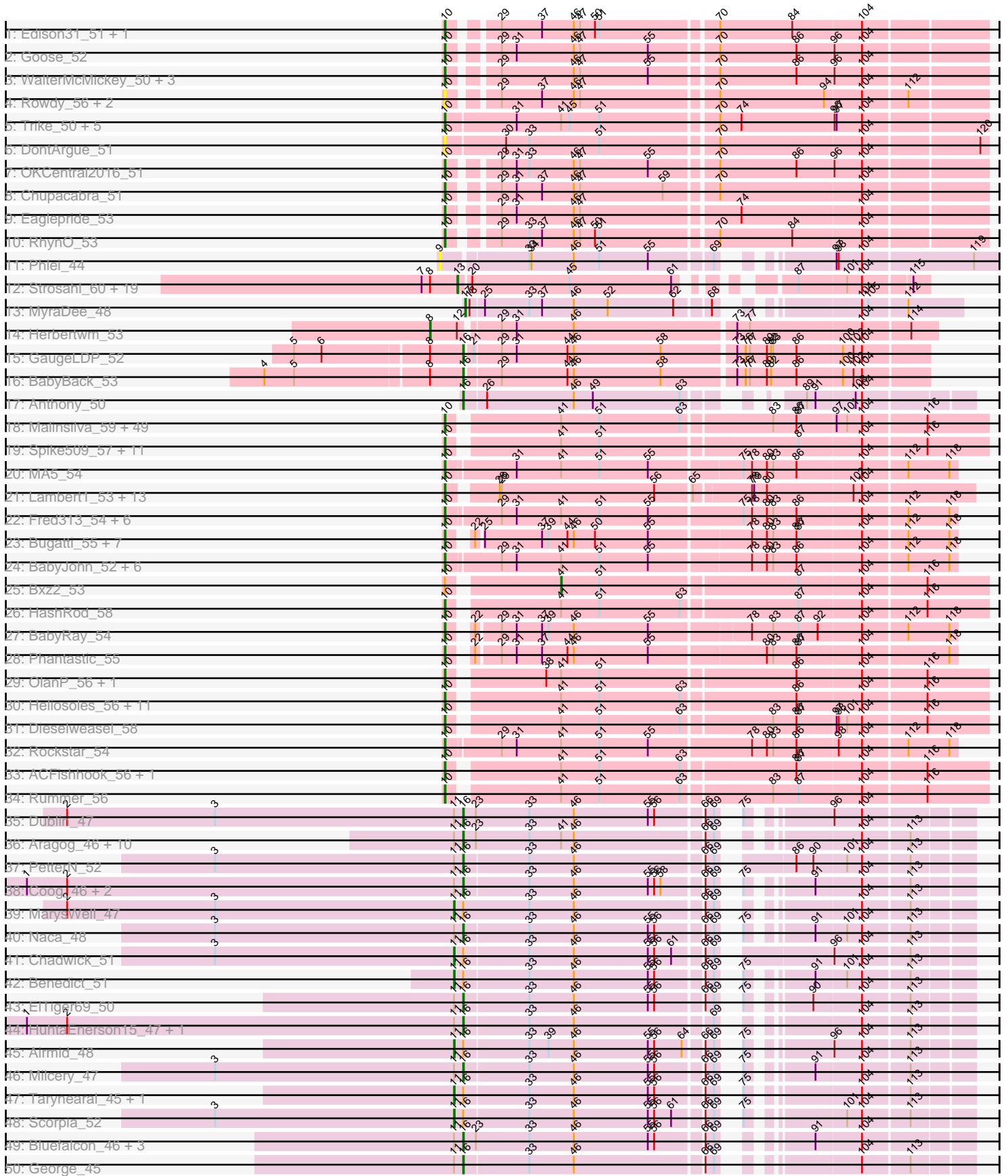
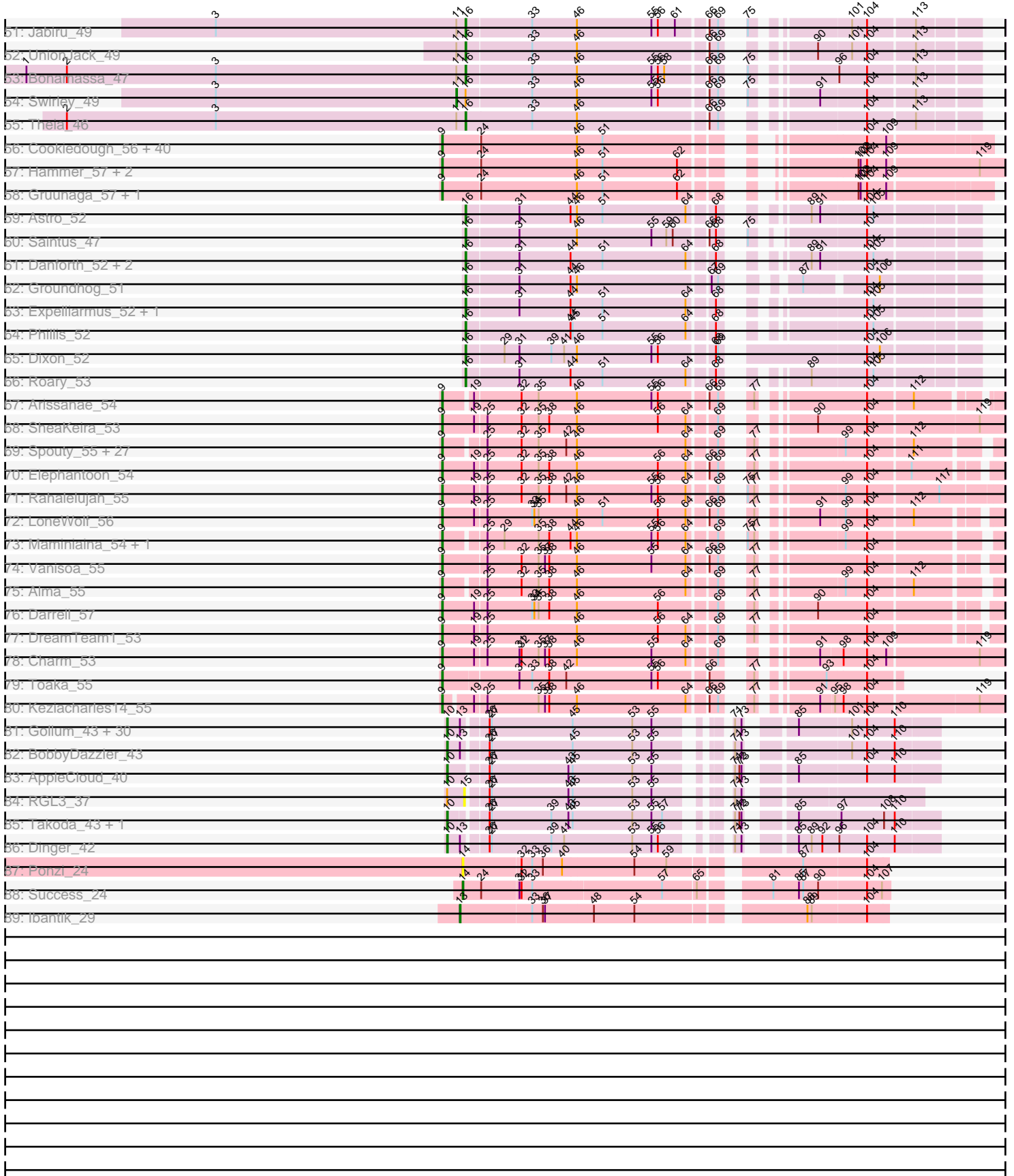


Pham 192244



Pham 192244



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 192244 Report

This analysis was run 11/02/24 on database version 579.

Pham number 192244 has 346 members, 31 are drafts.

Phages represented in each track:

- Track 1 : Edison31\_51, Topanga\_50
- Track 2 : Goose\_52
- Track 3 : WalterMcMickey\_50, Twister\_50, Kristoff\_52, Rebeuca\_52
- Track 4 : Rowdy\_56, DustyMartin\_56, Shapes\_56
- Track 5 : Trike\_50, Poompha\_51, Drake94\_50, Severus\_50, KittenMittens\_49, PeaceMeal1\_50
- Track 6 : DontArgue\_51
- Track 7 : OKCentral2016\_51
- Track 8 : Chupacabra\_51
- Track 9 : Eaglepride\_53
- Track 10 : RhynO\_53
- Track 11 : Phlei\_44
- Track 12 : Strosahl\_60, Boohoo\_59, Rosalind\_58, KatherineG\_60, MinecraftSteve\_60, LastResort\_58, JSwag\_59, Waits\_60, Soups\_60, Nebulosus\_58, ReMo\_58, Looper\_59, DekHockey33\_60, Oofda\_61, Anaysia\_59, Epsocamisio\_57, ShayRa\_60, Remus\_60, Switzerland\_59, Battleship\_61
- Track 13 : MyraDee\_48
- Track 14 : Herbertwm\_53
- Track 15 : GaugeLDP\_52
- Track 16 : BabyBack\_53
- Track 17 : Anthony\_50
- Track 18 : Malinsilva\_59, Wooldri\_59, Hercules11\_57, SoilDragon\_57, Fernando\_57, Jobu08\_56, Sabia\_57, Lilith\_58, Watson\_57, Grub\_57, Beauxregard13\_57, Anubis\_60, LugYA\_60, BreSam8\_57, PGHhamlin\_59, PotatoSplit\_59, Ollie\_57, P28Green\_58, SoYo\_57, Vix\_57, DaHudson\_57, MadMarie\_57, StepMih\_57, MuchMore\_60, MoneyMay\_57, Marie\_57, Phoebe\_58, Zetzy\_56, Microwolf\_57, Taurus\_58, Snickers\_57, JHC117\_57, Penny1\_58, Grif\_57, Colbster\_57, EpicPhail\_58, MarQuardt\_57, Pembroke\_57, Aglet\_58, GingkoMaracino\_57, Grum1\_57, AugsMagnumOpus\_60, LBerry\_58, GtownJaz\_57, Tiffany\_57, Stagni\_57, JenCasNa\_58, Sabinator\_56, Mainiac\_57, Cullens\_57
- Track 19 : Spike509\_57, Phoxy\_57, LarryKay\_57, AgronaGT15\_56, KADY\_57, Methuselah\_53, BuzzBuzz\_55, Misomonster\_58, Daishi\_56, Farber\_57, Soshari\_59, Louie6\_56
- Track 20 : MA5\_54
- Track 21 : Lambert1\_53, Caviar\_53, Popcicle\_53, Noella\_53, ResDef\_53, Hookmount\_53, Texage\_52, Pocahontas\_53, Todacoro\_53, Panamaxus\_51, Margo\_53, QuinnKiro\_52, Norbert\_52, Veracruz\_52

- Track 22 : Fred313\_54, Marchesa\_54, HelDan\_54, Kachowdy\_54, Scout\_54, Heathen\_54, DropBear\_54
- Track 23 : Bugatti\_55, Idleandcovert\_55, Giroux\_55, Puppy\_56, TNguyen7\_55, Pistachio\_56, SaturnRing\_55, BlueBird\_56
- Track 24 : BabyJohn\_52, JF4\_52, Isca\_53, JF2\_52, Chiqui\_52, MK4\_54, B1\_49
- Track 25 : Bxz2\_53
- Track 26 : HashRod\_58
- Track 27 : BabyRay\_54
- Track 28 : Phantastic\_55
- Track 29 : OlanP\_56, Gemma\_56
- Track 30 : Heliosoles\_56, Reba\_57, Manu\_57, HaveUMetTed\_58, PhishRPhriends\_55, Kalnoky\_58, PurpleHaze\_57, Kalb97\_58, JeppNRM\_58, Marius\_58, Grouphink\_58, Phranny\_58
- Track 31 : Dieselweasel\_58
- Track 32 : Rockstar\_54
- Track 33 : ACFishhook\_56, Pawn\_57
- Track 34 : Rummer\_56
- Track 35 : Dublin\_47
- Track 36 : Aragog\_46, Conspiracy\_47, Discoknowium\_45, Tiger\_46, AgentM\_46, Jovo\_47, Phlorence\_45, PickleBack\_47, Lev2\_47, Archetta\_46, ForGetIt\_47
- Track 37 : PetterN\_52
- Track 38 : Coog\_46, Midas2\_46, Micasa\_48
- Track 39 : MarysWell\_47
- Track 40 : Naca\_48
- Track 41 : Chadwick\_51
- Track 42 : Benedict\_51
- Track 43 : EITiger69\_50
- Track 44 : HuhtaEnerson15\_47, LittleCherry\_47
- Track 45 : Airmid\_48
- Track 46 : Milcery\_47
- Track 47 : Tarynearal\_45, Cuco\_47
- Track 48 : Scorpia\_52
- Track 49 : Bluefalcon\_46, SydNat\_50, Ghoulyboy\_50, Zolita\_49
- Track 50 : George\_45
- Track 51 : Jabiru\_49
- Track 52 : UnionJack\_49
- Track 53 : Bonamassa\_47
- Track 54 : Swirley\_49
- Track 55 : Theia\_46
- Track 56 : Cookiedough\_56, SuperAwesome\_56, SuperCallie99\_55, McFly\_56, VohminGhazi\_56, Pmask\_56, BABullseye\_50, Isiphiwo\_54, Wiks\_56, Koko\_58, JewelBug\_57, Tucker\_57, Newrala\_56, CloudWang3\_57, Hoot\_51, Dorothea\_56, Chartreuse\_55, DaVinci\_55, Yokurt\_57, Jordennis\_56, Candra\_56, ToneTone\_54, SmellyB\_56, Kazan\_57, EricB\_56, Neeharika16\_55, Roksolana\_58, Indra\_60, Zulu\_58, Blinn1\_59, Lilbunny\_56, Jeffabunny\_57, Artemis2UCLA\_57, Helmet\_59, WunderPhul\_57, Garak\_59, Priamo\_58, GreedyLawyer\_56, Kipper29\_56, Zaka\_57, Hexamo\_57
- Track 57 : Hammer\_57, Rifter\_57, Blue7\_58
- Track 58 : Gruunaga\_57, Gladiator\_54
- Track 59 : Astro\_52
- Track 60 : Saintus\_47
- Track 61 : Danforth\_52, NearlyHeadless\_52, Stephig9\_53
- Track 62 : Groundhog\_51

- Track 63 : Expelliarmus\_52, Smeadley\_53
- Track 64 : Phillis\_52
- Track 65 : Dixon\_52
- Track 66 : Roary\_53
- Track 67 : Arissanae\_54
- Track 68 : SheaKeira\_53
- Track 69 : Spouty\_55, Beemo\_55, Qobbit\_55, Onglai\_53, Phaeder\_55, RyeScarlet\_56, ExplosioNervosa\_55, Eidsmoe\_55, Scherzo\_55, Fayely\_55, Sachima\_52, Lilleskat\_53, Priya\_55, Hanray\_53, Myxus\_55, EdogawaKiddo\_53, Horex\_54, Aliter\_55, Ugenie5\_52, Conquerage\_55, Catalina\_56, Phonnegut\_55, Pioneer\_55, EmyBug\_54, PackMan\_54, Jiawan\_53, HortumSL17\_55, Tubs\_55
- Track 70 : Elephantoon\_54
- Track 71 : Rahalelujah\_55
- Track 72 : LoneWolf\_56
- Track 73 : Maminiaina\_54, BogosyJay\_54
- Track 74 : Vanisoa\_55
- Track 75 : Alma\_55
- Track 76 : Darrell\_57
- Track 77 : DreamTeam1\_53
- Track 78 : Charm\_53
- Track 79 : Toaka\_55
- Track 80 : Keziacharles14\_55
- Track 81 : Gollum\_43, Lillie\_43, Hiro\_43, Bryce\_42, Shuman\_43, Natosaleda\_42, Nancinator\_43, Yogi\_42, Jester\_42, Rhodalysa\_43, RexFury\_42, Espica\_43, Bradshaw\_43, Krishelle\_43, UhSalsa\_43, Naiad\_42, Bonanza\_43, Belenaria\_43, RER2\_36, Harlequin\_42, CosmicSans\_43, TWAMP\_43, Phrankenstein\_43, Rasputin\_43, Yoncess\_42, StCroix\_42, Erik\_43, Alpacados\_42, Swann\_43, PhailMary\_42, Alatin\_42
- Track 82 : BobbyDazzler\_43
- Track 83 : AppleCloud\_40
- Track 84 : RGL3\_37
- Track 85 : Takoda\_43, AngryOrchard\_41
- Track 86 : Dinger\_42
- Track 87 : Ponzi\_24
- Track 88 : Success\_24
- Track 89 : Ibantik\_29

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

The start number called the most often in the published annotations is 10, it was called in 163 of the 315 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ACFishhook\_56, Aglet\_58, AgronaGT15\_56, Alatin\_42, Alpacados\_42, AngryOrchard\_41, Anubis\_60, AppleCloud\_40, AugsMagnumOpus\_60, B1\_49, BabyJohn\_52, BabyRay\_54, Beauxregard13\_57, Belenaria\_43, BlueBird\_56, BobbyDazzler\_43, Bonanza\_43, Bradshaw\_43, BreSam8\_57, Bryce\_42, Bugatti\_55, BuzzBuzz\_55, Caviar\_53, Chiqui\_52, Chupacabra\_51, Colbster\_57, CosmicSans\_43, Cullens\_57, DaHudson\_57, Daishi\_56, Dieselweasel\_58, Dinger\_42, DontArgue\_51, Drake94\_50, DropBear\_54, DustyMartin\_56,

Eaglepride\_53, Edison31\_51, EpicPhail\_58, Erik\_43, Espica\_43, Farber\_57, Fernando\_57, Fred313\_54, Gemma\_56, GingkoMaracino\_57, Giroux\_55, Gollum\_43, Goose\_52, Grif\_57, Groupthink\_58, Grub\_57, Grum1\_57, GtownJaz\_57, Harlequin\_42, HashRod\_58, HaveUMetTed\_58, Heathen\_54, HelDan\_54, Heliosoles\_56, Hercules11\_57, Hiro\_43, Hookmount\_53, Idleandcovert\_55, Isca\_53, JF2\_52, JF4\_52, JHC117\_57, JenCasNa\_58, JeppNRM\_58, Jester\_42, Jobu08\_56, KADY\_57, Kachowdy\_54, Kalb97\_58, Kalnok\_58, KittenMittens\_49, Krishelle\_43, Kristoff\_52, LBerry\_58, Lambert1\_53, LarryKay\_57, Lilith\_58, Lillie\_43, Louie6\_56, LugYA\_60, MA5\_54, MK4\_54, MadMarie\_57, Mainiac\_57, Malinsilva\_59, Manu\_57, MarQuardt\_57, Marchesa\_54, Margo\_53, Marie\_57, Marius\_58, Methuselah\_53, Microwolf\_57, Misomonster\_58, MoneyMay\_57, MuchMore\_60, Naiad\_42, Nancinator\_43, Natosaleda\_42, Noella\_53, Norbert\_52, OKCentral2016\_51, OlanP\_56, Ollie\_57, P28Green\_58, PGHhamlin\_59, Panamaxus\_51, Pawn\_57, PeaceMeal1\_50, Pembroke\_57, Penny1\_58, PhailMary\_42, Phantastic\_55, PhishRPhriends\_55, Phoebe\_58, Phoxy\_57, Phrankenstien\_43, Phranny\_58, Pistachio\_56, Pocahontas\_53, Poompha\_51, Popcicle\_53, PotatoSplit\_59, Puppy\_56, PurpleHaze\_57, QuinnKiro\_52, RER2\_36, Rasputin\_43, Reba\_57, Rebeuca\_52, ResDef\_53, RexFury\_42, Rhodalysa\_43, RhynO\_53, Rockstar\_54, Rowdy\_56, Rummer\_56, Sabia\_57, Sabinator\_56, SaturnRing\_55, Scout\_54, Severus\_50, Shapes\_56, Shuman\_43, Snickers\_57, SoYo\_57, SoilDragon\_57, Soshari\_59, Spike509\_57, StCroix\_42, Stagni\_57, StepMih\_57, Swann\_43, TNguyen7\_55, TWAMP\_43, Takoda\_43, Taurus\_58, Texage\_52, Tiffany\_57, Todacoro\_53, Topanga\_50, Trike\_50, Twister\_50, UhSalsa\_43, Veracruz\_52, Vix\_57, WalterMcMickey\_50, Watson\_57, Wooldri\_59, Yogi\_42, Yoncess\_42, Zetzy\_56,

