1:

- Start number 61 was manually annotated 27 times for cluster P1.

Info for manual annotations of cluster P4:

- Start number 61 was manually annotated 2 times for cluster P4.

Info for manual annotations of cluster P5:

- Start number 66 was manually annotated 1 time for cluster P5.

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

Gene: ActinUp\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for ActinUp\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (81, 545), (88, 563), (90, 569), (98, 617), (101, 635), (102, 638), (105, 656), (107, 668), (111, 680), (114, 701),

Gene: Adephagia\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Adephagia\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (81, 545), (88, 563), (90, 569), (98, 617), (101, 635), (102, 638), (105, 656), (107, 668), (111, 680), (114, 701),

Gene: Adonis\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for Adonis\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (98, 593), (101, 611), (102, 614), (105, 632), (107, 644), (111, 656), (114, 677),

Gene: Agent47\_2 Start: 300, Stop: 545, Start Num: 69

Candidate Starts for Agent47\_2:

(Start: 69 @300 has 39 MA's), (88, 378), (95, 417), (102, 453), (105, 471), (113, 501), (114, 516),

Gene: Ageofdapage\_3 Start: 435, Stop: 689, Start Num: 59

Candidate Starts for Ageofdapage\_3:

(10, 174), (11, 180), (33, 309), (Start: 59 @435 has 84 MA's), (73, 456), (79, 495), (88, 522), (90, 528), (98, 576), (102, 597), (105, 615), (113, 645), (114, 660),

Gene: AlishaPH\_3 Start: 475, Stop: 729, Start Num: 59

Candidate Starts for AlishaPH\_3:

(33, 349), (Start: 59 @475 has 84 MA's), (73, 496), (81, 544), (88, 562), (90, 568), (98, 616), (101, 634), (102, 637), (105, 655), (107, 667), (111, 679),

Gene: AlleyCat\_2 Start: 300, Stop: 545, Start Num: 69

Candidate Starts for AlleyCat\_2:

(Start: 69 @300 has 39 MA's), (86, 372), (88, 378), (90, 384), (96, 420), (98, 432), (102, 453), (104, 459), (105, 471),

Gene: Amgine\_89 Start: 58064, Stop: 58318, Start Num: 68

Candidate Starts for Amgine\_89:

(Start: 68 @58064 has 7 MA's), (78, 58109), (93, 58166), (98, 58196), (114, 58277),

Gene: Amohnition\_87 Start: 57065, Stop: 57322, Start Num: 68

Candidate Starts for Amohnition\_87:

(Start: 68 @57065 has 7 MA's), (73, 57080), (78, 57110), (86, 57140), (88, 57146), (98, 57197), (99, 57200), (101, 57215), (111, 57257), (114, 57281), (116, 57290), (117, 57299), (119, 57305),

Gene: Amohnition\_3 Start: 416, Stop: 673, Start Num: 54

Candidate Starts for Amohnition\_3:

(Start: 54 @416 has 17 MA's), (86, 500), (114, 635),

Gene: Anaya\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Anaya\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (81, 545), (88, 563), (90, 569), (98, 617), (101, 635), (102, 638), (105, 656), (107, 668), (111, 680), (114, 701),

Gene: Angelica\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Angelica\_3:

(21, 278), (33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (81, 545), (88, 563), (90, 569), (98, 617), (101, 635), (102, 638), (105, 656), (107, 668), (111, 680), (114, 701),

Gene: Apocalypse\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Apocalypse\_3:

(21, 278), (33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (81, 545), (88, 563), (90, 569), (98, 617), (101, 635), (102, 638), (105, 656), (107, 668), (111, 680), (114, 701),

Gene: Applecrisp\_89 Start: 57244, Stop: 57498, Start Num: 68

Candidate Starts for Applecrisp\_89:

(31, 57088), (Start: 68 @57244 has 7 MA's), (78, 57289), (82, 57307), (93, 57346), (98, 57376), (103, 57400), (114, 57457),

Gene: Arib1\_66 Start: 42262, Stop: 42516, Start Num: 61

Candidate Starts for Arib1\_66:

(30, 42121), (38, 42172), (Start: 61 @42262 has 29 MA's), (71, 42283), (77, 42298), (83, 42340), (88, 42358), (105, 42451),

Gene: Asayake\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Asayake\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: Atiba\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for Atiba\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (95, 578), (98, 593), (101, 611), (102, 614), (105, 632), (107, 644), (111, 656), (114, 677),

Gene: BEEST\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for BEEST\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: BGlluviae\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for BGlluviae\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: BaghaKamala\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for BaghaKamala\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (98, 593), (101, 611), (102, 614), (105, 632), (111, 656), (114, 677),

Gene: BarrelRoll\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for BarrelRoll\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (81, 545), (88, 563), (90, 569), (98, 617), (101, 635), (102, 638), (105, 656), (107, 668), (111, 680), (114, 701),

Gene: Bartholomew\_63 Start: 41542, Stop: 41796, Start Num: 61

Candidate Starts for Bartholomew\_63:

(28, 41398), (32, 41407), (38, 41452), (Start: 61 @41542 has 29 MA's), (71, 41563), (77, 41578), (88, 41638), (108, 41746),

Gene: Beezoo\_3 Start: 473, Stop: 727, Start Num: 59

Candidate Starts for Beezoo\_3:

(20, 275), (33, 347), (Start: 59 @473 has 84 MA's), (73, 494), (81, 542), (88, 560), (90, 566), (98, 614), (101, 632), (102, 635), (105, 653), (111, 677), (114, 698),

Gene: Bella96\_3 Start: 440, Stop: 694, Start Num: 59

Candidate Starts for Bella96\_3:

(Start: 59 @440 has 84 MA's), (73, 461), (79, 500), (88, 527), (90, 533), (98, 581), (101, 599), (102, 602), (105, 620), (107, 632), (114, 665),

Gene: Belladonna\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Belladonna\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: Bern\_3 Start: 436, Stop: 690, Start Num: 59

Candidate Starts for Bern\_3:

(15, 214), (23, 244), (33, 310), (Start: 59 @436 has 84 MA's), (73, 457), (88, 523), (90, 529), (98, 577), (101, 595), (102, 598), (105, 616), (107, 628), (114, 661),

Gene: BigNuz\_69 Start: 44457, Stop: 44711, Start Num: 61

Candidate Starts for BigNuz\_69:

(Start: 61 @44457 has 29 MA's), (83, 44535), (88, 44553), (90, 44559),

Gene: Blizzard\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Blizzard\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: Bobquesha\_2 Start: 251, Stop: 481, Start Num: 69

Candidate Starts for Bobquesha\_2:

(Start: 69 @251 has 39 MA's), (94, 356), (95, 365), (98, 380), (99, 383), (100, 392), (107, 422), (118, 473), (120, 476),

Gene: Bogie\_70 Start: 44612, Stop: 44866, Start Num: 61

Candidate Starts for Bogie\_70:

(30, 44471), (38, 44522), (Start: 61 @44612 has 29 MA's), (71, 44633), (77, 44648), (83, 44690), (88, 44708),

Gene: Boiiii\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Boiiii\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: BrainDrainer\_102 Start: 61701, Stop: 61985, Start Num: 60

