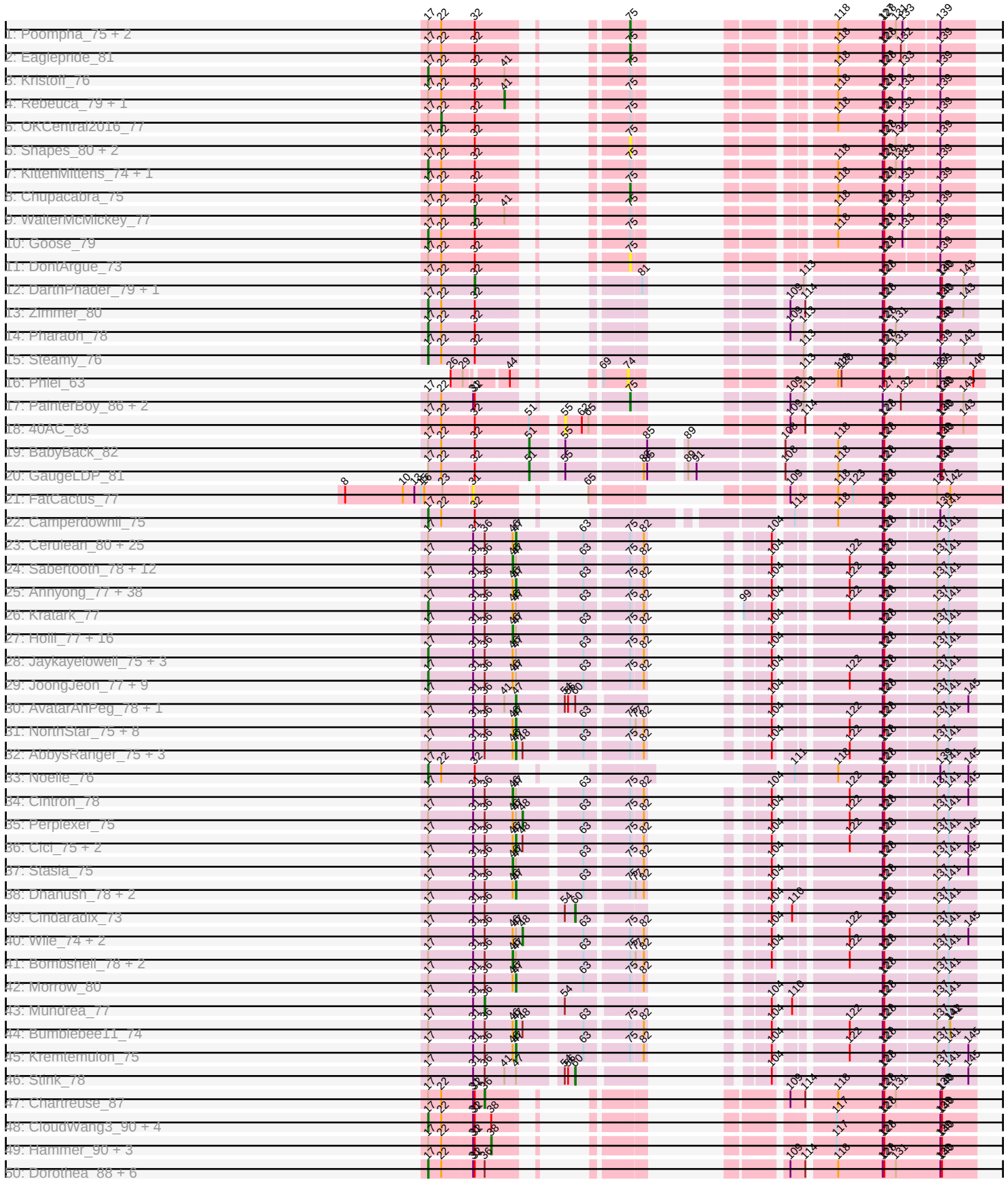
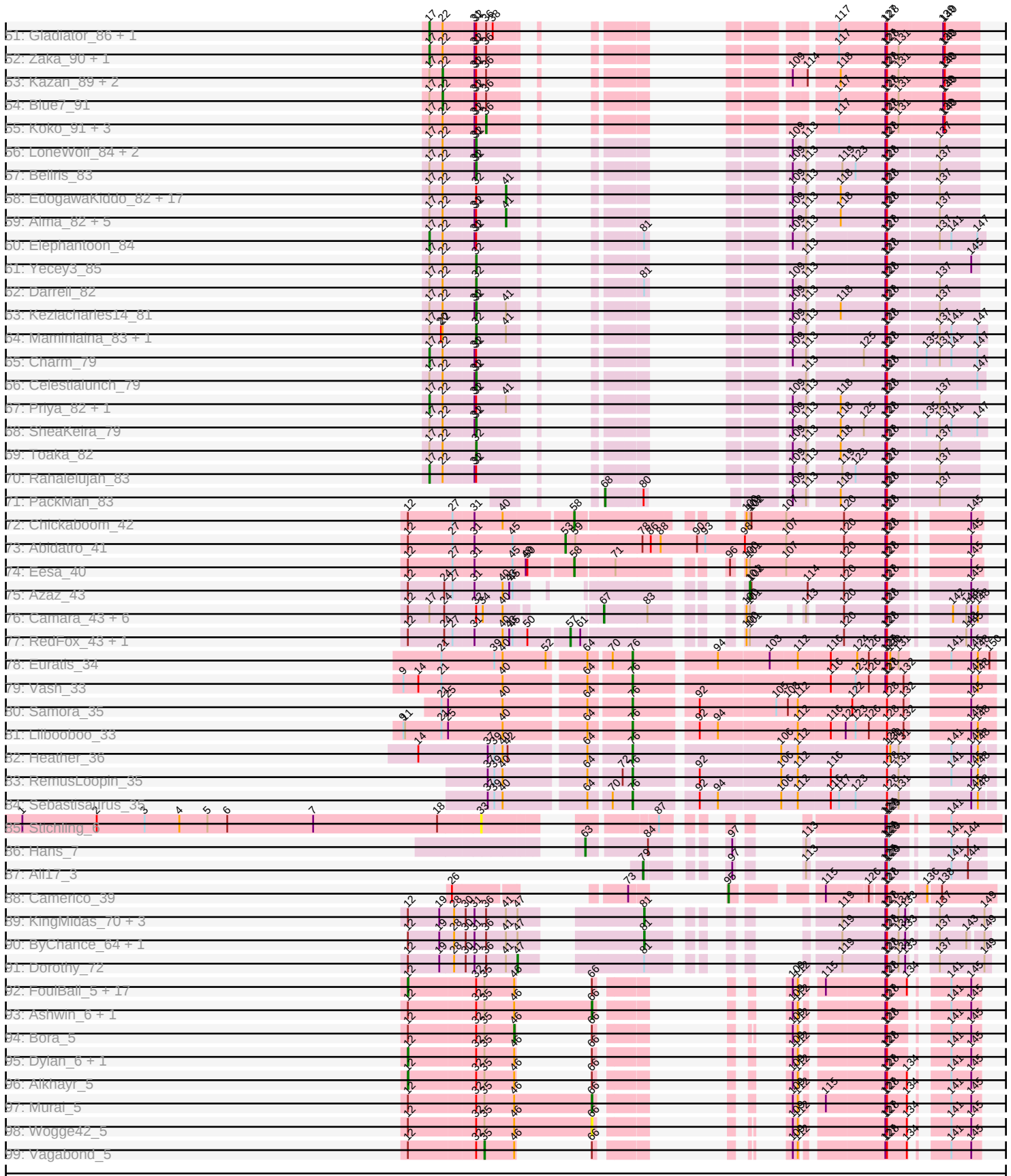






Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. If this default region is judged to be packed too tightly 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 330402 Report

This analysis was run 09/05/26 on database version 662.

Pham number 330402 has 307 members, 28 are drafts.

Phages represented in each track:

- Track 1 : Poompha\_75, Severus\_76, PeaceMeal1\_75
- Track 2 : Eaglepride\_81
- Track 3 : Kristoff\_76
- Track 4 : Rebeuca\_79, Twister\_78
- Track 5 : OKCentral2016\_77
- Track 6 : Shapes\_80, DustyMartin\_80, Rowdy\_80
- Track 7 : KittenMittens\_74, Drake94\_75
- Track 8 : Chupacabra\_75
- Track 9 : WalterMcMickey\_77
- Track 10 : Goose\_79
- Track 11 : DontArgue\_73
- Track 12 : DarthPhader\_79, Refuge\_81
- Track 13 : Zimmer\_80
- Track 14 : Pharaoh\_78
- Track 15 : Steamy\_76
- Track 16 : Phlei\_63
- Track 17 : PainterBoy\_86, Lucyedi\_87, EagleEye\_88
- Track 18 : 40AC\_83
- Track 19 : BabyBack\_82
- Track 20 : GaugeLDP\_81
- Track 21 : FatCactus\_77
- Track 22 : Camperdownii\_75
- Track 23 : Cerulean\_80, Deano\_75, TiroTheta9\_77, Caelakin\_76, LochMonster\_79, CentreCat\_78, Kampy\_77, Iracema64\_78, Spino\_77, Shaka\_76, Lunsford\_78, BellusTerra\_79, SenorClean\_79, Roosevelt\_76, Felipe\_79, Abdiel\_77, SheldonCooper\_78, Eagle\_77, Taquarus\_77, Citius\_78, Phontbonne\_78, Nebs\_79, Medusa\_77, Ulysses\_77, Druantia\_77, ChampagnePapi\_81
- Track 24 : Sabertooth\_78, Rocksand\_75, Polymorphads\_79, Mazhar510\_78, Northrop\_75, Connomayer\_78, Pumbaa\_78, TygerBlood\_78, Koreni\_77, LHTSCC\_80, Tinybot\_77, Sultana\_78, Skadoosh\_75
- Track 25 : Annyong\_77, Eros\_78, DirtyDunning\_77, Iceman\_76, MeeZee\_77, Obama12\_79, Huxley\_70, OKaNui\_77, Maverick\_77, Koan\_75, Happiness\_77, Burger\_76, Phacado\_78, Houdini22\_77, Millski\_77, Peaches\_76, PeterPeter\_78, Avle17\_78, Wander\_78, Broseidon\_78, Datway\_75, Commander\_76, Lorenzo\_78, CocoaBerry\_78, ICleared\_77, Alberto7\_79, Relief\_77, Kyee\_78, Arturo\_75, LittleGuy\_78, Scamp\_78, HamSlice\_74, Nemo27\_77, LappelDuVide\_78, Eapen\_78, Gadost\_78, NotAPhaseMom\_77, Phighter1804\_78, Xena\_74

- Track 26 : Kratark\_77
- Track 27 : Holli\_77, Kingmustik0402\_78, TroyPia\_79, Maxo\_80, Blackmoor\_77, Eurydice\_79, Ohfah\_79, JetBlade\_79, Nyxis\_77, Bartimeaus\_78, Sparxx\_79, BangNhom\_75, YoSam321\_78, Buckaroo\_74, Baby16\_78, Rosa24\_74, Junimo\_74
- Track 28 : Jaykayelowell\_75, Florean\_78, Bruiser\_77, TinaFeyge\_76
- Track 29 : JoongJeon\_77, Funston\_77, Clarenza\_77, BubbleTrouble\_77, Palestino\_77, KFPoly\_77, Albee\_78, Thanksgivukkah\_77, LittleB\_78, Eris\_77
- Track 30 : AvatarAhPeg\_78, Miramae\_78
- Track 31 : NorthStar\_75, Romney\_77, Wilbur\_78, SteMason\_78, Pipcraft\_74, Ruin\_78, Lemur\_78, Flux\_79, Melvin\_80
- Track 32 : AbbysRanger\_75, Badger\_74, PetiteSangsue\_75, Backyardigan\_73
- Track 33 : Noelle\_76
- Track 34 : Cintron\_78
- Track 35 : Perplexer\_75
- Track 36 : Cici\_75, Morpher26\_75, Shygu2\_76
- Track 37 : Stasia\_75
- Track 38 : Dhanush\_78, KekoraPapaka\_75, Chaph\_78
- Track 39 : Cindaradix\_73
- Track 40 : Wile\_74, Wizard007\_75, Katalie136\_75
- Track 41 : Bombshell\_78, Skipitt\_77, RockieBear\_75
- Track 42 : Morrow\_80
- Track 43 : Mundrea\_77
- Track 44 : Bumblebee11\_74
- Track 45 : Kremtemulon\_75
- Track 46 : Stink\_78
- Track 47 : Chartreuse\_87
- Track 48 : CloudWang3\_90, Roksolana\_90, Hexamo\_89, Rifter\_90, Artemis2UCLA\_89
- Track 49 : Hammer\_90, BlessJoy\_90, ToneTone\_87, Tucker\_90
- Track 50 : Dorothea\_88, Hoot\_83, Polyphemos\_81, BABullseye\_81, Jordennis\_86, Isiphiwo\_84, JewelBug\_80
- Track 51 : Gladiator\_86, Gruunaga\_89
- Track 52 : Zaka\_90, Wiks\_89
- Track 53 : Kazan\_89, SmellyB\_88, Cookiedough\_88
- Track 54 : Blue7\_91
- Track 55 : Koko\_91, Temprado\_91, Yokurt\_89, Helmet\_92
- Track 56 : LoneWolf\_84, Vanisoa\_79, Arissanae\_79
- Track 57 : Bellris\_83
- Track 58 : EdogawaKiddo\_82, HortumSL17\_85, Scherzo\_82, Phonnegut\_84, Fayely\_82, Jiawan\_81, Tubs\_84, Sachima\_80, Catalina\_86, RyeScarlet\_85, Beemo\_84, Onglai\_82, Myxus\_84, Halex\_82, Phaeder\_84, Pioneer\_84, Hanray\_82, Lilleskat\_81
- Track 59 : Alma\_82, Conquerage\_82, Eidsmoe\_82, EmyBug\_81, Qobbit\_82, Ayanochan\_81
- Track 60 : Elephantoon\_84
- Track 61 : Yecey3\_85
- Track 62 : Darrell\_82
- Track 63 : Keziacharles14\_81
- Track 64 : Maminiaina\_83, BogosyJay\_83
- Track 65 : Charm\_79
- Track 66 : Celestialunch\_79
- Track 67 : Priya\_82, Spouty\_82
- Track 68 : SheaKeira\_79

- Track 69 : Toaka\_82
- Track 70 : Rahalelujah\_83
- Track 71 : PackMan\_83
- Track 72 : Chickaboom\_42
- Track 73 : Abidatro\_41
- Track 74 : Eesa\_40
- Track 75 : Azaz\_43
- Track 76 : Camara\_43, Babushka\_40, Renna12\_42, KHumphrey\_43, Glotell\_44, Amphitrite\_43, AdoptaAdorbs\_42
- Track 77 : RedFox\_43, PhluffyCoco\_43
- Track 78 : Euratis\_34
- Track 79 : Vash\_33
- Track 80 : Samora\_35
- Track 81 : Lilbooboo\_33
- Track 82 : Heather\_36
- Track 83 : RemusLoopin\_35
- Track 84 : Sebastisaurus\_35
- Track 85 : Stichling\_6
- Track 86 : Hans\_7
- Track 87 : Ali17\_3
- Track 88 : Camerico\_39
- Track 89 : KingMidas\_70, Inventum\_69, Sassafras\_72, Scottish\_69
- Track 90 : ByChance\_64, ShowerHandel\_74
- Track 91 : Dorothy\_72
- Track 92 : FoulBall\_5, Zebo\_5, Familton\_6, Schuy\_5, Ryadel\_7, Idergollasper\_5, Shida\_5, YoyoKar\_5, TelAviv\_5, Mori\_5, Krili\_5, MadKillah\_5, NiebruSaylor\_5, Blessica\_5, Catdawg\_5, SchoolBus\_5, Vorrrps\_5, KingPhillip3\_5
- Track 93 : Ashwin\_6, Wildflower\_5
- Track 94 : Bora\_5
- Track 95 : Dylan\_6, Zakhe101\_6
- Track 96 : Alkhayr\_5
- Track 97 : Murai\_5
- Track 98 : Wogge42\_5
- Track 99 : Vagabond\_5

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

The start number called the most often in the published annotations is 47, it was called in 89 of the 279 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AbbysRanger\_75, Abdiel\_77, Alberto7\_79, Annyong\_77, Arturo\_75, AvatarAhPeg\_78, Avle17\_78, Backyardigan\_73, Badger\_74, BellusTerra\_79, Broseidon\_78, Bumblebee11\_74, Burger\_76, Caelakin\_76, CentreCat\_78, Cerulean\_80, ChampagnePapi\_81, Chaph\_78, Cici\_75, Citius\_78, Cocoaberry\_78, Commander\_76, Datway\_75, Deano\_75, Dhanush\_78, DirtyDunning\_77, Dorothy\_72, Druantia\_77, Eagle\_77, Eapen\_78, Eros\_78, Flux\_79, Gadost\_78, HamSlice\_74, Happiness\_77, Houdini22\_77, Huxley\_70, ICleared\_77, Iceman\_76, Iracema64\_78, Kampy\_77, KekoraPapaka\_75, Koan\_75, Kremtemulon\_75, Kyee\_78, LappelDuVide\_78, Lemur\_78, LittleGuy\_78, LochMonster\_79, Lorenzo\_78,

Lunsford\_78, Maverick\_77, Medusa\_77, MeeZee\_77, Melvin\_80, Millski\_77, Miramae\_78, Morpher26\_75, Morrow\_80, Nebs\_79, Nemo27\_77, NorthStar\_75, NotAPhaseMom\_77, OKaNui\_77, Obama12\_79, Peaches\_76, PeterPeter\_78, PetiteSangsue\_75, Phacado\_78, Felipe\_79, Phighter1804\_78, Phontbonne\_78, Pipcraft\_74, Relief\_77, Romney\_77, Roosevelt\_76, Ruin\_78, Scamp\_78, SenorClean\_79, Shaka\_76, SheldonCooper\_78, Shygu2\_76, Spino\_77, SteMason\_78, Taquarus\_77, TiroTheta9\_77, Ulysses\_77, Wander\_78, Wilbur\_78, Xena\_74,

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

- Albee\_78, Baby16\_78, BangNhom\_75, Bartimeaus\_78, Blackmoor\_77, Bombshell\_78, Bruiser\_77, BubbleTrouble\_77, Buckaroo\_74, ByChance\_64, Cintron\_78, Clarenza\_77, Connomayer\_78, Eris\_77, Eurydice\_79, Florean\_78, Funston\_77, Holli\_77, Inventum\_69, Jaykayelowell\_75, JetBlade\_79, JoongJeon\_77, Junimo\_74, KFPoly\_77, Katalie136\_75, KingMidas\_70, Kingmustik0402\_78, Koreni\_77, Kratark\_77, LHTSCC\_80, LittleB\_78, Maxo\_80, Mazhar510\_78, Northrop\_75, Nyxis\_77, Ohfah\_79, Palestino\_77, Perplexer\_75, Polymorphads\_79, Pumbaa\_78, RockieBear\_75, Rocksand\_75, Rosa24\_74, Sabertooth\_78, Sassafras\_72, Scottish\_69, ShowerHandel\_74, Skadoosh\_75, Skipitt\_77, Sparxx\_79, Stasia\_75, Stink\_78, Sultana\_78, Thanksgivukkah\_77, TinaFeyge\_76, Tinybot\_77, TroyPia\_79, TygerBlood\_78, Wile\_74, Wizard007\_75, YoSam321\_78,

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

- 40AC\_83, Abidatro\_41, AdoptaAdorbs\_42, Ali17\_3, Alkhayr\_5, Alma\_82, Amphitrite\_43, Arissanae\_79, Artemis2UCLA\_89, Ashwin\_6, Ayanochan\_81, Azaz\_43, BABullseye\_81, Babushka\_40, BabyBack\_82, Beemo\_84, Bellris\_83, BlessJoy\_90, Blessica\_5, Blue7\_91, BogosyJay\_83, Bora\_5, Camara\_43, Camerico\_39, Camperdownii\_75, Catalina\_86, Catdawg\_5, Celestiallunch\_79, Charm\_79, Chartreuse\_87, Chickaboom\_42, Chupacabra\_75, Cindaradix\_73, CloudWang3\_90, Conquerage\_82, Cookiedough\_88, Darrell\_82, DARTHPhader\_79, DontArgue\_73, Dorothea\_88, Drake94\_75, DustyMartin\_80, Dylan\_6, EagleEye\_88, Eaglepride\_81, EdogawaKiddo\_82, Eesa\_40, Eidsmoe\_82, Elephantoon\_84, EmyBug\_81, Euratis\_34, FAMILTON\_6, FatCactus\_77, Fayely\_82, FoulBall\_5, GaugeLDP\_81, Gladiator\_86, Glotell\_44, Goose\_79, Gruunaga\_89, Hammer\_90, Hanray\_82, Hans\_7, Heather\_36, Helmet\_92, Hexamo\_89, Horex\_82, Hoot\_83, HortumSL17\_85, Idergollasper\_5, Isiphiwo\_84, JewelBug\_80, Jiawan\_81, Jordennis\_86, KHumphrey\_43, Kazan\_89, Keziacharles14\_81, KingPhillip3\_5, KittenMittens\_74, Koko\_91, Krili\_5, Kristoff\_76, Lilbooboo\_33, Lilleskat\_81, LoneWolf\_84, Lucyedi\_87, MadKillah\_5, Maminiaina\_83, Mori\_5, Mundrea\_77, Murai\_5, Myxus\_84, NiebruSaylor\_5, Noelle\_76, OKCentral2016\_77, Onglai\_82, PackMan\_83, PainterBoy\_86, PeaceMeal1\_75, Phaeder\_84, Pharaoh\_78, Phlei\_63, PhluffyCoco\_43, Phonnegut\_84, Pioneer\_84, Polyphemus\_81, Poompha\_75, Priya\_82, Qobbit\_82, Rahalelujah\_83, Rebeuca\_79, RedFox\_43, Refuge\_81, RemusLoopin\_35, Renna12\_42, Rifter\_90, Roksolana\_90, Rowdy\_80, Ryadel\_7, RyeScarlet\_85, Sachima\_80, Samora\_35, Scherzo\_82, SchoolBus\_5, Schuy\_5, Sebastisaurus\_35, Severus\_76, Shapes\_80, SheaKeira\_79, Shida\_5, SmellyB\_88, Spouty\_82, Steamy\_76, Stichling\_6, TelAviv\_5, Temprado\_91, Toaka\_82, ToneTone\_87, Tubs\_84, Tucker\_90, Twister\_78, Vagabond\_5, Vanisoa\_79, Vash\_33, Vorrrps\_5, WalterMcMickey\_77, Wiks\_89, Wildflower\_5, Wogge42\_5, Yecey3\_85, Yokurt\_89, YoyoKar\_5, Zaka\_90, Zakhe101\_6, Zebo\_5, Zimmer\_80,

**Summary by start number:**

#### Start 12:

- Found in 47 of 307 ( 15.3% ) of genes in pham
- Manual Annotations of this start: 20 of 279
- Called 44.7% of time when present
- Phage (with cluster) where this start called: Alkhayr\_5 (O), Blessica\_5 (O), Catdawg\_5 (O), Dylan\_6 (O), Familton\_6 (O), FoulBall\_5 (O), Idergollasper\_5 (O), KingPhillip3\_5 (O), Krili\_5 (O), MadKillah\_5 (O), Mori\_5 (O), NiebruSaylor\_5 (O), Ryadel\_7 (O), SchoolBus\_5 (O), Schuy\_5 (O), Shida\_5 (O), TelAviv\_5 (O), Vorrrps\_5 (O), YoyoKar\_5 (O), Zakhe101\_6 (O), Zebo\_5 (O),