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

- Bxz2\_53, RGL3\_37,

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

- AgentM\_46, Airmid\_48, Aliter\_55, Alma\_55, Anaysia\_59, Anthony\_50, Aragog\_46, Archetta\_46, Arissanae\_54, Artemis2UCLA\_57, Astro\_52, BABullseye\_50, BabyBack\_53, Battleship\_61, Beemo\_55, Benedict\_51, Blinn1\_59, Blue7\_58, Bluefalcon\_46, BogosyJay\_54, Bonamassa\_47, Boohoo\_59, Candra\_56, Catalina\_56, Chadwick\_51, Charm\_53, Chartreuse\_55, CloudWang3\_57, Conquerage\_55, Conspiracy\_47, Coog\_46, Cookiedough\_56, Cuco\_47, DaVinci\_55, Danforth\_52, Darrell\_57, DekHockey33\_60, Discoknowium\_45, Dixon\_52, Dorothea\_56, DreamTeam1\_53, Dublin\_47, EdogawaKiddo\_53, Eidsmoe\_55, EITiger69\_50, Elephantoon\_54, EmyBug\_54, Epsocamisio\_57, EricB\_56, Expelliarmus\_52, ExplosioNervosa\_55, Fayely\_55, ForGetIt\_47, Garak\_59, GaugeLDP\_52, George\_45, Ghoulyboy\_50, Gladiator\_54, GreedyLawyer\_56, Groundhog\_51, Gruunaga\_57, Hammer\_57, Hanray\_53, Helmet\_59, Herbertwm\_53, Hexamo\_57, Horex\_54, Hoot\_51, HortumSL17\_55, HuhtaEnerson15\_47, Ibantik\_29, Indra\_60, Isiphiwo\_54, JSwag\_59, Jabiru\_49, Jeffabunny\_57, JewelBug\_57, Jiawan\_53, Jordennis\_56, Jovo\_47, KatherineG\_60, Kazan\_57, Keziacharles14\_55, Kipper29\_56, Koko\_58, LastResort\_58, Lev2\_47, Lilbunny\_56, Lilleskat\_53, LittleCherry\_47, LoneWolf\_56, Looper\_59, Maminiana\_54, MarysWell\_47, McFly\_56, Micasa\_48, Midas2\_46, Milcery\_47, MinecraftSteve\_60, MyraDee\_48, Myxus\_55, Naca\_48, NearlyHeadless\_52, Nebulosus\_58, Neeharika16\_55, Newrala\_56, Onglai\_53, Oofda\_61, PackMan\_54, PetterN\_52, Phaeder\_55, Phillis\_52, Phlei\_44, Phlorence\_45, Phonnegut\_55, PickleBack\_47, Pioneer\_55, Pmask\_56, Ponzi\_24, Priamo\_58, Priya\_55, Qobbit\_55, Rahalelujah\_55, ReMo\_58, Remus\_60, Rifter\_57, Roary\_53, Roksolana\_58, Rosalind\_58, RyeScarlet\_56, Sachima\_52, Saintus\_47,

Scherzo\_55, Scorpia\_52, ShayRa\_60, SheaKeira\_53, Smeadley\_53, SmellyB\_56, Soups\_60, Spouty\_55, Stephig9\_53, Strosahl\_60, Success\_24, SuperAwesome\_56, SuperCallie99\_55, Swirley\_49, Switzerland\_59, SydNat\_50, Tarynearal\_45, Theia\_46, Tiger\_46, Toaka\_55, ToneTone\_54, Tubs\_55, Tucker\_57, Ugenie5\_52, UnionJack\_49, Vanisoa\_55, VohminGhazi\_56, Waits\_60, Wiks\_56, WunderPhul\_57, Yokurt\_57, Zaka\_57, Zolita\_49, Zulu\_58,

### Summary by start number:

#### Start 8:

- Found in 23 of 346 ( 6.6% ) of genes in pham
- Manual Annotations of this start: 1 of 315
- Called 4.3% of time when present
- Phage (with cluster) where this start called: Herbertwm\_53 (A2),

#### Start 9:

- Found in 89 of 346 ( 25.7% ) of genes in pham
- Manual Annotations of this start: 76 of 315
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aliter\_55 (A9), Alma\_55 (A9), Arissanae\_54 (A9), Artemis2UCLA\_57 (A6), BABullseye\_50 (A6), Beemo\_55 (A9), Blinn1\_59 (A6), Blue7\_58 (A6), BogosyJay\_54 (A9), Candra\_56 (A6), Catalina\_56 (A9), Charm\_53 (A9), Chartreuse\_55 (A6), CloudWang3\_57 (A6), Conquerage\_55 (A9), Cookiedough\_56 (A6), DaVinci\_55 (A6), Darrell\_57 (A9), Dorothea\_56 (A6), DreamTeam1\_53 (A9), EdogawaKiddo\_53 (A9), Eidsmoe\_55 (A9), Elephantoon\_54 (A9), EmyBug\_54 (A9), EricB\_56 (A6), ExplosioNervosa\_55 (A9), Fayely\_55 (A9), Garak\_59 (A6), Gladiator\_54 (A6), GreedyLawyer\_56 (A6), Gruunaga\_57 (A6), Hammer\_57 (A6), Hanray\_53 (A9), Helmet\_59 (A6), Hexamo\_57 (A6), Holesx\_54 (A9), Hoot\_51 (A6), HortumSL17\_55 (A9), Indra\_60 (A6), Isiphiwo\_54 (A6), Jeffabunny\_57 (A6), JewelBug\_57 (A6), Jiawan\_53 (A9), Jordennis\_56 (A6), Kazan\_57 (A6), Keziacharles14\_55 (A9), Kipper29\_56 (A6), Koko\_58 (A6), Lilbunny\_56 (A6), Lilleskat\_53 (A9), LoneWolf\_56 (A9), Maminiaina\_54 (A9), McFly\_56 (A6), Myxus\_55 (A9), Neeharika16\_55 (A6), Newrala\_56 (A6), Onglai\_53 (A9), PackMan\_54 (A9), Phaeder\_55 (A9), Phlei\_44 (A13), Phonnegut\_55 (A9), Pioneer\_55 (A9), Pmask\_56 (A6), Priamo\_58 (A6), Priya\_55 (A9), Qobbit\_55 (A9), Rahalelujah\_55 (A9), Rifter\_57 (A6), Roksolana\_58 (A6), RyeScarlet\_56 (A9), Sachima\_52 (A9), Scherzo\_55 (A9), SheaKeira\_53 (A9), SmellyB\_56 (A6), Spouty\_55 (A9), SuperAwesome\_56 (A6), SuperCallie99\_55 (A6), Toaka\_55 (A9), ToneTone\_54 (A6), Tubs\_55 (A9), Tucker\_57 (A6), Ugenie5\_52 (A9), Vanisoa\_55 (A9), VohminGhazi\_56 (A6), Wiks\_56 (A6), WunderPhul\_57 (A6), Yokurt\_57 (A6), Zaka\_57 (A6), Zulu\_58 (A6),

#### Start 10:

- Found in 180 of 346 ( 52.0% ) of genes in pham
- Manual Annotations of this start: 163 of 315
- Called 98.9% of time when present
- Phage (with cluster) where this start called: ACFishhook\_56 (A3), Aglet\_58 (A3), AgronaGT15\_56 (A3), Alatin\_42 (CA), Alpacados\_42 (CA), AngryOrchard\_41 (CA), Anubis\_60 (A3), AppleCloud\_40 (CA), AugsMagnumOpus\_60 (A3), B1\_49 (A3), BabyJohn\_52 (A3), BabyRay\_54 (A3), Beauxregard13\_57 (A3), Belenaria\_43 (CA), BlueBird\_56 (A3), BobbyDazzler\_43 (CA), Bonanza\_43 (CA), Bradshaw\_43 (CA), BreSam8\_57 (A3), Bryce\_42 (CA), Bugatti\_55 (A3), BuzzBuzz\_55 (A3), Caviar\_53 (A3), Chiqui\_52 (A3), Chupacabra\_51 (A10), Colbster\_57 (A3), CosmicSans\_43

(CA), Cullens\_57 (A3), DaHudson\_57 (A3), Daishi\_56 (A3), Dieselweasel\_58 (A3), Dinger\_42 (CA), DontArgue\_51 (A10), Drake94\_50 (A10), DropBear\_54 (A3), DustyMartin\_56 (A10), Eaglepride\_53 (A10), Edison31\_51 (A10), EpicPhail\_58 (A3), Erik\_43 (CA), Espica\_43 (CA), Farber\_57 (A3), Fernando\_57 (A3), Fred313\_54 (A3), Gemma\_56 (A3), GingkoMaracino\_57 (A3), Giroux\_55 (A3), Gollum\_43 (CA), Goose\_52 (A10), Grif\_57 (A3), Groupthink\_58 (A3), Grub\_57 (A3), Grum1\_57 (A3), GtownJaz\_57 (A3), Harlequin\_42 (CA), HashRod\_58 (A3), HaveUMetTed\_58 (A3), Heathen\_54 (A3), HelDan\_54 (A3), Heliosoles\_56 (A3), Hercules11\_57 (A3), Hiro\_43 (CA), Hookmount\_53 (A3), Idleandcovert\_55 (A3), Isca\_53 (A3), JF2\_52 (A3), JF4\_52 (A3), JHC117\_57 (A3), JenCasNa\_58 (A3), JeppNRM\_58 (A3), Jester\_42 (CA), Jobu08\_56 (A3), KADY\_57 (A3), Kachowdy\_54 (A3), Kalb97\_58 (A3), Kalnok\_58 (A3), KittenMittens\_49 (A10), Krishelle\_43 (CA), Kristoff\_52 (A10), LBerry\_58 (A3), Lambert1\_53 (A3), LarryKay\_57 (A3), Lilith\_58 (A3), Lillie\_43 (CA), Louie6\_56 (A3), LugYA\_60 (A3), MA5\_54 (A3), MK4\_54 (A3), MadMarie\_57 (A3), Mainiac\_57 (A3), Malinsilva\_59 (A3), Manu\_57 (A3), MarQuardt\_57 (A3), Marchesa\_54 (A3), Margo\_53 (A3), Marie\_57 (A3), Marius\_58 (A3), Methuselah\_53 (A3), Microwolf\_57 (A3), Misomonster\_58 (A3), MoneyMay\_57 (A3), MuchMore\_60 (A3), Naiad\_42 (CA), Nancinator\_43 (CA), Natosaleda\_42 (CA), Noella\_53 (A3), Norbert\_52 (A3), OKCentral2016\_51 (A10), OlanP\_56 (A3), Ollie\_57 (A3), P28Green\_58 (A3), PGHhamlin\_59 (A3), Panamaxus\_51 (A3), Pawn\_57 (A3), PeaceMeal1\_50 (A10), Pembroke\_57 (A3), Penny1\_58 (A3), PhailMary\_42 (CA), Phantastic\_55 (A3), PhishRPhriends\_55 (A3), Phoebe\_58 (A3), Phoxy\_57 (A3), Phrankenstein\_43 (CA), Phranny\_58 (A3), Pistachio\_56 (A3), Pocahontas\_53 (A3), Poompha\_51 (A10), Popcicle\_53 (A3), PotatoSplit\_59 (A3), Puppy\_56 (A3), PurpleHaze\_57 (A3), QuinnKiro\_52 (A3), RER2\_36 (CA), Rasputin\_43 (CA), Reba\_57 (A3), Rebeuca\_52 (A10), ResDef\_53 (A3), RexFury\_42 (CA), Rhodalysa\_43 (CA), RhynO\_53 (A10), Rockstar\_54 (A3), Rowdy\_56 (A10), Rummer\_56 (A3), Sabia\_57 (A3), Sabinator\_56 (A3), SaturnRing\_55 (A3), Scout\_54 (A3), Severus\_50 (A10), Shapes\_56 (A10), Shuman\_43 (CA), Snickers\_57 (A3), SoYo\_57 (A3), SoilDragon\_57 (A3), Soshari\_59 (A3), Spike509\_57 (A3), StCroix\_42 (CA), Stagni\_57 (A3), StepMih\_57 (A3), Swann\_43 (CA), TNguyen7\_55 (A3), TWAMP\_43 (CA), Takoda\_43 (CA), Taurus\_58 (A3), Texage\_52 (A3), Tiffany\_57 (A3), Todacoro\_53 (A3), Topanga\_50 (A10), Trike\_50 (A10), Twister\_50 (A10), UhSalsa\_43 (CA), Veracruz\_52 (A3), Vix\_57 (A3), WalterMcMickey\_50 (A10), Watson\_57 (A3), Wooldri\_59 (A3), Yogi\_42 (CA), Yoncess\_42 (CA), Zetzy\_56 (A3),

#### Start 11:

- Found in 38 of 346 ( 11.0% ) of genes in pham
- Manual Annotations of this start: 8 of 315
- Called 21.1% of time when present
- Phage (with cluster) where this start called: Airmid\_48 (A5), Benedict\_51 (A5), Chadwick\_51 (A5), Cuco\_47 (A5), MarysWell\_47 (A5), Scorpio\_52 (A5), Swirley\_49 (A5), Tarynearal\_45 (A5),

#### Start 13:

- Found in 54 of 346 ( 15.6% ) of genes in pham
- Manual Annotations of this start: 20 of 315
- Called 38.9% of time when present
- Phage (with cluster) where this start called: Anaysia\_59 (A15), Battleship\_61 (A15), Boohoo\_59 (A15), DekHockey33\_60 (A15), Epsocamisio\_57 (A15), Ibantik\_29 (singleton), JSwag\_59 (A15), KatherineG\_60 (A15), LastResort\_58 (A15), Looper\_59 (A15), MinecraftSteve\_60 (A15), Nebulosus\_58 (A15), Oofda\_61 (A15), ReMo\_58 (A15), Remus\_60 (A15), Rosalind\_58 (A15), ShayRa\_60 (A15), Soups\_60 (A15),



Strosahl\_60 (A15), Switzerland\_59 (A15), Waits\_60 (A15),

Start 14:

- Found in 2 of 346 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 315
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ponzi\_24 (singleton), Success\_24 (singleton),

Start 15:

- Found in 1 of 346 ( 0.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: RGL3\_37 (CA),

Start 16:

- Found in 52 of 346 ( 15.0% ) of genes in pham
- Manual Annotations of this start: 44 of 315
- Called 84.6% of time when present
- Phage (with cluster) where this start called: AgentM\_46 (A5), Anthony\_50 (A20), Aragog\_46 (A5), Archetta\_46 (A5), Astro\_52 (A8), BabyBack\_53 (A2), Bluefalcon\_46 (A5), Bonamassa\_47 (A5), Conspiracy\_47 (A5), Coog\_46 (A5), Danforth\_52 (A8), Discoknowium\_45 (A5), Dixon\_52 (A8), Dublin\_47 (A5), EITiger69\_50 (A5), Expelliarmus\_52 (A8), ForGetIt\_47 (A5), GaugeLDP\_52 (A2), George\_45 (A5), Ghoulboy\_50 (A5), Groundhog\_51 (A8), HuhtaEnerson15\_47 (A5), Jabiru\_49 (A5), Jovo\_47 (A5), Lev2\_47 (A5), LittleCherry\_47 (A5), Micasa\_48 (A5), Midas2\_46 (A5), Milcery\_47 (A5), Naca\_48 (A5), NearlyHeadless\_52 (A8), PetterN\_52 (A5), Phillis\_52 (A8), Phlorence\_45 (A5), PickleBack\_47 (A5), Roary\_53 (A8), Saintus\_47 (A8), Smeadley\_53 (A8), Stephig9\_53 (A8), SydNat\_50 (A5), Theia\_46 (A5), Tiger\_46 (A5), UnionJack\_49 (A5), Zolita\_49 (A5),

Start 17:

- Found in 1 of 346 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 315
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MyraDee\_48 (A18),

Start 41:

- Found in 117 of 346 ( 33.8% ) of genes in pham
- Manual Annotations of this start: 1 of 315
- Called 0.9% of time when present
- Phage (with cluster) where this start called: Bxz2\_53 (A3),

### **Summary by clusters:**

There are 13 clusters represented in this pham: A15, A20, singleton, A10, A13, CA, A18, A3, A2, A5, A6, A9, A8,

Info for manual annotations of cluster A10:

- Start number 10 was manually annotated 17 times for cluster A10.

Info for manual annotations of cluster A15:

- Start number 13 was manually annotated 19 times for cluster A15.

Info for manual annotations of cluster A18:

- Start number 17 was manually annotated 1 time for cluster A18.

Info for manual annotations of cluster A2:

- Start number 8 was manually annotated 1 time for cluster A2.
- Start number 16 was manually annotated 2 times for cluster A2.

Info for manual annotations of cluster A20:

- Start number 16 was manually annotated 1 time for cluster A20.

Info for manual annotations of cluster A3:

- Start number 10 was manually annotated 111 times for cluster A3.
- Start number 41 was manually annotated 1 time for cluster A3.

Info for manual annotations of cluster A5:

- Start number 11 was manually annotated 8 times for cluster A5.
- Start number 16 was manually annotated 30 times for cluster A5.

Info for manual annotations of cluster A6:

- Start number 9 was manually annotated 42 times for cluster A6.

Info for manual annotations of cluster A8:

- Start number 16 was manually annotated 11 times for cluster A8.

Info for manual annotations of cluster A9:

- Start number 9 was manually annotated 34 times for cluster A9.

Info for manual annotations of cluster CA:

- Start number 10 was manually annotated 35 times for cluster CA.