Candidate Starts for BrainDrainer\_102:

(56, 61692), (Start: 60 @61701 has 2 MA's), (Start: 62 @61704 has 2 MA's), (78, 61758), (97, 61848), (102, 61872), (111, 61914), (116, 61944),

Gene: Bromden\_101 Start: 62440, Stop: 62721, Start Num: 62

Candidate Starts for Bromden\_101:

(Start: 60 @62437 has 2 MA's), (Start: 62 @62440 has 2 MA's), (78, 62494), (97, 62584), (102, 62608), (111, 62650), (116, 62680),

Gene: Bryler\_2 Start: 388, Stop: 648, Start Num: 54

Candidate Starts for Bryler\_2:

(26, 241), (Start: 54 @388 has 17 MA's), (86, 472), (99, 523),

Gene: CREW\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for CREW\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: CactusJack\_68 Start: 44240, Stop: 44494, Start Num: 61

Candidate Starts for CactusJack\_68:

(43, 44177), (Start: 61 @44240 has 29 MA's), (71, 44261), (77, 44276), (83, 44318), (88, 44336), (105, 44429), (108, 44444),

Gene: Cain\_2 Start: 388, Stop: 648, Start Num: 54  
Candidate Starts for Cain\_2:  
(26, 241), (Start: 54 @388 has 17 MA's), (86, 472), (99, 523),

Gene: CallaLilly\_3 Start: 452, Stop: 706, Start Num: 59  
Candidate Starts for CallaLilly\_3:  
(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (98, 593),  
(101, 611), (102, 614), (105, 632), (107, 644), (111, 656), (114, 677),

Gene: Camster\_68 Start: 43073, Stop: 43327, Start Num: 61  
Candidate Starts for Camster\_68:  
(30, 42932), (38, 42983), (Start: 61 @43073 has 29 MA's), (71, 43094), (77, 43109), (83, 43151), (88,  
43169),

Gene: Capricorn\_3 Start: 476, Stop: 730, Start Num: 59  
Candidate Starts for Capricorn\_3:  
(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617),  
(102, 638), (105, 656), (111, 680), (114, 701),

Gene: CaseJules\_3 Start: 476, Stop: 730, Start Num: 59  
Candidate Starts for CaseJules\_3:  
(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617),  
(102, 638), (105, 656), (111, 680), (114, 701),

Gene: Chancellor\_2 Start: 251, Stop: 481, Start Num: 69  
Candidate Starts for Chancellor\_2:  
(Start: 69 @251 has 39 MA's), (94, 356), (95, 365), (98, 380), (99, 383), (100, 392), (107, 422), (118,  
473),

Gene: Chaser\_100 Start: 61053, Stop: 61337, Start Num: 60  
Candidate Starts for Chaser\_100:  
(Start: 60 @61053 has 2 MA's), (Start: 62 @61056 has 2 MA's), (78, 61110), (97, 61200), (102, 61224),  
(111, 61266), (116, 61296),

Gene: Chavito\_3 Start: 474, Stop: 734, Start Num: 52  
Candidate Starts for Chavito\_3:  
(51, 471), (Start: 52 @474 has 1 MA's), (86, 558), (99, 609),

Gene: CheetoDust\_3 Start: 452, Stop: 706, Start Num: 59  
Candidate Starts for CheetoDust\_3:  
(Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (98, 593), (101, 611), (102,  
614), (105, 632), (107, 644), (111, 656), (114, 677),

Gene: Cheetobro\_2 Start: 251, Stop: 481, Start Num: 69  
Candidate Starts for Cheetobro\_2:  
(Start: 69 @251 has 39 MA's), (94, 356), (95, 365), (98, 380), (99, 383), (100, 392), (107, 422), (118,  
473),

Gene: Chris\_2 Start: 375, Stop: 665, Start Num: 42  
Candidate Starts for Chris\_2:  
(40, 369), (Start: 42 @375 has 2 MA's), (48, 411), (86, 507), (108, 609), (111, 618), (112, 621),

Gene: Clipper\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for Clipper\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (98, 593), (101, 611), (102, 614), (105, 632), (111, 656), (114, 677),

Gene: Collard\_2 Start: 274, Stop: 519, Start Num: 69

Candidate Starts for Collard\_2:

(Start: 69 @274 has 39 MA's), (86, 346), (88, 352), (90, 358), (96, 394), (98, 406), (102, 427), (104, 433), (105, 445), (114, 490),

Gene: CrimD\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for CrimD\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (88, 539), (90, 545), (98, 593), (101, 611), (102, 614), (105, 632), (111, 656), (114, 677),

Gene: Curiosium\_3 Start: 517, Stop: 777, Start Num: 59

Candidate Starts for Curiosium\_3:

(33, 391), (Start: 59 @517 has 84 MA's), (73, 544), (79, 583), (81, 592), (86, 604), (88, 610), (90, 616), (98, 664), (101, 682), (102, 685), (105, 703), (114, 748),

Gene: Dadosky\_2 Start: 300, Stop: 545, Start Num: 69

Candidate Starts for Dadosky\_2:

(Start: 69 @300 has 39 MA's), (86, 372), (88, 378), (90, 384), (96, 420), (98, 432), (102, 453), (104, 459), (105, 471),

Gene: Dalmuri\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Dalmuri\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: DarthP\_3 Start: 416, Stop: 673, Start Num: 54

Candidate Starts for DarthP\_3:

(Start: 54 @416 has 17 MA's), (86, 500), (114, 635),

Gene: DarthP\_87 Start: 56918, Stop: 57175, Start Num: 68

Candidate Starts for DarthP\_87:

(Start: 68 @56918 has 7 MA's), (73, 56933), (78, 56963), (86, 56993), (88, 56999), (98, 57050), (99, 57053), (111, 57110), (114, 57134), (116, 57143), (117, 57152), (119, 57158),

Gene: Dartin\_3 Start: 469, Stop: 732, Start Num: 67

Candidate Starts for Dartin\_3:

(1, 1), (2, 7), (5, 91), (8, 154), (33, 331), (Start: 67 @469 has 4 MA's), (90, 556), (99, 607), (114, 691),

Gene: Deby\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Deby\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (81, 545), (88, 563), (90, 569), (98, 617), (101, 635), (102, 638), (105, 656), (107, 668), (111, 680), (114, 701),

Gene: Devera\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for Devera\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (79, 512), (88, 539), (90, 545), (98, 593), (102, 614), (105, 632), (114, 677),

Gene: Dole\_3 Start: 452, Stop: 706, Start Num: 59



Candidate Starts for Dole\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (79, 512), (88, 539), (90, 545), (98, 593), (102, 614), (105, 632), (114, 677),

Gene: Donovan\_67 Start: 43202, Stop: 43456, Start Num: 61

Candidate Starts for Donovan\_67:

(43, 43139), (Start: 61 @43202 has 29 MA's), (71, 43223), (77, 43238), (83, 43280), (88, 43298), (105, 43391), (108, 43406),

Gene: Douge\_101 Start: 61124, Stop: 61405, Start Num: 62

Candidate Starts for Douge\_101:

(56, 61112), (Start: 60 @61121 has 2 MA's), (Start: 62 @61124 has 2 MA's), (78, 61178), (97, 61268), (102, 61292), (111, 61334), (116, 61364),

Gene: Douzhi\_101 Start: 61390, Stop: 61674, Start Num: 60

Candidate Starts for Douzhi\_101:

(56, 61381), (Start: 60 @61390 has 2 MA's), (Start: 62 @61393 has 2 MA's), (78, 61447), (97, 61537), (102, 61561), (111, 61603), (116, 61633),

Gene: DrHayes\_3 Start: 440, Stop: 694, Start Num: 59

Candidate Starts for DrHayes\_3:

(15, 215), (33, 314), (Start: 59 @440 has 84 MA's), (73, 461), (79, 500), (88, 527), (90, 533), (98, 581), (101, 599), (105, 620), (107, 632), (114, 665),

Gene: Durfee\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Durfee\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: Dynamo\_67 Start: 42646, Stop: 42900, Start Num: 61

Candidate Starts for Dynamo\_67:

(30, 42505), (38, 42556), (Start: 61 @42646 has 29 MA's), (71, 42667), (77, 42682), (83, 42724), (88, 42742),

Gene: DyoEdafos\_104 Start: 61681, Stop: 61965, Start Num: 60

Candidate Starts for DyoEdafos\_104:

(Start: 60 @61681 has 2 MA's), (Start: 62 @61684 has 2 MA's), (97, 61828), (102, 61852), (116, 61924),

Gene: Edugator\_2 Start: 300, Stop: 545, Start Num: 69

Candidate Starts for Edugator\_2:

(Start: 69 @300 has 39 MA's), (86, 372), (88, 378), (90, 384), (96, 420), (98, 432), (102, 453), (104, 459), (105, 471),

Gene: Efra2\_3 Start: 445, Stop: 699, Start Num: 59

Candidate Starts for Efra2\_3:

(Start: 59 @445 has 84 MA's), (73, 466), (79, 505), (88, 532), (90, 538), (98, 586), (101, 604), (102, 607), (105, 625), (114, 670), (116, 679),

Gene: Ekdilam\_82 Start: 56617, Stop: 56874, Start Num: 67

Candidate Starts for Ekdilam\_82:

(3, 56164), (6, 56254), (8, 56296), (36, 56500), (Start: 67 @56617 has 4 MA's), (71, 56629), (78, 56662), (86, 56692), (88, 56698), (98, 56749), (99, 56752), (101, 56767), (111, 56809), (114, 56833),

(116, 56842), (119, 56857),

Gene: Ellie\_88 Start: 57234, Stop: 57488, Start Num: 68

Candidate Starts for Ellie\_88:

(31, 57078), (Start: 68 @57234 has 7 MA's), (78, 57279), (82, 57297), (93, 57336), (98, 57366), (103, 57390), (114, 57447),

Gene: Emerson\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Emerson\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (81, 545), (88, 563), (90, 569), (98, 617), (101, 635), (102, 638), (105, 656), (107, 668), (111, 680), (114, 701),

Gene: Eponine\_2 Start: 251, Stop: 481, Start Num: 69

Candidate Starts for Eponine\_2:

(Start: 69 @251 has 39 MA's), (71, 260), (94, 356), (98, 380), (99, 383), (100, 392), (107, 422), (118, 473),

Gene: FarmResident\_102 Start: 61280, Stop: 61591, Start Num: 62

Candidate Starts for FarmResident\_102:

(Start: 60 @61277 has 2 MA's), (Start: 62 @61280 has 2 MA's), (78, 61334), (97, 61424), (99, 61430), (102, 61448), (115, 61517), (116, 61520), (121, 61559),

Gene: Fefferhead\_90 Start: 57025, Stop: 57279, Start Num: 68

Candidate Starts for Fefferhead\_90:

(Start: 68 @57025 has 7 MA's), (78, 57070), (93, 57127), (98, 57157), (109, 57211), (114, 57238),

Gene: Fefferhead\_3 Start: 410, Stop: 667, Start Num: 54

Candidate Starts for Fefferhead\_3:

(47, 389), (Start: 54 @410 has 17 MA's), (114, 629),

Gene: Feyre\_2 Start: 275, Stop: 520, Start Num: 69

Candidate Starts for Feyre\_2:

(Start: 69 @275 has 39 MA's), (86, 347), (88, 353), (90, 359), (96, 395), (98, 407), (102, 428), (104, 434), (105, 446), (114, 491),

Gene: Fionnbharth\_2 Start: 251, Stop: 481, Start Num: 69

Candidate Starts for Fionnbharth\_2:

(Start: 69 @251 has 39 MA's), (71, 260), (94, 356), (98, 380), (99, 383), (100, 392), (107, 422), (118, 473),

Gene: Fishburne\_66 Start: 43028, Stop: 43282, Start Num: 61

Candidate Starts for Fishburne\_66:

(43, 42965), (Start: 61 @43028 has 29 MA's), (71, 43049), (77, 43064), (83, 43106), (88, 43124), (105, 43217), (108, 43232),

Gene: Ganymede\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for Ganymede\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (98, 593), (101, 611), (102, 614), (105, 632), (107, 644), (111, 656), (114, 677),

Gene: Gavriela\_67 Start: 43933, Stop: 44187, Start Num: 61

Candidate Starts for Gavriela\_67:

(43, 43870), (Start: 61 @43933 has 29 MA's), (71, 43954), (77, 43969), (83, 44011), (88, 44029), (105, 44122), (108, 44137),

Gene: Gengar\_2 Start: 300, Stop: 545, Start Num: 69

Candidate Starts for Gengar\_2:

(Start: 69 @300 has 39 MA's), (86, 372), (88, 378), (90, 384), (96, 420), (98, 432), (102, 453), (104, 459), (105, 471), (114, 516),

Gene: Geraldini\_3 Start: 473, Stop: 727, Start Num: 59

Candidate Starts for Geraldini\_3:

(20, 275), (33, 347), (Start: 59 @473 has 84 MA's), (73, 494), (81, 542), (88, 560), (90, 566), (98, 614), (101, 632), (102, 635), (105, 653), (111, 677), (114, 698),

Gene: Glaske\_67 Start: 44240, Stop: 44494, Start Num: 61

Candidate Starts for Glaske\_67:

(43, 44177), (Start: 61 @44240 has 29 MA's), (71, 44261), (77, 44276), (83, 44318), (88, 44336), (105, 44429), (108, 44444),

Gene: Guanica15\_3 Start: 445, Stop: 702, Start Num: 59

Candidate Starts for Guanica15\_3:

(33, 325), (Start: 59 @445 has 84 MA's), (73, 466), (79, 505), (88, 532), (90, 538), (95, 571), (98, 586), (101, 604), (102, 607), (105, 625), (114, 673),

Gene: Guillsminger\_2 Start: 275, Stop: 520, Start Num: 69

Candidate Starts for Guillsminger\_2:

(Start: 69 @275 has 39 MA's), (86, 347), (88, 353), (90, 359), (96, 395), (98, 407), (102, 428), (104, 434), (105, 446), (114, 491),

Gene: HUHilltop\_70 Start: 42869, Stop: 43123, Start Num: 61

Candidate Starts for HUHilltop\_70:

(30, 42728), (38, 42779), (Start: 61 @42869 has 29 MA's), (71, 42890), (77, 42905), (83, 42947), (88, 42965),

Gene: Hammy\_87 Start: 56908, Stop: 57165, Start Num: 68

Candidate Starts for Hammy\_87:

(Start: 68 @56908 has 7 MA's), (73, 56923), (78, 56953), (86, 56983), (88, 56989), (98, 57040), (99, 57043), (101, 57058), (111, 57100), (114, 57124), (116, 57133), (117, 57142), (119, 57148),

Gene: Hammy\_3 Start: 413, Stop: 670, Start Num: 54

Candidate Starts for Hammy\_3:

(Start: 54 @413 has 17 MA's), (86, 497), (114, 632),

Gene: HedwigODU\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for HedwigODU\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (81, 545), (88, 563), (90, 569), (98, 617), (101, 635), (102, 638), (105, 656), (107, 668), (111, 680), (114, 701),

Gene: Heftyboy\_2 Start: 296, Stop: 541, Start Num: 69

Candidate Starts for Heftyboy\_2:

(Start: 69 @296 has 39 MA's), (86, 368), (88, 374), (90, 380), (96, 416), (98, 428), (102, 449), (104, 455), (105, 467), (114, 512),

Gene: Homura\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Homura\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: Hurricane\_89 Start: 56085, Stop: 56348, Start Num: 65

Candidate Starts for Hurricane\_89:

(Start: 65 @56085 has 6 MA's), (77, 56115), (82, 56151), (84, 56157), (92, 56184), (96, 56208), (98, 56220), (103, 56244), (105, 56256), (111, 56280), (112, 56283), (114, 56307), (117, 56325),

Gene: Hyperbowlee\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Hyperbowlee\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: Illumine\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for Illumine\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (79, 512), (88, 539), (90, 545), (98, 593), (102, 614), (105, 632), (114, 677),

Gene: Inky\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Inky\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: InvictusManeo\_2 Start: 300, Stop: 545, Start Num: 69

Candidate Starts for InvictusManeo\_2:

(Start: 69 @300 has 39 MA's), (88, 378), (95, 417), (102, 453), (105, 471), (113, 501), (114, 516),

Gene: JAWS\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for JAWS\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (81, 545), (88, 563), (90, 569), (98, 617), (101, 635), (102, 638), (105, 656), (107, 668), (111, 680), (114, 701),

Gene: JF1\_2 Start: 251, Stop: 481, Start Num: 69

Candidate Starts for JF1\_2:

(Start: 69 @251 has 39 MA's), (71, 260), (94, 356), (98, 380), (99, 383), (100, 392), (107, 422), (118, 473),

Gene: Jarvi\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Jarvi\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: Jayhawk\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Jayhawk\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (81, 545), (88, 563), (90, 569), (98, 617), (101, 635), (102, 638), (105, 656), (107, 668), (111, 680), (114, 701),

Gene: Jeckyll\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Jeckyll\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: Joy99\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for Joy99\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (98, 593), (101, 611), (102, 614), (105, 632), (114, 677),

Gene: Juliette\_2 Start: 251, Stop: 481, Start Num: 69

Candidate Starts for Juliette\_2:

(Start: 69 @251 has 39 MA's), (71, 260), (94, 356), (98, 380), (99, 383), (100, 392), (107, 422), (118, 473),

Gene: Kari\_64 Start: 43025, Stop: 43279, Start Num: 61

Candidate Starts for Kari\_64:

(43, 42962), (Start: 61 @43025 has 29 MA's), (71, 43046), (77, 43061), (83, 43103), (88, 43121), (105, 43214), (108, 43229),

Gene: Keshu\_91 Start: 56377, Stop: 56640, Start Num: 65

Candidate Starts for Keshu\_91:

(Start: 65 @56377 has 6 MA's), (80, 56434), (85, 56455), (88, 56461), (93, 56482), (96, 56500), (103, 56536), (114, 56599), (117, 56617),

Gene: KiSi\_2 Start: 346, Stop: 612, Start Num: 53

Candidate Starts for KiSi\_2:

(4, 1), (22, 187), (Start: 53 @346 has 4 MA's), (99, 487), (105, 523), (108, 538),

Gene: KilKor\_68 Start: 44933, Stop: 45187, Start Num: 61

Candidate Starts for KilKor\_68:

(43, 44870), (Start: 61 @44933 has 29 MA's), (71, 44954), (77, 44969), (83, 45011), (88, 45029), (105, 45122), (108, 45137),

Gene: Kraw\_2 Start: 251, Stop: 481, Start Num: 69

Candidate Starts for Kraw\_2:

(Start: 69 @251 has 39 MA's), (71, 260), (94, 356), (98, 380), (99, 383), (100, 392), (107, 422), (118, 473),

Gene: Kropertea\_96 Start: 60883, Stop: 61203, Start Num: 60

Candidate Starts for Kropertea\_96:

(Start: 60 @60883 has 2 MA's), (Start: 62 @60886 has 2 MA's), (90, 60988), (95, 61018), (97, 61030), (99, 61036), (102, 61054), (115, 61123),

Gene: Krueger\_3 Start: 500, Stop: 760, Start Num: 54

Candidate Starts for Krueger\_3:

(Start: 54 @500 has 17 MA's), (86, 584), (99, 635), (114, 719),

Gene: LastHope\_3 Start: 447, Stop: 701, Start Num: 59

Candidate Starts for LastHope\_3:

(15, 225), (33, 321), (Start: 59 @447 has 84 MA's), (73, 468), (86, 528), (88, 534), (90, 540), (98, 588), (101, 606), (102, 609), (105, 627),

Gene: LaterM\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for LaterM\_3:

(12, 197), (15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (79, 512), (88, 539), (98, 593), (102, 614), (105, 632), (113, 662), (114, 677),

Gene: LeMond\_2 Start: 346, Stop: 612, Start Num: 53

Candidate Starts for LeMond\_2:

(4, 1), (22, 187), (Start: 53 @346 has 4 MA's), (99, 487), (105, 523), (108, 538),

Gene: Lea83\_90 Start: 56206, Stop: 56469, Start Num: 65

Candidate Starts for Lea83\_90:

(Start: 65 @56206 has 6 MA's), (71, 56221), (77, 56236), (82, 56272), (84, 56278), (92, 56305), (96, 56329), (97, 56338), (98, 56341), (103, 56365), (105, 56377), (111, 56401), (114, 56428), (117, 56446),

Gene: Lebo14\_2 Start: 251, Stop: 481, Start Num: 69

Candidate Starts for Lebo14\_2:

(Start: 69 @251 has 39 MA's), (94, 356), (95, 365), (98, 380), (99, 383), (100, 392), (107, 422), (118, 473),

Gene: Leston\_2 Start: 300, Stop: 545, Start Num: 69

Candidate Starts for Leston\_2:

(Start: 69 @300 has 39 MA's), (86, 372), (88, 378), (90, 384), (96, 420), (98, 432), (102, 453), (104, 459), (105, 471), (114, 516),

Gene: LindNT\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for LindNT\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (98, 593), (101, 611), (102, 614), (105, 632), (111, 656), (114, 677),

