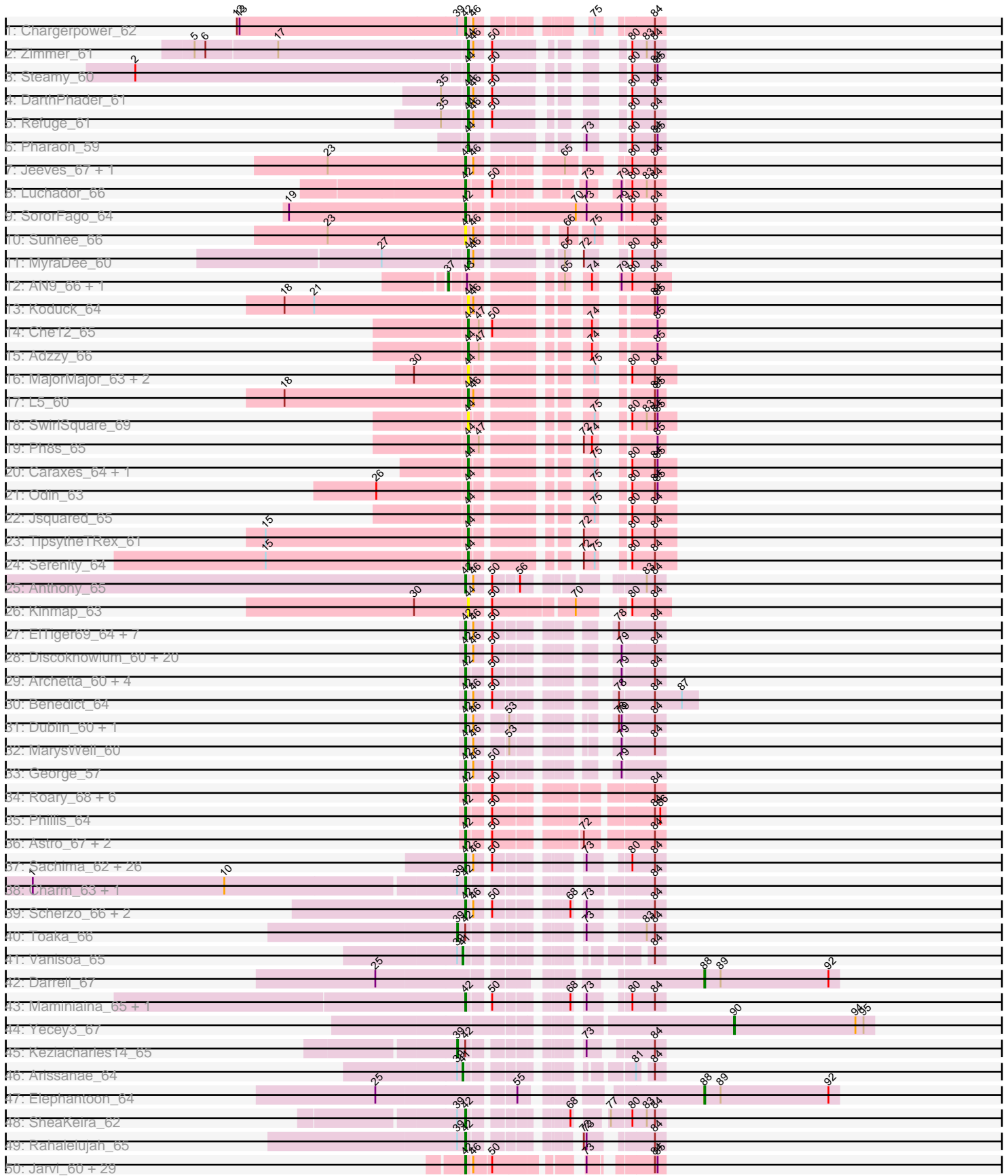
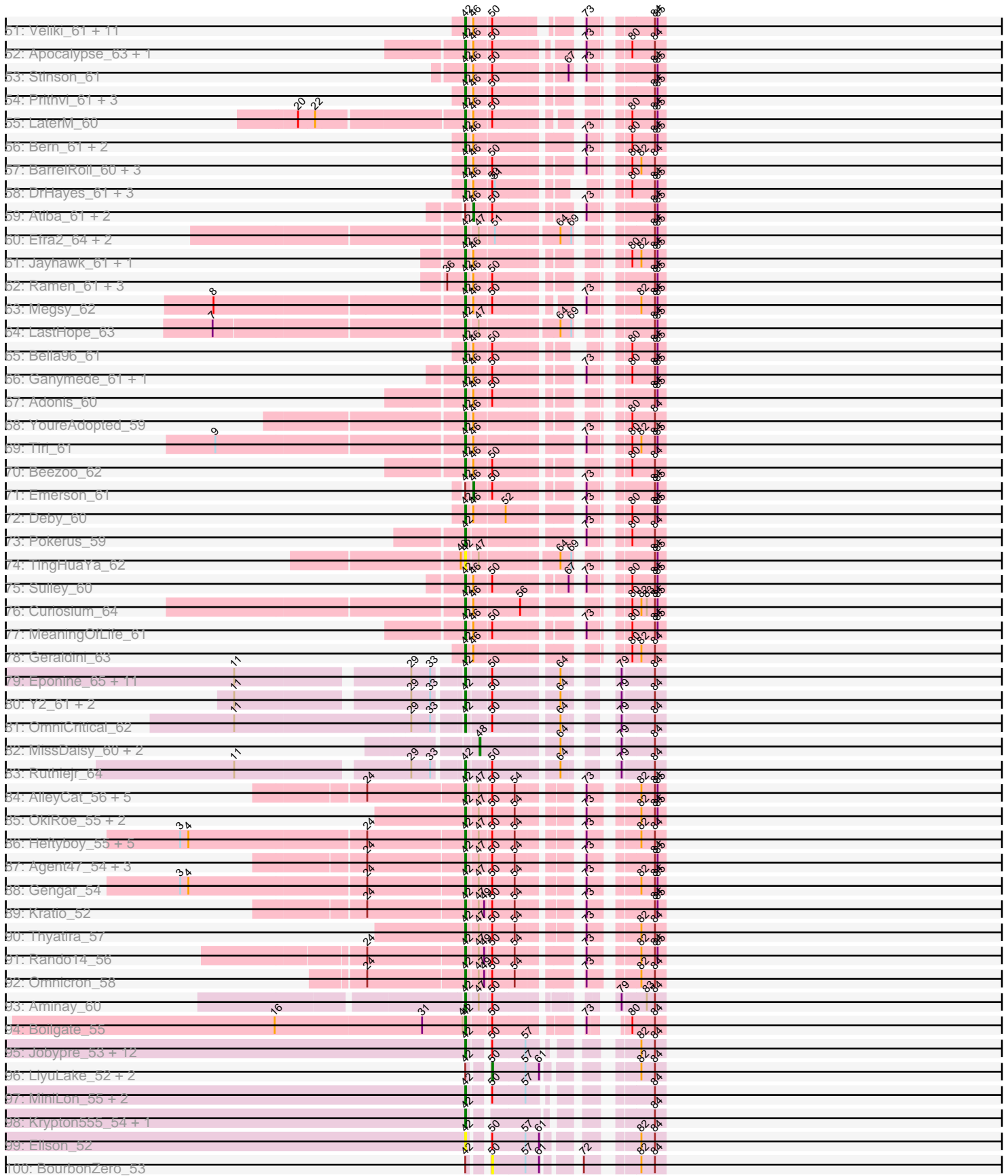


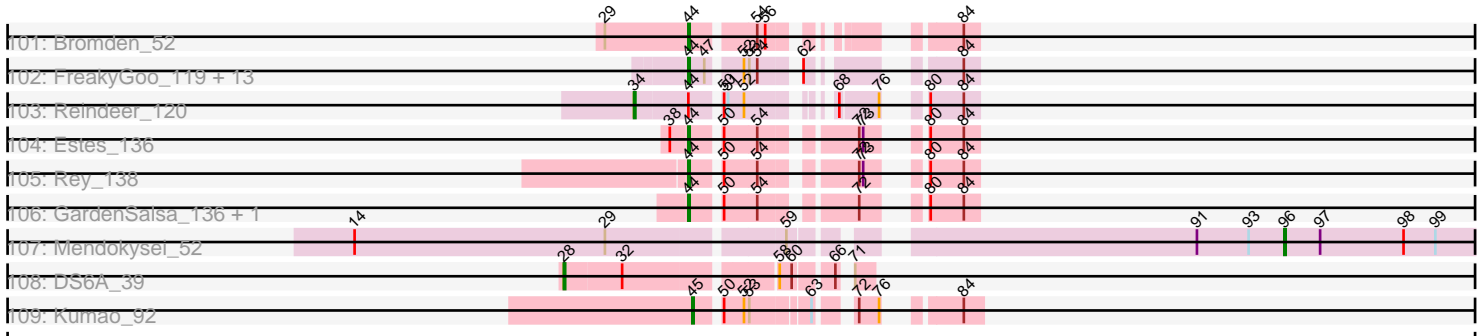
Pham 197796



Pham 197796



# Pham 197796



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 197796 Report

This analysis was run 01/18/25 on database version 583.

Pham number 197796 has 306 members, 35 are drafts.

Phages represented in each track:

- Track 1 : Chargerpower\_62
- Track 2 : Zimmer\_61
- Track 3 : Steamy\_60
- Track 4 : DarthPhader\_61
- Track 5 : Refuge\_61
- Track 6 : Pharaoh\_59
- Track 7 : Jeeves\_67, Gail\_65
- Track 8 : Luchador\_66
- Track 9 : SororFago\_64
- Track 10 : Sunhee\_66
- Track 11 : MyraDee\_60
- Track 12 : AN9\_66, ANI8\_66
- Track 13 : Koduck\_64
- Track 14 : Che12\_65
- Track 15 : Adzzy\_66
- Track 16 : MajorMajor\_63, Quokka\_63, Bradman\_64
- Track 17 : L5\_60
- Track 18 : SwirlSquare\_69
- Track 19 : Ph8s\_65
- Track 20 : Caraxes\_64, Superchunk\_63
- Track 21 : Odin\_63
- Track 22 : Jsquared\_65
- Track 23 : TopsytheTRex\_61
- Track 24 : Serenity\_64
- Track 25 : Anthony\_65
- Track 26 : Kinmap\_63
- Track 27 : EITiger69\_64, Jabiru\_63, Airmid\_62, PetterN\_67, UnionJack\_63, Scorpia\_64, Chadwick\_64, Naca\_62
- Track 28 : Discoknowium\_60, Aragog\_62, Twigg\_58, HuhtaEnerson15\_60, ForGetIt\_63, Tiger\_62, Phlorence\_61, Bonamassa\_60, Cuco\_61, PickleBack\_63, Jovo\_63, Milcery\_60, Swirley\_62, Coog\_59, Theia\_59, Conspiracy\_63, Midas2\_59, AgentM\_62, Tarynearal\_59, LittleCherry\_60, Lev2\_63
- Track 29 : Archetta\_60, SydNat\_62, Ghoulboy\_62, Zolita\_61, Bluefalcon\_58
- Track 30 : Benedict\_64
- Track 31 : Dublin\_60, Micasa\_60
- Track 32 : MarysWell\_60
- Track 33 : George\_57

- Track 34 : Roary\_68, Danforth\_67, Saintus\_62, Expelliarmus\_64, StepHig9\_66, Smeadley\_67, Dixon\_66
- Track 35 : Phillis\_64
- Track 36 : Astro\_67, NearlyHeadless\_67, Groundhog\_66
- Track 37 : Sachima\_62, Hanray\_64, EmyBug\_63, Halex\_64, Alma\_64, PackMan\_65, Conquerage\_64, Phonnegut\_67, HortumSL17\_67, Phaeder\_66, Eidsmoe\_64, Priya\_64, Beemo\_67, EdogawaKiddo\_64, Jiawan\_63, Qobbit\_64, ExplosioNervosa\_64, RyeScarlet\_68, Pioneer\_67, Catalina\_68, Tubs\_66, Onglai\_64, Aliter\_67, Lilleskat\_62, Fayely\_64, Myxus\_66, Spouty\_64
- Track 38 : Charm\_63, DreamTeam1\_63
- Track 39 : Scherzo\_66, Ugenie5\_62, LoneWolf\_66
- Track 40 : Toaka\_66
- Track 41 : Vanisoa\_65
- Track 42 : Darrell\_67
- Track 43 : Maminiaina\_65, BogosyJay\_65
- Track 44 : Yecey3\_67
- Track 45 : Keziacharles14\_65
- Track 46 : Arissanae\_64
- Track 47 : Elephantoon\_64
- Track 48 : SheaKeira\_62
- Track 49 : Rahalelujah\_65
- Track 50 : Jarvi\_60, Rosmarinus\_60, CREW\_60, Boiii\_60, Topper\_60, Lunahalos\_60, BGlluviae\_60, Dalmuri\_60, Peel\_60, Hyperbowlee\_60, Asayake\_60, Jeckyll\_60, CaseJules\_62, BEEST\_60, ShiaSurprise\_61, Inky\_60, Joy99\_60, Capricorn\_60, Belladonna\_60, Adephagia\_60, Ageofdapage\_63, Homura\_60, Blizzard\_60, Tachez\_60, Spock\_60, Durfee\_60, Twitch\_60, Piatt\_60, CallaLilly\_62, Llorens\_60
- Track 51 : Veliki\_61, MacKat\_55, Padpat\_62, Devera\_67, Clipper\_64, JAWS\_60, TaiwanKao\_62, CrimD\_61, Dole\_65, Zavala\_62, Mynx\_61, Illumine\_65
- Track 52 : Apocalypse\_63, Angelica\_60
- Track 53 : Stinson\_61
- Track 54 : Prithvi\_61, LindNT\_59, Murucutumbu\_61, TreyKay\_61
- Track 55 : LaterM\_60
- Track 56 : Bern\_61, BaghaKamala\_59, CheetoDust\_59
- Track 57 : BarrelRoll\_60, Rapunzel97\_61, Slimphazie\_60, TruffulaTree\_60
- Track 58 : DrHayes\_61, SamuelLPlaqson\_61, Urkel\_61, TiniBug\_61
- Track 59 : Atiba\_61, AlishaPH\_60, Padfoot\_60
- Track 60 : Efra2\_64, Yunkel11\_63, Guanica15\_63
- Track 61 : Jayhawk\_61, Anaya\_62
- Track 62 : Ramen\_61, ActinUp\_60, Zabiza\_55, HedwigODU\_60
- Track 63 : Megsy\_62
- Track 64 : LastHope\_63
- Track 65 : Bella96\_61
- Track 66 : Ganymede\_61, QuincyRose\_59
- Track 67 : Adonis\_60
- Track 68 : YoureAdopted\_59
- Track 69 : Tiri\_61
- Track 70 : Beezoo\_62
- Track 71 : Emerson\_61
- Track 72 : Deby\_60
- Track 73 : Pokerus\_59
- Track 74 : TingHuaYa\_62
- Track 75 : Sulley\_60

- Track 76 : Curiosium\_64
- Track 77 : MeaningOfLife\_61
- Track 78 : Geraldini\_63
- Track 79 : Eponine\_65, Taquito\_62, Malthus\_64, Juliette\_65, Slarp\_63, Fionnbharth\_63, Mitti\_63, Wintermute\_63, Chancellor\_63, Kraw\_64, Cheetobro\_63, SamScheppers\_61
- Track 80 : Y2\_61, Y10\_61, JF1\_63
- Track 81 : OmniCritical\_62
- Track 82 : MissDaisy\_60, Patt\_59, Reptar3000\_60
- Track 83 : Ruthiejr\_64
- Track 84 : AlleyCat\_56, Larva\_55, Edugator\_53, Neighly\_56, Psycho\_54, Dadosky\_56
- Track 85 : OkiRoe\_55, Feyre\_57, Miryou\_58
- Track 86 : Heftyboy\_55, Leston\_54, Waterfoul\_56, Paola\_54, SoSeph\_55, Guillsminger\_55
- Track 87 : Agent47\_54, Collard\_52, InvictusManeo\_52, ViviJ\_52
- Track 88 : Gengar\_54
- Track 89 : Kratio\_52
- Track 90 : Thyatira\_57
- Track 91 : Rando14\_56
- Track 92 : Omnicron\_58
- Track 93 : Aminay\_60
- Track 94 : Boilgate\_55
- Track 95 : Jobypre\_53, Kingsolomon\_52, Finnry\_52, Clautastrophe\_52, Bellis\_52, Samty\_52, TriFive\_53, Jubie\_52, Snenia\_52, MsGreen\_52, Nicholas\_52, Lumos\_54, Moostard\_52
- Track 96 : LiyuLake\_52, KirDoubleO7\_51, DuncansLeg\_53
- Track 97 : MiniLon\_55, MiniMac\_55, Lolly9\_52
- Track 98 : Krypton555\_54, Whirlwind\_53
- Track 99 : Ellson\_52
- Track 100 : BourbonZero\_53
- Track 101 : Bromden\_52
- Track 102 : FreakyGoo\_119, Auspice\_119, Dulcita\_120, Diminimus\_120, Skinny\_125, IPhane7\_117, Bricole\_121, Izel\_118, PegLeg\_123, Glaske16\_122, TyDawg\_114, LilhomieP\_119, Bongo\_119, SlimJimmy\_119
- Track 103 : Reindeer\_120
- Track 104 : Estes\_136
- Track 105 : Rey\_138
- Track 106 : GardenSalsa\_136, MrMagoo\_138
- Track 107 : Mendokysei\_52
- Track 108 : DS6A\_39
- Track 109 : Kumao\_92