#### Start 17:

- Found in 253 of 307 ( 82.4% ) of genes in pham
- Manual Annotations of this start: 45 of 279
- Called 17.8% of time when present
- Phage (with cluster) where this start called: Albee\_78 (A4), Artemis2UCLA\_89 (A6), BABullseye\_81 (A6), Bruiser\_77 (A4), BubbleTrouble\_77 (A4), Camperdownii\_75 (A4), Charm\_79 (A9), Clarenza\_77 (A4), CloudWang3\_90 (A6), Dorothea\_88 (A6), Drake94\_75 (A10), Elephantoon\_84 (A9), Eris\_77 (A4), Florean\_78 (A4), Funston\_77 (A4), Gladiator\_86 (A6), Goose\_79 (A10), Gruunaga\_89 (A6), Hexamo\_89 (A6), Hoot\_83 (A6), Isiphiwo\_84 (A6), Jaykayelowell\_75 (A4), JewelBug\_80 (A6), JoongJeon\_77 (A4), Jordennis\_86 (A6), KFPoly\_77 (A4), KittenMittens\_74 (A10), Kratark\_77 (A4), Kristoff\_76 (A10), LittleB\_78 (A4), Noelle\_76 (A4), Palestino\_77 (A4), Pharaoh\_78 (A12), Polyphemus\_81 (A6), Priya\_82 (A9), Rahalelujah\_83 (A9), Rifter\_90 (A6), Roksolana\_90 (A6), Spouty\_82 (A9), Steamy\_76 (A12), Thanksgivukkah\_77 (A4), TinaFeyge\_76 (A4), Wiks\_89 (A6), Zaka\_90 (A6), Zimmer\_80 (A12),

#### Start 22:

- Found in 100 of 307 ( 32.6% ) of genes in pham
- Manual Annotations of this start: 5 of 279
- Called 5.0% of time when present
- Phage (with cluster) where this start called: Blue7\_91 (A6), Cookiedough\_88 (A6), Kazan\_89 (A6), OKCentral2016\_77 (A10), SmellyB\_88 (A6),

#### Start 31:

- Found in 210 of 307 ( 68.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 0.5% of time when present
- Phage (with cluster) where this start called: FatCactus\_77 (A20),

#### Start 32:

- Found in 134 of 307 ( 43.6% ) of genes in pham
- Manual Annotations of this start: 15 of 279
- Called 11.2% of time when present
- Phage (with cluster) where this start called: Arissanae\_79 (A9), Bellris\_83 (A9), BogosyJay\_83 (A9), Celestialunch\_79 (A9), Darrell\_82 (A9), DarthPhader\_79 (A12), Keziacharles14\_81 (A9), LoneWolf\_84 (A9), Maminiaina\_83 (A9), Refuge\_81 (A12), SheaKeira\_79 (A9), Toaka\_82 (A9), Vanisoa\_79 (A9), WalterMcMickey\_77 (A10), Yecey3\_85 (A9),

#### Start 33:

- Found in 1 of 307 ( 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: Stichling\_6 (DE1),

Start 35:

- Found in 27 of 307 ( 8.8% ) of genes in pham
- Manual Annotations of this start: 1 of 279
- Called 3.7% of time when present
- Phage (with cluster) where this start called: Vagabond\_5 (O),

Start 36:

- Found in 173 of 307 ( 56.4% ) of genes in pham
- Manual Annotations of this start: 6 of 279
- Called 3.5% of time when present
- Phage (with cluster) where this start called: Chartreuse\_87 (A6), Helmet\_92 (A6), Koko\_91 (A6), Mundrea\_77 (A4), Temprado\_91 (A6), Yokurt\_89 (A6),

Start 38:

- Found in 11 of 307 ( 3.6% ) of genes in pham
- Manual Annotations of this start: 4 of 279
- Called 36.4% of time when present
- Phage (with cluster) where this start called: BlessJoy\_90 (A6), Hammer\_90 (A6), ToneTone\_87 (A6), Tucker\_90 (A6),

Start 41:

- Found in 43 of 307 ( 14.0% ) of genes in pham
- Manual Annotations of this start: 18 of 279
- Called 60.5% of time when present
- Phage (with cluster) where this start called: Alma\_82 (A9), Ayanochan\_81 (A9), Beemo\_84 (A9), Catalina\_86 (A9), Conquerage\_82 (A9), EdogawaKiddo\_82 (A9), Eidsmoe\_82 (A9), EmyBug\_81 (A9), Fayely\_82 (A9), Hanray\_82 (A9), Hollex\_82 (A9), HortumSL17\_85 (A9), Jiawan\_81 (A9), Lilleskat\_81 (A9), Myxus\_84 (A9), Onglai\_82 (A9), Phaeder\_84 (A9), Phonnegut\_84 (A9), Pioneer\_84 (A9), Qobbit\_82 (A9), Rebeuca\_79 (A10), RyeScarlet\_85 (A9), Sachima\_80 (A9), Scherzo\_82 (A9), Tubs\_84 (A9), Twister\_78 (A10),

Start 46:

- Found in 168 of 307 ( 54.7% ) of genes in pham
- Manual Annotations of this start: 29 of 279
- Called 21.4% of time when present
- Phage (with cluster) where this start called: Baby16\_78 (A4), BangNhom\_75 (A4), Bartimeaus\_78 (A4), Blackmoor\_77 (A4), Bombshell\_78 (A4), Bora\_5 (O), Buckaroo\_74 (A4), Cintron\_78 (A4), Connomayer\_78 (A4), Eurydice\_79 (A4), Holli\_77 (A4), JetBlade\_79 (A4), Junimo\_74 (A4), Kingmustik0402\_78 (A4), Koreni\_77 (A4), LHTSCC\_80 (A4), Maxo\_80 (A4), Mazhar510\_78 (A4), Northrop\_75 (A4), Nyxis\_77 (A4), Ohfah\_79 (A4), Polymorphads\_79 (A4), Pumbaa\_78 (A4), RockieBear\_75 (A4), Rocksand\_75 (A4), Rosa24\_74 (A4), Sabertooth\_78 (A4), Skadoosh\_75 (A4), Skipitt\_77 (A4), Sparxx\_79 (A4), Stasia\_75 (A4), Sultana\_78 (A4), Tinybot\_77 (A4), TroyPia\_79 (A4), TygerBlood\_78 (A4), YoSam321\_78 (A4),

Start 47:

- Found in 151 of 307 ( 49.2% ) of genes in pham
- Manual Annotations of this start: 89 of 279
- Called 59.6% of time when present

- Phage (with cluster) where this start called: AbbysRanger\_75 (A4), Abdiel\_77 (A4), Alberto7\_79 (A4), Annyong\_77 (A4), Arturo\_75 (A4), AvatarAhPeg\_78 (A4), Avle17\_78 (A4), Backyardigan\_73 (A4), Badger\_74 (A4), BellusTerra\_79 (A4), Broseidon\_78 (A4), Bumblebee11\_74 (A4), Burger\_76 (A4), Caelakin\_76 (A4), CentreCat\_78 (A4), Cerulean\_80 (A4), ChampagnePapi\_81 (A4), Chaph\_78 (A4), Cici\_75 (A4), Citius\_78 (A4), Cocoaberry\_78 (A4), Commander\_76 (A4), Datway\_75 (A4), Deano\_75 (A4), Dhanush\_78 (A4), DirtyDunning\_77 (A4), Dorothy\_72 (F1), Druantia\_77 (A4), Eagle\_77 (A4), Eapen\_78 (A4), Eros\_78 (A4), Flux\_79 (A4), Gadost\_78 (A4), HamSlice\_74 (A4), Happiness\_77 (A4), Houdini22\_77 (A4), Huxley\_70 (A4), ICleared\_77 (A4), Iceman\_76 (A4), Iracema64\_78 (A4), Kampy\_77 (A4), KekoraPapaka\_75 (A4), Koan\_75 (A4), Kremtemulon\_75 (A4), Kyee\_78 (A4), LappelDuVide\_78 (A4), Lemur\_78 (A4), LittleGuy\_78 (A4), LochMonster\_79 (A4), Lorenzo\_78 (A4), Lunsford\_78 (A4), Maverick\_77 (A4), Medusa\_77 (A4), MeeZee\_77 (A4), Melvin\_80 (A4), Millski\_77 (A4), Miramae\_78 (A4), Morpher26\_75 (A4), Morrow\_80 (A4), Nebs\_79 (A4), Nemo27\_77 (A4), NorthStar\_75 (A4), NotAPhaseMom\_77 (A4), OKaNui\_77 (A4), Obama12\_79 (A4), Peaches\_76 (A4), PeterPeter\_78 (A4), PetiteSangsue\_75 (A4), Phacado\_78 (A4), Phelipe\_79 (A4), Phighter1804\_78 (A4), Phontbonne\_78 (A4), Pipcraft\_74 (A4), Relief\_77 (A4), Romney\_77 (A4), Roosevelt\_76 (A4), Ruin\_78 (A4), Scamp\_78 (A4), SenorClean\_79 (A4), Shaka\_76 (A4), SheldonCooper\_78 (A4), Shygu2\_76 (A4), Spino\_77 (A4), SteMason\_78 (A4), Taquarus\_77 (A4), TiroTheta9\_77 (A4), Ulysses\_77 (A4), Wander\_78 (A4), Wilbur\_78 (A4), Xena\_74 (A4),

#### Start 48:

- Found in 12 of 307 ( 3.9% ) of genes in pham
- Manual Annotations of this start: 4 of 279
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Katalie136\_75 (A4), Perplexer\_75 (A4), Wile\_74 (A4), Wizard007\_75 (A4),

#### Start 51:

- Found in 3 of 307 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 2 of 279
- Called 66.7% of time when present
- Phage (with cluster) where this start called: BabyBack\_82 (A2), GaugeLDP\_81 (A2),

#### Start 53:

- Found in 1 of 307 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 279
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abidatro\_41 (AS1),

#### Start 55:

- Found in 3 of 307 ( 1.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: 40AC\_83 (A17),

#### Start 57:

- Found in 2 of 307 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 2 of 279
- Called 100.0% of time when present

- Phage (with cluster) where this start called: PhluffyCoco\_43 (AS3), RedFox\_43 (AS3),

Start 58:

- Found in 2 of 307 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 2 of 279
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chickaboom\_42 (AS1), Eesa\_40 (AS1),

Start 60:

- Found in 4 of 307 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 2 of 279
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Cindaradix\_73 (A4), Stink\_78 (A4),

Start 63:

- Found in 142 of 307 ( 46.3% ) of genes in pham
- Manual Annotations of this start: 1 of 279
- Called 0.7% of time when present
- Phage (with cluster) where this start called: Hans\_7 (DE2),

Start 66:

- Found in 27 of 307 ( 8.8% ) of genes in pham
- Manual Annotations of this start: 3 of 279
- Called 14.8% of time when present
- Phage (with cluster) where this start called: Ashwin\_6 (O), Murai\_5 (O), Wildflower\_5 (O), Wogge42\_5 (O),

Start 67:

- Found in 7 of 307 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 5 of 279
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AdoptaAdorbs\_42 (AS3), Amphitrite\_43 (AS3), Babushka\_40 (AS3), Camara\_43 (AS3), Glotell\_44 (AS3), KHumphrey\_43 (AS3), Renna12\_42 (AS3),

Start 68:

- Found in 1 of 307 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 279
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PackMan\_83 (A9),

Start 74:

- Found in 1 of 307 ( 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: Phlei\_63 (A13),

Start 75:

- Found in 161 of 307 ( 52.4% ) of genes in pham
- Manual Annotations of this start: 8 of 279
- Called 7.5% of time when present

- Phage (with cluster) where this start called: Chupacabra\_75 (A10), DontArgue\_73 (A10), DustyMartin\_80 (A10), EagleEye\_88 (A16), Eaglepride\_81 (A10), Lucyedi\_87 (A16), PainterBoy\_86 (A16), PeaceMeal1\_75 (A10), Poompha\_75 (A10), Rowdy\_80 (A10), Severus\_76 (A10), Shapes\_80 (A10),

Start 76:

- Found in 7 of 307 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 7 of 279
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Euratis\_34 (BB1), Heather\_36 (BB2), Lilbooboo\_33 (BB1), RemusLoopin\_35 (BB2), Samora\_35 (BB1), Sebastisaurus\_35 (BB2), Vash\_33 (BB1),

Start 79:

- Found in 1 of 307 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 279
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ali17\_3 (DE2),

Start 81:

- Found in 11 of 307 ( 3.6% ) of genes in pham
- Manual Annotations of this start: 6 of 279
- Called 54.5% of time when present
- Phage (with cluster) where this start called: ByChance\_64 (F1), Inventum\_69 (F1), KingMidas\_70 (F1), Sassafras\_72 (F1), Scottish\_69 (F1), ShowerHandel\_74 (F1),

Start 95:

- Found in 1 of 307 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 279
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Camerico\_39 (DF4),

Start 101:

- Found in 12 of 307 ( 3.9% ) of genes in pham
- Manual Annotations of this start: 1 of 279
- Called 8.3% of time when present
- Phage (with cluster) where this start called: Azaz\_43 (AS3),

## Summary by clusters:

There are 19 clusters represented in this pham: AS3, F1, A17, A16, A10, A13, A12, DF4, DE1, DE2, AS1, O, A20, A2, A4, A6, A9, BB2, BB1,

Info for manual annotations of cluster A10:

- Start number 17 was manually annotated 4 times for cluster A10.
- Start number 22 was manually annotated 1 time for cluster A10.
- Start number 32 was manually annotated 1 time for cluster A10.
- Start number 41 was manually annotated 2 times for cluster A10.
- Start number 75 was manually annotated 5 times for cluster A10.

Info for manual annotations of cluster A12:

- Start number 17 was manually annotated 3 times for cluster A12.
- Start number 32 was manually annotated 2 times for cluster A12.

Info for manual annotations of cluster A16:

- Start number 75 was manually annotated 3 times for cluster A16.

Info for manual annotations of cluster A2:

- Start number 51 was manually annotated 2 times for cluster A2.

Info for manual annotations of cluster A4:

- Start number 17 was manually annotated 17 times for cluster A4.
- Start number 36 was manually annotated 1 time for cluster A4.
- Start number 46 was manually annotated 28 times for cluster A4.
- Start number 47 was manually annotated 88 times for cluster A4.
- Start number 48 was manually annotated 4 times for cluster A4.
- Start number 60 was manually annotated 2 times for cluster A4.

Info for manual annotations of cluster A6:

- Start number 17 was manually annotated 16 times for cluster A6.
- Start number 22 was manually annotated 4 times for cluster A6.
- Start number 36 was manually annotated 5 times for cluster A6.
- Start number 38 was manually annotated 4 times for cluster A6.

Info for manual annotations of cluster A9:

- Start number 17 was manually annotated 5 times for cluster A9.
- Start number 32 was manually annotated 12 times for cluster A9.
- Start number 41 was manually annotated 16 times for cluster A9.
- Start number 68 was manually annotated 1 time for cluster A9.

Info for manual annotations of cluster AS1:

- Start number 53 was manually annotated 1 time for cluster AS1.
- Start number 58 was manually annotated 2 times for cluster AS1.

Info for manual annotations of cluster AS3:

- Start number 57 was manually annotated 2 times for cluster AS3.
- Start number 67 was manually annotated 5 times for cluster AS3.
- Start number 101 was manually annotated 1 time for cluster AS3.

Info for manual annotations of cluster BB1:

- Start number 76 was manually annotated 4 times for cluster BB1.

Info for manual annotations of cluster BB2:

- Start number 76 was manually annotated 3 times for cluster BB2.

Info for manual annotations of cluster DE2:

- Start number 63 was manually annotated 1 time for cluster DE2.
- Start number 79 was manually annotated 1 time for cluster DE2.

Info for manual annotations of cluster DF4:

- Start number 95 was manually annotated 1 time for cluster DF4.

Info for manual annotations of cluster F1:

- Start number 47 was manually annotated 1 time for cluster F1.
- Start number 81 was manually annotated 6 times for cluster F1.

Info for manual annotations of cluster O:

- Start number 12 was manually annotated 20 times for cluster O.
- Start number 35 was manually annotated 1 time for cluster O.
- Start number 46 was manually annotated 1 time for cluster O.
- Start number 66 was manually annotated 3 times for cluster O.

### **Gene Information:**

Gene: 40AC\_83 Start: 49035, Stop: 48499, Start Num: 55

Candidate Starts for 40AC\_83:

(Start: 17 @49257 has 45 MA's), (Start: 22 @49233 has 5 MA's), (Start: 32 @49176 has 15 MA's), (Start: 51 @49083 has 2 MA's), (55, 49035), (62, 49005), (65, 48996), (109, 48810), (114, 48786), (127, 48663), (128, 48660), (139, 48564), (140, 48561), (143, 48522),

Gene: AbbysRanger\_75 Start: 46560, Stop: 45976, Start Num: 47

Candidate Starts for AbbysRanger\_75:

(Start: 17 @46710 has 45 MA's), (31, 46632), (Start: 36 @46611 has 6 MA's), (Start: 46 @46563 has 29 MA's), (Start: 47 @46560 has 89 MA's), (Start: 48 @46548 has 4 MA's), (Start: 63 @46455 has 1 MA's), (Start: 75 @46383 has 8 MA's), (82, 46365), (104, 46299), (122, 46194), (127, 46134), (128, 46131), (137, 46044), (141, 46023),

Gene: Abdiel\_77 Start: 46760, Stop: 46176, Start Num: 47

Candidate Starts for Abdiel\_77:

(Start: 17 @46910 has 45 MA's), (31, 46832), (Start: 36 @46811 has 6 MA's), (Start: 46 @46763 has 29 MA's), (Start: 47 @46760 has 89 MA's), (Start: 63 @46655 has 1 MA's), (Start: 75 @46583 has 8 MA's), (82, 46565), (104, 46499), (127, 46334), (128, 46331), (137, 46244), (141, 46223),

Gene: Abidatro\_41 Start: 27763, Stop: 28476, Start Num: 53

Candidate Starts for Abidatro\_41:

(Start: 12 @27487 has 20 MA's), (27, 27568), (31, 27604), (45, 27670), (Start: 53 @27763 has 1 MA's), (59, 27781), (78, 27901), (86, 27916), (88, 27934), (90, 28000), (93, 28015), (98, 28087), (107, 28162), (120, 28264), (127, 28339), (128, 28342), (145, 28459),

Gene: AdoptaAdorbs\_42 Start: 27398, Stop: 27865, Start Num: 67

Candidate Starts for AdoptaAdorbs\_42:

(Start: 12 @27170 has 20 MA's), (Start: 17 @27209 has 45 MA's), (24, 27236), (Start: 32 @27290 has 15 MA's), (34, 27302), (40, 27335), (Start: 67 @27398 has 5 MA's), (83, 27473), (100, 27563), (Start: 101 @27569 has 1 MA's), (113, 27590), (120, 27641), (127, 27716), (128, 27719), (142, 27803), (143, 27827), (145, 27836), (148, 27848),

Gene: Albee\_78 Start: 46898, Stop: 46164, Start Num: 17

Candidate Starts for Albee\_78:

(Start: 17 @46898 has 45 MA's), (31, 46820), (Start: 36 @46799 has 6 MA's), (Start: 46 @46751 has 29 MA's), (Start: 47 @46748 has 89 MA's), (Start: 63 @46643 has 1 MA's), (Start: 75 @46571 has 8 MA's), (82, 46553), (104, 46487), (122, 46382), (127, 46322), (128, 46319), (137, 46232), (141, 46211),

Gene: Alberto7\_79 Start: 47085, Stop: 46501, Start Num: 47

Candidate Starts for Alberto7\_79:

(Start: 17 @47235 has 45 MA's), (31, 47157), (Start: 36 @47136 has 6 MA's), (Start: 46 @47088 has 29 MA's), (Start: 47 @47085 has 89 MA's), (Start: 63 @46980 has 1 MA's), (Start: 75 @46908 has 8 MA's), (82, 46890), (104, 46824), (122, 46719), (127, 46659), (128, 46656), (137, 46569), (141, 46548),

Gene: Ali17\_3 Start: 3303, Stop: 3692, Start Num: 79

Candidate Starts for Ali17\_3:

(Start: 79 @3303 has 1 MA's), (97, 3387), (113, 3414), (127, 3546), (128, 3549), (129, 3552), (141, 3630), (144, 3660),

Gene: Alkhayr\_5 Start: 1855, Stop: 1286, Start Num: 12

Candidate Starts for Alkhayr\_5:

(Start: 12 @1855 has 20 MA's), (Start: 32 @1738 has 15 MA's), (Start: 35 @1723 has 1 MA's), (Start: 46 @1672 has 29 MA's), (Start: 66 @1669 has 3 MA's), (109, 1555), (112, 1546), (127, 1417), (128, 1414), (134, 1378), (141, 1339), (145, 1303),

Gene: Alma\_82 Start: 46797, Stop: 46282, Start Num: 41

Candidate Starts for Alma\_82:

(Start: 17 @46929 has 45 MA's), (Start: 22 @46905 has 5 MA's), (31, 46851), (Start: 32 @46848 has 15 MA's), (Start: 41 @46797 has 18 MA's), (109, 46590), (113, 46569), (118, 46521), (127, 46443), (128, 46440), (137, 46353),

Gene: Amphitrite\_43 Start: 27397, Stop: 27864, Start Num: 67

Candidate Starts for Amphitrite\_43:

(Start: 12 @27169 has 20 MA's), (Start: 17 @27208 has 45 MA's), (24, 27235), (Start: 32 @27289 has 15 MA's), (34, 27301), (40, 27334), (Start: 67 @27397 has 5 MA's), (83, 27472), (100, 27562), (Start: 101 @27568 has 1 MA's), (113, 27589), (120, 27640), (127, 27715), (128, 27718), (142, 27802), (143, 27826), (145, 27835), (148, 27847),

Gene: Annyong\_77 Start: 46793, Stop: 46209, Start Num: 47

Candidate Starts for Annyong\_77:

(Start: 17 @46943 has 45 MA's), (31, 46865), (Start: 36 @46844 has 6 MA's), (Start: 46 @46796 has 29 MA's), (Start: 47 @46793 has 89 MA's), (Start: 63 @46688 has 1 MA's), (Start: 75 @46616 has 8 MA's), (82, 46598), (104, 46532), (122, 46427), (127, 46367), (128, 46364), (137, 46277), (141, 46256),

Gene: Arissanae\_79 Start: 46740, Stop: 46174, Start Num: 32

Candidate Starts for Arissanae\_79:

(Start: 17 @46821 has 45 MA's), (Start: 22 @46797 has 5 MA's), (31, 46743), (Start: 32 @46740 has 15 MA's), (109, 46482), (113, 46461), (127, 46335), (128, 46332), (137, 46245),

Gene: Artemis2UCLA\_89 Start: 47205, Stop: 46558, Start Num: 17

Candidate Starts for Artemis2UCLA\_89:

(Start: 17 @47205 has 45 MA's), (Start: 22 @47181 has 5 MA's), (31, 47127), (Start: 32 @47124 has 15 MA's), (Start: 38 @47094 has 4 MA's), (117, 46800), (127, 46719), (128, 46716), (139, 46623), (140, 46620),

Gene: Arturo\_75 Start: 46876, Stop: 46292, Start Num: 47

Candidate Starts for Arturo\_75:

(Start: 17 @47026 has 45 MA's), (31, 46948), (Start: 36 @46927 has 6 MA's), (Start: 46 @46879 has 29 MA's), (Start: 47 @46876 has 89 MA's), (Start: 63 @46771 has 1 MA's), (Start: 75 @46699 has 8

MA's), (82, 46681), (104, 46615), (122, 46510), (127, 46450), (128, 46447), (137, 46360), (141, 46339),