Gene: Llorens\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Llorens\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: Lunahalos\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Lunahalos\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: MacKat\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for MacKat\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (98, 593), (101, 611), (102, 614), (105, 632), (111, 656), (114, 677),

Gene: MacnCheese\_90 Start: 56613, Stop: 56876, Start Num: 65

Candidate Starts for MacnCheese\_90:

(35, 56478), (Start: 65 @56613 has 6 MA's), (77, 56643), (82, 56679), (84, 56685), (96, 56736), (98, 56748), (103, 56772), (105, 56784), (111, 56808), (114, 56835), (116, 56844), (117, 56853),

Gene: Majeke\_70 Start: 43651, Stop: 43905, Start Num: 61

Candidate Starts for Majeke\_70:

(38, 43561), (Start: 61 @43651 has 29 MA's), (71, 43672), (77, 43687), (83, 43729), (88, 43747), (105, 43840), (108, 43855),

Gene: Malithi\_67 Start: 42795, Stop: 43049, Start Num: 61

Candidate Starts for Malithi\_67:

(30, 42654), (38, 42705), (Start: 61 @42795 has 29 MA's), (71, 42816), (77, 42831), (83, 42873), (88, 42891),

Gene: Malthus\_2 Start: 251, Stop: 481, Start Num: 69

Candidate Starts for Malthus\_2:

(Start: 69 @251 has 39 MA's), (71, 260), (94, 356), (98, 380), (99, 383), (100, 392), (107, 422), (118, 473),

Gene: Mangethe\_70 Start: 43651, Stop: 43905, Start Num: 61

Candidate Starts for Mangethe\_70:

(38, 43561), (Start: 61 @43651 has 29 MA's), (71, 43672), (77, 43687), (83, 43729), (88, 43747), (105, 43840), (108, 43855),

Gene: MarkPhew\_2 Start: 323, Stop: 568, Start Num: 42

Candidate Starts for MarkPhew\_2:

(Start: 42 @323 has 2 MA's), (76, 359), (86, 410), (99, 461), (111, 521),

Gene: Marshawn\_2 Start: 329, Stop: 583, Start Num: 54

Candidate Starts for Marshawn\_2:

(17, 125), (22, 149), (Start: 54 @329 has 17 MA's), (70, 344), (73, 353), (99, 464), (114, 548),

Gene: McMater\_3 Start: 469, Stop: 732, Start Num: 67

Candidate Starts for McMater\_3:

(1, 1), (2, 7), (5, 91), (8, 154), (33, 331), (Start: 67 @469 has 4 MA's), (90, 556), (99, 607), (114, 691),

Gene: MeaningOfLife\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for MeaningOfLife\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (98, 593), (101, 611), (102, 614), (105, 632), (111, 656), (114, 677),

Gene: Megiddo\_67 Start: 44801, Stop: 45055, Start Num: 61

Candidate Starts for Megiddo\_67:

(43, 44738), (Start: 61 @44801 has 29 MA's), (71, 44822), (77, 44837), (83, 44879), (88, 44897), (105, 44990), (108, 45005),

Gene: Megsy\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for Megsy\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (98, 593), (101, 611), (102, 614), (105, 632), (111, 656), (114, 677),

Gene: Miryou\_2 Start: 275, Stop: 520, Start Num: 69

Candidate Starts for Miryou\_2:

(Start: 69 @275 has 39 MA's), (86, 347), (88, 353), (90, 359), (96, 395), (98, 407), (102, 428), (104, 434), (105, 446), (114, 491),

Gene: Mitti\_2 Start: 251, Stop: 481, Start Num: 69

Candidate Starts for Mitti\_2:

(Start: 69 @251 has 39 MA's), (94, 356), (95, 365), (98, 380), (99, 383), (100, 392), (107, 422), (118, 473),

Gene: Murucutumbu\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for Murucutumbu\_3:

(13, 206), (15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (97, 590), (98, 593), (101, 611), (102, 614), (105, 632), (111, 656), (114, 677),

Gene: Mynx\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for Mynx\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (95, 578), (98, 593), (101, 611), (102, 614), (105, 632), (111, 656), (114, 677),

Gene: Nazo\_70 Start: 44643, Stop: 44897, Start Num: 61

Candidate Starts for Nazo\_70:

(18, 44427), (19, 44436), (34, 44517), (43, 44583), (57, 44634), (Start: 61 @44643 has 29 MA's), (71, 44664), (83, 44721), (88, 44739), (108, 44847),

Gene: Necropolis\_65 Start: 42235, Stop: 42489, Start Num: 61

Candidate Starts for Necropolis\_65:

(30, 42094), (38, 42145), (Start: 61 @42235 has 29 MA's), (71, 42256), (77, 42271), (83, 42313), (88, 42331),

Gene: Nibb\_2 Start: 333, Stop: 605, Start Num: 44

Candidate Starts for Nibb\_2:

(Start: 44 @333 has 1 MA's), (78, 393), (105, 513), (107, 525), (112, 540),

Gene: Niklas\_3 Start: 469, Stop: 732, Start Num: 67

Candidate Starts for Niklas\_3:

(1, 1), (2, 7), (5, 91), (8, 154), (33, 331), (Start: 67 @469 has 4 MA's), (90, 556), (99, 607), (114, 691),

Gene: November\_3 Start: 424, Stop: 687, Start Num: 54

Candidate Starts for November\_3:

(Start: 54 @424 has 17 MA's), (86, 511), (102, 580), (114, 646),

Gene: OkiRoe\_2 Start: 275, Stop: 520, Start Num: 69

Candidate Starts for OkiRoe\_2:

(Start: 69 @275 has 39 MA's), (75, 293), (86, 347), (88, 353), (90, 359), (96, 395), (98, 407), (102, 428), (104, 434), (105, 446), (114, 491),

Gene: OmniCritical\_2 Start: 251, Stop: 481, Start Num: 69

Candidate Starts for OmniCritical\_2:

(Start: 69 @251 has 39 MA's), (94, 356), (95, 365), (98, 380), (99, 383), (100, 392), (107, 422), (118, 473),

Gene: Omnicron\_2 Start: 241, Stop: 486, Start Num: 69

Candidate Starts for Omnicron\_2:

(Start: 69 @241 has 39 MA's), (86, 313), (88, 319), (90, 325), (98, 373), (102, 394), (105, 412), (111, 436),

Gene: Oscar\_2 Start: 346, Stop: 612, Start Num: 53

Candidate Starts for Oscar\_2:

(Start: 53 @346 has 4 MA's), (99, 487), (105, 523), (108, 538),

Gene: PYPDinur\_101 Start: 61956, Stop: 62237, Start Num: 62

Candidate Starts for PYPDinur\_101:

(56, 61944), (Start: 60 @61953 has 2 MA's), (Start: 62 @61956 has 2 MA's), (97, 62100), (102, 62124), (111, 62166), (116, 62196),



Gene: Pace1224\_68 Start: 44266, Stop: 44490, Start Num: 63

Candidate Starts for Pace1224\_68:

(9, 43984), (14, 44005), (16, 44026), (25, 44077), (37, 44161), (49, 44233), (50, 44236), (Start: 63 @44266 has 2 MA's), (98, 44410),