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

The start number called the most often in the published annotations is 42, it was called in 218 of the 271 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp\_60, Adephegia\_60, Adonis\_60, Agent47\_54, AgentM\_62, Ageofdapage\_63, Airmid\_62, Aliter\_67, AlleyCat\_56, Alma\_64, Aminay\_60, Anaya\_62, Angelica\_60, Anthony\_65, Apocalypse\_63, Aragog\_62, Archetta\_60, Asayake\_60, Astro\_67, BEEST\_60, BGIlluviae\_60, BaghaKamala\_59, BarrelRoll\_60, Beemo\_67, Beezoo\_62, Bella96\_61, Belladonna\_60, Bellis\_52, Benedict\_64, Bern\_61, Blizzard\_60, Bluefalcon\_58, BogosyJay\_65, Boiiii\_60, Boilgate\_55, Bonamassa\_60, CREW\_60, CallaLilly\_62, Capricorn\_60, CaseJules\_62, Catalina\_68, Chadwick\_64, Chancellor\_63, Chargerpower\_62, Charm\_63, CheetoDust\_59, Cheetobro\_63, Clautastrophe\_52, Clipper\_64, Collard\_52, Conquerage\_64, Conspiracy\_63, Coog\_59, CrimD\_61, Cuco\_61, Curiosium\_64, Dadosky\_56, Dalmuri\_60, Danforth\_67, Deby\_60, Devera\_67, Discoknowium\_60, Dixon\_66, Dole\_65, DrHayes\_61, DreamTeam1\_63, Dublin\_60, Durfee\_60, EdogawaKiddo\_64, Edugator\_53, Efra2\_64, Eidsmoe\_64, ElTiger69\_64, Ellson\_52, EmyBug\_63, Eponine\_65, Expelliarmus\_64, ExplosioNervosa\_64, Fayely\_64, Feyre\_57, Finnry\_52, Fionnbharth\_63, ForGetIt\_63, Gail\_65, Ganymede\_61, Gengar\_54, George\_57, Geraldini\_63, Ghoulboy\_62, Groundhog\_66, Guanica15\_63, Guillsminger\_55, Hanray\_64, HedwigODU\_60, Heftyboy\_55, Horex\_64, Homura\_60, HortumSL17\_67, HuhtaEnerson15\_60, Hyperbowlee\_60, Illumine\_65, Inky\_60, InvictusManeo\_52, JAWS\_60, JF1\_63, Jabiru\_63, Jarvi\_60, Jayhawk\_61, Jeckyll\_60, Jeeves\_67, Jiawan\_63, Jobypre\_53, Jovo\_63, Joy99\_60, Jubie\_52, Juliette\_65, Kingsolomon\_52, Kratio\_52, Kraw\_64, Krypton555\_54, Larva\_55, LastHope\_63, LaterM\_60, Leston\_54, Lev2\_63, Lilleskat\_62, LindNT\_59, LittleCherry\_60, Llorens\_60, Lolly9\_52, LoneWolf\_66, Luchador\_66, Lumos\_54, Lunahalos\_60, MacKat\_55, Malthus\_64, Maminiaina\_65, MarysWell\_60, MeaningOfLife\_61, Megsy\_62, Micasa\_60, Midas2\_59, Milcery\_60, MiniLon\_55, MiniMac\_55, Miryou\_58, Mitti\_63, Moostard\_52, MsGreen\_52, Murucutumbu\_61, Mynx\_61, Myxus\_66, Naca\_62, NearlyHeadless\_67, Neighly\_56, Nicholas\_52, OkiRoe\_55, OmniCritical\_62, Omnicron\_58, Onglai\_64, PackMan\_65, Padpat\_62, Paola\_54, Peel\_60, PetterN\_67, Phaeder\_66, Phillis\_64, Phlorence\_61, Phonnegut\_67, Piatt\_60, PickleBack\_63, Pioneer\_67, Pokerus\_59, Prithvi\_61, Priya\_64, Psycho\_54, Qobbit\_64, QuincyRose\_59, Rahalelujah\_65, Ramen\_61, Rando14\_56, Rapunzel97\_61, Roary\_68, Rosmarinus\_60, Ruthiejr\_64, RyeScarlet\_68, Sachima\_62, Saintus\_62, SamScheppers\_61, Samty\_52, SamuelLPlaqson\_61, Scherzo\_66, Scorpia\_64, SheaKeira\_62, ShiaSurprise\_61, Slarp\_63, Slimphazie\_60, Smeadley\_67, Snenia\_52, SoSeph\_55, SororFago\_64, Spock\_60, Spouty\_64, Stephig9\_66, Stinson\_61, Sulley\_60, Sunhee\_66, Swirley\_62, SydNat\_62, Tachez\_60, TaiwanKao\_62, Taquito\_62, Tarynearal\_59, Theia\_59, Thyatira\_57, Tiger\_62, TingHuaYa\_62, TiniBug\_61, Tiri\_61, Topper\_60, TreyKay\_61, TriFive\_53, TruffulaTree\_60, Tubs\_66, Twigg\_58, Twitch\_60, Ugenie5\_62, UnionJack\_63, Urkel\_61, Veliki\_61, ViviJ\_52, Waterfoul\_56, Whirlwind\_53, Wintermute\_63, Y10\_61, Y2\_61, YoureAdopted\_59, Yunkel11\_63, Zabiza\_55, Zavala\_62, Zolita\_61,

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

- AlishaPH\_60, Atiba\_61, BourbonZero\_53, DuncansLeg\_53, Emerson\_61, Keziacharles14\_65, KirDoubleO7\_51, LiyuLake\_52, Padfoot\_60, Toaka\_66,

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

- AN9\_66, ANI8\_66, Adzzy\_66, Arissanae\_64, Auspice\_119, Bongo\_119, Bradman\_64, Bricole\_121, Bromden\_52, Caraxes\_64, Che12\_65, DS6A\_39, Darrell\_67, DarthPhader\_61, Diminimus\_120, Dulcita\_120, Elephantoon\_64, Estes\_136, FreakyGoo\_119, GardenSalsa\_136, Glaske16\_122, IPhane7\_117, Izel\_118, Jsquared\_65, Kinmap\_63, Koduck\_64, Kumao\_92, L5\_60, LilhomieP\_119, MajorMajor\_63, Mendokysej\_52, MissDaisy\_60, MrMagoo\_138, MyraDee\_60,

Odin\_63, Patt\_59, PegLeg\_123, Ph8s\_65, Pharaoh\_59, Quokka\_63, Refuge\_61, Reindeer\_120, Reptar3000\_60, Rey\_138, Serenity\_64, Skinny\_125, SlimJimmy\_119, Steamy\_60, Superchunk\_63, SwirlSquare\_69, TopsytheTRex\_61, TyDawg\_114, Vanisoa\_65, Yecey3\_67, Zimmer\_61,

### Summary by start number:

#### Start 28:

- Found in 1 of 306 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 271
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DS6A\_39 (singleton),

#### Start 34:

- Found in 1 of 306 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 271
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Reindeer\_120 (M1),

#### Start 37:

- Found in 2 of 306 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 2 of 271
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AN9\_66 (A2), ANI8\_66 (A2),

#### Start 39:

- Found in 9 of 306 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 2 of 271
- Called 22.2% of time when present
- Phage (with cluster) where this start called: Keziacharles14\_65 (A9), Toaka\_66 (A9),

#### Start 41:

- Found in 3 of 306 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 2 of 271
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Arissanae\_64 (A9), Vanisoa\_65 (A9),

#### Start 42:

- Found in 251 of 306 ( 82.0% ) of genes in pham
- Manual Annotations of this start: 218 of 271
- Called 96.0% of time when present
- Phage (with cluster) where this start called: ActinUp\_60 (K1), Adephagia\_60 (K1), Adonis\_60 (K1), Agent47\_54 (K5), AgentM\_62 (A5), Ageofdapage\_63 (K1), Airmid\_62 (A5), Aliter\_67 (A9), AlleyCat\_56 (K5), Alma\_64 (A9), Aminay\_60 (K7), Anaya\_62 (K1), Angelica\_60 (K1), Anthony\_65 (A20), Apocalypse\_63 (K1), Aragog\_62 (A5), Archetta\_60 (A5), Asayake\_60 (K1), Astro\_67 (A8), BEEST\_60 (K1), BGIluviae\_60 (K1), BaghaKamala\_59 (K1), BarrelRoll\_60 (K1), Beemo\_67 (A9), Beezoo\_62 (K1), Bella96\_61 (K1), Belladonna\_60 (K1), Bellis\_52 (L3), Benedict\_64 (A5), Bern\_61 (K1), Blizzard\_60 (K1), Bluefalcon\_58 (A5), BogosyJay\_65 (A9), Boiiii\_60 (K1), Boilgate\_55 (K8), Bonamassa\_60 (A5), CREW\_60 (K1), CallaLilly\_62 (K1), Capricorn\_60 (K1), CaseJules\_62 (K1), Catalina\_68 (A9), Chadwick\_64 (A5), Chancellor\_63 (K4), Chargerpower\_62 (A), Charm\_63 (A9), CheetoDust\_59 (K1), Cheetobro\_63 (K4), Clautastrophe\_52 (L3), Clipper\_64 (K1), Collard\_52 (K5),



Conquerage\_64 (A9), Conspiracy\_63 (A5), Coog\_59 (A5), CrimD\_61 (K1), Cuco\_61 (A5), Curiosium\_64 (K1), Dadosky\_56 (K5), Dalmuri\_60 (K1), Danforth\_67 (A8), Deby\_60 (K1), Devera\_67 (K1), Discoknowium\_60 (A5), Dixon\_66 (A8), Dole\_65 (K1), DrHayes\_61 (K1), DreamTeam1\_63 (A9), Dublin\_60 (A5), Durfee\_60 (K1), EdogawaKiddo\_64 (A9), Edugator\_53 (K5), Efra2\_64 (K1), Eidsmoe\_64 (A9), EITiger69\_64 (A5), Ellson\_52 (L3), EmyBug\_63 (A9), Eponine\_65 (K4), Expelliarmus\_64 (A8), ExplosioNervosa\_64 (A9), Fayely\_64 (A9), Feyre\_57 (K5), Finnry\_52 (L3), Fionnbharth\_63 (K4), ForGetIt\_63 (A5), Gail\_65 (A14), Ganymede\_61 (K1), Gengar\_54 (K5), George\_57 (A5), Geraldini\_63 (K1), Ghoulyboy\_62 (A5), Groundhog\_66 (A8), Guanica15\_63 (K1), Guillsminger\_55 (K5), Hanray\_64 (A9), HedwigODU\_60 (K1), Heftyboy\_55 (K5), Horex\_64 (A9), Homura\_60 (K1), HortumSL17\_67 (A9), HuhtaEnerson15\_60 (A5), Hyperbowlee\_60 (K1), Illumine\_65 (K1), Inky\_60 (K1), InvictusManeo\_52 (K5), JAWS\_60 (K1), JF1\_63 (K4), Jabiru\_63 (A5), Jarvi\_60 (K1), Jayhawk\_61 (K1), Jeckyll\_60 (K1), Jeeves\_67 (A14), Jiawan\_63 (A9), Jobypre\_53 (L3), Jovo\_63 (A5), Joy99\_60 (K1), Jubie\_52 (L3), Juliette\_65 (K4), Kingsolomon\_52 (L3), Kratio\_52 (K5), Kraw\_64 (K4), Krypton555\_54 (L3), Larva\_55 (K5), LastHope\_63 (K1), LaterM\_60 (K1), Leston\_54 (K5), Lev2\_63 (A5), Lilleskat\_62 (A9), LindNT\_59 (K1), LittleCherry\_60 (A5), Llorens\_60 (K1), Lolly9\_52 (L3), LoneWolf\_66 (A9), Luchador\_66 (A14), Lumos\_54 (L3), Lunahalos\_60 (K1), MacKat\_55 (K1), Malthus\_64 (K4), Maminiaina\_65 (A9), MarysWell\_60 (A5), MeaningOfLife\_61 (K1), Megsy\_62 (K1), Micasa\_60 (A5), Midas2\_59 (A5), Milcery\_60 (A5), MiniLon\_55 (L3), MiniMac\_55 (L3), Miryou\_58 (K5), Mitti\_63 (K4), Moostard\_52 (L3), MsGreen\_52 (L3), Murucutumbu\_61 (K1), Mynx\_61 (K1), Myxus\_66 (A9), Naca\_62 (A5), NearlyHeadless\_67 (A8), Neighly\_56 (K3), Nicholas\_52 (L3), OkiRoe\_55 (K5), OmniCritical\_62 (K4), Omnicron\_58 (K5), Onglai\_64 (A9), PackMan\_65 (A9), Padpat\_62 (K1), Paola\_54 (K5), Peel\_60 (K1), PetterN\_67 (A5), Phaeder\_66 (A9), Phillis\_64 (A8), Phlorence\_61 (A5), Phonnegut\_67 (A9), Piatt\_60 (K1), PickleBack\_63 (A5), Pioneer\_67 (A9), Pokerus\_59 (K1), Prithvi\_61 (K1), Priya\_64 (A9), Psycho\_54 (K5), Qobbit\_64 (A9), QuincyRose\_59 (K1), Rahalelujah\_65 (A9), Ramen\_61 (K1), Rando14\_56 (K5), Rapunzel97\_61 (K1), Roary\_68 (A8), Rosmarinus\_60 (K1), Ruthiejr\_64 (K4), RyeScarlet\_68 (A9), Sachima\_62 (A9), Saintus\_62 (A8), SamScheppers\_61 (K4), Samty\_52 (L3), SamuelLPlaqson\_61 (K1), Scherzo\_66 (A9), Scorpia\_64 (A5), SheaKeira\_62 (A9), ShiaSurprise\_61 (K1), Slarp\_63 (K4), Slimphazie\_60 (K1), Smeadley\_67 (A8), Snenia\_52 (L3), SoSeph\_55 (K5), SororFago\_64 (A14), Spock\_60 (K1), Spouty\_64 (A9), Stephig9\_66 (A8), Stinson\_61 (K1), Sulley\_60 (K1), Sunhee\_66 (A14), Swirley\_62 (A5), SydNat\_62 (A5), Tachez\_60 (K1), TaiwanKao\_62 (K1), Taquito\_62 (K4), Tarynearal\_59 (A5), Theia\_59 (A5), Thyatira\_57 (K5), Tiger\_62 (A5), TingHuaYa\_62 (K1), TiniBug\_61 (K1), Tiri\_61 (K1), Topper\_60 (K1), TreyKay\_61 (K1), TriFive\_53 (L3), TruffulaTree\_60 (K1), Tubs\_66 (A9), Twigg\_58 (A5), Twitch\_60 (K1), Ugenie5\_62 (A9), UnionJack\_63 (A5), Urkel\_61 (K1), Veliki\_61 (K1), ViviJ\_52 (K5), Waterfoul\_56 (K5), Whirlwind\_53 (L3), Wintermute\_63 (K4), Y10\_61 (K4), Y2\_61 (K4), YoureAdopted\_59 (K1), Yunkel11\_63 (K1), Zabiza\_55 (K1), Zavala\_62 (K1), Zolita\_61 (A5),

Start 44:

- Found in 42 of 306 ( 13.7% ) of genes in pham
- Manual Annotations of this start: 32 of 271
- Called 97.6% of time when present
- Phage (with cluster) where this start called: Adzzy\_66 (A2), Auspice\_119 (M1), Bongo\_119 (M1), Bradman\_64 (A2), Bricole\_121 (M1), Bromden\_52 (L4), Caraxes\_64 (A2), Che12\_65 (A2), DarthPhader\_61 (A12), Diminimus\_120 (M1), Dulcita\_120 (M1), Estes\_136 (M2), FreakyGoo\_119 (M1), GardenSalsa\_136 (M2),

Glaske16\_122 (M1), IPhane7\_117 (M1), Izel\_118 (M1), Jsquared\_65 (A2), Kinmap\_63 (A21), Koduck\_64 (A2), L5\_60 (A2), LilhomieP\_119 (M1), MajorMajor\_63 (A2), MrMagoo\_138 (M2), MyraDee\_60 (A18), Odin\_63 (A2), PegLeg\_123 (M1), Ph8s\_65 (A2), Pharaoh\_59 (A12), Quokka\_63 (A2), Refuge\_61 (A12), Rey\_138 (M2), Serenity\_64 (A2), Skinny\_125 (M1), SlimJimmy\_119 (M1), Steamy\_60 (A12), Superchunk\_63 (A2), SwirlSquare\_69 (A2), TipsytheTRex\_61 (A2), TyDawg\_114 (M1), Zimmer\_61 (A12),

Start 45:

- Found in 1 of 306 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 271
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kumao\_92 (singleton),

Start 46:

- Found in 159 of 306 ( 52.0% ) of genes in pham
- Manual Annotations of this start: 4 of 271
- Called 2.5% of time when present
- Phage (with cluster) where this start called: AlishaPH\_60 (K1), Atiba\_61 (K1), Emerson\_61 (K1), Padfoot\_60 (K1),

Start 48:

- Found in 3 of 306 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 3 of 271
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MissDaisy\_60 (K4), Patt\_59 (K4), Reptar3000\_60 (K4),

Start 50:

- Found in 231 of 306 ( 75.5% ) of genes in pham
- Manual Annotations of this start: 1 of 271
- Called 1.7% of time when present
- Phage (with cluster) where this start called: BourbonZero\_53 (L3), DuncansLeg\_53 (L3), KirDoubleO7\_51 (L3), LiyuLake\_52 (L3),

Start 88:

- Found in 2 of 306 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 2 of 271
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Darrell\_67 (A9), Elephantoon\_64 (A9),

Start 90:

- Found in 1 of 306 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 271
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Yecey3\_67 (A9),

Start 96:

- Found in 1 of 306 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 271
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mendokysei\_52 (T),

## Summary by clusters:

There are 22 clusters represented in this pham: singleton, K4, K3, K1, M1, K5, M2, K8, A14, A12, A18, A2, A5, A9, A8, A, L4, L3, A20, A21, K7, T,

Info for manual annotations of cluster A:

- Start number 42 was manually annotated 1 time for cluster A.

Info for manual annotations of cluster A12:

- Start number 44 was manually annotated 5 times for cluster A12.

Info for manual annotations of cluster A14:

- Start number 42 was manually annotated 4 times for cluster A14.

Info for manual annotations of cluster A18:

- Start number 44 was manually annotated 1 time for cluster A18.

Info for manual annotations of cluster A2:

- Start number 37 was manually annotated 2 times for cluster A2.
- Start number 44 was manually annotated 9 times for cluster A2.

Info for manual annotations of cluster A20:

- Start number 42 was manually annotated 1 time for cluster A20.

Info for manual annotations of cluster A5:

- Start number 42 was manually annotated 38 times for cluster A5.

Info for manual annotations of cluster A8:

- Start number 42 was manually annotated 11 times for cluster A8.

Info for manual annotations of cluster A9:

- Start number 39 was manually annotated 2 times for cluster A9.
- Start number 41 was manually annotated 2 times for cluster A9.
- Start number 42 was manually annotated 28 times for cluster A9.
- Start number 88 was manually annotated 2 times for cluster A9.
- Start number 90 was manually annotated 1 time for cluster A9.

Info for manual annotations of cluster K1:

- Start number 42 was manually annotated 80 times for cluster K1.
- Start number 46 was manually annotated 4 times for cluster K1.

Info for manual annotations of cluster K4:

- Start number 42 was manually annotated 16 times for cluster K4.
- Start number 48 was manually annotated 3 times for cluster K4.

Info for manual annotations of cluster K5:

- Start number 42 was manually annotated 22 times for cluster K5.

Info for manual annotations of cluster K7:

- Start number 42 was manually annotated 1 time for cluster K7.

Info for manual annotations of cluster K8:

- Start number 42 was manually annotated 1 time for cluster K8.

Info for manual annotations of cluster L3:

- Start number 42 was manually annotated 15 times for cluster L3.
- Start number 50 was manually annotated 1 time for cluster L3.

Info for manual annotations of cluster L4:

- Start number 44 was manually annotated 1 time for cluster L4.

Info for manual annotations of cluster M1:

- Start number 34 was manually annotated 1 time for cluster M1.
- Start number 44 was manually annotated 12 times for cluster M1.

Info for manual annotations of cluster M2:

- Start number 44 was manually annotated 4 times for cluster M2.

Info for manual annotations of cluster T:

- Start number 96 was manually annotated 1 time for cluster T.

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

Gene: AN9\_66 Start: 40276, Stop: 40106, Start Num: 37

Candidate Starts for AN9\_66:

(Start: 37 @40276 has 2 MA's), (43, 40261), (65, 40183), (74, 40168), (79, 40159), (80, 40147), (84, 40123),

Gene: ANI8\_66 Start: 40276, Stop: 40106, Start Num: 37

Candidate Starts for ANI8\_66:

(Start: 37 @40276 has 2 MA's), (43, 40261), (65, 40183), (74, 40168), (79, 40159), (80, 40147), (84, 40123),

Gene: ActinUp\_60 Start: 41125, Stop: 41289, Start Num: 42

Candidate Starts for ActinUp\_60:

(36, 41110), (Start: 42 @41125 has 218 MA's), (Start: 46 @41131 has 4 MA's), (Start: 50 @41149 has 1 MA's), (84, 41278), (85, 41281),

Gene: Adephagia\_60 Start: 41132, Stop: 41296, Start Num: 42

Candidate Starts for Adephagia\_60:

(Start: 42 @41132 has 218 MA's), (Start: 46 @41138 has 4 MA's), (Start: 50 @41156 has 1 MA's), (73, 41231), (84, 41285), (85, 41288),

Gene: Adonis\_60 Start: 41367, Stop: 41531, Start Num: 42

Candidate Starts for Adonis\_60:

(Start: 42 @41367 has 218 MA's), (Start: 46 @41373 has 4 MA's), (Start: 50 @41391 has 1 MA's), (84, 41520), (85, 41523),

Gene: Adzzy\_66 Start: 39083, Stop: 38940, Start Num: 44

Candidate Starts for Adzzy\_66:

(Start: 44 @39083 has 32 MA's), (47, 39071), (74, 38990), (85, 38948),

Gene: Agent47\_54 Start: 38364, Stop: 38531, Start Num: 42

Candidate Starts for Agent47\_54:

(24, 38262), (Start: 42 @38364 has 218 MA's), (47, 38376), (Start: 50 @38388 has 1 MA's), (54, 38412), (73, 38463), (84, 38520), (85, 38523),

Gene: AgentM\_62 Start: 40126, Stop: 39974, Start Num: 42

Candidate Starts for AgentM\_62:

(Start: 42 @40126 has 218 MA's), (Start: 46 @40120 has 4 MA's), (Start: 50 @40108 has 1 MA's), (79, 40018), (84, 39985),

Gene: Ageofdapage\_63 Start: 42108, Stop: 42269, Start Num: 42

Candidate Starts for Ageofdapage\_63:

(Start: 42 @42108 has 218 MA's), (Start: 46 @42114 has 4 MA's), (Start: 50 @42132 has 1 MA's), (73, 42204), (84, 42258), (85, 42261),

Gene: Airmid\_62 Start: 40118, Stop: 39966, Start Num: 42

Candidate Starts for Airmid\_62:

(Start: 42 @40118 has 218 MA's), (Start: 46 @40112 has 4 MA's), (Start: 50 @40100 has 1 MA's), (78, 40013), (84, 39977),

Gene: AlishaPH\_60 Start: 41399, Stop: 41557, Start Num: 46

Candidate Starts for AlishaPH\_60:

(Start: 42 @41393 has 218 MA's), (Start: 46 @41399 has 4 MA's), (Start: 50 @41417 has 1 MA's), (73, 41492), (84, 41546), (85, 41549),

Gene: Aliter\_67 Start: 40348, Stop: 40199, Start Num: 42

Candidate Starts for Aliter\_67:

(Start: 42 @40348 has 218 MA's), (Start: 46 @40342 has 4 MA's), (Start: 50 @40330 has 1 MA's), (73, 40264), (80, 40234), (84, 40210),

Gene: AlleyCat\_56 Start: 38668, Stop: 38835, Start Num: 42

Candidate Starts for AlleyCat\_56:

(24, 38566), (Start: 42 @38668 has 218 MA's), (47, 38680), (Start: 50 @38692 has 1 MA's), (54, 38716), (73, 38767), (82, 38809), (84, 38824), (85, 38827),

Gene: Alma\_64 Start: 40243, Stop: 40094, Start Num: 42

Candidate Starts for Alma\_64:

(Start: 42 @40243 has 218 MA's), (Start: 46 @40237 has 4 MA's), (Start: 50 @40225 has 1 MA's), (73, 40159), (80, 40129), (84, 40105),

Gene: Aminay\_60 Start: 40828, Stop: 40986, Start Num: 42

Candidate Starts for Aminay\_60:

(Start: 42 @40828 has 218 MA's), (47, 40840), (Start: 50 @40852 has 1 MA's), (79, 40942), (83, 40966), (84, 40975),

Gene: Anaya\_62 Start: 41648, Stop: 41815, Start Num: 42

Candidate Starts for Anaya\_62:

(Start: 42 @41648 has 218 MA's), (Start: 46 @41654 has 4 MA's), (80, 41780), (82, 41789), (84, 41804), (85, 41807),

Gene: Angelica\_60 Start: 41275, Stop: 41439, Start Num: 42

Candidate Starts for Angelica\_60:

(Start: 42 @41275 has 218 MA's), (Start: 46 @41281 has 4 MA's), (Start: 50 @41299 has 1 MA's), (73, 41374), (80, 41404), (84, 41428),

Gene: Anthony\_65 Start: 40664, Stop: 40509, Start Num: 42

Candidate Starts for Anthony\_65:

(Start: 42 @40664 has 218 MA's), (Start: 46 @40658 has 4 MA's), (Start: 50 @40646 has 1 MA's), (56, 40622), (83, 40529), (84, 40520),

Gene: Apocalypse\_63 Start: 42044, Stop: 42205, Start Num: 42

Candidate Starts for Apocalypse\_63:

(Start: 42 @42044 has 218 MA's), (Start: 46 @42050 has 4 MA's), (Start: 50 @42068 has 1 MA's), (73, 42140), (80, 42170), (84, 42194),

Gene: Aragog\_62 Start: 40146, Stop: 39994, Start Num: 42

Candidate Starts for Aragog\_62:

(Start: 42 @40146 has 218 MA's), (Start: 46 @40140 has 4 MA's), (Start: 50 @40128 has 1 MA's), (79, 40038), (84, 40005),

Gene: Archetta\_60 Start: 40330, Stop: 40178, Start Num: 42

Candidate Starts for Archetta\_60:

(Start: 42 @40330 has 218 MA's), (Start: 50 @40312 has 1 MA's), (79, 40222), (84, 40189),

Gene: Arissanae\_64 Start: 40777, Stop: 40631, Start Num: 41

Candidate Starts for Arissanae\_64:

(Start: 39 @40783 has 2 MA's), (Start: 41 @40777 has 2 MA's), (81, 40654), (84, 40642),

Gene: Asayake\_60 Start: 41447, Stop: 41611, Start Num: 42

Candidate Starts for Asayake\_60:

(Start: 42 @41447 has 218 MA's), (Start: 46 @41453 has 4 MA's), (Start: 50 @41471 has 1 MA's), (73, 41546), (84, 41600), (85, 41603),

Gene: Astro\_67 Start: 39968, Stop: 39795, Start Num: 42

Candidate Starts for Astro\_67:

(Start: 42 @39968 has 218 MA's), (Start: 50 @39950 has 1 MA's), (72, 39872), (84, 39806),

Gene: Atiba\_61 Start: 41101, Stop: 41259, Start Num: 46

Candidate Starts for Atiba\_61:

(Start: 42 @41095 has 218 MA's), (Start: 46 @41101 has 4 MA's), (Start: 50 @41119 has 1 MA's), (73, 41194), (84, 41248), (85, 41251),

Gene: Auspice\_119 Start: 63668, Stop: 63817, Start Num: 44

Candidate Starts for Auspice\_119:

(Start: 44 @63668 has 32 MA's), (47, 63680), (52, 63701), (53, 63704), (54, 63710), (62, 63731), (84, 63806),

Gene: BEEST\_60 Start: 41447, Stop: 41611, Start Num: 42

Candidate Starts for BEEST\_60:

(Start: 42 @41447 has 218 MA's), (Start: 46 @41453 has 4 MA's), (Start: 50 @41471 has 1 MA's), (73, 41546), (84, 41600), (85, 41603),

Gene: BGlluviae\_60 Start: 41250, Stop: 41414, Start Num: 42

Candidate Starts for BGlluviae\_60:

(Start: 42 @41250 has 218 MA's), (Start: 46 @41256 has 4 MA's), (Start: 50 @41274 has 1 MA's), (73, 41349), (84, 41403), (85, 41406),

Gene: BaghaKamala\_59 Start: 40476, Stop: 40640, Start Num: 42

Candidate Starts for BaghaKamala\_59:

(Start: 42 @40476 has 218 MA's), (Start: 46 @40482 has 4 MA's), (73, 40575), (80, 40605), (84, 40629), (85, 40632),

Gene: BarrelRoll\_60 Start: 41099, Stop: 41263, Start Num: 42

Candidate Starts for BarrelRoll\_60:

(Start: 42 @41099 has 218 MA's), (Start: 46 @41105 has 4 MA's), (Start: 50 @41123 has 1 MA's), (73, 41198), (80, 41228), (82, 41237), (84, 41252),

Gene: Beemo\_67 Start: 40518, Stop: 40369, Start Num: 42

Candidate Starts for Beemo\_67:

(Start: 42 @40518 has 218 MA's), (Start: 46 @40512 has 4 MA's), (Start: 50 @40500 has 1 MA's), (73, 40434), (80, 40404), (84, 40380),

Gene: Beezoo\_62 Start: 42083, Stop: 42247, Start Num: 42

Candidate Starts for Beezoo\_62:

(Start: 42 @42083 has 218 MA's), (Start: 46 @42089 has 4 MA's), (Start: 50 @42107 has 1 MA's), (80, 42212), (84, 42236),

Gene: Bella96\_61 Start: 41864, Stop: 42022, Start Num: 42

Candidate Starts for Bella96\_61:

(Start: 42 @41864 has 218 MA's), (Start: 46 @41870 has 4 MA's), (Start: 50 @41888 has 1 MA's), (80, 41987), (84, 42011), (85, 42014),

Gene: Belladonna\_60 Start: 41250, Stop: 41414, Start Num: 42

Candidate Starts for Belladonna\_60:

(Start: 42 @41250 has 218 MA's), (Start: 46 @41256 has 4 MA's), (Start: 50 @41274 has 1 MA's), (73, 41349), (84, 41403), (85, 41406),

Gene: Bellis\_52 Start: 40421, Stop: 40579, Start Num: 42

Candidate Starts for Bellis\_52:

(Start: 42 @40421 has 218 MA's), (Start: 50 @40439 has 1 MA's), (57, 40475), (82, 40553), (84, 40568),

Gene: Benedict\_64 Start: 40407, Stop: 40219, Start Num: 42

Candidate Starts for Benedict\_64:

(Start: 42 @40407 has 218 MA's), (Start: 46 @40401 has 4 MA's), (Start: 50 @40389 has 1 MA's), (78, 40302), (84, 40266), (87, 40236),

Gene: Bern\_61 Start: 40066, Stop: 40233, Start Num: 42

Candidate Starts for Bern\_61:

(Start: 42 @40066 has 218 MA's), (Start: 46 @40072 has 4 MA's), (73, 40168), (80, 40198), (84, 40222), (85, 40225),

Gene: Blizzard\_60 Start: 41447, Stop: 41611, Start Num: 42

Candidate Starts for Blizzard\_60:

(Start: 42 @41447 has 218 MA's), (Start: 46 @41453 has 4 MA's), (Start: 50 @41471 has 1 MA's), (73, 41546), (84, 41600), (85, 41603),

Gene: Bluefalcon\_58 Start: 40350, Stop: 40198, Start Num: 42  
Candidate Starts for Bluefalcon\_58:  
(Start: 42 @40350 has 218 MA's), (Start: 50 @40332 has 1 MA's), (79, 40242), (84, 40209),

Gene: BogosyJay\_65 Start: 40318, Stop: 40169, Start Num: 42  
Candidate Starts for BogosyJay\_65:  
(Start: 42 @40318 has 218 MA's), (Start: 50 @40300 has 1 MA's), (68, 40240), (73, 40234), (80, 40204), (84, 40180),

Gene: Boiiii\_60 Start: 41449, Stop: 41613, Start Num: 42  
Candidate Starts for Boiiii\_60:  
(Start: 42 @41449 has 218 MA's), (Start: 46 @41455 has 4 MA's), (Start: 50 @41473 has 1 MA's), (73, 41548), (84, 41602), (85, 41605),

Gene: Boilgate\_55 Start: 40489, Stop: 40644, Start Num: 42  
Candidate Starts for Boilgate\_55:  
(16, 40279), (31, 40441), (Start: 41 @40486 has 2 MA's), (Start: 42 @40489 has 218 MA's), (Start: 50 @40513 has 1 MA's), (73, 40588), (80, 40609), (84, 40633),

Gene: Bonamassa\_60 Start: 39968, Stop: 39816, Start Num: 42  
Candidate Starts for Bonamassa\_60:  
(Start: 42 @39968 has 218 MA's), (Start: 46 @39962 has 4 MA's), (Start: 50 @39950 has 1 MA's), (79, 39860), (84, 39827),

Gene: Bongo\_119 Start: 63284, Stop: 63433, Start Num: 44  
Candidate Starts for Bongo\_119:  
(Start: 44 @63284 has 32 MA's), (47, 63296), (52, 63317), (53, 63320), (54, 63326), (62, 63347), (84, 63422),

Gene: BourbonZero\_53 Start: 40479, Stop: 40625, Start Num: 50  
Candidate Starts for BourbonZero\_53:  
(Start: 42 @40464 has 218 MA's), (Start: 50 @40479 has 1 MA's), (57, 40515), (61, 40530), (72, 40557), (82, 40599), (84, 40614),

Gene: Bradman\_64 Start: 39432, Stop: 39280, Start Num: 44  
Candidate Starts for Bradman\_64:  
(30, 39489), (Start: 44 @39432 has 32 MA's), (75, 39339), (80, 39327), (84, 39303),

Gene: Bricole\_121 Start: 63432, Stop: 63581, Start Num: 44  
Candidate Starts for Bricole\_121:  
(Start: 44 @63432 has 32 MA's), (47, 63444), (52, 63465), (53, 63468), (54, 63474), (62, 63495), (84, 63570),

Gene: Bromden\_52 Start: 39680, Stop: 39823, Start Num: 44  
Candidate Starts for Bromden\_52:  
(29, 39617), (Start: 44 @39680 has 32 MA's), (54, 39722), (56, 39728), (84, 39812),

Gene: CREW\_60 Start: 41250, Stop: 41414, Start Num: 42  
Candidate Starts for CREW\_60:  
(Start: 42 @41250 has 218 MA's), (Start: 46 @41256 has 4 MA's), (Start: 50 @41274 has 1 MA's), (73, 41349), (84, 41403), (85, 41406),

Gene: CallaLilly\_62 Start: 41173, Stop: 41337, Start Num: 42



Candidate Starts for CallaLilly\_62:

(Start: 42 @41173 has 218 MA's), (Start: 46 @41179 has 4 MA's), (Start: 50 @41197 has 1 MA's), (73, 41272), (84, 41326), (85, 41329),

Gene: Capricorn\_60 Start: 41250, Stop: 41414, Start Num: 42

Candidate Starts for Capricorn\_60:

(Start: 42 @41250 has 218 MA's), (Start: 46 @41256 has 4 MA's), (Start: 50 @41274 has 1 MA's), (73, 41349), (84, 41403), (85, 41406),

Gene: Caraxes\_64 Start: 38825, Stop: 38673, Start Num: 44

Candidate Starts for Caraxes\_64:

(Start: 44 @38825 has 32 MA's), (75, 38732), (80, 38720), (84, 38696), (85, 38693),

Gene: CaseJules\_62 Start: 41447, Stop: 41611, Start Num: 42

Candidate Starts for CaseJules\_62:

(Start: 42 @41447 has 218 MA's), (Start: 46 @41453 has 4 MA's), (Start: 50 @41471 has 1 MA's), (73, 41546), (84, 41600), (85, 41603),

Gene: Catalina\_68 Start: 40421, Stop: 40272, Start Num: 42

Candidate Starts for Catalina\_68:

(Start: 42 @40421 has 218 MA's), (Start: 46 @40415 has 4 MA's), (Start: 50 @40403 has 1 MA's), (73, 40337), (80, 40307), (84, 40283),

Gene: Chadwick\_64 Start: 40094, Stop: 39942, Start Num: 42

Candidate Starts for Chadwick\_64:

(Start: 42 @40094 has 218 MA's), (Start: 46 @40088 has 4 MA's), (Start: 50 @40076 has 1 MA's), (78, 39989), (84, 39953),

Gene: Chancellor\_63 Start: 40757, Stop: 40921, Start Num: 42

Candidate Starts for Chancellor\_63:

(11, 40532), (29, 40709), (33, 40730), (Start: 42 @40757 has 218 MA's), (Start: 50 @40781 has 1 MA's), (64, 40844), (79, 40877), (84, 40910),

Gene: Chargerpower\_62 Start: 38721, Stop: 38578, Start Num: 42

Candidate Starts for Chargerpower\_62:

(12, 38973), (13, 38970), (Start: 39 @38730 has 2 MA's), (Start: 42 @38721 has 218 MA's), (Start: 46 @38715 has 4 MA's), (75, 38634), (84, 38589),

Gene: Charm\_63 Start: 39921, Stop: 39760, Start Num: 42

Candidate Starts for Charm\_63:

(1, 40392), (10, 40179), (Start: 39 @39930 has 2 MA's), (Start: 42 @39921 has 218 MA's), (84, 39771),

Gene: Che12\_65 Start: 39044, Stop: 38901, Start Num: 44

Candidate Starts for Che12\_65:

(Start: 44 @39044 has 32 MA's), (47, 39032), (Start: 50 @39026 has 1 MA's), (74, 38951), (85, 38909),

Gene: CheetoDust\_59 Start: 40520, Stop: 40687, Start Num: 42

Candidate Starts for CheetoDust\_59:

(Start: 42 @40520 has 218 MA's), (Start: 46 @40526 has 4 MA's), (73, 40622), (80, 40652), (84, 40676), (85, 40679),

Gene: Cheetobro\_63 Start: 40754, Stop: 40918, Start Num: 42

Candidate Starts for Cheetobro\_63:

(11, 40529), (29, 40706), (33, 40727), (Start: 42 @40754 has 218 MA's), (Start: 50 @40778 has 1 MA's), (64, 40841), (79, 40874), (84, 40907),

Gene: Clautastrophe\_52 Start: 40418, Stop: 40576, Start Num: 42

Candidate Starts for Clautastrophe\_52:

(Start: 42 @40418 has 218 MA's), (Start: 50 @40436 has 1 MA's), (57, 40472), (82, 40550), (84, 40565),

Gene: Clipper\_64 Start: 41698, Stop: 41862, Start Num: 42

Candidate Starts for Clipper\_64:

(Start: 42 @41698 has 218 MA's), (Start: 46 @41704 has 4 MA's), (Start: 50 @41722 has 1 MA's), (73, 41797), (84, 41851), (85, 41854),

Gene: Collard\_52 Start: 38325, Stop: 38492, Start Num: 42

Candidate Starts for Collard\_52:

(24, 38223), (Start: 42 @38325 has 218 MA's), (47, 38337), (Start: 50 @38349 has 1 MA's), (54, 38373), (73, 38424), (84, 38481), (85, 38484),

Gene: Conquerage\_64 Start: 40012, Stop: 39863, Start Num: 42

Candidate Starts for Conquerage\_64:

(Start: 42 @40012 has 218 MA's), (Start: 46 @40006 has 4 MA's), (Start: 50 @39994 has 1 MA's), (73, 39928), (80, 39898), (84, 39874),

Gene: Conspiracy\_63 Start: 40368, Stop: 40216, Start Num: 42

Candidate Starts for Conspiracy\_63:

(Start: 42 @40368 has 218 MA's), (Start: 46 @40362 has 4 MA's), (Start: 50 @40350 has 1 MA's), (79, 40260), (84, 40227),

Gene: Coog\_59 Start: 40182, Stop: 40030, Start Num: 42

Candidate Starts for Coog\_59:

(Start: 42 @40182 has 218 MA's), (Start: 46 @40176 has 4 MA's), (Start: 50 @40164 has 1 MA's), (79, 40074), (84, 40041),

Gene: CrimD\_61 Start: 41656, Stop: 41820, Start Num: 42

Candidate Starts for CrimD\_61:

(Start: 42 @41656 has 218 MA's), (Start: 46 @41662 has 4 MA's), (Start: 50 @41680 has 1 MA's), (73, 41755), (84, 41809), (85, 41812),

Gene: Cuco\_61 Start: 40042, Stop: 39890, Start Num: 42

Candidate Starts for Cuco\_61:

(Start: 42 @40042 has 218 MA's), (Start: 46 @40036 has 4 MA's), (Start: 50 @40024 has 1 MA's), (79, 39934), (84, 39901),

Gene: Curiosium\_64 Start: 40772, Stop: 40939, Start Num: 42

Candidate Starts for Curiosium\_64:

(Start: 42 @40772 has 218 MA's), (Start: 46 @40778 has 4 MA's), (56, 40826), (80, 40904), (82, 40913), (83, 40919), (84, 40928), (85, 40931),

Gene: DS6A\_39 Start: 32218, Stop: 32024, Start Num: 28

Candidate Starts for DS6A\_39:

(Start: 28 @32218 has 1 MA's), (32, 32176), (58, 32074), (60, 32065), (66, 32041), (71, 32038),

Gene: Dadosky\_56 Start: 38670, Stop: 38837, Start Num: 42

Candidate Starts for Dadosky\_56:

(24, 38568), (Start: 42 @38670 has 218 MA's), (47, 38682), (Start: 50 @38694 has 1 MA's), (54, 38718), (73, 38769), (82, 38811), (84, 38826), (85, 38829),

Gene: Dalmuri\_60 Start: 41250, Stop: 41414, Start Num: 42

Candidate Starts for Dalmuri\_60:

(Start: 42 @41250 has 218 MA's), (Start: 46 @41256 has 4 MA's), (Start: 50 @41274 has 1 MA's), (73, 41349), (84, 41403), (85, 41406),

Gene: Danforth\_67 Start: 40022, Stop: 39849, Start Num: 42

Candidate Starts for Danforth\_67:

(Start: 42 @40022 has 218 MA's), (Start: 50 @40004 has 1 MA's), (84, 39860),

Gene: Darrell\_67 Start: 40849, Stop: 40700, Start Num: 88

Candidate Starts for Darrell\_67:

(25, 41098), (Start: 88 @40849 has 2 MA's), (89, 40831), (92, 40711),

Gene: DARTHPhader\_61 Start: 41122, Stop: 40982, Start Num: 44

Candidate Starts for DARTHPhader\_61:

(35, 41149), (Start: 44 @41122 has 32 MA's), (Start: 46 @41116 has 4 MA's), (Start: 50 @41104 has 1 MA's), (80, 41017), (84, 40993),

Gene: Deby\_60 Start: 41297, Stop: 41464, Start Num: 42

Candidate Starts for Deby\_60:

(Start: 42 @41297 has 218 MA's), (Start: 46 @41303 has 4 MA's), (52, 41336), (73, 41399), (80, 41429), (84, 41453), (85, 41456),

Gene: Devera\_67 Start: 42665, Stop: 42826, Start Num: 42

Candidate Starts for Devera\_67:

(Start: 42 @42665 has 218 MA's), (Start: 46 @42671 has 4 MA's), (Start: 50 @42689 has 1 MA's), (73, 42761), (84, 42815), (85, 42818),

Gene: Diminimus\_120 Start: 63279, Stop: 63428, Start Num: 44

Candidate Starts for Diminimus\_120:

(Start: 44 @63279 has 32 MA's), (47, 63291), (52, 63312), (53, 63315), (54, 63321), (62, 63342), (84, 63417),

Gene: Discoknowium\_60 Start: 39885, Stop: 39733, Start Num: 42

Candidate Starts for Discoknowium\_60:

(Start: 42 @39885 has 218 MA's), (Start: 46 @39879 has 4 MA's), (Start: 50 @39867 has 1 MA's), (79, 39777), (84, 39744),

Gene: Dixon\_66 Start: 39542, Stop: 39369, Start Num: 42

Candidate Starts for Dixon\_66:

(Start: 42 @39542 has 218 MA's), (Start: 50 @39524 has 1 MA's), (84, 39380),

Gene: Dole\_65 Start: 42668, Stop: 42829, Start Num: 42

Candidate Starts for Dole\_65:

(Start: 42 @42668 has 218 MA's), (Start: 46 @42674 has 4 MA's), (Start: 50 @42692 has 1 MA's), (73, 42764), (84, 42818), (85, 42821),

Gene: DrHayes\_61 Start: 42019, Stop: 42177, Start Num: 42

Candidate Starts for DrHayes\_61:

(Start: 42 @42019 has 218 MA's), (Start: 46 @42025 has 4 MA's), (Start: 50 @42043 has 1 MA's), (51, 42046), (80, 42142), (84, 42166), (85, 42169),

Gene: DreamTeam1\_63 Start: 39753, Stop: 39592, Start Num: 42

Candidate Starts for DreamTeam1\_63:

(1, 40224), (10, 40011), (Start: 39 @39762 has 2 MA's), (Start: 42 @39753 has 218 MA's), (84, 39603),

Gene: Dublin\_60 Start: 40039, Stop: 39890, Start Num: 42

Candidate Starts for Dublin\_60:

(Start: 42 @40039 has 218 MA's), (Start: 46 @40033 has 4 MA's), (53, 40006), (78, 39937), (79, 39934), (84, 39901),

Gene: Dulcita\_120 Start: 63280, Stop: 63429, Start Num: 44

Candidate Starts for Dulcita\_120:

(Start: 44 @63280 has 32 MA's), (47, 63292), (52, 63313), (53, 63316), (54, 63322), (62, 63343), (84, 63418),

Gene: DuncansLeg\_53 Start: 40461, Stop: 40607, Start Num: 50

Candidate Starts for DuncansLeg\_53:

(Start: 42 @40446 has 218 MA's), (Start: 50 @40461 has 1 MA's), (57, 40497), (61, 40512), (82, 40581), (84, 40596),

Gene: Durfee\_60 Start: 41447, Stop: 41611, Start Num: 42

Candidate Starts for Durfee\_60:

(Start: 42 @41447 has 218 MA's), (Start: 46 @41453 has 4 MA's), (Start: 50 @41471 has 1 MA's), (73, 41546), (84, 41600), (85, 41603),

Gene: EdogawaKiddo\_64 Start: 40388, Stop: 40239, Start Num: 42

Candidate Starts for EdogawaKiddo\_64:

(Start: 42 @40388 has 218 MA's), (Start: 46 @40382 has 4 MA's), (Start: 50 @40370 has 1 MA's), (73, 40304), (80, 40274), (84, 40250),

Gene: Edugator\_53 Start: 40091, Stop: 40258, Start Num: 42

Candidate Starts for Edugator\_53:

(24, 39989), (Start: 42 @40091 has 218 MA's), (47, 40103), (Start: 50 @40115 has 1 MA's), (54, 40139), (73, 40190), (82, 40232), (84, 40247), (85, 40250),

Gene: Efra2\_64 Start: 41207, Stop: 41377, Start Num: 42

Candidate Starts for Efra2\_64:

(Start: 42 @41207 has 218 MA's), (47, 41219), (51, 41234), (64, 41297), (69, 41309), (84, 41366), (85, 41369),