Gene: Ashwin\_6 Start: 1973, Stop: 1590, Start Num: 66

Candidate Starts for Ashwin\_6:

(Start: 12 @2159 has 20 MA's), (Start: 32 @2042 has 15 MA's), (Start: 35 @2027 has 1 MA's), (Start: 46 @1976 has 29 MA's), (Start: 66 @1973 has 3 MA's), (109, 1859), (112, 1850), (127, 1721), (128, 1718), (141, 1643), (145, 1607),

Gene: AvatarAhPeg\_78 Start: 46909, Stop: 46328, Start Num: 47

Candidate Starts for AvatarAhPeg\_78:

(Start: 17 @47059 has 45 MA's), (31, 46981), (Start: 36 @46960 has 6 MA's), (Start: 41 @46927 has 18 MA's), (Start: 47 @46909 has 89 MA's), (54, 46840), (56, 46834), (Start: 60 @46822 has 2 MA's), (104, 46651), (127, 46486), (128, 46483), (137, 46396), (141, 46375), (145, 46339),

Gene: Avle17\_78 Start: 46742, Stop: 46158, Start Num: 47

Candidate Starts for Avle17\_78:

(Start: 17 @46892 has 45 MA's), (31, 46814), (Start: 36 @46793 has 6 MA's), (Start: 46 @46745 has 29 MA's), (Start: 47 @46742 has 89 MA's), (Start: 63 @46637 has 1 MA's), (Start: 75 @46565 has 8 MA's), (82, 46547), (104, 46481), (122, 46376), (127, 46316), (128, 46313), (137, 46226), (141, 46205),

Gene: Ayanochan\_81 Start: 46580, Stop: 46065, Start Num: 41

Candidate Starts for Ayanochan\_81:

(Start: 17 @46712 has 45 MA's), (Start: 22 @46688 has 5 MA's), (31, 46634), (Start: 32 @46631 has 15 MA's), (Start: 41 @46580 has 18 MA's), (109, 46373), (113, 46352), (118, 46304), (127, 46226), (128, 46223), (137, 46136),

Gene: Azaz\_43 Start: 27653, Stop: 28045, Start Num: 101

Candidate Starts for Azaz\_43:

(Start: 12 @27236 has 20 MA's), (24, 27302), (27, 27317), (31, 27353), (40, 27401), (43, 27413), (45, 27419), (Start: 101 @27653 has 1 MA's), (102, 27656), (114, 27758), (120, 27821), (127, 27896), (128, 27899), (145, 28016),

Gene: BABullseye\_81 Start: 45537, Stop: 44887, Start Num: 17

Candidate Starts for BABullseye\_81:

(Start: 17 @45537 has 45 MA's), (Start: 22 @45513 has 5 MA's), (31, 45459), (Start: 32 @45456 has 15 MA's), (Start: 36 @45438 has 6 MA's), (109, 45198), (114, 45174), (118, 45129), (127, 45051), (128, 45048), (131, 45027), (139, 44952), (140, 44949),

Gene: Babushka\_40 Start: 27331, Stop: 27798, Start Num: 67

Candidate Starts for Babushka\_40:

(Start: 12 @27103 has 20 MA's), (Start: 17 @27142 has 45 MA's), (24, 27169), (Start: 32 @27223 has 15 MA's), (34, 27235), (40, 27268), (Start: 67 @27331 has 5 MA's), (83, 27406), (100, 27496), (Start: 101 @27502 has 1 MA's), (113, 27523), (120, 27574), (127, 27649), (128, 27652), (142, 27736), (143, 27760), (145, 27769), (148, 27781),

Gene: Baby16\_78 Start: 46762, Stop: 46175, Start Num: 46

Candidate Starts for Baby16\_78:

(Start: 17 @46909 has 45 MA's), (31, 46831), (Start: 36 @46810 has 6 MA's), (Start: 46 @46762 has 29 MA's), (Start: 47 @46759 has 89 MA's), (Start: 63 @46654 has 1 MA's), (Start: 75 @46582 has 8 MA's), (82, 46564), (104, 46498), (127, 46333), (128, 46330), (137, 46243), (141, 46222),

Gene: BabyBack\_82 Start: 48998, Stop: 48291, Start Num: 51

Candidate Starts for BabyBack\_82:

(Start: 17 @49172 has 45 MA's), (Start: 22 @49148 has 5 MA's), (Start: 32 @49091 has 15 MA's),  
(Start: 51 @48998 has 2 MA's), (55, 48950), (85, 48821), (89, 48764), (108, 48611), (118, 48533),  
(127, 48455), (128, 48452), (139, 48356), (140, 48353),

Gene: Backyardigan\_73 Start: 46576, Stop: 45992, Start Num: 47

Candidate Starts for Backyardigan\_73:

(Start: 17 @46726 has 45 MA's), (31, 46648), (Start: 36 @46627 has 6 MA's), (Start: 46 @46579 has  
29 MA's), (Start: 47 @46576 has 89 MA's), (Start: 48 @46564 has 4 MA's), (Start: 63 @46471 has 1  
MA's), (Start: 75 @46399 has 8 MA's), (82, 46381), (104, 46315), (122, 46210), (127, 46150), (128,  
46147), (137, 46060), (141, 46039),

Gene: Badger\_74 Start: 46542, Stop: 45958, Start Num: 47

Candidate Starts for Badger\_74:

(Start: 17 @46692 has 45 MA's), (31, 46614), (Start: 36 @46593 has 6 MA's), (Start: 46 @46545 has  
29 MA's), (Start: 47 @46542 has 89 MA's), (Start: 48 @46530 has 4 MA's), (Start: 63 @46437 has 1  
MA's), (Start: 75 @46365 has 8 MA's), (82, 46347), (104, 46281), (122, 46176), (127, 46116), (128,  
46113), (137, 46026), (141, 46005),

Gene: BangNhom\_75 Start: 47188, Stop: 46601, Start Num: 46

Candidate Starts for BangNhom\_75:

(Start: 17 @47335 has 45 MA's), (31, 47257), (Start: 36 @47236 has 6 MA's), (Start: 46 @47188 has  
29 MA's), (Start: 47 @47185 has 89 MA's), (Start: 63 @47080 has 1 MA's), (Start: 75 @47008 has 8  
MA's), (82, 46990), (104, 46924), (127, 46759), (128, 46756), (137, 46669), (141, 46648),

Gene: Bartimeaus\_78 Start: 46753, Stop: 46166, Start Num: 46

Candidate Starts for Bartimeaus\_78:

(Start: 17 @46900 has 45 MA's), (31, 46822), (Start: 36 @46801 has 6 MA's), (Start: 46 @46753 has  
29 MA's), (Start: 47 @46750 has 89 MA's), (Start: 63 @46645 has 1 MA's), (Start: 75 @46573 has 8  
MA's), (82, 46555), (104, 46489), (127, 46324), (128, 46321), (137, 46234), (141, 46213),

Gene: Beemo\_84 Start: 46790, Stop: 46275, Start Num: 41

Candidate Starts for Beemo\_84:

(Start: 17 @46922 has 45 MA's), (Start: 22 @46898 has 5 MA's), (Start: 32 @46841 has 15 MA's),  
(Start: 41 @46790 has 18 MA's), (109, 46583), (113, 46562), (118, 46514), (127, 46436), (128, 46433),  
(137, 46346),

Gene: Bellris\_83 Start: 46366, Stop: 45800, Start Num: 32

Candidate Starts for Bellris\_83:

(Start: 17 @46447 has 45 MA's), (Start: 22 @46423 has 5 MA's), (31, 46369), (Start: 32 @46366 has  
15 MA's), (109, 46108), (113, 46087), (119, 46036), (123, 46015), (127, 45961), (128, 45958), (137,  
45871),

Gene: BellusTerra\_79 Start: 46789, Stop: 46205, Start Num: 47

Candidate Starts for BellusTerra\_79:

(Start: 17 @46939 has 45 MA's), (31, 46861), (Start: 36 @46840 has 6 MA's), (Start: 46 @46792 has  
29 MA's), (Start: 47 @46789 has 89 MA's), (Start: 63 @46684 has 1 MA's), (Start: 75 @46612 has 8  
MA's), (82, 46594), (104, 46528), (127, 46363), (128, 46360), (137, 46273), (141, 46252),

Gene: Blackmoor\_77 Start: 46753, Stop: 46166, Start Num: 46

Candidate Starts for Blackmoor\_77:

(Start: 17 @46900 has 45 MA's), (31, 46822), (Start: 36 @46801 has 6 MA's), (Start: 46 @46753 has 29 MA's), (Start: 47 @46750 has 89 MA's), (Start: 63 @46645 has 1 MA's), (Start: 75 @46573 has 8 MA's), (82, 46555), (104, 46489), (127, 46324), (128, 46321), (137, 46234), (141, 46213),

Gene: BlessJoy\_90 Start: 47615, Stop: 47079, Start Num: 38

Candidate Starts for BlessJoy\_90:

(Start: 17 @47726 has 45 MA's), (Start: 22 @47702 has 5 MA's), (31, 47648), (Start: 32 @47645 has 15 MA's), (Start: 38 @47615 has 4 MA's), (117, 47321), (127, 47240), (128, 47237), (139, 47144), (140, 47141),

Gene: Blessica\_5 Start: 1714, Stop: 1145, Start Num: 12

Candidate Starts for Blessica\_5:

(Start: 12 @1714 has 20 MA's), (Start: 32 @1597 has 15 MA's), (Start: 35 @1582 has 1 MA's), (Start: 46 @1531 has 29 MA's), (Start: 66 @1528 has 3 MA's), (109, 1414), (112, 1405), (115, 1381), (127, 1276), (128, 1273), (134, 1237), (141, 1198), (145, 1162),

Gene: Blue7\_91 Start: 47412, Stop: 46786, Start Num: 22

Candidate Starts for Blue7\_91:

(Start: 17 @47436 has 45 MA's), (Start: 22 @47412 has 5 MA's), (31, 47358), (Start: 32 @47355 has 15 MA's), (Start: 36 @47337 has 6 MA's), (117, 47031), (127, 46950), (128, 46947), (131, 46926), (139, 46851), (140, 46848),

Gene: BogosyJay\_83 Start: 46896, Stop: 46318, Start Num: 32

Candidate Starts for BogosyJay\_83:

(Start: 17 @46977 has 45 MA's), (20, 46956), (Start: 22 @46953 has 5 MA's), (Start: 32 @46896 has 15 MA's), (Start: 41 @46845 has 18 MA's), (109, 46638), (113, 46617), (127, 46491), (128, 46488), (137, 46401), (141, 46380), (147, 46335),

Gene: Bombshell\_78 Start: 46748, Stop: 46161, Start Num: 46

Candidate Starts for Bombshell\_78:

(Start: 17 @46895 has 45 MA's), (31, 46817), (Start: 36 @46796 has 6 MA's), (Start: 46 @46748 has 29 MA's), (Start: 47 @46745 has 89 MA's), (Start: 63 @46640 has 1 MA's), (Start: 75 @46568 has 8 MA's), (77, 46562), (82, 46550), (104, 46484), (122, 46379), (127, 46319), (128, 46316), (137, 46229), (141, 46208),

Gene: Bora\_5 Start: 1666, Stop: 1286, Start Num: 46

Candidate Starts for Bora\_5:

(Start: 12 @1849 has 20 MA's), (Start: 32 @1732 has 15 MA's), (Start: 35 @1717 has 1 MA's), (Start: 46 @1666 has 29 MA's), (Start: 66 @1663 has 3 MA's), (109, 1555), (112, 1546), (127, 1417), (128, 1414), (141, 1339), (145, 1303),

Gene: Broseidon\_78 Start: 46751, Stop: 46167, Start Num: 47

Candidate Starts for Broseidon\_78:

(Start: 17 @46901 has 45 MA's), (31, 46823), (Start: 36 @46802 has 6 MA's), (Start: 46 @46754 has 29 MA's), (Start: 47 @46751 has 89 MA's), (Start: 63 @46646 has 1 MA's), (Start: 75 @46574 has 8 MA's), (82, 46556), (104, 46490), (122, 46385), (127, 46325), (128, 46322), (137, 46235), (141, 46214),

Gene: Bruiser\_77 Start: 46898, Stop: 46164, Start Num: 17

Candidate Starts for Bruiser\_77:

(Start: 17 @46898 has 45 MA's), (31, 46820), (Start: 36 @46799 has 6 MA's), (Start: 46 @46751 has 29 MA's), (Start: 47 @46748 has 89 MA's), (Start: 63 @46643 has 1 MA's), (Start: 75 @46571 has 8 MA's), (82, 46553), (104, 46487), (127, 46322), (128, 46319), (137, 46232), (141, 46211),

Gene: BubbleTrouble\_77 Start: 46925, Stop: 46191, Start Num: 17

Candidate Starts for BubbleTrouble\_77:

(Start: 17 @46925 has 45 MA's), (31, 46847), (Start: 36 @46826 has 6 MA's), (Start: 46 @46778 has 29 MA's), (Start: 47 @46775 has 89 MA's), (Start: 63 @46670 has 1 MA's), (Start: 75 @46598 has 8 MA's), (82, 46580), (104, 46514), (122, 46409), (127, 46349), (128, 46346), (137, 46259), (141, 46238),

Gene: Buckaroo\_74 Start: 46755, Stop: 46168, Start Num: 46

Candidate Starts for Buckaroo\_74:

(Start: 17 @46902 has 45 MA's), (31, 46824), (Start: 36 @46803 has 6 MA's), (Start: 46 @46755 has 29 MA's), (Start: 47 @46752 has 89 MA's), (Start: 63 @46647 has 1 MA's), (Start: 75 @46575 has 8 MA's), (82, 46557), (104, 46491), (127, 46326), (128, 46323), (137, 46236), (141, 46215),

Gene: Bumblebee11\_74 Start: 46542, Stop: 45958, Start Num: 47

Candidate Starts for Bumblebee11\_74:

(Start: 17 @46692 has 45 MA's), (31, 46614), (Start: 36 @46593 has 6 MA's), (Start: 46 @46545 has 29 MA's), (Start: 47 @46542 has 89 MA's), (Start: 48 @46530 has 4 MA's), (Start: 63 @46437 has 1 MA's), (Start: 75 @46365 has 8 MA's), (82, 46347), (104, 46281), (122, 46176), (127, 46116), (128, 46113), (137, 46026), (141, 46005), (142, 46002),

Gene: Burger\_76 Start: 46748, Stop: 46164, Start Num: 47

Candidate Starts for Burger\_76:

(Start: 17 @46898 has 45 MA's), (31, 46820), (Start: 36 @46799 has 6 MA's), (Start: 46 @46751 has 29 MA's), (Start: 47 @46748 has 89 MA's), (Start: 63 @46643 has 1 MA's), (Start: 75 @46571 has 8 MA's), (82, 46553), (104, 46487), (122, 46382), (127, 46322), (128, 46319), (137, 46232), (141, 46211),

Gene: ByChance\_64 Start: 42129, Stop: 42512, Start Num: 81

Candidate Starts for ByChance\_64:

(Start: 12 @41784 has 20 MA's), (19, 41841), (28, 41865), (30, 41883), (31, 41898), (Start: 36 @41919 has 6 MA's), (Start: 41 @41952 has 18 MA's), (Start: 47 @41970 has 89 MA's), (Start: 81 @42129 has 6 MA's), (119, 42291), (127, 42369), (128, 42372), (131, 42393), (133, 42402), (137, 42429), (143, 42477), (149, 42501),

Gene: Caelakin\_76 Start: 46748, Stop: 46164, Start Num: 47

Candidate Starts for Caelakin\_76:

(Start: 17 @46898 has 45 MA's), (31, 46820), (Start: 36 @46799 has 6 MA's), (Start: 46 @46751 has 29 MA's), (Start: 47 @46748 has 89 MA's), (Start: 63 @46643 has 1 MA's), (Start: 75 @46571 has 8 MA's), (82, 46553), (104, 46487), (127, 46322), (128, 46319), (137, 46232), (141, 46211),

Gene: Camara\_43 Start: 27400, Stop: 27867, Start Num: 67

Candidate Starts for Camara\_43:

(Start: 12 @27172 has 20 MA's), (Start: 17 @27211 has 45 MA's), (24, 27238), (Start: 32 @27292 has 15 MA's), (34, 27304), (40, 27337), (Start: 67 @27400 has 5 MA's), (83, 27475), (100, 27565), (Start: 101 @27571 has 1 MA's), (113, 27592), (120, 27643), (127, 27718), (128, 27721), (142, 27805), (143, 27829), (145, 27838), (148, 27850),

Gene: Camerico\_39 Start: 42850, Stop: 43254, Start Num: 95

Candidate Starts for Camerico\_39:

(26, 42643), (73, 42814), (Start: 95 @42850 has 1 MA's), (115, 42979), (126, 43048), (127, 43072), (128, 43075), (136, 43135), (138, 43156),

Gene: Camperdownii\_75 Start: 46323, Stop: 45583, Start Num: 17

Candidate Starts for Camperdownii\_75:

(Start: 17 @46323 has 45 MA's), (Start: 22 @46299 has 5 MA's), (Start: 32 @46242 has 15 MA's), (111, 45870), (118, 45807), (127, 45729), (128, 45726), (139, 45645), (141, 45630),

Gene: Catalina\_86 Start: 46900, Stop: 46385, Start Num: 41

Candidate Starts for Catalina\_86:

(Start: 17 @47032 has 45 MA's), (Start: 22 @47008 has 5 MA's), (Start: 32 @46951 has 15 MA's), (Start: 41 @46900 has 18 MA's), (109, 46693), (113, 46672), (118, 46624), (127, 46546), (128, 46543), (137, 46456),

Gene: Catdawg\_5 Start: 1764, Stop: 1195, Start Num: 12

Candidate Starts for Catdawg\_5:

(Start: 12 @1764 has 20 MA's), (Start: 32 @1647 has 15 MA's), (Start: 35 @1632 has 1 MA's), (Start: 46 @1581 has 29 MA's), (Start: 66 @1578 has 3 MA's), (109, 1464), (112, 1455), (115, 1431), (127, 1326), (128, 1323), (134, 1287), (141, 1248), (145, 1212),

Gene: Celestiallunch\_79 Start: 46143, Stop: 45568, Start Num: 32

Candidate Starts for Celestiallunch\_79:

(Start: 17 @46224 has 45 MA's), (Start: 22 @46200 has 5 MA's), (31, 46146), (Start: 32 @46143 has 15 MA's), (113, 45864), (127, 45738), (128, 45735), (147, 45582),

Gene: CentreCat\_78 Start: 46788, Stop: 46204, Start Num: 47

Candidate Starts for CentreCat\_78:

(Start: 17 @46938 has 45 MA's), (31, 46860), (Start: 36 @46839 has 6 MA's), (Start: 46 @46791 has 29 MA's), (Start: 47 @46788 has 89 MA's), (Start: 63 @46683 has 1 MA's), (Start: 75 @46611 has 8 MA's), (82, 46593), (104, 46527), (127, 46362), (128, 46359), (137, 46272), (141, 46251),

Gene: Cerulean\_80 Start: 47186, Stop: 46602, Start Num: 47

Candidate Starts for Cerulean\_80:

(Start: 17 @47336 has 45 MA's), (31, 47258), (Start: 36 @47237 has 6 MA's), (Start: 46 @47189 has 29 MA's), (Start: 47 @47186 has 89 MA's), (Start: 63 @47081 has 1 MA's), (Start: 75 @47009 has 8 MA's), (82, 46991), (104, 46925), (127, 46760), (128, 46757), (137, 46670), (141, 46649),

Gene: ChampagnePapi\_81 Start: 47188, Stop: 46604, Start Num: 47

Candidate Starts for ChampagnePapi\_81:

(Start: 17 @47338 has 45 MA's), (31, 47260), (Start: 36 @47239 has 6 MA's), (Start: 46 @47191 has 29 MA's), (Start: 47 @47188 has 89 MA's), (Start: 63 @47083 has 1 MA's), (Start: 75 @47011 has 8 MA's), (82, 46993), (104, 46927), (127, 46762), (128, 46759), (137, 46672), (141, 46651),

Gene: Chaph\_78 Start: 46759, Stop: 46175, Start Num: 47

Candidate Starts for Chaph\_78:

(Start: 17 @46909 has 45 MA's), (31, 46831), (Start: 36 @46810 has 6 MA's), (Start: 46 @46762 has 29 MA's), (Start: 47 @46759 has 89 MA's), (Start: 63 @46654 has 1 MA's), (Start: 75 @46582 has 8 MA's), (77, 46576), (82, 46564), (104, 46498), (127, 46333), (128, 46330), (137, 46243), (141, 46222),

Gene: Charm\_79 Start: 46368, Stop: 45709, Start Num: 17

Candidate Starts for Charm\_79:

(Start: 17 @46368 has 45 MA's), (Start: 22 @46344 has 5 MA's), (31, 46290), (Start: 32 @46287 has 15 MA's), (109, 46029), (113, 46008), (125, 45921), (127, 45882), (128, 45879), (135, 45813), (137, 45792), (141, 45771), (147, 45726),

Gene: Chartreuse\_87 Start: 46443, Stop: 45892, Start Num: 36

Candidate Starts for Chartreuse\_87:

(Start: 17 @46542 has 45 MA's), (Start: 22 @46518 has 5 MA's), (31, 46464), (Start: 32 @46461 has 15 MA's), (Start: 36 @46443 has 6 MA's), (109, 46203), (114, 46179), (118, 46134), (127, 46056), (128, 46053), (131, 46032), (139, 45957), (140, 45954),

Gene: Chickaboom\_42 Start: 27783, Stop: 28385, Start Num: 58

Candidate Starts for Chickaboom\_42:

(Start: 12 @27504 has 20 MA's), (27, 27585), (31, 27621), (40, 27669), (Start: 58 @27783 has 2 MA's), (100, 27996), (Start: 101 @28002 has 1 MA's), (102, 28005), (107, 28068), (120, 28170), (127, 28245), (128, 28248), (145, 28365),

Gene: Chupacabra\_75 Start: 46471, Stop: 46052, Start Num: 75

Candidate Starts for Chupacabra\_75:

(Start: 17 @46687 has 45 MA's), (Start: 22 @46663 has 5 MA's), (Start: 32 @46606 has 15 MA's), (Start: 75 @46471 has 8 MA's), (118, 46282), (127, 46204), (128, 46201), (133, 46168), (139, 46114),

Gene: Cici\_75 Start: 46555, Stop: 45971, Start Num: 47

Candidate Starts for Cici\_75:

(Start: 17 @46705 has 45 MA's), (31, 46627), (Start: 36 @46606 has 6 MA's), (Start: 46 @46558 has 29 MA's), (Start: 47 @46555 has 89 MA's), (Start: 48 @46543 has 4 MA's), (Start: 63 @46450 has 1 MA's), (Start: 75 @46378 has 8 MA's), (82, 46360), (104, 46294), (122, 46189), (127, 46129), (128, 46126), (137, 46039), (141, 46018), (145, 45982),

Gene: Cindaradix\_73 Start: 46788, Stop: 46300, Start Num: 60

Candidate Starts for Cindaradix\_73:

(Start: 17 @47025 has 45 MA's), (31, 46947), (Start: 36 @46926 has 6 MA's), (54, 46806), (Start: 60 @46788 has 2 MA's), (104, 46623), (110, 46602), (127, 46458), (128, 46455), (137, 46368), (141, 46347),

Gene: Cintron\_78 Start: 46867, Stop: 46280, Start Num: 46

Candidate Starts for Cintron\_78:

(Start: 17 @47014 has 45 MA's), (31, 46936), (Start: 36 @46915 has 6 MA's), (Start: 46 @46867 has 29 MA's), (Start: 47 @46864 has 89 MA's), (Start: 63 @46759 has 1 MA's), (Start: 75 @46687 has 8 MA's), (82, 46669), (104, 46603), (122, 46498), (127, 46438), (128, 46435), (137, 46348), (141, 46327), (145, 46291),