Gene: Padfoot\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Padfoot\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: Padpat\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Padpat\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (81, 545), (88, 563), (90, 569), (98, 617), (101, 635), (102, 638), (105, 656), (107, 668), (111, 680), (114, 701),

Gene: Paito\_66 Start: 41579, Stop: 41797, Start Num: 68

Candidate Starts for Paito\_66:

(Start: 68 @41579 has 7 MA's), (88, 41660), (91, 41675), (98, 41717), (106, 41765), (110, 41777),

Gene: Paola\_2 Start: 275, Stop: 520, Start Num: 69

Candidate Starts for Paola\_2:

(Start: 69 @275 has 39 MA's), (86, 347), (88, 353), (90, 359), (96, 395), (98, 407), (102, 428), (104, 434), (105, 446), (114, 491),

Gene: Patt\_2 Start: 251, Stop: 481, Start Num: 69

Candidate Starts for Patt\_2:

(Start: 69 @251 has 39 MA's), (94, 356), (95, 365), (98, 380), (99, 383), (100, 392), (107, 422), (118, 473),

Gene: Peanam\_3 Start: 469, Stop: 732, Start Num: 67

Candidate Starts for Peanam\_3:

(33, 331), (Start: 67 @469 has 4 MA's), (90, 556), (99, 607), (114, 691),

Gene: Peel\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Peel\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: Phalm\_68 Start: 44231, Stop: 44485, Start Num: 61

Candidate Starts for Phalm\_68:

(43, 44168), (Start: 61 @44231 has 29 MA's), (71, 44252), (77, 44267), (83, 44309), (88, 44327), (105, 44420), (108, 44435),

Gene: Pharb\_89 Start: 56013, Stop: 56249, Start Num: 72

Candidate Starts for Pharb\_89:

(Start: 58 @56001 has 1 MA's), (Start: 72 @56013 has 1 MA's), (74, 56016), (87, 56079), (89, 56085), (97, 56124), (102, 56148), (108, 56181), (114, 56214),

Gene: Phegasus\_70 Start: 43618, Stop: 43872, Start Num: 61

Candidate Starts for Phegasus\_70:

(38, 43528), (Start: 61 @43618 has 29 MA's), (71, 43639), (77, 43654), (83, 43696), (88, 43714), (105, 43807), (108, 43822),

Gene: PhelpsODU\_2 Start: 389, Stop: 649, Start Num: 54

Candidate Starts for PhelpsODU\_2:

(26, 242), (Start: 54 @389 has 17 MA's),

Gene: Phineas\_68 Start: 43203, Stop: 43457, Start Num: 61

Candidate Starts for Phineas\_68:

(30, 43062), (38, 43113), (Start: 61 @43203 has 29 MA's), (71, 43224), (77, 43239), (83, 43281), (88, 43299),

Gene: Phrank\_2 Start: 394, Stop: 654, Start Num: 54

Candidate Starts for Phrank\_2:

(26, 247), (Start: 54 @394 has 17 MA's), (86, 478), (99, 529),

Gene: Piatt\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Piatt\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: Pixie\_88 Start: 55789, Stop: 56052, Start Num: 65

Candidate Starts for Pixie\_88:

(Start: 65 @55789 has 6 MA's), (77, 55819), (78, 55837), (82, 55855), (84, 55861), (92, 55888), (96, 55912), (97, 55921), (98, 55924), (103, 55948), (105, 55960), (111, 55984), (114, 56011), (117, 56029),

Gene: Pokerus\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for Pokerus\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (98, 593), (101, 611), (102, 614), (105, 632), (111, 656), (114, 677),

Gene: Prithvi\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for Prithvi\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (98, 593), (101, 611), (102, 614), (105, 632), (111, 656), (114, 677),

Gene: Psycho\_2 Start: 300, Stop: 545, Start Num: 69

Candidate Starts for Psycho\_2:

(Start: 69 @300 has 39 MA's), (86, 372), (88, 378), (90, 384), (96, 420), (98, 432), (102, 453), (104, 459), (105, 471),

Gene: Pygmy\_71 Start: 44585, Stop: 44839, Start Num: 61

Candidate Starts for Pygmy\_71:

(28, 44441), (32, 44450), (38, 44495), (Start: 61 @44585 has 29 MA's), (71, 44606), (77, 44621), (88, 44681), (108, 44789),

Gene: Quby\_101 Start: 61285, Stop: 61566, Start Num: 62

Candidate Starts for Quby\_101:

(56, 61273), (Start: 60 @61282 has 2 MA's), (Start: 62 @61285 has 2 MA's), (78, 61339), (97, 61429), (102, 61453), (111, 61495), (116, 61525),

Gene: QuincyRose\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for QuincyRose\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (98, 593), (101, 611), (102, 614), (105, 632), (107, 644), (111, 656), (114, 677),

Gene: Rabbs\_65 Start: 41915, Stop: 42166, Start Num: 64

Candidate Starts for Rabbs\_65:

(24, 41714), (29, 41762), (30, 41765), (45, 41867), (Start: 64 @41915 has 2 MA's), (73, 41936), (78, 41966), (86, 42002), (97, 42056),

Gene: Ramen\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Ramen\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (81, 545), (88, 563), (90, 569), (98, 617), (101, 635), (102, 638), (105, 656), (107, 668), (111, 680), (114, 701),

Gene: Rando14\_2 Start: 304, Stop: 549, Start Num: 69

Candidate Starts for Rando14\_2:

(Start: 69 @304 has 39 MA's), (73, 316), (88, 382), (90, 388), (98, 436), (102, 457), (105, 475), (108, 490), (113, 505), (116, 529),

Gene: Rapunzel97\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Rapunzel97\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (81, 545), (88, 563), (90, 569), (98, 617), (101, 635), (102, 638), (105, 656), (107, 668), (111, 680), (114, 701),

Gene: Reptar3000\_2 Start: 250, Stop: 480, Start Num: 69

Candidate Starts for Reptar3000\_2:

(Start: 69 @250 has 39 MA's), (94, 355), (95, 364), (98, 379), (99, 382), (100, 391), (107, 421), (118, 472), (120, 475),

Gene: Richo\_3 Start: 469, Stop: 732, Start Num: 67

Candidate Starts for Richo\_3:

(1, 1), (2, 7), (5, 91), (8, 154), (33, 331), (Start: 67 @469 has 4 MA's), (90, 556), (99, 607), (114, 691),

Gene: Rosmarinus\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Rosmarinus\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: Ruthiejr\_2 Start: 251, Stop: 481, Start Num: 69

Candidate Starts for Ruthiejr\_2:

(Start: 69 @251 has 39 MA's), (71, 260), (94, 356), (98, 380), (99, 383), (100, 392), (107, 422), (118, 473),

Gene: SamScheppers\_2 Start: 250, Stop: 480, Start Num: 69

Candidate Starts for SamScheppers\_2:

(Start: 69 @250 has 39 MA's), (94, 355), (95, 364), (98, 379), (99, 382), (100, 391), (107, 421), (118, 472),

Gene: SamuelLPlaqson\_3 Start: 440, Stop: 694, Start Num: 59

Candidate Starts for SamuelLPlaqson\_3:

(15, 215), (33, 314), (Start: 59 @440 has 84 MA's), (73, 461), (79, 500), (88, 527), (90, 533), (98, 581), (101, 599), (105, 620), (107, 632), (114, 665),

Gene: Sbash\_80 Start: 51476, Stop: 51787, Start Num: 41

Candidate Starts for Sbash\_80:

(Start: 41 @51476 has 1 MA's), (Start: 61 @51536 has 29 MA's), (Start: 68 @51545 has 7 MA's), (83, 51611), (88, 51629), (90, 51635), (105, 51722),

Gene: Scarlett\_2 Start: 346, Stop: 612, Start Num: 53

Candidate Starts for Scarlett\_2:

(22, 187), (Start: 53 @346 has 4 MA's), (99, 487), (105, 523), (108, 538),

Gene: Shadow1\_2 Start: 396, Stop: 665, Start Num: 54

Candidate Starts for Shadow1\_2:

(Start: 39 @330 has 1 MA's), (Start: 54 @396 has 17 MA's),

Gene: Shaobing\_3 Start: 469, Stop: 732, Start Num: 67

Candidate Starts for Shaobing\_3:

(1, 1), (2, 7), (5, 91), (8, 154), (33, 331), (Start: 67 @469 has 4 MA's), (90, 556), (99, 607), (114, 691),

Gene: ShedlockHolmes\_91 Start: 56212, Stop: 56475, Start Num: 65

Candidate Starts for ShedlockHolmes\_91:

(Start: 65 @56212 has 6 MA's), (77, 56242), (82, 56278), (84, 56284), (92, 56311), (96, 56335), (98, 56347), (103, 56371), (105, 56383), (111, 56407), (114, 56434), (117, 56452),

Gene: Sheng711\_102 Start: 61477, Stop: 61761, Start Num: 60

Candidate Starts for Sheng711\_102:

(56, 61468), (Start: 60 @61477 has 2 MA's), (Start: 62 @61480 has 2 MA's), (78, 61534), (97, 61624), (102, 61648), (111, 61690), (116, 61720),

Gene: ShiaSurprise\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for ShiaSurprise\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: Shipwreck\_70 Start: 44643, Stop: 44897, Start Num: 61

Candidate Starts for Shipwreck\_70:

(30, 44502), (38, 44553), (Start: 61 @44643 has 29 MA's), (71, 44664), (77, 44679), (83, 44721), (88, 44739),

Gene: SirPhilip\_3 Start: 468, Stop: 731, Start Num: 54

Candidate Starts for SirPhilip\_3:

(Start: 54 @468 has 17 MA's), (55, 471), (99, 606), (105, 642), (108, 657), (114, 690),

Gene: Slarp\_2 Start: 251, Stop: 481, Start Num: 69

Candidate Starts for Slarp\_2:

(Start: 69 @251 has 39 MA's), (94, 356), (95, 365), (98, 380), (99, 383), (100, 392), (107, 422), (118, 473),

Gene: Slimphazie\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Slimphazie\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (81, 545), (88, 563), (90, 569), (98, 617), (101, 635), (102, 638), (105, 656), (107, 668), (111, 680), (114, 701),

Gene: Sneeze\_64 Start: 41914, Stop: 42165, Start Num: 64

Candidate Starts for Sneeze\_64:

(24, 41713), (29, 41761), (30, 41764), (45, 41866), (Start: 64 @41914 has 2 MA's), (73, 41935), (78, 41965), (86, 42001), (97, 42055),

Gene: SoSeph\_2 Start: 296, Stop: 541, Start Num: 69

Candidate Starts for SoSeph\_2:

(Start: 69 @296 has 39 MA's), (86, 368), (88, 374), (90, 380), (96, 416), (98, 428), (102, 449), (104, 455), (105, 467), (114, 512),

Gene: Sonah\_68 Start: 42340, Stop: 42594, Start Num: 61

Candidate Starts for Sonah\_68:

(30, 42199), (38, 42250), (Start: 61 @42340 has 29 MA's), (71, 42361), (77, 42376), (83, 42418), (88, 42436),

Gene: Spock\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Spock\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: Stinson\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for Stinson\_3:

(12, 197), (15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (79, 512), (88, 539), (98, 593), (102, 614), (105, 632), (113, 662), (114, 677),

Gene: StressBall\_67 Start: 43933, Stop: 44187, Start Num: 61

Candidate Starts for StressBall\_67:

(43, 43870), (Start: 61 @43933 has 29 MA's), (71, 43954), (77, 43969), (83, 44011), (88, 44029), (105, 44122), (108, 44137),

Gene: Stuck\_78 Start: 50794, Stop: 51048, Start Num: 61

Candidate Starts for Stuck\_78:

(46, 50755), (Start: 61 @50794 has 29 MA's), (71, 50815), (77, 50830), (83, 50872), (88, 50890), (90, 50896), (105, 50983), (108, 50998),

Gene: Sulley\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Sulley\_3:

(21, 278), (33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (81, 545), (88, 563), (90, 569), (98, 617), (101, 635), (102, 638), (105, 656), (107, 668), (111, 680), (114, 701),

Gene: Sunflower1121\_2 Start: 329, Stop: 664, Start Num: 39

Candidate Starts for Sunflower1121\_2:

(Start: 39 @329 has 1 MA's), (Start: 54 @395 has 17 MA's),

Gene: Syra333\_3 Start: 509, Stop: 769, Start Num: 54

Candidate Starts for Syra333\_3:

(Start: 54 @509 has 17 MA's), (86, 593), (99, 644), (114, 728),

Gene: TBond007\_85 Start: 55787, Stop: 56050, Start Num: 65

Candidate Starts for TBond007\_85:

(Start: 65 @55787 has 6 MA's), (77, 55817), (78, 55835), (82, 55853), (84, 55859), (92, 55886), (96, 55910), (97, 55919), (98, 55922), (103, 55946), (105, 55958), (111, 55982), (114, 56009), (117, 56027),

Gene: TClif\_2 Start: 240, Stop: 494, Start Num: 69

Candidate Starts for TClif\_2:

(Start: 69 @240 has 39 MA's), (86, 318), (88, 324), (92, 339), (96, 363), (99, 378), (106, 420), (111, 435), (114, 453),

Gene: Tachez\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for Tachez\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (95, 578), (98, 593), (101, 611), (102, 614), (105, 632), (107, 644), (111, 656), (114, 677),

Gene: Taheera\_60 Start: 40724, Stop: 40945, Start Num: 63

Candidate Starts for Taheera\_60:

(Start: 63 @40724 has 2 MA's), (88, 40808), (91, 40823), (98, 40865), (110, 40925),

Gene: TaiwanKao\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for TaiwanKao\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (98, 593), (101, 611), (102, 614), (105, 632), (111, 656), (114, 677),

Gene: Taquito\_2 Start: 251, Stop: 481, Start Num: 69

Candidate Starts for Taquito\_2:

(Start: 69 @251 has 39 MA's), (94, 356), (95, 365), (98, 380), (99, 383), (100, 392), (107, 422), (118, 473),