Gene: Eidsmoe\_64 Start: 40004, Stop: 39855, Start Num: 42

Candidate Starts for Eidsmoe\_64:

(Start: 42 @40004 has 218 MA's), (Start: 46 @39998 has 4 MA's), (Start: 50 @39986 has 1 MA's), (73, 39920), (80, 39890), (84, 39866),

Gene: EITiger69\_64 Start: 40342, Stop: 40190, Start Num: 42

Candidate Starts for EITiger69\_64:

(Start: 42 @40342 has 218 MA's), (Start: 46 @40336 has 4 MA's), (Start: 50 @40324 has 1 MA's), (78, 40237), (84, 40201),

Gene: Elephantoon\_64 Start: 39594, Stop: 39445, Start Num: 88

Candidate Starts for Elephantoon\_64:

(25, 39897), (55, 39756), (Start: 88 @39594 has 2 MA's), (89, 39576), (92, 39456),

Gene: Ellson\_52 Start: 40476, Stop: 40637, Start Num: 42

Candidate Starts for Ellson\_52:

(Start: 42 @40476 has 218 MA's), (Start: 50 @40491 has 1 MA's), (57, 40527), (61, 40542), (82, 40611), (84, 40626),

Gene: Emerson\_61 Start: 41122, Stop: 41280, Start Num: 46

Candidate Starts for Emerson\_61:

(Start: 42 @41116 has 218 MA's), (Start: 46 @41122 has 4 MA's), (Start: 50 @41140 has 1 MA's), (73, 41215), (84, 41269), (85, 41272),

Gene: EmyBug\_63 Start: 40006, Stop: 39857, Start Num: 42

Candidate Starts for EmyBug\_63:

(Start: 42 @40006 has 218 MA's), (Start: 46 @40000 has 4 MA's), (Start: 50 @39988 has 1 MA's), (73, 39922), (80, 39892), (84, 39868),

Gene: Eponine\_65 Start: 41600, Stop: 41764, Start Num: 42

Candidate Starts for Eponine\_65:

(11, 41375), (29, 41552), (33, 41573), (Start: 42 @41600 has 218 MA's), (Start: 50 @41624 has 1 MA's), (64, 41687), (79, 41720), (84, 41753),

Gene: Estes\_136 Start: 65447, Stop: 65605, Start Num: 44

Candidate Starts for Estes\_136:

(38, 65435), (Start: 44 @65447 has 32 MA's), (Start: 50 @65465 has 1 MA's), (54, 65489), (72, 65546), (73, 65549), (80, 65570), (84, 65594),

Gene: Expelliarmus\_64 Start: 39746, Stop: 39573, Start Num: 42

Candidate Starts for Expelliarmus\_64:

(Start: 42 @39746 has 218 MA's), (Start: 50 @39728 has 1 MA's), (84, 39584),

Gene: ExplosioNervosa\_64 Start: 40072, Stop: 39923, Start Num: 42

Candidate Starts for ExplosioNervosa\_64:

(Start: 42 @40072 has 218 MA's), (Start: 46 @40066 has 4 MA's), (Start: 50 @40054 has 1 MA's), (73, 39988), (80, 39958), (84, 39934),

Gene: Fayely\_64 Start: 39973, Stop: 39824, Start Num: 42

Candidate Starts for Fayely\_64:

(Start: 42 @39973 has 218 MA's), (Start: 46 @39967 has 4 MA's), (Start: 50 @39955 has 1 MA's), (73, 39889), (80, 39859), (84, 39835),

Gene: Feyre\_57 Start: 42050, Stop: 42217, Start Num: 42

Candidate Starts for Feyre\_57:

(Start: 42 @42050 has 218 MA's), (47, 42062), (Start: 50 @42074 has 1 MA's), (54, 42098), (73, 42149), (82, 42191), (84, 42206), (85, 42209),

Gene: Finnry\_52 Start: 40683, Stop: 40844, Start Num: 42

Candidate Starts for Finnry\_52:

(Start: 42 @40683 has 218 MA's), (Start: 50 @40701 has 1 MA's), (57, 40737), (82, 40818), (84, 40833),

Gene: Fionnbharth\_63 Start: 40998, Stop: 41162, Start Num: 42

Candidate Starts for Fionnbharth\_63:

(11, 40773), (29, 40950), (33, 40971), (Start: 42 @40998 has 218 MA's), (Start: 50 @41022 has 1 MA's), (64, 41085), (79, 41118), (84, 41151),

Gene: ForGetIt\_63 Start: 40393, Stop: 40241, Start Num: 42

Candidate Starts for ForGetIt\_63:

(Start: 42 @40393 has 218 MA's), (Start: 46 @40387 has 4 MA's), (Start: 50 @40375 has 1 MA's), (79, 40285), (84, 40252),

Gene: FreakyGoo\_119 Start: 63764, Stop: 63913, Start Num: 44

Candidate Starts for FreakyGoo\_119:

(Start: 44 @63764 has 32 MA's), (47, 63776), (52, 63797), (53, 63800), (54, 63806), (62, 63827), (84, 63902),

Gene: Gail\_65 Start: 41004, Stop: 40843, Start Num: 42

Candidate Starts for Gail\_65:

(23, 41157), (Start: 42 @41004 has 218 MA's), (Start: 46 @40998 has 4 MA's), (65, 40926), (80, 40878), (84, 40854),

Gene: Ganymede\_61 Start: 41511, Stop: 41675, Start Num: 42

Candidate Starts for Ganymede\_61:

(Start: 42 @41511 has 218 MA's), (Start: 46 @41517 has 4 MA's), (Start: 50 @41535 has 1 MA's), (73, 41610), (80, 41640), (84, 41664), (85, 41667),

Gene: GardenSalsa\_136 Start: 65626, Stop: 65784, Start Num: 44

Candidate Starts for GardenSalsa\_136:

(Start: 44 @65626 has 32 MA's), (Start: 50 @65644 has 1 MA's), (54, 65668), (72, 65725), (80, 65749), (84, 65773),

Gene: Gengar\_54 Start: 40069, Stop: 40236, Start Num: 42

Candidate Starts for Gengar\_54:

(3, 39766), (4, 39775), (24, 39967), (Start: 42 @40069 has 218 MA's), (47, 40081), (Start: 50 @40093 has 1 MA's), (54, 40117), (73, 40168), (82, 40210), (84, 40225), (85, 40228),

Gene: George\_57 Start: 39712, Stop: 39560, Start Num: 42

Candidate Starts for George\_57:

(Start: 42 @39712 has 218 MA's), (Start: 46 @39706 has 4 MA's), (Start: 50 @39694 has 1 MA's), (79, 39604),

Gene: Geraldini\_63 Start: 42165, Stop: 42332, Start Num: 42

Candidate Starts for Geraldini\_63:

(Start: 42 @42165 has 218 MA's), (Start: 46 @42171 has 4 MA's), (80, 42297), (82, 42306), (84, 42321),

Gene: Ghouboy\_62 Start: 40604, Stop: 40452, Start Num: 42

Candidate Starts for Ghouboy\_62:

(Start: 42 @40604 has 218 MA's), (Start: 50 @40586 has 1 MA's), (79, 40496), (84, 40463),

Gene: Glaske16\_122 Start: 64397, Stop: 64546, Start Num: 44

Candidate Starts for Glaske16\_122:

(Start: 44 @64397 has 32 MA's), (47, 64409), (52, 64430), (53, 64433), (54, 64439), (62, 64460), (84, 64535),

Gene: Groundhog\_66 Start: 39946, Stop: 39773, Start Num: 42  
Candidate Starts for Groundhog\_66:  
(Start: 42 @39946 has 218 MA's), (Start: 50 @39928 has 1 MA's), (72, 39850), (84, 39784),

Gene: Guanica15\_63 Start: 40948, Stop: 41118, Start Num: 42  
Candidate Starts for Guanica15\_63:  
(Start: 42 @40948 has 218 MA's), (47, 40960), (51, 40975), (64, 41038), (69, 41050), (84, 41107), (85, 41110),

Gene: Guillsminger\_55 Start: 40040, Stop: 40207, Start Num: 42  
Candidate Starts for Guillsminger\_55:  
(3, 39737), (4, 39746), (24, 39938), (Start: 42 @40040 has 218 MA's), (47, 40052), (Start: 50 @40064 has 1 MA's), (54, 40088), (73, 40139), (82, 40181), (84, 40196),

Gene: Hanray\_64 Start: 40336, Stop: 40187, Start Num: 42  
Candidate Starts for Hanray\_64:  
(Start: 42 @40336 has 218 MA's), (Start: 46 @40330 has 4 MA's), (Start: 50 @40318 has 1 MA's), (73, 40252), (80, 40222), (84, 40198),

Gene: HedwigODU\_60 Start: 41125, Stop: 41289, Start Num: 42  
Candidate Starts for HedwigODU\_60:  
(36, 41110), (Start: 42 @41125 has 218 MA's), (Start: 46 @41131 has 4 MA's), (Start: 50 @41149 has 1 MA's), (84, 41278), (85, 41281),

Gene: Heftyboy\_55 Start: 40412, Stop: 40579, Start Num: 42  
Candidate Starts for Heftyboy\_55:  
(3, 40109), (4, 40118), (24, 40310), (Start: 42 @40412 has 218 MA's), (47, 40424), (Start: 50 @40436 has 1 MA's), (54, 40460), (73, 40511), (82, 40553), (84, 40568),

Gene: Horex\_64 Start: 40352, Stop: 40203, Start Num: 42  
Candidate Starts for Horex\_64:  
(Start: 42 @40352 has 218 MA's), (Start: 46 @40346 has 4 MA's), (Start: 50 @40334 has 1 MA's), (73, 40268), (80, 40238), (84, 40214),

Gene: Homura\_60 Start: 41250, Stop: 41414, Start Num: 42  
Candidate Starts for Homura\_60:  
(Start: 42 @41250 has 218 MA's), (Start: 46 @41256 has 4 MA's), (Start: 50 @41274 has 1 MA's), (73, 41349), (84, 41403), (85, 41406),

Gene: HortumSL17\_67 Start: 40420, Stop: 40271, Start Num: 42  
Candidate Starts for HortumSL17\_67:  
(Start: 42 @40420 has 218 MA's), (Start: 46 @40414 has 4 MA's), (Start: 50 @40402 has 1 MA's), (73, 40336), (80, 40306), (84, 40282),

Gene: HuhtaEnerson15\_60 Start: 39862, Stop: 39710, Start Num: 42  
Candidate Starts for HuhtaEnerson15\_60:  
(Start: 42 @39862 has 218 MA's), (Start: 46 @39856 has 4 MA's), (Start: 50 @39844 has 1 MA's), (79, 39754), (84, 39721),

Gene: Hyperbowlee\_60 Start: 41447, Stop: 41611, Start Num: 42  
Candidate Starts for Hyperbowlee\_60:  
(Start: 42 @41447 has 218 MA's), (Start: 46 @41453 has 4 MA's), (Start: 50 @41471 has 1 MA's), (73, 41546), (84, 41600), (85, 41603),

Gene: IPhane7\_117 Start: 63284, Stop: 63433, Start Num: 44

Candidate Starts for IPhane7\_117:

(Start: 44 @63284 has 32 MA's), (47, 63296), (52, 63317), (53, 63320), (54, 63326), (62, 63347), (84, 63422),

Gene: Illumine\_65 Start: 42667, Stop: 42828, Start Num: 42

Candidate Starts for Illumine\_65:

(Start: 42 @42667 has 218 MA's), (Start: 46 @42673 has 4 MA's), (Start: 50 @42691 has 1 MA's), (73, 42763), (84, 42817), (85, 42820),

Gene: Inky\_60 Start: 41250, Stop: 41414, Start Num: 42

Candidate Starts for Inky\_60:

(Start: 42 @41250 has 218 MA's), (Start: 46 @41256 has 4 MA's), (Start: 50 @41274 has 1 MA's), (73, 41349), (84, 41403), (85, 41406),

Gene: InvictusManeo\_52 Start: 38368, Stop: 38535, Start Num: 42

Candidate Starts for InvictusManeo\_52:

(24, 38266), (Start: 42 @38368 has 218 MA's), (47, 38380), (Start: 50 @38392 has 1 MA's), (54, 38416), (73, 38467), (84, 38524), (85, 38527),

Gene: Izel\_118 Start: 63279, Stop: 63428, Start Num: 44

Candidate Starts for Izel\_118:

(Start: 44 @63279 has 32 MA's), (47, 63291), (52, 63312), (53, 63315), (54, 63321), (62, 63342), (84, 63417),

Gene: JAWS\_60 Start: 41105, Stop: 41263, Start Num: 42

Candidate Starts for JAWS\_60:

(Start: 42 @41105 has 218 MA's), (Start: 46 @41111 has 4 MA's), (Start: 50 @41129 has 1 MA's), (73, 41198), (84, 41252), (85, 41255),

Gene: JF1\_63 Start: 40915, Stop: 41079, Start Num: 42

Candidate Starts for JF1\_63:

(11, 40690), (29, 40867), (33, 40888), (Start: 42 @40915 has 218 MA's), (Start: 50 @40939 has 1 MA's), (64, 41002), (79, 41035), (84, 41068),

Gene: Jabiru\_63 Start: 40261, Stop: 40109, Start Num: 42

Candidate Starts for Jabiru\_63:

(Start: 42 @40261 has 218 MA's), (Start: 46 @40255 has 4 MA's), (Start: 50 @40243 has 1 MA's), (78, 40156), (84, 40120),

Gene: Jarvi\_60 Start: 41250, Stop: 41414, Start Num: 42

Candidate Starts for Jarvi\_60:

(Start: 42 @41250 has 218 MA's), (Start: 46 @41256 has 4 MA's), (Start: 50 @41274 has 1 MA's), (73, 41349), (84, 41403), (85, 41406),

Gene: Jayhawk\_61 Start: 41120, Stop: 41284, Start Num: 42

Candidate Starts for Jayhawk\_61:

(Start: 42 @41120 has 218 MA's), (Start: 46 @41126 has 4 MA's), (80, 41249), (82, 41258), (84, 41273), (85, 41276),

Gene: Jeckyll\_60 Start: 41250, Stop: 41414, Start Num: 42

Candidate Starts for Jeckyll\_60:



(Start: 42 @41250 has 218 MA's), (Start: 46 @41256 has 4 MA's), (Start: 50 @41274 has 1 MA's), (73, 41349), (84, 41403), (85, 41406),

Gene: Jeeves\_67 Start: 39998, Stop: 39837, Start Num: 42

Candidate Starts for Jeeves\_67:

(23, 40151), (Start: 42 @39998 has 218 MA's), (Start: 46 @39992 has 4 MA's), (65, 39920), (80, 39872), (84, 39848),

Gene: Jiawan\_63 Start: 40368, Stop: 40219, Start Num: 42

Candidate Starts for Jiawan\_63:

(Start: 42 @40368 has 218 MA's), (Start: 46 @40362 has 4 MA's), (Start: 50 @40350 has 1 MA's), (73, 40284), (80, 40254), (84, 40230),

Gene: Jobypre\_53 Start: 40418, Stop: 40576, Start Num: 42

Candidate Starts for Jobypre\_53:

(Start: 42 @40418 has 218 MA's), (Start: 50 @40436 has 1 MA's), (57, 40472), (82, 40550), (84, 40565),

Gene: Jovo\_63 Start: 40649, Stop: 40497, Start Num: 42

Candidate Starts for Jovo\_63:

(Start: 42 @40649 has 218 MA's), (Start: 46 @40643 has 4 MA's), (Start: 50 @40631 has 1 MA's), (79, 40541), (84, 40508),

Gene: Joy99\_60 Start: 41179, Stop: 41343, Start Num: 42

Candidate Starts for Joy99\_60:

(Start: 42 @41179 has 218 MA's), (Start: 46 @41185 has 4 MA's), (Start: 50 @41203 has 1 MA's), (73, 41278), (84, 41332), (85, 41335),

Gene: Jsquared\_65 Start: 39590, Stop: 39438, Start Num: 44

Candidate Starts for Jsquared\_65:

(Start: 44 @39590 has 32 MA's), (75, 39497), (80, 39485), (84, 39461),

Gene: Jubie\_52 Start: 40553, Stop: 40711, Start Num: 42

Candidate Starts for Jubie\_52:

(Start: 42 @40553 has 218 MA's), (Start: 50 @40571 has 1 MA's), (57, 40607), (82, 40685), (84, 40700),