Gene: Citius\_78 Start: 46769, Stop: 46185, Start Num: 47

Candidate Starts for Citius\_78:

(Start: 17 @46919 has 45 MA's), (31, 46841), (Start: 36 @46820 has 6 MA's), (Start: 46 @46772 has 29 MA's), (Start: 47 @46769 has 89 MA's), (Start: 63 @46664 has 1 MA's), (Start: 75 @46592 has 8 MA's), (82, 46574), (104, 46508), (127, 46343), (128, 46340), (137, 46253), (141, 46232),

Gene: Clarenza\_77 Start: 46895, Stop: 46161, Start Num: 17

Candidate Starts for Clarenza\_77:

(Start: 17 @46895 has 45 MA's), (31, 46817), (Start: 36 @46796 has 6 MA's), (Start: 46 @46748 has 29 MA's), (Start: 47 @46745 has 89 MA's), (Start: 63 @46640 has 1 MA's), (Start: 75 @46568 has 8 MA's), (82, 46550), (104, 46484), (122, 46379), (127, 46319), (128, 46316), (137, 46229), (141, 46208),

Gene: CloudWang3\_90 Start: 47734, Stop: 47087, Start Num: 17

Candidate Starts for CloudWang3\_90:

(Start: 17 @47734 has 45 MA's), (Start: 22 @47710 has 5 MA's), (31, 47656), (Start: 32 @47653 has 15 MA's), (Start: 38 @47623 has 4 MA's), (117, 47329), (127, 47248), (128, 47245), (139, 47152),

(140, 47149),

Gene: Cocoaberry\_78 Start: 46749, Stop: 46165, Start Num: 47

Candidate Starts for Cocoaberry\_78:

(Start: 17 @46899 has 45 MA's), (31, 46821), (Start: 36 @46800 has 6 MA's), (Start: 46 @46752 has 29 MA's), (Start: 47 @46749 has 89 MA's), (Start: 63 @46644 has 1 MA's), (Start: 75 @46572 has 8 MA's), (82, 46554), (104, 46488), (122, 46383), (127, 46323), (128, 46320), (137, 46233), (141, 46212),

Gene: Commander\_76 Start: 46746, Stop: 46162, Start Num: 47

Candidate Starts for Commander\_76:

(Start: 17 @46896 has 45 MA's), (31, 46818), (Start: 36 @46797 has 6 MA's), (Start: 46 @46749 has 29 MA's), (Start: 47 @46746 has 89 MA's), (Start: 63 @46641 has 1 MA's), (Start: 75 @46569 has 8 MA's), (82, 46551), (104, 46485), (122, 46380), (127, 46320), (128, 46317), (137, 46230), (141, 46209),

Gene: Connomayer\_78 Start: 46751, Stop: 46164, Start Num: 46

Candidate Starts for Connomayer\_78:

(Start: 17 @46898 has 45 MA's), (31, 46820), (Start: 36 @46799 has 6 MA's), (Start: 46 @46751 has 29 MA's), (Start: 47 @46748 has 89 MA's), (Start: 63 @46643 has 1 MA's), (Start: 75 @46571 has 8 MA's), (82, 46553), (104, 46487), (122, 46382), (127, 46322), (128, 46319), (137, 46232), (141, 46211),

Gene: Conquerage\_82 Start: 46566, Stop: 46051, Start Num: 41

Candidate Starts for Conquerage\_82:

(Start: 17 @46698 has 45 MA's), (Start: 22 @46674 has 5 MA's), (31, 46620), (Start: 32 @46617 has 15 MA's), (Start: 41 @46566 has 18 MA's), (109, 46359), (113, 46338), (118, 46290), (127, 46212), (128, 46209), (137, 46122),

Gene: Cookiedough\_88 Start: 47826, Stop: 47200, Start Num: 22

Candidate Starts for Cookiedough\_88:

(Start: 17 @47850 has 45 MA's), (Start: 22 @47826 has 5 MA's), (31, 47772), (Start: 32 @47769 has 15 MA's), (Start: 36 @47751 has 6 MA's), (109, 47511), (114, 47487), (118, 47442), (127, 47364), (128, 47361), (131, 47340), (139, 47265), (140, 47262),

Gene: Darrell\_82 Start: 46051, Stop: 45485, Start Num: 32

Candidate Starts for Darrell\_82:

(Start: 17 @46132 has 45 MA's), (Start: 22 @46108 has 5 MA's), (Start: 32 @46051 has 15 MA's), (Start: 81 @45898 has 6 MA's), (109, 45793), (113, 45772), (127, 45646), (128, 45643), (137, 45556),

Gene: DarthPhader\_79 Start: 47620, Stop: 47048, Start Num: 32

Candidate Starts for DarthPhader\_79:

(Start: 17 @47701 has 45 MA's), (Start: 22 @47677 has 5 MA's), (Start: 32 @47620 has 15 MA's), (Start: 81 @47464 has 6 MA's), (113, 47338), (127, 47212), (128, 47209), (139, 47116), (140, 47113), (143, 47074),

Gene: Datway\_75 Start: 46559, Stop: 45975, Start Num: 47

Candidate Starts for Datway\_75:

(Start: 17 @46709 has 45 MA's), (31, 46631), (Start: 36 @46610 has 6 MA's), (Start: 46 @46562 has 29 MA's), (Start: 47 @46559 has 89 MA's), (Start: 63 @46454 has 1 MA's), (Start: 75 @46382 has 8 MA's), (82, 46364), (104, 46298), (122, 46193), (127, 46133), (128, 46130), (137, 46043), (141, 46022),

Gene: Deano\_75 Start: 46756, Stop: 46172, Start Num: 47

Candidate Starts for Deano\_75:

(Start: 17 @46906 has 45 MA's), (31, 46828), (Start: 36 @46807 has 6 MA's), (Start: 46 @46759 has 29 MA's), (Start: 47 @46756 has 89 MA's), (Start: 63 @46651 has 1 MA's), (Start: 75 @46579 has 8 MA's), (82, 46561), (104, 46495), (127, 46330), (128, 46327), (137, 46240), (141, 46219),

Gene: Dhanush\_78 Start: 46751, Stop: 46167, Start Num: 47

Candidate Starts for Dhanush\_78:

(Start: 17 @46901 has 45 MA's), (31, 46823), (Start: 36 @46802 has 6 MA's), (Start: 46 @46754 has 29 MA's), (Start: 47 @46751 has 89 MA's), (Start: 63 @46646 has 1 MA's), (Start: 75 @46574 has 8 MA's), (77, 46568), (82, 46556), (104, 46490), (127, 46325), (128, 46322), (137, 46235), (141, 46214),

Gene: DirtyDunning\_77 Start: 46760, Stop: 46176, Start Num: 47

Candidate Starts for DirtyDunning\_77:

(Start: 17 @46910 has 45 MA's), (31, 46832), (Start: 36 @46811 has 6 MA's), (Start: 46 @46763 has 29 MA's), (Start: 47 @46760 has 89 MA's), (Start: 63 @46655 has 1 MA's), (Start: 75 @46583 has 8 MA's), (82, 46565), (104, 46499), (122, 46394), (127, 46334), (128, 46331), (137, 46244), (141, 46223),

Gene: DontArgue\_73 Start: 45331, Stop: 44912, Start Num: 75

Candidate Starts for DontArgue\_73:

(Start: 17 @45547 has 45 MA's), (Start: 22 @45523 has 5 MA's), (Start: 32 @45466 has 15 MA's), (Start: 75 @45331 has 8 MA's), (127, 45064), (128, 45061), (139, 44974),

Gene: Dorothea\_88 Start: 47842, Stop: 47192, Start Num: 17

Candidate Starts for Dorothea\_88:

(Start: 17 @47842 has 45 MA's), (Start: 22 @47818 has 5 MA's), (31, 47764), (Start: 32 @47761 has 15 MA's), (Start: 36 @47743 has 6 MA's), (109, 47503), (114, 47479), (118, 47434), (127, 47356), (128, 47353), (131, 47332), (139, 47257), (140, 47254),

Gene: Dorothy\_72 Start: 44809, Stop: 45360, Start Num: 47

Candidate Starts for Dorothy\_72:

(Start: 12 @44623 has 20 MA's), (19, 44680), (28, 44704), (30, 44722), (31, 44737), (Start: 36 @44758 has 6 MA's), (Start: 41 @44791 has 18 MA's), (Start: 47 @44809 has 89 MA's), (Start: 81 @44968 has 6 MA's), (119, 45130), (127, 45208), (128, 45211), (131, 45232), (133, 45241), (137, 45268), (149, 45349),

Gene: Drake94\_75 Start: 45844, Stop: 45209, Start Num: 17

Candidate Starts for Drake94\_75:

(Start: 17 @45844 has 45 MA's), (Start: 22 @45820 has 5 MA's), (Start: 32 @45763 has 15 MA's), (Start: 75 @45628 has 8 MA's), (118, 45439), (127, 45361), (128, 45358), (131, 45337), (133, 45325), (139, 45271),

Gene: Druantia\_77 Start: 46751, Stop: 46167, Start Num: 47

Candidate Starts for Druantia\_77:

(Start: 17 @46901 has 45 MA's), (31, 46823), (Start: 36 @46802 has 6 MA's), (Start: 46 @46754 has 29 MA's), (Start: 47 @46751 has 89 MA's), (Start: 63 @46646 has 1 MA's), (Start: 75 @46574 has 8 MA's), (82, 46556), (104, 46490), (127, 46325), (128, 46322), (137, 46235), (141, 46214),

Gene: DustyMartin\_80 Start: 46614, Stop: 46195, Start Num: 75

Candidate Starts for DustyMartin\_80:

(Start: 17 @46830 has 45 MA's), (Start: 22 @46806 has 5 MA's), (Start: 32 @46749 has 15 MA's), (Start: 75 @46614 has 8 MA's), (127, 46347), (128, 46344), (131, 46323), (139, 46257),

Gene: Dylan\_6 Start: 2163, Stop: 1594, Start Num: 12

Candidate Starts for Dylan\_6:

(Start: 12 @2163 has 20 MA's), (Start: 32 @2046 has 15 MA's), (Start: 35 @2031 has 1 MA's), (Start: 46 @1980 has 29 MA's), (Start: 66 @1977 has 3 MA's), (109, 1863), (112, 1854), (127, 1725), (128, 1722), (141, 1647), (145, 1611),

Gene: Eagle\_77 Start: 46810, Stop: 46226, Start Num: 47

Candidate Starts for Eagle\_77:

(Start: 17 @46960 has 45 MA's), (31, 46882), (Start: 36 @46861 has 6 MA's), (Start: 46 @46813 has 29 MA's), (Start: 47 @46810 has 89 MA's), (Start: 63 @46705 has 1 MA's), (Start: 75 @46633 has 8 MA's), (82, 46615), (104, 46549), (127, 46384), (128, 46381), (137, 46294), (141, 46273),

Gene: EagleEye\_88 Start: 48605, Stop: 48168, Start Num: 75

Candidate Starts for EagleEye\_88:

(Start: 17 @48824 has 45 MA's), (Start: 22 @48800 has 5 MA's), (31, 48746), (Start: 32 @48743 has 15 MA's), (Start: 75 @48605 has 8 MA's), (109, 48482), (113, 48461), (127, 48335), (132, 48302), (139, 48233), (140, 48230), (143, 48191),

Gene: Eaglepride\_81 Start: 46551, Stop: 46135, Start Num: 75

Candidate Starts for Eaglepride\_81:

(Start: 17 @46767 has 45 MA's), (Start: 22 @46743 has 5 MA's), (Start: 32 @46686 has 15 MA's), (Start: 75 @46551 has 8 MA's), (118, 46362), (127, 46284), (128, 46281), (132, 46251), (139, 46197),

Gene: Eapen\_78 Start: 46743, Stop: 46159, Start Num: 47

Candidate Starts for Eapen\_78:

(Start: 17 @46893 has 45 MA's), (31, 46815), (Start: 36 @46794 has 6 MA's), (Start: 46 @46746 has 29 MA's), (Start: 47 @46743 has 89 MA's), (Start: 63 @46638 has 1 MA's), (Start: 75 @46566 has 8 MA's), (82, 46548), (104, 46482), (122, 46377), (127, 46317), (128, 46314), (137, 46227), (141, 46206),

Gene: EdogawaKiddo\_82 Start: 46868, Stop: 46353, Start Num: 41

Candidate Starts for EdogawaKiddo\_82:

(Start: 17 @47000 has 45 MA's), (Start: 22 @46976 has 5 MA's), (Start: 32 @46919 has 15 MA's), (Start: 41 @46868 has 18 MA's), (109, 46661), (113, 46640), (118, 46592), (127, 46514), (128, 46511), (137, 46424),

Gene: Eesa\_40 Start: 28668, Stop: 29270, Start Num: 58

Candidate Starts for Eesa\_40:

(Start: 12 @28389 has 20 MA's), (27, 28470), (31, 28506), (45, 28572), (49, 28593), (50, 28596), (Start: 58 @28668 has 2 MA's), (71, 28734), (96, 28869), (100, 28881), (Start: 101 @28887 has 1 MA's), (107, 28953), (120, 29055), (127, 29130), (128, 29133), (145, 29250),

Gene: Eidsmoe\_82 Start: 46558, Stop: 46043, Start Num: 41

Candidate Starts for Eidsmoe\_82:

(Start: 17 @46690 has 45 MA's), (Start: 22 @46666 has 5 MA's), (31, 46612), (Start: 32 @46609 has 15 MA's), (Start: 41 @46558 has 18 MA's), (109, 46351), (113, 46330), (118, 46282), (127, 46204), (128, 46201), (137, 46114),

Gene: Elephantoon\_84 Start: 46848, Stop: 46192, Start Num: 17

Candidate Starts for Elephantoon\_84:

(Start: 17 @46848 has 45 MA's), (Start: 22 @46824 has 5 MA's), (31, 46770), (Start: 32 @46767 has 15 MA's), (Start: 81 @46614 has 6 MA's), (109, 46509), (113, 46488), (127, 46362), (128, 46359),

(137, 46272), (141, 46251), (147, 46206),

Gene: EmyBug\_81 Start: 46560, Stop: 46045, Start Num: 41

Candidate Starts for EmyBug\_81:

(Start: 17 @46692 has 45 MA's), (Start: 22 @46668 has 5 MA's), (31, 46614), (Start: 32 @46611 has 15 MA's), (Start: 41 @46560 has 18 MA's), (109, 46353), (113, 46332), (118, 46284), (127, 46206), (128, 46203), (137, 46116),

Gene: Eris\_77 Start: 46910, Stop: 46176, Start Num: 17

Candidate Starts for Eris\_77:

(Start: 17 @46910 has 45 MA's), (31, 46832), (Start: 36 @46811 has 6 MA's), (Start: 46 @46763 has 29 MA's), (Start: 47 @46760 has 89 MA's), (Start: 63 @46655 has 1 MA's), (Start: 75 @46583 has 8 MA's), (82, 46565), (104, 46499), (122, 46394), (127, 46334), (128, 46331), (137, 46244), (141, 46223),

Gene: Eros\_78 Start: 46750, Stop: 46166, Start Num: 47

Candidate Starts for Eros\_78:

(Start: 17 @46900 has 45 MA's), (31, 46822), (Start: 36 @46801 has 6 MA's), (Start: 46 @46753 has 29 MA's), (Start: 47 @46750 has 89 MA's), (Start: 63 @46645 has 1 MA's), (Start: 75 @46573 has 8 MA's), (82, 46555), (104, 46489), (122, 46384), (127, 46324), (128, 46321), (137, 46234), (141, 46213),

Gene: Euratis\_34 Start: 26257, Stop: 26847, Start Num: 76

Candidate Starts for Euratis\_34:

(21, 25936), (39, 26032), (40, 26047), (52, 26125), (64, 26185), (70, 26221), (Start: 76 @26257 has 7 MA's), (94, 26392), (103, 26482), (112, 26530), (116, 26587), (124, 26635), (126, 26656), (127, 26686), (128, 26689), (130, 26695), (131, 26710), (141, 26767), (145, 26803), (148, 26815), (150, 26836),

Gene: Eurydice\_79 Start: 46788, Stop: 46201, Start Num: 46

Candidate Starts for Eurydice\_79:

(Start: 17 @46935 has 45 MA's), (31, 46857), (Start: 36 @46836 has 6 MA's), (Start: 46 @46788 has 29 MA's), (Start: 47 @46785 has 89 MA's), (Start: 63 @46680 has 1 MA's), (Start: 75 @46608 has 8 MA's), (82, 46590), (104, 46524), (127, 46359), (128, 46356), (137, 46269), (141, 46248),

Gene: Familton\_6 Start: 1765, Stop: 1196, Start Num: 12

Candidate Starts for Familton\_6:

(Start: 12 @1765 has 20 MA's), (Start: 32 @1648 has 15 MA's), (Start: 35 @1633 has 1 MA's), (Start: 46 @1582 has 29 MA's), (Start: 66 @1579 has 3 MA's), (109, 1465), (112, 1456), (115, 1432), (127, 1327), (128, 1324), (134, 1288), (141, 1249), (145, 1213),

Gene: FatCactus\_77 Start: 46761, Stop: 46126, Start Num: 31

Candidate Starts for FatCactus\_77:

(8, 46983), (10, 46878), (13, 46857), (15, 46845), (16, 46839), (23, 46806), (31, 46761), (65, 46677), (109, 46497), (118, 46428), (123, 46404), (127, 46350), (128, 46347), (137, 46254), (142, 46230),

Gene: Fayely\_82 Start: 46533, Stop: 46018, Start Num: 41

Candidate Starts for Fayely\_82:

(Start: 17 @46665 has 45 MA's), (Start: 22 @46641 has 5 MA's), (Start: 32 @46584 has 15 MA's), (Start: 41 @46533 has 18 MA's), (109, 46326), (113, 46305), (118, 46257), (127, 46179), (128, 46176), (137, 46089),

Gene: Florean\_78 Start: 46897, Stop: 46163, Start Num: 17

Candidate Starts for Florean\_78:

(Start: 17 @46897 has 45 MA's), (31, 46819), (Start: 36 @46798 has 6 MA's), (Start: 46 @46750 has 29 MA's), (Start: 47 @46747 has 89 MA's), (Start: 63 @46642 has 1 MA's), (Start: 75 @46570 has 8 MA's), (82, 46552), (104, 46486), (127, 46321), (128, 46318), (137, 46231), (141, 46210),

Gene: Flux\_79 Start: 46746, Stop: 46162, Start Num: 47

Candidate Starts for Flux\_79:

(Start: 17 @46896 has 45 MA's), (31, 46818), (Start: 36 @46797 has 6 MA's), (Start: 46 @46749 has 29 MA's), (Start: 47 @46746 has 89 MA's), (Start: 63 @46641 has 1 MA's), (Start: 75 @46569 has 8 MA's), (77, 46563), (82, 46551), (104, 46485), (122, 46380), (127, 46320), (128, 46317), (137, 46230), (141, 46209),

Gene: FoulBall\_5 Start: 1765, Stop: 1196, Start Num: 12

Candidate Starts for FoulBall\_5:

(Start: 12 @1765 has 20 MA's), (Start: 32 @1648 has 15 MA's), (Start: 35 @1633 has 1 MA's), (Start: 46 @1582 has 29 MA's), (Start: 66 @1579 has 3 MA's), (109, 1465), (112, 1456), (115, 1432), (127, 1327), (128, 1324), (134, 1288), (141, 1249), (145, 1213),

Gene: Funston\_77 Start: 46895, Stop: 46161, Start Num: 17

Candidate Starts for Funston\_77:

(Start: 17 @46895 has 45 MA's), (31, 46817), (Start: 36 @46796 has 6 MA's), (Start: 46 @46748 has 29 MA's), (Start: 47 @46745 has 89 MA's), (Start: 63 @46640 has 1 MA's), (Start: 75 @46568 has 8 MA's), (82, 46550), (104, 46484), (122, 46379), (127, 46319), (128, 46316), (137, 46229), (141, 46208),

Gene: Gadost\_78 Start: 46749, Stop: 46165, Start Num: 47

Candidate Starts for Gadost\_78:

(Start: 17 @46899 has 45 MA's), (31, 46821), (Start: 36 @46800 has 6 MA's), (Start: 46 @46752 has 29 MA's), (Start: 47 @46749 has 89 MA's), (Start: 63 @46644 has 1 MA's), (Start: 75 @46572 has 8 MA's), (82, 46554), (104, 46488), (122, 46383), (127, 46323), (128, 46320), (137, 46233), (141, 46212),

Gene: GaugeLDP\_81 Start: 48551, Stop: 47844, Start Num: 51

Candidate Starts for GaugeLDP\_81:

(Start: 17 @48725 has 45 MA's), (Start: 22 @48701 has 5 MA's), (Start: 32 @48644 has 15 MA's), (Start: 51 @48551 has 2 MA's), (55, 48503), (82, 48380), (85, 48374), (89, 48317), (91, 48302), (108, 48164), (118, 48086), (127, 48008), (128, 48005), (139, 47909), (140, 47906),

Gene: Gladiator\_86 Start: 47390, Stop: 46743, Start Num: 17

Candidate Starts for Gladiator\_86:

(Start: 17 @47390 has 45 MA's), (Start: 22 @47366 has 5 MA's), (31, 47312), (Start: 32 @47309 has 15 MA's), (Start: 36 @47291 has 6 MA's), (Start: 38 @47279 has 4 MA's), (117, 46985), (127, 46904), (128, 46901), (139, 46808), (140, 46805),

Gene: Glotell\_44 Start: 27556, Stop: 28023, Start Num: 67

Candidate Starts for Glotell\_44:

(Start: 12 @27328 has 20 MA's), (Start: 17 @27367 has 45 MA's), (24, 27394), (Start: 32 @27448 has 15 MA's), (34, 27460), (40, 27493), (Start: 67 @27556 has 5 MA's), (83, 27631), (100, 27721), (Start: 101 @27727 has 1 MA's), (113, 27748), (120, 27799), (127, 27874), (128, 27877), (142, 27961), (143, 27985), (145, 27994), (148, 28006),

Gene: Goose\_79 Start: 46498, Stop: 45863, Start Num: 17

Candidate Starts for Goose\_79:

(Start: 17 @46498 has 45 MA's), (Start: 22 @46474 has 5 MA's), (Start: 32 @46417 has 15 MA's),  
(Start: 75 @46282 has 8 MA's), (118, 46093), (127, 46015), (128, 46012), (133, 45979), (139, 45925),

Gene: Gruunaga\_89 Start: 47345, Stop: 46698, Start Num: 17

Candidate Starts for Gruunaga\_89:

(Start: 17 @47345 has 45 MA's), (Start: 22 @47321 has 5 MA's), (31, 47267), (Start: 32 @47264 has 15 MA's), (Start: 36 @47246 has 6 MA's), (Start: 38 @47234 has 4 MA's), (117, 46940), (127, 46859), (128, 46856), (139, 46763), (140, 46760),

Gene: HamSlice\_74 Start: 46747, Stop: 46163, Start Num: 47

Candidate Starts for HamSlice\_74:

(Start: 17 @46897 has 45 MA's), (31, 46819), (Start: 36 @46798 has 6 MA's), (Start: 46 @46750 has 29 MA's), (Start: 47 @46747 has 89 MA's), (Start: 63 @46642 has 1 MA's), (Start: 75 @46570 has 8 MA's), (82, 46552), (104, 46486), (122, 46381), (127, 46321), (128, 46318), (137, 46231), (141, 46210),

Gene: Hammer\_90 Start: 46941, Stop: 46405, Start Num: 38

Candidate Starts for Hammer\_90:

(Start: 17 @47052 has 45 MA's), (Start: 22 @47028 has 5 MA's), (31, 46974), (Start: 32 @46971 has 15 MA's), (Start: 38 @46941 has 4 MA's), (117, 46647), (127, 46566), (128, 46563), (139, 46470), (140, 46467),

Gene: Hanray\_82 Start: 46844, Stop: 46329, Start Num: 41

Candidate Starts for Hanray\_82:

(Start: 17 @46976 has 45 MA's), (Start: 22 @46952 has 5 MA's), (Start: 32 @46895 has 15 MA's), (Start: 41 @46844 has 18 MA's), (109, 46637), (113, 46616), (118, 46568), (127, 46490), (128, 46487), (137, 46400),

Gene: Hans\_7 Start: 4390, Stop: 4869, Start Num: 63

Candidate Starts for Hans\_7:

(Start: 63 @4390 has 1 MA's), (84, 4486), (97, 4564), (113, 4591), (127, 4723), (128, 4726), (129, 4729), (141, 4807), (144, 4837),

Gene: Happiness\_77 Start: 46771, Stop: 46187, Start Num: 47

Candidate Starts for Happiness\_77:

(Start: 17 @46921 has 45 MA's), (31, 46843), (Start: 36 @46822 has 6 MA's), (Start: 46 @46774 has 29 MA's), (Start: 47 @46771 has 89 MA's), (Start: 63 @46666 has 1 MA's), (Start: 75 @46594 has 8 MA's), (82, 46576), (104, 46510), (122, 46405), (127, 46345), (128, 46342), (137, 46255), (141, 46234),

Gene: Heather\_36 Start: 27272, Stop: 27856, Start Num: 76

Candidate Starts for Heather\_36:

(14, 26909), (37, 27035), (39, 27047), (40, 27062), (42, 27071), (64, 27200), (Start: 76 @27272 has 7 MA's), (106, 27518), (112, 27545), (128, 27704), (130, 27710), (131, 27725), (141, 27782), (145, 27818), (148, 27830),

Gene: Helmet\_92 Start: 47580, Stop: 47029, Start Num: 36

Candidate Starts for Helmet\_92:

(Start: 17 @47679 has 45 MA's), (Start: 22 @47655 has 5 MA's), (31, 47601), (Start: 32 @47598 has 15 MA's), (Start: 36 @47580 has 6 MA's), (117, 47274), (127, 47193), (128, 47190), (131, 47169), (139, 47094), (140, 47091),

Gene: Hexamo\_89 Start: 47220, Stop: 46573, Start Num: 17

Candidate Starts for Hexamo\_89:

(Start: 17 @47220 has 45 MA's), (Start: 22 @47196 has 5 MA's), (31, 47142), (Start: 32 @47139 has 15 MA's), (Start: 38 @47109 has 4 MA's), (117, 46815), (127, 46734), (128, 46731), (139, 46638), (140, 46635),

Gene: Holec\_82 Start: 46860, Stop: 46345, Start Num: 41

Candidate Starts for Holec\_82:

(Start: 17 @46992 has 45 MA's), (Start: 22 @46968 has 5 MA's), (Start: 32 @46911 has 15 MA's), (Start: 41 @46860 has 18 MA's), (109, 46653), (113, 46632), (118, 46584), (127, 46506), (128, 46503), (137, 46416),

Gene: Holli\_77 Start: 46541, Stop: 45954, Start Num: 46

Candidate Starts for Holli\_77:

(Start: 17 @46688 has 45 MA's), (31, 46610), (Start: 36 @46589 has 6 MA's), (Start: 46 @46541 has 29 MA's), (Start: 47 @46538 has 89 MA's), (Start: 63 @46433 has 1 MA's), (Start: 75 @46361 has 8 MA's), (82, 46343), (104, 46277), (127, 46112), (128, 46109), (137, 46022), (141, 46001),

Gene: Hoot\_83 Start: 45056, Stop: 44406, Start Num: 17

Candidate Starts for Hoot\_83:

(Start: 17 @45056 has 45 MA's), (Start: 22 @45032 has 5 MA's), (31, 44978), (Start: 32 @44975 has 15 MA's), (Start: 36 @44957 has 6 MA's), (109, 44717), (114, 44693), (118, 44648), (127, 44570), (128, 44567), (131, 44546), (139, 44471), (140, 44468),

Gene: HortumSL17\_85 Start: 46898, Stop: 46383, Start Num: 41

Candidate Starts for HortumSL17\_85:

(Start: 17 @47030 has 45 MA's), (Start: 22 @47006 has 5 MA's), (Start: 32 @46949 has 15 MA's), (Start: 41 @46898 has 18 MA's), (109, 46691), (113, 46670), (118, 46622), (127, 46544), (128, 46541), (137, 46454),

Gene: Houdini22\_77 Start: 46749, Stop: 46165, Start Num: 47

Candidate Starts for Houdini22\_77:

(Start: 17 @46899 has 45 MA's), (31, 46821), (Start: 36 @46800 has 6 MA's), (Start: 46 @46752 has 29 MA's), (Start: 47 @46749 has 89 MA's), (Start: 63 @46644 has 1 MA's), (Start: 75 @46572 has 8 MA's), (82, 46554), (104, 46488), (122, 46383), (127, 46323), (128, 46320), (137, 46233), (141, 46212),

Gene: Huxley\_70 Start: 44641, Stop: 44057, Start Num: 47

Candidate Starts for Huxley\_70:

(Start: 17 @44791 has 45 MA's), (31, 44713), (Start: 36 @44692 has 6 MA's), (Start: 46 @44644 has 29 MA's), (Start: 47 @44641 has 89 MA's), (Start: 63 @44536 has 1 MA's), (Start: 75 @44464 has 8 MA's), (82, 44446), (104, 44380), (122, 44275), (127, 44215), (128, 44212), (137, 44125), (141, 44104),

Gene: ICleared\_77 Start: 46816, Stop: 46232, Start Num: 47

Candidate Starts for ICleared\_77:

(Start: 17 @46966 has 45 MA's), (31, 46888), (Start: 36 @46867 has 6 MA's), (Start: 46 @46819 has 29 MA's), (Start: 47 @46816 has 89 MA's), (Start: 63 @46711 has 1 MA's), (Start: 75 @46639 has 8 MA's), (82, 46621), (104, 46555), (122, 46450), (127, 46390), (128, 46387), (137, 46300), (141, 46279),

Gene: Iceman\_76 Start: 47038, Stop: 46454, Start Num: 47

Candidate Starts for Iceman\_76:

(Start: 17 @47188 has 45 MA's), (31, 47110), (Start: 36 @47089 has 6 MA's), (Start: 46 @47041 has 29 MA's), (Start: 47 @47038 has 89 MA's), (Start: 63 @46933 has 1 MA's), (Start: 75 @46861 has 8 MA's), (82, 46843), (104, 46777), (122, 46672), (127, 46612), (128, 46609), (137, 46522), (141, 46501),

Gene: Idergollasper\_5 Start: 1765, Stop: 1196, Start Num: 12

Candidate Starts for Idergollasper\_5:

(Start: 12 @1765 has 20 MA's), (Start: 32 @1648 has 15 MA's), (Start: 35 @1633 has 1 MA's), (Start: 46 @1582 has 29 MA's), (Start: 66 @1579 has 3 MA's), (109, 1465), (112, 1456), (115, 1432), (127, 1327), (128, 1324), (134, 1288), (141, 1249), (145, 1213),

Gene: Inventum\_69 Start: 45166, Stop: 45558, Start Num: 81

Candidate Starts for Inventum\_69:

(Start: 12 @44821 has 20 MA's), (19, 44878), (28, 44902), (30, 44920), (31, 44935), (Start: 36 @44956 has 6 MA's), (Start: 41 @44989 has 18 MA's), (Start: 47 @45007 has 89 MA's), (Start: 81 @45166 has 6 MA's), (119, 45328), (127, 45406), (128, 45409), (131, 45430), (133, 45439), (137, 45466), (149, 45547),

Gene: Iracema64\_78 Start: 47012, Stop: 46428, Start Num: 47

Candidate Starts for Iracema64\_78:

(Start: 17 @47162 has 45 MA's), (31, 47084), (Start: 36 @47063 has 6 MA's), (Start: 46 @47015 has 29 MA's), (Start: 47 @47012 has 89 MA's), (Start: 63 @46907 has 1 MA's), (Start: 75 @46835 has 8 MA's), (82, 46817), (104, 46751), (127, 46586), (128, 46583), (137, 46496), (141, 46475),

Gene: Isiphiwo\_84 Start: 46767, Stop: 46117, Start Num: 17

Candidate Starts for Isiphiwo\_84:

(Start: 17 @46767 has 45 MA's), (Start: 22 @46743 has 5 MA's), (31, 46689), (Start: 32 @46686 has 15 MA's), (Start: 36 @46668 has 6 MA's), (109, 46428), (114, 46404), (118, 46359), (127, 46281), (128, 46278), (131, 46257), (139, 46182), (140, 46179),

Gene: Jaykayelowell\_75 Start: 46891, Stop: 46157, Start Num: 17

Candidate Starts for Jaykayelowell\_75:

(Start: 17 @46891 has 45 MA's), (31, 46813), (Start: 36 @46792 has 6 MA's), (Start: 46 @46744 has 29 MA's), (Start: 47 @46741 has 89 MA's), (Start: 63 @46636 has 1 MA's), (Start: 75 @46564 has 8 MA's), (82, 46546), (104, 46480), (127, 46315), (128, 46312), (137, 46225), (141, 46204),

Gene: JetBlade\_79 Start: 46779, Stop: 46192, Start Num: 46

Candidate Starts for JetBlade\_79:

(Start: 17 @46926 has 45 MA's), (31, 46848), (Start: 36 @46827 has 6 MA's), (Start: 46 @46779 has 29 MA's), (Start: 47 @46776 has 89 MA's), (Start: 63 @46671 has 1 MA's), (Start: 75 @46599 has 8 MA's), (82, 46581), (104, 46515), (127, 46350), (128, 46347), (137, 46260), (141, 46239),

Gene: JewelBug\_80 Start: 45535, Stop: 44885, Start Num: 17

Candidate Starts for JewelBug\_80:

(Start: 17 @45535 has 45 MA's), (Start: 22 @45511 has 5 MA's), (31, 45457), (Start: 32 @45454 has 15 MA's), (Start: 36 @45436 has 6 MA's), (109, 45196), (114, 45172), (118, 45127), (127, 45049), (128, 45046), (131, 45025), (139, 44950), (140, 44947),

Gene: Jiawan\_81 Start: 46876, Stop: 46361, Start Num: 41

Candidate Starts for Jiawan\_81:

(Start: 17 @47008 has 45 MA's), (Start: 22 @46984 has 5 MA's), (Start: 32 @46927 has 15 MA's), (Start: 41 @46876 has 18 MA's), (109, 46669), (113, 46648), (118, 46600), (127, 46522), (128, 46519), (137, 46432),

Gene: JoongJeon\_77 Start: 46892, Stop: 46158, Start Num: 17

Candidate Starts for JoongJeon\_77:

(Start: 17 @46892 has 45 MA's), (31, 46814), (Start: 36 @46793 has 6 MA's), (Start: 46 @46745 has 29 MA's), (Start: 47 @46742 has 89 MA's), (Start: 63 @46637 has 1 MA's), (Start: 75 @46565 has 8 MA's), (82, 46547), (104, 46481), (122, 46376), (127, 46316), (128, 46313), (137, 46226), (141, 46205),

Gene: Jordennis\_86 Start: 47439, Stop: 46789, Start Num: 17

Candidate Starts for Jordennis\_86:

(Start: 17 @47439 has 45 MA's), (Start: 22 @47415 has 5 MA's), (31, 47361), (Start: 32 @47358 has 15 MA's), (Start: 36 @47340 has 6 MA's), (109, 47100), (114, 47076), (118, 47031), (127, 46953), (128, 46950), (131, 46929), (139, 46854), (140, 46851),

Gene: Junimo\_74 Start: 46751, Stop: 46164, Start Num: 46

Candidate Starts for Junimo\_74:

(Start: 17 @46898 has 45 MA's), (31, 46820), (Start: 36 @46799 has 6 MA's), (Start: 46 @46751 has 29 MA's), (Start: 47 @46748 has 89 MA's), (Start: 63 @46643 has 1 MA's), (Start: 75 @46571 has 8 MA's), (82, 46553), (104, 46487), (127, 46322), (128, 46319), (137, 46232), (141, 46211),

Gene: KFPoly\_77 Start: 46892, Stop: 46158, Start Num: 17

Candidate Starts for KFPoly\_77:

(Start: 17 @46892 has 45 MA's), (31, 46814), (Start: 36 @46793 has 6 MA's), (Start: 46 @46745 has 29 MA's), (Start: 47 @46742 has 89 MA's), (Start: 63 @46637 has 1 MA's), (Start: 75 @46565 has 8 MA's), (82, 46547), (104, 46481), (122, 46376), (127, 46316), (128, 46313), (137, 46226), (141, 46205),

Gene: KHumphrey\_43 Start: 27399, Stop: 27866, Start Num: 67

Candidate Starts for KHumphrey\_43:

(Start: 12 @27171 has 20 MA's), (Start: 17 @27210 has 45 MA's), (24, 27237), (Start: 32 @27291 has 15 MA's), (34, 27303), (40, 27336), (Start: 67 @27399 has 5 MA's), (83, 27474), (100, 27564), (Start: 101 @27570 has 1 MA's), (113, 27591), (120, 27642), (127, 27717), (128, 27720), (142, 27804), (143, 27828), (145, 27837), (148, 27849),

Gene: Kamy\_77 Start: 46751, Stop: 46167, Start Num: 47

Candidate Starts for Kamy\_77:

(Start: 17 @46901 has 45 MA's), (31, 46823), (Start: 36 @46802 has 6 MA's), (Start: 46 @46754 has 29 MA's), (Start: 47 @46751 has 89 MA's), (Start: 63 @46646 has 1 MA's), (Start: 75 @46574 has 8 MA's), (82, 46556), (104, 46490), (127, 46325), (128, 46322), (137, 46235), (141, 46214),

Gene: Katalie136\_75 Start: 46530, Stop: 45958, Start Num: 48

Candidate Starts for Katalie136\_75:

(Start: 17 @46692 has 45 MA's), (31, 46614), (Start: 36 @46593 has 6 MA's), (Start: 46 @46545 has 29 MA's), (Start: 47 @46542 has 89 MA's), (Start: 48 @46530 has 4 MA's), (Start: 63 @46437 has 1 MA's), (Start: 75 @46365 has 8 MA's), (82, 46347), (104, 46281), (122, 46176), (127, 46116), (128, 46113), (137, 46026), (141, 46005), (145, 45969),

Gene: Kazan\_89 Start: 47187, Stop: 46561, Start Num: 22

Candidate Starts for Kazan\_89:

(Start: 17 @47211 has 45 MA's), (Start: 22 @47187 has 5 MA's), (31, 47133), (Start: 32 @47130 has 15 MA's), (Start: 36 @47112 has 6 MA's), (109, 46872), (114, 46848), (118, 46803), (127, 46725), (128, 46722), (131, 46701), (139, 46626), (140, 46623),

Gene: KekoraPapaka\_75 Start: 46748, Stop: 46164, Start Num: 47

Candidate Starts for KekoraPapaka\_75:

(Start: 17 @46898 has 45 MA's), (31, 46820), (Start: 36 @46799 has 6 MA's), (Start: 46 @46751 has 29 MA's), (Start: 47 @46748 has 89 MA's), (Start: 63 @46643 has 1 MA's), (Start: 75 @46571 has 8 MA's), (77, 46565), (82, 46553), (104, 46487), (127, 46322), (128, 46319), (137, 46232), (141, 46211),

Gene: Keziacharles14\_81 Start: 47447, Stop: 46881, Start Num: 32

Candidate Starts for Keziacharles14\_81:

(Start: 17 @47528 has 45 MA's), (Start: 22 @47504 has 5 MA's), (31, 47450), (Start: 32 @47447 has 15 MA's), (Start: 41 @47396 has 18 MA's), (109, 47189), (113, 47168), (118, 47120), (127, 47042), (128, 47039), (137, 46952),

Gene: KingMidas\_70 Start: 45569, Stop: 45961, Start Num: 81

Candidate Starts for KingMidas\_70:

(Start: 12 @45224 has 20 MA's), (19, 45281), (28, 45305), (30, 45323), (31, 45338), (Start: 36 @45359 has 6 MA's), (Start: 41 @45392 has 18 MA's), (Start: 47 @45410 has 89 MA's), (Start: 81 @45569 has 6 MA's), (119, 45731), (127, 45809), (128, 45812), (131, 45833), (133, 45842), (137, 45869), (149, 45950),

Gene: KingPhillip3\_5 Start: 1765, Stop: 1196, Start Num: 12

Candidate Starts for KingPhillip3\_5:

(Start: 12 @1765 has 20 MA's), (Start: 32 @1648 has 15 MA's), (Start: 35 @1633 has 1 MA's), (Start: 46 @1582 has 29 MA's), (Start: 66 @1579 has 3 MA's), (109, 1465), (112, 1456), (115, 1432), (127, 1327), (128, 1324), (134, 1288), (141, 1249), (145, 1213),

Gene: Kingmustik0402\_78 Start: 46740, Stop: 46153, Start Num: 46

Candidate Starts for Kingmustik0402\_78:

(Start: 17 @46887 has 45 MA's), (31, 46809), (Start: 36 @46788 has 6 MA's), (Start: 46 @46740 has 29 MA's), (Start: 47 @46737 has 89 MA's), (Start: 63 @46632 has 1 MA's), (Start: 75 @46560 has 8 MA's), (82, 46542), (104, 46476), (127, 46311), (128, 46308), (137, 46221), (141, 46200),

Gene: KittenMittens\_74 Start: 45854, Stop: 45219, Start Num: 17

Candidate Starts for KittenMittens\_74:

(Start: 17 @45854 has 45 MA's), (Start: 22 @45830 has 5 MA's), (Start: 32 @45773 has 15 MA's), (Start: 75 @45638 has 8 MA's), (118, 45449), (127, 45371), (128, 45368), (131, 45347), (133, 45335), (139, 45281),

Gene: Koan\_75 Start: 46748, Stop: 46164, Start Num: 47

Candidate Starts for Koan\_75:

(Start: 17 @46898 has 45 MA's), (31, 46820), (Start: 36 @46799 has 6 MA's), (Start: 46 @46751 has 29 MA's), (Start: 47 @46748 has 89 MA's), (Start: 63 @46643 has 1 MA's), (Start: 75 @46571 has 8 MA's), (82, 46553), (104, 46487), (122, 46382), (127, 46322), (128, 46319), (137, 46232), (141, 46211),

Gene: Koko\_91 Start: 47970, Stop: 47419, Start Num: 36

Candidate Starts for Koko\_91:

(Start: 17 @48069 has 45 MA's), (Start: 22 @48045 has 5 MA's), (31, 47991), (Start: 32 @47988 has 15 MA's), (Start: 36 @47970 has 6 MA's), (117, 47664), (127, 47583), (128, 47580), (131, 47559), (139, 47484), (140, 47481),

Gene: Koreni\_77 Start: 46432, Stop: 45845, Start Num: 46

Candidate Starts for Koreni\_77:

(Start: 17 @46579 has 45 MA's), (31, 46501), (Start: 36 @46480 has 6 MA's), (Start: 46 @46432 has 29 MA's), (Start: 47 @46429 has 89 MA's), (Start: 63 @46324 has 1 MA's), (Start: 75 @46252 has 8 MA's), (82, 46234), (104, 46168), (122, 46063), (127, 46003), (128, 46000), (137, 45913), (141, 45892),

Gene: Kratak\_77 Start: 46932, Stop: 46198, Start Num: 17

Candidate Starts for Kratak\_77:

(Start: 17 @46932 has 45 MA's), (31, 46854), (Start: 36 @46833 has 6 MA's), (Start: 46 @46785 has 29 MA's), (Start: 47 @46782 has 89 MA's), (Start: 63 @46677 has 1 MA's), (Start: 75 @46605 has 8 MA's), (82, 46587), (99, 46566), (104, 46521), (122, 46416), (127, 46356), (128, 46353), (137, 46266), (141, 46245),

Gene: Kremtemulon\_75 Start: 46628, Stop: 46044, Start Num: 47

Candidate Starts for Kremtemulon\_75:

(Start: 17 @46778 has 45 MA's), (31, 46700), (Start: 36 @46679 has 6 MA's), (Start: 46 @46631 has 29 MA's), (Start: 47 @46628 has 89 MA's), (Start: 63 @46523 has 1 MA's), (Start: 75 @46451 has 8 MA's), (82, 46433), (104, 46367), (122, 46262), (127, 46202), (128, 46199), (137, 46112), (141, 46091), (145, 46055),

Gene: Krili\_5 Start: 1716, Stop: 1147, Start Num: 12

Candidate Starts for Krili\_5:

(Start: 12 @1716 has 20 MA's), (Start: 32 @1599 has 15 MA's), (Start: 35 @1584 has 1 MA's), (Start: 46 @1533 has 29 MA's), (Start: 66 @1530 has 3 MA's), (109, 1416), (112, 1407), (115, 1383), (127, 1278), (128, 1275), (134, 1239), (141, 1200), (145, 1164),

Gene: Kristoff\_76 Start: 47122, Stop: 46487, Start Num: 17

Candidate Starts for Kristoff\_76:

(Start: 17 @47122 has 45 MA's), (Start: 22 @47098 has 5 MA's), (Start: 32 @47041 has 15 MA's), (Start: 41 @46990 has 18 MA's), (Start: 75 @46906 has 8 MA's), (118, 46717), (127, 46639), (128, 46636), (133, 46603), (139, 46549),

Gene: Kyee\_78 Start: 46743, Stop: 46159, Start Num: 47

Candidate Starts for Kyee\_78:

(Start: 17 @46893 has 45 MA's), (31, 46815), (Start: 36 @46794 has 6 MA's), (Start: 46 @46746 has 29 MA's), (Start: 47 @46743 has 89 MA's), (Start: 63 @46638 has 1 MA's), (Start: 75 @46566 has 8 MA's), (82, 46548), (104, 46482), (122, 46377), (127, 46317), (128, 46314), (137, 46227), (141, 46206),

Gene: LHTSCC\_80 Start: 47191, Stop: 46604, Start Num: 46

Candidate Starts for LHTSCC\_80:

(Start: 17 @47338 has 45 MA's), (31, 47260), (Start: 36 @47239 has 6 MA's), (Start: 46 @47191 has 29 MA's), (Start: 47 @47188 has 89 MA's), (Start: 63 @47083 has 1 MA's), (Start: 75 @47011 has 8 MA's), (82, 46993), (104, 46927), (122, 46822), (127, 46762), (128, 46759), (137, 46672), (141, 46651),

Gene: LappelDuVide\_78 Start: 46748, Stop: 46164, Start Num: 47

Candidate Starts for LappelDuVide\_78:

(Start: 17 @46898 has 45 MA's), (31, 46820), (Start: 36 @46799 has 6 MA's), (Start: 46 @46751 has 29 MA's), (Start: 47 @46748 has 89 MA's), (Start: 63 @46643 has 1 MA's), (Start: 75 @46571 has 8 MA's), (82, 46553), (104, 46487), (122, 46382), (127, 46322), (128, 46319), (137, 46232), (141, 46211),

Gene: Lemur\_78 Start: 46745, Stop: 46161, Start Num: 47

Candidate Starts for Lemur\_78:

(Start: 17 @46895 has 45 MA's), (31, 46817), (Start: 36 @46796 has 6 MA's), (Start: 46 @46748 has 29 MA's), (Start: 47 @46745 has 89 MA's), (Start: 63 @46640 has 1 MA's), (Start: 75 @46568 has 8 MA's), (77, 46562), (82, 46550), (104, 46484), (122, 46379), (127, 46319), (128, 46316), (137, 46229), (141, 46208),