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

Gene: ACFishhook\_56 Start: 36893, Stop: 36171, Start Num: 10

Candidate Starts for ACFishhook\_56:

(Start: 10 @36893 has 163 MA's), (Start: 41 @36752 has 1 MA's), (51, 36698), (63, 36584), (86, 36434), (87, 36431), (104, 36344), (116, 36257),

Gene: AgentM\_46 Start: 35277, Stop: 34651, Start Num: 16

Candidate Starts for AgentM\_46:

(Start: 11 @35289 has 8 MA's), (Start: 16 @35277 has 44 MA's), (23, 35259), (33, 35184), (Start: 41 @35139 has 1 MA's), (46, 35121), (66, 34947), (69, 34935), (104, 34794), (113, 34731),

Gene: Aglet\_58 Start: 36932, Stop: 36210, Start Num: 10

Candidate Starts for Aglet\_58:

(Start: 10 @36932 has 163 MA's), (Start: 41 @36791 has 1 MA's), (51, 36737), (63, 36623), (83, 36506), (86, 36473), (87, 36470), (97, 36419), (101, 36404), (104, 36383), (116, 36296),

Gene: AgronaGT15\_56 Start: 36780, Stop: 36058, Start Num: 10

Candidate Starts for AgronaGT15\_56:

(Start: 10 @36780 has 163 MA's), (Start: 41 @36639 has 1 MA's), (51, 36585), (87, 36318), (104, 36231), (116, 36144),

Gene: Airmid\_48 Start: 35448, Stop: 34813, Start Num: 11

Candidate Starts for Airmid\_48:

(Start: 11 @35448 has 8 MA's), (Start: 16 @35436 has 44 MA's), (33, 35346), (39, 35319), (46, 35283), (55, 35178), (56, 35169), (64, 35130), (66, 35109), (69, 35097), (75, 35088), (96, 34995), (104, 34956), (113, 34893),

Gene: Alatin\_42 Start: 32896, Stop: 32306, Start Num: 10

Candidate Starts for Alatin\_42:

(Start: 10 @32896 has 163 MA's), (Start: 13 @32878 has 20 MA's), (26, 32848), (27, 32845), (45, 32731), (53, 32647), (55, 32620), (71, 32554), (73, 32545), (85, 32497), (101, 32425), (104, 32404), (110, 32365),

Gene: Aliter\_55 Start: 36835, Stop: 36170, Start Num: 9

Candidate Starts for Aliter\_55:

(Start: 9 @36835 has 76 MA's), (25, 36784), (32, 36736), (35, 36712), (42, 36673), (46, 36658), (64, 36505), (69, 36472), (77, 36454), (99, 36361), (104, 36331), (112, 36271),

Gene: Alma\_55 Start: 37015, Stop: 36350, Start Num: 9

Candidate Starts for Alma\_55:

(Start: 9 @37015 has 76 MA's), (25, 36964), (32, 36916), (35, 36892), (38, 36877), (46, 36838), (64, 36685), (69, 36652), (77, 36634), (99, 36541), (104, 36511), (112, 36451),

Gene: Alpacados\_42 Start: 32801, Stop: 32211, Start Num: 10

Candidate Starts for Alpacados\_42:

(Start: 10 @32801 has 163 MA's), (Start: 13 @32783 has 20 MA's), (26, 32753), (27, 32750), (45, 32636), (53, 32552), (55, 32525), (71, 32459), (73, 32450), (85, 32402), (101, 32330), (104, 32309), (110, 32270),

Gene: Anaysia\_59 Start: 35907, Stop: 35335, Start Num: 13

Candidate Starts for Anaysia\_59:

(7, 35958), (Start: 8 @35946 has 1 MA's), (Start: 13 @35907 has 20 MA's), (20, 35892), (45, 35754), (61, 35610), (87, 35508), (101, 35442), (104, 35421), (115, 35358),

Gene: AngryOrchard\_41 Start: 32691, Stop: 32104, Start Num: 10

Candidate Starts for AngryOrchard\_41:

(Start: 10 @32691 has 163 MA's), (26, 32646), (27, 32643), (39, 32559), (43, 32535), (45, 32529), (53, 32445), (55, 32418), (57, 32403), (71, 32352), (72, 32346), (73, 32343), (85, 32295), (97, 32238), (108, 32178), (110, 32163),

Gene: Anthony\_50 Start: 34512, Stop: 33898, Start Num: 16

Candidate Starts for Anthony\_50:

(Start: 16 @34512 has 44 MA's), (26, 34482), (46, 34359), (49, 34332), (63, 34209), (89, 34116), (91, 34104), (103, 34050), (104, 34041),

Gene: Anubis\_60 Start: 36818, Stop: 36096, Start Num: 10

Candidate Starts for Anubis\_60:

(Start: 10 @36818 has 163 MA's), (Start: 41 @36677 has 1 MA's), (51, 36623), (63, 36509), (83, 36392), (86, 36359), (87, 36356), (97, 36305), (101, 36290), (104, 36269), (116, 36182),

Gene: AppleCloud\_40 Start: 32626, Stop: 32036, Start Num: 10

Candidate Starts for AppleCloud\_40:

(Start: 10 @32626 has 163 MA's), (26, 32578), (27, 32575), (43, 32467), (45, 32461), (53, 32377), (55, 32350), (71, 32284), (72, 32278), (73, 32275), (85, 32227), (104, 32134), (110, 32095),

Gene: Aragog\_46 Start: 35297, Stop: 34671, Start Num: 16

Candidate Starts for Aragog\_46:

(Start: 11 @35309 has 8 MA's), (Start: 16 @35297 has 44 MA's), (23, 35279), (33, 35204), (Start: 41 @35159 has 1 MA's), (46, 35141), (66, 34967), (69, 34955), (104, 34814), (113, 34751),

Gene: Archetta\_46 Start: 35707, Stop: 35081, Start Num: 16

Candidate Starts for Archetta\_46:

(Start: 11 @35719 has 8 MA's), (Start: 16 @35707 has 44 MA's), (23, 35689), (33, 35614), (Start: 41 @35569 has 1 MA's), (46, 35551), (66, 35377), (69, 35365), (104, 35224), (113, 35161),

Gene: Arissanae\_54 Start: 37527, Stop: 36862, Start Num: 9

Candidate Starts for Arissanae\_54:

(Start: 9 @37527 has 76 MA's), (19, 37491), (32, 37428), (35, 37404), (46, 37350), (55, 37245), (56, 37236), (66, 37176), (69, 37164), (77, 37146), (104, 37020), (112, 36960),

Gene: Artemis2UCLA\_57 Start: 35891, Stop: 35223, Start Num: 9

Candidate Starts for Artemis2UCLA\_57:

(Start: 9 @35891 has 76 MA's), (24, 35840), (46, 35705), (51, 35669), (104, 35387), (109, 35360),

Gene: Astro\_52 Start: 35198, Stop: 34575, Start Num: 16

Candidate Starts for Astro\_52:

(Start: 16 @35198 has 44 MA's), (31, 35126), (44, 35054), (46, 35045), (51, 35009), (64, 34892), (68, 34862), (89, 34793), (91, 34781), (104, 34718), (105, 34709),

Gene: AugsMagnumOpus\_60 Start: 36923, Stop: 36201, Start Num: 10

Candidate Starts for AugsMagnumOpus\_60:

(Start: 10 @36923 has 163 MA's), (Start: 41 @36782 has 1 MA's), (51, 36728), (63, 36614), (83, 36497), (86, 36464), (87, 36461), (97, 36410), (101, 36395), (104, 36374), (116, 36287),

Gene: B1\_49 Start: 34918, Stop: 34217, Start Num: 10

Candidate Starts for B1\_49:

(Start: 10 @34918 has 163 MA's), (29, 34846), (31, 34825), (Start: 41 @34762 has 1 MA's), (51, 34708), (55, 34639), (78, 34498), (80, 34477), (83, 34468), (86, 34435), (104, 34345), (112, 34285), (118, 34228),

Gene: BABullseye\_50 Start: 33473, Stop: 32805, Start Num: 9

Candidate Starts for BABullseye\_50:

(Start: 9 @33473 has 76 MA's), (24, 33422), (46, 33287), (51, 33251), (104, 32969), (109, 32942),

Gene: BabyBack\_53 Start: 37430, Stop: 36798, Start Num: 16

Candidate Starts for BabyBack\_53:

(4, 37700), (5, 37658), (Start: 8 @37475 has 1 MA's), (Start: 16 @37430 has 44 MA's), (29, 37385), (44, 37292), (46, 37283), (58, 37160), (73, 37061), (76, 37049), (77, 37043), (80, 37019), (82, 37013), (86, 36977), (100, 36914), (102, 36899), (104, 36887),

Gene: BabyJohn\_52 Start: 36739, Stop: 36041, Start Num: 10

Candidate Starts for BabyJohn\_52:

(Start: 10 @36739 has 163 MA's), (29, 36667), (31, 36646), (Start: 41 @36583 has 1 MA's), (51, 36529), (55, 36460), (78, 36322), (80, 36301), (83, 36292), (86, 36259), (104, 36169), (112, 36109),

(118, 36052),

Gene: BabyRay\_54 Start: 36688, Stop: 36014, Start Num: 10

Candidate Starts for BabyRay\_54:

(Start: 10 @36688 has 163 MA's), (22, 36667), (29, 36637), (31, 36616), (37, 36580), (39, 36571), (46, 36535), (55, 36430), (78, 36295), (83, 36265), (87, 36229), (92, 36202), (104, 36142), (112, 36082), (118, 36025),

Gene: Battleship\_61 Start: 36113, Stop: 35541, Start Num: 13

Candidate Starts for Battleship\_61:

(7, 36164), (Start: 8 @36152 has 1 MA's), (Start: 13 @36113 has 20 MA's), (20, 36098), (45, 35960), (61, 35816), (87, 35714), (101, 35648), (104, 35627), (115, 35564),

Gene: Beauxregard13\_57 Start: 36935, Stop: 36213, Start Num: 10

Candidate Starts for Beauxregard13\_57:

(Start: 10 @36935 has 163 MA's), (Start: 41 @36794 has 1 MA's), (51, 36740), (63, 36626), (83, 36509), (86, 36476), (87, 36473), (97, 36422), (101, 36407), (104, 36386), (116, 36299),

Gene: Beemo\_55 Start: 37005, Stop: 36340, Start Num: 9

Candidate Starts for Beemo\_55:

(Start: 9 @37005 has 76 MA's), (25, 36954), (32, 36906), (35, 36882), (42, 36843), (46, 36828), (64, 36675), (69, 36642), (77, 36624), (99, 36531), (104, 36501), (112, 36441),

Gene: Belenaria\_43 Start: 32762, Stop: 32172, Start Num: 10

Candidate Starts for Belenaria\_43:

(Start: 10 @32762 has 163 MA's), (Start: 13 @32744 has 20 MA's), (26, 32714), (27, 32711), (45, 32597), (53, 32513), (55, 32486), (71, 32420), (73, 32411), (85, 32363), (101, 32291), (104, 32270), (110, 32231),

Gene: Benedict\_51 Start: 35675, Stop: 35040, Start Num: 11

Candidate Starts for Benedict\_51:

(Start: 11 @35675 has 8 MA's), (Start: 16 @35663 has 44 MA's), (33, 35573), (46, 35510), (55, 35405), (56, 35396), (66, 35336), (69, 35324), (75, 35315), (91, 35246), (101, 35204), (104, 35183), (113, 35120),

Gene: Blinn1\_59 Start: 35909, Stop: 35241, Start Num: 9

Candidate Starts for Blinn1\_59:

(Start: 9 @35909 has 76 MA's), (24, 35858), (46, 35723), (51, 35687), (104, 35405), (109, 35378),

Gene: Blue7\_58 Start: 35991, Stop: 35299, Start Num: 9

Candidate Starts for Blue7\_58:

(Start: 9 @35991 has 76 MA's), (24, 35940), (46, 35805), (51, 35769), (62, 35664), (102, 35499), (103, 35496), (104, 35487), (109, 35460), (119, 35334),

Gene: BlueBird\_56 Start: 36750, Stop: 36073, Start Num: 10

Candidate Starts for BlueBird\_56:

(Start: 10 @36750 has 163 MA's), (22, 36729), (25, 36723), (37, 36642), (39, 36633), (44, 36606), (46, 36597), (50, 36567), (55, 36492), (78, 36354), (80, 36333), (83, 36324), (86, 36291), (87, 36288), (104, 36201), (112, 36141), (118, 36084),

Gene: Bluefalcon\_46 Start: 35852, Stop: 35226, Start Num: 16

Candidate Starts for Bluefalcon\_46:

(Start: 11 @35864 has 8 MA's), (Start: 16 @35852 has 44 MA's), (23, 35834), (33, 35759), (46, 35696), (55, 35591), (56, 35582), (66, 35522), (69, 35510), (91, 35432), (104, 35369),

Gene: BobbyDazzler\_43 Start: 32875, Stop: 32285, Start Num: 10

Candidate Starts for BobbyDazzler\_43:

(Start: 10 @32875 has 163 MA's), (Start: 13 @32857 has 20 MA's), (26, 32827), (27, 32824), (45, 32710), (53, 32626), (55, 32599), (71, 32533), (73, 32524), (101, 32404), (104, 32383), (110, 32344),

Gene: BogosyJay\_54 Start: 36720, Stop: 36055, Start Num: 9

Candidate Starts for BogosyJay\_54:

(Start: 9 @36720 has 76 MA's), (25, 36669), (29, 36645), (35, 36597), (38, 36582), (44, 36552), (46, 36543), (55, 36438), (56, 36429), (64, 36390), (69, 36357), (75, 36348), (77, 36339), (99, 36246), (104, 36216),

Gene: Bonamassa\_47 Start: 35693, Stop: 35070, Start Num: 16

Candidate Starts for Bonamassa\_47:

(1, 36311), (2, 36254), (3, 36044), (Start: 11 @35705 has 8 MA's), (Start: 16 @35693 has 44 MA's), (33, 35603), (46, 35540), (55, 35435), (56, 35426), (58, 35417), (66, 35366), (69, 35354), (75, 35345), (96, 35252), (104, 35213), (113, 35150),

Gene: Bonanza\_43 Start: 32803, Stop: 32213, Start Num: 10

Candidate Starts for Bonanza\_43:

(Start: 10 @32803 has 163 MA's), (Start: 13 @32785 has 20 MA's), (26, 32755), (27, 32752), (45, 32638), (53, 32554), (55, 32527), (71, 32461), (73, 32452), (85, 32404), (101, 32332), (104, 32311), (110, 32272),

Gene: Boohoo\_59 Start: 35907, Stop: 35335, Start Num: 13

Candidate Starts for Boohoo\_59:

(7, 35958), (Start: 8 @35946 has 1 MA's), (Start: 13 @35907 has 20 MA's), (20, 35892), (45, 35754), (61, 35610), (87, 35508), (101, 35442), (104, 35421), (115, 35358),

Gene: Bradshaw\_43 Start: 32829, Stop: 32239, Start Num: 10

Candidate Starts for Bradshaw\_43:

(Start: 10 @32829 has 163 MA's), (Start: 13 @32811 has 20 MA's), (26, 32781), (27, 32778), (45, 32664), (53, 32580), (55, 32553), (71, 32487), (73, 32478), (85, 32430), (101, 32358), (104, 32337), (110, 32298),

Gene: BreSam8\_57 Start: 36925, Stop: 36203, Start Num: 10

Candidate Starts for BreSam8\_57:

(Start: 10 @36925 has 163 MA's), (Start: 41 @36784 has 1 MA's), (51, 36730), (63, 36616), (83, 36499), (86, 36466), (87, 36463), (97, 36412), (101, 36397), (104, 36376), (116, 36289),

Gene: Bryce\_42 Start: 32583, Stop: 31993, Start Num: 10

Candidate Starts for Bryce\_42:

(Start: 10 @32583 has 163 MA's), (Start: 13 @32565 has 20 MA's), (26, 32535), (27, 32532), (45, 32418), (53, 32334), (55, 32307), (71, 32241), (73, 32232), (85, 32184), (101, 32112), (104, 32091), (110, 32052),

Gene: Bugatti\_55 Start: 36750, Stop: 36073, Start Num: 10

Candidate Starts for Bugatti\_55:

(Start: 10 @36750 has 163 MA's), (22, 36729), (25, 36723), (37, 36642), (39, 36633), (44, 36606), (46, 36597), (50, 36567), (55, 36492), (78, 36354), (80, 36333), (83, 36324), (86, 36291), (87, 36288), (104, 36201), (112, 36141), (118, 36084),

Gene: BuzzBuzz\_55 Start: 36959, Stop: 36237, Start Num: 10

Candidate Starts for BuzzBuzz\_55:

(Start: 10 @36959 has 163 MA's), (Start: 41 @36818 has 1 MA's), (51, 36764), (87, 36497), (104, 36410), (116, 36323),

Gene: Bxz2\_53 Start: 36825, Stop: 36244, Start Num: 41

Candidate Starts for Bxz2\_53:

(Start: 10 @36966 has 163 MA's), (Start: 41 @36825 has 1 MA's), (51, 36771), (87, 36504), (104, 36417), (116, 36330),

Gene: Candra\_56 Start: 35831, Stop: 35163, Start Num: 9

Candidate Starts for Candra\_56:

(Start: 9 @35831 has 76 MA's), (24, 35780), (46, 35645), (51, 35609), (104, 35327), (109, 35300),

Gene: Catalina\_56 Start: 36908, Stop: 36243, Start Num: 9

Candidate Starts for Catalina\_56:

(Start: 9 @36908 has 76 MA's), (25, 36857), (32, 36809), (35, 36785), (42, 36746), (46, 36731), (64, 36578), (69, 36545), (77, 36527), (99, 36434), (104, 36404), (112, 36344),

Gene: Caviar\_53 Start: 36706, Stop: 36002, Start Num: 10

Candidate Starts for Caviar\_53:

(Start: 10 @36706 has 163 MA's), (28, 36649), (29, 36646), (56, 36430), (65, 36382), (78, 36307), (79, 36304), (80, 36286), (102, 36166), (104, 36154),

Gene: Chadwick\_51 Start: 35516, Stop: 34851, Start Num: 11

Candidate Starts for Chadwick\_51:

(3, 35855), (Start: 11 @35516 has 8 MA's), (Start: 16 @35504 has 44 MA's), (33, 35414), (46, 35351), (55, 35246), (56, 35237), (61, 35213), (66, 35177), (69, 35165), (96, 35033), (104, 34994), (113, 34931),

Gene: Charm\_53 Start: 36613, Stop: 35912, Start Num: 9

Candidate Starts for Charm\_53:

(Start: 9 @36613 has 76 MA's), (19, 36568), (25, 36553), (31, 36508), (32, 36505), (35, 36481), (37, 36472), (38, 36466), (46, 36427), (55, 36322), (64, 36274), (69, 36241), (91, 36163), (98, 36133), (104, 36100), (109, 36073), (119, 35947),

Gene: Chartreuse\_55 Start: 35191, Stop: 34523, Start Num: 9

Candidate Starts for Chartreuse\_55:

(Start: 9 @35191 has 76 MA's), (24, 35140), (46, 35005), (51, 34969), (104, 34687), (109, 34660),

Gene: Chiqui\_52 Start: 36748, Stop: 36050, Start Num: 10

Candidate Starts for Chiqui\_52:

(Start: 10 @36748 has 163 MA's), (29, 36676), (31, 36655), (Start: 41 @36592 has 1 MA's), (51, 36538), (55, 36469), (78, 36331), (80, 36310), (83, 36301), (86, 36268), (104, 36178), (112, 36118), (118, 36061),

Gene: Chupacabra\_51 Start: 36238, Stop: 35528, Start Num: 10

Candidate Starts for Chupacabra\_51:

(Start: 10 @36238 has 163 MA's), (29, 36187), (31, 36166), (37, 36130), (46, 36085), (47, 36076), (59, 35959), (70, 35893), (104, 35695),

Gene: CloudWang3\_57 Start: 35979, Stop: 35311, Start Num: 9

Candidate Starts for CloudWang3\_57:

(Start: 9 @35979 has 76 MA's), (24, 35928), (46, 35793), (51, 35757), (104, 35475), (109, 35448),

Gene: Colbster\_57 Start: 36935, Stop: 36213, Start Num: 10

Candidate Starts for Colbster\_57:

(Start: 10 @36935 has 163 MA's), (Start: 41 @36794 has 1 MA's), (51, 36740), (63, 36626), (83, 36509), (86, 36476), (87, 36473), (97, 36422), (101, 36407), (104, 36386), (116, 36299),

Gene: Conquerage\_55 Start: 36979, Stop: 36314, Start Num: 9

Candidate Starts for Conquerage\_55:

(Start: 9 @36979 has 76 MA's), (25, 36928), (32, 36880), (35, 36856), (42, 36817), (46, 36802), (64, 36649), (69, 36616), (77, 36598), (99, 36505), (104, 36475), (112, 36415),

Gene: Conspiracy\_47 Start: 35519, Stop: 34893, Start Num: 16

Candidate Starts for Conspiracy\_47:

(Start: 11 @35531 has 8 MA's), (Start: 16 @35519 has 44 MA's), (23, 35501), (33, 35426), (Start: 41 @35381 has 1 MA's), (46, 35363), (66, 35189), (69, 35177), (104, 35036), (113, 34973),

Gene: Coog\_46 Start: 35677, Stop: 35054, Start Num: 16

Candidate Starts for Coog\_46:

(1, 36295), (2, 36238), (Start: 11 @35689 has 8 MA's), (Start: 16 @35677 has 44 MA's), (33, 35587), (46, 35524), (55, 35419), (56, 35410), (58, 35401), (66, 35350), (69, 35338), (75, 35329), (91, 35260), (104, 35197), (113, 35134),

Gene: Cookiedough\_56 Start: 35810, Stop: 35142, Start Num: 9

Candidate Starts for Cookiedough\_56:

(Start: 9 @35810 has 76 MA's), (24, 35759), (46, 35624), (51, 35588), (104, 35306), (109, 35279),

Gene: CosmicSans\_43 Start: 32829, Stop: 32239, Start Num: 10

Candidate Starts for CosmicSans\_43:

(Start: 10 @32829 has 163 MA's), (Start: 13 @32811 has 20 MA's), (26, 32781), (27, 32778), (45, 32664), (53, 32580), (55, 32553), (71, 32487), (73, 32478), (85, 32430), (101, 32358), (104, 32337), (110, 32298),

Gene: Cuco\_47 Start: 35561, Stop: 34926, Start Num: 11

Candidate Starts for Cuco\_47:

(Start: 11 @35561 has 8 MA's), (Start: 16 @35549 has 44 MA's), (33, 35459), (46, 35396), (55, 35291), (56, 35282), (66, 35222), (69, 35210), (75, 35201), (104, 35069), (113, 35006),

Gene: Cullens\_57 Start: 36931, Stop: 36209, Start Num: 10

Candidate Starts for Cullens\_57:

(Start: 10 @36931 has 163 MA's), (Start: 41 @36790 has 1 MA's), (51, 36736), (63, 36622), (83, 36505), (86, 36472), (87, 36469), (97, 36418), (101, 36403), (104, 36382), (116, 36295),

Gene: DaHudson\_57 Start: 36924, Stop: 36202, Start Num: 10

Candidate Starts for DaHudson\_57:

(Start: 10 @36924 has 163 MA's), (Start: 41 @36783 has 1 MA's), (51, 36729), (63, 36615), (83, 36498), (86, 36465), (87, 36462), (97, 36411), (101, 36396), (104, 36375), (116, 36288),

Gene: DaVinci\_55 Start: 35245, Stop: 34577, Start Num: 9

Candidate Starts for DaVinci\_55:

(Start: 9 @35245 has 76 MA's), (24, 35194), (46, 35059), (51, 35023), (104, 34741), (109, 34714),



Gene: Daishi\_56 Start: 35800, Stop: 35078, Start Num: 10

Candidate Starts for Daishi\_56:

(Start: 10 @35800 has 163 MA's), (Start: 41 @35659 has 1 MA's), (51, 35605), (87, 35338), (104, 35251), (116, 35164),

Gene: Danforth\_52 Start: 35227, Stop: 34604, Start Num: 16

Candidate Starts for Danforth\_52:

(Start: 16 @35227 has 44 MA's), (31, 35155), (44, 35083), (51, 35038), (64, 34921), (68, 34891), (89, 34822), (91, 34810), (104, 34747), (105, 34738),

Gene: Darrell\_57 Start: 37605, Stop: 36931, Start Num: 9

Candidate Starts for Darrell\_57:

(Start: 9 @37605 has 76 MA's), (19, 37560), (25, 37545), (33, 37482), (34, 37479), (35, 37473), (38, 37458), (46, 37419), (56, 37305), (69, 37233), (77, 37215), (90, 37158), (104, 37089),

Gene: DekHockey33\_60 Start: 36199, Stop: 35627, Start Num: 13

Candidate Starts for DekHockey33\_60:

(7, 36250), (Start: 8 @36238 has 1 MA's), (Start: 13 @36199 has 20 MA's), (20, 36184), (45, 36046), (61, 35902), (87, 35800), (101, 35734), (104, 35713), (115, 35650),

Gene: Dieselweasel\_58 Start: 36934, Stop: 36212, Start Num: 10

Candidate Starts for Dieselweasel\_58:

(Start: 10 @36934 has 163 MA's), (Start: 41 @36793 has 1 MA's), (51, 36739), (63, 36625), (83, 36508), (86, 36475), (87, 36472), (97, 36421), (98, 36418), (101, 36406), (104, 36385), (116, 36298),

Gene: Dinger\_42 Start: 32698, Stop: 32108, Start Num: 10

Candidate Starts for Dinger\_42:

(Start: 10 @32698 has 163 MA's), (Start: 13 @32680 has 20 MA's), (26, 32650), (27, 32647), (39, 32563), (Start: 41 @32545 has 1 MA's), (53, 32449), (55, 32422), (56, 32413), (71, 32356), (73, 32347), (85, 32299), (89, 32281), (92, 32266), (96, 32245), (104, 32206), (110, 32167),

Gene: Discoknowium\_45 Start: 35186, Stop: 34560, Start Num: 16

Candidate Starts for Discoknowium\_45:

(Start: 11 @35198 has 8 MA's), (Start: 16 @35186 has 44 MA's), (23, 35168), (33, 35093), (Start: 41 @35048 has 1 MA's), (46, 35030), (66, 34856), (69, 34844), (104, 34703), (113, 34640),

Gene: Dixon\_52 Start: 35052, Stop: 34399, Start Num: 16

Candidate Starts for Dixon\_52:

(Start: 16 @35052 has 44 MA's), (29, 35001), (31, 34980), (39, 34935), (Start: 41 @34917 has 1 MA's), (46, 34899), (55, 34794), (56, 34785), (68, 34716), (69, 34713), (104, 34542), (106, 34524),

Gene: DontArgue\_51 Start: 35412, Stop: 34678, Start Num: 10

Candidate Starts for DontArgue\_51:

(Start: 10 @35412 has 163 MA's), (30, 35331), (33, 35298), (51, 35199), (70, 35043), (104, 34845), (120, 34689),

Gene: Dorothea\_56 Start: 35814, Stop: 35146, Start Num: 9

Candidate Starts for Dorothea\_56:

(Start: 9 @35814 has 76 MA's), (24, 35763), (46, 35628), (51, 35592), (104, 35310), (109, 35283),

Gene: Drake94\_50 Start: 35473, Stop: 34739, Start Num: 10

Candidate Starts for Drake94\_50:

(Start: 10 @35473 has 163 MA's), (31, 35377), (Start: 41 @35314 has 1 MA's), (45, 35302), (51, 35260), (70, 35104), (74, 35074), (96, 34945), (97, 34942), (104, 34906),

Gene: DreamTeam1\_53 Start: 36445, Stop: 35768, Start Num: 9

Candidate Starts for DreamTeam1\_53:

(Start: 9 @36445 has 76 MA's), (19, 36400), (25, 36385), (46, 36259), (56, 36145), (64, 36106), (69, 36073), (77, 36055), (104, 35929),

Gene: DropBear\_54 Start: 36646, Stop: 35945, Start Num: 10

Candidate Starts for DropBear\_54:

(Start: 10 @36646 has 163 MA's), (29, 36574), (31, 36553), (Start: 41 @36490 has 1 MA's), (51, 36436), (55, 36367), (75, 36238), (78, 36226), (80, 36205), (83, 36196), (86, 36163), (104, 36073), (112, 36013), (118, 35956),

Gene: Dublin\_47 Start: 35688, Stop: 35062, Start Num: 16

Candidate Starts for Dublin\_47:

(2, 36249), (3, 36039), (Start: 11 @35700 has 8 MA's), (Start: 16 @35688 has 44 MA's), (23, 35670), (33, 35595), (46, 35532), (55, 35427), (56, 35418), (66, 35358), (69, 35346), (75, 35337), (96, 35244), (104, 35205),

Gene: DustyMartin\_56 Start: 36313, Stop: 35600, Start Num: 10

Candidate Starts for DustyMartin\_56:

(Start: 10 @36313 has 163 MA's), (29, 36259), (37, 36202), (46, 36157), (47, 36148), (70, 35965), (94, 35818), (104, 35767), (112, 35707),

Gene: Eaglepride\_53 Start: 36302, Stop: 35592, Start Num: 10

Candidate Starts for Eaglepride\_53:

(Start: 10 @36302 has 163 MA's), (29, 36251), (31, 36230), (46, 36149), (47, 36140), (74, 35927), (104, 35759),

Gene: Edison31\_51 Start: 36241, Stop: 35531, Start Num: 10

Candidate Starts for Edison31\_51:

(Start: 10 @36241 has 163 MA's), (29, 36190), (37, 36133), (46, 36088), (47, 36079), (50, 36058), (51, 36052), (70, 35896), (84, 35794), (104, 35698),

Gene: EdogawaKiddo\_53 Start: 36956, Stop: 36291, Start Num: 9

Candidate Starts for EdogawaKiddo\_53:

(Start: 9 @36956 has 76 MA's), (25, 36905), (32, 36857), (35, 36833), (42, 36794), (46, 36779), (64, 36626), (69, 36593), (77, 36575), (99, 36482), (104, 36452), (112, 36392),

Gene: Eidsmoe\_55 Start: 36971, Stop: 36306, Start Num: 9

Candidate Starts for Eidsmoe\_55:

(Start: 9 @36971 has 76 MA's), (25, 36920), (32, 36872), (35, 36848), (42, 36809), (46, 36794), (64, 36641), (69, 36608), (77, 36590), (99, 36497), (104, 36467), (112, 36407),

Gene: EITiger69\_50 Start: 35645, Stop: 35022, Start Num: 16

Candidate Starts for EITiger69\_50:

(Start: 11 @35657 has 8 MA's), (Start: 16 @35645 has 44 MA's), (33, 35555), (46, 35492), (55, 35387), (56, 35378), (66, 35318), (69, 35306), (75, 35297), (90, 35231), (104, 35165), (113, 35102),

Gene: Elephantoon\_54 Start: 36347, Stop: 35676, Start Num: 9

Candidate Starts for Elephantoon\_54:

(Start: 9 @36347 has 76 MA's), (19, 36302), (25, 36287), (32, 36239), (35, 36215), (38, 36200), (46, 36161), (56, 36047), (64, 36008), (66, 35987), (69, 35975), (77, 35957), (104, 35834), (111, 35777),

Gene: EmyBug\_54 Start: 36973, Stop: 36308, Start Num: 9

Candidate Starts for EmyBug\_54:

(Start: 9 @36973 has 76 MA's), (25, 36922), (32, 36874), (35, 36850), (42, 36811), (46, 36796), (64, 36643), (69, 36610), (77, 36592), (99, 36499), (104, 36469), (112, 36409),

Gene: EpicPhail\_58 Start: 36935, Stop: 36213, Start Num: 10

Candidate Starts for EpicPhail\_58:

(Start: 10 @36935 has 163 MA's), (Start: 41 @36794 has 1 MA's), (51, 36740), (63, 36626), (83, 36509), (86, 36476), (87, 36473), (97, 36422), (101, 36407), (104, 36386), (116, 36299),

Gene: Epsocamisio\_57 Start: 35442, Stop: 34870, Start Num: 13

Candidate Starts for Epsocamisio\_57:

(7, 35493), (Start: 8 @35481 has 1 MA's), (Start: 13 @35442 has 20 MA's), (20, 35427), (45, 35289), (61, 35145), (87, 35043), (101, 34977), (104, 34956), (115, 34893),

Gene: EricB\_56 Start: 35788, Stop: 35120, Start Num: 9

Candidate Starts for EricB\_56:

(Start: 9 @35788 has 76 MA's), (24, 35737), (46, 35602), (51, 35566), (104, 35284), (109, 35257),

Gene: Erik\_43 Start: 32761, Stop: 32171, Start Num: 10

Candidate Starts for Erik\_43:

(Start: 10 @32761 has 163 MA's), (Start: 13 @32743 has 20 MA's), (26, 32713), (27, 32710), (45, 32596), (53, 32512), (55, 32485), (71, 32419), (73, 32410), (85, 32362), (101, 32290), (104, 32269), (110, 32230),

Gene: Espica\_43 Start: 32762, Stop: 32172, Start Num: 10

Candidate Starts for Espica\_43:

(Start: 10 @32762 has 163 MA's), (Start: 13 @32744 has 20 MA's), (26, 32714), (27, 32711), (45, 32597), (53, 32513), (55, 32486), (71, 32420), (73, 32411), (85, 32363), (101, 32291), (104, 32270), (110, 32231),

Gene: Expelliarmus\_52 Start: 35256, Stop: 34633, Start Num: 16

Candidate Starts for Expelliarmus\_52:

(Start: 16 @35256 has 44 MA's), (31, 35184), (44, 35112), (51, 35067), (64, 34950), (68, 34920), (104, 34776), (105, 34767),

Gene: ExplosioNervosa\_55 Start: 37039, Stop: 36374, Start Num: 9

Candidate Starts for ExplosioNervosa\_55:

(Start: 9 @37039 has 76 MA's), (25, 36988), (32, 36940), (35, 36916), (42, 36877), (46, 36862), (64, 36709), (69, 36676), (77, 36658), (99, 36565), (104, 36535), (112, 36475),

Gene: Farber\_57 Start: 36921, Stop: 36199, Start Num: 10

Candidate Starts for Farber\_57:

(Start: 10 @36921 has 163 MA's), (Start: 41 @36780 has 1 MA's), (51, 36726), (87, 36459), (104, 36372), (116, 36285),

Gene: Fayely\_55 Start: 36940, Stop: 36275, Start Num: 9

Candidate Starts for Fayely\_55:

(Start: 9 @36940 has 76 MA's), (25, 36889), (32, 36841), (35, 36817), (42, 36778), (46, 36763), (64, 36610), (69, 36577), (77, 36559), (99, 36466), (104, 36436), (112, 36376),

Gene: Fernando\_57 Start: 36931, Stop: 36209, Start Num: 10

Candidate Starts for Fernando\_57:

(Start: 10 @36931 has 163 MA's), (Start: 41 @36790 has 1 MA's), (51, 36736), (63, 36622), (83, 36505), (86, 36472), (87, 36469), (97, 36418), (101, 36403), (104, 36382), (116, 36295),

Gene: ForGetIt\_47 Start: 35544, Stop: 34918, Start Num: 16

Candidate Starts for ForGetIt\_47:

(Start: 11 @35556 has 8 MA's), (Start: 16 @35544 has 44 MA's), (23, 35526), (33, 35451), (Start: 41 @35406 has 1 MA's), (46, 35388), (66, 35214), (69, 35202), (104, 35061), (113, 34998),

Gene: Fred313\_54 Start: 36337, Stop: 35636, Start Num: 10

Candidate Starts for Fred313\_54:

(Start: 10 @36337 has 163 MA's), (29, 36265), (31, 36244), (Start: 41 @36181 has 1 MA's), (51, 36127), (55, 36058), (75, 35929), (78, 35917), (80, 35896), (83, 35887), (86, 35854), (104, 35764), (112, 35704), (118, 35647),

Gene: Garak\_59 Start: 36258, Stop: 35590, Start Num: 9

Candidate Starts for Garak\_59:

(Start: 9 @36258 has 76 MA's), (24, 36207), (46, 36072), (51, 36036), (104, 35754), (109, 35727),

Gene: GaugeLDP\_52 Start: 37028, Stop: 36396, Start Num: 16

Candidate Starts for GaugeLDP\_52:

(5, 37256), (6, 37217), (Start: 8 @37073 has 1 MA's), (Start: 16 @37028 has 44 MA's), (21, 37019), (29, 36983), (31, 36962), (44, 36890), (46, 36881), (58, 36758), (73, 36659), (76, 36647), (77, 36641), (80, 36617), (82, 36611), (83, 36608), (86, 36575), (100, 36512), (102, 36497), (104, 36485),

Gene: Gemma\_56 Start: 36817, Stop: 36095, Start Num: 10

Candidate Starts for Gemma\_56:

(Start: 10 @36817 has 163 MA's), (38, 36697), (Start: 41 @36676 has 1 MA's), (51, 36622), (86, 36358), (104, 36268), (116, 36181),

Gene: George\_45 Start: 35596, Stop: 34973, Start Num: 16

Candidate Starts for George\_45:

(Start: 11 @35608 has 8 MA's), (Start: 16 @35596 has 44 MA's), (33, 35506), (46, 35443), (66, 35269), (69, 35257), (104, 35116), (113, 35053),

Gene: Ghouboy\_50 Start: 36423, Stop: 35797, Start Num: 16

Candidate Starts for Ghouboy\_50:

(Start: 11 @36435 has 8 MA's), (Start: 16 @36423 has 44 MA's), (23, 36405), (33, 36330), (46, 36267), (55, 36162), (56, 36153), (66, 36093), (69, 36081), (91, 36003), (104, 35940),

Gene: GingkoMaracino\_57 Start: 36817, Stop: 36095, Start Num: 10

Candidate Starts for GingkoMaracino\_57:

(Start: 10 @36817 has 163 MA's), (Start: 41 @36676 has 1 MA's), (51, 36622), (63, 36508), (83, 36391), (86, 36358), (87, 36355), (97, 36304), (101, 36289), (104, 36268), (116, 36181),

Gene: Giroux\_55 Start: 36749, Stop: 36072, Start Num: 10

Candidate Starts for Giroux\_55:

(Start: 10 @36749 has 163 MA's), (22, 36728), (25, 36722), (37, 36641), (39, 36632), (44, 36605), (46, 36596), (50, 36566), (55, 36491), (78, 36353), (80, 36332), (83, 36323), (86, 36290), (87, 36287), (104, 36200), (112, 36140), (118, 36083),

Gene: Gladiator\_54 Start: 35489, Stop: 34821, Start Num: 9

Candidate Starts for Gladiator\_54:

(Start: 9 @35489 has 76 MA's), (24, 35438), (46, 35303), (51, 35267), (62, 35162), (102, 34997), (103, 34994), (104, 34985), (109, 34958),

Gene: Gollum\_43 Start: 32827, Stop: 32237, Start Num: 10

Candidate Starts for Gollum\_43:

(Start: 10 @32827 has 163 MA's), (Start: 13 @32809 has 20 MA's), (26, 32779), (27, 32776), (45, 32662), (53, 32578), (55, 32551), (71, 32485), (73, 32476), (85, 32428), (101, 32356), (104, 32335), (110, 32296),

Gene: Goose\_52 Start: 36054, Stop: 35341, Start Num: 10

Candidate Starts for Goose\_52:

(Start: 10 @36054 has 163 MA's), (29, 36000), (31, 35979), (46, 35898), (47, 35889), (55, 35793), (70, 35706), (86, 35598), (96, 35547), (104, 35508),

Gene: GreedyLawyer\_56 Start: 35795, Stop: 35127, Start Num: 9

Candidate Starts for GreedyLawyer\_56:

(Start: 9 @35795 has 76 MA's), (24, 35744), (46, 35609), (51, 35573), (104, 35291), (109, 35264),

Gene: Grif\_57 Start: 37006, Stop: 36284, Start Num: 10

Candidate Starts for Grif\_57:

(Start: 10 @37006 has 163 MA's), (Start: 41 @36865 has 1 MA's), (51, 36811), (63, 36697), (83, 36580), (86, 36547), (87, 36544), (97, 36493), (101, 36478), (104, 36457), (116, 36370),

Gene: Groundhog\_51 Start: 35142, Stop: 34531, Start Num: 16

Candidate Starts for Groundhog\_51:

(Start: 16 @35142 has 44 MA's), (31, 35070), (44, 34998), (46, 34989), (67, 34812), (69, 34803), (87, 34749), (104, 34674), (106, 34656),

Gene: Groupthink\_58 Start: 36821, Stop: 36099, Start Num: 10

Candidate Starts for Groupthink\_58:

(Start: 10 @36821 has 163 MA's), (Start: 41 @36680 has 1 MA's), (51, 36626), (63, 36512), (86, 36362), (104, 36272), (116, 36185),

Gene: Grub\_57 Start: 36923, Stop: 36201, Start Num: 10

Candidate Starts for Grub\_57:

(Start: 10 @36923 has 163 MA's), (Start: 41 @36782 has 1 MA's), (51, 36728), (63, 36614), (83, 36497), (86, 36464), (87, 36461), (97, 36410), (101, 36395), (104, 36374), (116, 36287),

Gene: Grum1\_57 Start: 36931, Stop: 36209, Start Num: 10

Candidate Starts for Grum1\_57:

(Start: 10 @36931 has 163 MA's), (Start: 41 @36790 has 1 MA's), (51, 36736), (63, 36622), (83, 36505), (86, 36472), (87, 36469), (97, 36418), (101, 36403), (104, 36382), (116, 36295),

Gene: Gruunaga\_57 Start: 36188, Stop: 35520, Start Num: 9

Candidate Starts for Gruunaga\_57:

(Start: 9 @36188 has 76 MA's), (24, 36137), (46, 36002), (51, 35966), (62, 35861), (102, 35696), (103, 35693), (104, 35684), (109, 35657),

Gene: GtownJaz\_57 Start: 36933, Stop: 36211, Start Num: 10

Candidate Starts for GtownJaz\_57:

(Start: 10 @36933 has 163 MA's), (Start: 41 @36792 has 1 MA's), (51, 36738), (63, 36624), (83, 36507), (86, 36474), (87, 36471), (97, 36420), (101, 36405), (104, 36384), (116, 36297),

Gene: Hammer\_57 Start: 35795, Stop: 35103, Start Num: 9

Candidate Starts for Hammer\_57:

(Start: 9 @35795 has 76 MA's), (24, 35744), (46, 35609), (51, 35573), (62, 35468), (102, 35303), (103, 35300), (104, 35291), (109, 35264), (119, 35138),

Gene: Hanray\_53 Start: 36960, Stop: 36295, Start Num: 9

Candidate Starts for Hanray\_53:

(Start: 9 @36960 has 76 MA's), (25, 36909), (32, 36861), (35, 36837), (42, 36798), (46, 36783), (64, 36630), (69, 36597), (77, 36579), (99, 36486), (104, 36456), (112, 36396),