Gene: Juliette\_65 Start: 41062, Stop: 41226, Start Num: 42

Candidate Starts for Juliette\_65:

(11, 40837), (29, 41014), (33, 41035), (Start: 42 @41062 has 218 MA's), (Start: 50 @41086 has 1 MA's), (64, 41149), (79, 41182), (84, 41215),

Gene: Keziacharles14\_65 Start: 41367, Stop: 41209, Start Num: 39

Candidate Starts for Keziacharles14\_65:

(Start: 39 @41367 has 2 MA's), (Start: 42 @41358 has 218 MA's), (73, 41274), (84, 41220),

Gene: Kingsolomon\_52 Start: 40419, Stop: 40580, Start Num: 42

Candidate Starts for Kingsolomon\_52:

(Start: 42 @40419 has 218 MA's), (Start: 50 @40437 has 1 MA's), (57, 40473), (82, 40554), (84, 40569),

Gene: Kinmap\_63 Start: 38733, Stop: 38560, Start Num: 44

Candidate Starts for Kinmap\_63:

(30, 38793), (Start: 44 @38733 has 32 MA's), (Start: 50 @38715 has 1 MA's), (70, 38634), (80, 38601), (84, 38577),

Gene: KirDoubleO7\_51 Start: 40465, Stop: 40611, Start Num: 50

Candidate Starts for KirDoubleO7\_51:

(Start: 42 @40450 has 218 MA's), (Start: 50 @40465 has 1 MA's), (57, 40501), (61, 40516), (82, 40585), (84, 40600),

Gene: Koduck\_64 Start: 39435, Stop: 39292, Start Num: 44

Candidate Starts for Koduck\_64:

(18, 39636), (21, 39603), (Start: 44 @39435 has 32 MA's), (Start: 46 @39429 has 4 MA's), (84, 39303), (85, 39300),

Gene: Kratio\_52 Start: 38110, Stop: 38277, Start Num: 42

Candidate Starts for Kratio\_52:

(24, 38008), (Start: 42 @38110 has 218 MA's), (47, 38122), (49, 38128), (Start: 50 @38134 has 1 MA's), (54, 38158), (73, 38209), (84, 38266), (85, 38269),

Gene: Kraw\_64 Start: 40750, Stop: 40914, Start Num: 42

Candidate Starts for Kraw\_64:

(11, 40525), (29, 40702), (33, 40723), (Start: 42 @40750 has 218 MA's), (Start: 50 @40774 has 1 MA's), (64, 40837), (79, 40870), (84, 40903),

Gene: Krypton555\_54 Start: 40655, Stop: 40813, Start Num: 42

Candidate Starts for Krypton555\_54:

(Start: 42 @40655 has 218 MA's), (84, 40802),

Gene: Kumao\_92 Start: 57451, Stop: 57603, Start Num: 45

Candidate Starts for Kumao\_92:

(Start: 45 @57451 has 1 MA's), (Start: 50 @57466 has 1 MA's), (52, 57481), (53, 57484), (63, 57523), (72, 57541), (76, 57556), (84, 57589),

Gene: L5\_60 Start: 39522, Stop: 39379, Start Num: 44

Candidate Starts for L5\_60:

(18, 39723), (Start: 44 @39522 has 32 MA's), (Start: 46 @39516 has 4 MA's), (84, 39390), (85, 39387),

Gene: Larva\_55 Start: 39542, Stop: 39709, Start Num: 42

Candidate Starts for Larva\_55:

(24, 39440), (Start: 42 @39542 has 218 MA's), (47, 39554), (Start: 50 @39566 has 1 MA's), (54, 39590), (73, 39641), (82, 39683), (84, 39698), (85, 39701),

Gene: LastHope\_63 Start: 40287, Stop: 40457, Start Num: 42

Candidate Starts for LastHope\_63:

(7, 40026), (Start: 42 @40287 has 218 MA's), (47, 40299), (64, 40377), (69, 40389), (84, 40446), (85, 40449),

Gene: LaterM\_60 Start: 41716, Stop: 41877, Start Num: 42

Candidate Starts for LaterM\_60:

(20, 41548), (22, 41566), (Start: 42 @41716 has 218 MA's), (Start: 46 @41722 has 4 MA's), (Start: 50 @41740 has 1 MA's), (80, 41842), (84, 41866), (85, 41869),

Gene: Leston\_54 Start: 40169, Stop: 40336, Start Num: 42

Candidate Starts for Leston\_54:

(3, 39866), (4, 39875), (24, 40067), (Start: 42 @40169 has 218 MA's), (47, 40181), (Start: 50 @40193 has 1 MA's), (54, 40217), (73, 40268), (82, 40310), (84, 40325),

Gene: Lev2\_63 Start: 40281, Stop: 40129, Start Num: 42

Candidate Starts for Lev2\_63:

(Start: 42 @40281 has 218 MA's), (Start: 46 @40275 has 4 MA's), (Start: 50 @40263 has 1 MA's), (79, 40173), (84, 40140),

Gene: LilhomieP\_119 Start: 64562, Stop: 64711, Start Num: 44

Candidate Starts for LilhomieP\_119:

(Start: 44 @64562 has 32 MA's), (47, 64574), (52, 64595), (53, 64598), (54, 64604), (62, 64625), (84, 64700),

Gene: Lilleskat\_62 Start: 40204, Stop: 40055, Start Num: 42

Candidate Starts for Lilleskat\_62:

(Start: 42 @40204 has 218 MA's), (Start: 46 @40198 has 4 MA's), (Start: 50 @40186 has 1 MA's), (73, 40120), (80, 40090), (84, 40066),

Gene: LindNT\_59 Start: 41322, Stop: 41486, Start Num: 42

Candidate Starts for LindNT\_59:

(Start: 42 @41322 has 218 MA's), (Start: 46 @41328 has 4 MA's), (Start: 50 @41346 has 1 MA's), (84, 41475), (85, 41478),

Gene: LittleCherry\_60 Start: 39732, Stop: 39580, Start Num: 42

Candidate Starts for LittleCherry\_60:

(Start: 42 @39732 has 218 MA's), (Start: 46 @39726 has 4 MA's), (Start: 50 @39714 has 1 MA's), (79, 39624), (84, 39591),

Gene: LiyuLake\_52 Start: 40481, Stop: 40627, Start Num: 50

Candidate Starts for LiyuLake\_52:

(Start: 42 @40466 has 218 MA's), (Start: 50 @40481 has 1 MA's), (57, 40517), (61, 40532), (82, 40601), (84, 40616),

Gene: Llorens\_60 Start: 41250, Stop: 41414, Start Num: 42

Candidate Starts for Llorens\_60:

(Start: 42 @41250 has 218 MA's), (Start: 46 @41256 has 4 MA's), (Start: 50 @41274 has 1 MA's), (73, 41349), (84, 41403), (85, 41406),

Gene: Lolly9\_52 Start: 40240, Stop: 40398, Start Num: 42

Candidate Starts for Lolly9\_52:

(Start: 42 @40240 has 218 MA's), (Start: 50 @40258 has 1 MA's), (57, 40294), (84, 40387),

Gene: LoneWolf\_66 Start: 40322, Stop: 40173, Start Num: 42

Candidate Starts for LoneWolf\_66:

(Start: 42 @40322 has 218 MA's), (Start: 46 @40316 has 4 MA's), (Start: 50 @40304 has 1 MA's), (68, 40244), (73, 40238), (84, 40184),

Gene: Luchador\_66 Start: 41501, Stop: 41346, Start Num: 42

Candidate Starts for Luchador\_66:

(Start: 42 @41501 has 218 MA's), (Start: 50 @41483 has 1 MA's), (73, 41411), (79, 41390), (80, 41381), (83, 41366), (84, 41357),

Gene: Lumos\_54 Start: 40415, Stop: 40573, Start Num: 42

Candidate Starts for Lumos\_54:

(Start: 42 @40415 has 218 MA's), (Start: 50 @40433 has 1 MA's), (57, 40469), (82, 40547), (84, 40562),

Gene: Lunahalos\_60 Start: 41250, Stop: 41414, Start Num: 42

Candidate Starts for Lunahalos\_60:

(Start: 42 @41250 has 218 MA's), (Start: 46 @41256 has 4 MA's), (Start: 50 @41274 has 1 MA's), (73, 41349), (84, 41403), (85, 41406),

Gene: MacKat\_55 Start: 36582, Stop: 36746, Start Num: 42

Candidate Starts for MacKat\_55:

(Start: 42 @36582 has 218 MA's), (Start: 46 @36588 has 4 MA's), (Start: 50 @36606 has 1 MA's), (73, 36681), (84, 36735), (85, 36738),

Gene: MajorMajor\_63 Start: 39432, Stop: 39280, Start Num: 44

Candidate Starts for MajorMajor\_63:

(30, 39489), (Start: 44 @39432 has 32 MA's), (75, 39339), (80, 39327), (84, 39303),

Gene: Malthus\_64 Start: 40750, Stop: 40914, Start Num: 42

Candidate Starts for Malthus\_64:

(11, 40525), (29, 40702), (33, 40723), (Start: 42 @40750 has 218 MA's), (Start: 50 @40774 has 1 MA's), (64, 40837), (79, 40870), (84, 40903),

Gene: Maminiaina\_65 Start: 40300, Stop: 40151, Start Num: 42

Candidate Starts for Maminiaina\_65:

(Start: 42 @40300 has 218 MA's), (Start: 50 @40282 has 1 MA's), (68, 40222), (73, 40216), (80, 40186), (84, 40162),

Gene: MarysWell\_60 Start: 40282, Stop: 40133, Start Num: 42

Candidate Starts for MarysWell\_60:

(Start: 42 @40282 has 218 MA's), (Start: 46 @40276 has 4 MA's), (53, 40249), (79, 40177), (84, 40144),

Gene: MeaningOfLife\_61 Start: 41993, Stop: 42157, Start Num: 42

Candidate Starts for MeaningOfLife\_61:

(Start: 42 @41993 has 218 MA's), (Start: 46 @41999 has 4 MA's), (Start: 50 @42017 has 1 MA's), (73, 42092), (80, 42122), (84, 42146), (85, 42149),

Gene: Megsy\_62 Start: 41393, Stop: 41554, Start Num: 42

Candidate Starts for Megsy\_62:

(8, 41132), (Start: 42 @41393 has 218 MA's), (Start: 46 @41399 has 4 MA's), (Start: 50 @41417 has 1 MA's), (73, 41489), (82, 41528), (84, 41543), (85, 41546),

Gene: Mendokysei\_52 Start: 37971, Stop: 38135, Start Num: 96

Candidate Starts for Mendokysei\_52:

(14, 37329), (29, 37518), (59, 37641), (91, 37905), (93, 37944), (Start: 96 @37971 has 1 MA's), (97, 37998), (98, 38061), (99, 38085),

Gene: Micasa\_60 Start: 40004, Stop: 39855, Start Num: 42

Candidate Starts for Micasa\_60:

(Start: 42 @40004 has 218 MA's), (Start: 46 @39998 has 4 MA's), (53, 39971), (78, 39902), (79, 39899), (84, 39866),

Gene: Midas2\_59 Start: 40182, Stop: 40030, Start Num: 42

Candidate Starts for Midas2\_59:

(Start: 42 @40182 has 218 MA's), (Start: 46 @40176 has 4 MA's), (Start: 50 @40164 has 1 MA's), (79, 40074), (84, 40041),

Gene: Milcery\_60 Start: 39680, Stop: 39528, Start Num: 42

Candidate Starts for Milcery\_60:

(Start: 42 @39680 has 218 MA's), (Start: 46 @39674 has 4 MA's), (Start: 50 @39662 has 1 MA's), (79, 39572), (84, 39539),

Gene: MiniLon\_55 Start: 40241, Stop: 40399, Start Num: 42

Candidate Starts for MiniLon\_55:

(Start: 42 @40241 has 218 MA's), (Start: 50 @40259 has 1 MA's), (57, 40295), (84, 40388),

Gene: MiniMac\_55 Start: 40239, Stop: 40397, Start Num: 42

Candidate Starts for MiniMac\_55:

(Start: 42 @40239 has 218 MA's), (Start: 50 @40257 has 1 MA's), (57, 40293), (84, 40386),

Gene: Miryou\_58 Start: 42766, Stop: 42933, Start Num: 42

Candidate Starts for Miryou\_58:

(Start: 42 @42766 has 218 MA's), (47, 42778), (Start: 50 @42790 has 1 MA's), (54, 42814), (73, 42865), (82, 42907), (84, 42922), (85, 42925),

Gene: MissDaisy\_60 Start: 39674, Stop: 39826, Start Num: 48

Candidate Starts for MissDaisy\_60:

(Start: 48 @39674 has 3 MA's), (64, 39749), (79, 39782), (84, 39815),

Gene: Mitti\_63 Start: 40929, Stop: 41093, Start Num: 42

Candidate Starts for Mitti\_63:

(11, 40704), (29, 40881), (33, 40902), (Start: 42 @40929 has 218 MA's), (Start: 50 @40953 has 1 MA's), (64, 41016), (79, 41049), (84, 41082),

Gene: Moostard\_52 Start: 40421, Stop: 40579, Start Num: 42

Candidate Starts for Moostard\_52:

(Start: 42 @40421 has 218 MA's), (Start: 50 @40439 has 1 MA's), (57, 40475), (82, 40553), (84, 40568),

Gene: MrMagoo\_138 Start: 65627, Stop: 65785, Start Num: 44

Candidate Starts for MrMagoo\_138:

(Start: 44 @65627 has 32 MA's), (Start: 50 @65645 has 1 MA's), (54, 65669), (72, 65726), (80, 65750), (84, 65774),

Gene: MsGreen\_52 Start: 40418, Stop: 40576, Start Num: 42

Candidate Starts for MsGreen\_52:

(Start: 42 @40418 has 218 MA's), (Start: 50 @40436 has 1 MA's), (57, 40472), (82, 40550), (84, 40565),

Gene: Murucutumbu\_61 Start: 42093, Stop: 42257, Start Num: 42

Candidate Starts for Murucutumbu\_61:

(Start: 42 @42093 has 218 MA's), (Start: 46 @42099 has 4 MA's), (Start: 50 @42117 has 1 MA's), (84, 42246), (85, 42249),

Gene: Mynx\_61 Start: 41435, Stop: 41599, Start Num: 42

Candidate Starts for Mynx\_61:

(Start: 42 @41435 has 218 MA's), (Start: 46 @41441 has 4 MA's), (Start: 50 @41459 has 1 MA's), (73, 41534), (84, 41588), (85, 41591),

Gene: MyraDee\_60 Start: 36959, Stop: 36816, Start Num: 44

Candidate Starts for MyraDee\_60:

(27, 37049), (Start: 44 @36959 has 32 MA's), (Start: 46 @36953 has 4 MA's), (65, 36881), (72, 36875), (80, 36851), (84, 36827),

Gene: Myxus\_66 Start: 40420, Stop: 40271, Start Num: 42

Candidate Starts for Myxus\_66:

(Start: 42 @40420 has 218 MA's), (Start: 46 @40414 has 4 MA's), (Start: 50 @40402 has 1 MA's), (73, 40336), (80, 40306), (84, 40282),

Gene: Naca\_62 Start: 40646, Stop: 40494, Start Num: 42

Candidate Starts for Naca\_62:

(Start: 42 @40646 has 218 MA's), (Start: 46 @40640 has 4 MA's), (Start: 50 @40628 has 1 MA's), (78, 40541), (84, 40505),

Gene: NearlyHeadless\_67 Start: 39788, Stop: 39615, Start Num: 42

Candidate Starts for NearlyHeadless\_67:

(Start: 42 @39788 has 218 MA's), (Start: 50 @39770 has 1 MA's), (72, 39692), (84, 39626),

Gene: Neighly\_56 Start: 39541, Stop: 39708, Start Num: 42

Candidate Starts for Neighly\_56:

(24, 39439), (Start: 42 @39541 has 218 MA's), (47, 39553), (Start: 50 @39565 has 1 MA's), (54, 39589), (73, 39640), (82, 39682), (84, 39697), (85, 39700),

Gene: Nicholas\_52 Start: 40419, Stop: 40580, Start Num: 42

Candidate Starts for Nicholas\_52:

(Start: 42 @40419 has 218 MA's), (Start: 50 @40437 has 1 MA's), (57, 40473), (82, 40554), (84, 40569),

Gene: Odin\_63 Start: 39209, Stop: 39057, Start Num: 44

Candidate Starts for Odin\_63:

(26, 39308), (Start: 44 @39209 has 32 MA's), (75, 39116), (80, 39104), (84, 39080), (85, 39077),

Gene: OkiRoe\_55 Start: 40437, Stop: 40604, Start Num: 42

Candidate Starts for OkiRoe\_55:

(Start: 42 @40437 has 218 MA's), (47, 40449), (Start: 50 @40461 has 1 MA's), (54, 40485), (73, 40536), (82, 40578), (84, 40593), (85, 40596),

Gene: OmniCritical\_62 Start: 40819, Stop: 40983, Start Num: 42

Candidate Starts for OmniCritical\_62:

(11, 40579), (29, 40771), (33, 40792), (Start: 42 @40819 has 218 MA's), (Start: 50 @40843 has 1 MA's), (64, 40906), (79, 40939), (84, 40972),

Gene: Omnicron\_58 Start: 40537, Stop: 40707, Start Num: 42

Candidate Starts for Omnicron\_58:

(24, 40435), (Start: 42 @40537 has 218 MA's), (47, 40549), (49, 40555), (Start: 50 @40561 has 1 MA's), (54, 40585), (73, 40639), (82, 40681), (84, 40696),

Gene: Onglai\_64 Start: 38624, Stop: 38475, Start Num: 42

Candidate Starts for Onglai\_64:

(Start: 42 @38624 has 218 MA's), (Start: 46 @38618 has 4 MA's), (Start: 50 @38606 has 1 MA's), (73, 38540), (80, 38510), (84, 38486),

Gene: PackMan\_65 Start: 40295, Stop: 40146, Start Num: 42

Candidate Starts for PackMan\_65:

(Start: 42 @40295 has 218 MA's), (Start: 46 @40289 has 4 MA's), (Start: 50 @40277 has 1 MA's), (73, 40211), (80, 40181), (84, 40157),

Gene: Padfoot\_60 Start: 41453, Stop: 41611, Start Num: 46

Candidate Starts for Padfoot\_60:

(Start: 42 @41447 has 218 MA's), (Start: 46 @41453 has 4 MA's), (Start: 50 @41471 has 1 MA's), (73, 41546), (84, 41600), (85, 41603),

Gene: Padpat\_62 Start: 41116, Stop: 41280, Start Num: 42

Candidate Starts for Padpat\_62:

(Start: 42 @41116 has 218 MA's), (Start: 46 @41122 has 4 MA's), (Start: 50 @41140 has 1 MA's), (73, 41215), (84, 41269), (85, 41272),

Gene: Paola\_54 Start: 40040, Stop: 40207, Start Num: 42

Candidate Starts for Paola\_54:

(3, 39737), (4, 39746), (24, 39938), (Start: 42 @40040 has 218 MA's), (47, 40052), (Start: 50 @40064 has 1 MA's), (54, 40088), (73, 40139), (82, 40181), (84, 40196),

Gene: Patt\_59 Start: 39398, Stop: 39550, Start Num: 48

Candidate Starts for Patt\_59:

(Start: 48 @39398 has 3 MA's), (64, 39473), (79, 39506), (84, 39539),

Gene: Peel\_60 Start: 41252, Stop: 41416, Start Num: 42

Candidate Starts for Peel\_60:

(Start: 42 @41252 has 218 MA's), (Start: 46 @41258 has 4 MA's), (Start: 50 @41276 has 1 MA's), (73, 41351), (84, 41405), (85, 41408),

Gene: PegLeg\_123 Start: 64446, Stop: 64595, Start Num: 44

Candidate Starts for PegLeg\_123:

(Start: 44 @64446 has 32 MA's), (47, 64458), (52, 64479), (53, 64482), (54, 64488), (62, 64509), (84, 64584),

Gene: PetterN\_67 Start: 40392, Stop: 40240, Start Num: 42

Candidate Starts for PetterN\_67:

(Start: 42 @40392 has 218 MA's), (Start: 46 @40386 has 4 MA's), (Start: 50 @40374 has 1 MA's), (78, 40287), (84, 40251),

Gene: Ph8s\_65 Start: 39383, Stop: 39240, Start Num: 44

Candidate Starts for Ph8s\_65:

(Start: 44 @39383 has 32 MA's), (47, 39371), (72, 39299), (74, 39290), (85, 39248),

Gene: Phaeder\_66 Start: 40295, Stop: 40146, Start Num: 42

Candidate Starts for Phaeder\_66:

(Start: 42 @40295 has 218 MA's), (Start: 46 @40289 has 4 MA's), (Start: 50 @40277 has 1 MA's), (73, 40211), (80, 40181), (84, 40157),

Gene: Pharaoh\_59 Start: 39999, Stop: 39856, Start Num: 44

Candidate Starts for Pharaoh\_59:

(Start: 44 @39999 has 32 MA's), (73, 39912), (80, 39891), (84, 39867), (85, 39864),

Gene: Phillis\_64 Start: 39236, Stop: 39063, Start Num: 42

Candidate Starts for Phillis\_64:

(Start: 42 @39236 has 218 MA's), (Start: 50 @39218 has 1 MA's), (84, 39074), (86, 39068),

Gene: Phlorence\_61 Start: 40026, Stop: 39874, Start Num: 42

Candidate Starts for Phlorence\_61:

(Start: 42 @40026 has 218 MA's), (Start: 46 @40020 has 4 MA's), (Start: 50 @40008 has 1 MA's), (79, 39918), (84, 39885),

Gene: Phonnegut\_67 Start: 40517, Stop: 40368, Start Num: 42

Candidate Starts for Phonnegut\_67:

(Start: 42 @40517 has 218 MA's), (Start: 46 @40511 has 4 MA's), (Start: 50 @40499 has 1 MA's), (73, 40433), (80, 40403), (84, 40379),

Gene: Piatt\_60 Start: 41447, Stop: 41611, Start Num: 42

Candidate Starts for Piatt\_60:

(Start: 42 @41447 has 218 MA's), (Start: 46 @41453 has 4 MA's), (Start: 50 @41471 has 1 MA's), (73, 41546), (84, 41600), (85, 41603),

Gene: PickleBack\_63 Start: 40203, Stop: 40051, Start Num: 42

Candidate Starts for PickleBack\_63:

(Start: 42 @40203 has 218 MA's), (Start: 46 @40197 has 4 MA's), (Start: 50 @40185 has 1 MA's), (79, 40095), (84, 40062),

Gene: Pioneer\_67 Start: 40517, Stop: 40368, Start Num: 42

Candidate Starts for Pioneer\_67:

(Start: 42 @40517 has 218 MA's), (Start: 46 @40511 has 4 MA's), (Start: 50 @40499 has 1 MA's), (73, 40433), (80, 40403), (84, 40379),

Gene: Pokerus\_59 Start: 41165, Stop: 41332, Start Num: 42

Candidate Starts for Pokerus\_59:

(Start: 42 @41165 has 218 MA's), (73, 41267), (80, 41297), (84, 41321),

Gene: Prithvi\_61 Start: 41322, Stop: 41486, Start Num: 42

Candidate Starts for Prithvi\_61:

(Start: 42 @41322 has 218 MA's), (Start: 46 @41328 has 4 MA's), (Start: 50 @41346 has 1 MA's), (84, 41475), (85, 41478),

Gene: Priya\_64 Start: 40007, Stop: 39858, Start Num: 42

Candidate Starts for Priya\_64:

(Start: 42 @40007 has 218 MA's), (Start: 46 @40001 has 4 MA's), (Start: 50 @39989 has 1 MA's), (73, 39923), (80, 39893), (84, 39869),

Gene: Psycho\_54 Start: 38667, Stop: 38834, Start Num: 42

Candidate Starts for Psycho\_54:

(24, 38565), (Start: 42 @38667 has 218 MA's), (47, 38679), (Start: 50 @38691 has 1 MA's), (54, 38715), (73, 38766), (82, 38808), (84, 38823), (85, 38826),

Gene: Qobbit\_64 Start: 39969, Stop: 39820, Start Num: 42

Candidate Starts for Qobbit\_64:



(Start: 42 @39969 has 218 MA's), (Start: 46 @39963 has 4 MA's), (Start: 50 @39951 has 1 MA's), (73, 39885), (80, 39855), (84, 39831),

Gene: QuincyRose\_59 Start: 41511, Stop: 41675, Start Num: 42

Candidate Starts for QuincyRose\_59:

(Start: 42 @41511 has 218 MA's), (Start: 46 @41517 has 4 MA's), (Start: 50 @41535 has 1 MA's), (73, 41610), (80, 41640), (84, 41664), (85, 41667),

Gene: Quokka\_63 Start: 39432, Stop: 39280, Start Num: 44

Candidate Starts for Quokka\_63:

(30, 39489), (Start: 44 @39432 has 32 MA's), (75, 39339), (80, 39327), (84, 39303),

Gene: Rahalelujah\_65 Start: 39922, Stop: 39773, Start Num: 42

Candidate Starts for Rahalelujah\_65:

(Start: 39 @39931 has 2 MA's), (Start: 42 @39922 has 218 MA's), (72, 39841), (73, 39838), (84, 39784),

Gene: Ramen\_61 Start: 41127, Stop: 41291, Start Num: 42

Candidate Starts for Ramen\_61:

(36, 41112), (Start: 42 @41127 has 218 MA's), (Start: 46 @41133 has 4 MA's), (Start: 50 @41151 has 1 MA's), (84, 41280), (85, 41283),

Gene: Rando14\_56 Start: 38237, Stop: 38407, Start Num: 42

Candidate Starts for Rando14\_56:

(24, 38135), (Start: 42 @38237 has 218 MA's), (47, 38249), (49, 38255), (Start: 50 @38261 has 1 MA's), (54, 38285), (73, 38339), (82, 38381), (84, 38396), (85, 38399),

Gene: Rapunzel97\_61 Start: 41114, Stop: 41278, Start Num: 42

Candidate Starts for Rapunzel97\_61:

(Start: 42 @41114 has 218 MA's), (Start: 46 @41120 has 4 MA's), (Start: 50 @41138 has 1 MA's), (73, 41213), (80, 41243), (82, 41252), (84, 41267),

Gene: Refuge\_61 Start: 41137, Stop: 40997, Start Num: 44

Candidate Starts for Refuge\_61:

(35, 41164), (Start: 44 @41137 has 32 MA's), (Start: 46 @41131 has 4 MA's), (Start: 50 @41119 has 1 MA's), (80, 41032), (84, 41008),

Gene: Reindeer\_120 Start: 64620, Stop: 64802, Start Num: 34

Candidate Starts for Reindeer\_120:

(Start: 34 @64620 has 1 MA's), (Start: 44 @64659 has 32 MA's), (Start: 50 @64677 has 1 MA's), (51, 64680), (52, 64692), (68, 64731), (76, 64758), (80, 64767), (84, 64791),

Gene: Reptar3000\_60 Start: 39386, Stop: 39538, Start Num: 48

Candidate Starts for Reptar3000\_60:

(Start: 48 @39386 has 3 MA's), (64, 39461), (79, 39494), (84, 39527),

Gene: Rey\_138 Start: 65174, Stop: 65332, Start Num: 44

Candidate Starts for Rey\_138:

(Start: 44 @65174 has 32 MA's), (Start: 50 @65192 has 1 MA's), (54, 65216), (72, 65273), (73, 65276), (80, 65297), (84, 65321),

Gene: Roary\_68 Start: 40007, Stop: 39834, Start Num: 42

Candidate Starts for Roary\_68:

(Start: 42 @40007 has 218 MA's), (Start: 50 @39989 has 1 MA's), (84, 39845),

Gene: Rosmarinus\_60 Start: 41238, Stop: 41402, Start Num: 42

Candidate Starts for Rosmarinus\_60:

(Start: 42 @41238 has 218 MA's), (Start: 46 @41244 has 4 MA's), (Start: 50 @41262 has 1 MA's), (73, 41337), (84, 41391), (85, 41394),

Gene: Ruthiejr\_64 Start: 40800, Stop: 40964, Start Num: 42

Candidate Starts for Ruthiejr\_64:

(11, 40575), (29, 40752), (33, 40773), (Start: 42 @40800 has 218 MA's), (Start: 50 @40824 has 1 MA's), (64, 40887), (79, 40920), (84, 40953),

Gene: RyeScarlet\_68 Start: 40492, Stop: 40343, Start Num: 42

Candidate Starts for RyeScarlet\_68:

(Start: 42 @40492 has 218 MA's), (Start: 46 @40486 has 4 MA's), (Start: 50 @40474 has 1 MA's), (73, 40408), (80, 40378), (84, 40354),

Gene: Sachima\_62 Start: 40321, Stop: 40172, Start Num: 42

Candidate Starts for Sachima\_62:

(Start: 42 @40321 has 218 MA's), (Start: 46 @40315 has 4 MA's), (Start: 50 @40303 has 1 MA's), (73, 40237), (80, 40207), (84, 40183),

Gene: Saintus\_62 Start: 36672, Stop: 36499, Start Num: 42

Candidate Starts for Saintus\_62:

(Start: 42 @36672 has 218 MA's), (Start: 50 @36654 has 1 MA's), (84, 36510),

Gene: SamScheppers\_61 Start: 41229, Stop: 41393, Start Num: 42

Candidate Starts for SamScheppers\_61:

(11, 41004), (29, 41181), (33, 41202), (Start: 42 @41229 has 218 MA's), (Start: 50 @41253 has 1 MA's), (64, 41316), (79, 41349), (84, 41382),

Gene: Samty\_52 Start: 40420, Stop: 40581, Start Num: 42

Candidate Starts for Samty\_52:

(Start: 42 @40420 has 218 MA's), (Start: 50 @40438 has 1 MA's), (57, 40474), (82, 40555), (84, 40570),

Gene: SamuelLPlaqson\_61 Start: 42019, Stop: 42177, Start Num: 42

Candidate Starts for SamuelLPlaqson\_61:

(Start: 42 @42019 has 218 MA's), (Start: 46 @42025 has 4 MA's), (Start: 50 @42043 has 1 MA's), (51, 42046), (80, 42142), (84, 42166), (85, 42169),

Gene: Scherzo\_66 Start: 40652, Stop: 40503, Start Num: 42

Candidate Starts for Scherzo\_66:

(Start: 42 @40652 has 218 MA's), (Start: 46 @40646 has 4 MA's), (Start: 50 @40634 has 1 MA's), (68, 40574), (73, 40568), (84, 40514),

Gene: Scorpia\_64 Start: 40451, Stop: 40299, Start Num: 42

Candidate Starts for Scorpia\_64:

(Start: 42 @40451 has 218 MA's), (Start: 46 @40445 has 4 MA's), (Start: 50 @40433 has 1 MA's), (78, 40346), (84, 40310),

Gene: Serenity\_64 Start: 39562, Stop: 39410, Start Num: 44

Candidate Starts for Serenity\_64:

(15, 39784), (Start: 44 @39562 has 32 MA's), (72, 39481), (75, 39469), (80, 39457), (84, 39433),

Gene: SheaKeira\_62 Start: 39772, Stop: 39614, Start Num: 42

Candidate Starts for SheaKeira\_62:

(Start: 39 @39781 has 2 MA's), (Start: 42 @39772 has 218 MA's), (68, 39694), (77, 39670), (80, 39649), (83, 39634), (84, 39625),

Gene: ShiaSurprise\_61 Start: 41447, Stop: 41611, Start Num: 42

Candidate Starts for ShiaSurprise\_61:

(Start: 42 @41447 has 218 MA's), (Start: 46 @41453 has 4 MA's), (Start: 50 @41471 has 1 MA's), (73, 41546), (84, 41600), (85, 41603),

Gene: Skinny\_125 Start: 65562, Stop: 65711, Start Num: 44

Candidate Starts for Skinny\_125:

(Start: 44 @65562 has 32 MA's), (47, 65574), (52, 65595), (53, 65598), (54, 65604), (62, 65625), (84, 65700),

Gene: Slarp\_63 Start: 40757, Stop: 40921, Start Num: 42

Candidate Starts for Slarp\_63:

(11, 40532), (29, 40709), (33, 40730), (Start: 42 @40757 has 218 MA's), (Start: 50 @40781 has 1 MA's), (64, 40844), (79, 40877), (84, 40910),

Gene: SlimJimmy\_119 Start: 64271, Stop: 64420, Start Num: 44

Candidate Starts for SlimJimmy\_119:

(Start: 44 @64271 has 32 MA's), (47, 64283), (52, 64304), (53, 64307), (54, 64313), (62, 64334), (84, 64409),

