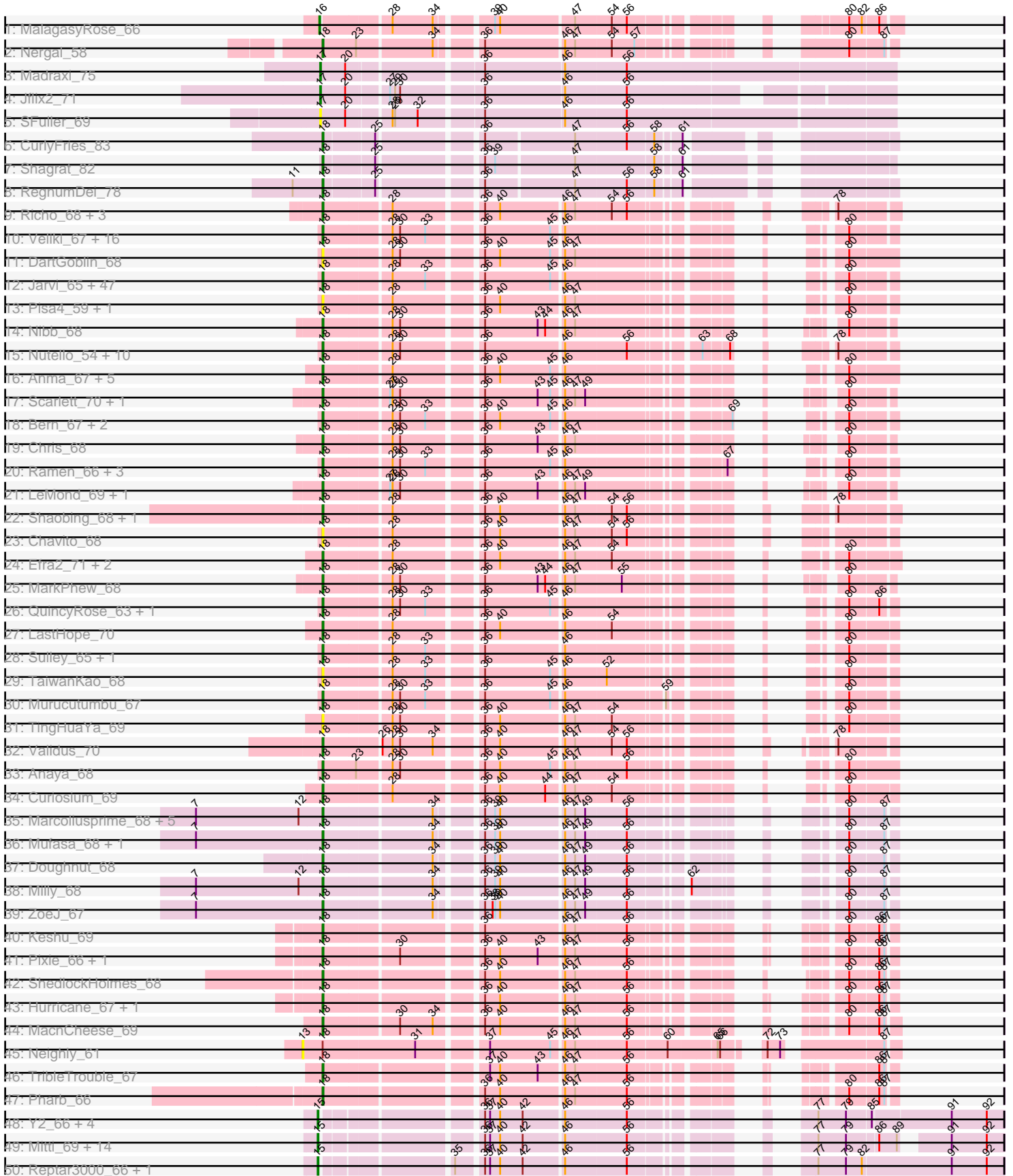


Pham 296230





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 296230 Report

This analysis was run 04/25/26 on database version 644.

Pham number 296230 has 230 members, 23 are drafts.

Phages represented in each track:

- Track 1 : MalagasyRose\_66
- Track 2 : Nergal\_58
- Track 3 : Madraxi\_75
- Track 4 : Jflix2\_71
- Track 5 : SFuller\_69
- Track 6 : CurlyFries\_83
- Track 7 : Shagrat\_82
- Track 8 : RegnumDei\_78
- Track 9 : Richo\_68, Dartin\_68, Niklas\_68, McMater\_68
- Track 10 : Veliki\_67, LaterM\_66, Apocalypse\_68, Stinson\_67, JAWS\_66, Ageofdapage\_69, Devera\_73, BarrelRoll\_66, Rapunzel97\_67, TruffulaTree\_66, Dole\_71, Slimphazie\_66, Deby\_66, Zavala\_68, Illumine\_71, Mynx\_67, MeaningOfLife\_66
- Track 11 : DartGoblin\_68
- Track 12 : Jarvi\_65, Tachez\_65, BGlluviae\_65, Inky\_65, Durfee\_65, Padpat\_68, Twitch\_65, CREW\_65, Adonis\_65, Emerson\_67, Blizzard\_65, LindNT\_65, Atiba\_66, CaseJules\_67, Adephagia\_65, Llorens\_65, Hyperbowlee\_65, Capricorn\_65, Asayake\_65, Homura\_65, Pokerus\_65, Clipper\_69, Spock\_65, Rosmarinus\_65, Megsy\_68, Lunahalos\_65, YoureAdopted\_65, Boiiii\_65, Piatt\_65, Joy99\_65, CrimD\_67, Tiri\_66, Peel\_65, Belladonna\_65, Beezoo\_67, Padfoot\_65, Topper\_65, Jayhawk\_67, Dalmuri\_65, ShiaSurprise\_66, CallaLilly\_65, TreyKay\_67, Jeckyll\_65, MacKat\_61, Prithvi\_67, AlishaPH\_65, Geraldini\_68, BEEEST\_65
- Track 13 : Pisa4\_59, Pisa1\_65
- Track 14 : Nibb\_68
- Track 15 : Nutello\_54, SgtBeansprout\_55, Torres\_57, Binglebops\_54, LilPharaoh\_55, Nikao\_57, Teejan\_56, Mdavu\_55, Enkosi\_56, Amelie\_54, Trice\_54
- Track 16 : Anma\_67, TiniBug\_66, Urkel\_66, Bella96\_66, DrHayes\_66, SamuelLPlaqson\_66
- Track 17 : Scarlett\_70, KiSi\_70
- Track 18 : Bern\_67, BaghaKamala\_65, CheetoDust\_65
- Track 19 : Chris\_68
- Track 20 : Ramen\_66, Zabiza\_60, ActinUp\_65, HedwigODU\_65
- Track 21 : LeMond\_69, Oscar\_69
- Track 22 : Shaobing\_68, Peanam\_68
- Track 23 : Chavito\_68
- Track 24 : Efra2\_71, Yunkel11\_70, Guanica15\_70
- Track 25 : MarkPhew\_68

- Track 26 : QuincyRose\_63, Ganymede\_65
- Track 27 : LastHope\_70
- Track 28 : Sulley\_65, Angelica\_65
- Track 29 : TaiwanKao\_68
- Track 30 : Murucutumbu\_67
- Track 31 : TingHuaYa\_69
- Track 32 : Validus\_70
- Track 33 : Anaya\_68
- Track 34 : Curiosium\_69
- Track 35 : Marcoliusprime\_68, DismalFunk\_68, TM4\_66, Findley\_68, DismalStressor\_68, Strobilo\_69
- Track 36 : Mufasa\_68, BoostSeason\_68
- Track 37 : Doughnut\_68
- Track 38 : Milly\_68
- Track 39 : ZoeJ\_67
- Track 40 : Keshu\_69
- Track 41 : Pixie\_66, TBond007\_63
- Track 42 : ShedlockHolmes\_68
- Track 43 : Hurricane\_67, Lea83\_67
- Track 44 : MacnCheese\_69
- Track 45 : Neighly\_61
- Track 46 : TribbleTrouble\_67
- Track 47 : Pharb\_66
- Track 48 : Y2\_66, Ruthiejr\_70, Y10\_66, YasnayaPolyana\_68, JF1\_69
- Track 49 : Mitti\_69, DanSyl44\_72, Eponine\_71, Cheetobro\_69, Malthus\_70, Taquito\_68, Juliette\_71, Slarp\_69, Fionnbharth\_69, Wintermute\_69, Qhanda\_71, Kraw\_69, SamScheppers\_67, Chancellor\_69, Lebo14\_68
- Track 50 : Reptar3000\_66, Bobquesha\_70
- Track 51 : MissDaisy\_66
- Track 52 : Patt\_65
- Track 53 : OmniCritical\_68
- Track 54 : Larva\_60
- Track 55 : SoSeph\_60, Heftyboy\_60, Waterfoul\_61
- Track 56 : OkiRoe\_60, Gengar\_59, Miryou\_63
- Track 57 : DoubleChamp\_56, Agent47\_59, BananenDer11\_56, Collard\_57, LilDirt\_56, Kratio\_57, InvictusManeo\_57, ViviJ\_58
- Track 58 : Dadosky\_61, Edugator\_58, AlleyCat\_61, Psycho\_59
- Track 59 : Feyre\_62
- Track 60 : Guillsminger\_60, Paola\_59, Leston\_59
- Track 61 : Omnicron\_63
- Track 62 : Rando14\_61
- Track 63 : Thyatira\_62
- Track 64 : Tigress9\_72
- Track 65 : Amgine\_64, Lavahound\_64
- Track 66 : Tierra\_69, Cain\_69, Phrank\_69, Bryler\_69
- Track 67 : Fefferhead\_63, Applecrisp\_62, Ellie\_61
- Track 68 : PhelpsODU\_67, Unicorn\_67
- Track 69 : Marshawn\_65
- Track 70 : Shadow1\_70, Sunflower1121\_71
- Track 71 : Hammy\_65, Amohnition\_65, DarthP\_65
- Track 72 : Ekdilam\_62
- Track 73 : Krueger\_70, Syra333\_69
- Track 74 : November\_63

- Track 75 : SirPhilip\_65
- Track 76 : Ximenita\_71
- Track 77 : Yuna\_70
- Track 78 : TClif\_67
- Track 79 : Aminay\_65
- Track 80 : Boilgate\_62
- Track 81 : GMA4\_41
- Track 82 : TinyDot\_45

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

The start number called the most often in the published annotations is 18, it was called in 178 of the 207 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp\_65, Adephegia\_65, Adonis\_65, Agent47\_59, Ageofdapage\_69, AlishaPH\_65, AlleyCat\_61, Amelie\_54, Amgine\_64, Amohnition\_65, Anaya\_68, Angelica\_65, Anma\_67, Apocalypse\_68, Applecrisp\_62, Asayake\_65, Atiba\_66, BEEST\_65, BGlluviae\_65, BaghaKamala\_65, BananenDer11\_56, BarrelRoll\_66, Beezoo\_67, Bella96\_66, Belladonna\_65, Bern\_67, Biglebops\_54, Blizzard\_65, Boiiii\_65, BoostSeason\_68, Bryler\_69, CREW\_65, Cain\_69, CallaLilly\_65, Capricorn\_65, CaseJules\_67, Chavito\_68, CheetoDust\_65, Chris\_68, Clipper\_69, Collard\_57, CrimD\_67, Curiosium\_69, CurlyFries\_83, Dadosky\_61, Dalmuri\_65, DartGoblin\_68, DarthP\_65, Dartin\_68, Deby\_66, Devera\_73, DismalFunk\_68, DismalStressor\_68, Dole\_71, DoubleChamp\_56, Doughnut\_68, DrHayes\_66, Durfee\_65, Edugator\_58, Efra2\_71, Ekdilam\_62, Ellie\_61, Emerson\_67, Enkosi\_56, Fefferhead\_63, Feyre\_62, Findley\_68, Ganymede\_65, Gengar\_59, Geraldini\_68, Guanica15\_70, Guillsminger\_60, Hammy\_65, HedwigODU\_65, Heftyboy\_60, Homura\_65, Hurricane\_67, Hyperbowlee\_65, Illumine\_71, Inky\_65, InvictusManeo\_57, JAWS\_66, Jarvi\_65, Jayhawk\_67, Jeckyll\_65, Joy99\_65, Keshu\_69, KiSi\_70, Kratio\_57, Krueger\_70, Larva\_60, LastHope\_70, LaterM\_66, Lavahound\_64, LeMond\_69, Lea83\_67, Leston\_59, LilDirt\_56, LilPharaoh\_55, LindNT\_65, Llorens\_65, Lunahalos\_65, MacKat\_61, MacnCheese\_69, Marcoliusprime\_68, MarkPhew\_68, Marshawn\_65, McMater\_68, Mdavu\_55, MeaningOfLife\_66, Megsy\_68, Milly\_68, Miryou\_63, Mufasa\_68, Murucutumbu\_67, Mynx\_67, Nergal\_58, Nibb\_68, Nikao\_57, Niklas\_68, November\_63, Nutello\_54, OkiRoe\_60, Oscar\_69, Padfoot\_65, Padpat\_68, Paola\_59, Peanam\_68, Peel\_65, Pharb\_66, PhelpsODU\_67, Phrank\_69, Piatt\_65, Pisa1\_65, Pisa4\_59, Pixie\_66, Pokerus\_65, Prithvi\_67, Psycho\_59, QuincyRose\_63, Ramen\_66, Rando14\_61, Rapunzel97\_67, RegnumDei\_78, Richo\_68, Rosmarinus\_65, SamuelLPlaqson\_66, Scarlett\_70, SgtBeansprout\_55, Shadow1\_70, Shagrat\_82, Shaobing\_68, ShedlockHolmes\_68, ShiaSurprise\_66, SirPhilip\_65, Slimphazie\_66, SoSeph\_60, Spock\_65, Stinson\_67, Strobilo\_69, Sulley\_65, Sunflower1121\_71, Syra333\_69, TBond007\_63, TClif\_67, TM4\_66, Tachez\_65, TaiwanKao\_68, Teejan\_56, Thyatira\_62, Tierra\_69, Tigress9\_72, TingHuaYa\_69, TiniBug\_66, Tiri\_66, Topper\_65, Torres\_57, TreyKay\_67, TripleTrouble\_67, Trice\_54, TruffulaTree\_66, Twitch\_65, Unicorn\_67, Urkel\_66, Validus\_70, Veliki\_67, ViviJ\_58, Waterfoul\_61, Ximenita\_71, YoureAdopted\_65, Yuna\_70, Yunkel11\_70, Zabiza\_60, Zavala\_68, ZoeJ\_67,