Gene: Harlequin\_42 Start: 32613, Stop: 32023, Start Num: 10

Candidate Starts for Harlequin\_42:

(Start: 10 @32613 has 163 MA's), (Start: 13 @32595 has 20 MA's), (26, 32565), (27, 32562), (45, 32448), (53, 32364), (55, 32337), (71, 32271), (73, 32262), (85, 32214), (101, 32142), (104, 32121), (110, 32082),

Gene: HashRod\_58 Start: 36959, Stop: 36237, Start Num: 10

Candidate Starts for HashRod\_58:

(Start: 10 @36959 has 163 MA's), (Start: 41 @36818 has 1 MA's), (51, 36764), (63, 36650), (87, 36497), (104, 36410), (116, 36323),

Gene: HaveUMetTed\_58 Start: 36806, Stop: 36084, Start Num: 10

Candidate Starts for HaveUMetTed\_58:

(Start: 10 @36806 has 163 MA's), (Start: 41 @36665 has 1 MA's), (51, 36611), (63, 36497), (86, 36347), (104, 36257), (116, 36170),

Gene: Heathen\_54 Start: 36435, Stop: 35734, Start Num: 10

Candidate Starts for Heathen\_54:

(Start: 10 @36435 has 163 MA's), (29, 36363), (31, 36342), (Start: 41 @36279 has 1 MA's), (51, 36225), (55, 36156), (75, 36027), (78, 36015), (80, 35994), (83, 35985), (86, 35952), (104, 35862), (112, 35802), (118, 35745),

Gene: HelDan\_54 Start: 36651, Stop: 35950, Start Num: 10

Candidate Starts for HelDan\_54:

(Start: 10 @36651 has 163 MA's), (29, 36579), (31, 36558), (Start: 41 @36495 has 1 MA's), (51, 36441), (55, 36372), (75, 36243), (78, 36231), (80, 36210), (83, 36201), (86, 36168), (104, 36078), (112, 36018), (118, 35961),

Gene: Heliosoles\_56 Start: 36824, Stop: 36102, Start Num: 10

Candidate Starts for Heliosoles\_56:

(Start: 10 @36824 has 163 MA's), (Start: 41 @36683 has 1 MA's), (51, 36629), (63, 36515), (86, 36365), (104, 36275), (116, 36188),

Gene: Helmet\_59 Start: 36258, Stop: 35590, Start Num: 9

Candidate Starts for Helmet\_59:

(Start: 9 @36258 has 76 MA's), (24, 36207), (46, 36072), (51, 36036), (104, 35754), (109, 35727),

Gene: Herbertwm\_53 Start: 36479, Stop: 35799, Start Num: 8

Candidate Starts for Herbertwm\_53:

(Start: 8 @36479 has 1 MA's), (12, 36443), (29, 36395), (31, 36374), (46, 36293), (73, 36071), (77, 36053), (104, 35897), (114, 35834),

Gene: Hercules11\_57 Start: 36940, Stop: 36218, Start Num: 10

Candidate Starts for Hercules11\_57:

(Start: 10 @36940 has 163 MA's), (Start: 41 @36799 has 1 MA's), (51, 36745), (63, 36631), (83, 36514), (86, 36481), (87, 36478), (97, 36427), (101, 36412), (104, 36391), (116, 36304),

Gene: Hexamo\_57 Start: 35888, Stop: 35220, Start Num: 9

Candidate Starts for Hexamo\_57:

(Start: 9 @35888 has 76 MA's), (24, 35837), (46, 35702), (51, 35666), (104, 35384), (109, 35357),

Gene: Hiro\_43 Start: 33089, Stop: 32499, Start Num: 10

Candidate Starts for Hiro\_43:

(Start: 10 @33089 has 163 MA's), (Start: 13 @33071 has 20 MA's), (26, 33041), (27, 33038), (45, 32924), (53, 32840), (55, 32813), (71, 32747), (73, 32738), (85, 32690), (101, 32618), (104, 32597), (110, 32558),

Gene: Horex\_54 Start: 36976, Stop: 36311, Start Num: 9

Candidate Starts for Horex\_54:

(Start: 9 @36976 has 76 MA's), (25, 36925), (32, 36877), (35, 36853), (42, 36814), (46, 36799), (64, 36646), (69, 36613), (77, 36595), (99, 36502), (104, 36472), (112, 36412),

Gene: Hookmount\_53 Start: 36707, Stop: 36003, Start Num: 10

Candidate Starts for Hookmount\_53:

(Start: 10 @36707 has 163 MA's), (28, 36650), (29, 36647), (56, 36431), (65, 36383), (78, 36308), (79, 36305), (80, 36287), (102, 36167), (104, 36155),

Gene: Hoot\_51 Start: 33646, Stop: 32978, Start Num: 9

Candidate Starts for Hoot\_51:

(Start: 9 @33646 has 76 MA's), (24, 33595), (46, 33460), (51, 33424), (104, 33142), (109, 33115),

Gene: HortumSL17\_55 Start: 36907, Stop: 36242, Start Num: 9

Candidate Starts for HortumSL17\_55:

(Start: 9 @36907 has 76 MA's), (25, 36856), (32, 36808), (35, 36784), (42, 36745), (46, 36730), (64, 36577), (69, 36544), (77, 36526), (99, 36433), (104, 36403), (112, 36343),

Gene: HuhtaEnerson15\_47 Start: 35587, Stop: 34964, Start Num: 16

Candidate Starts for HuhtaEnerson15\_47:

(1, 36205), (2, 36148), (Start: 11 @35599 has 8 MA's), (Start: 16 @35587 has 44 MA's), (33, 35497), (46, 35434), (69, 35248), (104, 35107), (113, 35044),

Gene: Ibantik\_29 Start: 14780, Stop: 14223, Start Num: 13

Candidate Starts for Ibantik\_29:

(Start: 13 @14780 has 20 MA's), (33, 14681), (36, 14666), (37, 14663), (48, 14597), (54, 14540), (88, 14333), (89, 14327), (104, 14252),

Gene: Idleandcovert\_55 Start: 36750, Stop: 36073, Start Num: 10

Candidate Starts for Idleandcovert\_55:

(Start: 10 @36750 has 163 MA's), (22, 36729), (25, 36723), (37, 36642), (39, 36633), (44, 36606), (46, 36597), (50, 36567), (55, 36492), (78, 36354), (80, 36333), (83, 36324), (86, 36291), (87, 36288), (104, 36201), (112, 36141), (118, 36084),

Gene: Indra\_60 Start: 36259, Stop: 35591, Start Num: 9  
Candidate Starts for Indra\_60:  
(Start: 9 @36259 has 76 MA's), (24, 36208), (46, 36073), (51, 36037), (104, 35755), (109, 35728),

Gene: Isca\_53 Start: 36217, Stop: 35516, Start Num: 10  
Candidate Starts for Isca\_53:  
(Start: 10 @36217 has 163 MA's), (29, 36145), (31, 36124), (Start: 41 @36061 has 1 MA's), (51, 36007), (55, 35938), (78, 35797), (80, 35776), (83, 35767), (86, 35734), (104, 35644), (112, 35584), (118, 35527),

Gene: Isiphiwo\_54 Start: 35371, Stop: 34703, Start Num: 9  
Candidate Starts for Isiphiwo\_54:  
(Start: 9 @35371 has 76 MA's), (24, 35320), (46, 35185), (51, 35149), (104, 34867), (109, 34840),

Gene: JF2\_52 Start: 34918, Stop: 34217, Start Num: 10  
Candidate Starts for JF2\_52:  
(Start: 10 @34918 has 163 MA's), (29, 34846), (31, 34825), (Start: 41 @34762 has 1 MA's), (51, 34708), (55, 34639), (78, 34498), (80, 34477), (83, 34468), (86, 34435), (104, 34345), (112, 34285), (118, 34228),

Gene: JF4\_52 Start: 34918, Stop: 34217, Start Num: 10  
Candidate Starts for JF4\_52:  
(Start: 10 @34918 has 163 MA's), (29, 34846), (31, 34825), (Start: 41 @34762 has 1 MA's), (51, 34708), (55, 34639), (78, 34498), (80, 34477), (83, 34468), (86, 34435), (104, 34345), (112, 34285), (118, 34228),

Gene: JHC117\_57 Start: 36930, Stop: 36208, Start Num: 10  
Candidate Starts for JHC117\_57:  
(Start: 10 @36930 has 163 MA's), (Start: 41 @36789 has 1 MA's), (51, 36735), (63, 36621), (83, 36504), (86, 36471), (87, 36468), (97, 36417), (101, 36402), (104, 36381), (116, 36294),

Gene: JSwag\_59 Start: 35631, Stop: 35059, Start Num: 13  
Candidate Starts for JSwag\_59:  
(7, 35682), (Start: 8 @35670 has 1 MA's), (Start: 13 @35631 has 20 MA's), (20, 35616), (45, 35478), (61, 35334), (87, 35232), (101, 35166), (104, 35145), (115, 35082),

Gene: Jabiru\_49 Start: 35518, Stop: 34895, Start Num: 16  
Candidate Starts for Jabiru\_49:  
(3, 35869), (Start: 11 @35530 has 8 MA's), (Start: 16 @35518 has 44 MA's), (33, 35428), (46, 35365), (55, 35260), (56, 35251), (61, 35227), (66, 35191), (69, 35179), (75, 35170), (101, 35059), (104, 35038), (113, 34975),

Gene: Jeffabunny\_57 Start: 35885, Stop: 35217, Start Num: 9  
Candidate Starts for Jeffabunny\_57:  
(Start: 9 @35885 has 76 MA's), (24, 35834), (46, 35699), (51, 35663), (104, 35381), (109, 35354),

Gene: JenCasNa\_58 Start: 36931, Stop: 36209, Start Num: 10  
Candidate Starts for JenCasNa\_58:  
(Start: 10 @36931 has 163 MA's), (Start: 41 @36790 has 1 MA's), (51, 36736), (63, 36622), (83, 36505), (86, 36472), (87, 36469), (97, 36418), (101, 36403), (104, 36382), (116, 36295),

Gene: JeppNRM\_58 Start: 36822, Stop: 36100, Start Num: 10  
Candidate Starts for JeppNRM\_58:



(Start: 10 @36822 has 163 MA's), (Start: 41 @36681 has 1 MA's), (51, 36627), (63, 36513), (86, 36363), (104, 36273), (116, 36186),

Gene: Jester\_42 Start: 32544, Stop: 31954, Start Num: 10

Candidate Starts for Jester\_42:

(Start: 10 @32544 has 163 MA's), (Start: 13 @32526 has 20 MA's), (26, 32496), (27, 32493), (45, 32379), (53, 32295), (55, 32268), (71, 32202), (73, 32193), (85, 32145), (101, 32073), (104, 32052), (110, 32013),

Gene: JewelBug\_57 Start: 36001, Stop: 35333, Start Num: 9

Candidate Starts for JewelBug\_57:

(Start: 9 @36001 has 76 MA's), (24, 35950), (46, 35815), (51, 35779), (104, 35497), (109, 35470),

Gene: Jiawan\_53 Start: 36992, Stop: 36327, Start Num: 9

Candidate Starts for Jiawan\_53:

(Start: 9 @36992 has 76 MA's), (25, 36941), (32, 36893), (35, 36869), (42, 36830), (46, 36815), (64, 36662), (69, 36629), (77, 36611), (99, 36518), (104, 36488), (112, 36428),

Gene: Jobu08\_56 Start: 36763, Stop: 36041, Start Num: 10

Candidate Starts for Jobu08\_56:

(Start: 10 @36763 has 163 MA's), (Start: 41 @36622 has 1 MA's), (51, 36568), (63, 36454), (83, 36337), (86, 36304), (87, 36301), (97, 36250), (101, 36235), (104, 36214), (116, 36127),

Gene: Jordennis\_56 Start: 35491, Stop: 34823, Start Num: 9

Candidate Starts for Jordennis\_56:

(Start: 9 @35491 has 76 MA's), (24, 35440), (46, 35305), (51, 35269), (104, 34987), (109, 34960),

Gene: Jovo\_47 Start: 35800, Stop: 35174, Start Num: 16

Candidate Starts for Jovo\_47:

(Start: 11 @35812 has 8 MA's), (Start: 16 @35800 has 44 MA's), (23, 35782), (33, 35707), (Start: 41 @35662 has 1 MA's), (46, 35644), (66, 35470), (69, 35458), (104, 35317), (113, 35254),

Gene: KADY\_57 Start: 36959, Stop: 36237, Start Num: 10

Candidate Starts for KADY\_57:

(Start: 10 @36959 has 163 MA's), (Start: 41 @36818 has 1 MA's), (51, 36764), (87, 36497), (104, 36410), (116, 36323),

Gene: Kachowdy\_54 Start: 36687, Stop: 35986, Start Num: 10

Candidate Starts for Kachowdy\_54:

(Start: 10 @36687 has 163 MA's), (29, 36615), (31, 36594), (Start: 41 @36531 has 1 MA's), (51, 36477), (55, 36408), (75, 36279), (78, 36267), (80, 36246), (83, 36237), (86, 36204), (104, 36114), (112, 36054), (118, 35997),

Gene: Kalb97\_58 Start: 36820, Stop: 36098, Start Num: 10

Candidate Starts for Kalb97\_58:

(Start: 10 @36820 has 163 MA's), (Start: 41 @36679 has 1 MA's), (51, 36625), (63, 36511), (86, 36361), (104, 36271), (116, 36184),

Gene: Kalnoky\_58 Start: 36818, Stop: 36096, Start Num: 10

Candidate Starts for Kalnoky\_58:

(Start: 10 @36818 has 163 MA's), (Start: 41 @36677 has 1 MA's), (51, 36623), (63, 36509), (86, 36359), (104, 36269), (116, 36182),

Gene: KatherineG\_60 Start: 36104, Stop: 35532, Start Num: 13

Candidate Starts for KatherineG\_60:

(7, 36155), (Start: 8 @36143 has 1 MA's), (Start: 13 @36104 has 20 MA's), (20, 36089), (45, 35951), (61, 35807), (87, 35705), (101, 35639), (104, 35618), (115, 35555),

Gene: Kazan\_57 Start: 35801, Stop: 35133, Start Num: 9

Candidate Starts for Kazan\_57:

(Start: 9 @35801 has 76 MA's), (24, 35750), (46, 35615), (51, 35579), (104, 35297), (109, 35270),

Gene: Keziacharles14\_55 Start: 38049, Stop: 37360, Start Num: 9

Candidate Starts for Keziacharles14\_55:

(Start: 9 @38049 has 76 MA's), (19, 38013), (25, 37998), (35, 37926), (37, 37917), (38, 37911), (46, 37872), (64, 37719), (66, 37698), (69, 37686), (77, 37668), (91, 37608), (95, 37590), (98, 37578), (104, 37545), (119, 37395),

Gene: Kipper29\_56 Start: 35814, Stop: 35146, Start Num: 9

Candidate Starts for Kipper29\_56:

(Start: 9 @35814 has 76 MA's), (24, 35763), (46, 35628), (51, 35592), (104, 35310), (109, 35283),

Gene: KittenMittens\_49 Start: 35481, Stop: 34747, Start Num: 10

Candidate Starts for KittenMittens\_49:

(Start: 10 @35481 has 163 MA's), (31, 35385), (Start: 41 @35322 has 1 MA's), (45, 35310), (51, 35268), (70, 35112), (74, 35082), (96, 34953), (97, 34950), (104, 34914),

Gene: Koko\_58 Start: 36319, Stop: 35651, Start Num: 9

Candidate Starts for Koko\_58:

(Start: 9 @36319 has 76 MA's), (24, 36268), (46, 36133), (51, 36097), (104, 35815), (109, 35788),

Gene: Krishelle\_43 Start: 33189, Stop: 32599, Start Num: 10

Candidate Starts for Krishelle\_43:

(Start: 10 @33189 has 163 MA's), (Start: 13 @33171 has 20 MA's), (26, 33141), (27, 33138), (45, 33024), (53, 32940), (55, 32913), (71, 32847), (73, 32838), (85, 32790), (101, 32718), (104, 32697), (110, 32658),

Gene: Kristoff\_52 Start: 36602, Stop: 35889, Start Num: 10

Candidate Starts for Kristoff\_52:

(Start: 10 @36602 has 163 MA's), (29, 36548), (46, 36446), (47, 36437), (55, 36341), (70, 36254), (86, 36146), (96, 36095), (104, 36056),

Gene: LBerry\_58 Start: 36935, Stop: 36213, Start Num: 10

Candidate Starts for LBerry\_58:

(Start: 10 @36935 has 163 MA's), (Start: 41 @36794 has 1 MA's), (51, 36740), (63, 36626), (83, 36509), (86, 36476), (87, 36473), (97, 36422), (101, 36407), (104, 36386), (116, 36299),

Gene: Lambert1\_53 Start: 36706, Stop: 36002, Start Num: 10

Candidate Starts for Lambert1\_53:

(Start: 10 @36706 has 163 MA's), (28, 36649), (29, 36646), (56, 36430), (65, 36382), (78, 36307), (79, 36304), (80, 36286), (102, 36166), (104, 36154),

Gene: LarryKay\_57 Start: 36961, Stop: 36239, Start Num: 10

Candidate Starts for LarryKay\_57:

(Start: 10 @36961 has 163 MA's), (Start: 41 @36820 has 1 MA's), (51, 36766), (87, 36499), (104, 36412), (116, 36325),

Gene: LastResort\_58 Start: 35683, Stop: 35111, Start Num: 13

Candidate Starts for LastResort\_58:

(7, 35734), (Start: 8 @35722 has 1 MA's), (Start: 13 @35683 has 20 MA's), (20, 35668), (45, 35530), (61, 35386), (87, 35284), (101, 35218), (104, 35197), (115, 35134),

Gene: Lev2\_47 Start: 35432, Stop: 34806, Start Num: 16

Candidate Starts for Lev2\_47:

(Start: 11 @35444 has 8 MA's), (Start: 16 @35432 has 44 MA's), (23, 35414), (33, 35339), (Start: 41 @35294 has 1 MA's), (46, 35276), (66, 35102), (69, 35090), (104, 34949), (113, 34886),

Gene: Lilbunny\_56 Start: 35889, Stop: 35221, Start Num: 9

Candidate Starts for Lilbunny\_56:

(Start: 9 @35889 has 76 MA's), (24, 35838), (46, 35703), (51, 35667), (104, 35385), (109, 35358),

Gene: Lilit\_58 Start: 36924, Stop: 36202, Start Num: 10

Candidate Starts for Lilit\_58:

(Start: 10 @36924 has 163 MA's), (Start: 41 @36783 has 1 MA's), (51, 36729), (63, 36615), (83, 36498), (86, 36465), (87, 36462), (97, 36411), (101, 36396), (104, 36375), (116, 36288),

Gene: Lilleskat\_53 Start: 36909, Stop: 36244, Start Num: 9

Candidate Starts for Lilleskat\_53:

(Start: 9 @36909 has 76 MA's), (25, 36858), (32, 36810), (35, 36786), (42, 36747), (46, 36732), (64, 36579), (69, 36546), (77, 36528), (99, 36435), (104, 36405), (112, 36345),

Gene: Lillie\_43 Start: 32829, Stop: 32239, Start Num: 10

Candidate Starts for Lillie\_43:

(Start: 10 @32829 has 163 MA's), (Start: 13 @32811 has 20 MA's), (26, 32781), (27, 32778), (45, 32664), (53, 32580), (55, 32553), (71, 32487), (73, 32478), (85, 32430), (101, 32358), (104, 32337), (110, 32298),

Gene: LittleCherry\_47 Start: 35607, Stop: 34984, Start Num: 16

Candidate Starts for LittleCherry\_47:

(1, 36225), (2, 36168), (Start: 11 @35619 has 8 MA's), (Start: 16 @35607 has 44 MA's), (33, 35517), (46, 35454), (69, 35268), (104, 35127), (113, 35064),

Gene: LoneWolf\_56 Start: 36941, Stop: 36270, Start Num: 9

Candidate Starts for LoneWolf\_56:

(Start: 9 @36941 has 76 MA's), (19, 36896), (25, 36881), (33, 36818), (34, 36815), (35, 36809), (46, 36755), (51, 36719), (56, 36641), (64, 36602), (66, 36581), (69, 36569), (77, 36551), (91, 36491), (99, 36458), (104, 36428), (112, 36368),

