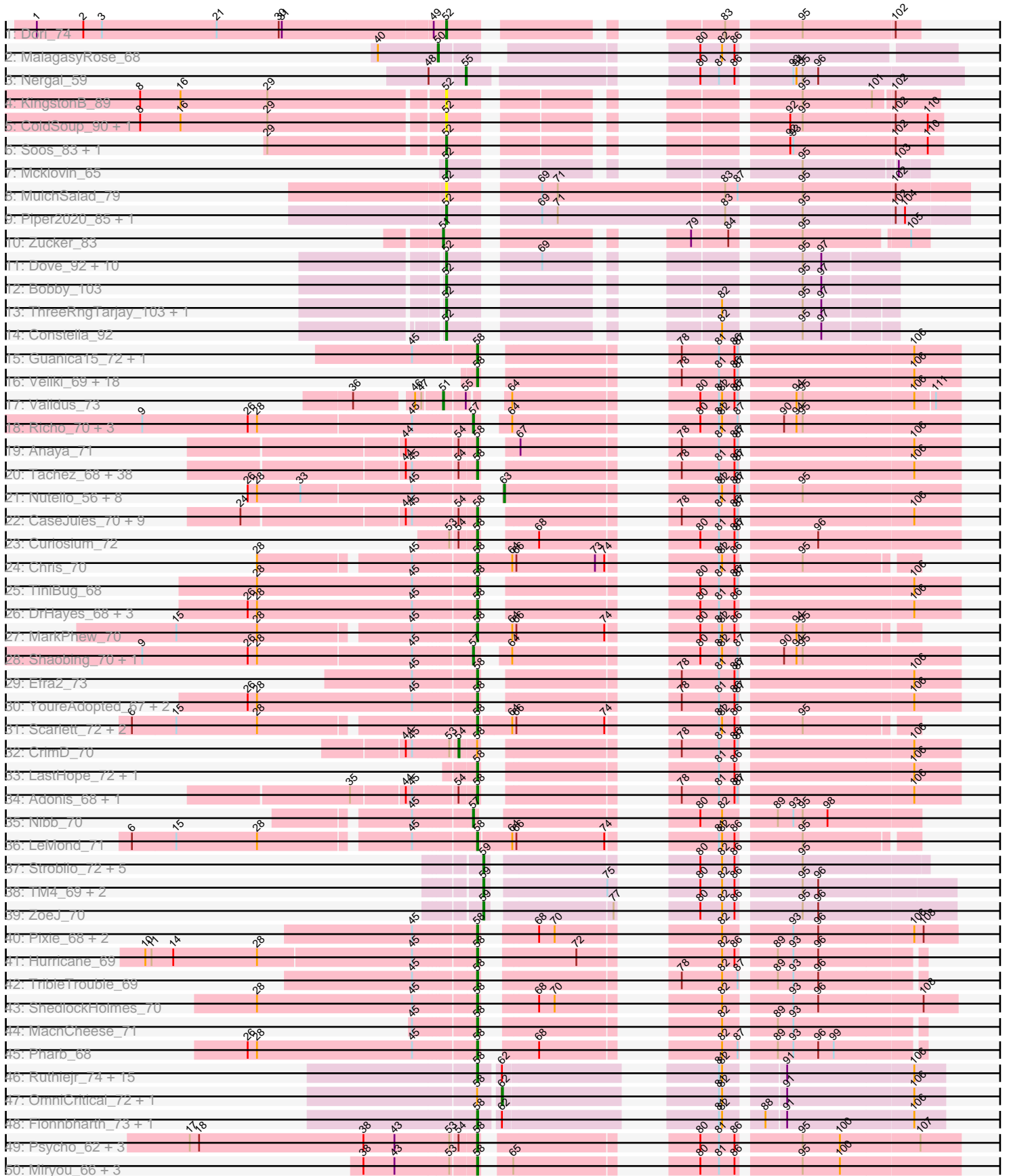
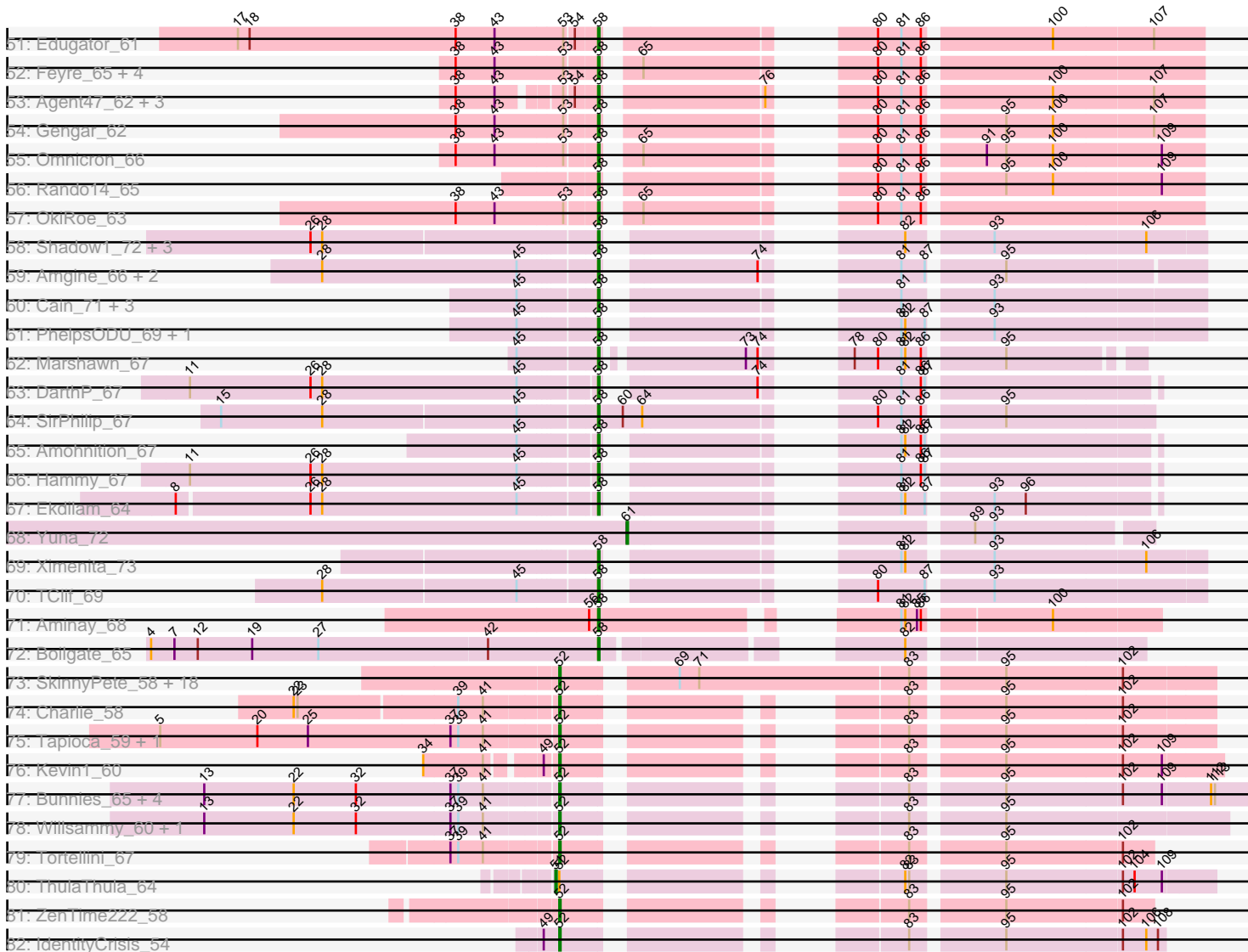


Pham 196265



Pham 196265



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 196265 Report

This analysis was run 12/09/24 on database version 580.

Pham number 196265 has 255 members, 11 are drafts.

Phages represented in each track:

- Track 1 : Dori\_74
- Track 2 : MalagasyRose\_68
- Track 3 : Nergal\_59
- Track 4 : KingstonB\_89
- Track 5 : ColdSoup\_90, Jollymon\_90
- Track 6 : Soos\_83, Sting\_86
- Track 7 : Mcklovin\_65
- Track 8 : MulchSalad\_79
- Track 9 : Piper2020\_85, Frankie\_79
- Track 10 : Zucker\_83
- Track 11 : Dove\_92, Bombitas\_95, Ejimix\_100, JuicyJay\_103, Halley\_108, Beem\_108, Minerva\_106, Schatzie\_101, HokkenD\_96, Redno2\_98, NihilNomen\_108
- Track 12 : Bobby\_103
- Track 13 : ThreeRngTarjay\_103, Optimus\_100
- Track 14 : Constella\_92
- Track 15 : Guanica15\_72, Yunkel11\_72
- Track 16 : Veliki\_69, LaterM\_68, Apocalypse\_70, JAWS\_68, Devera\_75, Ageofdapage\_71, Prithvi\_69, Deby\_68, Megsy\_70, TaiwanKao\_70, BaghaKamala\_67, Murucutumbu\_69, Dole\_73, CheetoDust\_67, Illumine\_73, LindNT\_67, Tiri\_68, TreyKay\_69, Stinson\_69
- Track 17 : Validus\_73
- Track 18 : Richo\_70, Dartin\_70, Niklas\_70, McMater\_70
- Track 19 : Anaya\_71
- Track 20 : Tachez\_68, BGlluviae\_68, Jarvi\_68, Emerson\_70, Padpat\_71, Adephegia\_68, Twitch\_68, Ramen\_69, Pokerus\_68, Homura\_68, BarrelRoll\_69, Rapunzel97\_70, TruffulaTree\_69, Atiba\_69, Beezoo\_70, Spock\_68, Inky\_68, QuincyRose\_66, Jeckyll\_68, ActinUp\_68, Joy99\_68, Slimphazie\_69, Zavala\_71, Ganymede\_68, Peel\_68, Belladonna\_68, Rosmarinus\_68, HedwigODU\_68, Topper\_68, Zabiza\_63, Dalmuri\_68, Jayhawk\_70, Lunahalos\_68, Capricorn\_68, Llorens\_68, MeaningOfLife\_69, AlishaPH\_68, Mynx\_70, CREW\_68
- Track 21 : Nutello\_56, LilPharaoh\_57, Torres\_58, Nikao\_59, Binglebops\_56, Mdavu\_57, Enkosi\_58, Amelie\_56, SgtBeansprout\_57
- Track 22 : CaseJules\_70, Blizzard\_68, Boiiii\_68, Durfee\_68, Piatt\_68, Hyperbowlee\_68, Padfoot\_68, Asayake\_68, BEEST\_68, ShiaSurprise\_69
- Track 23 : Curiosium\_72
- Track 24 : Chris\_70
- Track 25 : TiniBug\_68

- Track 26 : DrHayes\_68, Urkel\_68, Bella96\_68, SamuelLPlaqson\_68
- Track 27 : MarkPheW\_70
- Track 28 : Shaobing\_70, Peanam\_70
- Track 29 : Efra2\_73
- Track 30 : YoureAdopted\_67, Sulley\_67, Angelica\_67
- Track 31 : Scarlett\_72, Oscar\_71, KiSi\_72
- Track 32 : CrimD\_70
- Track 33 : LastHope\_72, TingHuaYa\_71
- Track 34 : Adonis\_68, Geraldini\_71
- Track 35 : Nibb\_70
- Track 36 : LeMond\_71
- Track 37 : Strobilo\_72, DismalFunk\_71, Milly\_71, DismalStressor\_71, Findley\_71, Marcoliusprime\_71
- Track 38 : TM4\_69, BoostSeason\_71, Mufasa\_71
- Track 39 : ZoeJ\_70
- Track 40 : Pixie\_68, Keshu\_71, TBond007\_65
- Track 41 : Hurricane\_69
- Track 42 : TribbleTrouble\_69
- Track 43 : ShedlockHolmes\_70
- Track 44 : MacnCheese\_71
- Track 45 : Pharb\_68
- Track 46 : Ruthiejr\_74, Patt\_69, Cheetobro\_73, Reptar3000\_70, Malthus\_74, Y10\_70, Y2\_70, Mitti\_73, Juliette\_75, Taquito\_72, Chancellor\_73, MissDaisy\_70, Slarp\_73, JF1\_73, Wintermute\_73, SamScheppers\_71
- Track 47 : OmniCritical\_72, Kraw\_74
- Track 48 : Fionnbharth\_73, Eponine\_75
- Track 49 : Psycho\_62, Dadosky\_64, AlleyCat\_64, Larva\_63
- Track 50 : Miryou\_66, Leston\_62, Guillsminger\_63, Paola\_62
- Track 51 : Edugator\_61
- Track 52 : Feyre\_65, Waterfoul\_64, SoSeph\_63, Heftyboy\_63, Thyatira\_65
- Track 53 : Agent47\_62, Kratio\_60, Collard\_60, InvictusManeo\_60
- Track 54 : Gengar\_62
- Track 55 : Omnicron\_66
- Track 56 : Rando14\_65
- Track 57 : OkiRoe\_63
- Track 58 : Shadow1\_72, Sunflower1121\_73, Krueger\_72, Syra333\_71
- Track 59 : Amgine\_66, Fefferhead\_65, Ellie\_63
- Track 60 : Cain\_71, Phrank\_71, Bryler\_71, Tierra\_71
- Track 61 : PhelpsODU\_69, Unicorn\_69
- Track 62 : Marshawn\_67
- Track 63 : DARTH\_P\_67
- Track 64 : SirPhilip\_67
- Track 65 : Amohnition\_67
- Track 66 : Hammy\_67
- Track 67 : Ekdilam\_64
- Track 68 : Yuna\_72
- Track 69 : Ximenita\_73
- Track 70 : TClif\_69
- Track 71 : Aminay\_68
- Track 72 : Boilgate\_65
- Track 73 : SkinnyPete\_58, FirstPlacePfu\_63, Pipsqueaks\_62, Smurph\_61, Fulbright\_59, Carcharodon\_61, Magsby\_60, Phloss\_59, Chewbacca\_64, Schnauzer\_62, Philonius\_61, Silvy\_57, Silvafighter\_63, Parmesanjohn\_61,