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

- Neighly\_61, Omnicron\_63,

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

- Aminay\_65, Bobquesha\_70, Boilgate\_62, Chancellor\_69, Cheetobro\_69, DanSyl44\_72, Eponine\_71, Fionnbharth\_69, GMA4\_41, JF1\_69, Jflix2\_71, Juliette\_71, Kraw\_69, Lebo14\_68, Madraxi\_75, MalagasyRose\_66, Malthus\_70, MissDaisy\_66, Mitti\_69, OmniCritical\_68, Patt\_65, Qhanda\_71, Reptar3000\_66, Ruthiejr\_70, SFuller\_69, SamScheppers\_67, Slarp\_69, Taquito\_68, TinyDot\_45, Wintermute\_69, Y10\_66, Y2\_66, YasnayaPolyana\_68,

### Summary by start number:

Start 13:

- Found in 27 of 230 ( 11.7% ) of genes in pham
- Manual Annotations of this start: 1 of 207
- Called 7.4% of time when present
- Phage (with cluster) where this start called: Neighly\_61 (K3), Omnicron\_63 (K5),

Start 14:

- Found in 1 of 230 ( 0.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA4\_41 (singleton),

Start 15:

- Found in 26 of 230 ( 11.3% ) of genes in pham
- Manual Annotations of this start: 23 of 207
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bobquesha\_70 (K4), Boilgate\_62 (K8), Chancellor\_69 (K4), Cheetobro\_69 (K4), DanSyl44\_72 (K4), Eponine\_71 (K4), Fionnbharth\_69 (K4), JF1\_69 (K4), Juliette\_71 (K4), Kraw\_69 (K4), Lebo14\_68 (K4), Malthus\_70 (K4), MissDaisy\_66 (K4), Mitti\_69 (K4), Patt\_65 (K4), Qhanda\_71 (K4), Reptar3000\_66 (K4), Ruthiejr\_70 (K4), SamScheppers\_67 (K4), Slarp\_69 (K4), Taquito\_68 (K4), TinyDot\_45 (singleton), Wintermute\_69 (K4), Y10\_66 (K4), Y2\_66 (K4), YasnayaPolyana\_68 (K4),

Start 16:

- Found in 2 of 230 ( 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: MalagasyRose\_66 (AG), OmniCritical\_68 (K4),

Start 17:

- Found in 4 of 230 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 3 of 207
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aminay\_65 (K7), Jflix2\_71 (CF), Madraxi\_75 (CF), SFuller\_69 (CF),

Start 18:

- Found in 197 of 230 ( 85.7% ) of genes in pham

- Manual Annotations of this start: 178 of 207
- Called 99.0% of time when present
- Phage (with cluster) where this start called: ActinUp\_65 (K1), Adephagia\_65 (K1), Adonis\_65 (K1), Agent47\_59 (K5), Ageofdapage\_69 (K1), AlishaPH\_65 (K1), AlleyCat\_61 (K5), Amelie\_54 (K1), Amgine\_64 (K6), Amohnition\_65 (K6), Anaya\_68 (K1), Angelica\_65 (K1), Anma\_67 (K1), Apocalypse\_68 (K1), Applecrisp\_62 (K6), Asayake\_65 (K1), Atiba\_66 (K1), BEEST\_65 (K1), BGIlluviae\_65 (K1), BaghaKamala\_65 (K1), BananenDer11\_56 (K5), BarrelRoll\_66 (K1), Beezoo\_67 (K1), Bella96\_66 (K1), Belladonna\_65 (K1), Bern\_67 (K1), Binglebops\_54 (K1), Blizzard\_65 (K1), Boiiii\_65 (K1), BoostSeason\_68 (K2), Bryler\_69 (K6), CREW\_65 (K1), Cain\_69 (K6), CallaLilly\_65 (K1), Capricorn\_65 (K1), CaseJules\_67 (K1), Chavito\_68 (K1), CheetoDust\_65 (K1), Chris\_68 (K1), Clipper\_69 (K1), Collard\_57 (K5), CrimD\_67 (K1), Curiosium\_69 (K1), CurlyFries\_83 (CF), Dadosky\_61 (K5), Dalmuri\_65 (K1), DartGoblin\_68 (K1), DarthP\_65 (K6), Dartin\_68 (K1), Deby\_66 (K1), Devera\_73 (K1), DismalFunk\_68 (K2), DismalStressor\_68 (K2), Dole\_71 (K1), DoubleChamp\_56 (K5), Doughnut\_68 (K2), DrHayes\_66 (K1), Durfee\_65 (K1), Edugator\_58 (K5), Efra2\_71 (K1), Ekdilam\_62 (K6), Ellie\_61 (K6), Emerson\_67 (K1), Enkosi\_56 (K1), Fefferhead\_63 (K6), Feyre\_62 (K5), Findley\_68 (K2), Ganymede\_65 (K1), Gengar\_59 (K5), Geraldini\_68 (K1), Guanica15\_70 (K1), Guillsminger\_60 (K5), Hammy\_65 (K6), HedwigODU\_65 (K1), Heftyboy\_60 (K5), Homura\_65 (K1), Hurricane\_67 (K3), Hyperbowlee\_65 (K1), Illumine\_71 (K1), Inky\_65 (K1), InvictusManeo\_57 (K5), JAWS\_66 (K1), Jarvi\_65 (K1), Jayhawk\_67 (K1), Jeckyll\_65 (K1), Joy99\_65 (K1), Keshu\_69 (K3), KiSi\_70 (K1), Kratio\_57 (K5), Krueger\_70 (K6), Larva\_60 (K5), LastHope\_70 (K1), LaterM\_66 (K1), Lavahound\_64 (K6), LeMond\_69 (K1), Lea83\_67 (K3), Leston\_59 (K5), LilDirt\_56 (K5), LilPharaoh\_55 (K1), LindNT\_65 (K1), Llorens\_65 (K1), Lunahalos\_65 (K1), MacKat\_61 (K1), MacnCheese\_69 (K3), Marcoliusprime\_68 (K2), MarkPhew\_68 (K1), Marshawn\_65 (K6), McMater\_68 (K1), Mdavu\_55 (K1), MeaningOfLife\_66 (K1), Megsy\_68 (K1), Milly\_68 (K2), Miryou\_63 (K5), Mufasa\_68 (K2), Murucutumbu\_67 (K1), Mynx\_67 (K1), Nergal\_58 (AG), Nibb\_68 (K1), Nikao\_57 (K1), Niklas\_68 (K1), November\_63 (K6), Nutello\_54 (K1), OkiRoe\_60 (K5), Oscar\_69 (K1), Padfoot\_65 (K1), Padpat\_68 (K1), Paola\_59 (K5), Peanam\_68 (K1), Peel\_65 (K1), Pharb\_66 (K3), PhelpsODU\_67 (K6), Phrank\_69 (K6), Piatt\_65 (K1), Pisa1\_65 (K1), Pisa4\_59 (K1), Pixie\_66 (K3), Pokerus\_65 (K1), Prithvi\_67 (K1), Psycho\_59 (K5), QuincyRose\_63 (K1), Ramen\_66 (K1), Rando14\_61 (K5), Rapunzel97\_67 (K1), RegnumDei\_78 (CF), Richo\_68 (K1), Rosmarinus\_65 (K1), SamuelLPlaqson\_66 (K1), Scarlett\_70 (K1), SgtBeansprout\_55 (K1), Shadow1\_70 (K6), Shagrat\_82 (CF), Shaobing\_68 (K1), ShedlockHolmes\_68 (K3), ShiaSurprise\_66 (K1), SirPhilip\_65 (K6), Slimphazie\_66 (K1), SoSeph\_60 (K5), Spock\_65 (K1), Stinson\_67 (K1), Strobilo\_69 (K2), Sulley\_65 (K1), Sunflower1121\_71 (K6), Syra333\_69 (K6), TBond007\_63 (K3), TClif\_67 (K6), TM4\_66 (K2), Tachez\_65 (K1), TaiwanKao\_68 (K1), Teejan\_56 (K1), Thyatira\_62 (K5), Tierra\_69 (K6), Tigress9\_72 (K6), TingHuaYa\_69 (K1), TiniBug\_66 (K1), Tiri\_66 (K1), Topper\_65 (K1), Torres\_57 (K1), TreyKay\_67 (K1), TribbleTrouble\_67 (K3), Trice\_54 (K1), TruffulaTree\_66 (K1), Twitch\_65 (K1), Unicorn\_67 (K6), Urkel\_66 (K1), Validus\_70 (K1), Veliki\_67 (K1), ViviJ\_58 (K5), Waterfoul\_61 (K5), Ximenita\_71 (K6), YoureAdopted\_65 (K1), Yuna\_70 (K6), Yunkel11\_70 (K1), Zabiza\_60 (K1), Zavala\_68 (K1), ZoeJ\_67 (K2),

### Summary by clusters:

There are 11 clusters represented in this pham: singleton, AG, CF, K3, K2, K1, K7, K6, K5, K4, K8,

Info for manual annotations of cluster AG:

- Start number 16 was manually annotated 1 time for cluster AG.
- Start number 18 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster CF:

- Start number 17 was manually annotated 2 times for cluster CF.
- Start number 18 was manually annotated 3 times for cluster CF.

Info for manual annotations of cluster K1:

- Start number 18 was manually annotated 108 times for cluster K1.

Info for manual annotations of cluster K2:

- Start number 18 was manually annotated 11 times for cluster K2.

Info for manual annotations of cluster K3:

- Start number 18 was manually annotated 9 times for cluster K3.

Info for manual annotations of cluster K4:

- Start number 15 was manually annotated 21 times for cluster K4.
- Start number 16 was manually annotated 1 time for cluster K4.

Info for manual annotations of cluster K5:

- Start number 13 was manually annotated 1 time for cluster K5.
- Start number 18 was manually annotated 22 times for cluster K5.

Info for manual annotations of cluster K6:

- Start number 18 was manually annotated 24 times for cluster K6.

Info for manual annotations of cluster K7:

- Start number 17 was manually annotated 1 time for cluster K7.

Info for manual annotations of cluster K8:

- Start number 15 was manually annotated 1 time for cluster K8.