Gene: Slimphazie\_60 Start: 41114, Stop: 41278, Start Num: 42

Candidate Starts for Slimphazie\_60:

(Start: 42 @41114 has 218 MA's), (Start: 46 @41120 has 4 MA's), (Start: 50 @41138 has 1 MA's), (73, 41213), (80, 41243), (82, 41252), (84, 41267),

Gene: Smeadley\_67 Start: 39868, Stop: 39695, Start Num: 42

Candidate Starts for Smeadley\_67:

(Start: 42 @39868 has 218 MA's), (Start: 50 @39850 has 1 MA's), (84, 39706),

Gene: Snenia\_52 Start: 40419, Stop: 40577, Start Num: 42

Candidate Starts for Snenia\_52:

(Start: 42 @40419 has 218 MA's), (Start: 50 @40437 has 1 MA's), (57, 40473), (82, 40551), (84, 40566),

Gene: SoSeph\_55 Start: 40412, Stop: 40579, Start Num: 42

Candidate Starts for SoSeph\_55:

(3, 40109), (4, 40118), (24, 40310), (Start: 42 @40412 has 218 MA's), (47, 40424), (Start: 50 @40436 has 1 MA's), (54, 40460), (73, 40511), (82, 40553), (84, 40568),

Gene: SororFago\_64 Start: 40881, Stop: 40684, Start Num: 42

Candidate Starts for SororFago\_64:

(19, 41076), (Start: 42 @40881 has 218 MA's), (70, 40779), (73, 40767), (79, 40728), (80, 40719), (84, 40695),

Gene: Spock\_60 Start: 41251, Stop: 41415, Start Num: 42

Candidate Starts for Spock\_60:

(Start: 42 @41251 has 218 MA's), (Start: 46 @41257 has 4 MA's), (Start: 50 @41275 has 1 MA's), (73, 41350), (84, 41404), (85, 41407),

Gene: Spouty\_64 Start: 40006, Stop: 39857, Start Num: 42

Candidate Starts for Spouty\_64:

(Start: 42 @40006 has 218 MA's), (Start: 46 @40000 has 4 MA's), (Start: 50 @39988 has 1 MA's), (73, 39922), (80, 39892), (84, 39868),

Gene: Steamy\_60 Start: 39733, Stop: 39590, Start Num: 44

Candidate Starts for Steamy\_60:

(2, 40096), (Start: 44 @39733 has 32 MA's), (Start: 50 @39715 has 1 MA's), (80, 39625), (84, 39601), (85, 39598),

Gene: Stephig9\_66 Start: 39802, Stop: 39629, Start Num: 42

Candidate Starts for Stephig9\_66:

(Start: 42 @39802 has 218 MA's), (Start: 50 @39784 has 1 MA's), (84, 39640),

Gene: Stinson\_61 Start: 41616, Stop: 41780, Start Num: 42

Candidate Starts for Stinson\_61:

(Start: 42 @41616 has 218 MA's), (Start: 46 @41622 has 4 MA's), (Start: 50 @41640 has 1 MA's), (67, 41709), (73, 41715), (84, 41769), (85, 41772),

Gene: Sulley\_60 Start: 41302, Stop: 41466, Start Num: 42

Candidate Starts for Sulley\_60:

(Start: 42 @41302 has 218 MA's), (Start: 46 @41308 has 4 MA's), (Start: 50 @41326 has 1 MA's), (67, 41395), (73, 41401), (80, 41431), (84, 41455), (85, 41458),

Gene: Sunhee\_66 Start: 39448, Stop: 39299, Start Num: 42

Candidate Starts for Sunhee\_66:

(23, 39601), (Start: 42 @39448 has 218 MA's), (Start: 46 @39442 has 4 MA's), (66, 39379), (75, 39355), (84, 39310),

Gene: Superchunk\_63 Start: 38825, Stop: 38673, Start Num: 44

Candidate Starts for Superchunk\_63:

(Start: 44 @38825 has 32 MA's), (75, 38732), (80, 38720), (84, 38696), (85, 38693),

Gene: SwirlSquare\_69 Start: 39747, Stop: 39595, Start Num: 44

Candidate Starts for SwirlSquare\_69:

(Start: 44 @39747 has 32 MA's), (75, 39654), (80, 39642), (83, 39627), (84, 39618), (85, 39615),

Gene: Swirley\_62 Start: 40071, Stop: 39919, Start Num: 42

Candidate Starts for Swirley\_62:

(Start: 42 @40071 has 218 MA's), (Start: 46 @40065 has 4 MA's), (Start: 50 @40053 has 1 MA's), (79, 39963), (84, 39930),

Gene: SydNat\_62 Start: 40613, Stop: 40461, Start Num: 42

Candidate Starts for SydNat\_62:

(Start: 42 @40613 has 218 MA's), (Start: 50 @40595 has 1 MA's), (79, 40505), (84, 40472),

Gene: Tachez\_60 Start: 41095, Stop: 41259, Start Num: 42

Candidate Starts for Tachez\_60:

(Start: 42 @41095 has 218 MA's), (Start: 46 @41101 has 4 MA's), (Start: 50 @41119 has 1 MA's), (73, 41194), (84, 41248), (85, 41251),

Gene: TaiwanKao\_62 Start: 41384, Stop: 41548, Start Num: 42

Candidate Starts for TaiwanKao\_62:

(Start: 42 @41384 has 218 MA's), (Start: 46 @41390 has 4 MA's), (Start: 50 @41408 has 1 MA's), (73, 41483), (84, 41537), (85, 41540),

Gene: Taquito\_62 Start: 40992, Stop: 41156, Start Num: 42

Candidate Starts for Taquito\_62:

(11, 40767), (29, 40944), (33, 40965), (Start: 42 @40992 has 218 MA's), (Start: 50 @41016 has 1 MA's), (64, 41079), (79, 41112), (84, 41145),

Gene: Tarynearal\_59 Start: 39666, Stop: 39514, Start Num: 42

Candidate Starts for Tarynearal\_59:

(Start: 42 @39666 has 218 MA's), (Start: 46 @39660 has 4 MA's), (Start: 50 @39648 has 1 MA's), (79, 39558), (84, 39525),

Gene: Theia\_59 Start: 40266, Stop: 40114, Start Num: 42

Candidate Starts for Theia\_59:

(Start: 42 @40266 has 218 MA's), (Start: 46 @40260 has 4 MA's), (Start: 50 @40248 has 1 MA's), (79, 40158), (84, 40125),

Gene: Thyatira\_57 Start: 42370, Stop: 42537, Start Num: 42

Candidate Starts for Thyatira\_57:

(Start: 42 @42370 has 218 MA's), (47, 42382), (Start: 50 @42394 has 1 MA's), (54, 42418), (73, 42469), (82, 42511), (84, 42526),

Gene: Tiger\_62 Start: 39947, Stop: 39795, Start Num: 42

Candidate Starts for Tiger\_62:

(Start: 42 @39947 has 218 MA's), (Start: 46 @39941 has 4 MA's), (Start: 50 @39929 has 1 MA's), (79, 39839), (84, 39806),

Gene: TingHuaYa\_62 Start: 40455, Stop: 40625, Start Num: 42

Candidate Starts for TingHuaYa\_62:

(40, 40452), (Start: 42 @40455 has 218 MA's), (47, 40467), (64, 40545), (69, 40557), (84, 40614), (85, 40617),

Gene: TiniBug\_61 Start: 42015, Stop: 42173, Start Num: 42

Candidate Starts for TiniBug\_61:

(Start: 42 @42015 has 218 MA's), (Start: 46 @42021 has 4 MA's), (Start: 50 @42039 has 1 MA's), (51, 42042), (80, 42138), (84, 42162), (85, 42165),

Gene: TopsytheTRex\_61 Start: 39632, Stop: 39480, Start Num: 44

Candidate Starts for TopsytheTRex\_61:

(15, 39854), (Start: 44 @39632 has 32 MA's), (72, 39551), (80, 39527), (84, 39503),

Gene: Tiri\_61 Start: 41410, Stop: 41577, Start Num: 42

Candidate Starts for Tiri\_61:

(9, 41149), (Start: 42 @41410 has 218 MA's), (Start: 46 @41416 has 4 MA's), (73, 41512), (80, 41542), (82, 41551), (84, 41566), (85, 41569),

Gene: Toaka\_66 Start: 40403, Stop: 40245, Start Num: 39

Candidate Starts for Toaka\_66:

(Start: 39 @40403 has 2 MA's), (Start: 42 @40394 has 218 MA's), (73, 40310), (83, 40265), (84, 40256),

Gene: Topper\_60 Start: 41250, Stop: 41414, Start Num: 42

Candidate Starts for Topper\_60:

(Start: 42 @41250 has 218 MA's), (Start: 46 @41256 has 4 MA's), (Start: 50 @41274 has 1 MA's), (73, 41349), (84, 41403), (85, 41406),

Gene: TreyKay\_61 Start: 41322, Stop: 41486, Start Num: 42

Candidate Starts for TreyKay\_61:

(Start: 42 @41322 has 218 MA's), (Start: 46 @41328 has 4 MA's), (Start: 50 @41346 has 1 MA's), (84, 41475), (85, 41478),

Gene: TriFive\_53 Start: 40418, Stop: 40576, Start Num: 42

Candidate Starts for TriFive\_53:

(Start: 42 @40418 has 218 MA's), (Start: 50 @40436 has 1 MA's), (57, 40472), (82, 40550), (84, 40565),

Gene: TruffulaTree\_60 Start: 41110, Stop: 41274, Start Num: 42

Candidate Starts for TruffulaTree\_60:

(Start: 42 @41110 has 218 MA's), (Start: 46 @41116 has 4 MA's), (Start: 50 @41134 has 1 MA's), (73, 41209), (80, 41239), (82, 41248), (84, 41263),

Gene: Tubs\_66 Start: 40295, Stop: 40146, Start Num: 42

Candidate Starts for Tubs\_66:

(Start: 42 @40295 has 218 MA's), (Start: 46 @40289 has 4 MA's), (Start: 50 @40277 has 1 MA's), (73, 40211), (80, 40181), (84, 40157),

Gene: Twigg\_58 Start: 39719, Stop: 39567, Start Num: 42

Candidate Starts for Twigg\_58:

(Start: 42 @39719 has 218 MA's), (Start: 46 @39713 has 4 MA's), (Start: 50 @39701 has 1 MA's), (79, 39611), (84, 39578),

Gene: Twitch\_60 Start: 41252, Stop: 41416, Start Num: 42

Candidate Starts for Twitch\_60:

(Start: 42 @41252 has 218 MA's), (Start: 46 @41258 has 4 MA's), (Start: 50 @41276 has 1 MA's), (73, 41351), (84, 41405), (85, 41408),

Gene: TyDawg\_114 Start: 63287, Stop: 63436, Start Num: 44

Candidate Starts for TyDawg\_114:

(Start: 44 @63287 has 32 MA's), (47, 63299), (52, 63320), (53, 63323), (54, 63329), (62, 63350), (84, 63425),

Gene: Ugenie5\_62 Start: 40651, Stop: 40502, Start Num: 42

Candidate Starts for Ugenie5\_62:

(Start: 42 @40651 has 218 MA's), (Start: 46 @40645 has 4 MA's), (Start: 50 @40633 has 1 MA's), (68, 40573), (73, 40567), (84, 40513),

Gene: UnionJack\_63 Start: 39933, Stop: 39781, Start Num: 42

Candidate Starts for UnionJack\_63:

(Start: 42 @39933 has 218 MA's), (Start: 46 @39927 has 4 MA's), (Start: 50 @39915 has 1 MA's), (78, 39828), (84, 39792),

Gene: Urkel\_61 Start: 42019, Stop: 42177, Start Num: 42

Candidate Starts for Urkel\_61:

(Start: 42 @42019 has 218 MA's), (Start: 46 @42025 has 4 MA's), (Start: 50 @42043 has 1 MA's), (51, 42046), (80, 42142), (84, 42166), (85, 42169),

Gene: Vanisoa\_65 Start: 41342, Stop: 41196, Start Num: 41

Candidate Starts for Vanisoa\_65:

(Start: 39 @41348 has 2 MA's), (Start: 41 @41342 has 2 MA's), (84, 41207),

Gene: Veliki\_61 Start: 41096, Stop: 41254, Start Num: 42

Candidate Starts for Veliki\_61:

(Start: 42 @41096 has 218 MA's), (Start: 46 @41102 has 4 MA's), (Start: 50 @41120 has 1 MA's), (73, 41189), (84, 41243), (85, 41246),

Gene: ViviJ\_52 Start: 38125, Stop: 38292, Start Num: 42

Candidate Starts for ViviJ\_52:

(24, 38023), (Start: 42 @38125 has 218 MA's), (47, 38137), (Start: 50 @38149 has 1 MA's), (54, 38173), (73, 38224), (84, 38281), (85, 38284),

Gene: Waterfoul\_56 Start: 40474, Stop: 40641, Start Num: 42

Candidate Starts for Waterfoul\_56:

(3, 40171), (4, 40180), (24, 40372), (Start: 42 @40474 has 218 MA's), (47, 40486), (Start: 50 @40498 has 1 MA's), (54, 40522), (73, 40573), (82, 40615), (84, 40630),

Gene: Whirlwind\_53 Start: 40234, Stop: 40392, Start Num: 42

Candidate Starts for Whirlwind\_53:

(Start: 42 @40234 has 218 MA's), (84, 40381),

Gene: Wintermute\_63 Start: 40987, Stop: 41151, Start Num: 42

Candidate Starts for Wintermute\_63:

(11, 40762), (29, 40939), (33, 40960), (Start: 42 @40987 has 218 MA's), (Start: 50 @41011 has 1 MA's), (64, 41074), (79, 41107), (84, 41140),

Gene: Y10\_61 Start: 40915, Stop: 41079, Start Num: 42

Candidate Starts for Y10\_61:

(11, 40690), (29, 40867), (33, 40888), (Start: 42 @40915 has 218 MA's), (Start: 50 @40939 has 1 MA's), (64, 41002), (79, 41035), (84, 41068),

Gene: Y2\_61 Start: 40915, Stop: 41079, Start Num: 42

Candidate Starts for Y2\_61:

(11, 40690), (29, 40867), (33, 40888), (Start: 42 @40915 has 218 MA's), (Start: 50 @40939 has 1 MA's), (64, 41002), (79, 41035), (84, 41068),

Gene: Yecey3\_67 Start: 40309, Stop: 40154, Start Num: 90

Candidate Starts for Yecey3\_67:

(Start: 90 @40309 has 1 MA's), (94, 40174), (95, 40165),

Gene: YoureAdopted\_59 Start: 41239, Stop: 41403, Start Num: 42

Candidate Starts for YoureAdopted\_59:

(Start: 42 @41239 has 218 MA's), (Start: 46 @41245 has 4 MA's), (80, 41368), (84, 41392),

Gene: Yunkel11\_63 Start: 40947, Stop: 41123, Start Num: 42

Candidate Starts for Yunkel11\_63:

(Start: 42 @40947 has 218 MA's), (47, 40959), (51, 40974), (64, 41043), (69, 41055), (84, 41112), (85, 41115),

Gene: Zabiza\_55 Start: 37430, Stop: 37594, Start Num: 42

Candidate Starts for Zabiza\_55:

(36, 37415), (Start: 42 @37430 has 218 MA's), (Start: 46 @37436 has 4 MA's), (Start: 50 @37454 has 1 MA's), (84, 37583), (85, 37586),

Gene: Zavala\_62 Start: 41395, Stop: 41559, Start Num: 42

Candidate Starts for Zavala\_62:

(Start: 42 @41395 has 218 MA's), (Start: 46 @41401 has 4 MA's), (Start: 50 @41419 has 1 MA's), (73, 41494), (84, 41548), (85, 41551),

Gene: Zimmer\_61 Start: 40965, Stop: 40825, Start Num: 44

Candidate Starts for Zimmer\_61:

(5, 41262), (6, 41250), (17, 41172), (Start: 44 @40965 has 32 MA's), (Start: 46 @40959 has 4 MA's), (Start: 50 @40947 has 1 MA's), (80, 40860), (83, 40845), (84, 40836),

Gene: Zolita\_61 Start: 40617, Stop: 40465, Start Num: 42

Candidate Starts for Zolita\_61:

(Start: 42 @40617 has 218 MA's), (Start: 50 @40599 has 1 MA's), (79, 40509), (84, 40476),