Xerxes\_61, Melville\_66, Aggie\_57, Duplicity\_59, Gex\_62

- Track 74 : Charlie\_58
- Track 75 : Tapioca\_59, Andies\_55
- Track 76 : Kevin1\_60
- Track 77 : Bunnies\_65, Glaske\_59, CactusJack\_60, KilKor\_60, Phalm\_60
- Track 78 : Willsammy\_60, Ksqared\_63
- Track 79 : Tortellini\_67
- Track 80 : ThulaThula\_64
- Track 81 : ZenTime222\_58
- Track 82 : IdentityCrisis\_54

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

The start number called the most often in the published annotations is 58, it was called in 160 of the 244 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp\_68, Adephegia\_68, Adonis\_68, Agent47\_62, Ageofdapage\_71, AlishaPH\_68, AlleyCat\_64, Amgine\_66, Aminay\_68, Amohnition\_67, Anaya\_71, Angelica\_67, Apocalypse\_70, Asayake\_68, Atiba\_69, BEEST\_68, BGIlluviae\_68, BaghaKamala\_67, BarrelRoll\_69, Beezoo\_70, Bella96\_68, Belladonna\_68, Blizzard\_68, Boiiii\_68, Boilgate\_65, Bryler\_71, CREW\_68, Cain\_71, Capricorn\_68, CaseJules\_70, Chancellor\_73, CheetoDust\_67, Cheetobro\_73, Chris\_70, Collard\_60, Curiosium\_72, Dadosky\_64, Dalmuri\_68, DarthP\_67, Deby\_68, Devera\_75, Dole\_73, DrHayes\_68, Durfee\_68, Edugator\_61, Efra2\_73, Ekdilam\_64, Ellie\_63, Emerson\_70, Eponine\_75, Fefferhead\_65, Feyre\_65, Fionnbharth\_73, Ganymede\_68, Gengar\_62, Geraldini\_71, Guanica15\_72, Guillsminger\_63, Hammy\_67, HedwigODU\_68, Heftyboy\_63, Homura\_68, Hurricane\_69, Hyperbowlee\_68, Illumine\_73, Inky\_68, InvictusManeo\_60, JAWS\_68, JF1\_73, Jarvi\_68, Jayhawk\_70, Jeckyll\_68, Joy99\_68, Juliette\_75, Keshu\_71, KiSi\_72, Kratio\_60, Krueger\_72, Larva\_63, LastHope\_72, LaterM\_68, LeMond\_71, Leston\_62, LindNT\_67, Llorens\_68, Lunahalos\_68, MacnCheese\_71, Malthus\_74, MarkPhew\_70, Marshawn\_67, MeaningOfLife\_69, Megsy\_70, Miryou\_66, MissDaisy\_70, Mitti\_73, Murucutumbu\_69, Mynx\_70, OkiRoe\_63, Omnicron\_66, Oscar\_71, Padfoot\_68, Padpat\_71, Paola\_62, Patt\_69, Peel\_68, Pharb\_68, PhelpsODU\_69, Phrank\_71, Piatt\_68, Pixie\_68, Pokerus\_68, Prithvi\_69, Psycho\_62, QuincyRose\_66, Ramen\_69, Rando14\_65, Rapunzel97\_70, Reptar3000\_70, Rosmarinus\_68, Ruthiejr\_74, SamScheppers\_71, SamuelPlaqson\_68, Scarlett\_72, Shadow1\_72, ShedlockHolmes\_70, ShiaSurprise\_69, SirPhilip\_67, Slarp\_73, Slimphazie\_69, SoSeph\_63, Spock\_68, Stinson\_69, Sulley\_67, Sunflower1121\_73, Syra333\_71, TBond007\_65, TClif\_69, Tachez\_68, TaiwanKao\_70, Taquito\_72, Thyatira\_65, Tierra\_71, TingHuaYa\_71, TiniBug\_68, Tiri\_68, Topper\_68, TreyKay\_69, TripleTrouble\_69, TruffulaTree\_69, Twitch\_68, Unicorn\_69, Urkel\_68, Veliki\_69, Waterfoul\_64, Wintermute\_73, Ximenita\_73, Y10\_70, Y2\_70, YoureAdopted\_67, Yunkel11\_72, Zabiza\_63, Zavala\_71,

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

- CrimD\_70, Kraw\_74, OmniCritical\_72,

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

- Aggie\_57, Amelie\_56, Andies\_55, Beem\_108, Biglebops\_56, Bobby\_103, Bombitas\_95, BoostSeason\_71, Bunnies\_65, CactusJack\_60, Carcharodon\_61, Charlie\_58, Chewbacca\_64, ColdSoup\_90, Constella\_92, Dartin\_70, DismalFunk\_71, DismalStressor\_71, Dori\_74, Dove\_92, Duplicity\_59, Ejimix\_100, Enkosi\_58, Findley\_71, FirstPlacePfu\_63, Frankie\_79, Fulbright\_59, Gex\_62, Glaske\_59, Halley\_108, HokkenD\_96, IdentityCrisis\_54, Jollymon\_90, JuicyJay\_103, Kevin1\_60, KilKor\_60, KingstonB\_89, Ksquared\_63, LilPharaoh\_57, Magsby\_60, MalagasyRose\_68, Marcoliusprime\_71, McMater\_70, Mcklovin\_65, Mdavu\_57, Melville\_66, Milly\_71, Minerva\_106, Mufasa\_71, MulchSalad\_79, Nergal\_59, Nibb\_70, NihilNomen\_108, Nikao\_59, Niklas\_70, Nutello\_56, Optimus\_100, Parmesanjohn\_61, Peanam\_70, Phalm\_60, Philonius\_61, Phloss\_59, Piper2020\_85, Pipsqueaks\_62, Redno2\_98, Richo\_70, Schatzie\_101, Schnauzer\_62, SgtBeansprout\_57, Shaobing\_70, Silvafighter\_63, Silvy\_57, SkinnyPete\_58, Smurph\_61, Soos\_83, Sting\_86, Strobilo\_72, TM4\_69, Tapioca\_59, ThreeRngTarjay\_103, ThulaThula\_64, Torres\_58, Tortellini\_67, Validus\_73, Willsammy\_60, Xerxes\_61, Yuna\_72, ZenTime222\_58, ZoeJ\_70, Zucker\_83,

### Summary by start number:

#### Start 50:

- Found in 1 of 255 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 244
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MalagasyRose\_68 (AG),

#### Start 51:

- Found in 3 of 255 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 3 of 244
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ThulaThula\_64 (P5), Validus\_73 (K1), Zucker\_83 (FN),

#### Start 52:

- Found in 59 of 255 ( 23.1% ) of genes in pham
- Manual Annotations of this start: 54 of 244
- Called 98.3% of time when present
- Phage (with cluster) where this start called: Aggie\_57 (N), Andies\_55 (N), Beem\_108 (J), Bobby\_103 (J), Bombitas\_95 (J), Bunnies\_65 (P1), CactusJack\_60 (P1), Carcharodon\_61 (N), Charlie\_58 (N), Chewbacca\_64 (N), ColdSoup\_90 (CP), Constella\_92 (J), Dori\_74 (AD), Dove\_92 (J), Duplicity\_59 (N), Ejimix\_100 (J), FirstPlacePfu\_63 (P1), Frankie\_79 (F1), Fulbright\_59 (N), Gex\_62 (N), Glaske\_59 (P1), Halley\_108 (J), HokkenD\_96 (J), IdentityCrisis\_54 (singleton), Jollymon\_90 (CP), JuicyJay\_103 (J), Kevin1\_60 (N), KilKor\_60 (P1), KingstonB\_89 (CP), Ksquared\_63 (P1), Magsby\_60 (N), Mcklovin\_65 (CZ4), Melville\_66 (N), Minerva\_106 (J), MulchSalad\_79 (F), NihilNomen\_108 (J), Optimus\_100 (J), Parmesanjohn\_61 (N), Phalm\_60 (P1), Philonius\_61 (N), Phloss\_59 (N), Piper2020\_85 (F1), Pipsqueaks\_62 (N), Redno2\_98 (J), Schatzie\_101 (J), Schnauzer\_62 (N), Silvafighter\_63 (N), Silvy\_57 (N), SkinnyPete\_58 (N), Smurph\_61 (N), Soos\_83 (CP), Sting\_86 (CP), Tapioca\_59 (N), ThreeRngTarjay\_103 (J), Tortellini\_67 (P2), Willsammy\_60 (P1), Xerxes\_61 (N), ZenTime222\_58 (T),

#### Start 54:

- Found in 63 of 255 ( 24.7% ) of genes in pham

- Manual Annotations of this start: 1 of 244
- Called 1.6% of time when present
- Phage (with cluster) where this start called: CrimD\_70 (K1),

#### Start 55:

- Found in 2 of 255 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 244
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Nergal\_59 (AG),

#### Start 57:

- Found in 7 of 255 ( 2.7% ) of genes in pham
- Manual Annotations of this start: 4 of 244
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dartin\_70 (K1), McMater\_70 (K1), Nibb\_70 (K1), Niklas\_70 (K1), Peanam\_70 (K1), Richo\_70 (K1), Shaobing\_70 (K1),

#### Start 58:

- Found in 165 of 255 ( 64.7% ) of genes in pham
- Manual Annotations of this start: 160 of 244
- Called 98.2% of time when present
- Phage (with cluster) where this start called: ActinUp\_68 (K1), Adephagia\_68 (K1), Adonis\_68 (K1), Agent47\_62 (K5), Ageofdapage\_71 (K1), AlishaPH\_68 (K1), AlleyCat\_64 (K5), Amgine\_66 (K6), Aminay\_68 (K7), Amohnition\_67 (K6), Anaya\_71 (K1), Angelica\_67 (K1), Apocalypse\_70 (K1), Asayake\_68 (K1), Atiba\_69 (K1), BEEST\_68 (K1), BGIlluviae\_68 (K1), BaghaKamala\_67 (K1), BarrelRoll\_69 (K1), Beezoo\_70 (K1), Bella96\_68 (K1), Belladonna\_68 (K1), Blizzard\_68 (K1), Boiiii\_68 (K1), Boilgate\_65 (K8), Bryler\_71 (K6), CREW\_68 (K1), Cain\_71 (K6), Capricorn\_68 (K1), CaseJules\_70 (K1), Chancellor\_73 (K4), CheetoDust\_67 (K1), Cheetobro\_73 (K4), Chris\_70 (K1), Collard\_60 (K5), Curiosium\_72 (K1), Dadosky\_64 (K5), Dalmuri\_68 (K1), DarthP\_67 (K6), Deby\_68 (K1), Devera\_75 (K1), Dole\_73 (K1), DrHayes\_68 (K1), Durfee\_68 (K1), Edugator\_61 (K5), Efra2\_73 (K1), Ekdilam\_64 (K6), Ellie\_63 (K6), Emerson\_70 (K1), Eponine\_75 (K4), Fefferhead\_65 (K6), Feyre\_65 (K5), Fionnbharth\_73 (K4), Ganymede\_68 (K1), Gengar\_62 (K5), Geraldini\_71 (K1), Guanica15\_72 (K1), Guillsminger\_63 (K5), Hammy\_67 (K6), HedwigODU\_68 (K1), Heftyboy\_63 (K5), Homura\_68 (K1), Hurricane\_69 (K3), Hyperbowlee\_68 (K1), Illumine\_73 (K1), Inky\_68 (K1), InvictusManeo\_60 (K5), JAWS\_68 (K1), JF1\_73 (K4), Jarvi\_68 (K1), Jayhawk\_70 (K1), Jeckyll\_68 (K1), Joy99\_68 (K1), Juliette\_75 (K4), Keshu\_71 (K3), KiSi\_72 (K1), Kratio\_60 (K5), Krueger\_72 (K6), Larva\_63 (K5), LastHope\_72 (K1), LaterM\_68 (K1), LeMond\_71 (K1), Leston\_62 (K5), LindNT\_67 (K1), Llorens\_68 (K1), Lunahalos\_68 (K1), MacnCheese\_71 (K3), Malthus\_74 (K4), MarkPhew\_70 (K1), Marshawn\_67 (K6), MeaningOfLife\_69 (K1), Megsy\_70 (K1), Miryou\_66 (K5), MissDaisy\_70 (K4), Mitti\_73 (K4), Murucutumbu\_69 (K1), Mynx\_70 (K1), OkiRoe\_63 (K5), Omnicron\_66 (K5), Oscar\_71 (K1), Padfoot\_68 (K1), Padpat\_71 (K1), Paola\_62 (K5), Patt\_69 (K4), Peel\_68 (K1), Pharb\_68 (K3), PhelpsODU\_69 (K6), Phrank\_71 (K6), Piatt\_68 (K1), Pixie\_68 (K3), Pokerus\_68 (K1), Prithvi\_69 (K1), Psycho\_62 (K5), QuincyRose\_66 (K1), Ramen\_69 (K1), Rando14\_65 (K5), Rapunzel97\_70 (K1), Reptar3000\_70 (K4), Rosmarinus\_68 (K1), Ruthiejr\_74 (K4), SamScheppers\_71 (K4), SamuelLPlaqson\_68 (K1), Scarlett\_72 (K1), Shadow1\_72 (K6), ShedlockHolmes\_70 (K3), ShiaSurprise\_69 (K1), SirPhilip\_67 (K6), Slarp\_73 (K4), Slimphazie\_69 (K1), SoSeph\_63 (K5), Spock\_68 (K1), Stinson\_69 (K1), Sulley\_67 (K1), Sunflower1121\_73 (K6), Syra333\_71 (K6), TBond007\_65 (K3), TClif\_69 (K6),