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

Gene: ActinUp\_65 Start: 42856, Stop: 43365, Start Num: 18

Candidate Starts for ActinUp\_65:

(Start: 18 @42856 has 178 MA's), (28, 42931), (30, 42940), (33, 42970), (36, 43024), (45, 43102), (46, 43114), (67, 43273), (80, 43315),

Gene: Adephagia\_65 Start: 42893, Stop: 43402, Start Num: 18

Candidate Starts for Adephagia\_65:

(Start: 18 @42893 has 178 MA's), (28, 42968), (33, 43007), (36, 43061), (45, 43139), (46, 43151), (80, 43352),

Gene: Adonis\_65 Start: 43128, Stop: 43637, Start Num: 18

Candidate Starts for Adonis\_65:

(Start: 18 @43128 has 178 MA's), (28, 43203), (33, 43242), (36, 43296), (45, 43374), (46, 43386), (80, 43587),

Gene: Agent47\_59 Start: 40081, Stop: 40656, Start Num: 18

Candidate Starts for Agent47\_59:

(Start: 13 @40057 has 1 MA's), (Start: 18 @40081 has 178 MA's), (31, 40189), (37, 40261), (41, 40285), (45, 40333), (46, 40345), (49, 40369), (56, 40417), (60, 40462), (73, 40552), (87, 40645),

Gene: Ageofdapage\_69 Start: 44287, Stop: 44796, Start Num: 18

Candidate Starts for Ageofdapage\_69:

(Start: 18 @44287 has 178 MA's), (28, 44362), (30, 44371), (33, 44401), (36, 44455), (45, 44533), (46, 44545), (80, 44746),

Gene: AlishaPH\_65 Start: 43154, Stop: 43663, Start Num: 18

Candidate Starts for AlishaPH\_65:

(Start: 18 @43154 has 178 MA's), (28, 43229), (33, 43268), (36, 43322), (45, 43400), (46, 43412), (80, 43613),

Gene: AlleyCat\_61 Start: 40379, Stop: 40972, Start Num: 18

Candidate Starts for AlleyCat\_61:

(Start: 13 @40355 has 1 MA's), (Start: 18 @40379 has 178 MA's), (31, 40487), (37, 40559), (41, 40583), (45, 40631), (46, 40643), (47, 40655), (56, 40715), (60, 40760), (65, 40814), (66, 40817), (72, 40844), (73, 40859), (87, 40958),

Gene: Amelie\_54 Start: 40324, Stop: 40845, Start Num: 18

Candidate Starts for Amelie\_54:

(Start: 18 @40324 has 178 MA's), (28, 40399), (30, 40408), (36, 40492), (46, 40582), (56, 40654), (63, 40717), (68, 40744), (78, 40783),

Gene: Amgine\_64 Start: 43961, Stop: 44473, Start Num: 18

Candidate Starts for Amgine\_64:

(8, 43832), (Start: 18 @43961 has 178 MA's), (28, 44036), (30, 44045), (36, 44129), (37, 44135), (40, 44147), (46, 44219), (47, 44231), (56, 44291), (80, 44426), (81, 44438),

Gene: Aminay\_65 Start: 42473, Stop: 43045, Start Num: 17

Candidate Starts for Aminay\_65:

(Start: 17 @42473 has 3 MA's), (35, 42614), (36, 42641), (40, 42659), (46, 42731), (54, 42785), (77, 42932), (80, 42959),

Gene: Amohnition\_65 Start: 43500, Stop: 44012, Start Num: 18

Candidate Starts for Amohnition\_65:

(4, 43323), (6, 43332), (Start: 18 @43500 has 178 MA's), (28, 43575), (30, 43584), (36, 43668), (40, 43686), (46, 43758), (47, 43770), (56, 43830), (80, 43962), (87, 44001),

Gene: Anaya\_68 Start: 43839, Stop: 44357, Start Num: 18

Candidate Starts for Anaya\_68:

(Start: 18 @43839 has 178 MA's), (23, 43878), (28, 43914), (30, 43923), (36, 44007), (40, 44025), (45, 44085), (46, 44097), (47, 44109), (56, 44169), (80, 44301),

Gene: Angelica\_65 Start: 43046, Stop: 43555, Start Num: 18

Candidate Starts for Angelica\_65:

(Start: 18 @43046 has 178 MA's), (28, 43121), (33, 43160), (36, 43214), (46, 43304), (80, 43505),

Gene: Anma\_67 Start: 43745, Stop: 44260, Start Num: 18

Candidate Starts for Anma\_67:

(Start: 18 @43745 has 178 MA's), (28, 43820), (36, 43913), (40, 43931), (45, 43991), (46, 44003), (80, 44204),

Gene: Apocalypse\_68 Start: 43810, Stop: 44319, Start Num: 18

Candidate Starts for Apocalypse\_68:

(Start: 18 @43810 has 178 MA's), (28, 43885), (30, 43894), (33, 43924), (36, 43978), (45, 44056), (46, 44068), (80, 44269),

Gene: Applecrisp\_62 Start: 43091, Stop: 43603, Start Num: 18

Candidate Starts for Applecrisp\_62:

(Start: 18 @43091 has 178 MA's), (28, 43166), (30, 43175), (36, 43259), (37, 43265), (40, 43277), (46, 43349), (47, 43361), (56, 43421), (80, 43556), (81, 43568),

Gene: Asayake\_65 Start: 43208, Stop: 43717, Start Num: 18

Candidate Starts for Asayake\_65:

(Start: 18 @43208 has 178 MA's), (28, 43283), (33, 43322), (36, 43376), (45, 43454), (46, 43466), (80, 43667),

Gene: Atiba\_66 Start: 42856, Stop: 43365, Start Num: 18

Candidate Starts for Atiba\_66:

(Start: 18 @42856 has 178 MA's), (28, 42931), (33, 42970), (36, 43024), (45, 43102), (46, 43114), (80, 43315),

Gene: BEEST\_65 Start: 43208, Stop: 43717, Start Num: 18

Candidate Starts for BEEST\_65:

(Start: 18 @43208 has 178 MA's), (28, 43283), (33, 43322), (36, 43376), (45, 43454), (46, 43466), (80, 43667),

Gene: BGlluviae\_65 Start: 43011, Stop: 43520, Start Num: 18

Candidate Starts for BGlluviae\_65:

(Start: 18 @43011 has 178 MA's), (28, 43086), (33, 43125), (36, 43179), (45, 43257), (46, 43269), (80, 43470),

Gene: BaghaKamala\_65 Start: 42675, Stop: 43184, Start Num: 18

Candidate Starts for BaghaKamala\_65:

(Start: 18 @42675 has 178 MA's), (28, 42750), (30, 42759), (33, 42789), (36, 42843), (40, 42861), (45, 42921), (46, 42933), (69, 43098), (80, 43134),

Gene: BananenDer11\_56 Start: 40042, Stop: 40617, Start Num: 18

Candidate Starts for BananenDer11\_56:

(Start: 13 @40018 has 1 MA's), (Start: 18 @40042 has 178 MA's), (31, 40150), (37, 40222), (41, 40246), (45, 40294), (46, 40306), (49, 40330), (56, 40378), (60, 40423), (73, 40513), (87, 40606),

Gene: BarrelRoll\_66 Start: 43294, Stop: 43803, Start Num: 18

Candidate Starts for BarrelRoll\_66:

(Start: 18 @43294 has 178 MA's), (28, 43369), (30, 43378), (33, 43408), (36, 43462), (45, 43540), (46, 43552), (80, 43753),

Gene: Beezoo\_67 Start: 43806, Stop: 44315, Start Num: 18

Candidate Starts for Beezoo\_67:

(Start: 18 @43806 has 178 MA's), (28, 43881), (33, 43920), (36, 43974), (45, 44052), (46, 44064), (80, 44265),

Gene: Bella96\_66 Start: 43591, Stop: 44106, Start Num: 18  
Candidate Starts for Bella96\_66:  
(Start: 18 @43591 has 178 MA's), (28, 43666), (36, 43759), (40, 43777), (45, 43837), (46, 43849), (80, 44050),

Gene: Belladonna\_65 Start: 43011, Stop: 43520, Start Num: 18  
Candidate Starts for Belladonna\_65:  
(Start: 18 @43011 has 178 MA's), (28, 43086), (33, 43125), (36, 43179), (45, 43257), (46, 43269), (80, 43470),

Gene: Bern\_67 Start: 42268, Stop: 42777, Start Num: 18  
Candidate Starts for Bern\_67:  
(Start: 18 @42268 has 178 MA's), (28, 42343), (30, 42352), (33, 42382), (36, 42436), (40, 42454), (45, 42514), (46, 42526), (69, 42691), (80, 42727),

Gene: Biglebops\_54 Start: 40324, Stop: 40845, Start Num: 18  
Candidate Starts for Biglebops\_54:  
(Start: 18 @40324 has 178 MA's), (28, 40399), (30, 40408), (36, 40492), (46, 40582), (56, 40654), (63, 40717), (68, 40744), (78, 40783),

Gene: Blizzard\_65 Start: 43208, Stop: 43717, Start Num: 18  
Candidate Starts for Blizzard\_65:  
(Start: 18 @43208 has 178 MA's), (28, 43283), (33, 43322), (36, 43376), (45, 43454), (46, 43466), (80, 43667),

Gene: Bobquesha\_70 Start: 41491, Stop: 42162, Start Num: 15  
Candidate Starts for Bobquesha\_70:  
(Start: 15 @41491 has 23 MA's), (35, 41626), (36, 41653), (37, 41659), (40, 41671), (42, 41698), (46, 41743), (56, 41815), (77, 41944), (79, 41977), (82, 41995), (91, 42100), (92, 42142),

Gene: Boiiii\_65 Start: 43210, Stop: 43719, Start Num: 18  
Candidate Starts for Boiiii\_65:  
(Start: 18 @43210 has 178 MA's), (28, 43285), (33, 43324), (36, 43378), (45, 43456), (46, 43468), (80, 43669),

Gene: Boilgate\_62 Start: 44590, Stop: 45171, Start Num: 15  
Candidate Starts for Boilgate\_62:  
(Start: 15 @44590 has 23 MA's), (36, 44755), (42, 44800), (44, 44827), (46, 44845), (50, 44875), (51, 44884), (83, 45094),

Gene: BoostSeason\_68 Start: 45062, Stop: 45580, Start Num: 18  
Candidate Starts for BoostSeason\_68:  
(7, 44912), (Start: 18 @45062 has 178 MA's), (34, 45185), (36, 45227), (39, 45239), (40, 45245), (46, 45317), (47, 45329), (49, 45341), (56, 45389), (80, 45530), (87, 45569),

Gene: Bryler\_69 Start: 42843, Stop: 43361, Start Num: 18  
Candidate Starts for Bryler\_69:  
(3, 42663), (10, 42729), (Start: 18 @42843 has 178 MA's), (28, 42918), (34, 42966), (36, 43011), (40, 43029), (46, 43101), (56, 43173), (80, 43311), (86, 43344), (87, 43350),

Gene: CREW\_65 Start: 43011, Stop: 43520, Start Num: 18  
Candidate Starts for CREW\_65:

(Start: 18 @43011 has 178 MA's), (28, 43086), (33, 43125), (36, 43179), (45, 43257), (46, 43269), (80, 43470),

Gene: Cain\_69 Start: 42831, Stop: 43349, Start Num: 18

Candidate Starts for Cain\_69:

(3, 42651), (10, 42717), (Start: 18 @42831 has 178 MA's), (28, 42906), (34, 42954), (36, 42999), (40, 43017), (46, 43089), (56, 43161), (80, 43299), (86, 43332), (87, 43338),

Gene: CallaLilly\_65 Start: 42934, Stop: 43443, Start Num: 18

Candidate Starts for CallaLilly\_65:

(Start: 18 @42934 has 178 MA's), (28, 43009), (33, 43048), (36, 43102), (45, 43180), (46, 43192), (80, 43393),

Gene: Capricorn\_65 Start: 43011, Stop: 43520, Start Num: 18

Candidate Starts for Capricorn\_65:

(Start: 18 @43011 has 178 MA's), (28, 43086), (33, 43125), (36, 43179), (45, 43257), (46, 43269), (80, 43470),

Gene: CaseJules\_67 Start: 43208, Stop: 43717, Start Num: 18

Candidate Starts for CaseJules\_67:

(Start: 18 @43208 has 178 MA's), (28, 43283), (33, 43322), (36, 43376), (45, 43454), (46, 43466), (80, 43667),

Gene: Chancellor\_69 Start: 42601, Stop: 43269, Start Num: 15

Candidate Starts for Chancellor\_69:

(Start: 15 @42601 has 23 MA's), (36, 42763), (37, 42769), (40, 42781), (42, 42808), (46, 42853), (56, 42925), (77, 43054), (79, 43087), (86, 43120), (89, 43141), (91, 43207), (92, 43249),

Gene: Chavito\_68 Start: 44040, Stop: 44564, Start Num: 18

Candidate Starts for Chavito\_68:

(Start: 18 @44040 has 178 MA's), (28, 44115), (36, 44208), (40, 44226), (46, 44298), (47, 44310), (54, 44352), (56, 44370),

Gene: CheetoDust\_65 Start: 42722, Stop: 43231, Start Num: 18

Candidate Starts for CheetoDust\_65:

(Start: 18 @42722 has 178 MA's), (28, 42797), (30, 42806), (33, 42836), (36, 42890), (40, 42908), (45, 42968), (46, 42980), (69, 43145), (80, 43181),

Gene: Cheetobro\_69 Start: 42598, Stop: 43266, Start Num: 15

Candidate Starts for Cheetobro\_69:

(Start: 15 @42598 has 23 MA's), (36, 42760), (37, 42766), (40, 42778), (42, 42805), (46, 42850), (56, 42922), (77, 43051), (79, 43084), (86, 43117), (89, 43138), (91, 43204), (92, 43246),

Gene: Chris\_68 Start: 44067, Stop: 44573, Start Num: 18

Candidate Starts for Chris\_68:

(Start: 18 @44067 has 178 MA's), (28, 44142), (30, 44151), (36, 44235), (43, 44298), (46, 44325), (47, 44337), (80, 44526),

Gene: Clipper\_69 Start: 43910, Stop: 44419, Start Num: 18

Candidate Starts for Clipper\_69:

(Start: 18 @43910 has 178 MA's), (28, 43985), (33, 44024), (36, 44078), (45, 44156), (46, 44168), (80, 44369),

Gene: Collard\_57 Start: 40042, Stop: 40617, Start Num: 18

Candidate Starts for Collard\_57:

(Start: 13 @40018 has 1 MA's), (Start: 18 @40042 has 178 MA's), (31, 40150), (37, 40222), (41, 40246), (45, 40294), (46, 40306), (49, 40330), (56, 40378), (60, 40423), (73, 40513), (87, 40606),

Gene: CrimD\_67 Start: 43833, Stop: 44342, Start Num: 18

Candidate Starts for CrimD\_67:

(Start: 18 @43833 has 178 MA's), (28, 43908), (33, 43947), (36, 44001), (45, 44079), (46, 44091), (80, 44292),

Gene: Curiosium\_69 Start: 42524, Stop: 43036, Start Num: 18

Candidate Starts for Curiosium\_69:

(Start: 18 @42524 has 178 MA's), (28, 42599), (36, 42692), (40, 42710), (44, 42764), (46, 42782), (47, 42794), (54, 42836), (80, 42983),

Gene: CurlyFries\_83 Start: 45467, Stop: 46030, Start Num: 18

Candidate Starts for CurlyFries\_83:

(Start: 18 @45467 has 178 MA's), (25, 45521), (36, 45629), (47, 45731), (56, 45791), (58, 45821), (61, 45845),

Gene: Dadosky\_61 Start: 40381, Stop: 40974, Start Num: 18

Candidate Starts for Dadosky\_61:

(Start: 13 @40357 has 1 MA's), (Start: 18 @40381 has 178 MA's), (31, 40489), (37, 40561), (41, 40585), (45, 40633), (46, 40645), (47, 40657), (56, 40717), (60, 40762), (65, 40816), (66, 40819), (72, 40846), (73, 40861), (87, 40960),

Gene: Dalmuri\_65 Start: 43011, Stop: 43520, Start Num: 18

Candidate Starts for Dalmuri\_65:

(Start: 18 @43011 has 178 MA's), (28, 43086), (33, 43125), (36, 43179), (45, 43257), (46, 43269), (80, 43470),

Gene: DanSyl44\_72 Start: 43792, Stop: 44460, Start Num: 15

Candidate Starts for DanSyl44\_72:

(Start: 15 @43792 has 23 MA's), (36, 43954), (37, 43960), (40, 43972), (42, 43999), (46, 44044), (56, 44116), (77, 44245), (79, 44278), (86, 44311), (89, 44332), (91, 44398), (92, 44440),

Gene: DartGoblin\_68 Start: 43563, Stop: 44078, Start Num: 18

Candidate Starts for DartGoblin\_68:

(Start: 18 @43563 has 178 MA's), (28, 43638), (30, 43647), (36, 43731), (40, 43749), (45, 43809), (46, 43821), (47, 43833), (80, 44022),

Gene: DarthP\_65 Start: 43354, Stop: 43866, Start Num: 18

Candidate Starts for DarthP\_65:

(4, 43177), (6, 43186), (Start: 18 @43354 has 178 MA's), (28, 43429), (30, 43438), (36, 43522), (40, 43540), (46, 43612), (47, 43624), (56, 43684), (80, 43816), (87, 43855),

Gene: Dartin\_68 Start: 43499, Stop: 44026, Start Num: 18

Candidate Starts for Dartin\_68:

(Start: 18 @43499 has 178 MA's), (28, 43574), (36, 43667), (40, 43685), (46, 43757), (47, 43769), (54, 43811), (56, 43829), (78, 43961),

Gene: Deby\_66 Start: 43494, Stop: 44003, Start Num: 18

Candidate Starts for Deby\_66:

(Start: 18 @43494 has 178 MA's), (28, 43569), (30, 43578), (33, 43608), (36, 43662), (45, 43740), (46, 43752), (80, 43953),

Gene: Devera\_73 Start: 44850, Stop: 45359, Start Num: 18

Candidate Starts for Devera\_73:

(Start: 18 @44850 has 178 MA's), (28, 44925), (30, 44934), (33, 44964), (36, 45018), (45, 45096), (46, 45108), (80, 45309),

Gene: DismalFunk\_68 Start: 45487, Stop: 46005, Start Num: 18

Candidate Starts for DismalFunk\_68:

(7, 45337), (12, 45460), (Start: 18 @45487 has 178 MA's), (34, 45610), (36, 45652), (39, 45664), (40, 45670), (46, 45742), (47, 45754), (49, 45766), (56, 45814), (80, 45955), (87, 45994),

Gene: DismalStressor\_68 Start: 45487, Stop: 46005, Start Num: 18

Candidate Starts for DismalStressor\_68:

(7, 45337), (12, 45460), (Start: 18 @45487 has 178 MA's), (34, 45610), (36, 45652), (39, 45664), (40, 45670), (46, 45742), (47, 45754), (49, 45766), (56, 45814), (80, 45955), (87, 45994),

Gene: Dole\_71 Start: 44853, Stop: 45362, Start Num: 18

Candidate Starts for Dole\_71:

(Start: 18 @44853 has 178 MA's), (28, 44928), (30, 44937), (33, 44967), (36, 45021), (45, 45099), (46, 45111), (80, 45312),

Gene: DoubleChamp\_56 Start: 40042, Stop: 40617, Start Num: 18

Candidate Starts for DoubleChamp\_56:

(Start: 13 @40018 has 1 MA's), (Start: 18 @40042 has 178 MA's), (31, 40150), (37, 40222), (41, 40246), (45, 40294), (46, 40306), (49, 40330), (56, 40378), (60, 40423), (73, 40513), (87, 40606),

Gene: Doughnut\_68 Start: 45102, Stop: 45620, Start Num: 18

Candidate Starts for Doughnut\_68:

(Start: 18 @45102 has 178 MA's), (34, 45225), (36, 45267), (39, 45279), (40, 45285), (46, 45357), (47, 45369), (49, 45381), (56, 45429), (80, 45570), (87, 45609),

Gene: DrHayes\_66 Start: 43745, Stop: 44260, Start Num: 18

Candidate Starts for DrHayes\_66:

(Start: 18 @43745 has 178 MA's), (28, 43820), (36, 43913), (40, 43931), (45, 43991), (46, 44003), (80, 44204),

Gene: Durfee\_65 Start: 43208, Stop: 43717, Start Num: 18

Candidate Starts for Durfee\_65:

(Start: 18 @43208 has 178 MA's), (28, 43283), (33, 43322), (36, 43376), (45, 43454), (46, 43466), (80, 43667),

Gene: Edugator\_58 Start: 41802, Stop: 42395, Start Num: 18

Candidate Starts for Edugator\_58:

(Start: 13 @41778 has 1 MA's), (Start: 18 @41802 has 178 MA's), (31, 41910), (37, 41982), (41, 42006), (45, 42054), (46, 42066), (47, 42078), (56, 42138), (60, 42183), (65, 42237), (66, 42240), (72, 42267), (73, 42282), (87, 42381),

Gene: Efra2\_71 Start: 43581, Stop: 44105, Start Num: 18

Candidate Starts for Efra2\_71:

(Start: 18 @43581 has 178 MA's), (28, 43656), (36, 43749), (40, 43767), (46, 43839), (47, 43851), (54, 43893), (80, 44049),

Gene: Ekdilam\_62 Start: 43584, Stop: 44096, Start Num: 18

Candidate Starts for Ekdilam\_62:

(Start: 18 @43584 has 178 MA's), (28, 43659), (30, 43668), (36, 43752), (37, 43758), (46, 43842), (47, 43854), (56, 43914), (80, 44046), (86, 44079), (87, 44085),

Gene: Ellie\_61 Start: 42821, Stop: 43333, Start Num: 18

Candidate Starts for Ellie\_61:

(Start: 18 @42821 has 178 MA's), (28, 42896), (30, 42905), (36, 42989), (37, 42995), (40, 43007), (46, 43079), (47, 43091), (56, 43151), (80, 43286), (81, 43298),

Gene: Emerson\_67 Start: 43328, Stop: 43837, Start Num: 18

Candidate Starts for Emerson\_67:

(Start: 18 @43328 has 178 MA's), (28, 43403), (33, 43442), (36, 43496), (45, 43574), (46, 43586), (80, 43787),

Gene: Enkosi\_56 Start: 42937, Stop: 43458, Start Num: 18

Candidate Starts for Enkosi\_56:

(Start: 18 @42937 has 178 MA's), (28, 43012), (30, 43021), (36, 43105), (46, 43195), (56, 43267), (63, 43330), (68, 43357), (78, 43396),

Gene: Eponine\_71 Start: 43444, Stop: 44112, Start Num: 15

Candidate Starts for Eponine\_71:

(Start: 15 @43444 has 23 MA's), (36, 43606), (37, 43612), (40, 43624), (42, 43651), (46, 43696), (56, 43768), (77, 43897), (79, 43930), (86, 43963), (89, 43984), (91, 44050), (92, 44092),

Gene: Fefferhead\_63 Start: 42730, Stop: 43242, Start Num: 18

Candidate Starts for Fefferhead\_63:

(Start: 18 @42730 has 178 MA's), (28, 42805), (30, 42814), (36, 42898), (37, 42904), (40, 42916), (46, 42988), (47, 43000), (56, 43060), (80, 43195), (81, 43207),

Gene: Feyre\_62 Start: 43763, Stop: 44383, Start Num: 18

Candidate Starts for Feyre\_62:

(Start: 13 @43739 has 1 MA's), (Start: 18 @43763 has 178 MA's), (36, 43937), (37, 43943), (45, 44015), (46, 44027), (47, 44039), (56, 44099), (60, 44144), (69, 44219), (70, 44222), (73, 44249), (74, 44264), (87, 44369),

Gene: Findley\_68 Start: 45480, Stop: 45998, Start Num: 18

Candidate Starts for Findley\_68:

(7, 45330), (12, 45453), (Start: 18 @45480 has 178 MA's), (34, 45603), (36, 45645), (39, 45657), (40, 45663), (46, 45735), (47, 45747), (49, 45759), (56, 45807), (80, 45948), (87, 45987),

Gene: Fionnbharth\_69 Start: 42842, Stop: 43510, Start Num: 15

Candidate Starts for Fionnbharth\_69:

(Start: 15 @42842 has 23 MA's), (36, 43004), (37, 43010), (40, 43022), (42, 43049), (46, 43094), (56, 43166), (77, 43295), (79, 43328), (86, 43361), (89, 43382), (91, 43448), (92, 43490),

Gene: GMA4\_41 Start: 30857, Stop: 31489, Start Num: 14

Candidate Starts for GMA4\_41:

(14, 30857), (19, 30899), (21, 30905), (22, 30908), (24, 30917), (36, 31070), (39, 31082), (48, 31181), (53, 31214), (55, 31226), (56, 31232), (64, 31328),

Gene: Ganymede\_65 Start: 43234, Stop: 43743, Start Num: 18

Candidate Starts for Ganymede\_65:

(Start: 18 @43234 has 178 MA's), (28, 43309), (30, 43318), (33, 43348), (36, 43402), (45, 43480), (46, 43492), (80, 43693), (86, 43726),

Gene: Gengar\_59 Start: 41780, Stop: 42370, Start Num: 18

Candidate Starts for Gengar\_59:

(Start: 13 @41756 has 1 MA's), (Start: 18 @41780 has 178 MA's), (27, 41858), (36, 41954), (37, 41960), (44, 42026), (45, 42032), (46, 42044), (47, 42056), (49, 42068), (56, 42116), (60, 42161), (69, 42233), (70, 42236), (73, 42263), (76, 42278), (87, 42356),

Gene: Geraldini\_68 Start: 43890, Stop: 44399, Start Num: 18

Candidate Starts for Geraldini\_68:

(Start: 18 @43890 has 178 MA's), (28, 43965), (33, 44004), (36, 44058), (45, 44136), (46, 44148), (80, 44349),

Gene: Guanica15\_70 Start: 43322, Stop: 43843, Start Num: 18

Candidate Starts for Guanica15\_70:

(Start: 18 @43322 has 178 MA's), (28, 43397), (36, 43490), (40, 43508), (46, 43580), (47, 43592), (54, 43634), (80, 43790),

Gene: Guillsminger\_60 Start: 41751, Stop: 42323, Start Num: 18

Candidate Starts for Guillsminger\_60:

(Start: 13 @41727 has 1 MA's), (Start: 18 @41751 has 178 MA's), (27, 41829), (36, 41925), (37, 41931), (45, 42003), (46, 42015), (47, 42027), (49, 42039), (51, 42054), (56, 42087), (60, 42132), (71, 42210), (75, 42222), (87, 42309),

Gene: Hammy\_65 Start: 43342, Stop: 43854, Start Num: 18

Candidate Starts for Hammy\_65:

(4, 43165), (6, 43174), (Start: 18 @43342 has 178 MA's), (28, 43417), (30, 43426), (36, 43510), (40, 43528), (46, 43600), (47, 43612), (56, 43672), (80, 43804), (87, 43843),

Gene: HedwigODU\_65 Start: 42856, Stop: 43365, Start Num: 18

Candidate Starts for HedwigODU\_65:

(Start: 18 @42856 has 178 MA's), (28, 42931), (30, 42940), (33, 42970), (36, 43024), (45, 43102), (46, 43114), (67, 43273), (80, 43315),

Gene: Heftyboy\_60 Start: 42125, Stop: 42691, Start Num: 18

Candidate Starts for Heftyboy\_60:

(Start: 13 @42101 has 1 MA's), (Start: 18 @42125 has 178 MA's), (36, 42299), (37, 42305), (45, 42377), (46, 42389), (47, 42401), (49, 42413), (56, 42461), (60, 42506), (75, 42590), (87, 42677),

Gene: Homura\_65 Start: 43011, Stop: 43520, Start Num: 18

Candidate Starts for Homura\_65:

(Start: 18 @43011 has 178 MA's), (28, 43086), (33, 43125), (36, 43179), (45, 43257), (46, 43269), (80, 43470),

Gene: Hurricane\_67 Start: 43488, Stop: 44006, Start Num: 18

Candidate Starts for Hurricane\_67:

(Start: 18 @43488 has 178 MA's), (36, 43656), (40, 43674), (46, 43746), (47, 43758), (56, 43818), (80, 43956), (86, 43989), (87, 43995),

Gene: Hyperbowlee\_65 Start: 43208, Stop: 43717, Start Num: 18

Candidate Starts for Hyperbowlee\_65:

(Start: 18 @43208 has 178 MA's), (28, 43283), (33, 43322), (36, 43376), (45, 43454), (46, 43466), (80, 43667),

Gene: Illumine\_71 Start: 44852, Stop: 45361, Start Num: 18

Candidate Starts for Illumine\_71:

(Start: 18 @44852 has 178 MA's), (28, 44927), (30, 44936), (33, 44966), (36, 45020), (45, 45098), (46, 45110), (80, 45311),

Gene: Inky\_65 Start: 43011, Stop: 43520, Start Num: 18

Candidate Starts for Inky\_65:

(Start: 18 @43011 has 178 MA's), (28, 43086), (33, 43125), (36, 43179), (45, 43257), (46, 43269), (80, 43470),

Gene: InvictusManeo\_57 Start: 40085, Stop: 40660, Start Num: 18

Candidate Starts for InvictusManeo\_57:

(Start: 13 @40061 has 1 MA's), (Start: 18 @40085 has 178 MA's), (31, 40193), (37, 40265), (41, 40289), (45, 40337), (46, 40349), (49, 40373), (56, 40421), (60, 40466), (73, 40556), (87, 40649),

Gene: JAWS\_66 Start: 43287, Stop: 43796, Start Num: 18

Candidate Starts for JAWS\_66:

(Start: 18 @43287 has 178 MA's), (28, 43362), (30, 43371), (33, 43401), (36, 43455), (45, 43533), (46, 43545), (80, 43746),

Gene: JF1\_69 Start: 42759, Stop: 43424, Start Num: 15

Candidate Starts for JF1\_69:

(Start: 15 @42759 has 23 MA's), (36, 42921), (37, 42927), (40, 42939), (42, 42966), (46, 43011), (56, 43083), (77, 43212), (79, 43245), (85, 43272), (91, 43362), (92, 43404),

Gene: Jarvi\_65 Start: 43011, Stop: 43520, Start Num: 18

Candidate Starts for Jarvi\_65:

(Start: 18 @43011 has 178 MA's), (28, 43086), (33, 43125), (36, 43179), (45, 43257), (46, 43269), (80, 43470),

Gene: Jayhawk\_67 Start: 43354, Stop: 43863, Start Num: 18

Candidate Starts for Jayhawk\_67:

(Start: 18 @43354 has 178 MA's), (28, 43429), (33, 43468), (36, 43522), (45, 43600), (46, 43612), (80, 43813),

Gene: Jeckyll\_65 Start: 43011, Stop: 43520, Start Num: 18

Candidate Starts for Jeckyll\_65:

(Start: 18 @43011 has 178 MA's), (28, 43086), (33, 43125), (36, 43179), (45, 43257), (46, 43269), (80, 43470),

Gene: Jflix2\_71 Start: 44931, Stop: 45539, Start Num: 17

Candidate Starts for Jflix2\_71:

(Start: 17 @44931 has 3 MA's), (20, 44961), (27, 45003), (29, 45009), (30, 45015), (36, 45105), (46, 45198), (56, 45270),

Gene: Joy99\_65 Start: 42940, Stop: 43449, Start Num: 18

Candidate Starts for Joy99\_65:

(Start: 18 @42940 has 178 MA's), (28, 43015), (33, 43054), (36, 43108), (45, 43186), (46, 43198), (80, 43399),

Gene: Juliette\_71 Start: 42906, Stop: 43574, Start Num: 15

Candidate Starts for Juliette\_71:

(Start: 15 @42906 has 23 MA's), (36, 43068), (37, 43074), (40, 43086), (42, 43113), (46, 43158), (56, 43230), (77, 43359), (79, 43392), (86, 43425), (89, 43446), (91, 43512), (92, 43554),

Gene: Keshu\_69 Start: 43586, Stop: 44104, Start Num: 18

Candidate Starts for Keshu\_69:

(Start: 18 @43586 has 178 MA's), (36, 43754), (46, 43844), (47, 43856), (56, 43916), (80, 44054), (86, 44087), (87, 44093),

Gene: KiSi\_70 Start: 44046, Stop: 44552, Start Num: 18

Candidate Starts for KiSi\_70:

(Start: 18 @44046 has 178 MA's), (27, 44118), (28, 44121), (30, 44130), (36, 44214), (43, 44277), (45, 44292), (46, 44304), (47, 44316), (49, 44328), (80, 44505),

Gene: Kratio\_57 Start: 39821, Stop: 40396, Start Num: 18

Candidate Starts for Kratio\_57:

(Start: 13 @39797 has 1 MA's), (Start: 18 @39821 has 178 MA's), (31, 39929), (37, 40001), (41, 40025), (45, 40073), (46, 40085), (49, 40109), (56, 40157), (60, 40202), (73, 40292), (87, 40385),

Gene: Kraw\_69 Start: 42594, Stop: 43262, Start Num: 15

Candidate Starts for Kraw\_69:

(Start: 15 @42594 has 23 MA's), (36, 42756), (37, 42762), (40, 42774), (42, 42801), (46, 42846), (56, 42918), (77, 43047), (79, 43080), (86, 43113), (89, 43134), (91, 43200), (92, 43242),

Gene: Krueger\_70 Start: 43119, Stop: 43637, Start Num: 18

Candidate Starts for Krueger\_70:

(3, 42939), (10, 43005), (Start: 18 @43119 has 178 MA's), (28, 43194), (34, 43242), (36, 43287), (40, 43305), (45, 43365), (46, 43377), (47, 43389), (56, 43449), (80, 43587), (86, 43620), (87, 43626),

Gene: Larva\_60 Start: 41253, Stop: 41846, Start Num: 18

Candidate Starts for Larva\_60:

(Start: 13 @41229 has 1 MA's), (Start: 18 @41253 has 178 MA's), (31, 41361), (37, 41433), (45, 41505), (46, 41517), (47, 41529), (56, 41589), (60, 41634), (65, 41688), (66, 41691), (72, 41718), (73, 41733), (87, 41832),

Gene: LastHope\_70 Start: 42442, Stop: 42954, Start Num: 18

Candidate Starts for LastHope\_70:

(Start: 18 @42442 has 178 MA's), (28, 42517), (36, 42610), (40, 42628), (46, 42700), (54, 42754), (80, 42901),

Gene: LaterM\_66 Start: 43705, Stop: 44214, Start Num: 18

Candidate Starts for LaterM\_66:

(Start: 18 @43705 has 178 MA's), (28, 43780), (30, 43789), (33, 43819), (36, 43873), (45, 43951), (46, 43963), (80, 44164),

Gene: Lavahound\_64 Start: 44098, Stop: 44610, Start Num: 18

Candidate Starts for Lavahound\_64:

(8, 43969), (Start: 18 @44098 has 178 MA's), (28, 44173), (30, 44182), (36, 44266), (37, 44272), (40, 44284), (46, 44356), (47, 44368), (56, 44428), (80, 44563), (81, 44575),

Gene: LeMond\_69 Start: 43680, Stop: 44186, Start Num: 18

Candidate Starts for LeMond\_69:

(Start: 18 @43680 has 178 MA's), (27, 43752), (28, 43755), (30, 43764), (36, 43848), (43, 43911), (46, 43938), (47, 43950), (49, 43962), (80, 44139),

Gene: Lea83\_67 Start: 43524, Stop: 44036, Start Num: 18

Candidate Starts for Lea83\_67:

(Start: 18 @43524 has 178 MA's), (36, 43692), (40, 43710), (46, 43782), (47, 43794), (56, 43854), (80, 43986), (86, 44019), (87, 44025),

Gene: Lebo14\_68 Start: 42927, Stop: 43595, Start Num: 15

Candidate Starts for Lebo14\_68:

(Start: 15 @42927 has 23 MA's), (36, 43089), (37, 43095), (40, 43107), (42, 43134), (46, 43179), (56, 43251), (77, 43380), (79, 43413), (86, 43446), (89, 43467), (91, 43533), (92, 43575),

Gene: Leston\_59 Start: 41880, Stop: 42452, Start Num: 18

Candidate Starts for Leston\_59:

(Start: 13 @41856 has 1 MA's), (Start: 18 @41880 has 178 MA's), (27, 41958), (36, 42054), (37, 42060), (45, 42132), (46, 42144), (47, 42156), (49, 42168), (51, 42183), (56, 42216), (60, 42261), (71, 42339), (75, 42351), (87, 42438),

Gene: LilDirt\_56 Start: 39843, Stop: 40418, Start Num: 18

Candidate Starts for LilDirt\_56:

(Start: 13 @39819 has 1 MA's), (Start: 18 @39843 has 178 MA's), (31, 39951), (37, 40023), (41, 40047), (45, 40095), (46, 40107), (49, 40131), (56, 40179), (60, 40224), (73, 40314), (87, 40407),

Gene: LilPharaoh\_55 Start: 40052, Stop: 40573, Start Num: 18

Candidate Starts for LilPharaoh\_55:

(Start: 18 @40052 has 178 MA's), (28, 40127), (30, 40136), (36, 40220), (46, 40310), (56, 40382), (63, 40445), (68, 40472), (78, 40511),

Gene: LindNT\_65 Start: 43499, Stop: 44008, Start Num: 18

Candidate Starts for LindNT\_65:

(Start: 18 @43499 has 178 MA's), (28, 43574), (33, 43613), (36, 43667), (45, 43745), (46, 43757), (80, 43958),

Gene: Llorens\_65 Start: 43011, Stop: 43520, Start Num: 18

Candidate Starts for Llorens\_65:

(Start: 18 @43011 has 178 MA's), (28, 43086), (33, 43125), (36, 43179), (45, 43257), (46, 43269), (80, 43470),

Gene: Lunahalos\_65 Start: 43011, Stop: 43520, Start Num: 18

Candidate Starts for Lunahalos\_65:

(Start: 18 @43011 has 178 MA's), (28, 43086), (33, 43125), (36, 43179), (45, 43257), (46, 43269), (80, 43470),

Gene: MacKat\_61 Start: 38794, Stop: 39303, Start Num: 18

Candidate Starts for MacKat\_61:

(Start: 18 @38794 has 178 MA's), (28, 38869), (33, 38908), (36, 38962), (45, 39040), (46, 39052), (80, 39253),

Gene: MacnCheese\_69 Start: 44105, Stop: 44629, Start Num: 18

Candidate Starts for MacnCheese\_69:

(Start: 18 @44105 has 178 MA's), (30, 44189), (34, 44228), (36, 44273), (40, 44291), (46, 44363), (47, 44375), (56, 44435), (80, 44576), (86, 44609), (87, 44615),

Gene: Madraxi\_75 Start: 47623, Stop: 48270, Start Num: 17

Candidate Starts for Madraxi\_75:

(Start: 17 @47623 has 3 MA's), (20, 47653), (36, 47797), (46, 47890), (56, 47962),

Gene: MalagasyRose\_66 Start: 42483, Stop: 43022, Start Num: 16

Candidate Starts for MalagasyRose\_66:

(Start: 16 @42483 has 2 MA's), (28, 42558), (34, 42606), (39, 42660), (40, 42666), (47, 42750), (54, 42792), (56, 42810), (80, 42966), (82, 42981), (86, 42999),

Gene: Malthus\_70 Start: 42594, Stop: 43262, Start Num: 15

Candidate Starts for Malthus\_70:

(Start: 15 @42594 has 23 MA's), (36, 42756), (37, 42762), (40, 42774), (42, 42801), (46, 42846), (56, 42918), (77, 43047), (79, 43080), (86, 43113), (89, 43134), (91, 43200), (92, 43242),

Gene: Marcoliusprime\_68 Start: 45487, Stop: 46005, Start Num: 18

Candidate Starts for Marcoliusprime\_68:

(7, 45337), (12, 45460), (Start: 18 @45487 has 178 MA's), (34, 45610), (36, 45652), (39, 45664), (40, 45670), (46, 45742), (47, 45754), (49, 45766), (56, 45814), (80, 45955), (87, 45994),

Gene: MarkPhew\_68 Start: 43181, Stop: 43687, Start Num: 18

Candidate Starts for MarkPhew\_68:

(Start: 18 @43181 has 178 MA's), (28, 43256), (30, 43265), (36, 43349), (43, 43412), (44, 43421), (46, 43439), (47, 43451), (55, 43505), (80, 43640),

Gene: Marshawn\_65 Start: 43539, Stop: 44048, Start Num: 18

Candidate Starts for Marshawn\_65:

(Start: 18 @43539 has 178 MA's), (28, 43614), (40, 43725), (46, 43797), (47, 43809), (56, 43869), (80, 43998), (86, 44031), (87, 44037), (88, 44040),

Gene: McMater\_68 Start: 43499, Stop: 44026, Start Num: 18

Candidate Starts for McMater\_68:

(Start: 18 @43499 has 178 MA's), (28, 43574), (36, 43667), (40, 43685), (46, 43757), (47, 43769), (54, 43811), (56, 43829), (78, 43961),

Gene: Mdavu\_55 Start: 40313, Stop: 40834, Start Num: 18

Candidate Starts for Mdavu\_55:

(Start: 18 @40313 has 178 MA's), (28, 40388), (30, 40397), (36, 40481), (46, 40571), (56, 40643), (63, 40706), (68, 40733), (78, 40772),

Gene: MeaningOfLife\_66 Start: 43763, Stop: 44272, Start Num: 18

Candidate Starts for MeaningOfLife\_66:

(Start: 18 @43763 has 178 MA's), (28, 43838), (30, 43847), (33, 43877), (36, 43931), (45, 44009), (46, 44021), (80, 44222),

Gene: Megsy\_68 Start: 43420, Stop: 43929, Start Num: 18

Candidate Starts for Megsy\_68:

(Start: 18 @43420 has 178 MA's), (28, 43495), (33, 43534), (36, 43588), (45, 43666), (46, 43678), (80, 43879),

Gene: Milly\_68 Start: 45460, Stop: 45978, Start Num: 18

Candidate Starts for Milly\_68:

(7, 45310), (12, 45433), (Start: 18 @45460 has 178 MA's), (34, 45583), (36, 45625), (39, 45637), (40, 45643), (46, 45715), (47, 45727), (49, 45739), (56, 45787), (62, 45841), (80, 45928), (87, 45967),

Gene: Miryou\_63 Start: 44477, Stop: 45067, Start Num: 18

Candidate Starts for Miryou\_63:

(Start: 13 @44453 has 1 MA's), (Start: 18 @44477 has 178 MA's), (27, 44555), (36, 44651), (37, 44657), (44, 44723), (45, 44729), (46, 44741), (47, 44753), (49, 44765), (56, 44813), (60, 44858), (69, 44930), (70, 44933), (73, 44960), (76, 44975), (87, 45053),

Gene: MissDaisy\_66 Start: 41506, Stop: 42177, Start Num: 15

Candidate Starts for MissDaisy\_66:

(Start: 15 @41506 has 23 MA's), (36, 41668), (37, 41674), (40, 41686), (42, 41713), (46, 41758), (56, 41830), (77, 41959), (79, 41992), (82, 42010), (91, 42115), (92, 42157),

Gene: Mitti\_69 Start: 42773, Stop: 43417, Start Num: 15

Candidate Starts for Mitti\_69:

(Start: 15 @42773 has 23 MA's), (36, 42935), (37, 42941), (40, 42953), (42, 42980), (46, 43025), (56, 43097), (77, 43226), (79, 43259), (86, 43292), (89, 43313), (91, 43355), (92, 43397),

Gene: Mufasa\_68 Start: 45047, Stop: 45565, Start Num: 18

Candidate Starts for Mufasa\_68:

(7, 44897), (Start: 18 @45047 has 178 MA's), (34, 45170), (36, 45212), (39, 45224), (40, 45230), (46, 45302), (47, 45314), (49, 45326), (56, 45374), (80, 45515), (87, 45554),

Gene: Murucutumbu\_67 Start: 44280, Stop: 44789, Start Num: 18

Candidate Starts for Murucutumbu\_67:

(Start: 18 @44280 has 178 MA's), (28, 44355), (30, 44364), (33, 44394), (36, 44448), (45, 44526), (46, 44538), (59, 44646), (80, 44739),

Gene: Mynx\_67 Start: 43623, Stop: 44132, Start Num: 18

Candidate Starts for Mynx\_67:

(Start: 18 @43623 has 178 MA's), (28, 43698), (30, 43707), (33, 43737), (36, 43791), (45, 43869), (46, 43881), (80, 44082),

Gene: Neighly\_61 Start: 41228, Stop: 41845, Start Num: 13

Candidate Starts for Neighly\_61:

(Start: 13 @41228 has 1 MA's), (Start: 18 @41252 has 178 MA's), (31, 41360), (37, 41432), (45, 41504), (46, 41516), (47, 41528), (56, 41588), (60, 41633), (65, 41687), (66, 41690), (72, 41717), (73, 41732), (87, 41831),

Gene: Nergal\_58 Start: 39813, Stop: 40349, Start Num: 18

Candidate Starts for Nergal\_58:

(Start: 18 @39813 has 178 MA's), (23, 39852), (34, 39936), (36, 39978), (46, 40068), (47, 40080), (54, 40122), (57, 40149), (80, 40299), (87, 40338),

Gene: Nibb\_68 Start: 43393, Stop: 43899, Start Num: 18

Candidate Starts for Nibb\_68:

(Start: 18 @43393 has 178 MA's), (28, 43468), (30, 43477), (36, 43561), (43, 43624), (44, 43633), (46, 43651), (47, 43663), (80, 43852),

Gene: Nikao\_57 Start: 42937, Stop: 43458, Start Num: 18

Candidate Starts for Nikao\_57:

(Start: 18 @42937 has 178 MA's), (28, 43012), (30, 43021), (36, 43105), (46, 43195), (56, 43267), (63, 43330), (68, 43357), (78, 43396),

Gene: Niklas\_68 Start: 43560, Stop: 44087, Start Num: 18

Candidate Starts for Niklas\_68:

(Start: 18 @43560 has 178 MA's), (28, 43635), (36, 43728), (40, 43746), (46, 43818), (47, 43830), (54, 43872), (56, 43890), (78, 44022),

Gene: November\_63 Start: 43249, Stop: 43761, Start Num: 18

Candidate Starts for November\_63:

(Start: 18 @43249 has 178 MA's), (28, 43324), (30, 43333), (36, 43417), (40, 43435), (46, 43507), (47, 43519), (56, 43579), (80, 43711), (87, 43750),

Gene: Nutello\_54 Start: 40324, Stop: 40845, Start Num: 18

Candidate Starts for Nutello\_54:

(Start: 18 @40324 has 178 MA's), (28, 40399), (30, 40408), (36, 40492), (46, 40582), (56, 40654), (63, 40717), (68, 40744), (78, 40783),

Gene: OkiRoe\_60 Start: 42149, Stop: 42739, Start Num: 18

Candidate Starts for OkiRoe\_60:

(Start: 13 @42125 has 1 MA's), (Start: 18 @42149 has 178 MA's), (27, 42227), (36, 42323), (37, 42329), (44, 42395), (45, 42401), (46, 42413), (47, 42425), (49, 42437), (56, 42485), (60, 42530), (69, 42602), (70, 42605), (73, 42632), (76, 42647), (87, 42725),

Gene: OmniCritical\_68 Start: 42624, Stop: 43298, Start Num: 16

Candidate Starts for OmniCritical\_68:

(Start: 16 @42624 has 2 MA's), (36, 42786), (37, 42792), (40, 42804), (42, 42831), (46, 42876), (56, 42948), (77, 43077), (79, 43110), (83, 43131), (90, 43185), (91, 43236), (92, 43278),

Gene: Omnicron\_63 Start: 42235, Stop: 42843, Start Num: 13

Candidate Starts for Omnicron\_63:

(Start: 13 @42235 has 1 MA's), (Start: 18 @42259 has 178 MA's), (36, 42427), (37, 42433), (43, 42490), (46, 42517), (47, 42529), (49, 42541), (56, 42589), (65, 42685), (66, 42688), (87, 42829),

Gene: Oscar\_69 Start: 43597, Stop: 44103, Start Num: 18

Candidate Starts for Oscar\_69:

(Start: 18 @43597 has 178 MA's), (27, 43669), (28, 43672), (30, 43681), (36, 43765), (43, 43828), (46, 43855), (47, 43867), (49, 43879), (80, 44056),

Gene: Padfoot\_65 Start: 43208, Stop: 43717, Start Num: 18

Candidate Starts for Padfoot\_65:

(Start: 18 @43208 has 178 MA's), (28, 43283), (33, 43322), (36, 43376), (45, 43454), (46, 43466), (80, 43667),

Gene: Padpat\_68 Start: 43328, Stop: 43837, Start Num: 18

Candidate Starts for Padpat\_68:

(Start: 18 @43328 has 178 MA's), (28, 43403), (33, 43442), (36, 43496), (45, 43574), (46, 43586), (80, 43787),

Gene: Paola\_59 Start: 41751, Stop: 42323, Start Num: 18

Candidate Starts for Paola\_59:

(Start: 13 @41727 has 1 MA's), (Start: 18 @41751 has 178 MA's), (27, 41829), (36, 41925), (37, 41931), (45, 42003), (46, 42015), (47, 42027), (49, 42039), (51, 42054), (56, 42087), (60, 42132), (71,

42210), (75, 42222), (87, 42309),

Gene: Patt\_65 Start: 41230, Stop: 41901, Start Num: 15

Candidate Starts for Patt\_65:

(Start: 15 @41230 has 23 MA's), (36, 41392), (37, 41398), (40, 41410), (42, 41437), (46, 41482), (56, 41554), (77, 41683), (79, 41716), (82, 41734), (91, 41839), (92, 41881),

Gene: Peanam\_68 Start: 43517, Stop: 44044, Start Num: 18

Candidate Starts for Peanam\_68:

(Start: 18 @43517 has 178 MA's), (28, 43592), (36, 43685), (40, 43703), (46, 43775), (47, 43787), (54, 43829), (56, 43847), (78, 43979),

Gene: Peel\_65 Start: 43013, Stop: 43522, Start Num: 18

Candidate Starts for Peel\_65:

(Start: 18 @43013 has 178 MA's), (28, 43088), (33, 43127), (36, 43181), (45, 43259), (46, 43271), (80, 43472),

Gene: Pharb\_66 Start: 42835, Stop: 43353, Start Num: 18

Candidate Starts for Pharb\_66:

(Start: 18 @42835 has 178 MA's), (36, 43003), (40, 43021), (46, 43093), (47, 43105), (56, 43165), (80, 43303), (86, 43336), (87, 43342),

Gene: PhelpsODU\_67 Start: 42757, Stop: 43275, Start Num: 18

Candidate Starts for PhelpsODU\_67:

(3, 42577), (10, 42643), (Start: 18 @42757 has 178 MA's), (28, 42832), (34, 42880), (36, 42925), (40, 42943), (46, 43015), (47, 43027), (56, 43087), (80, 43225), (86, 43258), (87, 43264),