Gene: Lilbooboo\_33 Start: 26272, Stop: 26859, Start Num: 76

Candidate Starts for Lilbooboo\_33:

(9, 25882), (11, 25885), (21, 25951), (25, 25963), (40, 26062), (64, 26200), (Start: 76 @26272 has 7 MA's), (92, 26374), (94, 26407), (112, 26545), (116, 26602), (121, 26629), (123, 26647), (126, 26671), (128, 26704), (132, 26734), (145, 26818), (148, 26830),

Gene: Lilleskat\_81 Start: 46857, Stop: 46342, Start Num: 41

Candidate Starts for Lilleskat\_81:

(Start: 17 @46989 has 45 MA's), (Start: 22 @46965 has 5 MA's), (Start: 32 @46908 has 15 MA's), (Start: 41 @46857 has 18 MA's), (109, 46650), (113, 46629), (118, 46581), (127, 46503), (128, 46500), (137, 46413),

Gene: LittleB\_78 Start: 46899, Stop: 46165, Start Num: 17

Candidate Starts for LittleB\_78:

(Start: 17 @46899 has 45 MA's), (31, 46821), (Start: 36 @46800 has 6 MA's), (Start: 46 @46752 has 29 MA's), (Start: 47 @46749 has 89 MA's), (Start: 63 @46644 has 1 MA's), (Start: 75 @46572 has 8 MA's), (82, 46554), (104, 46488), (122, 46383), (127, 46323), (128, 46320), (137, 46233), (141, 46212),

Gene: LittleGuy\_78 Start: 46633, Stop: 46049, Start Num: 47

Candidate Starts for LittleGuy\_78:

(Start: 17 @46783 has 45 MA's), (31, 46705), (Start: 36 @46684 has 6 MA's), (Start: 46 @46636 has 29 MA's), (Start: 47 @46633 has 89 MA's), (Start: 63 @46528 has 1 MA's), (Start: 75 @46456 has 8 MA's), (82, 46438), (104, 46372), (122, 46267), (127, 46207), (128, 46204), (137, 46117), (141, 46096),

Gene: LochMonster\_79 Start: 46985, Stop: 46401, Start Num: 47

Candidate Starts for LochMonster\_79:

(Start: 17 @47135 has 45 MA's), (31, 47057), (Start: 36 @47036 has 6 MA's), (Start: 46 @46988 has 29 MA's), (Start: 47 @46985 has 89 MA's), (Start: 63 @46880 has 1 MA's), (Start: 75 @46808 has 8 MA's), (82, 46790), (104, 46724), (127, 46559), (128, 46556), (137, 46469), (141, 46448),

Gene: LoneWolf\_84 Start: 46963, Stop: 46397, Start Num: 32

Candidate Starts for LoneWolf\_84:

(Start: 17 @47044 has 45 MA's), (Start: 22 @47020 has 5 MA's), (31, 46966), (Start: 32 @46963 has 15 MA's), (109, 46705), (113, 46684), (127, 46558), (128, 46555), (137, 46468),

Gene: Lorenzo\_78 Start: 46746, Stop: 46162, Start Num: 47

Candidate Starts for Lorenzo\_78:

(Start: 17 @46896 has 45 MA's), (31, 46818), (Start: 36 @46797 has 6 MA's), (Start: 46 @46749 has 29 MA's), (Start: 47 @46746 has 89 MA's), (Start: 63 @46641 has 1 MA's), (Start: 75 @46569 has 8 MA's), (82, 46551), (104, 46485), (122, 46380), (127, 46320), (128, 46317), (137, 46230), (141, 46209),

Gene: Lucyedi\_87 Start: 48804, Stop: 48367, Start Num: 75

Candidate Starts for Lucyedi\_87:

(Start: 17 @49023 has 45 MA's), (Start: 22 @48999 has 5 MA's), (31, 48945), (Start: 32 @48942 has 15 MA's), (Start: 75 @48804 has 8 MA's), (109, 48681), (113, 48660), (127, 48534), (132, 48501), (139, 48432), (140, 48429), (143, 48390),

Gene: Lunsford\_78 Start: 46741, Stop: 46157, Start Num: 47

Candidate Starts for Lunsford\_78:

(Start: 17 @46891 has 45 MA's), (31, 46813), (Start: 36 @46792 has 6 MA's), (Start: 46 @46744 has 29 MA's), (Start: 47 @46741 has 89 MA's), (Start: 63 @46636 has 1 MA's), (Start: 75 @46564 has 8 MA's), (82, 46546), (104, 46480), (127, 46315), (128, 46312), (137, 46225), (141, 46204),

Gene: MadKillah\_5 Start: 1716, Stop: 1147, Start Num: 12

Candidate Starts for MadKillah\_5:

(Start: 12 @1716 has 20 MA's), (Start: 32 @1599 has 15 MA's), (Start: 35 @1584 has 1 MA's), (Start: 46 @1533 has 29 MA's), (Start: 66 @1530 has 3 MA's), (109, 1416), (112, 1407), (115, 1383), (127, 1278), (128, 1275), (134, 1239), (141, 1200), (145, 1164),

Gene: Maminiaina\_83 Start: 46878, Stop: 46300, Start Num: 32

Candidate Starts for Maminiaina\_83:

(Start: 17 @46959 has 45 MA's), (20, 46938), (Start: 22 @46935 has 5 MA's), (Start: 32 @46878 has 15 MA's), (Start: 41 @46827 has 18 MA's), (109, 46620), (113, 46599), (127, 46473), (128, 46470), (137, 46383), (141, 46362), (147, 46317),

Gene: Maverick\_77 Start: 46745, Stop: 46161, Start Num: 47

Candidate Starts for Maverick\_77:

(Start: 17 @46895 has 45 MA's), (31, 46817), (Start: 36 @46796 has 6 MA's), (Start: 46 @46748 has 29 MA's), (Start: 47 @46745 has 89 MA's), (Start: 63 @46640 has 1 MA's), (Start: 75 @46568 has 8 MA's), (82, 46550), (104, 46484), (122, 46379), (127, 46319), (128, 46316), (137, 46229), (141, 46208),

Gene: Maxo\_80 Start: 46754, Stop: 46167, Start Num: 46

Candidate Starts for Maxo\_80:

(Start: 17 @46901 has 45 MA's), (31, 46823), (Start: 36 @46802 has 6 MA's), (Start: 46 @46754 has 29 MA's), (Start: 47 @46751 has 89 MA's), (Start: 63 @46646 has 1 MA's), (Start: 75 @46574 has 8 MA's), (82, 46556), (104, 46490), (127, 46325), (128, 46322), (137, 46235), (141, 46214),

Gene: Mazhar510\_78 Start: 46749, Stop: 46162, Start Num: 46

Candidate Starts for Mazhar510\_78:

(Start: 17 @46896 has 45 MA's), (31, 46818), (Start: 36 @46797 has 6 MA's), (Start: 46 @46749 has 29 MA's), (Start: 47 @46746 has 89 MA's), (Start: 63 @46641 has 1 MA's), (Start: 75 @46569 has 8 MA's), (82, 46551), (104, 46485), (122, 46380), (127, 46320), (128, 46317), (137, 46230), (141, 46209),

Gene: Medusa\_77 Start: 46761, Stop: 46177, Start Num: 47

Candidate Starts for Medusa\_77:

(Start: 17 @46911 has 45 MA's), (31, 46833), (Start: 36 @46812 has 6 MA's), (Start: 46 @46764 has 29 MA's), (Start: 47 @46761 has 89 MA's), (Start: 63 @46656 has 1 MA's), (Start: 75 @46584 has 8 MA's), (82, 46566), (104, 46500), (127, 46335), (128, 46332), (137, 46245), (141, 46224),

Gene: MeeZee\_77 Start: 46742, Stop: 46158, Start Num: 47

Candidate Starts for MeeZee\_77:

(Start: 17 @46892 has 45 MA's), (31, 46814), (Start: 36 @46793 has 6 MA's), (Start: 46 @46745 has 29 MA's), (Start: 47 @46742 has 89 MA's), (Start: 63 @46637 has 1 MA's), (Start: 75 @46565 has 8 MA's), (82, 46547), (104, 46481), (122, 46376), (127, 46316), (128, 46313), (137, 46226), (141,

46205),

Gene: Melvin\_80 Start: 46743, Stop: 46159, Start Num: 47

Candidate Starts for Melvin\_80:

(Start: 17 @46893 has 45 MA's), (31, 46815), (Start: 36 @46794 has 6 MA's), (Start: 46 @46746 has 29 MA's), (Start: 47 @46743 has 89 MA's), (Start: 63 @46638 has 1 MA's), (Start: 75 @46566 has 8 MA's), (77, 46560), (82, 46548), (104, 46482), (122, 46377), (127, 46317), (128, 46314), (137, 46227), (141, 46206),

Gene: Millski\_77 Start: 46749, Stop: 46165, Start Num: 47

Candidate Starts for Millski\_77:

(Start: 17 @46899 has 45 MA's), (31, 46821), (Start: 36 @46800 has 6 MA's), (Start: 46 @46752 has 29 MA's), (Start: 47 @46749 has 89 MA's), (Start: 63 @46644 has 1 MA's), (Start: 75 @46572 has 8 MA's), (82, 46554), (104, 46488), (122, 46383), (127, 46323), (128, 46320), (137, 46233), (141, 46212),

Gene: Miramae\_78 Start: 46572, Stop: 45991, Start Num: 47

Candidate Starts for Miramae\_78:

(Start: 17 @46722 has 45 MA's), (31, 46644), (Start: 36 @46623 has 6 MA's), (Start: 41 @46590 has 18 MA's), (Start: 47 @46572 has 89 MA's), (54, 46503), (56, 46497), (Start: 60 @46485 has 2 MA's), (104, 46314), (127, 46149), (128, 46146), (137, 46059), (141, 46038), (145, 46002),

Gene: Mori\_5 Start: 1716, Stop: 1147, Start Num: 12

Candidate Starts for Mori\_5:

(Start: 12 @1716 has 20 MA's), (Start: 32 @1599 has 15 MA's), (Start: 35 @1584 has 1 MA's), (Start: 46 @1533 has 29 MA's), (Start: 66 @1530 has 3 MA's), (109, 1416), (112, 1407), (115, 1383), (127, 1278), (128, 1275), (134, 1239), (141, 1200), (145, 1164),

Gene: Morpher26\_75 Start: 46563, Stop: 45979, Start Num: 47

Candidate Starts for Morpher26\_75:

(Start: 17 @46713 has 45 MA's), (31, 46635), (Start: 36 @46614 has 6 MA's), (Start: 46 @46566 has 29 MA's), (Start: 47 @46563 has 89 MA's), (Start: 48 @46551 has 4 MA's), (Start: 63 @46458 has 1 MA's), (Start: 75 @46386 has 8 MA's), (82, 46368), (104, 46302), (122, 46197), (127, 46137), (128, 46134), (137, 46047), (141, 46026), (145, 45990),

Gene: Morrow\_80 Start: 46788, Stop: 46204, Start Num: 47

Candidate Starts for Morrow\_80:

(Start: 17 @46938 has 45 MA's), (31, 46860), (Start: 36 @46839 has 6 MA's), (Start: 46 @46791 has 29 MA's), (Start: 47 @46788 has 89 MA's), (Start: 63 @46683 has 1 MA's), (Start: 75 @46611 has 8 MA's), (82, 46593), (127, 46362), (128, 46359), (137, 46272), (141, 46251),

Gene: Mundrea\_77 Start: 46850, Stop: 46224, Start Num: 36

Candidate Starts for Mundrea\_77:

(Start: 17 @46949 has 45 MA's), (31, 46871), (Start: 36 @46850 has 6 MA's), (54, 46730), (104, 46547), (110, 46526), (127, 46382), (128, 46379), (137, 46292), (141, 46271),

Gene: Murai\_5 Start: 1530, Stop: 1147, Start Num: 66

Candidate Starts for Murai\_5:

(Start: 12 @1716 has 20 MA's), (Start: 32 @1599 has 15 MA's), (Start: 35 @1584 has 1 MA's), (Start: 46 @1533 has 29 MA's), (Start: 66 @1530 has 3 MA's), (109, 1416), (112, 1407), (115, 1383), (127, 1278), (128, 1275), (134, 1239), (141, 1200), (145, 1164),

Gene: Myxus\_84 Start: 46898, Stop: 46383, Start Num: 41

Candidate Starts for Myxus\_84:

(Start: 17 @47030 has 45 MA's), (Start: 22 @47006 has 5 MA's), (Start: 32 @46949 has 15 MA's), (Start: 41 @46898 has 18 MA's), (109, 46691), (113, 46670), (118, 46622), (127, 46544), (128, 46541), (137, 46454),

Gene: Nebs\_79 Start: 46788, Stop: 46204, Start Num: 47

Candidate Starts for Nebs\_79:

(Start: 17 @46938 has 45 MA's), (31, 46860), (Start: 36 @46839 has 6 MA's), (Start: 46 @46791 has 29 MA's), (Start: 47 @46788 has 89 MA's), (Start: 63 @46683 has 1 MA's), (Start: 75 @46611 has 8 MA's), (82, 46593), (104, 46527), (127, 46362), (128, 46359), (137, 46272), (141, 46251),

Gene: Nemo27\_77 Start: 46744, Stop: 46160, Start Num: 47

Candidate Starts for Nemo27\_77:

(Start: 17 @46894 has 45 MA's), (31, 46816), (Start: 36 @46795 has 6 MA's), (Start: 46 @46747 has 29 MA's), (Start: 47 @46744 has 89 MA's), (Start: 63 @46639 has 1 MA's), (Start: 75 @46567 has 8 MA's), (82, 46549), (104, 46483), (122, 46378), (127, 46318), (128, 46315), (137, 46228), (141, 46207),

Gene: NiebruSaylor\_5 Start: 1716, Stop: 1147, Start Num: 12

Candidate Starts for NiebruSaylor\_5:

(Start: 12 @1716 has 20 MA's), (Start: 32 @1599 has 15 MA's), (Start: 35 @1584 has 1 MA's), (Start: 46 @1533 has 29 MA's), (Start: 66 @1530 has 3 MA's), (109, 1416), (112, 1407), (115, 1383), (127, 1278), (128, 1275), (134, 1239), (141, 1200), (145, 1164),

Gene: Noelle\_76 Start: 46925, Stop: 46305, Start Num: 17

Candidate Starts for Noelle\_76:

(Start: 17 @46925 has 45 MA's), (Start: 22 @46901 has 5 MA's), (Start: 32 @46844 has 15 MA's), (111, 46592), (118, 46529), (127, 46451), (128, 46448), (139, 46367), (141, 46352), (145, 46316),

Gene: NorthStar\_75 Start: 46748, Stop: 46164, Start Num: 47

Candidate Starts for NorthStar\_75:

(Start: 17 @46898 has 45 MA's), (31, 46820), (Start: 36 @46799 has 6 MA's), (Start: 46 @46751 has 29 MA's), (Start: 47 @46748 has 89 MA's), (Start: 63 @46643 has 1 MA's), (Start: 75 @46571 has 8 MA's), (77, 46565), (82, 46553), (104, 46487), (122, 46382), (127, 46322), (128, 46319), (137, 46232), (141, 46211),

Gene: Northrop\_75 Start: 46747, Stop: 46160, Start Num: 46

Candidate Starts for Northrop\_75:

(Start: 17 @46894 has 45 MA's), (31, 46816), (Start: 36 @46795 has 6 MA's), (Start: 46 @46747 has 29 MA's), (Start: 47 @46744 has 89 MA's), (Start: 63 @46639 has 1 MA's), (Start: 75 @46567 has 8 MA's), (82, 46549), (104, 46483), (122, 46378), (127, 46318), (128, 46315), (137, 46228), (141, 46207),

Gene: NotAPhaseMom\_77 Start: 46749, Stop: 46165, Start Num: 47

Candidate Starts for NotAPhaseMom\_77:

(Start: 17 @46899 has 45 MA's), (31, 46821), (Start: 36 @46800 has 6 MA's), (Start: 46 @46752 has 29 MA's), (Start: 47 @46749 has 89 MA's), (Start: 63 @46644 has 1 MA's), (Start: 75 @46572 has 8 MA's), (82, 46554), (104, 46488), (122, 46383), (127, 46323), (128, 46320), (137, 46233), (141, 46212),

Gene: Nyxis\_77 Start: 46630, Stop: 46043, Start Num: 46

Candidate Starts for Nyxis\_77:

(Start: 17 @46777 has 45 MA's), (31, 46699), (Start: 36 @46678 has 6 MA's), (Start: 46 @46630 has 29 MA's), (Start: 47 @46627 has 89 MA's), (Start: 63 @46522 has 1 MA's), (Start: 75 @46450 has 8 MA's), (82, 46432), (104, 46366), (127, 46201), (128, 46198), (137, 46111), (141, 46090),

Gene: OKCentral2016\_77 Start: 45901, Stop: 45290, Start Num: 22

Candidate Starts for OKCentral2016\_77:

(Start: 17 @45925 has 45 MA's), (Start: 22 @45901 has 5 MA's), (Start: 32 @45844 has 15 MA's), (Start: 75 @45709 has 8 MA's), (118, 45520), (127, 45442), (128, 45439), (133, 45406), (139, 45352),

Gene: OKaNui\_77 Start: 46799, Stop: 46215, Start Num: 47

Candidate Starts for OKaNui\_77:

(Start: 17 @46949 has 45 MA's), (31, 46871), (Start: 36 @46850 has 6 MA's), (Start: 46 @46802 has 29 MA's), (Start: 47 @46799 has 89 MA's), (Start: 63 @46694 has 1 MA's), (Start: 75 @46622 has 8 MA's), (82, 46604), (104, 46538), (122, 46433), (127, 46373), (128, 46370), (137, 46283), (141, 46262),

Gene: Obama12\_79 Start: 47172, Stop: 46588, Start Num: 47

Candidate Starts for Obama12\_79:

(Start: 17 @47322 has 45 MA's), (31, 47244), (Start: 36 @47223 has 6 MA's), (Start: 46 @47175 has 29 MA's), (Start: 47 @47172 has 89 MA's), (Start: 63 @47067 has 1 MA's), (Start: 75 @46995 has 8 MA's), (82, 46977), (104, 46911), (122, 46806), (127, 46746), (128, 46743), (137, 46656), (141, 46635),

Gene: Ohfah\_79 Start: 46791, Stop: 46204, Start Num: 46

Candidate Starts for Ohfah\_79:

(Start: 17 @46938 has 45 MA's), (31, 46860), (Start: 36 @46839 has 6 MA's), (Start: 46 @46791 has 29 MA's), (Start: 47 @46788 has 89 MA's), (Start: 63 @46683 has 1 MA's), (Start: 75 @46611 has 8 MA's), (82, 46593), (104, 46527), (127, 46362), (128, 46359), (137, 46272), (141, 46251),

Gene: Onglai\_82 Start: 45048, Stop: 44533, Start Num: 41

Candidate Starts for Onglai\_82:

(Start: 17 @45180 has 45 MA's), (Start: 22 @45156 has 5 MA's), (Start: 32 @45099 has 15 MA's), (Start: 41 @45048 has 18 MA's), (109, 44841), (113, 44820), (118, 44772), (127, 44694), (128, 44691), (137, 44604),

Gene: PackMan\_83 Start: 46722, Stop: 46258, Start Num: 68

Candidate Starts for PackMan\_83:

(Start: 68 @46722 has 1 MA's), (80, 46662), (109, 46566), (113, 46545), (118, 46497), (127, 46419), (128, 46416), (137, 46329),

Gene: PainterBoy\_86 Start: 48515, Stop: 48078, Start Num: 75

Candidate Starts for PainterBoy\_86:

(Start: 17 @48734 has 45 MA's), (Start: 22 @48710 has 5 MA's), (31, 48656), (Start: 32 @48653 has 15 MA's), (Start: 75 @48515 has 8 MA's), (109, 48392), (113, 48371), (127, 48245), (132, 48212), (139, 48143), (140, 48140), (143, 48101),

Gene: Palestino\_77 Start: 46895, Stop: 46161, Start Num: 17

Candidate Starts for Palestino\_77:

(Start: 17 @46895 has 45 MA's), (31, 46817), (Start: 36 @46796 has 6 MA's), (Start: 46 @46748 has 29 MA's), (Start: 47 @46745 has 89 MA's), (Start: 63 @46640 has 1 MA's), (Start: 75 @46568 has 8 MA's), (82, 46550), (104, 46484), (122, 46379), (127, 46319), (128, 46316), (137, 46229), (141, 46208),

Gene: PeaceMeal1\_75 Start: 45639, Stop: 45220, Start Num: 75

Candidate Starts for PeaceMeal1\_75:

(Start: 17 @45855 has 45 MA's), (Start: 22 @45831 has 5 MA's), (Start: 32 @45774 has 15 MA's),  
(Start: 75 @45639 has 8 MA's), (118, 45450), (127, 45372), (128, 45369), (131, 45348), (133, 45336),  
(139, 45282),

Gene: Peaches\_76 Start: 46747, Stop: 46163, Start Num: 47

Candidate Starts for Peaches\_76:

(Start: 17 @46897 has 45 MA's), (31, 46819), (Start: 36 @46798 has 6 MA's), (Start: 46 @46750 has  
29 MA's), (Start: 47 @46747 has 89 MA's), (Start: 63 @46642 has 1 MA's), (Start: 75 @46570 has 8  
MA's), (82, 46552), (104, 46486), (122, 46381), (127, 46321), (128, 46318), (137, 46231), (141,  
46210),

Gene: Perplexer\_75 Start: 46531, Stop: 45959, Start Num: 48

Candidate Starts for Perplexer\_75:

(Start: 17 @46693 has 45 MA's), (31, 46615), (Start: 36 @46594 has 6 MA's), (Start: 46 @46546 has  
29 MA's), (Start: 47 @46543 has 89 MA's), (Start: 48 @46531 has 4 MA's), (Start: 63 @46438 has 1  
MA's), (Start: 75 @46366 has 8 MA's), (82, 46348), (104, 46282), (122, 46177), (127, 46117), (128,  
46114), (137, 46027), (141, 46006),

Gene: PeterPeter\_78 Start: 46742, Stop: 46158, Start Num: 47

Candidate Starts for PeterPeter\_78:

(Start: 17 @46892 has 45 MA's), (31, 46814), (Start: 36 @46793 has 6 MA's), (Start: 46 @46745 has  
29 MA's), (Start: 47 @46742 has 89 MA's), (Start: 63 @46637 has 1 MA's), (Start: 75 @46565 has 8  
MA's), (82, 46547), (104, 46481), (122, 46376), (127, 46316), (128, 46313), (137, 46226), (141,  
46205),

Gene: PetiteSangsue\_75 Start: 46546, Stop: 45962, Start Num: 47

Candidate Starts for PetiteSangsue\_75:

(Start: 17 @46696 has 45 MA's), (31, 46618), (Start: 36 @46597 has 6 MA's), (Start: 46 @46549 has  
29 MA's), (Start: 47 @46546 has 89 MA's), (Start: 48 @46534 has 4 MA's), (Start: 63 @46441 has 1  
MA's), (Start: 75 @46369 has 8 MA's), (82, 46351), (104, 46285), (122, 46180), (127, 46120), (128,  
46117), (137, 46030), (141, 46009),

Gene: Phacado\_78 Start: 46744, Stop: 46160, Start Num: 47

Candidate Starts for Phacado\_78:

(Start: 17 @46894 has 45 MA's), (31, 46816), (Start: 36 @46795 has 6 MA's), (Start: 46 @46747 has  
29 MA's), (Start: 47 @46744 has 89 MA's), (Start: 63 @46639 has 1 MA's), (Start: 75 @46567 has 8  
MA's), (82, 46549), (104, 46483), (122, 46378), (127, 46318), (128, 46315), (137, 46228), (141,  
46207),