Gene: Looper\_59 Start: 35595, Stop: 35023, Start Num: 13

Candidate Starts for Looper\_59:

(7, 35646), (Start: 8 @35634 has 1 MA's), (Start: 13 @35595 has 20 MA's), (20, 35580), (45, 35442), (61, 35298), (87, 35196), (101, 35130), (104, 35109), (115, 35046),

Gene: Louie6\_56 Start: 36960, Stop: 36238, Start Num: 10

Candidate Starts for Louie6\_56:

(Start: 10 @36960 has 163 MA's), (Start: 41 @36819 has 1 MA's), (51, 36765), (87, 36498), (104, 36411), (116, 36324),

Gene: LugYA\_60 Start: 36932, Stop: 36210, Start Num: 10

Candidate Starts for LugYA\_60:

(Start: 10 @36932 has 163 MA's), (Start: 41 @36791 has 1 MA's), (51, 36737), (63, 36623), (83, 36506), (86, 36473), (87, 36470), (97, 36419), (101, 36404), (104, 36383), (116, 36296),

Gene: MA5\_54 Start: 36100, Stop: 35402, Start Num: 10

Candidate Starts for MA5\_54:

(Start: 10 @36100 has 163 MA's), (31, 36007), (Start: 41 @35944 has 1 MA's), (51, 35890), (55, 35821), (75, 35695), (78, 35683), (80, 35662), (83, 35653), (86, 35620), (104, 35530), (112, 35470), (118, 35413),

Gene: MK4\_54 Start: 36202, Stop: 35501, Start Num: 10

Candidate Starts for MK4\_54:

(Start: 10 @36202 has 163 MA's), (29, 36130), (31, 36109), (Start: 41 @36046 has 1 MA's), (51, 35992), (55, 35923), (78, 35782), (80, 35761), (83, 35752), (86, 35719), (104, 35629), (112, 35569), (118, 35512),

Gene: MadMarie\_57 Start: 36933, Stop: 36211, Start Num: 10

Candidate Starts for MadMarie\_57:

(Start: 10 @36933 has 163 MA's), (Start: 41 @36792 has 1 MA's), (51, 36738), (63, 36624), (83, 36507), (86, 36474), (87, 36471), (97, 36420), (101, 36405), (104, 36384), (116, 36297),

Gene: Mainiac\_57 Start: 36925, Stop: 36203, Start Num: 10

Candidate Starts for Mainiac\_57:

(Start: 10 @36925 has 163 MA's), (Start: 41 @36784 has 1 MA's), (51, 36730), (63, 36616), (83, 36499), (86, 36466), (87, 36463), (97, 36412), (101, 36397), (104, 36376), (116, 36289),

Gene: Malinsilva\_59 Start: 36923, Stop: 36201, Start Num: 10

Candidate Starts for Malinsilva\_59:

(Start: 10 @36923 has 163 MA's), (Start: 41 @36782 has 1 MA's), (51, 36728), (63, 36614), (83, 36497), (86, 36464), (87, 36461), (97, 36410), (101, 36395), (104, 36374), (116, 36287),

Gene: Maminiaina\_54 Start: 36702, Stop: 36037, Start Num: 9

Candidate Starts for Maminiaina\_54:

(Start: 9 @36702 has 76 MA's), (25, 36651), (29, 36627), (35, 36579), (38, 36564), (44, 36534), (46, 36525), (55, 36420), (56, 36411), (64, 36372), (69, 36339), (75, 36330), (77, 36321), (99, 36228), (104, 36198),

Gene: Manu\_57 Start: 36821, Stop: 36099, Start Num: 10

Candidate Starts for Manu\_57:

(Start: 10 @36821 has 163 MA's), (Start: 41 @36680 has 1 MA's), (51, 36626), (63, 36512), (86, 36362), (104, 36272), (116, 36185),

Gene: MarQuardt\_57 Start: 36933, Stop: 36211, Start Num: 10

Candidate Starts for MarQuardt\_57:

(Start: 10 @36933 has 163 MA's), (Start: 41 @36792 has 1 MA's), (51, 36738), (63, 36624), (83, 36507), (86, 36474), (87, 36471), (97, 36420), (101, 36405), (104, 36384), (116, 36297),

Gene: Marchesa\_54 Start: 36637, Stop: 35936, Start Num: 10

Candidate Starts for Marchesa\_54:

(Start: 10 @36637 has 163 MA's), (29, 36565), (31, 36544), (Start: 41 @36481 has 1 MA's), (51, 36427), (55, 36358), (75, 36229), (78, 36217), (80, 36196), (83, 36187), (86, 36154), (104, 36064), (112, 36004), (118, 35947),

Gene: Margo\_53 Start: 36732, Stop: 36028, Start Num: 10

Candidate Starts for Margo\_53:

(Start: 10 @36732 has 163 MA's), (28, 36675), (29, 36672), (56, 36456), (65, 36408), (78, 36333), (79, 36330), (80, 36312), (102, 36192), (104, 36180),

Gene: Marie\_57 Start: 36931, Stop: 36209, Start Num: 10

Candidate Starts for Marie\_57:

(Start: 10 @36931 has 163 MA's), (Start: 41 @36790 has 1 MA's), (51, 36736), (63, 36622), (83, 36505), (86, 36472), (87, 36469), (97, 36418), (101, 36403), (104, 36382), (116, 36295),

Gene: Marius\_58 Start: 36818, Stop: 36096, Start Num: 10

Candidate Starts for Marius\_58:

(Start: 10 @36818 has 163 MA's), (Start: 41 @36677 has 1 MA's), (51, 36623), (63, 36509), (86, 36359), (104, 36269), (116, 36182),

Gene: MarysWell\_47 Start: 35943, Stop: 35305, Start Num: 11

Candidate Starts for MarysWell\_47:

(2, 36492), (3, 36282), (Start: 11 @35943 has 8 MA's), (Start: 16 @35931 has 44 MA's), (33, 35838), (46, 35775), (66, 35601), (69, 35589), (104, 35448), (113, 35385),

Gene: McFly\_56 Start: 35795, Stop: 35127, Start Num: 9

Candidate Starts for McFly\_56:

(Start: 9 @35795 has 76 MA's), (24, 35744), (46, 35609), (51, 35573), (104, 35291), (109, 35264),

Gene: Methuselah\_53 Start: 36955, Stop: 36233, Start Num: 10

Candidate Starts for Methuselah\_53:

(Start: 10 @36955 has 163 MA's), (Start: 41 @36814 has 1 MA's), (51, 36760), (87, 36493), (104, 36406), (116, 36319),

Gene: Micasa\_48 Start: 35775, Stop: 35152, Start Num: 16

Candidate Starts for Micasa\_48:

(1, 36393), (2, 36336), (Start: 11 @35787 has 8 MA's), (Start: 16 @35775 has 44 MA's), (33, 35685), (46, 35622), (55, 35517), (56, 35508), (58, 35499), (66, 35448), (69, 35436), (75, 35427), (91, 35358), (104, 35295), (113, 35232),

Gene: Microwolf\_57 Start: 36947, Stop: 36225, Start Num: 10

Candidate Starts for Microwolf\_57:

(Start: 10 @36947 has 163 MA's), (Start: 41 @36806 has 1 MA's), (51, 36752), (63, 36638), (83, 36521), (86, 36488), (87, 36485), (97, 36434), (101, 36419), (104, 36398), (116, 36311),

Gene: Midas2\_46 Start: 35677, Stop: 35054, Start Num: 16

Candidate Starts for Midas2\_46:

(1, 36295), (2, 36238), (Start: 11 @35689 has 8 MA's), (Start: 16 @35677 has 44 MA's), (33, 35587), (46, 35524), (55, 35419), (56, 35410), (58, 35401), (66, 35350), (69, 35338), (75, 35329), (91, 35260), (104, 35197), (113, 35134),

Gene: Milcery\_47 Start: 35564, Stop: 34941, Start Num: 16

Candidate Starts for Milcery\_47:

(3, 35915), (Start: 11 @35576 has 8 MA's), (Start: 16 @35564 has 44 MA's), (33, 35474), (46, 35411), (55, 35306), (56, 35297), (66, 35237), (69, 35225), (75, 35216), (91, 35147), (104, 35084), (113, 35021),

Gene: MinecraftSteve\_60 Start: 35904, Stop: 35332, Start Num: 13

Candidate Starts for MinecraftSteve\_60:

(7, 35955), (Start: 8 @35943 has 1 MA's), (Start: 13 @35904 has 20 MA's), (20, 35889), (45, 35751), (61, 35607), (87, 35505), (101, 35439), (104, 35418), (115, 35355),

Gene: Misomonster\_58 Start: 36958, Stop: 36236, Start Num: 10

Candidate Starts for Misomonster\_58:

(Start: 10 @36958 has 163 MA's), (Start: 41 @36817 has 1 MA's), (51, 36763), (87, 36496), (104, 36409), (116, 36322),

Gene: MoneyMay\_57 Start: 36931, Stop: 36209, Start Num: 10

Candidate Starts for MoneyMay\_57:

(Start: 10 @36931 has 163 MA's), (Start: 41 @36790 has 1 MA's), (51, 36736), (63, 36622), (83, 36505), (86, 36472), (87, 36469), (97, 36418), (101, 36403), (104, 36382), (116, 36295),

Gene: MuchMore\_60 Start: 36923, Stop: 36201, Start Num: 10

Candidate Starts for MuchMore\_60:

(Start: 10 @36923 has 163 MA's), (Start: 41 @36782 has 1 MA's), (51, 36728), (63, 36614), (83, 36497), (86, 36464), (87, 36461), (97, 36410), (101, 36395), (104, 36374), (116, 36287),

Gene: MyraDee\_48 Start: 33093, Stop: 32479, Start Num: 17

Candidate Starts for MyraDee\_48:

(Start: 17 @33093 has 1 MA's), (18, 33087), (25, 33069), (33, 33006), (37, 32988), (46, 32943), (52, 32895), (62, 32802), (68, 32760), (104, 32616), (105, 32607), (112, 32556),

Gene: Myxus\_55 Start: 36907, Stop: 36242, Start Num: 9

Candidate Starts for Myxus\_55:

(Start: 9 @36907 has 76 MA's), (25, 36856), (32, 36808), (35, 36784), (42, 36745), (46, 36730), (64, 36577), (69, 36544), (77, 36526), (99, 36433), (104, 36403), (112, 36343),

Gene: Naca\_48 Start: 36054, Stop: 35431, Start Num: 16

Candidate Starts for Naca\_48:

(3, 36405), (Start: 11 @36066 has 8 MA's), (Start: 16 @36054 has 44 MA's), (33, 35964), (46, 35901), (55, 35796), (56, 35787), (66, 35727), (69, 35715), (75, 35706), (91, 35637), (101, 35595), (104, 35574), (113, 35511),

Gene: Naiad\_42 Start: 32842, Stop: 32252, Start Num: 10

Candidate Starts for Naiad\_42:

(Start: 10 @32842 has 163 MA's), (Start: 13 @32824 has 20 MA's), (26, 32794), (27, 32791), (45, 32677), (53, 32593), (55, 32566), (71, 32500), (73, 32491), (85, 32443), (101, 32371), (104, 32350), (110, 32311),

Gene: Nancinator\_43 Start: 32762, Stop: 32172, Start Num: 10

Candidate Starts for Nancinator\_43:

(Start: 10 @32762 has 163 MA's), (Start: 13 @32744 has 20 MA's), (26, 32714), (27, 32711), (45, 32597), (53, 32513), (55, 32486), (71, 32420), (73, 32411), (85, 32363), (101, 32291), (104, 32270), (110, 32231),

Gene: Natosaleda\_42 Start: 32761, Stop: 32171, Start Num: 10

Candidate Starts for Natosaleda\_42:

(Start: 10 @32761 has 163 MA's), (Start: 13 @32743 has 20 MA's), (26, 32713), (27, 32710), (45, 32596), (53, 32512), (55, 32485), (71, 32419), (73, 32410), (85, 32362), (101, 32290), (104, 32269), (110, 32230),

Gene: NearlyHeadless\_52 Start: 34993, Stop: 34370, Start Num: 16

Candidate Starts for NearlyHeadless\_52:

(Start: 16 @34993 has 44 MA's), (31, 34921), (44, 34849), (51, 34804), (64, 34687), (68, 34657), (89, 34588), (91, 34576), (104, 34513), (105, 34504),

Gene: Nebulosus\_58 Start: 35679, Stop: 35107, Start Num: 13

Candidate Starts for Nebulosus\_58:

(7, 35730), (Start: 8 @35718 has 1 MA's), (Start: 13 @35679 has 20 MA's), (20, 35664), (45, 35526), (61, 35382), (87, 35280), (101, 35214), (104, 35193), (115, 35130),

Gene: Neeharika16\_55 Start: 35255, Stop: 34587, Start Num: 9

Candidate Starts for Neeharika16\_55:

(Start: 9 @35255 has 76 MA's), (24, 35204), (46, 35069), (51, 35033), (104, 34751), (109, 34724),

Gene: Newrala\_56 Start: 35797, Stop: 35129, Start Num: 9

Candidate Starts for Newrala\_56:

(Start: 9 @35797 has 76 MA's), (24, 35746), (46, 35611), (51, 35575), (104, 35293), (109, 35266),

Gene: Noella\_53 Start: 36707, Stop: 36003, Start Num: 10

Candidate Starts for Noella\_53:

(Start: 10 @36707 has 163 MA's), (28, 36650), (29, 36647), (56, 36431), (65, 36383), (78, 36308), (79, 36305), (80, 36287), (102, 36167), (104, 36155),

Gene: Norbert\_52 Start: 36706, Stop: 36002, Start Num: 10

Candidate Starts for Norbert\_52:

(Start: 10 @36706 has 163 MA's), (28, 36649), (29, 36646), (56, 36430), (65, 36382), (78, 36307), (79, 36304), (80, 36286), (102, 36166), (104, 36154),

Gene: OKCentral2016\_51 Start: 35957, Stop: 35244, Start Num: 10

Candidate Starts for OKCentral2016\_51:

(Start: 10 @35957 has 163 MA's), (29, 35903), (31, 35882), (33, 35864), (46, 35801), (47, 35792), (55, 35696), (70, 35609), (86, 35501), (96, 35450), (104, 35411),

Gene: OlanP\_56 Start: 36994, Stop: 36272, Start Num: 10

Candidate Starts for OlanP\_56:

(Start: 10 @36994 has 163 MA's), (38, 36874), (Start: 41 @36853 has 1 MA's), (51, 36799), (86, 36535), (104, 36445), (116, 36358),

Gene: Ollie\_57 Start: 36802, Stop: 36080, Start Num: 10

Candidate Starts for Ollie\_57:

(Start: 10 @36802 has 163 MA's), (Start: 41 @36661 has 1 MA's), (51, 36607), (63, 36493), (83, 36376), (86, 36343), (87, 36340), (97, 36289), (101, 36274), (104, 36253), (116, 36166),

Gene: Onglai\_53 Start: 35248, Stop: 34583, Start Num: 9

Candidate Starts for Onglai\_53:

(Start: 9 @35248 has 76 MA's), (25, 35197), (32, 35149), (35, 35125), (42, 35086), (46, 35071), (64, 34918), (69, 34885), (77, 34867), (99, 34774), (104, 34744), (112, 34684),

Gene: Oofda\_61 Start: 35897, Stop: 35325, Start Num: 13

Candidate Starts for Oofda\_61:

(7, 35948), (Start: 8 @35936 has 1 MA's), (Start: 13 @35897 has 20 MA's), (20, 35882), (45, 35744), (61, 35600), (87, 35498), (101, 35432), (104, 35411), (115, 35348),

Gene: P28Green\_58 Start: 36934, Stop: 36212, Start Num: 10

Candidate Starts for P28Green\_58:

(Start: 10 @36934 has 163 MA's), (Start: 41 @36793 has 1 MA's), (51, 36739), (63, 36625), (83, 36508), (86, 36475), (87, 36472), (97, 36421), (101, 36406), (104, 36385), (116, 36298),

Gene: PGHhamlin\_59 Start: 36923, Stop: 36201, Start Num: 10

Candidate Starts for PGHhamlin\_59:

(Start: 10 @36923 has 163 MA's), (Start: 41 @36782 has 1 MA's), (51, 36728), (63, 36614), (83, 36497), (86, 36464), (87, 36461), (97, 36410), (101, 36395), (104, 36374), (116, 36287),

Gene: PackMan\_54 Start: 36907, Stop: 36242, Start Num: 9

Candidate Starts for PackMan\_54:

(Start: 9 @36907 has 76 MA's), (25, 36856), (32, 36808), (35, 36784), (42, 36745), (46, 36730), (64, 36577), (69, 36544), (77, 36526), (99, 36433), (104, 36403), (112, 36343),

Gene: Panamaxus\_51 Start: 36706, Stop: 36002, Start Num: 10

Candidate Starts for Panamaxus\_51:

(Start: 10 @36706 has 163 MA's), (28, 36649), (29, 36646), (56, 36430), (65, 36382), (78, 36307), (79, 36304), (80, 36286), (102, 36166), (104, 36154),

Gene: Pawn\_57 Start: 36825, Stop: 36103, Start Num: 10

Candidate Starts for Pawn\_57:

(Start: 10 @36825 has 163 MA's), (Start: 41 @36684 has 1 MA's), (51, 36630), (63, 36516), (86, 36366), (87, 36363), (104, 36276), (116, 36189),

Gene: PeaceMeal1\_50 Start: 35482, Stop: 34748, Start Num: 10

Candidate Starts for PeaceMeal1\_50:

(Start: 10 @35482 has 163 MA's), (31, 35386), (Start: 41 @35323 has 1 MA's), (45, 35311), (51, 35269), (70, 35113), (74, 35083), (96, 34954), (97, 34951), (104, 34915),

Gene: Pembroke\_57 Start: 36932, Stop: 36210, Start Num: 10

Candidate Starts for Pembroke\_57:

(Start: 10 @36932 has 163 MA's), (Start: 41 @36791 has 1 MA's), (51, 36737), (63, 36623), (83, 36506), (86, 36473), (87, 36470), (97, 36419), (101, 36404), (104, 36383), (116, 36296),

Gene: Penny1\_58 Start: 36935, Stop: 36213, Start Num: 10

Candidate Starts for Penny1\_58:

(Start: 10 @36935 has 163 MA's), (Start: 41 @36794 has 1 MA's), (51, 36740), (63, 36626), (83, 36509), (86, 36476), (87, 36473), (97, 36422), (101, 36407), (104, 36386), (116, 36299),

Gene: PetterN\_52 Start: 35672, Stop: 35019, Start Num: 16

Candidate Starts for PetterN\_52:

(3, 36023), (Start: 11 @35684 has 8 MA's), (Start: 16 @35672 has 44 MA's), (33, 35582), (46, 35519), (66, 35345), (69, 35333), (86, 35252), (90, 35228), (101, 35183), (104, 35162), (113, 35099),

Gene: Phaeder\_55 Start: 36907, Stop: 36242, Start Num: 9

Candidate Starts for Phaeder\_55:

(Start: 9 @36907 has 76 MA's), (25, 36856), (32, 36808), (35, 36784), (42, 36745), (46, 36730), (64, 36577), (69, 36544), (77, 36526), (99, 36433), (104, 36403), (112, 36343),

Gene: PhailMary\_42 Start: 33151, Stop: 32561, Start Num: 10

Candidate Starts for PhailMary\_42:



(Start: 10 @33151 has 163 MA's), (Start: 13 @33133 has 20 MA's), (26, 33103), (27, 33100), (45, 32986), (53, 32902), (55, 32875), (71, 32809), (73, 32800), (85, 32752), (101, 32680), (104, 32659), (110, 32620),

Gene: Phantastic\_55 Start: 36379, Stop: 35702, Start Num: 10

Candidate Starts for Phantastic\_55:

(Start: 10 @36379 has 163 MA's), (22, 36358), (29, 36328), (31, 36307), (37, 36271), (44, 36235), (46, 36226), (55, 36121), (80, 35962), (83, 35953), (86, 35920), (87, 35917), (104, 35830), (118, 35713),

Gene: Phillis\_52 Start: 35195, Stop: 34572, Start Num: 16

Candidate Starts for Phillis\_52:

(Start: 16 @35195 has 44 MA's), (44, 35051), (45, 35048), (51, 35006), (64, 34889), (68, 34859), (104, 34715), (105, 34706),