Gene: Phrank\_69 Start: 42821, Stop: 43339, Start Num: 18

Candidate Starts for Phrank\_69:

(3, 42641), (10, 42707), (Start: 18 @42821 has 178 MA's), (28, 42896), (34, 42944), (36, 42989), (40, 43007), (46, 43079), (56, 43151), (80, 43289), (86, 43322), (87, 43328),

Gene: Piatt\_65 Start: 43208, Stop: 43717, Start Num: 18

Candidate Starts for Piatt\_65:

(Start: 18 @43208 has 178 MA's), (28, 43283), (33, 43322), (36, 43376), (45, 43454), (46, 43466), (80, 43667),

Gene: Pisa1\_65 Start: 43826, Stop: 44335, Start Num: 18

Candidate Starts for Pisa1\_65:

(Start: 18 @43826 has 178 MA's), (28, 43901), (36, 43994), (40, 44012), (46, 44084), (47, 44096), (80, 44285),

Gene: Pisa4\_59 Start: 39195, Stop: 39704, Start Num: 18

Candidate Starts for Pisa4\_59:

(Start: 18 @39195 has 178 MA's), (28, 39270), (36, 39363), (40, 39381), (46, 39453), (47, 39465), (80, 39654),

Gene: Pixie\_66 Start: 43008, Stop: 43526, Start Num: 18

Candidate Starts for Pixie\_66:

(Start: 18 @43008 has 178 MA's), (30, 43092), (36, 43176), (40, 43194), (43, 43239), (46, 43266), (47, 43278), (56, 43338), (80, 43476), (86, 43509), (87, 43515),

Gene: Pokerus\_65 Start: 43353, Stop: 43862, Start Num: 18

Candidate Starts for Pokerus\_65:

(Start: 18 @43353 has 178 MA's), (28, 43428), (33, 43467), (36, 43521), (45, 43599), (46, 43611), (80, 43812),

Gene: Prithvi\_67 Start: 43499, Stop: 44008, Start Num: 18

Candidate Starts for Prithvi\_67:

(Start: 18 @43499 has 178 MA's), (28, 43574), (33, 43613), (36, 43667), (45, 43745), (46, 43757), (80, 43958),

Gene: Psycho\_59 Start: 40378, Stop: 40971, Start Num: 18

Candidate Starts for Psycho\_59:

(Start: 13 @40354 has 1 MA's), (Start: 18 @40378 has 178 MA's), (31, 40486), (37, 40558), (41, 40582), (45, 40630), (46, 40642), (47, 40654), (56, 40714), (60, 40759), (65, 40813), (66, 40816), (72, 40843), (73, 40858), (87, 40957),

Gene: Qhanda\_71 Start: 42610, Stop: 43278, Start Num: 15

Candidate Starts for Qhanda\_71:

(Start: 15 @42610 has 23 MA's), (36, 42772), (37, 42778), (40, 42790), (42, 42817), (46, 42862), (56, 42934), (77, 43063), (79, 43096), (86, 43129), (89, 43150), (91, 43216), (92, 43258),

Gene: QuincyRose\_63 Start: 43234, Stop: 43743, Start Num: 18

Candidate Starts for QuincyRose\_63:

(Start: 18 @43234 has 178 MA's), (28, 43309), (30, 43318), (33, 43348), (36, 43402), (45, 43480), (46, 43492), (80, 43693), (86, 43726),

Gene: Ramen\_66 Start: 42858, Stop: 43367, Start Num: 18

Candidate Starts for Ramen\_66:

(Start: 18 @42858 has 178 MA's), (28, 42933), (30, 42942), (33, 42972), (36, 43026), (45, 43104), (46, 43116), (67, 43275), (80, 43317),

Gene: Rando14\_61 Start: 39976, Stop: 40557, Start Num: 18

Candidate Starts for Rando14\_61:

(Start: 13 @39952 has 1 MA's), (Start: 18 @39976 has 178 MA's), (36, 40144), (37, 40150), (43, 40207), (45, 40222), (46, 40234), (47, 40246), (49, 40258), (56, 40306), (65, 40402), (66, 40405), (78, 40492), (87, 40543),

Gene: Rapunzel97\_67 Start: 43309, Stop: 43818, Start Num: 18

Candidate Starts for Rapunzel97\_67:

(Start: 18 @43309 has 178 MA's), (28, 43384), (30, 43393), (33, 43423), (36, 43477), (45, 43555), (46, 43567), (80, 43768),

Gene: RegnumDei\_78 Start: 46080, Stop: 46646, Start Num: 18

Candidate Starts for RegnumDei\_78:

(11, 46044), (Start: 18 @46080 has 178 MA's), (25, 46134), (36, 46242), (47, 46344), (56, 46404), (58, 46434), (61, 46458),

Gene: Reptar3000\_66 Start: 41218, Stop: 41889, Start Num: 15

Candidate Starts for Reptar3000\_66:

(Start: 15 @41218 has 23 MA's), (35, 41353), (36, 41380), (37, 41386), (40, 41398), (42, 41425), (46, 41470), (56, 41542), (77, 41671), (79, 41704), (82, 41722), (91, 41827), (92, 41869),

Gene: Richo\_68 Start: 43499, Stop: 44026, Start Num: 18

Candidate Starts for Richo\_68:

(Start: 18 @43499 has 178 MA's), (28, 43574), (36, 43667), (40, 43685), (46, 43757), (47, 43769), (54, 43811), (56, 43829), (78, 43961),

Gene: Rosmarinus\_65 Start: 42999, Stop: 43508, Start Num: 18

Candidate Starts for Rosmarinus\_65:

(Start: 18 @42999 has 178 MA's), (28, 43074), (33, 43113), (36, 43167), (45, 43245), (46, 43257), (80, 43458),

Gene: Ruthiejr\_70 Start: 42644, Stop: 43309, Start Num: 15

Candidate Starts for Ruthiejr\_70:

(Start: 15 @42644 has 23 MA's), (36, 42806), (37, 42812), (40, 42824), (42, 42851), (46, 42896), (56, 42968), (77, 43097), (79, 43130), (85, 43157), (91, 43247), (92, 43289),

Gene: SFuller\_69 Start: 45080, Stop: 45724, Start Num: 17

Candidate Starts for SFuller\_69:

(Start: 17 @45080 has 3 MA's), (20, 45110), (28, 45155), (29, 45158), (32, 45185), (36, 45254), (46, 45347), (56, 45419),

Gene: SamScheppers\_67 Start: 43073, Stop: 43741, Start Num: 15

Candidate Starts for SamScheppers\_67:

(Start: 15 @43073 has 23 MA's), (36, 43235), (37, 43241), (40, 43253), (42, 43280), (46, 43325), (56, 43397), (77, 43526), (79, 43559), (86, 43592), (89, 43613), (91, 43679), (92, 43721),

Gene: SamuelLPlaqson\_66 Start: 43745, Stop: 44260, Start Num: 18

Candidate Starts for SamuelLPlaqson\_66:

(Start: 18 @43745 has 178 MA's), (28, 43820), (36, 43913), (40, 43931), (45, 43991), (46, 44003), (80, 44204),

Gene: Scarlett\_70 Start: 43927, Stop: 44433, Start Num: 18

Candidate Starts for Scarlett\_70:

(Start: 18 @43927 has 178 MA's), (27, 43999), (28, 44002), (30, 44011), (36, 44095), (43, 44158), (45, 44173), (46, 44185), (47, 44197), (49, 44209), (80, 44386),

Gene: SgtBeansprout\_55 Start: 40324, Stop: 40845, Start Num: 18

Candidate Starts for SgtBeansprout\_55:

(Start: 18 @40324 has 178 MA's), (28, 40399), (30, 40408), (36, 40492), (46, 40582), (56, 40654), (63, 40717), (68, 40744), (78, 40783),

Gene: Shadow1\_70 Start: 43271, Stop: 43789, Start Num: 18

Candidate Starts for Shadow1\_70:

(Start: 18 @43271 has 178 MA's), (28, 43346), (34, 43394), (36, 43439), (40, 43457), (46, 43529), (47, 43541), (56, 43601), (80, 43739), (86, 43772), (87, 43778),

Gene: Shagrat\_82 Start: 45931, Stop: 46494, Start Num: 18

Candidate Starts for Shagrat\_82:

(Start: 18 @45931 has 178 MA's), (25, 45985), (36, 46093), (39, 46105), (47, 46195), (58, 46285), (61, 46309),

Gene: Shaobing\_68 Start: 43535, Stop: 44062, Start Num: 18

Candidate Starts for Shaobing\_68:

(Start: 18 @43535 has 178 MA's), (28, 43610), (36, 43703), (40, 43721), (46, 43793), (47, 43805), (54, 43847), (56, 43865), (78, 43997),

Gene: ShedlockHolmes\_68 Start: 43528, Stop: 44040, Start Num: 18

Candidate Starts for ShedlockHolmes\_68:

(Start: 18 @43528 has 178 MA's), (36, 43696), (40, 43714), (46, 43786), (47, 43798), (56, 43858), (80, 43990), (86, 44023), (87, 44029),

Gene: ShiaSurprise\_66 Start: 43208, Stop: 43717, Start Num: 18

Candidate Starts for ShiaSurprise\_66:

(Start: 18 @43208 has 178 MA's), (28, 43283), (33, 43322), (36, 43376), (45, 43454), (46, 43466), (80, 43667),

Gene: SirPhilip\_65 Start: 43696, Stop: 44205, Start Num: 18

Candidate Starts for SirPhilip\_65:

(Start: 18 @43696 has 178 MA's), (28, 43771), (36, 43864), (40, 43882), (46, 43954), (47, 43966), (57, 44035), (87, 44194),

Gene: Slarp\_69 Start: 42601, Stop: 43269, Start Num: 15

Candidate Starts for Slarp\_69:

(Start: 15 @42601 has 23 MA's), (36, 42763), (37, 42769), (40, 42781), (42, 42808), (46, 42853), (56, 42925), (77, 43054), (79, 43087), (86, 43120), (89, 43141), (91, 43207), (92, 43249),

Gene: Slimphazie\_66 Start: 43309, Stop: 43818, Start Num: 18

Candidate Starts for Slimphazie\_66:

(Start: 18 @43309 has 178 MA's), (28, 43384), (30, 43393), (33, 43423), (36, 43477), (45, 43555), (46, 43567), (80, 43768),

Gene: SoSeph\_60 Start: 42125, Stop: 42691, Start Num: 18

Candidate Starts for SoSeph\_60:

(Start: 13 @42101 has 1 MA's), (Start: 18 @42125 has 178 MA's), (36, 42299), (37, 42305), (45, 42377), (46, 42389), (47, 42401), (49, 42413), (56, 42461), (60, 42506), (75, 42590), (87, 42677),

Gene: Spock\_65 Start: 43012, Stop: 43521, Start Num: 18

Candidate Starts for Spock\_65:

(Start: 18 @43012 has 178 MA's), (28, 43087), (33, 43126), (36, 43180), (45, 43258), (46, 43270), (80, 43471),

Gene: Stinson\_67 Start: 43637, Stop: 44149, Start Num: 18

Candidate Starts for Stinson\_67:

(Start: 18 @43637 has 178 MA's), (28, 43712), (30, 43721), (33, 43751), (36, 43805), (45, 43883), (46, 43895), (80, 44096),

Gene: Strobilo\_69 Start: 45462, Stop: 45980, Start Num: 18

Candidate Starts for Strobilo\_69:

(7, 45312), (12, 45435), (Start: 18 @45462 has 178 MA's), (34, 45585), (36, 45627), (39, 45639), (40, 45645), (46, 45717), (47, 45729), (49, 45741), (56, 45789), (80, 45930), (87, 45969),

Gene: Sulley\_65 Start: 43072, Stop: 43581, Start Num: 18

Candidate Starts for Sulley\_65:

(Start: 18 @43072 has 178 MA's), (28, 43147), (33, 43186), (36, 43240), (46, 43330), (80, 43531),

Gene: Sunflower1121\_71 Start: 43417, Stop: 43935, Start Num: 18

Candidate Starts for Sunflower1121\_71:

(Start: 18 @43417 has 178 MA's), (28, 43492), (34, 43540), (36, 43585), (40, 43603), (46, 43675), (47, 43687), (56, 43747), (80, 43885), (86, 43918), (87, 43924),

Gene: Syra333\_69 Start: 43131, Stop: 43649, Start Num: 18

Candidate Starts for Syra333\_69:

(3, 42951), (10, 43017), (Start: 18 @43131 has 178 MA's), (28, 43206), (34, 43254), (36, 43299), (40, 43317), (45, 43377), (46, 43389), (47, 43401), (56, 43461), (80, 43599), (86, 43632), (87, 43638),

Gene: TBond007\_63 Start: 43007, Stop: 43525, Start Num: 18

Candidate Starts for TBond007\_63:

(Start: 18 @43007 has 178 MA's), (30, 43091), (36, 43175), (40, 43193), (43, 43238), (46, 43265), (47, 43277), (56, 43337), (80, 43475), (86, 43508), (87, 43514),

Gene: TClif\_67 Start: 43102, Stop: 43614, Start Num: 18

Candidate Starts for TClif\_67:

(Start: 18 @43102 has 178 MA's), (28, 43177), (30, 43186), (35, 43243), (36, 43270), (40, 43288), (46, 43360), (47, 43372), (56, 43432), (78, 43552), (80, 43564), (82, 43579), (86, 43597), (87, 43603),

Gene: TM4\_66 Start: 40125, Stop: 40643, Start Num: 18

Candidate Starts for TM4\_66:

(7, 39975), (12, 40098), (Start: 18 @40125 has 178 MA's), (34, 40248), (36, 40290), (39, 40302), (40, 40308), (46, 40380), (47, 40392), (49, 40404), (56, 40452), (80, 40593), (87, 40632),

Gene: Tachez\_65 Start: 42856, Stop: 43365, Start Num: 18

Candidate Starts for Tachez\_65:

(Start: 18 @42856 has 178 MA's), (28, 42931), (33, 42970), (36, 43024), (45, 43102), (46, 43114), (80, 43315),

Gene: TaiwanKao\_68 Start: 43561, Stop: 44070, Start Num: 18

Candidate Starts for TaiwanKao\_68:

(Start: 18 @43561 has 178 MA's), (28, 43636), (33, 43675), (36, 43729), (45, 43807), (46, 43819), (52, 43867), (80, 44020),

Gene: Taquito\_68 Start: 42836, Stop: 43474, Start Num: 15

Candidate Starts for Taquito\_68:

(Start: 15 @42836 has 23 MA's), (36, 42998), (37, 43004), (40, 43016), (42, 43043), (46, 43088), (56, 43160), (77, 43289), (79, 43322), (86, 43355), (89, 43376), (91, 43412), (92, 43454),

Gene: Teejan\_56 Start: 42937, Stop: 43458, Start Num: 18

Candidate Starts for Teejan\_56:

(Start: 18 @42937 has 178 MA's), (28, 43012), (30, 43021), (36, 43105), (46, 43195), (56, 43267), (63, 43330), (68, 43357), (78, 43396),

Gene: Thyatira\_62 Start: 44083, Stop: 44655, Start Num: 18

Candidate Starts for Thyatira\_62:

(Start: 13 @44059 has 1 MA's), (Start: 18 @44083 has 178 MA's), (36, 44257), (37, 44263), (44, 44329), (45, 44335), (46, 44347), (47, 44359), (49, 44371), (56, 44419), (60, 44464), (71, 44542), (75, 44554), (87, 44641),

Gene: Tierra\_69 Start: 43632, Stop: 44150, Start Num: 18

Candidate Starts for Tierra\_69:

(3, 43452), (10, 43518), (Start: 18 @43632 has 178 MA's), (28, 43707), (34, 43755), (36, 43800), (40, 43818), (46, 43890), (56, 43962), (80, 44100), (86, 44133), (87, 44139),

Gene: Tigress9\_72 Start: 43448, Stop: 43966, Start Num: 18

Candidate Starts for Tigress9\_72:

(3, 43268), (5, 43277), (10, 43334), (Start: 18 @43448 has 178 MA's), (28, 43523), (34, 43571), (36, 43616), (40, 43634), (45, 43694), (46, 43706), (47, 43718), (56, 43778), (80, 43916), (86, 43949), (87, 43955),

Gene: TingHuaYa\_69 Start: 42808, Stop: 43320, Start Num: 18

Candidate Starts for TingHuaYa\_69:

(Start: 18 @42808 has 178 MA's), (28, 42883), (30, 42892), (36, 42976), (40, 42994), (46, 43066), (47, 43078), (54, 43120), (80, 43267),

Gene: TiniBug\_66 Start: 43741, Stop: 44256, Start Num: 18

Candidate Starts for TiniBug\_66:

(Start: 18 @43741 has 178 MA's), (28, 43816), (36, 43909), (40, 43927), (45, 43987), (46, 43999), (80, 44200),

Gene: TinyDot\_45 Start: 30672, Stop: 31235, Start Num: 15

Candidate Starts for TinyDot\_45:

(1, 30327), (2, 30393), (9, 30549), (Start: 15 @30672 has 23 MA's), (36, 30846), (55, 30993), (84, 31191),

Gene: Tiri\_66 Start: 43145, Stop: 43654, Start Num: 18

Candidate Starts for Tiri\_66:

(Start: 18 @43145 has 178 MA's), (28, 43220), (33, 43259), (36, 43313), (45, 43391), (46, 43403), (80, 43604),

Gene: Topper\_65 Start: 43011, Stop: 43520, Start Num: 18

Candidate Starts for Topper\_65:

(Start: 18 @43011 has 178 MA's), (28, 43086), (33, 43125), (36, 43179), (45, 43257), (46, 43269), (80, 43470),

Gene: Torres\_57 Start: 42938, Stop: 43459, Start Num: 18

Candidate Starts for Torres\_57:

(Start: 18 @42938 has 178 MA's), (28, 43013), (30, 43022), (36, 43106), (46, 43196), (56, 43268), (63, 43331), (68, 43358), (78, 43397),

Gene: TreyKay\_67 Start: 43499, Stop: 44008, Start Num: 18

Candidate Starts for TreyKay\_67:

(Start: 18 @43499 has 178 MA's), (28, 43574), (33, 43613), (36, 43667), (45, 43745), (46, 43757), (80, 43958),

Gene: TribbleTrouble\_67 Start: 44010, Stop: 44528, Start Num: 18

Candidate Starts for TribbleTrouble\_67:

(Start: 18 @44010 has 178 MA's), (37, 44184), (40, 44196), (43, 44241), (46, 44268), (47, 44280), (56, 44340), (86, 44511), (87, 44517),

Gene: Trice\_54 Start: 40325, Stop: 40846, Start Num: 18

Candidate Starts for Trice\_54:

(Start: 18 @40325 has 178 MA's), (28, 40400), (30, 40409), (36, 40493), (46, 40583), (56, 40655), (63, 40718), (68, 40745), (78, 40784),

Gene: TruffulaTree\_66 Start: 43305, Stop: 43814, Start Num: 18

Candidate Starts for TruffulaTree\_66:

(Start: 18 @43305 has 178 MA's), (28, 43380), (30, 43389), (33, 43419), (36, 43473), (45, 43551), (46, 43563), (80, 43764),

Gene: Twitch\_65 Start: 43013, Stop: 43522, Start Num: 18

Candidate Starts for Twitch\_65:

(Start: 18 @43013 has 178 MA's), (28, 43088), (33, 43127), (36, 43181), (45, 43259), (46, 43271), (80, 43472),

Gene: Unicorn\_67 Start: 42757, Stop: 43275, Start Num: 18

Candidate Starts for Unicorn\_67:

(3, 42577), (10, 42643), (Start: 18 @42757 has 178 MA's), (28, 42832), (34, 42880), (36, 42925), (40, 42943), (46, 43015), (47, 43027), (56, 43087), (80, 43225), (86, 43258), (87, 43264),

Gene: Urkel\_66 Start: 43745, Stop: 44260, Start Num: 18

Candidate Starts for Urkel\_66:

(Start: 18 @43745 has 178 MA's), (28, 43820), (36, 43913), (40, 43931), (45, 43991), (46, 44003), (80, 44204),

Gene: Validus\_70 Start: 43876, Stop: 44394, Start Num: 18

Candidate Starts for Validus\_70:

(Start: 18 @43876 has 178 MA's), (26, 43939), (28, 43951), (30, 43960), (34, 43999), (36, 44044), (40, 44062), (46, 44134), (47, 44146), (54, 44188), (56, 44206), (78, 44332),

Gene: Veliki\_67 Start: 43278, Stop: 43787, Start Num: 18

Candidate Starts for Veliki\_67:

(Start: 18 @43278 has 178 MA's), (28, 43353), (30, 43362), (33, 43392), (36, 43446), (45, 43524), (46, 43536), (80, 43737),

Gene: ViviJ\_58 Start: 39842, Stop: 40417, Start Num: 18

Candidate Starts for ViviJ\_58:

(Start: 13 @39818 has 1 MA's), (Start: 18 @39842 has 178 MA's), (31, 39950), (37, 40022), (41, 40046), (45, 40094), (46, 40106), (49, 40130), (56, 40178), (60, 40223), (73, 40313), (87, 40406),

Gene: Waterfoul\_61 Start: 42187, Stop: 42753, Start Num: 18

Candidate Starts for Waterfoul\_61:

(Start: 13 @42163 has 1 MA's), (Start: 18 @42187 has 178 MA's), (36, 42361), (37, 42367), (45, 42439), (46, 42451), (47, 42463), (49, 42475), (56, 42523), (60, 42568), (75, 42652), (87, 42739),

Gene: Wintermute\_69 Start: 42831, Stop: 43499, Start Num: 15

Candidate Starts for Wintermute\_69:

(Start: 15 @42831 has 23 MA's), (36, 42993), (37, 42999), (40, 43011), (42, 43038), (46, 43083), (56, 43155), (77, 43284), (79, 43317), (86, 43350), (89, 43371), (91, 43437), (92, 43479),

Gene: Ximenita\_71 Start: 43457, Stop: 43978, Start Num: 18

Candidate Starts for Ximenita\_71:

(3, 43277), (Start: 18 @43457 has 178 MA's), (28, 43532), (34, 43580), (36, 43625), (40, 43643), (46, 43715), (47, 43727), (56, 43787), (80, 43928), (86, 43961), (87, 43967),

Gene: Y10\_66 Start: 42759, Stop: 43424, Start Num: 15

Candidate Starts for Y10\_66:

(Start: 15 @42759 has 23 MA's), (36, 42921), (37, 42927), (40, 42939), (42, 42966), (46, 43011), (56, 43083), (77, 43212), (79, 43245), (85, 43272), (91, 43362), (92, 43404),

Gene: Y2\_66 Start: 42759, Stop: 43424, Start Num: 15

Candidate Starts for Y2\_66:

(Start: 15 @42759 has 23 MA's), (36, 42921), (37, 42927), (40, 42939), (42, 42966), (46, 43011), (56, 43083), (77, 43212), (79, 43245), (85, 43272), (91, 43362), (92, 43404),

Gene: YasnayaPolyana\_68 Start: 42684, Stop: 43325, Start Num: 15

Candidate Starts for YasnayaPolyana\_68:

(Start: 15 @42684 has 23 MA's), (36, 42846), (37, 42852), (40, 42864), (42, 42891), (46, 42936), (56, 43008), (77, 43137), (79, 43170), (85, 43197), (91, 43263), (92, 43305),

Gene: YoureAdopted\_65 Start: 43424, Stop: 43933, Start Num: 18

Candidate Starts for YoureAdopted\_65:

(Start: 18 @43424 has 178 MA's), (28, 43499), (33, 43538), (36, 43592), (45, 43670), (46, 43682), (80, 43883),

Gene: Yuna\_70 Start: 44572, Stop: 45099, Start Num: 18

Candidate Starts for Yuna\_70:

(Start: 18 @44572 has 178 MA's), (28, 44647), (34, 44695), (36, 44740), (39, 44752), (40, 44758), (46, 44830), (47, 44842), (63, 44965), (87, 45088),

Gene: Yunkel11\_70 Start: 43327, Stop: 43848, Start Num: 18

Candidate Starts for Yunkel11\_70:

(Start: 18 @43327 has 178 MA's), (28, 43402), (36, 43495), (40, 43513), (46, 43585), (47, 43597), (54, 43639), (80, 43795),

Gene: Zabiza\_60 Start: 39161, Stop: 39670, Start Num: 18

Candidate Starts for Zabiza\_60:

(Start: 18 @39161 has 178 MA's), (28, 39236), (30, 39245), (33, 39275), (36, 39329), (45, 39407), (46, 39419), (67, 39578), (80, 39620),

Gene: Zavala\_68 Start: 43583, Stop: 44092, Start Num: 18

Candidate Starts for Zavala\_68:

(Start: 18 @43583 has 178 MA's), (28, 43658), (30, 43667), (33, 43697), (36, 43751), (45, 43829), (46, 43841), (80, 44042),

Gene: ZoeJ\_67 Start: 44866, Stop: 45384, Start Num: 18

Candidate Starts for ZoeJ\_67:

(7, 44716), (Start: 18 @44866 has 178 MA's), (34, 44989), (36, 45031), (38, 45040), (39, 45043), (40, 45049), (46, 45121), (47, 45133), (49, 45145), (56, 45193), (80, 45334), (87, 45373),