Gene: Phaeder\_84 Start: 46773, Stop: 46258, Start Num: 41

Candidate Starts for Phaeder\_84:

(Start: 17 @46905 has 45 MA's), (Start: 22 @46881 has 5 MA's), (Start: 32 @46824 has 15 MA's),  
(Start: 41 @46773 has 18 MA's), (109, 46566), (113, 46545), (118, 46497), (127, 46419), (128, 46416),  
(137, 46329),

Gene: Pharaoh\_78 Start: 47942, Stop: 47292, Start Num: 17

Candidate Starts for Pharaoh\_78:

(Start: 17 @47942 has 45 MA's), (Start: 22 @47918 has 5 MA's), (Start: 32 @47861 has 15 MA's),  
(109, 47600), (113, 47579), (127, 47456), (128, 47453), (131, 47432), (139, 47360), (140, 47357),

Gene: Phelipe\_79 Start: 46788, Stop: 46204, Start Num: 47

Candidate Starts for Phelipe\_79:

(Start: 17 @46938 has 45 MA's), (31, 46860), (Start: 36 @46839 has 6 MA's), (Start: 46 @46791 has 29 MA's), (Start: 47 @46788 has 89 MA's), (Start: 63 @46683 has 1 MA's), (Start: 75 @46611 has 8 MA's), (82, 46593), (104, 46527), (127, 46362), (128, 46359), (137, 46272), (141, 46251),

Gene: Phighter1804\_78 Start: 46809, Stop: 46225, Start Num: 47

Candidate Starts for Phighter1804\_78:

(Start: 17 @46959 has 45 MA's), (31, 46881), (Start: 36 @46860 has 6 MA's), (Start: 46 @46812 has 29 MA's), (Start: 47 @46809 has 89 MA's), (Start: 63 @46704 has 1 MA's), (Start: 75 @46632 has 8 MA's), (82, 46614), (104, 46548), (122, 46443), (127, 46383), (128, 46380), (137, 46293), (141, 46272),

Gene: Phlei\_63 Start: 43732, Stop: 43292, Start Num: 74

Candidate Starts for Phlei\_63:

(26, 43876), (29, 43858), (44, 43804), (69, 43771), (74, 43732), (113, 43588), (118, 43540), (120, 43534), (127, 43462), (128, 43459), (137, 43378), (139, 43372), (146, 43312),

Gene: PhluffyCoco\_43 Start: 27444, Stop: 28064, Start Num: 57

Candidate Starts for PhluffyCoco\_43:

(Start: 12 @27168 has 20 MA's), (24, 27234), (27, 27249), (31, 27285), (40, 27333), (43, 27345), (45, 27351), (50, 27375), (Start: 57 @27444 has 2 MA's), (61, 27462), (100, 27666), (Start: 101 @27672 has 1 MA's), (120, 27840), (127, 27915), (128, 27918), (143, 28026), (145, 28035),

Gene: Phonnegut\_84 Start: 46789, Stop: 46274, Start Num: 41

Candidate Starts for Phonnegut\_84:

(Start: 17 @46921 has 45 MA's), (Start: 22 @46897 has 5 MA's), (Start: 32 @46840 has 15 MA's), (Start: 41 @46789 has 18 MA's), (109, 46582), (113, 46561), (118, 46513), (127, 46435), (128, 46432), (137, 46345),

Gene: Phontbonne\_78 Start: 46643, Stop: 46059, Start Num: 47

Candidate Starts for Phontbonne\_78:

(Start: 17 @46793 has 45 MA's), (31, 46715), (Start: 36 @46694 has 6 MA's), (Start: 46 @46646 has 29 MA's), (Start: 47 @46643 has 89 MA's), (Start: 63 @46538 has 1 MA's), (Start: 75 @46466 has 8 MA's), (82, 46448), (104, 46382), (127, 46217), (128, 46214), (137, 46127), (141, 46106),

Gene: Pioneer\_84 Start: 46789, Stop: 46274, Start Num: 41

Candidate Starts for Pioneer\_84:

(Start: 17 @46921 has 45 MA's), (Start: 22 @46897 has 5 MA's), (Start: 32 @46840 has 15 MA's), (Start: 41 @46789 has 18 MA's), (109, 46582), (113, 46561), (118, 46513), (127, 46435), (128, 46432), (137, 46345),

Gene: Pipcraft\_74 Start: 46749, Stop: 46165, Start Num: 47

Candidate Starts for Pipcraft\_74:

(Start: 17 @46899 has 45 MA's), (31, 46821), (Start: 36 @46800 has 6 MA's), (Start: 46 @46752 has 29 MA's), (Start: 47 @46749 has 89 MA's), (Start: 63 @46644 has 1 MA's), (Start: 75 @46572 has 8 MA's), (77, 46566), (82, 46554), (104, 46488), (122, 46383), (127, 46323), (128, 46320), (137, 46233), (141, 46212),

Gene: Polymorphads\_79 Start: 46772, Stop: 46185, Start Num: 46

Candidate Starts for Polymorphads\_79:

(Start: 17 @46919 has 45 MA's), (31, 46841), (Start: 36 @46820 has 6 MA's), (Start: 46 @46772 has 29 MA's), (Start: 47 @46769 has 89 MA's), (Start: 63 @46664 has 1 MA's), (Start: 75 @46592 has 8 MA's), (82, 46574), (104, 46508), (122, 46403), (127, 46343), (128, 46340), (137, 46253), (141,

46232),

Gene: Polyphemus\_81 Start: 45619, Stop: 44969, Start Num: 17

Candidate Starts for Polyphemus\_81:

(Start: 17 @45619 has 45 MA's), (Start: 22 @45595 has 5 MA's), (31, 45541), (Start: 32 @45538 has 15 MA's), (Start: 36 @45520 has 6 MA's), (109, 45280), (114, 45256), (118, 45211), (127, 45133), (128, 45130), (131, 45109), (139, 45034), (140, 45031),

Gene: Poompha\_75 Start: 45637, Stop: 45218, Start Num: 75

Candidate Starts for Poompha\_75:

(Start: 17 @45853 has 45 MA's), (Start: 22 @45829 has 5 MA's), (Start: 32 @45772 has 15 MA's), (Start: 75 @45637 has 8 MA's), (118, 45448), (127, 45370), (128, 45367), (131, 45346), (133, 45334), (139, 45280),

Gene: Priya\_82 Start: 46693, Stop: 46046, Start Num: 17

Candidate Starts for Priya\_82:

(Start: 17 @46693 has 45 MA's), (Start: 22 @46669 has 5 MA's), (31, 46615), (Start: 32 @46612 has 15 MA's), (Start: 41 @46561 has 18 MA's), (109, 46354), (113, 46333), (118, 46285), (127, 46207), (128, 46204), (137, 46117),

Gene: Pumbaa\_78 Start: 46696, Stop: 46109, Start Num: 46

Candidate Starts for Pumbaa\_78:

(Start: 17 @46843 has 45 MA's), (31, 46765), (Start: 36 @46744 has 6 MA's), (Start: 46 @46696 has 29 MA's), (Start: 47 @46693 has 89 MA's), (Start: 63 @46588 has 1 MA's), (Start: 75 @46516 has 8 MA's), (82, 46498), (104, 46432), (122, 46327), (127, 46267), (128, 46264), (137, 46177), (141, 46156),

Gene: Qobbit\_82 Start: 46523, Stop: 46008, Start Num: 41

Candidate Starts for Qobbit\_82:

(Start: 17 @46655 has 45 MA's), (Start: 22 @46631 has 5 MA's), (31, 46577), (Start: 32 @46574 has 15 MA's), (Start: 41 @46523 has 18 MA's), (109, 46316), (113, 46295), (118, 46247), (127, 46169), (128, 46166), (137, 46079),

Gene: Rahalelujah\_83 Start: 46456, Stop: 45809, Start Num: 17

Candidate Starts for Rahalelujah\_83:

(Start: 17 @46456 has 45 MA's), (Start: 22 @46432 has 5 MA's), (31, 46378), (Start: 32 @46375 has 15 MA's), (109, 46117), (113, 46096), (119, 46045), (123, 46024), (127, 45970), (128, 45967), (137, 45880),

Gene: Rebeuca\_79 Start: 46991, Stop: 46488, Start Num: 41

Candidate Starts for Rebeuca\_79:

(Start: 17 @47123 has 45 MA's), (Start: 22 @47099 has 5 MA's), (Start: 32 @47042 has 15 MA's), (Start: 41 @46991 has 18 MA's), (Start: 75 @46907 has 8 MA's), (118, 46718), (127, 46640), (128, 46637), (133, 46604), (139, 46550),

Gene: RedFox\_43 Start: 27443, Stop: 28063, Start Num: 57

Candidate Starts for RedFox\_43:

(Start: 12 @27167 has 20 MA's), (24, 27233), (27, 27248), (31, 27284), (40, 27332), (43, 27344), (45, 27350), (50, 27374), (Start: 57 @27443 has 2 MA's), (61, 27461), (100, 27665), (Start: 101 @27671 has 1 MA's), (120, 27839), (127, 27914), (128, 27917), (143, 28025), (145, 28034),

Gene: Refuge\_81 Start: 48475, Stop: 47903, Start Num: 32

Candidate Starts for Refuge\_81:

(Start: 17 @48556 has 45 MA's), (Start: 22 @48532 has 5 MA's), (Start: 32 @48475 has 15 MA's), (Start: 81 @48319 has 6 MA's), (113, 48193), (127, 48067), (128, 48064), (139, 47971), (140, 47968), (143, 47929),

Gene: Relief\_77 Start: 46745, Stop: 46161, Start Num: 47

Candidate Starts for Relief\_77:

(Start: 17 @46895 has 45 MA's), (31, 46817), (Start: 36 @46796 has 6 MA's), (Start: 46 @46748 has 29 MA's), (Start: 47 @46745 has 89 MA's), (Start: 63 @46640 has 1 MA's), (Start: 75 @46568 has 8 MA's), (82, 46550), (104, 46484), (122, 46379), (127, 46319), (128, 46316), (137, 46229), (141, 46208),

Gene: RemusLoopin\_35 Start: 27467, Stop: 28051, Start Num: 76

Candidate Starts for RemusLoopin\_35:

(37, 27230), (39, 27242), (40, 27257), (64, 27395), (72, 27449), (Start: 76 @27467 has 7 MA's), (92, 27569), (106, 27713), (112, 27740), (116, 27797), (128, 27899), (131, 27920), (141, 27977), (145, 28013), (148, 28025),

Gene: Renna12\_42 Start: 27456, Stop: 27923, Start Num: 67

Candidate Starts for Renna12\_42:

(Start: 12 @27228 has 20 MA's), (Start: 17 @27267 has 45 MA's), (24, 27294), (Start: 32 @27348 has 15 MA's), (34, 27360), (40, 27393), (Start: 67 @27456 has 5 MA's), (83, 27531), (100, 27621), (Start: 101 @27627 has 1 MA's), (113, 27648), (120, 27699), (127, 27774), (128, 27777), (142, 27861), (143, 27885), (145, 27894), (148, 27906),

Gene: Rifter\_90 Start: 46847, Stop: 46200, Start Num: 17

Candidate Starts for Rifter\_90:

(Start: 17 @46847 has 45 MA's), (Start: 22 @46823 has 5 MA's), (31, 46769), (Start: 32 @46766 has 15 MA's), (Start: 38 @46736 has 4 MA's), (117, 46442), (127, 46361), (128, 46358), (139, 46265), (140, 46262),

Gene: RockieBear\_75 Start: 46750, Stop: 46163, Start Num: 46

Candidate Starts for RockieBear\_75:

(Start: 17 @46897 has 45 MA's), (31, 46819), (Start: 36 @46798 has 6 MA's), (Start: 46 @46750 has 29 MA's), (Start: 47 @46747 has 89 MA's), (Start: 63 @46642 has 1 MA's), (Start: 75 @46570 has 8 MA's), (77, 46564), (82, 46552), (104, 46486), (122, 46381), (127, 46321), (128, 46318), (137, 46231), (141, 46210),

Gene: Rocksand\_75 Start: 46747, Stop: 46160, Start Num: 46

Candidate Starts for Rocksand\_75:

(Start: 17 @46894 has 45 MA's), (31, 46816), (Start: 36 @46795 has 6 MA's), (Start: 46 @46747 has 29 MA's), (Start: 47 @46744 has 89 MA's), (Start: 63 @46639 has 1 MA's), (Start: 75 @46567 has 8 MA's), (82, 46549), (104, 46483), (122, 46378), (127, 46318), (128, 46315), (137, 46228), (141, 46207),

Gene: Roksolana\_90 Start: 47563, Stop: 46916, Start Num: 17

Candidate Starts for Roksolana\_90:

(Start: 17 @47563 has 45 MA's), (Start: 22 @47539 has 5 MA's), (31, 47485), (Start: 32 @47482 has 15 MA's), (Start: 38 @47452 has 4 MA's), (117, 47158), (127, 47077), (128, 47074), (139, 46981), (140, 46978),

Gene: Romney\_77 Start: 46745, Stop: 46161, Start Num: 47

Candidate Starts for Romney\_77:

(Start: 17 @46895 has 45 MA's), (31, 46817), (Start: 36 @46796 has 6 MA's), (Start: 46 @46748 has 29 MA's), (Start: 47 @46745 has 89 MA's), (Start: 63 @46640 has 1 MA's), (Start: 75 @46568 has 8 MA's), (77, 46562), (82, 46550), (104, 46484), (122, 46379), (127, 46319), (128, 46316), (137, 46229), (141, 46208),

Gene: Roosevelt\_76 Start: 46750, Stop: 46166, Start Num: 47

Candidate Starts for Roosevelt\_76:

(Start: 17 @46900 has 45 MA's), (31, 46822), (Start: 36 @46801 has 6 MA's), (Start: 46 @46753 has 29 MA's), (Start: 47 @46750 has 89 MA's), (Start: 63 @46645 has 1 MA's), (Start: 75 @46573 has 8 MA's), (82, 46555), (104, 46489), (127, 46324), (128, 46321), (137, 46234), (141, 46213),

Gene: Rosa24\_74 Start: 46779, Stop: 46192, Start Num: 46

Candidate Starts for Rosa24\_74:

(Start: 17 @46926 has 45 MA's), (31, 46848), (Start: 36 @46827 has 6 MA's), (Start: 46 @46779 has 29 MA's), (Start: 47 @46776 has 89 MA's), (Start: 63 @46671 has 1 MA's), (Start: 75 @46599 has 8 MA's), (82, 46581), (104, 46515), (127, 46350), (128, 46347), (137, 46260), (141, 46239),

Gene: Rowdy\_80 Start: 46614, Stop: 46195, Start Num: 75

Candidate Starts for Rowdy\_80:

(Start: 17 @46830 has 45 MA's), (Start: 22 @46806 has 5 MA's), (Start: 32 @46749 has 15 MA's), (Start: 75 @46614 has 8 MA's), (127, 46347), (128, 46344), (131, 46323), (139, 46257),

Gene: Ruin\_78 Start: 46741, Stop: 46157, Start Num: 47

Candidate Starts for Ruin\_78:

(Start: 17 @46891 has 45 MA's), (31, 46813), (Start: 36 @46792 has 6 MA's), (Start: 46 @46744 has 29 MA's), (Start: 47 @46741 has 89 MA's), (Start: 63 @46636 has 1 MA's), (Start: 75 @46564 has 8 MA's), (77, 46558), (82, 46546), (104, 46480), (122, 46375), (127, 46315), (128, 46312), (137, 46225), (141, 46204),

Gene: Ryadel\_7 Start: 2296, Stop: 1727, Start Num: 12

Candidate Starts for Ryadel\_7:

(Start: 12 @2296 has 20 MA's), (Start: 32 @2179 has 15 MA's), (Start: 35 @2164 has 1 MA's), (Start: 46 @2113 has 29 MA's), (Start: 66 @2110 has 3 MA's), (109, 1996), (112, 1987), (115, 1963), (127, 1858), (128, 1855), (134, 1819), (141, 1780), (145, 1744),

Gene: RyeScarlet\_85 Start: 46764, Stop: 46249, Start Num: 41

Candidate Starts for RyeScarlet\_85:

(Start: 17 @46896 has 45 MA's), (Start: 22 @46872 has 5 MA's), (Start: 32 @46815 has 15 MA's), (Start: 41 @46764 has 18 MA's), (109, 46557), (113, 46536), (118, 46488), (127, 46410), (128, 46407), (137, 46320),

Gene: Sabertooth\_78 Start: 46756, Stop: 46169, Start Num: 46

Candidate Starts for Sabertooth\_78:

(Start: 17 @46903 has 45 MA's), (31, 46825), (Start: 36 @46804 has 6 MA's), (Start: 46 @46756 has 29 MA's), (Start: 47 @46753 has 89 MA's), (Start: 63 @46648 has 1 MA's), (Start: 75 @46576 has 8 MA's), (82, 46558), (104, 46492), (122, 46387), (127, 46327), (128, 46324), (137, 46237), (141, 46216),

Gene: Sachima\_80 Start: 46801, Stop: 46286, Start Num: 41

Candidate Starts for Sachima\_80:

(Start: 17 @46933 has 45 MA's), (Start: 22 @46909 has 5 MA's), (Start: 32 @46852 has 15 MA's), (Start: 41 @46801 has 18 MA's), (109, 46594), (113, 46573), (118, 46525), (127, 46447), (128, 46444), (137, 46357),

Gene: Samora\_35 Start: 26872, Stop: 27459, Start Num: 76

Candidate Starts for Samora\_35:

(21, 26551), (25, 26563), (40, 26662), (64, 26800), (Start: 76 @26872 has 7 MA's), (92, 26974), (105, 27109), (108, 27127), (112, 27145), (122, 27241), (128, 27304), (132, 27334), (145, 27418),

Gene: Sassafras\_72 Start: 45165, Stop: 45557, Start Num: 81

Candidate Starts for Sassafras\_72:

(Start: 12 @44820 has 20 MA's), (19, 44877), (28, 44901), (30, 44919), (31, 44934), (Start: 36 @44955 has 6 MA's), (Start: 41 @44988 has 18 MA's), (Start: 47 @45006 has 89 MA's), (Start: 81 @45165 has 6 MA's), (119, 45327), (127, 45405), (128, 45408), (131, 45429), (133, 45438), (137, 45465), (149, 45546),

Gene: Scamp\_78 Start: 46750, Stop: 46166, Start Num: 47

Candidate Starts for Scamp\_78:

(Start: 17 @46900 has 45 MA's), (31, 46822), (Start: 36 @46801 has 6 MA's), (Start: 46 @46753 has 29 MA's), (Start: 47 @46750 has 89 MA's), (Start: 63 @46645 has 1 MA's), (Start: 75 @46573 has 8 MA's), (82, 46555), (104, 46489), (122, 46384), (127, 46324), (128, 46321), (137, 46234), (141, 46213),

Gene: Scherzo\_82 Start: 46821, Stop: 46306, Start Num: 41

Candidate Starts for Scherzo\_82:

(Start: 17 @46953 has 45 MA's), (Start: 22 @46929 has 5 MA's), (Start: 32 @46872 has 15 MA's), (Start: 41 @46821 has 18 MA's), (109, 46614), (113, 46593), (118, 46545), (127, 46467), (128, 46464), (137, 46377),

Gene: SchoolBus\_5 Start: 1765, Stop: 1196, Start Num: 12

Candidate Starts for SchoolBus\_5:

(Start: 12 @1765 has 20 MA's), (Start: 32 @1648 has 15 MA's), (Start: 35 @1633 has 1 MA's), (Start: 46 @1582 has 29 MA's), (Start: 66 @1579 has 3 MA's), (109, 1465), (112, 1456), (115, 1432), (127, 1327), (128, 1324), (134, 1288), (141, 1249), (145, 1213),

Gene: Schuy\_5 Start: 1716, Stop: 1147, Start Num: 12

Candidate Starts for Schuy\_5:

(Start: 12 @1716 has 20 MA's), (Start: 32 @1599 has 15 MA's), (Start: 35 @1584 has 1 MA's), (Start: 46 @1533 has 29 MA's), (Start: 66 @1530 has 3 MA's), (109, 1416), (112, 1407), (115, 1383), (127, 1278), (128, 1275), (134, 1239), (141, 1200), (145, 1164),

Gene: Scottish\_69 Start: 44824, Stop: 45216, Start Num: 81

Candidate Starts for Scottish\_69:

(Start: 12 @44479 has 20 MA's), (19, 44536), (28, 44560), (30, 44578), (31, 44593), (Start: 36 @44614 has 6 MA's), (Start: 41 @44647 has 18 MA's), (Start: 47 @44665 has 89 MA's), (Start: 81 @44824 has 6 MA's), (119, 44986), (127, 45064), (128, 45067), (131, 45088), (133, 45097), (137, 45124), (149, 45205),

Gene: Sebastisaurus\_35 Start: 27189, Stop: 27773, Start Num: 76

Candidate Starts for Sebastisaurus\_35:

(37, 26952), (39, 26964), (40, 26979), (64, 27117), (70, 27153), (Start: 76 @27189 has 7 MA's), (92, 27291), (94, 27324), (106, 27435), (112, 27462), (116, 27519), (117, 27534), (123, 27564), (128, 27621), (131, 27642), (145, 27735), (148, 27747),

Gene: SenorClean\_79 Start: 46748, Stop: 46164, Start Num: 47

Candidate Starts for SenorClean\_79:

(Start: 17 @46898 has 45 MA's), (31, 46820), (Start: 36 @46799 has 6 MA's), (Start: 46 @46751 has 29 MA's), (Start: 47 @46748 has 89 MA's), (Start: 63 @46643 has 1 MA's), (Start: 75 @46571 has 8 MA's), (82, 46553), (104, 46487), (127, 46322), (128, 46319), (137, 46232), (141, 46211),

Gene: Severus\_76 Start: 45637, Stop: 45218, Start Num: 75

Candidate Starts for Severus\_76:

(Start: 17 @45853 has 45 MA's), (Start: 22 @45829 has 5 MA's), (Start: 32 @45772 has 15 MA's), (Start: 75 @45637 has 8 MA's), (118, 45448), (127, 45370), (128, 45367), (131, 45346), (133, 45334), (139, 45280),

Gene: Shaka\_76 Start: 46746, Stop: 46162, Start Num: 47

Candidate Starts for Shaka\_76:

(Start: 17 @46896 has 45 MA's), (31, 46818), (Start: 36 @46797 has 6 MA's), (Start: 46 @46749 has 29 MA's), (Start: 47 @46746 has 89 MA's), (Start: 63 @46641 has 1 MA's), (Start: 75 @46569 has 8 MA's), (82, 46551), (104, 46485), (127, 46320), (128, 46317), (137, 46230), (141, 46209),

Gene: Shapes\_80 Start: 46614, Stop: 46195, Start Num: 75

Candidate Starts for Shapes\_80:

(Start: 17 @46830 has 45 MA's), (Start: 22 @46806 has 5 MA's), (Start: 32 @46749 has 15 MA's), (Start: 75 @46614 has 8 MA's), (127, 46347), (128, 46344), (131, 46323), (139, 46257),

Gene: SheaKeira\_79 Start: 46163, Stop: 45585, Start Num: 32

Candidate Starts for SheaKeira\_79:

(Start: 17 @46244 has 45 MA's), (Start: 22 @46220 has 5 MA's), (31, 46166), (Start: 32 @46163 has 15 MA's), (109, 45905), (113, 45884), (118, 45836), (125, 45797), (127, 45758), (128, 45755), (135, 45689), (137, 45668), (141, 45647), (147, 45602),