Gene: PhishRPhriends\_55 Start: 36002, Stop: 35280, Start Num: 10

Candidate Starts for PhishRPhriends\_55:

(Start: 10 @36002 has 163 MA's), (Start: 41 @35861 has 1 MA's), (51, 35807), (63, 35693), (86, 35543), (104, 35453), (116, 35366),

Gene: Phlei\_44 Start: 36400, Stop: 35708, Start Num: 9

Candidate Starts for Phlei\_44:

(Start: 9 @36400 has 76 MA's), (33, 36286), (34, 36283), (46, 36223), (51, 36187), (55, 36118), (69, 36037), (97, 35932), (98, 35929), (104, 35896), (119, 35743),

Gene: Phlorence\_45 Start: 35177, Stop: 34551, Start Num: 16

Candidate Starts for Phlorence\_45:

(Start: 11 @35189 has 8 MA's), (Start: 16 @35177 has 44 MA's), (23, 35159), (33, 35084), (Start: 41 @35039 has 1 MA's), (46, 35021), (66, 34847), (69, 34835), (104, 34694), (113, 34631),

Gene: Phoebe\_58 Start: 36924, Stop: 36202, Start Num: 10

Candidate Starts for Phoebe\_58:

(Start: 10 @36924 has 163 MA's), (Start: 41 @36783 has 1 MA's), (51, 36729), (63, 36615), (83, 36498), (86, 36465), (87, 36462), (97, 36411), (101, 36396), (104, 36375), (116, 36288),

Gene: Phonnegut\_55 Start: 37004, Stop: 36339, Start Num: 9

Candidate Starts for Phonnegut\_55:

(Start: 9 @37004 has 76 MA's), (25, 36953), (32, 36905), (35, 36881), (42, 36842), (46, 36827), (64, 36674), (69, 36641), (77, 36623), (99, 36530), (104, 36500), (112, 36440),

Gene: Phoxy\_57 Start: 36956, Stop: 36234, Start Num: 10

Candidate Starts for Phoxy\_57:

(Start: 10 @36956 has 163 MA's), (Start: 41 @36815 has 1 MA's), (51, 36761), (87, 36494), (104, 36407), (116, 36320),

Gene: Phrankenstein\_43 Start: 32775, Stop: 32185, Start Num: 10

Candidate Starts for Phrankenstein\_43:

(Start: 10 @32775 has 163 MA's), (Start: 13 @32757 has 20 MA's), (26, 32727), (27, 32724), (45, 32610), (53, 32526), (55, 32499), (71, 32433), (73, 32424), (85, 32376), (101, 32304), (104, 32283), (110, 32244),

Gene: Phranny\_58 Start: 36807, Stop: 36085, Start Num: 10

Candidate Starts for Phranny\_58:

(Start: 10 @36807 has 163 MA's), (Start: 41 @36666 has 1 MA's), (51, 36612), (63, 36498), (86, 36348), (104, 36258), (116, 36171),

Gene: PickleBack\_47 Start: 35424, Stop: 34798, Start Num: 16

Candidate Starts for PickleBack\_47:

(Start: 11 @35436 has 8 MA's), (Start: 16 @35424 has 44 MA's), (23, 35406), (33, 35331), (Start: 41 @35286 has 1 MA's), (46, 35268), (66, 35094), (69, 35082), (104, 34941), (113, 34878),

Gene: Pioneer\_55 Start: 37004, Stop: 36339, Start Num: 9

Candidate Starts for Pioneer\_55:

(Start: 9 @37004 has 76 MA's), (25, 36953), (32, 36905), (35, 36881), (42, 36842), (46, 36827), (64, 36674), (69, 36641), (77, 36623), (99, 36530), (104, 36500), (112, 36440),

Gene: Pistachio\_56 Start: 36297, Stop: 35620, Start Num: 10

Candidate Starts for Pistachio\_56:

(Start: 10 @36297 has 163 MA's), (22, 36276), (25, 36270), (37, 36189), (39, 36180), (44, 36153), (46, 36144), (50, 36114), (55, 36039), (78, 35901), (80, 35880), (83, 35871), (86, 35838), (87, 35835), (104, 35748), (112, 35688), (118, 35631),

Gene: Pmask\_56 Start: 35798, Stop: 35130, Start Num: 9

Candidate Starts for Pmask\_56:

(Start: 9 @35798 has 76 MA's), (24, 35747), (46, 35612), (51, 35576), (104, 35294), (109, 35267),

Gene: Pocahontas\_53 Start: 36703, Stop: 35999, Start Num: 10

Candidate Starts for Pocahontas\_53:

(Start: 10 @36703 has 163 MA's), (28, 36646), (29, 36643), (56, 36427), (65, 36379), (78, 36304), (79, 36301), (80, 36283), (102, 36163), (104, 36151),

Gene: Ponzi\_24 Start: 14603, Stop: 14052, Start Num: 14

Candidate Starts for Ponzi\_24:

(Start: 14 @14603 has 1 MA's), (32, 14525), (33, 14510), (36, 14495), (40, 14468), (54, 14369), (59, 14324), (87, 14168), (104, 14081),

Gene: Poompha\_51 Start: 35480, Stop: 34746, Start Num: 10

Candidate Starts for Poompha\_51:

(Start: 10 @35480 has 163 MA's), (31, 35384), (Start: 41 @35321 has 1 MA's), (45, 35309), (51, 35267), (70, 35111), (74, 35081), (96, 34952), (97, 34949), (104, 34913),

Gene: Popcicle\_53 Start: 36703, Stop: 35999, Start Num: 10

Candidate Starts for Popcicle\_53:

(Start: 10 @36703 has 163 MA's), (28, 36646), (29, 36643), (56, 36427), (65, 36379), (78, 36304), (79, 36301), (80, 36283), (102, 36163), (104, 36151),

Gene: PotatoSplit\_59 Start: 36935, Stop: 36213, Start Num: 10

Candidate Starts for PotatoSplit\_59:

(Start: 10 @36935 has 163 MA's), (Start: 41 @36794 has 1 MA's), (51, 36740), (63, 36626), (83, 36509), (86, 36476), (87, 36473), (97, 36422), (101, 36407), (104, 36386), (116, 36299),

Gene: Priamo\_58 Start: 35557, Stop: 34889, Start Num: 9

Candidate Starts for Priamo\_58:

(Start: 9 @35557 has 76 MA's), (24, 35506), (46, 35371), (51, 35335), (104, 35053), (109, 35026),

Gene: Priya\_55 Start: 36974, Stop: 36309, Start Num: 9

Candidate Starts for Priya\_55:

(Start: 9 @36974 has 76 MA's), (25, 36923), (32, 36875), (35, 36851), (42, 36812), (46, 36797), (64, 36644), (69, 36611), (77, 36593), (99, 36500), (104, 36470), (112, 36410),

Gene: Puppy\_56 Start: 36369, Stop: 35692, Start Num: 10

Candidate Starts for Puppy\_56:

(Start: 10 @36369 has 163 MA's), (22, 36348), (25, 36342), (37, 36261), (39, 36252), (44, 36225), (46, 36216), (50, 36186), (55, 36111), (78, 35973), (80, 35952), (83, 35943), (86, 35910), (87, 35907), (104, 35820), (112, 35760), (118, 35703),

Gene: PurpleHaze\_57 Start: 36820, Stop: 36098, Start Num: 10

Candidate Starts for PurpleHaze\_57:

(Start: 10 @36820 has 163 MA's), (Start: 41 @36679 has 1 MA's), (51, 36625), (63, 36511), (86, 36361), (104, 36271), (116, 36184),

Gene: Qobbit\_55 Start: 36936, Stop: 36271, Start Num: 9

Candidate Starts for Qobbit\_55:

(Start: 9 @36936 has 76 MA's), (25, 36885), (32, 36837), (35, 36813), (42, 36774), (46, 36759), (64, 36606), (69, 36573), (77, 36555), (99, 36462), (104, 36432), (112, 36372),

Gene: QuinnKiro\_52 Start: 36706, Stop: 36002, Start Num: 10

Candidate Starts for QuinnKiro\_52:

(Start: 10 @36706 has 163 MA's), (28, 36649), (29, 36646), (56, 36430), (65, 36382), (78, 36307), (79, 36304), (80, 36286), (102, 36166), (104, 36154),

Gene: RER2\_36 Start: 29701, Stop: 29111, Start Num: 10

Candidate Starts for RER2\_36:

(Start: 10 @29701 has 163 MA's), (Start: 13 @29683 has 20 MA's), (26, 29653), (27, 29650), (45, 29536), (53, 29452), (55, 29425), (71, 29359), (73, 29350), (85, 29302), (101, 29230), (104, 29209), (110, 29170),

Gene: RGL3\_37 Start: 30321, Stop: 29776, Start Num: 15

Candidate Starts for RGL3\_37:

(Start: 10 @30345 has 163 MA's), (15, 30321), (26, 30297), (27, 30294), (43, 30186), (45, 30180), (53, 30096), (55, 30069), (71, 30003), (73, 29994),

Gene: Rahalelujah\_55 Start: 36500, Stop: 35808, Start Num: 9

Candidate Starts for Rahalelujah\_55:

(Start: 9 @36500 has 76 MA's), (19, 36455), (25, 36440), (32, 36392), (35, 36368), (38, 36353), (42, 36329), (46, 36314), (55, 36209), (56, 36200), (64, 36161), (69, 36128), (75, 36119), (77, 36110), (99, 36017), (104, 35987), (117, 35891),

Gene: Rasputin\_43 Start: 32799, Stop: 32209, Start Num: 10

Candidate Starts for Rasputin\_43:

(Start: 10 @32799 has 163 MA's), (Start: 13 @32781 has 20 MA's), (26, 32751), (27, 32748), (45, 32634), (53, 32550), (55, 32523), (71, 32457), (73, 32448), (85, 32400), (101, 32328), (104, 32307), (110, 32268),

Gene: ReMo\_58 Start: 35680, Stop: 35108, Start Num: 13

Candidate Starts for ReMo\_58:

(7, 35731), (Start: 8 @35719 has 1 MA's), (Start: 13 @35680 has 20 MA's), (20, 35665), (45, 35527), (61, 35383), (87, 35281), (101, 35215), (104, 35194), (115, 35131),

Gene: Reba\_57 Start: 36480, Stop: 35758, Start Num: 10

Candidate Starts for Reba\_57:

(Start: 10 @36480 has 163 MA's), (Start: 41 @36339 has 1 MA's), (51, 36285), (63, 36171), (86, 36021), (104, 35931), (116, 35844),

Gene: Rebeuca\_52 Start: 36603, Stop: 35890, Start Num: 10

Candidate Starts for Rebeuca\_52:

(Start: 10 @36603 has 163 MA's), (29, 36549), (46, 36447), (47, 36438), (55, 36342), (70, 36255), (86, 36147), (96, 36096), (104, 36057),

Gene: Remus\_60 Start: 35686, Stop: 35114, Start Num: 13

Candidate Starts for Remus\_60:

(7, 35737), (Start: 8 @35725 has 1 MA's), (Start: 13 @35686 has 20 MA's), (20, 35671), (45, 35533), (61, 35389), (87, 35287), (101, 35221), (104, 35200), (115, 35137),

Gene: ResDef\_53 Start: 36706, Stop: 36002, Start Num: 10

Candidate Starts for ResDef\_53:

(Start: 10 @36706 has 163 MA's), (28, 36649), (29, 36646), (56, 36430), (65, 36382), (78, 36307), (79, 36304), (80, 36286), (102, 36166), (104, 36154),

Gene: RexFury\_42 Start: 32860, Stop: 32270, Start Num: 10

Candidate Starts for RexFury\_42:

(Start: 10 @32860 has 163 MA's), (Start: 13 @32842 has 20 MA's), (26, 32812), (27, 32809), (45, 32695), (53, 32611), (55, 32584), (71, 32518), (73, 32509), (85, 32461), (101, 32389), (104, 32368), (110, 32329),

Gene: Rhodalysa\_43 Start: 32829, Stop: 32239, Start Num: 10

Candidate Starts for Rhodalysa\_43:

(Start: 10 @32829 has 163 MA's), (Start: 13 @32811 has 20 MA's), (26, 32781), (27, 32778), (45, 32664), (53, 32580), (55, 32553), (71, 32487), (73, 32478), (85, 32430), (101, 32358), (104, 32337), (110, 32298),

Gene: RhynO\_53 Start: 36402, Stop: 35692, Start Num: 10

Candidate Starts for RhynO\_53:

(Start: 10 @36402 has 163 MA's), (29, 36351), (33, 36312), (37, 36294), (46, 36249), (47, 36240), (50, 36219), (51, 36213), (70, 36057), (84, 35955), (104, 35859),

Gene: Rifter\_57 Start: 35391, Stop: 34699, Start Num: 9

Candidate Starts for Rifter\_57:

(Start: 9 @35391 has 76 MA's), (24, 35340), (46, 35205), (51, 35169), (62, 35064), (102, 34899), (103, 34896), (104, 34887), (109, 34860), (119, 34734),

Gene: Roary\_53 Start: 35212, Stop: 34589, Start Num: 16

Candidate Starts for Roary\_53:

(Start: 16 @35212 has 44 MA's), (31, 35140), (44, 35068), (51, 35023), (64, 34906), (68, 34876), (89, 34807), (104, 34732), (105, 34723),

Gene: Rockstar\_54 Start: 36211, Stop: 35510, Start Num: 10

Candidate Starts for Rockstar\_54:

(Start: 10 @36211 has 163 MA's), (29, 36139), (31, 36118), (Start: 41 @36055 has 1 MA's), (51, 36001), (55, 35932), (78, 35791), (80, 35770), (83, 35761), (86, 35728), (98, 35671), (104, 35638), (112, 35578), (118, 35521),

Gene: Roksolana\_58 Start: 36225, Stop: 35557, Start Num: 9  
Candidate Starts for Roksolana\_58:  
(Start: 9 @36225 has 76 MA's), (24, 36174), (46, 36039), (51, 36003), (104, 35721), (109, 35694),

Gene: Rosalind\_58 Start: 35823, Stop: 35251, Start Num: 13  
Candidate Starts for Rosalind\_58:  
(7, 35874), (Start: 8 @35862 has 1 MA's), (Start: 13 @35823 has 20 MA's), (20, 35808), (45, 35670),  
(61, 35526), (87, 35424), (101, 35358), (104, 35337), (115, 35274),

Gene: Rowdy\_56 Start: 36313, Stop: 35600, Start Num: 10  
Candidate Starts for Rowdy\_56:  
(Start: 10 @36313 has 163 MA's), (29, 36259), (37, 36202), (46, 36157), (47, 36148), (70, 35965), (94,  
35818), (104, 35767), (112, 35707),

Gene: Rummer\_56 Start: 36959, Stop: 36237, Start Num: 10  
Candidate Starts for Rummer\_56:  
(Start: 10 @36959 has 163 MA's), (Start: 41 @36818 has 1 MA's), (51, 36764), (63, 36650), (83,  
36533), (87, 36497), (104, 36410), (116, 36323),

Gene: RyeScarlet\_56 Start: 36979, Stop: 36314, Start Num: 9  
Candidate Starts for RyeScarlet\_56:  
(Start: 9 @36979 has 76 MA's), (25, 36928), (32, 36880), (35, 36856), (42, 36817), (46, 36802), (64,  
36649), (69, 36616), (77, 36598), (99, 36505), (104, 36475), (112, 36415),

Gene: Sabia\_57 Start: 36940, Stop: 36218, Start Num: 10  
Candidate Starts for Sabia\_57:  
(Start: 10 @36940 has 163 MA's), (Start: 41 @36799 has 1 MA's), (51, 36745), (63, 36631), (83,  
36514), (86, 36481), (87, 36478), (97, 36427), (101, 36412), (104, 36391), (116, 36304),

Gene: Sabinator\_56 Start: 36930, Stop: 36208, Start Num: 10  
Candidate Starts for Sabinator\_56:  
(Start: 10 @36930 has 163 MA's), (Start: 41 @36789 has 1 MA's), (51, 36735), (63, 36621), (83,  
36504), (86, 36471), (87, 36468), (97, 36417), (101, 36402), (104, 36381), (116, 36294),

Gene: Sachima\_52 Start: 36889, Stop: 36224, Start Num: 9  
Candidate Starts for Sachima\_52:  
(Start: 9 @36889 has 76 MA's), (25, 36838), (32, 36790), (35, 36766), (42, 36727), (46, 36712), (64,  
36559), (69, 36526), (77, 36508), (99, 36415), (104, 36385), (112, 36325),

Gene: Saintus\_47 Start: 31919, Stop: 31305, Start Num: 16  
Candidate Starts for Saintus\_47:  
(Start: 16 @31919 has 44 MA's), (31, 31847), (46, 31766), (55, 31661), (59, 31640), (60, 31631), (66,  
31592), (68, 31583), (75, 31571), (104, 31448),

Gene: SaturnRing\_55 Start: 36750, Stop: 36073, Start Num: 10  
Candidate Starts for SaturnRing\_55:  
(Start: 10 @36750 has 163 MA's), (22, 36729), (25, 36723), (37, 36642), (39, 36633), (44, 36606), (46,  
36597), (50, 36567), (55, 36492), (78, 36354), (80, 36333), (83, 36324), (86, 36291), (87, 36288),  
(104, 36201), (112, 36141), (118, 36084),

Gene: Scherzo\_55 Start: 37193, Stop: 36528, Start Num: 9  
Candidate Starts for Scherzo\_55:

(Start: 9 @37193 has 76 MA's), (25, 37142), (32, 37094), (35, 37070), (42, 37031), (46, 37016), (64, 36863), (69, 36830), (77, 36812), (99, 36719), (104, 36689), (112, 36629),

Gene: Scorpia\_52 Start: 35740, Stop: 35105, Start Num: 11

Candidate Starts for Scorpia\_52:

(3, 36079), (Start: 11 @35740 has 8 MA's), (Start: 16 @35728 has 44 MA's), (33, 35638), (46, 35575), (55, 35470), (56, 35461), (61, 35437), (66, 35401), (69, 35389), (75, 35380), (101, 35269), (104, 35248), (113, 35185),

Gene: Scout\_54 Start: 35898, Stop: 35197, Start Num: 10

Candidate Starts for Scout\_54:

(Start: 10 @35898 has 163 MA's), (29, 35826), (31, 35805), (Start: 41 @35742 has 1 MA's), (51, 35688), (55, 35619), (75, 35490), (78, 35478), (80, 35457), (83, 35448), (86, 35415), (104, 35325), (112, 35265), (118, 35208),

Gene: Severus\_50 Start: 35480, Stop: 34746, Start Num: 10

Candidate Starts for Severus\_50:

(Start: 10 @35480 has 163 MA's), (31, 35384), (Start: 41 @35321 has 1 MA's), (45, 35309), (51, 35267), (70, 35111), (74, 35081), (96, 34952), (97, 34949), (104, 34913),

Gene: Shapes\_56 Start: 36313, Stop: 35600, Start Num: 10

Candidate Starts for Shapes\_56:

(Start: 10 @36313 has 163 MA's), (29, 36259), (37, 36202), (46, 36157), (47, 36148), (70, 35965), (94, 35818), (104, 35767), (112, 35707),

Gene: ShayRa\_60 Start: 35867, Stop: 35295, Start Num: 13

Candidate Starts for ShayRa\_60:

(7, 35918), (Start: 8 @35906 has 1 MA's), (Start: 13 @35867 has 20 MA's), (20, 35852), (45, 35714), (61, 35570), (87, 35468), (101, 35402), (104, 35381), (115, 35318),

Gene: SheaKeira\_53 Start: 36414, Stop: 35713, Start Num: 9

Candidate Starts for SheaKeira\_53:

(Start: 9 @36414 has 76 MA's), (19, 36369), (25, 36354), (32, 36306), (35, 36282), (38, 36267), (46, 36228), (56, 36114), (64, 36075), (69, 36042), (90, 35967), (104, 35898), (119, 35748),

Gene: Shuman\_43 Start: 32774, Stop: 32184, Start Num: 10

Candidate Starts for Shuman\_43:

(Start: 10 @32774 has 163 MA's), (Start: 13 @32756 has 20 MA's), (26, 32726), (27, 32723), (45, 32609), (53, 32525), (55, 32498), (71, 32432), (73, 32423), (85, 32375), (101, 32303), (104, 32282), (110, 32243),