Tachez\_68 (K1), TaiwanKao\_70 (K1), Taquito\_72 (K4), Thyatira\_65 (K5), Tierra\_71 (K6), TingHuaYa\_71 (K1), TiniBug\_68 (K1), Tiri\_68 (K1), Topper\_68 (K1), TreyKay\_69 (K1), TribbleTrouble\_69 (K3), TruffulaTree\_69 (K1), Twitch\_68 (K1), Unicorn\_69 (K6), Urkel\_68 (K1), Veliki\_69 (K1), Waterfoul\_64 (K5), Wintermute\_73 (K4), Ximenita\_73 (K6), Y10\_70 (K4), Y2\_70 (K4), YoureAdopted\_67 (K1), Yunkel11\_72 (K1), Zabiza\_63 (K1), Zavala\_71 (K1),

Start 59:

- Found in 10 of 255 ( 3.9% ) of genes in pham
- Manual Annotations of this start: 10 of 244
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BoostSeason\_71 (K2), DismalFunk\_71 (K2), DismalStressor\_71 (K2), Findley\_71 (K2), Marcoliusprime\_71 (K2), Milly\_71 (K2), Mufasa\_71 (K2), Strobilo\_72 (K2), TM4\_69 (K2), ZoeJ\_70 (K2),

Start 61:

- Found in 1 of 255 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 244
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Yuna\_72 (K6),

Start 62:

- Found in 20 of 255 ( 7.8% ) of genes in pham
- Manual Annotations of this start: 1 of 244
- Called 10.0% of time when present
- Phage (with cluster) where this start called: Kraw\_74 (K4), OmniCritical\_72 (K4),

Start 63:

- Found in 9 of 255 ( 3.5% ) of genes in pham
- Manual Annotations of this start: 8 of 244
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amelie\_56 (K1), Binglebops\_56 (K1), Enkosi\_58 (K1), LilPharaoh\_57 (K1), Mdavu\_57 (K1), Nikao\_59 (K1), Nutello\_56 (K1), SgtBeansprout\_57 (K1), Torres\_58 (K1),

### **Summary by clusters:**

There are 22 clusters represented in this pham: singleton, CZ4, K3, K2, K1, K7, K6, K5, K4, K8, FN, F, P2, P1, AD, AG, P5, J, N, T, CP, F1,

Info for manual annotations of cluster AD:

- Start number 52 was manually annotated 1 time for cluster AD.

Info for manual annotations of cluster AG:

- Start number 50 was manually annotated 1 time for cluster AG.
- Start number 55 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster CP:

- Start number 52 was manually annotated 2 times for cluster CP.

Info for manual annotations of cluster CZ4:

- Start number 52 was manually annotated 1 time for cluster CZ4.



Info for manual annotations of cluster F1:

- Start number 52 was manually annotated 2 times for cluster F1.

Info for manual annotations of cluster FN:

- Start number 51 was manually annotated 1 time for cluster FN.

Info for manual annotations of cluster J:

- Start number 52 was manually annotated 15 times for cluster J.

Info for manual annotations of cluster K1:

- Start number 51 was manually annotated 1 time for cluster K1.
- Start number 54 was manually annotated 1 time for cluster K1.
- Start number 57 was manually annotated 4 times for cluster K1.
- Start number 58 was manually annotated 89 times for cluster K1.
- Start number 63 was manually annotated 8 times for cluster K1.

Info for manual annotations of cluster K2:

- Start number 59 was manually annotated 10 times for cluster K2.

Info for manual annotations of cluster K3:

- Start number 58 was manually annotated 8 times for cluster K3.

Info for manual annotations of cluster K4:

- Start number 58 was manually annotated 18 times for cluster K4.
- Start number 62 was manually annotated 1 time for cluster K4.

Info for manual annotations of cluster K5:

- Start number 58 was manually annotated 22 times for cluster K5.

Info for manual annotations of cluster K6:

- Start number 58 was manually annotated 21 times for cluster K6.
- Start number 61 was manually annotated 1 time for cluster K6.

Info for manual annotations of cluster K7:

- Start number 58 was manually annotated 1 time for cluster K7.

Info for manual annotations of cluster K8:

- Start number 58 was manually annotated 1 time for cluster K8.

Info for manual annotations of cluster N:

- Start number 52 was manually annotated 22 times for cluster N.

Info for manual annotations of cluster P1:

- Start number 52 was manually annotated 8 times for cluster P1.

Info for manual annotations of cluster P2:

- Start number 52 was manually annotated 1 time for cluster P2.

Info for manual annotations of cluster P5:

- Start number 51 was manually annotated 1 time for cluster P5.

Info for manual annotations of cluster T:

- Start number 52 was manually annotated 1 time for cluster T.

**Gene Information:**

Gene: ActinUp\_68 Start: 43942, Stop: 44313, Start Num: 58

Candidate Starts for ActinUp\_68:

(44, 43882), (45, 43888), (Start: 54 @43927 has 1 MA's), (Start: 58 @43942 has 160 MA's), (78, 44059), (81, 44095), (86, 44110), (87, 44113), (106, 44269),

Gene: Adephagia\_68 Start: 43979, Stop: 44350, Start Num: 58

Candidate Starts for Adephagia\_68:

(44, 43919), (45, 43925), (Start: 54 @43964 has 1 MA's), (Start: 58 @43979 has 160 MA's), (78, 44096), (81, 44132), (86, 44147), (87, 44150), (106, 44306),

Gene: Adonis\_68 Start: 44214, Stop: 44585, Start Num: 58

Candidate Starts for Adonis\_68:

(35, 44106), (44, 44154), (45, 44160), (Start: 54 @44199 has 1 MA's), (Start: 58 @44214 has 160 MA's), (78, 44331), (81, 44367), (86, 44382), (87, 44385), (106, 44541),

Gene: Agent47\_62 Start: 41490, Stop: 41870, Start Num: 58

Candidate Starts for Agent47\_62:

(38, 41400), (43, 41430), (53, 41469), (Start: 54 @41475 has 1 MA's), (Start: 58 @41490 has 160 MA's), (76, 41598), (80, 41634), (81, 41652), (86, 41667), (100, 41757), (107, 41832),

Gene: Ageofdapage\_71 Start: 45137, Stop: 45508, Start Num: 58

Candidate Starts for Ageofdapage\_71:

(Start: 58 @45137 has 160 MA's), (78, 45254), (81, 45290), (86, 45305), (87, 45308), (106, 45464),

Gene: Aggie\_57 Start: 39395, Stop: 39856, Start Num: 52

Candidate Starts for Aggie\_57:

(Start: 52 @39395 has 54 MA's), (69, 39467), (71, 39482), (83, 39641), (95, 39704), (102, 39791),

Gene: AlishaPH\_68 Start: 44240, Stop: 44611, Start Num: 58

Candidate Starts for AlishaPH\_68:

(44, 44180), (45, 44186), (Start: 54 @44225 has 1 MA's), (Start: 58 @44240 has 160 MA's), (78, 44357), (81, 44393), (86, 44408), (87, 44411), (106, 44567),

Gene: AlleyCat\_64 Start: 41814, Stop: 42194, Start Num: 58

Candidate Starts for AlleyCat\_64:

(17, 41544), (18, 41553), (38, 41712), (43, 41742), (53, 41793), (Start: 54 @41799 has 1 MA's), (Start: 58 @41814 has 160 MA's), (80, 41958), (81, 41976), (86, 41991), (95, 42045), (100, 42081), (107, 42156),

Gene: Amelie\_56 Start: 41183, Stop: 41554, Start Num: 63

Candidate Starts for Amelie\_56:

(26, 40970), (28, 40979), (33, 41021), (45, 41126), (Start: 63 @41183 has 8 MA's), (81, 41336), (82, 41339), (86, 41351), (87, 41354), (95, 41405),

Gene: Amgine\_66 Start: 44807, Stop: 45178, Start Num: 58

Candidate Starts for Amgine\_66:

(28, 44603), (45, 44753), (Start: 58 @44807 has 160 MA's), (74, 44906), (81, 44963), (87, 44981), (95, 45032),

Gene: Aminay\_68 Start: 43564, Stop: 43917, Start Num: 58

Candidate Starts for Aminay\_68:

(56, 43558), (Start: 58 @43564 has 160 MA's), (81, 43735), (82, 43738), (85, 43747), (86, 43750), (100, 43837),

Gene: Amohnition\_67 Start: 44352, Stop: 44687, Start Num: 58

Candidate Starts for Amohnition\_67:

(45, 44301), (Start: 58 @44352 has 160 MA's), (81, 44508), (82, 44511), (86, 44523), (87, 44526),

Gene: Anaya\_71 Start: 44933, Stop: 45304, Start Num: 58

Candidate Starts for Anaya\_71:

(44, 44873), (Start: 54 @44918 has 1 MA's), (Start: 58 @44933 has 160 MA's), (67, 44948), (78, 45050), (81, 45086), (86, 45101), (87, 45104), (106, 45260),

Gene: Andies\_55 Start: 38900, Stop: 39301, Start Num: 52

Candidate Starts for Andies\_55:

(5, 38603), (20, 38678), (25, 38717), (37, 38825), (39, 38831), (41, 38849), (Start: 52 @38900 has 54 MA's), (83, 39083), (95, 39146), (102, 39233),

Gene: Angelica\_67 Start: 43899, Stop: 44270, Start Num: 58

Candidate Starts for Angelica\_67:

(26, 43686), (28, 43695), (45, 43845), (Start: 58 @43899 has 160 MA's), (78, 44016), (81, 44052), (86, 44067), (87, 44070), (106, 44226),

Gene: Apocalypse\_70 Start: 44662, Stop: 45033, Start Num: 58

Candidate Starts for Apocalypse\_70:

(Start: 58 @44662 has 160 MA's), (78, 44779), (81, 44815), (86, 44830), (87, 44833), (106, 44989),

Gene: Asayake\_68 Start: 44294, Stop: 44665, Start Num: 58

Candidate Starts for Asayake\_68:

(24, 44084), (44, 44234), (45, 44240), (Start: 54 @44279 has 1 MA's), (Start: 58 @44294 has 160 MA's), (78, 44411), (81, 44447), (86, 44462), (87, 44465), (106, 44621),

Gene: Atiba\_69 Start: 43942, Stop: 44313, Start Num: 58

Candidate Starts for Atiba\_69:

(44, 43882), (45, 43888), (Start: 54 @43927 has 1 MA's), (Start: 58 @43942 has 160 MA's), (78, 44059), (81, 44095), (86, 44110), (87, 44113), (106, 44269),

Gene: BEEST\_68 Start: 44294, Stop: 44665, Start Num: 58

Candidate Starts for BEEST\_68:

(24, 44084), (44, 44234), (45, 44240), (Start: 54 @44279 has 1 MA's), (Start: 58 @44294 has 160 MA's), (78, 44411), (81, 44447), (86, 44462), (87, 44465), (106, 44621),

Gene: BGlluviae\_68 Start: 44097, Stop: 44468, Start Num: 58

Candidate Starts for BGlluviae\_68:

(44, 44037), (45, 44043), (Start: 54 @44082 has 1 MA's), (Start: 58 @44097 has 160 MA's), (78, 44214), (81, 44250), (86, 44265), (87, 44268), (106, 44424),

Gene: BaghaKamala\_67 Start: 43528, Stop: 43899, Start Num: 58

Candidate Starts for BaghaKamala\_67:

(Start: 58 @43528 has 160 MA's), (78, 43645), (81, 43681), (86, 43696), (87, 43699), (106, 43855),

Gene: BarrelRoll\_69 Start: 44380, Stop: 44751, Start Num: 58

Candidate Starts for BarrelRoll\_69:

(44, 44320), (45, 44326), (Start: 54 @44365 has 1 MA's), (Start: 58 @44380 has 160 MA's), (78, 44497), (81, 44533), (86, 44548), (87, 44551), (106, 44707),

Gene: Beem\_108 Start: 62992, Stop: 63327, Start Num: 52

Candidate Starts for Beem\_108:

(Start: 52 @62992 has 54 MA's), (69, 63064), (95, 63238), (97, 63256),

Gene: Beezoo\_70 Start: 44892, Stop: 45263, Start Num: 58

Candidate Starts for Beezoo\_70:

(44, 44832), (45, 44838), (Start: 54 @44877 has 1 MA's), (Start: 58 @44892 has 160 MA's), (78, 45009), (81, 45045), (86, 45060), (87, 45063), (106, 45219),

Gene: Bella96\_68 Start: 44450, Stop: 44821, Start Num: 58

Candidate Starts for Bella96\_68:

(26, 44237), (28, 44246), (45, 44396), (Start: 58 @44450 has 160 MA's), (80, 44585), (81, 44603), (86, 44618), (106, 44777),

Gene: Belladonna\_68 Start: 44097, Stop: 44468, Start Num: 58

Candidate Starts for Belladonna\_68:

(44, 44037), (45, 44043), (Start: 54 @44082 has 1 MA's), (Start: 58 @44097 has 160 MA's), (78, 44214), (81, 44250), (86, 44265), (87, 44268), (106, 44424),

Gene: Biglebops\_56 Start: 41183, Stop: 41554, Start Num: 63

Candidate Starts for Biglebops\_56:

(26, 40970), (28, 40979), (33, 41021), (45, 41126), (Start: 63 @41183 has 8 MA's), (81, 41336), (82, 41339), (86, 41351), (87, 41354), (95, 41405),

Gene: Blizzard\_68 Start: 44294, Stop: 44665, Start Num: 58

Candidate Starts for Blizzard\_68:

(24, 44084), (44, 44234), (45, 44240), (Start: 54 @44279 has 1 MA's), (Start: 58 @44294 has 160 MA's), (78, 44411), (81, 44447), (86, 44462), (87, 44465), (106, 44621),

Gene: Bobby\_103 Start: 64857, Stop: 65192, Start Num: 52

Candidate Starts for Bobby\_103:

(Start: 52 @64857 has 54 MA's), (95, 65103), (97, 65121),

Gene: Boiiii\_68 Start: 44296, Stop: 44667, Start Num: 58

Candidate Starts for Boiiii\_68:

(24, 44086), (44, 44236), (45, 44242), (Start: 54 @44281 has 1 MA's), (Start: 58 @44296 has 160 MA's), (78, 44413), (81, 44449), (86, 44464), (87, 44467), (106, 44623),

Gene: Boilgate\_65 Start: 46267, Stop: 46611, Start Num: 58

Candidate Starts for Boilgate\_65:

(4, 45925), (7, 45943), (12, 45961), (19, 46003), (27, 46054), (42, 46183), (Start: 58 @46267 has 160 MA's), (82, 46444),

Gene: Bombitas\_95 Start: 60155, Stop: 60490, Start Num: 52

Candidate Starts for Bombitas\_95:

(Start: 52 @60155 has 54 MA's), (69, 60227), (95, 60401), (97, 60419),

Gene: BoostSeason\_71 Start: 46076, Stop: 46420, Start Num: 59  
Candidate Starts for BoostSeason\_71:  
(Start: 59 @46076 has 10 MA's), (75, 46181), (80, 46220), (82, 46241), (86, 46253), (95, 46307), (96, 46322),

Gene: Bryler\_71 Start: 43715, Stop: 44089, Start Num: 58  
Candidate Starts for Bryler\_71:  
(45, 43661), (Start: 58 @43715 has 160 MA's), (81, 43871), (93, 43931),

Gene: Bunnies\_65 Start: 41638, Stop: 42144, Start Num: 52  
Candidate Starts for Bunnies\_65:  
(13, 41374), (22, 41443), (32, 41491), (37, 41563), (39, 41569), (41, 41587), (Start: 52 @41638 has 54 MA's), (83, 41821), (95, 41884), (102, 41971), (109, 42001), (112, 42037), (113, 42040),

Gene: CREW\_68 Start: 44097, Stop: 44468, Start Num: 58  
Candidate Starts for CREW\_68:  
(44, 44037), (45, 44043), (Start: 54 @44082 has 1 MA's), (Start: 58 @44097 has 160 MA's), (78, 44214), (81, 44250), (86, 44265), (87, 44268), (106, 44424),

Gene: CactusJack\_60 Start: 40506, Stop: 41012, Start Num: 52  
Candidate Starts for CactusJack\_60:  
(13, 40242), (22, 40311), (32, 40359), (37, 40431), (39, 40437), (41, 40455), (Start: 52 @40506 has 54 MA's), (83, 40689), (95, 40752), (102, 40839), (109, 40869), (112, 40905), (113, 40908),

Gene: Cain\_71 Start: 43703, Stop: 44077, Start Num: 58  
Candidate Starts for Cain\_71:  
(45, 43649), (Start: 58 @43703 has 160 MA's), (81, 43859), (93, 43919),

Gene: Capricorn\_68 Start: 44097, Stop: 44468, Start Num: 58  
Candidate Starts for Capricorn\_68:  
(44, 44037), (45, 44043), (Start: 54 @44082 has 1 MA's), (Start: 58 @44097 has 160 MA's), (78, 44214), (81, 44250), (86, 44265), (87, 44268), (106, 44424),

Gene: Carcharodon\_61 Start: 38739, Stop: 39203, Start Num: 52  
Candidate Starts for Carcharodon\_61:  
(Start: 52 @38739 has 54 MA's), (69, 38811), (71, 38826), (83, 38985), (95, 39048), (102, 39135),

Gene: CaseJules\_70 Start: 44294, Stop: 44665, Start Num: 58  
Candidate Starts for CaseJules\_70:  
(24, 44084), (44, 44234), (45, 44240), (Start: 54 @44279 has 1 MA's), (Start: 58 @44294 has 160 MA's), (78, 44411), (81, 44447), (86, 44462), (87, 44465), (106, 44621),

Gene: Chancellor\_73 Start: 44642, Stop: 45022, Start Num: 58  
Candidate Starts for Chancellor\_73:  
(Start: 58 @44642 has 160 MA's), (Start: 62 @44660 has 1 MA's), (81, 44822), (82, 44825), (91, 44873), (106, 44993),

Gene: Charlie\_58 Start: 38128, Stop: 38529, Start Num: 52  
Candidate Starts for Charlie\_58:  
(22, 37939), (23, 37942), (39, 38059), (41, 38077), (Start: 52 @38128 has 54 MA's), (83, 38311), (95, 38374), (102, 38461),

Gene: CheetoDust\_67 Start: 43575, Stop: 43946, Start Num: 58  
Candidate Starts for CheetoDust\_67:  
(Start: 58 @43575 has 160 MA's), (78, 43692), (81, 43728), (86, 43743), (87, 43746), (106, 43902),

Gene: Cheetobro\_73 Start: 44639, Stop: 45019, Start Num: 58  
Candidate Starts for Cheetobro\_73:  
(Start: 58 @44639 has 160 MA's), (Start: 62 @44657 has 1 MA's), (81, 44819), (82, 44822), (91, 44870), (106, 44990),

Gene: Chewbacca\_64 Start: 38634, Stop: 39098, Start Num: 52  
Candidate Starts for Chewbacca\_64:  
(Start: 52 @38634 has 54 MA's), (69, 38706), (71, 38721), (83, 38880), (95, 38943), (102, 39030),

Gene: Chris\_70 Start: 44892, Stop: 45239, Start Num: 58  
Candidate Starts for Chris\_70:  
(28, 44703), (45, 44838), (Start: 58 @44892 has 160 MA's), (64, 44925), (66, 44928), (73, 45003), (74, 45012), (81, 45069), (82, 45072), (86, 45084), (95, 45138),

Gene: ColdSoup\_90 Start: 56372, Stop: 56746, Start Num: 52  
Candidate Starts for ColdSoup\_90:  
(8, 56087), (16, 56126), (29, 56210), (Start: 52 @56372 has 54 MA's), (92, 56603), (95, 56615), (102, 56702), (110, 56732),

Gene: Collard\_60 Start: 41451, Stop: 41831, Start Num: 58  
Candidate Starts for Collard\_60:  
(38, 41361), (43, 41391), (53, 41430), (Start: 54 @41436 has 1 MA's), (Start: 58 @41451 has 160 MA's), (76, 41559), (80, 41595), (81, 41613), (86, 41628), (100, 41718), (107, 41793),

Gene: Constella\_92 Start: 57167, Stop: 57499, Start Num: 52  
Candidate Starts for Constella\_92:  
(Start: 52 @57167 has 54 MA's), (82, 57347), (95, 57413), (97, 57431),

Gene: CrimD\_70 Start: 44874, Stop: 45260, Start Num: 54  
Candidate Starts for CrimD\_70:  
(44, 44829), (45, 44835), (53, 44868), (Start: 54 @44874 has 1 MA's), (Start: 58 @44889 has 160 MA's), (78, 45006), (81, 45042), (86, 45057), (87, 45060), (106, 45216),

Gene: Curiosium\_72 Start: 43619, Stop: 43990, Start Num: 58  
Candidate Starts for Curiosium\_72:  
(53, 43598), (Start: 54 @43604 has 1 MA's), (Start: 58 @43619 has 160 MA's), (68, 43652), (80, 43754), (81, 43772), (86, 43787), (87, 43790), (96, 43856),

Gene: Dadosky\_64 Start: 41816, Stop: 42196, Start Num: 58  
Candidate Starts for Dadosky\_64:  
(17, 41546), (18, 41555), (38, 41714), (43, 41744), (53, 41795), (Start: 54 @41801 has 1 MA's), (Start: 58 @41816 has 160 MA's), (80, 41960), (81, 41978), (86, 41993), (95, 42047), (100, 42083), (107, 42158),

Gene: Dalmuri\_68 Start: 44097, Stop: 44468, Start Num: 58  
Candidate Starts for Dalmuri\_68:  
(44, 44037), (45, 44043), (Start: 54 @44082 has 1 MA's), (Start: 58 @44097 has 160 MA's), (78, 44214), (81, 44250), (86, 44265), (87, 44268), (106, 44424),

Gene: DarthP\_67 Start: 44206, Stop: 44541, Start Num: 58

Candidate Starts for DarthP\_67:

(11, 43903), (26, 43996), (28, 44005), (45, 44155), (Start: 58 @44206 has 160 MA's), (74, 44305), (81, 44362), (86, 44377), (87, 44380),

Gene: Dartin\_70 Start: 44359, Stop: 44739, Start Num: 57

Candidate Starts for Dartin\_70:

(9, 44050), (26, 44152), (28, 44161), (45, 44308), (Start: 57 @44359 has 4 MA's), (64, 44377), (80, 44503), (81, 44521), (82, 44524), (87, 44539), (90, 44572), (94, 44584), (95, 44590),

Gene: Deby\_68 Start: 44347, Stop: 44718, Start Num: 58

Candidate Starts for Deby\_68:

(Start: 58 @44347 has 160 MA's), (78, 44464), (81, 44500), (86, 44515), (87, 44518), (106, 44674),

Gene: Devera\_75 Start: 45700, Stop: 46071, Start Num: 58

Candidate Starts for Devera\_75:

(Start: 58 @45700 has 160 MA's), (78, 45817), (81, 45853), (86, 45868), (87, 45871), (106, 46027),

Gene: DismalFunk\_71 Start: 46501, Stop: 46845, Start Num: 59

Candidate Starts for DismalFunk\_71:

(Start: 59 @46501 has 10 MA's), (80, 46642), (82, 46663), (86, 46675), (95, 46729),

Gene: DismalStressor\_71 Start: 46501, Stop: 46845, Start Num: 59

Candidate Starts for DismalStressor\_71:

(Start: 59 @46501 has 10 MA's), (80, 46642), (82, 46663), (86, 46675), (95, 46729),

Gene: Dole\_73 Start: 45703, Stop: 46074, Start Num: 58

Candidate Starts for Dole\_73:

(Start: 58 @45703 has 160 MA's), (78, 45820), (81, 45856), (86, 45871), (87, 45874), (106, 46030),

Gene: Dori\_74 Start: 55849, Stop: 56205, Start Num: 52

Candidate Starts for Dori\_74:

(1, 55459), (2, 55504), (3, 55522), (21, 55633), (30, 55693), (31, 55696), (49, 55837), (Start: 52 @55849 has 54 MA's), (83, 56032), (95, 56095), (102, 56182),

Gene: Dove\_92 Start: 58421, Stop: 58756, Start Num: 52

Candidate Starts for Dove\_92:

(Start: 52 @58421 has 54 MA's), (69, 58493), (95, 58667), (97, 58685),

Gene: DrHayes\_68 Start: 44604, Stop: 44975, Start Num: 58

Candidate Starts for DrHayes\_68:

(26, 44391), (28, 44400), (45, 44550), (Start: 58 @44604 has 160 MA's), (80, 44739), (81, 44757), (86, 44772), (106, 44931),

Gene: Duplicity\_59 Start: 37996, Stop: 38460, Start Num: 52

Candidate Starts for Duplicity\_59:

(Start: 52 @37996 has 54 MA's), (69, 38068), (71, 38083), (83, 38242), (95, 38305), (102, 38392),

Gene: Durfee\_68 Start: 44294, Stop: 44665, Start Num: 58

Candidate Starts for Durfee\_68:

(24, 44084), (44, 44234), (45, 44240), (Start: 54 @44279 has 1 MA's), (Start: 58 @44294 has 160 MA's), (78, 44411), (81, 44447), (86, 44462), (87, 44465), (106, 44621),

Gene: Edugator\_61 Start: 43237, Stop: 43617, Start Num: 58

Candidate Starts for Edugator\_61:

(17, 42967), (18, 42976), (38, 43135), (43, 43165), (53, 43216), (Start: 54 @43222 has 1 MA's), (Start: 58 @43237 has 160 MA's), (80, 43381), (81, 43399), (86, 43414), (100, 43504), (107, 43579),

Gene: Efra2\_73 Start: 44448, Stop: 44819, Start Num: 58

Candidate Starts for Efra2\_73:

(45, 44394), (Start: 58 @44448 has 160 MA's), (78, 44565), (81, 44601), (86, 44616), (87, 44619), (106, 44775),

Gene: Ejimix\_100 Start: 62719, Stop: 63054, Start Num: 52

Candidate Starts for Ejimix\_100:

(Start: 52 @62719 has 54 MA's), (69, 62791), (95, 62965), (97, 62983),

Gene: Ekdilam\_64 Start: 44431, Stop: 44766, Start Num: 58

Candidate Starts for Ekdilam\_64:

(8, 44122), (26, 44221), (28, 44230), (45, 44380), (Start: 58 @44431 has 160 MA's), (81, 44587), (82, 44590), (87, 44605), (93, 44647), (96, 44671),

Gene: Ellie\_63 Start: 43667, Stop: 44038, Start Num: 58

Candidate Starts for Ellie\_63:

(28, 43463), (45, 43613), (Start: 58 @43667 has 160 MA's), (74, 43766), (81, 43823), (87, 43841), (95, 43892),

Gene: Emerson\_70 Start: 44414, Stop: 44785, Start Num: 58

Candidate Starts for Emerson\_70:

(44, 44354), (45, 44360), (Start: 54 @44399 has 1 MA's), (Start: 58 @44414 has 160 MA's), (78, 44531), (81, 44567), (86, 44582), (87, 44585), (106, 44741),

Gene: Enkosi\_58 Start: 43796, Stop: 44167, Start Num: 63

Candidate Starts for Enkosi\_58:

(26, 43583), (28, 43592), (33, 43634), (45, 43739), (Start: 63 @43796 has 8 MA's), (81, 43949), (82, 43952), (86, 43964), (87, 43967), (95, 44018),

Gene: Eponine\_75 Start: 45485, Stop: 45865, Start Num: 58

Candidate Starts for Eponine\_75:

(Start: 58 @45485 has 160 MA's), (Start: 62 @45503 has 1 MA's), (81, 45665), (82, 45668), (88, 45698), (91, 45716), (106, 45836),