Gene: Techage\_68 Start: 43134, Stop: 43388, Start Num: 61

Candidate Starts for Techage\_68:

(28, 42990), (32, 42999), (38, 43044), (Start: 61 @43134 has 29 MA's), (71, 43155), (77, 43170), (88, 43230), (108, 43338),

Gene: Terror\_60 Start: 40724, Stop: 40945, Start Num: 63

Candidate Starts for Terror\_60:

(Start: 63 @40724 has 2 MA's), (88, 40808), (91, 40823), (98, 40865), (110, 40925),

Gene: ThulaThula\_78 Start: 49203, Stop: 49487, Start Num: 66

Candidate Starts for ThulaThula\_78:

(Start: 66 @49203 has 1 MA's), (95, 49329), (114, 49431), (116, 49440),

Gene: Thyatira\_2 Start: 275, Stop: 520, Start Num: 69

Candidate Starts for Thyatira\_2:

(Start: 69 @275 has 39 MA's), (86, 347), (88, 353), (90, 359), (96, 395), (98, 407), (102, 428), (104, 434), (105, 446), (114, 491),

Gene: Tierra\_2 Start: 395, Stop: 655, Start Num: 54

Candidate Starts for Tierra\_2:

(26, 248), (Start: 54 @395 has 17 MA's), (86, 479), (99, 530),

Gene: TingHuaYa\_3 Start: 447, Stop: 701, Start Num: 59

Candidate Starts for TingHuaYa\_3:

(15, 225), (33, 321), (Start: 59 @447 has 84 MA's), (73, 468), (86, 528), (88, 534), (90, 540), (98, 588), (101, 606), (102, 609), (105, 627),

Gene: TiniBug\_3 Start: 440, Stop: 694, Start Num: 59

Candidate Starts for TiniBug\_3:

(15, 215), (33, 314), (Start: 59 @440 has 84 MA's), (73, 461), (79, 500), (88, 527), (90, 533), (98, 581), (101, 599), (105, 620), (107, 632), (114, 665),

Gene: Tiri\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for Tiri\_3:

(Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (95, 578), (98, 593), (101, 611), (102, 614), (105, 632), (107, 644), (111, 656), (114, 677),

Gene: Topper\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Topper\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: TreyKay\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for TreyKay\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (98, 593), (101, 611), (102, 614), (105, 632), (111, 656), (114, 677),

Gene: TribelTrouble\_91 Start: 58049, Stop: 58294, Start Num: 58

Candidate Starts for TribelTrouble\_91:

(Start: 58 @58049 has 1 MA's), (Start: 72 @58061 has 1 MA's), (87, 58124), (102, 58193), (108, 58226), (114, 58259),

Gene: TruffulaTree\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for TruffulaTree\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (101, 635), (102, 638), (105, 656), (107, 668), (111, 680), (114, 701),

Gene: Twitch\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Twitch\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (79, 536), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: Unicorn\_2 Start: 389, Stop: 649, Start Num: 54

Candidate Starts for Unicorn\_2:

(26, 242), (Start: 54 @389 has 17 MA's),

Gene: Urkel\_3 Start: 440, Stop: 694, Start Num: 59

Candidate Starts for Urkel\_3:

(15, 215), (33, 314), (Start: 59 @440 has 84 MA's), (73, 461), (79, 500), (88, 527), (90, 533), (98, 581), (101, 599), (105, 620), (107, 632), (114, 665),

Gene: Validus\_4 Start: 682, Stop: 942, Start Num: 52

Candidate Starts for Validus\_4:

(Start: 52 @682 has 1 MA's), (78, 736), (96, 802), (99, 817), (114, 901),

Gene: Veliki\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Veliki\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (81, 545), (88, 563), (90, 569), (98, 617), (102, 638), (105, 656), (111, 680), (114, 701),

Gene: Venti\_65 Start: 41542, Stop: 41796, Start Num: 61

Candidate Starts for Venti\_65:

(28, 41398), (32, 41407), (38, 41452), (Start: 61 @41542 has 29 MA's), (71, 41563), (77, 41578), (88, 41638), (108, 41746),

Gene: Waterfoul\_2 Start: 296, Stop: 541, Start Num: 69

Candidate Starts for Waterfoul\_2:

(Start: 69 @296 has 39 MA's), (86, 368), (88, 374), (90, 380), (96, 416), (98, 428), (102, 449), (104, 455), (105, 467), (114, 512),

Gene: Willsammy\_69 Start: 44417, Stop: 44671, Start Num: 61

Candidate Starts for Willsammy\_69:

(43, 44354), (Start: 61 @44417 has 29 MA's), (71, 44438), (77, 44453), (83, 44495), (88, 44513), (105, 44606), (108, 44621),

Gene: Wintermute\_2 Start: 250, Stop: 480, Start Num: 69

Candidate Starts for Wintermute\_2:

(Start: 69 @250 has 39 MA's), (71, 259), (94, 355), (98, 379), (99, 382), (100, 391), (107, 421), (118, 472),

Gene: Ximenita\_3 Start: 509, Stop: 769, Start Num: 54

Candidate Starts for Ximenita\_3:

(Start: 54 @509 has 17 MA's), (73, 533), (86, 593), (99, 644), (114, 728),

Gene: Y10\_02 Start: 251, Stop: 481, Start Num: 69

Candidate Starts for Y10\_02:

(Start: 69 @251 has 39 MA's), (71, 260), (94, 356), (98, 380), (99, 383), (100, 392), (107, 422), (118, 473),

Gene: Y2\_02 Start: 251, Stop: 481, Start Num: 69

Candidate Starts for Y2\_02:

(Start: 69 @251 has 39 MA's), (71, 260), (94, 356), (98, 380), (99, 383), (100, 392), (107, 422), (118, 473),

Gene: YoureAdopted\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for YoureAdopted\_3:

(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (98, 593), (101, 611), (102, 614), (105, 632), (111, 656), (114, 677),

Gene: Yuna\_3 Start: 525, Stop: 797, Start Num: 54

Candidate Starts for Yuna\_3:

(7, 201), (27, 378), (Start: 54 @525 has 17 MA's), (88, 627), (96, 657), (114, 756),

Gene: Yunkel11\_3 Start: 445, Stop: 702, Start Num: 59

Candidate Starts for Yunkel11\_3:

(33, 325), (Start: 59 @445 has 84 MA's), (73, 466), (79, 505), (88, 532), (90, 538), (95, 571), (98, 586), (101, 604), (102, 607), (105, 625), (114, 673),

Gene: Zabiza\_3 Start: 476, Stop: 730, Start Num: 59

Candidate Starts for Zabiza\_3:

(33, 350), (Start: 59 @476 has 84 MA's), (73, 497), (81, 545), (88, 563), (90, 569), (98, 617), (101, 635), (102, 638), (105, 656), (107, 668), (111, 680), (114, 701),

Gene: Zavala\_3 Start: 452, Stop: 706, Start Num: 59

Candidate Starts for Zavala\_3:



(15, 227), (33, 326), (Start: 59 @452 has 84 MA's), (73, 473), (81, 521), (88, 539), (90, 545), (98, 593),  
(101, 611), (102, 614), (105, 632), (107, 644), (111, 656), (114, 677),