Gene: Smeadley\_53 Start: 35378, Stop: 34755, Start Num: 16

Candidate Starts for Smeadley\_53:

(Start: 16 @35378 has 44 MA's), (31, 35306), (44, 35234), (51, 35189), (64, 35072), (68, 35042), (104, 34898), (105, 34889),

Gene: SmellyB\_56 Start: 35795, Stop: 35127, Start Num: 9

Candidate Starts for SmellyB\_56:

(Start: 9 @35795 has 76 MA's), (24, 35744), (46, 35609), (51, 35573), (104, 35291), (109, 35264),

Gene: Snickers\_57 Start: 36905, Stop: 36183, Start Num: 10

Candidate Starts for Snickers\_57:

(Start: 10 @36905 has 163 MA's), (Start: 41 @36764 has 1 MA's), (51, 36710), (63, 36596), (83, 36479), (86, 36446), (87, 36443), (97, 36392), (101, 36377), (104, 36356), (116, 36269),

Gene: SoYo\_57 Start: 36843, Stop: 36121, Start Num: 10

Candidate Starts for SoYo\_57:

(Start: 10 @36843 has 163 MA's), (Start: 41 @36702 has 1 MA's), (51, 36648), (63, 36534), (83, 36417), (86, 36384), (87, 36381), (97, 36330), (101, 36315), (104, 36294), (116, 36207),

Gene: SoilDragon\_57 Start: 36379, Stop: 35657, Start Num: 10

Candidate Starts for SoilDragon\_57:

(Start: 10 @36379 has 163 MA's), (Start: 41 @36238 has 1 MA's), (51, 36184), (63, 36070), (83, 35953), (86, 35920), (87, 35917), (97, 35866), (101, 35851), (104, 35830), (116, 35743),

Gene: Soshari\_59 Start: 36955, Stop: 36233, Start Num: 10

Candidate Starts for Soshari\_59:

(Start: 10 @36955 has 163 MA's), (Start: 41 @36814 has 1 MA's), (51, 36760), (87, 36493), (104, 36406), (116, 36319),

Gene: Soups\_60 Start: 36106, Stop: 35534, Start Num: 13

Candidate Starts for Soups\_60:

(7, 36157), (Start: 8 @36145 has 1 MA's), (Start: 13 @36106 has 20 MA's), (20, 36091), (45, 35953), (61, 35809), (87, 35707), (101, 35641), (104, 35620), (115, 35557),

Gene: Spike509\_57 Start: 36956, Stop: 36234, Start Num: 10

Candidate Starts for Spike509\_57:

(Start: 10 @36956 has 163 MA's), (Start: 41 @36815 has 1 MA's), (51, 36761), (87, 36494), (104, 36407), (116, 36320),

Gene: Spouty\_55 Start: 36973, Stop: 36308, Start Num: 9

Candidate Starts for Spouty\_55:

(Start: 9 @36973 has 76 MA's), (25, 36922), (32, 36874), (35, 36850), (42, 36811), (46, 36796), (64, 36643), (69, 36610), (77, 36592), (99, 36499), (104, 36469), (112, 36409),

Gene: StCroix\_42 Start: 32842, Stop: 32252, Start Num: 10

Candidate Starts for StCroix\_42:

(Start: 10 @32842 has 163 MA's), (Start: 13 @32824 has 20 MA's), (26, 32794), (27, 32791), (45, 32677), (53, 32593), (55, 32566), (71, 32500), (73, 32491), (85, 32443), (101, 32371), (104, 32350), (110, 32311),

Gene: Stagni\_57 Start: 36934, Stop: 36212, Start Num: 10

Candidate Starts for Stagni\_57:

(Start: 10 @36934 has 163 MA's), (Start: 41 @36793 has 1 MA's), (51, 36739), (63, 36625), (83, 36508), (86, 36475), (87, 36472), (97, 36421), (101, 36406), (104, 36385), (116, 36298),

Gene: StepMih\_57 Start: 36925, Stop: 36203, Start Num: 10

Candidate Starts for StepMih\_57:

(Start: 10 @36925 has 163 MA's), (Start: 41 @36784 has 1 MA's), (51, 36730), (63, 36616), (83, 36499), (86, 36466), (87, 36463), (97, 36412), (101, 36397), (104, 36376), (116, 36289),

Gene: Stephig9\_53 Start: 35444, Stop: 34821, Start Num: 16

Candidate Starts for Stephig9\_53:

(Start: 16 @35444 has 44 MA's), (31, 35372), (44, 35300), (51, 35255), (64, 35138), (68, 35108), (89, 35039), (91, 35027), (104, 34964), (105, 34955),

Gene: Strosahl\_60 Start: 35686, Stop: 35114, Start Num: 13

Candidate Starts for Strosahl\_60:

(7, 35737), (Start: 8 @35725 has 1 MA's), (Start: 13 @35686 has 20 MA's), (20, 35671), (45, 35533), (61, 35389), (87, 35287), (101, 35221), (104, 35200), (115, 35137),

Gene: Success\_24 Start: 16405, Stop: 15854, Start Num: 14

Candidate Starts for Success\_24:

(Start: 14 @16405 has 1 MA's), (24, 16381), (31, 16330), (32, 16327), (33, 16312), (57, 16135), (65, 16090), (81, 16015), (85, 15979), (87, 15973), (90, 15952), (104, 15886), (107, 15865),

Gene: SuperAwesome\_56 Start: 35809, Stop: 35141, Start Num: 9

Candidate Starts for SuperAwesome\_56:

(Start: 9 @35809 has 76 MA's), (24, 35758), (46, 35623), (51, 35587), (104, 35305), (109, 35278),

Gene: SuperCallie99\_55 Start: 35682, Stop: 35014, Start Num: 9

Candidate Starts for SuperCallie99\_55:

(Start: 9 @35682 has 76 MA's), (24, 35631), (46, 35496), (51, 35460), (104, 35178), (109, 35151),

Gene: Swann\_43 Start: 32827, Stop: 32237, Start Num: 10

Candidate Starts for Swann\_43:

(Start: 10 @32827 has 163 MA's), (Start: 13 @32809 has 20 MA's), (26, 32779), (27, 32776), (45, 32662), (53, 32578), (55, 32551), (71, 32485), (73, 32476), (85, 32428), (101, 32356), (104, 32335), (110, 32296),

Gene: Swirley\_49 Start: 35919, Stop: 35284, Start Num: 11

Candidate Starts for Swirley\_49:

(3, 36258), (Start: 11 @35919 has 8 MA's), (Start: 16 @35907 has 44 MA's), (33, 35817), (46, 35754), (55, 35649), (56, 35640), (66, 35580), (69, 35568), (75, 35559), (91, 35490), (104, 35427), (113, 35364),

Gene: Switzerland\_59 Start: 36006, Stop: 35434, Start Num: 13

Candidate Starts for Switzerland\_59:

(7, 36057), (Start: 8 @36045 has 1 MA's), (Start: 13 @36006 has 20 MA's), (20, 35991), (45, 35853), (61, 35709), (87, 35607), (101, 35541), (104, 35520), (115, 35457),

Gene: SydNat\_50 Start: 36432, Stop: 35806, Start Num: 16

Candidate Starts for SydNat\_50:

(Start: 11 @36444 has 8 MA's), (Start: 16 @36432 has 44 MA's), (23, 36414), (33, 36339), (46, 36276), (55, 36171), (56, 36162), (66, 36102), (69, 36090), (91, 36012), (104, 35949),

Gene: TNguyen7\_55 Start: 36716, Stop: 36039, Start Num: 10

Candidate Starts for TNguyen7\_55:

(Start: 10 @36716 has 163 MA's), (22, 36695), (25, 36689), (37, 36608), (39, 36599), (44, 36572), (46, 36563), (50, 36533), (55, 36458), (78, 36320), (80, 36299), (83, 36290), (86, 36257), (87, 36254), (104, 36167), (112, 36107), (118, 36050),

Gene: TWAMP\_43 Start: 32829, Stop: 32239, Start Num: 10

Candidate Starts for TWAMP\_43:

(Start: 10 @32829 has 163 MA's), (Start: 13 @32811 has 20 MA's), (26, 32781), (27, 32778), (45, 32664), (53, 32580), (55, 32553), (71, 32487), (73, 32478), (85, 32430), (101, 32358), (104, 32337), (110, 32298),



Gene: Takoda\_43 Start: 32733, Stop: 32146, Start Num: 10

Candidate Starts for Takoda\_43:

(Start: 10 @32733 has 163 MA's), (26, 32688), (27, 32685), (39, 32601), (43, 32577), (45, 32571), (53, 32487), (55, 32460), (57, 32445), (71, 32394), (72, 32388), (73, 32385), (85, 32337), (97, 32280), (108, 32220), (110, 32205),

Gene: Tarynearal\_45 Start: 35361, Stop: 34726, Start Num: 11

Candidate Starts for Tarynearal\_45:

(Start: 11 @35361 has 8 MA's), (Start: 16 @35349 has 44 MA's), (33, 35259), (46, 35196), (55, 35091), (56, 35082), (66, 35022), (69, 35010), (75, 35001), (104, 34869), (113, 34806),

Gene: Taurus\_58 Start: 36931, Stop: 36209, Start Num: 10

Candidate Starts for Taurus\_58:

(Start: 10 @36931 has 163 MA's), (Start: 41 @36790 has 1 MA's), (51, 36736), (63, 36622), (83, 36505), (86, 36472), (87, 36469), (97, 36418), (101, 36403), (104, 36382), (116, 36295),

Gene: Texage\_52 Start: 36707, Stop: 36003, Start Num: 10

Candidate Starts for Texage\_52:

(Start: 10 @36707 has 163 MA's), (28, 36650), (29, 36647), (56, 36431), (65, 36383), (78, 36308), (79, 36305), (80, 36287), (102, 36167), (104, 36155),

Gene: Theia\_46 Start: 35909, Stop: 35283, Start Num: 16

Candidate Starts for Theia\_46:

(2, 36470), (3, 36260), (Start: 11 @35921 has 8 MA's), (Start: 16 @35909 has 44 MA's), (33, 35816), (46, 35753), (66, 35579), (69, 35567), (104, 35426), (113, 35363),

Gene: Tiffany\_57 Start: 36817, Stop: 36095, Start Num: 10

Candidate Starts for Tiffany\_57:

(Start: 10 @36817 has 163 MA's), (Start: 41 @36676 has 1 MA's), (51, 36622), (63, 36508), (83, 36391), (86, 36358), (87, 36355), (97, 36304), (101, 36289), (104, 36268), (116, 36181),

Gene: Tiger\_46 Start: 35098, Stop: 34472, Start Num: 16

Candidate Starts for Tiger\_46:

(Start: 11 @35110 has 8 MA's), (Start: 16 @35098 has 44 MA's), (23, 35080), (33, 35005), (Start: 41 @34960 has 1 MA's), (46, 34942), (66, 34768), (69, 34756), (104, 34615), (113, 34552),

Gene: Toaka\_55 Start: 36696, Stop: 36142, Start Num: 9

Candidate Starts for Toaka\_55:

(Start: 9 @36696 has 76 MA's), (31, 36594), (33, 36576), (38, 36552), (42, 36528), (55, 36408), (56, 36399), (66, 36339), (77, 36309), (93, 36240), (104, 36186),

Gene: Todacoro\_53 Start: 36706, Stop: 36002, Start Num: 10

Candidate Starts for Todacoro\_53:

(Start: 10 @36706 has 163 MA's), (28, 36649), (29, 36646), (56, 36430), (65, 36382), (78, 36307), (79, 36304), (80, 36286), (102, 36166), (104, 36154),

Gene: ToneTone\_54 Start: 35818, Stop: 35150, Start Num: 9

Candidate Starts for ToneTone\_54:

(Start: 9 @35818 has 76 MA's), (24, 35767), (46, 35632), (51, 35596), (104, 35314), (109, 35287),

Gene: Topanga\_50 Start: 36244, Stop: 35534, Start Num: 10

Candidate Starts for Topanga\_50:

(Start: 10 @36244 has 163 MA's), (29, 36193), (37, 36136), (46, 36091), (47, 36082), (50, 36061), (51, 36055), (70, 35899), (84, 35797), (104, 35701),

Gene: Trike\_50 Start: 35489, Stop: 34755, Start Num: 10

Candidate Starts for Trike\_50:

(Start: 10 @35489 has 163 MA's), (31, 35393), (Start: 41 @35330 has 1 MA's), (45, 35318), (51, 35276), (70, 35120), (74, 35090), (96, 34961), (97, 34958), (104, 34922),

Gene: Tubs\_55 Start: 36907, Stop: 36242, Start Num: 9

Candidate Starts for Tubs\_55:

(Start: 9 @36907 has 76 MA's), (25, 36856), (32, 36808), (35, 36784), (42, 36745), (46, 36730), (64, 36577), (69, 36544), (77, 36526), (99, 36433), (104, 36403), (112, 36343),

Gene: Tucker\_57 Start: 35987, Stop: 35319, Start Num: 9

Candidate Starts for Tucker\_57:

(Start: 9 @35987 has 76 MA's), (24, 35936), (46, 35801), (51, 35765), (104, 35483), (109, 35456),

Gene: Twister\_50 Start: 36164, Stop: 35451, Start Num: 10

Candidate Starts for Twister\_50:

(Start: 10 @36164 has 163 MA's), (29, 36110), (46, 36008), (47, 35999), (55, 35903), (70, 35816), (86, 35708), (96, 35657), (104, 35618),

Gene: Ugenie5\_52 Start: 37192, Stop: 36527, Start Num: 9

Candidate Starts for Ugenie5\_52:

(Start: 9 @37192 has 76 MA's), (25, 37141), (32, 37093), (35, 37069), (42, 37030), (46, 37015), (64, 36862), (69, 36829), (77, 36811), (99, 36718), (104, 36688), (112, 36628),

Gene: UhSalsa\_43 Start: 32762, Stop: 32172, Start Num: 10

Candidate Starts for UhSalsa\_43:

(Start: 10 @32762 has 163 MA's), (Start: 13 @32744 has 20 MA's), (26, 32714), (27, 32711), (45, 32597), (53, 32513), (55, 32486), (71, 32420), (73, 32411), (85, 32363), (101, 32291), (104, 32270), (110, 32231),

Gene: UnionJack\_49 Start: 35218, Stop: 34595, Start Num: 16

Candidate Starts for UnionJack\_49:

(Start: 11 @35230 has 8 MA's), (Start: 16 @35218 has 44 MA's), (33, 35128), (46, 35065), (66, 34891), (69, 34879), (90, 34804), (101, 34759), (104, 34738), (113, 34675),

Gene: Vanisoa\_55 Start: 37825, Stop: 37151, Start Num: 9

Candidate Starts for Vanisoa\_55:

(Start: 9 @37825 has 76 MA's), (25, 37765), (32, 37717), (35, 37693), (37, 37684), (38, 37678), (46, 37639), (55, 37534), (64, 37486), (66, 37465), (69, 37453), (77, 37435), (104, 37309),

Gene: Veracruz\_52 Start: 36706, Stop: 36002, Start Num: 10

Candidate Starts for Veracruz\_52:

(Start: 10 @36706 has 163 MA's), (28, 36649), (29, 36646), (56, 36430), (65, 36382), (78, 36307), (79, 36304), (80, 36286), (102, 36166), (104, 36154),

Gene: Vix\_57 Start: 37014, Stop: 36292, Start Num: 10

Candidate Starts for Vix\_57:

(Start: 10 @37014 has 163 MA's), (Start: 41 @36873 has 1 MA's), (51, 36819), (63, 36705), (83, 36588), (86, 36555), (87, 36552), (97, 36501), (101, 36486), (104, 36465), (116, 36378),

Gene: VohminGhazi\_56 Start: 35796, Stop: 35128, Start Num: 9  
Candidate Starts for VohminGhazi\_56:  
(Start: 9 @35796 has 76 MA's), (24, 35745), (46, 35610), (51, 35574), (104, 35292), (109, 35265),

Gene: Waits\_60 Start: 35888, Stop: 35316, Start Num: 13  
Candidate Starts for Waits\_60:  
(7, 35939), (Start: 8 @35927 has 1 MA's), (Start: 13 @35888 has 20 MA's), (20, 35873), (45, 35735),  
(61, 35591), (87, 35489), (101, 35423), (104, 35402), (115, 35339),

Gene: WalterMcMickey\_50 Start: 36164, Stop: 35451, Start Num: 10  
Candidate Starts for WalterMcMickey\_50:  
(Start: 10 @36164 has 163 MA's), (29, 36110), (46, 36008), (47, 35999), (55, 35903), (70, 35816), (86,  
35708), (96, 35657), (104, 35618),

Gene: Watson\_57 Start: 36923, Stop: 36201, Start Num: 10  
Candidate Starts for Watson\_57:  
(Start: 10 @36923 has 163 MA's), (Start: 41 @36782 has 1 MA's), (51, 36728), (63, 36614), (83,  
36497), (86, 36464), (87, 36461), (97, 36410), (101, 36395), (104, 36374), (116, 36287),

Gene: Wiks\_56 Start: 35889, Stop: 35221, Start Num: 9  
Candidate Starts for Wiks\_56:  
(Start: 9 @35889 has 76 MA's), (24, 35838), (46, 35703), (51, 35667), (104, 35385), (109, 35358),

Gene: Wooldri\_59 Start: 36843, Stop: 36121, Start Num: 10  
Candidate Starts for Wooldri\_59:  
(Start: 10 @36843 has 163 MA's), (Start: 41 @36702 has 1 MA's), (51, 36648), (63, 36534), (83,  
36417), (86, 36384), (87, 36381), (97, 36330), (101, 36315), (104, 36294), (116, 36207),

Gene: WunderPhul\_57 Start: 35887, Stop: 35219, Start Num: 9  
Candidate Starts for WunderPhul\_57:  
(Start: 9 @35887 has 76 MA's), (24, 35836), (46, 35701), (51, 35665), (104, 35383), (109, 35356),

Gene: Yogi\_42 Start: 32803, Stop: 32213, Start Num: 10  
Candidate Starts for Yogi\_42:  
(Start: 10 @32803 has 163 MA's), (Start: 13 @32785 has 20 MA's), (26, 32755), (27, 32752), (45,  
32638), (53, 32554), (55, 32527), (71, 32461), (73, 32452), (85, 32404), (101, 32332), (104, 32311),  
(110, 32272),

Gene: Yokurt\_57 Start: 35889, Stop: 35221, Start Num: 9  
Candidate Starts for Yokurt\_57:  
(Start: 9 @35889 has 76 MA's), (24, 35838), (46, 35703), (51, 35667), (104, 35385), (109, 35358),

Gene: Yoncess\_42 Start: 32583, Stop: 31993, Start Num: 10  
Candidate Starts for Yoncess\_42:  
(Start: 10 @32583 has 163 MA's), (Start: 13 @32565 has 20 MA's), (26, 32535), (27, 32532), (45,  
32418), (53, 32334), (55, 32307), (71, 32241), (73, 32232), (85, 32184), (101, 32112), (104, 32091),  
(110, 32052),

Gene: Zaka\_57 Start: 35889, Stop: 35221, Start Num: 9  
Candidate Starts for Zaka\_57:  
(Start: 9 @35889 has 76 MA's), (24, 35838), (46, 35703), (51, 35667), (104, 35385), (109, 35358),

Gene: Zetzy\_56 Start: 36494, Stop: 35772, Start Num: 10

Candidate Starts for Zetzy\_56:

(Start: 10 @36494 has 163 MA's), (Start: 41 @36353 has 1 MA's), (51, 36299), (63, 36185), (83, 36068), (86, 36035), (87, 36032), (97, 35981), (101, 35966), (104, 35945), (116, 35858),

Gene: Zolita\_49 Start: 36436, Stop: 35810, Start Num: 16

Candidate Starts for Zolita\_49:

(Start: 11 @36448 has 8 MA's), (Start: 16 @36436 has 44 MA's), (23, 36418), (33, 36343), (46, 36280), (55, 36175), (56, 36166), (66, 36106), (69, 36094), (91, 36016), (104, 35953),

Gene: Zulu\_58 Start: 36267, Stop: 35599, Start Num: 9

Candidate Starts for Zulu\_58:

(Start: 9 @36267 has 76 MA's), (24, 36216), (46, 36081), (51, 36045), (104, 35763), (109, 35736),