Gene: Fefferhead\_65 Start: 43576, Stop: 43947, Start Num: 58

Candidate Starts for Fefferhead\_65:

(28, 43372), (45, 43522), (Start: 58 @43576 has 160 MA's), (74, 43675), (81, 43732), (87, 43750), (95, 43801),

Gene: Feyre\_65 Start: 45225, Stop: 45605, Start Num: 58

Candidate Starts for Feyre\_65:

(38, 45123), (43, 45153), (53, 45204), (Start: 58 @45225 has 160 MA's), (65, 45243), (80, 45369), (81, 45387), (86, 45402),

Gene: Findley\_71 Start: 46495, Stop: 46839, Start Num: 59

Candidate Starts for Findley\_71:

(Start: 59 @46495 has 10 MA's), (80, 46636), (82, 46657), (86, 46669), (95, 46723),



Gene: Fionnbharth\_73 Start: 44883, Stop: 45263, Start Num: 58

Candidate Starts for Fionnbharth\_73:

(Start: 58 @44883 has 160 MA's), (Start: 62 @44901 has 1 MA's), (81, 45063), (82, 45066), (88, 45096), (91, 45114), (106, 45234),

Gene: FirstPlacePfu\_63 Start: 38539, Stop: 39003, Start Num: 52

Candidate Starts for FirstPlacePfu\_63:

(Start: 52 @38539 has 54 MA's), (69, 38611), (71, 38626), (83, 38785), (95, 38848), (102, 38935),

Gene: Frankie\_79 Start: 47128, Stop: 47547, Start Num: 52

Candidate Starts for Frankie\_79:

(Start: 52 @47128 has 54 MA's), (69, 47200), (71, 47215), (83, 47374), (95, 47437), (102, 47524), (104, 47533),

Gene: Fulbright\_59 Start: 37433, Stop: 37897, Start Num: 52

Candidate Starts for Fulbright\_59:

(Start: 52 @37433 has 54 MA's), (69, 37505), (71, 37520), (83, 37679), (95, 37742), (102, 37829),

Gene: Ganymede\_68 Start: 44320, Stop: 44691, Start Num: 58

Candidate Starts for Ganymede\_68:

(44, 44260), (45, 44266), (Start: 54 @44305 has 1 MA's), (Start: 58 @44320 has 160 MA's), (78, 44437), (81, 44473), (86, 44488), (87, 44491), (106, 44647),

Gene: Gengar\_62 Start: 43211, Stop: 43591, Start Num: 58

Candidate Starts for Gengar\_62:

(38, 43109), (43, 43139), (53, 43190), (Start: 58 @43211 has 160 MA's), (80, 43355), (81, 43373), (86, 43388), (95, 43442), (100, 43478), (107, 43553),

Gene: Geraldini\_71 Start: 44976, Stop: 45347, Start Num: 58

Candidate Starts for Geraldini\_71:

(35, 44868), (44, 44916), (45, 44922), (Start: 54 @44961 has 1 MA's), (Start: 58 @44976 has 160 MA's), (78, 45093), (81, 45129), (86, 45144), (87, 45147), (106, 45303),

Gene: Gex\_62 Start: 38755, Stop: 39219, Start Num: 52

Candidate Starts for Gex\_62:

(Start: 52 @38755 has 54 MA's), (69, 38827), (71, 38842), (83, 39001), (95, 39064), (102, 39151),

Gene: Glaske\_59 Start: 40506, Stop: 41012, Start Num: 52

Candidate Starts for Glaske\_59:

(13, 40242), (22, 40311), (32, 40359), (37, 40431), (39, 40437), (41, 40455), (Start: 52 @40506 has 54 MA's), (83, 40689), (95, 40752), (102, 40839), (109, 40869), (112, 40905), (113, 40908),

Gene: Guanica15\_72 Start: 44186, Stop: 44557, Start Num: 58

Candidate Starts for Guanica15\_72:

(45, 44132), (Start: 58 @44186 has 160 MA's), (78, 44303), (81, 44339), (86, 44354), (87, 44357), (106, 44513),

Gene: Guillsminger\_63 Start: 43165, Stop: 43545, Start Num: 58

Candidate Starts for Guillsminger\_63:

(38, 43063), (43, 43093), (53, 43144), (Start: 58 @43165 has 160 MA's), (65, 43183), (80, 43309), (81, 43327), (86, 43342), (95, 43396), (100, 43432),

Gene: Halley\_108 Start: 62993, Stop: 63328, Start Num: 52

Candidate Starts for Halley\_108:

(Start: 52 @62993 has 54 MA's), (69, 63065), (95, 63239), (97, 63257),

Gene: Hammy\_67 Start: 44194, Stop: 44529, Start Num: 58

Candidate Starts for Hammy\_67:

(11, 43891), (26, 43984), (28, 43993), (45, 44143), (Start: 58 @44194 has 160 MA's), (81, 44350), (86, 44365), (87, 44368),

Gene: HedwigODU\_68 Start: 43942, Stop: 44313, Start Num: 58

Candidate Starts for HedwigODU\_68:

(44, 43882), (45, 43888), (Start: 54 @43927 has 1 MA's), (Start: 58 @43942 has 160 MA's), (78, 44059), (81, 44095), (86, 44110), (87, 44113), (106, 44269),

Gene: Heftyboy\_63 Start: 43532, Stop: 43912, Start Num: 58

Candidate Starts for Heftyboy\_63:

(38, 43430), (43, 43460), (53, 43511), (Start: 58 @43532 has 160 MA's), (65, 43550), (80, 43676), (81, 43694), (86, 43709),

Gene: HokkenD\_96 Start: 61261, Stop: 61596, Start Num: 52

Candidate Starts for HokkenD\_96:

(Start: 52 @61261 has 54 MA's), (69, 61333), (95, 61507), (97, 61525),

Gene: Homura\_68 Start: 44097, Stop: 44468, Start Num: 58

Candidate Starts for Homura\_68:

(44, 44037), (45, 44043), (Start: 54 @44082 has 1 MA's), (Start: 58 @44097 has 160 MA's), (78, 44214), (81, 44250), (86, 44265), (87, 44268), (106, 44424),

Gene: Hurricane\_69 Start: 44340, Stop: 44675, Start Num: 58

Candidate Starts for Hurricane\_69:

(10, 44031), (11, 44037), (14, 44058), (28, 44139), (45, 44286), (Start: 58 @44340 has 160 MA's), (72, 44412), (82, 44499), (86, 44511), (89, 44541), (93, 44556), (96, 44580),

Gene: Hyperbowlee\_68 Start: 44294, Stop: 44665, Start Num: 58

Candidate Starts for Hyperbowlee\_68:

(24, 44084), (44, 44234), (45, 44240), (Start: 54 @44279 has 1 MA's), (Start: 58 @44294 has 160 MA's), (78, 44411), (81, 44447), (86, 44462), (87, 44465), (106, 44621),

Gene: IdentityCrisis\_54 Start: 33602, Stop: 33967, Start Num: 52

Candidate Starts for IdentityCrisis\_54:

(49, 33590), (Start: 52 @33602 has 54 MA's), (83, 33785), (95, 33848), (102, 33935), (106, 33953), (108, 33962),

Gene: Illumine\_73 Start: 45702, Stop: 46073, Start Num: 58

Candidate Starts for Illumine\_73:

(Start: 58 @45702 has 160 MA's), (78, 45819), (81, 45855), (86, 45870), (87, 45873), (106, 46029),

Gene: Inky\_68 Start: 44097, Stop: 44468, Start Num: 58

Candidate Starts for Inky\_68:

(44, 44037), (45, 44043), (Start: 54 @44082 has 1 MA's), (Start: 58 @44097 has 160 MA's), (78, 44214), (81, 44250), (86, 44265), (87, 44268), (106, 44424),

Gene: InvictusManeo\_60 Start: 41494, Stop: 41874, Start Num: 58

Candidate Starts for InvictusManeo\_60:

(38, 41404), (43, 41434), (53, 41473), (Start: 54 @41479 has 1 MA's), (Start: 58 @41494 has 160 MA's), (76, 41602), (80, 41638), (81, 41656), (86, 41671), (100, 41761), (107, 41836),

Gene: JAWS\_68 Start: 44140, Stop: 44511, Start Num: 58

Candidate Starts for JAWS\_68:

(Start: 58 @44140 has 160 MA's), (78, 44257), (81, 44293), (86, 44308), (87, 44311), (106, 44467),

Gene: JF1\_73 Start: 44849, Stop: 45229, Start Num: 58

Candidate Starts for JF1\_73:

(Start: 58 @44849 has 160 MA's), (Start: 62 @44867 has 1 MA's), (81, 45029), (82, 45032), (91, 45080), (106, 45200),

Gene: Jarvi\_68 Start: 44097, Stop: 44468, Start Num: 58

Candidate Starts for Jarvi\_68:

(44, 44037), (45, 44043), (Start: 54 @44082 has 1 MA's), (Start: 58 @44097 has 160 MA's), (78, 44214), (81, 44250), (86, 44265), (87, 44268), (106, 44424),

Gene: Jayhawk\_70 Start: 44440, Stop: 44811, Start Num: 58

Candidate Starts for Jayhawk\_70:

(44, 44380), (45, 44386), (Start: 54 @44425 has 1 MA's), (Start: 58 @44440 has 160 MA's), (78, 44557), (81, 44593), (86, 44608), (87, 44611), (106, 44767),

Gene: Jeckyll\_68 Start: 44097, Stop: 44468, Start Num: 58

Candidate Starts for Jeckyll\_68:

(44, 44037), (45, 44043), (Start: 54 @44082 has 1 MA's), (Start: 58 @44097 has 160 MA's), (78, 44214), (81, 44250), (86, 44265), (87, 44268), (106, 44424),

Gene: Jollymon\_90 Start: 56372, Stop: 56746, Start Num: 52

Candidate Starts for Jollymon\_90:

(8, 56087), (16, 56126), (29, 56210), (Start: 52 @56372 has 54 MA's), (92, 56603), (95, 56615), (102, 56702), (110, 56732),

Gene: Joy99\_68 Start: 44026, Stop: 44397, Start Num: 58

Candidate Starts for Joy99\_68:

(44, 43966), (45, 43972), (Start: 54 @44011 has 1 MA's), (Start: 58 @44026 has 160 MA's), (78, 44143), (81, 44179), (86, 44194), (87, 44197), (106, 44353),

Gene: JuicyJay\_103 Start: 64127, Stop: 64462, Start Num: 52

Candidate Starts for JuicyJay\_103:

(Start: 52 @64127 has 54 MA's), (69, 64199), (95, 64373), (97, 64391),

Gene: Juliette\_75 Start: 44947, Stop: 45327, Start Num: 58

Candidate Starts for Juliette\_75:

(Start: 58 @44947 has 160 MA's), (Start: 62 @44965 has 1 MA's), (81, 45127), (82, 45130), (91, 45178), (106, 45298),

Gene: Keshu\_71 Start: 44440, Stop: 44811, Start Num: 58

Candidate Starts for Keshu\_71:

(45, 44386), (Start: 58 @44440 has 160 MA's), (68, 44476), (70, 44491), (82, 44599), (93, 44656), (96, 44680), (106, 44770), (108, 44779),

Gene: Kevin1\_60 Start: 37027, Stop: 37434, Start Num: 52

Candidate Starts for Kevin1\_60:

(34, 36940), (41, 36985), (49, 37018), (Start: 52 @37027 has 54 MA's), (83, 37210), (95, 37273), (102, 37360), (109, 37390),

Gene: KiSi\_72 Start: 44874, Stop: 45218, Start Num: 58

Candidate Starts for KiSi\_72:

(6, 44565), (15, 44607), (28, 44685), (Start: 58 @44874 has 160 MA's), (64, 44904), (66, 44907), (74, 44991), (81, 45048), (82, 45051), (86, 45063), (95, 45117),

Gene: KilKor\_60 Start: 41199, Stop: 41705, Start Num: 52

Candidate Starts for KilKor\_60:

(13, 40935), (22, 41004), (32, 41052), (37, 41124), (39, 41130), (41, 41148), (Start: 52 @41199 has 54 MA's), (83, 41382), (95, 41445), (102, 41532), (109, 41562), (112, 41598), (113, 41601),

Gene: KingstonB\_89 Start: 55783, Stop: 56148, Start Num: 52

Candidate Starts for KingstonB\_89:

(8, 55498), (16, 55537), (29, 55621), (Start: 52 @55783 has 54 MA's), (95, 56026), (101, 56092), (102, 56107),

Gene: Kratio\_60 Start: 41230, Stop: 41610, Start Num: 58

Candidate Starts for Kratio\_60:

(38, 41140), (43, 41170), (53, 41209), (Start: 54 @41215 has 1 MA's), (Start: 58 @41230 has 160 MA's), (76, 41338), (80, 41374), (81, 41392), (86, 41407), (100, 41497), (107, 41572),

Gene: Kraw\_74 Start: 44653, Stop: 45015, Start Num: 62

Candidate Starts for Kraw\_74:

(Start: 58 @44635 has 160 MA's), (Start: 62 @44653 has 1 MA's), (81, 44815), (82, 44818), (91, 44866), (106, 44986),

Gene: Krueger\_72 Start: 43991, Stop: 44365, Start Num: 58

Candidate Starts for Krueger\_72:

(26, 43781), (28, 43790), (Start: 58 @43991 has 160 MA's), (82, 44150), (93, 44207), (106, 44321),

Gene: Ksquared\_63 Start: 41638, Stop: 42021, Start Num: 52

Candidate Starts for Ksquared\_63:

(13, 41374), (22, 41443), (32, 41491), (37, 41563), (39, 41569), (41, 41587), (Start: 52 @41638 has 54 MA's), (83, 41821), (95, 41884),

Gene: Larva\_63 Start: 42688, Stop: 43068, Start Num: 58

Candidate Starts for Larva\_63:

(17, 42418), (18, 42427), (38, 42586), (43, 42616), (53, 42667), (Start: 54 @42673 has 1 MA's), (Start: 58 @42688 has 160 MA's), (80, 42832), (81, 42850), (86, 42865), (95, 42919), (100, 42955), (107, 43030),

Gene: LastHope\_72 Start: 43303, Stop: 43674, Start Num: 58

Candidate Starts for LastHope\_72:

(Start: 58 @43303 has 160 MA's), (81, 43456), (86, 43471), (106, 43630),

Gene: LaterM\_68 Start: 44555, Stop: 44926, Start Num: 58

Candidate Starts for LaterM\_68:

(Start: 58 @44555 has 160 MA's), (78, 44672), (81, 44708), (86, 44723), (87, 44726), (106, 44882),

Gene: LeMond\_71 Start: 44508, Stop: 44852, Start Num: 58

Candidate Starts for LeMond\_71:

(6, 44199), (15, 44241), (28, 44319), (45, 44454), (Start: 58 @44508 has 160 MA's), (64, 44538), (66, 44541), (74, 44625), (81, 44682), (82, 44685), (86, 44697), (95, 44751),

Gene: Leston\_62 Start: 43294, Stop: 43674, Start Num: 58

Candidate Starts for Leston\_62:

(38, 43192), (43, 43222), (53, 43273), (Start: 58 @43294 has 160 MA's), (65, 43312), (80, 43438), (81, 43456), (86, 43471), (95, 43525), (100, 43561),

Gene: LilPharaoh\_57 Start: 40911, Stop: 41282, Start Num: 63

Candidate Starts for LilPharaoh\_57:

(26, 40698), (28, 40707), (33, 40749), (45, 40854), (Start: 63 @40911 has 8 MA's), (81, 41064), (82, 41067), (86, 41079), (87, 41082), (95, 41133),

Gene: LindNT\_67 Start: 44352, Stop: 44723, Start Num: 58

Candidate Starts for LindNT\_67:

(Start: 58 @44352 has 160 MA's), (78, 44469), (81, 44505), (86, 44520), (87, 44523), (106, 44679),

Gene: Llorens\_68 Start: 44097, Stop: 44468, Start Num: 58

Candidate Starts for Llorens\_68:

(44, 44037), (45, 44043), (Start: 54 @44082 has 1 MA's), (Start: 58 @44097 has 160 MA's), (78, 44214), (81, 44250), (86, 44265), (87, 44268), (106, 44424),

Gene: Lunahalos\_68 Start: 44097, Stop: 44468, Start Num: 58

Candidate Starts for Lunahalos\_68:

(44, 44037), (45, 44043), (Start: 54 @44082 has 1 MA's), (Start: 58 @44097 has 160 MA's), (78, 44214), (81, 44250), (86, 44265), (87, 44268), (106, 44424),

Gene: MacnCheese\_71 Start: 44967, Stop: 45302, Start Num: 58

Candidate Starts for MacnCheese\_71:

(45, 44913), (Start: 58 @44967 has 160 MA's), (82, 45126), (89, 45168), (93, 45183),

Gene: Magsby\_60 Start: 38701, Stop: 39165, Start Num: 52

Candidate Starts for Magsby\_60:

(Start: 52 @38701 has 54 MA's), (69, 38773), (71, 38788), (83, 38947), (95, 39010), (102, 39097),

Gene: MalagasyRose\_68 Start: 43493, Stop: 43888, Start Num: 50

Candidate Starts for MalagasyRose\_68:

(40, 43436), (Start: 50 @43493 has 1 MA's), (80, 43661), (82, 43682), (86, 43694),

Gene: Malthus\_74 Start: 44635, Stop: 45015, Start Num: 58

Candidate Starts for Malthus\_74:

(Start: 58 @44635 has 160 MA's), (Start: 62 @44653 has 1 MA's), (81, 44815), (82, 44818), (91, 44866), (106, 44986),

Gene: Marcoliusprime\_71 Start: 46501, Stop: 46845, Start Num: 59

Candidate Starts for Marcoliusprime\_71:

(Start: 59 @46501 has 10 MA's), (80, 46642), (82, 46663), (86, 46675), (95, 46729),

Gene: MarkPhew\_70 Start: 44007, Stop: 44354, Start Num: 58

Candidate Starts for MarkPhew\_70:

(15, 43740), (28, 43818), (45, 43953), (Start: 58 @44007 has 160 MA's), (64, 44040), (66, 44043), (74, 44127), (80, 44166), (81, 44184), (82, 44187), (86, 44199), (94, 44247), (95, 44253),

Gene: Marshawn\_67 Start: 44384, Stop: 44707, Start Num: 58

Candidate Starts for Marshawn\_67:

(45, 44330), (Start: 58 @44384 has 160 MA's), (73, 44480), (74, 44489), (78, 44510), (80, 44528), (81, 44546), (82, 44549), (86, 44561), (95, 44615),

Gene: McMater\_70 Start: 44359, Stop: 44739, Start Num: 57

Candidate Starts for McMater\_70:

(9, 44050), (26, 44152), (28, 44161), (45, 44308), (Start: 57 @44359 has 4 MA's), (64, 44377), (80, 44503), (81, 44521), (82, 44524), (87, 44539), (90, 44572), (94, 44584), (95, 44590),

Gene: Mcklovin\_65 Start: 48076, Stop: 48429, Start Num: 52

Candidate Starts for Mcklovin\_65:

(Start: 52 @48076 has 54 MA's), (95, 48319), (103, 48403),

Gene: Mdavu\_57 Start: 41172, Stop: 41543, Start Num: 63

Candidate Starts for Mdavu\_57:

(26, 40959), (28, 40968), (33, 41010), (45, 41115), (Start: 63 @41172 has 8 MA's), (81, 41325), (82, 41328), (86, 41340), (87, 41343), (95, 41394),

Gene: MeaningOfLife\_69 Start: 44849, Stop: 45220, Start Num: 58

Candidate Starts for MeaningOfLife\_69:

(44, 44789), (45, 44795), (Start: 54 @44834 has 1 MA's), (Start: 58 @44849 has 160 MA's), (78, 44966), (81, 45002), (86, 45017), (87, 45020), (106, 45176),

Gene: Megsy\_70 Start: 44274, Stop: 44645, Start Num: 58

Candidate Starts for Megsy\_70:

(Start: 58 @44274 has 160 MA's), (78, 44391), (81, 44427), (86, 44442), (87, 44445), (106, 44601),

Gene: Melville\_66 Start: 38310, Stop: 38774, Start Num: 52

Candidate Starts for Melville\_66:

(Start: 52 @38310 has 54 MA's), (69, 38382), (71, 38397), (83, 38556), (95, 38619), (102, 38706),

Gene: Milly\_71 Start: 46475, Stop: 46819, Start Num: 59

Candidate Starts for Milly\_71:

(Start: 59 @46475 has 10 MA's), (80, 46616), (82, 46637), (86, 46649), (95, 46703),

Gene: Minerva\_106 Start: 62938, Stop: 63273, Start Num: 52

Candidate Starts for Minerva\_106:

(Start: 52 @62938 has 54 MA's), (69, 63010), (95, 63184), (97, 63202),

Gene: Miryou\_66 Start: 45908, Stop: 46288, Start Num: 58

Candidate Starts for Miryou\_66:

(38, 45806), (43, 45836), (53, 45887), (Start: 58 @45908 has 160 MA's), (65, 45926), (80, 46052), (81, 46070), (86, 46085), (95, 46139), (100, 46175),

Gene: MissDaisy\_70 Start: 43549, Stop: 43929, Start Num: 58

Candidate Starts for MissDaisy\_70:

(Start: 58 @43549 has 160 MA's), (Start: 62 @43567 has 1 MA's), (81, 43729), (82, 43732), (91, 43780), (106, 43900),

Gene: Mitti\_73 Start: 44790, Stop: 45170, Start Num: 58

Candidate Starts for Mitti\_73:

(Start: 58 @44790 has 160 MA's), (Start: 62 @44808 has 1 MA's), (81, 44970), (82, 44973), (91, 45021), (106, 45141),

Gene: Mufasa\_71 Start: 46061, Stop: 46405, Start Num: 59

Candidate Starts for Mufasa\_71:

(Start: 59 @46061 has 10 MA's), (75, 46166), (80, 46205), (82, 46226), (86, 46238), (95, 46292), (96, 46307),

Gene: MulchSalad\_79 Start: 47746, Stop: 48222, Start Num: 52

Candidate Starts for MulchSalad\_79:

(Start: 52 @47746 has 54 MA's), (69, 47818), (71, 47833), (83, 47992), (87, 48004), (95, 48067), (102, 48154),

Gene: Murucutumbu\_69 Start: 45130, Stop: 45501, Start Num: 58

Candidate Starts for Murucutumbu\_69:

(Start: 58 @45130 has 160 MA's), (78, 45247), (81, 45283), (86, 45298), (87, 45301), (106, 45457),

Gene: Mynx\_70 Start: 44709, Stop: 45080, Start Num: 58

Candidate Starts for Mynx\_70:

(44, 44649), (45, 44655), (Start: 54 @44694 has 1 MA's), (Start: 58 @44709 has 160 MA's), (78, 44826), (81, 44862), (86, 44877), (87, 44880), (106, 45036),

Gene: Nergal\_59 Start: 40436, Stop: 40837, Start Num: 55

Candidate Starts for Nergal\_59:

(48, 40403), (Start: 55 @40436 has 1 MA's), (80, 40598), (81, 40616), (86, 40631), (93, 40676), (94, 40679), (95, 40685), (96, 40700),

Gene: Nibb\_70 Start: 44218, Stop: 44553, Start Num: 57

Candidate Starts for Nibb\_70:

(45, 44167), (Start: 57 @44218 has 4 MA's), (80, 44356), (82, 44377), (89, 44419), (93, 44434), (95, 44443), (98, 44467),

Gene: NihilNomen\_108 Start: 63079, Stop: 63414, Start Num: 52

Candidate Starts for NihilNomen\_108:

(Start: 52 @63079 has 54 MA's), (69, 63151), (95, 63325), (97, 63343),

Gene: Nikao\_59 Start: 43796, Stop: 44167, Start Num: 63

Candidate Starts for Nikao\_59:

(26, 43583), (28, 43592), (33, 43634), (45, 43739), (Start: 63 @43796 has 8 MA's), (81, 43949), (82, 43952), (86, 43964), (87, 43967), (95, 44018),

Gene: Niklas\_70 Start: 44420, Stop: 44800, Start Num: 57

Candidate Starts for Niklas\_70:

(9, 44111), (26, 44213), (28, 44222), (45, 44369), (Start: 57 @44420 has 4 MA's), (64, 44438), (80, 44564), (81, 44582), (82, 44585), (87, 44600), (90, 44633), (94, 44645), (95, 44651),

Gene: Nutello\_56 Start: 41183, Stop: 41554, Start Num: 63

Candidate Starts for Nutello\_56:

(26, 40970), (28, 40979), (33, 41021), (45, 41126), (Start: 63 @41183 has 8 MA's), (81, 41336), (82, 41339), (86, 41351), (87, 41354), (95, 41405),

Gene: OkiRoe\_63 Start: 43580, Stop: 43960, Start Num: 58

Candidate Starts for OkiRoe\_63:

(38, 43478), (43, 43508), (53, 43559), (Start: 58 @43580 has 160 MA's), (65, 43598), (80, 43724), (81, 43742), (86, 43757),

Gene: OmniCritical\_72 Start: 44741, Stop: 45103, Start Num: 62

Candidate Starts for OmniCritical\_72:

(Start: 58 @44723 has 160 MA's), (Start: 62 @44741 has 1 MA's), (81, 44903), (82, 44906), (91, 44954), (106, 45074),

Gene: Omnicron\_66 Start: 43686, Stop: 44066, Start Num: 58

Candidate Starts for Omnicron\_66:

(38, 43584), (43, 43614), (53, 43665), (Start: 58 @43686 has 160 MA's), (65, 43704), (80, 43830), (81, 43848), (86, 43863), (91, 43902), (95, 43917), (100, 43953), (109, 44034),

Gene: Optimus\_100 Start: 61613, Stop: 61945, Start Num: 52

Candidate Starts for Optimus\_100:

(Start: 52 @61613 has 54 MA's), (82, 61793), (95, 61859), (97, 61877),

Gene: Oscar\_71 Start: 44425, Stop: 44769, Start Num: 58

Candidate Starts for Oscar\_71:

(6, 44116), (15, 44158), (28, 44236), (Start: 58 @44425 has 160 MA's), (64, 44455), (66, 44458), (74, 44542), (81, 44599), (82, 44602), (86, 44614), (95, 44668),

Gene: Padfoot\_68 Start: 44294, Stop: 44665, Start Num: 58

Candidate Starts for Padfoot\_68:

(24, 44084), (44, 44234), (45, 44240), (Start: 54 @44279 has 1 MA's), (Start: 58 @44294 has 160 MA's), (78, 44411), (81, 44447), (86, 44462), (87, 44465), (106, 44621),

Gene: Padpat\_71 Start: 44414, Stop: 44785, Start Num: 58

Candidate Starts for Padpat\_71:

(44, 44354), (45, 44360), (Start: 54 @44399 has 1 MA's), (Start: 58 @44414 has 160 MA's), (78, 44531), (81, 44567), (86, 44582), (87, 44585), (106, 44741),

Gene: Paola\_62 Start: 43165, Stop: 43545, Start Num: 58

Candidate Starts for Paola\_62:

(38, 43063), (43, 43093), (53, 43144), (Start: 58 @43165 has 160 MA's), (65, 43183), (80, 43309), (81, 43327), (86, 43342), (95, 43396), (100, 43432),

Gene: Parmesanjohn\_61 Start: 38759, Stop: 39223, Start Num: 52

Candidate Starts for Parmesanjohn\_61:

(Start: 52 @38759 has 54 MA's), (69, 38831), (71, 38846), (83, 39005), (95, 39068), (102, 39155),

Gene: Patt\_69 Start: 43273, Stop: 43653, Start Num: 58

Candidate Starts for Patt\_69:

(Start: 58 @43273 has 160 MA's), (Start: 62 @43291 has 1 MA's), (81, 43453), (82, 43456), (91, 43504), (106, 43624),

Gene: Peanam\_70 Start: 44377, Stop: 44757, Start Num: 57

Candidate Starts for Peanam\_70:

(9, 44068), (26, 44170), (28, 44179), (45, 44326), (Start: 57 @44377 has 4 MA's), (64, 44395), (80, 44521), (81, 44539), (82, 44542), (87, 44557), (90, 44590), (94, 44602), (95, 44608),

Gene: Peel\_68 Start: 44099, Stop: 44470, Start Num: 58

Candidate Starts for Peel\_68:



(44, 44039), (45, 44045), (Start: 54 @44084 has 1 MA's), (Start: 58 @44099 has 160 MA's), (78, 44216), (81, 44252), (86, 44267), (87, 44270), (106, 44426),

Gene: Phalm\_60 Start: 40506, Stop: 41012, Start Num: 52

Candidate Starts for Phalm\_60:

(13, 40242), (22, 40311), (32, 40359), (37, 40431), (39, 40437), (41, 40455), (Start: 52 @40506 has 54 MA's), (83, 40689), (95, 40752), (102, 40839), (109, 40869), (112, 40905), (113, 40908),

Gene: Pharb\_68 Start: 43690, Stop: 44025, Start Num: 58

Candidate Starts for Pharb\_68:

(26, 43477), (28, 43486), (45, 43636), (Start: 58 @43690 has 160 MA's), (68, 43726), (82, 43849), (87, 43864), (89, 43891), (93, 43906), (96, 43930), (99, 43945),

Gene: PhelpsODU\_69 Start: 43630, Stop: 44004, Start Num: 58

Candidate Starts for PhelpsODU\_69:

(45, 43576), (Start: 58 @43630 has 160 MA's), (81, 43786), (82, 43789), (87, 43804), (93, 43846),

Gene: Philonius\_61 Start: 38924, Stop: 39388, Start Num: 52

Candidate Starts for Philonius\_61:

(Start: 52 @38924 has 54 MA's), (69, 38996), (71, 39011), (83, 39170), (95, 39233), (102, 39320),

Gene: Phloss\_59 Start: 38166, Stop: 38630, Start Num: 52

Candidate Starts for Phloss\_59:

(Start: 52 @38166 has 54 MA's), (69, 38238), (71, 38253), (83, 38412), (95, 38475), (102, 38562),

Gene: Phrank\_71 Start: 43693, Stop: 44067, Start Num: 58

Candidate Starts for Phrank\_71:

(45, 43639), (Start: 58 @43693 has 160 MA's), (81, 43849), (93, 43909),

Gene: Piatt\_68 Start: 44294, Stop: 44665, Start Num: 58

Candidate Starts for Piatt\_68:

(24, 44084), (44, 44234), (45, 44240), (Start: 54 @44279 has 1 MA's), (Start: 58 @44294 has 160 MA's), (78, 44411), (81, 44447), (86, 44462), (87, 44465), (106, 44621),

Gene: Piper2020\_85 Start: 51523, Stop: 51987, Start Num: 52

Candidate Starts for Piper2020\_85:

(Start: 52 @51523 has 54 MA's), (69, 51595), (71, 51610), (83, 51769), (95, 51832), (102, 51919), (104, 51928),

Gene: Pipsqueaks\_62 Start: 38737, Stop: 39201, Start Num: 52

Candidate Starts for Pipsqueaks\_62:

(Start: 52 @38737 has 54 MA's), (69, 38809), (71, 38824), (83, 38983), (95, 39046), (102, 39133),

Gene: Pixie\_68 Start: 43865, Stop: 44236, Start Num: 58

Candidate Starts for Pixie\_68:

(45, 43811), (Start: 58 @43865 has 160 MA's), (68, 43901), (70, 43916), (82, 44024), (93, 44081), (96, 44105), (106, 44195), (108, 44204),

Gene: Pokerus\_68 Start: 44439, Stop: 44810, Start Num: 58

Candidate Starts for Pokerus\_68:

(44, 44379), (45, 44385), (Start: 54 @44424 has 1 MA's), (Start: 58 @44439 has 160 MA's), (78, 44556), (81, 44592), (86, 44607), (87, 44610), (106, 44766),

Gene: Prithvi\_69 Start: 44352, Stop: 44723, Start Num: 58  
Candidate Starts for Prithvi\_69:  
(Start: 58 @44352 has 160 MA's), (78, 44469), (81, 44505), (86, 44520), (87, 44523), (106, 44679),

Gene: Psycho\_62 Start: 41813, Stop: 42193, Start Num: 58  
Candidate Starts for Psycho\_62:  
(17, 41543), (18, 41552), (38, 41711), (43, 41741), (53, 41792), (Start: 54 @41798 has 1 MA's), (Start: 58 @41813 has 160 MA's), (80, 41957), (81, 41975), (86, 41990), (95, 42044), (100, 42080), (107, 42155),

Gene: QuincyRose\_66 Start: 44320, Stop: 44691, Start Num: 58  
Candidate Starts for QuincyRose\_66:  
(44, 44260), (45, 44266), (Start: 54 @44305 has 1 MA's), (Start: 58 @44320 has 160 MA's), (78, 44437), (81, 44473), (86, 44488), (87, 44491), (106, 44647),

Gene: Ramen\_69 Start: 43944, Stop: 44315, Start Num: 58  
Candidate Starts for Ramen\_69:  
(44, 43884), (45, 43890), (Start: 54 @43929 has 1 MA's), (Start: 58 @43944 has 160 MA's), (78, 44061), (81, 44097), (86, 44112), (87, 44115), (106, 44271),

Gene: Rando14\_65 Start: 42494, Stop: 42874, Start Num: 58  
Candidate Starts for Rando14\_65:  
(Start: 58 @42494 has 160 MA's), (80, 42638), (81, 42656), (86, 42671), (95, 42725), (100, 42761), (109, 42842),

Gene: Rapunzel97\_70 Start: 44395, Stop: 44766, Start Num: 58  
Candidate Starts for Rapunzel97\_70:  
(44, 44335), (45, 44341), (Start: 54 @44380 has 1 MA's), (Start: 58 @44395 has 160 MA's), (78, 44512), (81, 44548), (86, 44563), (87, 44566), (106, 44722),

Gene: Redno2\_98 Start: 58813, Stop: 59148, Start Num: 52  
Candidate Starts for Redno2\_98:  
(Start: 52 @58813 has 54 MA's), (69, 58885), (95, 59059), (97, 59077),

Gene: Reptar3000\_70 Start: 43262, Stop: 43642, Start Num: 58  
Candidate Starts for Reptar3000\_70:  
(Start: 58 @43262 has 160 MA's), (Start: 62 @43280 has 1 MA's), (81, 43442), (82, 43445), (91, 43493), (106, 43613),

Gene: Richo\_70 Start: 44359, Stop: 44739, Start Num: 57  
Candidate Starts for Richo\_70:  
(9, 44050), (26, 44152), (28, 44161), (45, 44308), (Start: 57 @44359 has 4 MA's), (64, 44377), (80, 44503), (81, 44521), (82, 44524), (87, 44539), (90, 44572), (94, 44584), (95, 44590),

Gene: Rosmarinus\_68 Start: 44085, Stop: 44456, Start Num: 58  
Candidate Starts for Rosmarinus\_68:  
(44, 44025), (45, 44031), (Start: 54 @44070 has 1 MA's), (Start: 58 @44085 has 160 MA's), (78, 44202), (81, 44238), (86, 44253), (87, 44256), (106, 44412),

Gene: Ruthiejr\_74 Start: 44734, Stop: 45114, Start Num: 58  
Candidate Starts for Ruthiejr\_74:  
(Start: 58 @44734 has 160 MA's), (Start: 62 @44752 has 1 MA's), (81, 44914), (82, 44917), (91, 44965), (106, 45085),

Gene: SamScheppers\_71 Start: 45114, Stop: 45494, Start Num: 58  
Candidate Starts for SamScheppers\_71:  
(Start: 58 @45114 has 160 MA's), (Start: 62 @45132 has 1 MA's), (81, 45294), (82, 45297), (91, 45345), (106, 45465),

Gene: SamuelLPlaqson\_68 Start: 44604, Stop: 44975, Start Num: 58  
Candidate Starts for SamuelLPlaqson\_68:  
(26, 44391), (28, 44400), (45, 44550), (Start: 58 @44604 has 160 MA's), (80, 44739), (81, 44757), (86, 44772), (106, 44931),

Gene: Scarlett\_72 Start: 44755, Stop: 45099, Start Num: 58  
Candidate Starts for Scarlett\_72:  
(6, 44446), (15, 44488), (28, 44566), (Start: 58 @44755 has 160 MA's), (64, 44785), (66, 44788), (74, 44872), (81, 44929), (82, 44932), (86, 44944), (95, 44998),

Gene: Schatzie\_101 Start: 61869, Stop: 62204, Start Num: 52  
Candidate Starts for Schatzie\_101:  
(Start: 52 @61869 has 54 MA's), (69, 61941), (95, 62115), (97, 62133),

Gene: Schnauzer\_62 Start: 38759, Stop: 39223, Start Num: 52  
Candidate Starts for Schnauzer\_62:  
(Start: 52 @38759 has 54 MA's), (69, 38831), (71, 38846), (83, 39005), (95, 39068), (102, 39155),

Gene: SgtBeansprout\_57 Start: 41183, Stop: 41554, Start Num: 63  
Candidate Starts for SgtBeansprout\_57:  
(26, 40970), (28, 40979), (33, 41021), (45, 41126), (Start: 63 @41183 has 8 MA's), (81, 41336), (82, 41339), (86, 41351), (87, 41354), (95, 41405),

Gene: Shadow1\_72 Start: 44143, Stop: 44517, Start Num: 58  
Candidate Starts for Shadow1\_72:  
(26, 43933), (28, 43942), (Start: 58 @44143 has 160 MA's), (82, 44302), (93, 44359), (106, 44473),

Gene: Shaobing\_70 Start: 44395, Stop: 44775, Start Num: 57  
Candidate Starts for Shaobing\_70:  
(9, 44086), (26, 44188), (28, 44197), (45, 44344), (Start: 57 @44395 has 4 MA's), (64, 44413), (80, 44539), (81, 44557), (82, 44560), (87, 44575), (90, 44608), (94, 44620), (95, 44626),

Gene: ShedlockHolmes\_70 Start: 44378, Stop: 44749, Start Num: 58  
Candidate Starts for ShedlockHolmes\_70:  
(28, 44174), (45, 44324), (Start: 58 @44378 has 160 MA's), (68, 44414), (70, 44429), (82, 44537), (93, 44594), (96, 44618), (108, 44717),

Gene: ShiaSurprise\_69 Start: 44294, Stop: 44665, Start Num: 58  
Candidate Starts for ShiaSurprise\_69:  
(24, 44084), (44, 44234), (45, 44240), (Start: 54 @44279 has 1 MA's), (Start: 58 @44294 has 160 MA's), (78, 44411), (81, 44447), (86, 44462), (87, 44465), (106, 44621),

Gene: Silvafighter\_63 Start: 38302, Stop: 38766, Start Num: 52  
Candidate Starts for Silvafighter\_63:  
(Start: 52 @38302 has 54 MA's), (69, 38374), (71, 38389), (83, 38548), (95, 38611), (102, 38698),

Gene: Silvy\_57 Start: 39395, Stop: 39856, Start Num: 52

Candidate Starts for Silvy\_57:

(Start: 52 @39395 has 54 MA's), (69, 39467), (71, 39482), (83, 39641), (95, 39704), (102, 39791),

Gene: SirPhilip\_67 Start: 44537, Stop: 44893, Start Num: 58

Candidate Starts for SirPhilip\_67:

(15, 44258), (28, 44336), (45, 44483), (Start: 58 @44537 has 160 MA's), (60, 44555), (64, 44570), (80, 44696), (81, 44714), (86, 44729), (95, 44783),

Gene: SkinnyPete\_58 Start: 38506, Stop: 38970, Start Num: 52

Candidate Starts for SkinnyPete\_58:

(Start: 52 @38506 has 54 MA's), (69, 38578), (71, 38593), (83, 38752), (95, 38815), (102, 38902),

Gene: Slarp\_73 Start: 44642, Stop: 45022, Start Num: 58

Candidate Starts for Slarp\_73:

(Start: 58 @44642 has 160 MA's), (Start: 62 @44660 has 1 MA's), (81, 44822), (82, 44825), (91, 44873), (106, 44993),

Gene: Slimphazie\_69 Start: 44395, Stop: 44766, Start Num: 58

Candidate Starts for Slimphazie\_69:

(44, 44335), (45, 44341), (Start: 54 @44380 has 1 MA's), (Start: 58 @44395 has 160 MA's), (78, 44512), (81, 44548), (86, 44563), (87, 44566), (106, 44722),

Gene: Smurph\_61 Start: 38759, Stop: 39223, Start Num: 52

Candidate Starts for Smurph\_61:

(Start: 52 @38759 has 54 MA's), (69, 38831), (71, 38846), (83, 39005), (95, 39068), (102, 39155),

Gene: SoSeph\_63 Start: 43532, Stop: 43912, Start Num: 58

Candidate Starts for SoSeph\_63:

(38, 43430), (43, 43460), (53, 43511), (Start: 58 @43532 has 160 MA's), (65, 43550), (80, 43676), (81, 43694), (86, 43709),

Gene: Soos\_83 Start: 55576, Stop: 55950, Start Num: 52

Candidate Starts for Soos\_83:

(29, 55414), (Start: 52 @55576 has 54 MA's), (92, 55807), (93, 55810), (102, 55906), (110, 55936),

Gene: Spock\_68 Start: 44098, Stop: 44469, Start Num: 58

Candidate Starts for Spock\_68:

(44, 44038), (45, 44044), (Start: 54 @44083 has 1 MA's), (Start: 58 @44098 has 160 MA's), (78, 44215), (81, 44251), (86, 44266), (87, 44269), (106, 44425),

Gene: Sting\_86 Start: 56015, Stop: 56389, Start Num: 52

Candidate Starts for Sting\_86:

(29, 55853), (Start: 52 @56015 has 54 MA's), (92, 56246), (93, 56249), (102, 56345), (110, 56375),

Gene: Stinson\_69 Start: 44490, Stop: 44861, Start Num: 58

Candidate Starts for Stinson\_69:

(Start: 58 @44490 has 160 MA's), (78, 44607), (81, 44643), (86, 44658), (87, 44661), (106, 44817),

Gene: Strobilo\_72 Start: 46477, Stop: 46821, Start Num: 59

Candidate Starts for Strobilo\_72:

(Start: 59 @46477 has 10 MA's), (80, 46618), (82, 46639), (86, 46651), (95, 46705),

Gene: Sulley\_67 Start: 43925, Stop: 44296, Start Num: 58

Candidate Starts for Sulley\_67:

(26, 43712), (28, 43721), (45, 43871), (Start: 58 @43925 has 160 MA's), (78, 44042), (81, 44078), (86, 44093), (87, 44096), (106, 44252),

Gene: Sunflower1121\_73 Start: 44289, Stop: 44663, Start Num: 58

Candidate Starts for Sunflower1121\_73:

(26, 44079), (28, 44088), (Start: 58 @44289 has 160 MA's), (82, 44448), (93, 44505), (106, 44619),

Gene: Syra333\_71 Start: 44003, Stop: 44377, Start Num: 58

Candidate Starts for Syra333\_71:

(26, 43793), (28, 43802), (Start: 58 @44003 has 160 MA's), (82, 44162), (93, 44219), (106, 44333),

Gene: TBond007\_65 Start: 43864, Stop: 44235, Start Num: 58

Candidate Starts for TBond007\_65:

(45, 43810), (Start: 58 @43864 has 160 MA's), (68, 43900), (70, 43915), (82, 44023), (93, 44080), (96, 44104), (106, 44194), (108, 44203),

Gene: TClif\_69 Start: 43964, Stop: 44338, Start Num: 58

Candidate Starts for TClif\_69:

(28, 43763), (45, 43910), (Start: 58 @43964 has 160 MA's), (80, 44102), (87, 44138), (93, 44180),

Gene: TM4\_69 Start: 41139, Stop: 41513, Start Num: 59

Candidate Starts for TM4\_69:

(Start: 59 @41139 has 10 MA's), (75, 41244), (80, 41283), (82, 41304), (86, 41316), (95, 41370), (96, 41385),

Gene: Tachez\_68 Start: 43942, Stop: 44313, Start Num: 58

Candidate Starts for Tachez\_68:

(44, 43882), (45, 43888), (Start: 54 @43927 has 1 MA's), (Start: 58 @43942 has 160 MA's), (78, 44059), (81, 44095), (86, 44110), (87, 44113), (106, 44269),

Gene: TaiwanKao\_70 Start: 44414, Stop: 44785, Start Num: 58

Candidate Starts for TaiwanKao\_70:

(Start: 58 @44414 has 160 MA's), (78, 44531), (81, 44567), (86, 44582), (87, 44585), (106, 44741),

Gene: Tapioca\_59 Start: 39339, Stop: 39740, Start Num: 52

Candidate Starts for Tapioca\_59:

(5, 39042), (20, 39117), (25, 39156), (37, 39264), (39, 39270), (41, 39288), (Start: 52 @39339 has 54 MA's), (83, 39522), (95, 39585), (102, 39672),

Gene: Taquito\_72 Start: 44847, Stop: 45227, Start Num: 58

Candidate Starts for Taquito\_72:

(Start: 58 @44847 has 160 MA's), (Start: 62 @44865 has 1 MA's), (81, 45027), (82, 45030), (91, 45078), (106, 45198),

Gene: ThreeRngTarjay\_103 Start: 63154, Stop: 63486, Start Num: 52

Candidate Starts for ThreeRngTarjay\_103:

(Start: 52 @63154 has 54 MA's), (82, 63334), (95, 63400), (97, 63418),

Gene: ThulaThula\_64 Start: 43444, Stop: 43848, Start Num: 51

Candidate Starts for ThulaThula\_64:

(Start: 51 @43444 has 3 MA's), (Start: 52 @43447 has 54 MA's), (82, 43627), (83, 43630), (95, 43693), (102, 43780), (104, 43789), (109, 43810),

Gene: Thyatira\_65 Start: 45497, Stop: 45877, Start Num: 58  
Candidate Starts for Thyatira\_65:  
(38, 45395), (43, 45425), (53, 45476), (Start: 58 @45497 has 160 MA's), (65, 45515), (80, 45641), (81, 45659), (86, 45674),

Gene: Tierra\_71 Start: 44504, Stop: 44878, Start Num: 58  
Candidate Starts for Tierra\_71:  
(45, 44450), (Start: 58 @44504 has 160 MA's), (81, 44660), (93, 44720),

Gene: TingHuaYa\_71 Start: 43669, Stop: 44040, Start Num: 58  
Candidate Starts for TingHuaYa\_71:  
(Start: 58 @43669 has 160 MA's), (81, 43822), (86, 43837), (106, 43996),

Gene: TiniBug\_68 Start: 44600, Stop: 44971, Start Num: 58  
Candidate Starts for TiniBug\_68:  
(28, 44396), (45, 44546), (Start: 58 @44600 has 160 MA's), (80, 44735), (81, 44753), (86, 44768), (87, 44771), (106, 44927),

Gene: Tiri\_68 Start: 43998, Stop: 44369, Start Num: 58  
Candidate Starts for Tiri\_68:  
(Start: 58 @43998 has 160 MA's), (78, 44115), (81, 44151), (86, 44166), (87, 44169), (106, 44325),

Gene: Topper\_68 Start: 44097, Stop: 44468, Start Num: 58  
Candidate Starts for Topper\_68:  
(44, 44037), (45, 44043), (Start: 54 @44082 has 1 MA's), (Start: 58 @44097 has 160 MA's), (78, 44214), (81, 44250), (86, 44265), (87, 44268), (106, 44424),

Gene: Torres\_58 Start: 43797, Stop: 44168, Start Num: 63  
Candidate Starts for Torres\_58:  
(26, 43584), (28, 43593), (33, 43635), (45, 43740), (Start: 63 @43797 has 8 MA's), (81, 43950), (82, 43953), (86, 43965), (87, 43968), (95, 44019),

Gene: Tortellini\_67 Start: 45000, Stop: 45356, Start Num: 52  
Candidate Starts for Tortellini\_67:  
(37, 44925), (39, 44931), (41, 44949), (Start: 52 @45000 has 54 MA's), (83, 45183), (95, 45246), (102, 45333),

Gene: TreyKay\_69 Start: 44352, Stop: 44723, Start Num: 58  
Candidate Starts for TreyKay\_69:  
(Start: 58 @44352 has 160 MA's), (78, 44469), (81, 44505), (86, 44520), (87, 44523), (106, 44679),

Gene: TribbleTrouble\_69 Start: 44867, Stop: 45202, Start Num: 58  
Candidate Starts for TribbleTrouble\_69:  
(45, 44813), (Start: 58 @44867 has 160 MA's), (78, 44987), (82, 45026), (87, 45041), (89, 45068), (93, 45083), (96, 45107),

Gene: TruffulaTree\_69 Start: 44391, Stop: 44762, Start Num: 58  
Candidate Starts for TruffulaTree\_69:  
(44, 44331), (45, 44337), (Start: 54 @44376 has 1 MA's), (Start: 58 @44391 has 160 MA's), (78, 44508), (81, 44544), (86, 44559), (87, 44562), (106, 44718),

Gene: Twitch\_68 Start: 44099, Stop: 44470, Start Num: 58

Candidate Starts for Twitch\_68:

(44, 44039), (45, 44045), (Start: 54 @44084 has 1 MA's), (Start: 58 @44099 has 160 MA's), (78, 44216), (81, 44252), (86, 44267), (87, 44270), (106, 44426),

Gene: Unicorn\_69 Start: 43630, Stop: 44004, Start Num: 58

Candidate Starts for Unicorn\_69:

(45, 43576), (Start: 58 @43630 has 160 MA's), (81, 43786), (82, 43789), (87, 43804), (93, 43846),

Gene: Urkel\_68 Start: 44604, Stop: 44975, Start Num: 58

Candidate Starts for Urkel\_68:

(26, 44391), (28, 44400), (45, 44550), (Start: 58 @44604 has 160 MA's), (80, 44739), (81, 44757), (86, 44772), (106, 44931),

Gene: Validus\_73 Start: 44948, Stop: 45340, Start Num: 51

Candidate Starts for Validus\_73:

(36, 44876), (46, 44927), (47, 44933), (Start: 51 @44948 has 3 MA's), (Start: 55 @44966 has 1 MA's), (64, 44981), (80, 45107), (81, 45125), (82, 45128), (86, 45140), (87, 45143), (94, 45188), (95, 45194), (106, 45299), (111, 45317),

Gene: Veliki\_69 Start: 44131, Stop: 44502, Start Num: 58

Candidate Starts for Veliki\_69:

(Start: 58 @44131 has 160 MA's), (78, 44248), (81, 44284), (86, 44299), (87, 44302), (106, 44458),

Gene: Waterfoul\_64 Start: 43594, Stop: 43974, Start Num: 58

Candidate Starts for Waterfoul\_64:

(38, 43492), (43, 43522), (53, 43573), (Start: 58 @43594 has 160 MA's), (65, 43612), (80, 43738), (81, 43756), (86, 43771),

Gene: Willsammy\_60 Start: 40682, Stop: 41095, Start Num: 52

Candidate Starts for Willsammy\_60:

(13, 40418), (22, 40487), (32, 40535), (37, 40607), (39, 40613), (41, 40631), (Start: 52 @40682 has 54 MA's), (83, 40865), (95, 40928),

Gene: Wintermute\_73 Start: 44872, Stop: 45252, Start Num: 58

Candidate Starts for Wintermute\_73:

(Start: 58 @44872 has 160 MA's), (Start: 62 @44890 has 1 MA's), (81, 45052), (82, 45055), (91, 45103), (106, 45223),

Gene: Xerxes\_61 Start: 38756, Stop: 39220, Start Num: 52

Candidate Starts for Xerxes\_61:

(Start: 52 @38756 has 54 MA's), (69, 38828), (71, 38843), (83, 39002), (95, 39065), (102, 39152),

Gene: Ximenita\_73 Start: 44332, Stop: 44706, Start Num: 58

Candidate Starts for Ximenita\_73:

(Start: 58 @44332 has 160 MA's), (81, 44488), (82, 44491), (93, 44548), (106, 44662),

Gene: Y10\_70 Start: 44849, Stop: 45229, Start Num: 58

Candidate Starts for Y10\_70:

(Start: 58 @44849 has 160 MA's), (Start: 62 @44867 has 1 MA's), (81, 45029), (82, 45032), (91, 45080), (106, 45200),

Gene: Y2\_70 Start: 44849, Stop: 45229, Start Num: 58

Candidate Starts for Y2\_70:

(Start: 58 @44849 has 160 MA's), (Start: 62 @44867 has 1 MA's), (81, 45029), (82, 45032), (91, 45080), (106, 45200),

Gene: YoureAdopted\_67 Start: 44277, Stop: 44648, Start Num: 58

Candidate Starts for YoureAdopted\_67:

(26, 44064), (28, 44073), (45, 44223), (Start: 58 @44277 has 160 MA's), (78, 44394), (81, 44430), (86, 44445), (87, 44448), (106, 44604),

Gene: Yuna\_72 Start: 45450, Stop: 45779, Start Num: 61

Candidate Starts for Yuna\_72:

(Start: 61 @45450 has 1 MA's), (89, 45651), (93, 45666),

Gene: Yunkel11\_72 Start: 44191, Stop: 44562, Start Num: 58

Candidate Starts for Yunkel11\_72:

(45, 44137), (Start: 58 @44191 has 160 MA's), (78, 44308), (81, 44344), (86, 44359), (87, 44362), (106, 44518),

Gene: Zabiza\_63 Start: 40247, Stop: 40618, Start Num: 58

Candidate Starts for Zabiza\_63:

(44, 40187), (45, 40193), (Start: 54 @40232 has 1 MA's), (Start: 58 @40247 has 160 MA's), (78, 40364), (81, 40400), (86, 40415), (87, 40418), (106, 40574),

Gene: Zavala\_71 Start: 44669, Stop: 45040, Start Num: 58

Candidate Starts for Zavala\_71:

(44, 44609), (45, 44615), (Start: 54 @44654 has 1 MA's), (Start: 58 @44669 has 160 MA's), (78, 44786), (81, 44822), (86, 44837), (87, 44840), (106, 44996),

Gene: ZenTime222\_58 Start: 39792, Stop: 40148, Start Num: 52

Candidate Starts for ZenTime222\_58:

(Start: 52 @39792 has 54 MA's), (83, 39975), (95, 40038), (102, 40125),

Gene: ZoeJ\_70 Start: 45880, Stop: 46251, Start Num: 59

Candidate Starts for ZoeJ\_70:

(Start: 59 @45880 has 10 MA's), (77, 45988), (80, 46021), (82, 46042), (86, 46054), (95, 46108), (96, 46123),

Gene: Zucker\_83 Start: 48730, Stop: 49089, Start Num: 51

Candidate Starts for Zucker\_83:

(Start: 51 @48730 has 3 MA's), (79, 48886), (84, 48919), (95, 48979), (105, 49072),