Gene: SheldonCooper\_78 Start: 47186, Stop: 46602, Start Num: 47

Candidate Starts for SheldonCooper\_78:

(Start: 17 @47336 has 45 MA's), (31, 47258), (Start: 36 @47237 has 6 MA's), (Start: 46 @47189 has 29 MA's), (Start: 47 @47186 has 89 MA's), (Start: 63 @47081 has 1 MA's), (Start: 75 @47009 has 8 MA's), (82, 46991), (104, 46925), (127, 46760), (128, 46757), (137, 46670), (141, 46649),

Gene: Shida\_5 Start: 1765, Stop: 1196, Start Num: 12

Candidate Starts for Shida\_5:

(Start: 12 @1765 has 20 MA's), (Start: 32 @1648 has 15 MA's), (Start: 35 @1633 has 1 MA's), (Start: 46 @1582 has 29 MA's), (Start: 66 @1579 has 3 MA's), (109, 1465), (112, 1456), (115, 1432), (127, 1327), (128, 1324), (134, 1288), (141, 1249), (145, 1213),

Gene: ShowerHandel\_74 Start: 46069, Stop: 46452, Start Num: 81

Candidate Starts for ShowerHandel\_74:

(Start: 12 @45724 has 20 MA's), (19, 45781), (28, 45805), (30, 45823), (31, 45838), (Start: 36 @45859 has 6 MA's), (Start: 41 @45892 has 18 MA's), (Start: 47 @45910 has 89 MA's), (Start: 81 @46069 has 6 MA's), (119, 46231), (127, 46309), (128, 46312), (131, 46333), (133, 46342), (137, 46369), (143, 46417), (149, 46441),

Gene: Shygu2\_76 Start: 46692, Stop: 46108, Start Num: 47

Candidate Starts for Shygu2\_76:

(Start: 17 @46842 has 45 MA's), (31, 46764), (Start: 36 @46743 has 6 MA's), (Start: 46 @46695 has 29 MA's), (Start: 47 @46692 has 89 MA's), (Start: 48 @46680 has 4 MA's), (Start: 63 @46587 has 1 MA's), (Start: 75 @46515 has 8 MA's), (82, 46497), (104, 46431), (122, 46326), (127, 46266), (128, 46263), (137, 46176), (141, 46155), (145, 46119),

Gene: Skadoosh\_75 Start: 46748, Stop: 46161, Start Num: 46

Candidate Starts for Skadoosh\_75:

(Start: 17 @46895 has 45 MA's), (31, 46817), (Start: 36 @46796 has 6 MA's), (Start: 46 @46748 has 29 MA's), (Start: 47 @46745 has 89 MA's), (Start: 63 @46640 has 1 MA's), (Start: 75 @46568 has 8 MA's), (82, 46550), (104, 46484), (122, 46379), (127, 46319), (128, 46316), (137, 46229), (141, 46208),

Gene: Skipitt\_77 Start: 46745, Stop: 46158, Start Num: 46

Candidate Starts for Skipitt\_77:

(Start: 17 @46892 has 45 MA's), (31, 46814), (Start: 36 @46793 has 6 MA's), (Start: 46 @46745 has 29 MA's), (Start: 47 @46742 has 89 MA's), (Start: 63 @46637 has 1 MA's), (Start: 75 @46565 has 8 MA's), (77, 46559), (82, 46547), (104, 46481), (122, 46376), (127, 46316), (128, 46313), (137, 46226), (141, 46205),

Gene: SmellyB\_88 Start: 47181, Stop: 46555, Start Num: 22

Candidate Starts for SmellyB\_88:

(Start: 17 @47205 has 45 MA's), (Start: 22 @47181 has 5 MA's), (31, 47127), (Start: 32 @47124 has 15 MA's), (Start: 36 @47106 has 6 MA's), (109, 46866), (114, 46842), (118, 46797), (127, 46719), (128, 46716), (131, 46695), (139, 46620), (140, 46617),

Gene: Sparxx\_79 Start: 46747, Stop: 46160, Start Num: 46

Candidate Starts for Sparxx\_79:

(Start: 17 @46894 has 45 MA's), (31, 46816), (Start: 36 @46795 has 6 MA's), (Start: 46 @46747 has 29 MA's), (Start: 47 @46744 has 89 MA's), (Start: 63 @46639 has 1 MA's), (Start: 75 @46567 has 8 MA's), (82, 46549), (104, 46483), (127, 46318), (128, 46315), (137, 46228), (141, 46207),

Gene: Spino\_77 Start: 46748, Stop: 46164, Start Num: 47

Candidate Starts for Spino\_77:

(Start: 17 @46898 has 45 MA's), (31, 46820), (Start: 36 @46799 has 6 MA's), (Start: 46 @46751 has 29 MA's), (Start: 47 @46748 has 89 MA's), (Start: 63 @46643 has 1 MA's), (Start: 75 @46571 has 8 MA's), (82, 46553), (104, 46487), (127, 46322), (128, 46319), (137, 46232), (141, 46211),

Gene: Spouty\_82 Start: 46692, Stop: 46045, Start Num: 17

Candidate Starts for Spouty\_82:

(Start: 17 @46692 has 45 MA's), (Start: 22 @46668 has 5 MA's), (31, 46614), (Start: 32 @46611 has 15 MA's), (Start: 41 @46560 has 18 MA's), (109, 46353), (113, 46332), (118, 46284), (127, 46206), (128, 46203), (137, 46116),

Gene: Stasia\_75 Start: 46708, Stop: 46121, Start Num: 46

Candidate Starts for Stasia\_75:

(Start: 17 @46855 has 45 MA's), (31, 46777), (Start: 36 @46756 has 6 MA's), (Start: 46 @46708 has 29 MA's), (Start: 47 @46705 has 89 MA's), (Start: 63 @46600 has 1 MA's), (Start: 75 @46528 has 8 MA's), (82, 46510), (104, 46444), (127, 46279), (128, 46276), (137, 46189), (141, 46168), (145, 46132),

Gene: SteMason\_78 Start: 46745, Stop: 46161, Start Num: 47

Candidate Starts for SteMason\_78:

(Start: 17 @46895 has 45 MA's), (31, 46817), (Start: 36 @46796 has 6 MA's), (Start: 46 @46748 has 29 MA's), (Start: 47 @46745 has 89 MA's), (Start: 63 @46640 has 1 MA's), (Start: 75 @46568 has 8 MA's), (77, 46562), (82, 46550), (104, 46484), (122, 46379), (127, 46319), (128, 46316), (137, 46229), (141, 46208),

Gene: Steamy\_76 Start: 47037, Stop: 46378, Start Num: 17

Candidate Starts for Steamy\_76:

(Start: 17 @47037 has 45 MA's), (Start: 22 @47013 has 5 MA's), (Start: 32 @46956 has 15 MA's), (113, 46674), (127, 46548), (128, 46545), (131, 46524), (139, 46452), (143, 46410),

Gene: Stichling\_6 Start: 3233, Stop: 3850, Start Num: 33

Candidate Starts for Stichling\_6:

(1, 2405), (2, 2540), (3, 2627), (4, 2690), (5, 2741), (6, 2777), (7, 2933), (18, 3158), (33, 3233), (87, 3452), (127, 3677), (128, 3680), (129, 3683), (141, 3761),

Gene: Stink\_78 Start: 46793, Stop: 46299, Start Num: 60

Candidate Starts for Stink\_78:

(Start: 17 @47030 has 45 MA's), (31, 46952), (Start: 36 @46931 has 6 MA's), (Start: 41 @46898 has 18 MA's), (Start: 47 @46880 has 89 MA's), (54, 46811), (56, 46805), (Start: 60 @46793 has 2 MA's), (104, 46622), (127, 46457), (128, 46454), (137, 46367), (141, 46346), (145, 46310),

Gene: Sultana\_78 Start: 46748, Stop: 46161, Start Num: 46

Candidate Starts for Sultana\_78:

(Start: 17 @46895 has 45 MA's), (31, 46817), (Start: 36 @46796 has 6 MA's), (Start: 46 @46748 has 29 MA's), (Start: 47 @46745 has 89 MA's), (Start: 63 @46640 has 1 MA's), (Start: 75 @46568 has 8 MA's), (82, 46550), (104, 46484), (122, 46379), (127, 46319), (128, 46316), (137, 46229), (141, 46208),

Gene: Taquarus\_77 Start: 46751, Stop: 46167, Start Num: 47

Candidate Starts for Taquarus\_77:

(Start: 17 @46901 has 45 MA's), (31, 46823), (Start: 36 @46802 has 6 MA's), (Start: 46 @46754 has 29 MA's), (Start: 47 @46751 has 89 MA's), (Start: 63 @46646 has 1 MA's), (Start: 75 @46574 has 8 MA's), (82, 46556), (104, 46490), (127, 46325), (128, 46322), (137, 46235), (141, 46214),

Gene: TelAviv\_5 Start: 1762, Stop: 1193, Start Num: 12

Candidate Starts for TelAviv\_5:

(Start: 12 @1762 has 20 MA's), (Start: 32 @1645 has 15 MA's), (Start: 35 @1630 has 1 MA's), (Start: 46 @1579 has 29 MA's), (Start: 66 @1576 has 3 MA's), (109, 1462), (112, 1453), (115, 1429), (127, 1324), (128, 1321), (134, 1285), (141, 1246), (145, 1210),

Gene: Temprado\_91 Start: 47580, Stop: 47029, Start Num: 36

Candidate Starts for Temprado\_91:

(Start: 17 @47679 has 45 MA's), (Start: 22 @47655 has 5 MA's), (31, 47601), (Start: 32 @47598 has 15 MA's), (Start: 36 @47580 has 6 MA's), (117, 47274), (127, 47193), (128, 47190), (131, 47169), (139, 47094), (140, 47091),

Gene: Thanksgivukkah\_77 Start: 46896, Stop: 46162, Start Num: 17

Candidate Starts for Thanksgivukkah\_77:

(Start: 17 @46896 has 45 MA's), (31, 46818), (Start: 36 @46797 has 6 MA's), (Start: 46 @46749 has 29 MA's), (Start: 47 @46746 has 89 MA's), (Start: 63 @46641 has 1 MA's), (Start: 75 @46569 has 8 MA's), (82, 46551), (104, 46485), (122, 46380), (127, 46320), (128, 46317), (137, 46230), (141, 46209),

Gene: TinaFeyge\_76 Start: 46893, Stop: 46159, Start Num: 17

Candidate Starts for TinaFeyge\_76:

(Start: 17 @46893 has 45 MA's), (31, 46815), (Start: 36 @46794 has 6 MA's), (Start: 46 @46746 has 29 MA's), (Start: 47 @46743 has 89 MA's), (Start: 63 @46638 has 1 MA's), (Start: 75 @46566 has 8 MA's), (82, 46548), (104, 46482), (127, 46317), (128, 46314), (137, 46227), (141, 46206),

Gene: Tinybot\_77 Start: 46778, Stop: 46191, Start Num: 46

Candidate Starts for Tinybot\_77:

(Start: 17 @46925 has 45 MA's), (31, 46847), (Start: 36 @46826 has 6 MA's), (Start: 46 @46778 has 29 MA's), (Start: 47 @46775 has 89 MA's), (Start: 63 @46670 has 1 MA's), (Start: 75 @46598 has 8 MA's), (82, 46580), (104, 46514), (122, 46409), (127, 46349), (128, 46346), (137, 46259), (141, 46238),

Gene: TiroTheta9\_77 Start: 46742, Stop: 46158, Start Num: 47

Candidate Starts for TiroTheta9\_77:

(Start: 17 @46892 has 45 MA's), (31, 46814), (Start: 36 @46793 has 6 MA's), (Start: 46 @46745 has 29 MA's), (Start: 47 @46742 has 89 MA's), (Start: 63 @46637 has 1 MA's), (Start: 75 @46565 has 8 MA's), (82, 46547), (104, 46481), (127, 46316), (128, 46313), (137, 46226), (141, 46205),

Gene: Toaka\_82 Start: 46732, Stop: 46166, Start Num: 32

Candidate Starts for Toaka\_82:

(Start: 17 @46813 has 45 MA's), (Start: 22 @46789 has 5 MA's), (Start: 32 @46732 has 15 MA's), (109, 46474), (113, 46453), (118, 46405), (127, 46327), (128, 46324), (137, 46237),

Gene: ToneTone\_87 Start: 47116, Stop: 46580, Start Num: 38

Candidate Starts for ToneTone\_87:

(Start: 17 @47227 has 45 MA's), (Start: 22 @47203 has 5 MA's), (31, 47149), (Start: 32 @47146 has 15 MA's), (Start: 38 @47116 has 4 MA's), (117, 46822), (127, 46741), (128, 46738), (139, 46645), (140, 46642),

Gene: TroyPia\_79 Start: 46786, Stop: 46199, Start Num: 46

Candidate Starts for TroyPia\_79:

(Start: 17 @46933 has 45 MA's), (31, 46855), (Start: 36 @46834 has 6 MA's), (Start: 46 @46786 has 29 MA's), (Start: 47 @46783 has 89 MA's), (Start: 63 @46678 has 1 MA's), (Start: 75 @46606 has 8 MA's), (82, 46588), (104, 46522), (127, 46357), (128, 46354), (137, 46267), (141, 46246),

Gene: Tubs\_84 Start: 46773, Stop: 46258, Start Num: 41

Candidate Starts for Tubs\_84:

(Start: 17 @46905 has 45 MA's), (Start: 22 @46881 has 5 MA's), (Start: 32 @46824 has 15 MA's), (Start: 41 @46773 has 18 MA's), (109, 46566), (113, 46545), (118, 46497), (127, 46419), (128, 46416), (137, 46329),

Gene: Tucker\_90 Start: 47319, Stop: 46783, Start Num: 38

Candidate Starts for Tucker\_90:

(Start: 17 @47430 has 45 MA's), (Start: 22 @47406 has 5 MA's), (31, 47352), (Start: 32 @47349 has 15 MA's), (Start: 38 @47319 has 4 MA's), (117, 47025), (127, 46944), (128, 46941), (139, 46848), (140, 46845),

Gene: Twister\_78 Start: 46549, Stop: 46046, Start Num: 41

Candidate Starts for Twister\_78:

(Start: 17 @46681 has 45 MA's), (Start: 22 @46657 has 5 MA's), (Start: 32 @46600 has 15 MA's), (Start: 41 @46549 has 18 MA's), (Start: 75 @46465 has 8 MA's), (118, 46276), (127, 46198), (128, 46195), (133, 46162), (139, 46108),

Gene: TygerBlood\_78 Start: 46751, Stop: 46164, Start Num: 46

Candidate Starts for TygerBlood\_78:

(Start: 17 @46898 has 45 MA's), (31, 46820), (Start: 36 @46799 has 6 MA's), (Start: 46 @46751 has 29 MA's), (Start: 47 @46748 has 89 MA's), (Start: 63 @46643 has 1 MA's), (Start: 75 @46571 has 8 MA's), (82, 46553), (104, 46487), (122, 46382), (127, 46322), (128, 46319), (137, 46232), (141,

46211),

Gene: Ulysses\_77 Start: 46431, Stop: 45847, Start Num: 47

Candidate Starts for Ulysses\_77:

(Start: 17 @46581 has 45 MA's), (31, 46503), (Start: 36 @46482 has 6 MA's), (Start: 46 @46434 has 29 MA's), (Start: 47 @46431 has 89 MA's), (Start: 63 @46326 has 1 MA's), (Start: 75 @46254 has 8 MA's), (82, 46236), (104, 46170), (127, 46005), (128, 46002), (137, 45915), (141, 45894),

Gene: Vagabond\_5 Start: 1719, Stop: 1288, Start Num: 35

Candidate Starts for Vagabond\_5:

(Start: 12 @1851 has 20 MA's), (Start: 32 @1734 has 15 MA's), (Start: 35 @1719 has 1 MA's), (Start: 46 @1668 has 29 MA's), (Start: 66 @1665 has 3 MA's), (109, 1557), (112, 1548), (127, 1419), (128, 1416), (134, 1380), (141, 1341), (145, 1305),

Gene: Vanisoa\_79 Start: 47062, Stop: 46496, Start Num: 32

Candidate Starts for Vanisoa\_79:

(Start: 17 @47143 has 45 MA's), (Start: 22 @47119 has 5 MA's), (31, 47065), (Start: 32 @47062 has 15 MA's), (109, 46804), (113, 46783), (127, 46657), (128, 46654), (137, 46567),

Gene: Vash\_33 Start: 26115, Stop: 26702, Start Num: 76

Candidate Starts for Vash\_33:

(9, 25725), (14, 25752), (21, 25794), (40, 25905), (64, 26043), (Start: 76 @26115 has 7 MA's), (116, 26445), (123, 26490), (126, 26514), (127, 26544), (128, 26547), (132, 26577), (145, 26661), (148, 26673),

Gene: Vorrrps\_5 Start: 1716, Stop: 1147, Start Num: 12

Candidate Starts for Vorrrps\_5:

(Start: 12 @1716 has 20 MA's), (Start: 32 @1599 has 15 MA's), (Start: 35 @1584 has 1 MA's), (Start: 46 @1533 has 29 MA's), (Start: 66 @1530 has 3 MA's), (109, 1416), (112, 1407), (115, 1383), (127, 1278), (128, 1275), (134, 1239), (141, 1200), (145, 1164),

Gene: WalterMcMickey\_77 Start: 46600, Stop: 46046, Start Num: 32

Candidate Starts for WalterMcMickey\_77:

(Start: 17 @46681 has 45 MA's), (Start: 22 @46657 has 5 MA's), (Start: 32 @46600 has 15 MA's), (Start: 41 @46549 has 18 MA's), (Start: 75 @46465 has 8 MA's), (118, 46276), (127, 46198), (128, 46195), (133, 46162), (139, 46108),

Gene: Wander\_78 Start: 46742, Stop: 46158, Start Num: 47

Candidate Starts for Wander\_78:

(Start: 17 @46892 has 45 MA's), (31, 46814), (Start: 36 @46793 has 6 MA's), (Start: 46 @46745 has 29 MA's), (Start: 47 @46742 has 89 MA's), (Start: 63 @46637 has 1 MA's), (Start: 75 @46565 has 8 MA's), (82, 46547), (104, 46481), (122, 46376), (127, 46316), (128, 46313), (137, 46226), (141, 46205),

Gene: Wiks\_89 Start: 47310, Stop: 46660, Start Num: 17

Candidate Starts for Wiks\_89:

(Start: 17 @47310 has 45 MA's), (Start: 22 @47286 has 5 MA's), (31, 47232), (Start: 32 @47229 has 15 MA's), (Start: 36 @47211 has 6 MA's), (117, 46905), (127, 46824), (128, 46821), (131, 46800), (139, 46725), (140, 46722),

Gene: Wilbur\_78 Start: 46745, Stop: 46161, Start Num: 47

Candidate Starts for Wilbur\_78:

(Start: 17 @46895 has 45 MA's), (31, 46817), (Start: 36 @46796 has 6 MA's), (Start: 46 @46748 has 29 MA's), (Start: 47 @46745 has 89 MA's), (Start: 63 @46640 has 1 MA's), (Start: 75 @46568 has 8 MA's), (77, 46562), (82, 46550), (104, 46484), (122, 46379), (127, 46319), (128, 46316), (137, 46229), (141, 46208),

Gene: Wildflower\_5 Start: 1625, Stop: 1242, Start Num: 66

Candidate Starts for Wildflower\_5:

(Start: 12 @1811 has 20 MA's), (Start: 32 @1694 has 15 MA's), (Start: 35 @1679 has 1 MA's), (Start: 46 @1628 has 29 MA's), (Start: 66 @1625 has 3 MA's), (109, 1511), (112, 1502), (127, 1373), (128, 1370), (141, 1295), (145, 1259),

Gene: Wile\_74 Start: 46560, Stop: 45988, Start Num: 48

Candidate Starts for Wile\_74:

(Start: 17 @46722 has 45 MA's), (31, 46644), (Start: 36 @46623 has 6 MA's), (Start: 46 @46575 has 29 MA's), (Start: 47 @46572 has 89 MA's), (Start: 48 @46560 has 4 MA's), (Start: 63 @46467 has 1 MA's), (Start: 75 @46395 has 8 MA's), (82, 46377), (104, 46311), (122, 46206), (127, 46146), (128, 46143), (137, 46056), (141, 46035), (145, 45999),

Gene: Wizard007\_75 Start: 46286, Stop: 45714, Start Num: 48

Candidate Starts for Wizard007\_75:

(Start: 17 @46448 has 45 MA's), (31, 46370), (Start: 36 @46349 has 6 MA's), (Start: 46 @46301 has 29 MA's), (Start: 47 @46298 has 89 MA's), (Start: 48 @46286 has 4 MA's), (Start: 63 @46193 has 1 MA's), (Start: 75 @46121 has 8 MA's), (82, 46103), (104, 46037), (122, 45932), (127, 45872), (128, 45869), (137, 45782), (141, 45761), (145, 45725),

Gene: Wogge42\_5 Start: 1668, Stop: 1291, Start Num: 66

Candidate Starts for Wogge42\_5:

(Start: 12 @1854 has 20 MA's), (Start: 32 @1737 has 15 MA's), (Start: 35 @1722 has 1 MA's), (Start: 46 @1671 has 29 MA's), (Start: 66 @1668 has 3 MA's), (109, 1560), (112, 1551), (127, 1422), (128, 1419), (134, 1383), (141, 1344), (145, 1308),

Gene: Xena\_74 Start: 46567, Stop: 45983, Start Num: 47

Candidate Starts for Xena\_74:

(Start: 17 @46717 has 45 MA's), (31, 46639), (Start: 36 @46618 has 6 MA's), (Start: 46 @46570 has 29 MA's), (Start: 47 @46567 has 89 MA's), (Start: 63 @46462 has 1 MA's), (Start: 75 @46390 has 8 MA's), (82, 46372), (104, 46306), (122, 46201), (127, 46141), (128, 46138), (137, 46051), (141, 46030),

Gene: Yecey3\_85 Start: 46628, Stop: 46062, Start Num: 32

Candidate Starts for Yecey3\_85:

(Start: 17 @46709 has 45 MA's), (Start: 22 @46685 has 5 MA's), (Start: 32 @46628 has 15 MA's), (113, 46349), (127, 46223), (128, 46220), (145, 46076),

Gene: YoSam321\_78 Start: 46746, Stop: 46159, Start Num: 46

Candidate Starts for YoSam321\_78:

(Start: 17 @46893 has 45 MA's), (31, 46815), (Start: 36 @46794 has 6 MA's), (Start: 46 @46746 has 29 MA's), (Start: 47 @46743 has 89 MA's), (Start: 63 @46638 has 1 MA's), (Start: 75 @46566 has 8 MA's), (82, 46548), (104, 46482), (127, 46317), (128, 46314), (137, 46227), (141, 46206),

Gene: Yokurt\_89 Start: 47211, Stop: 46660, Start Num: 36

Candidate Starts for Yokurt\_89:

(Start: 17 @47310 has 45 MA's), (Start: 22 @47286 has 5 MA's), (31, 47232), (Start: 32 @47229 has 15 MA's), (Start: 36 @47211 has 6 MA's), (117, 46905), (127, 46824), (128, 46821), (131, 46800),

(139, 46725), (140, 46722),

Gene: YoyoKar\_5 Start: 1772, Stop: 1203, Start Num: 12

Candidate Starts for YoyoKar\_5:

(Start: 12 @1772 has 20 MA's), (Start: 32 @1655 has 15 MA's), (Start: 35 @1640 has 1 MA's), (Start: 46 @1589 has 29 MA's), (Start: 66 @1586 has 3 MA's), (109, 1472), (112, 1463), (115, 1439), (127, 1334), (128, 1331), (134, 1295), (141, 1256), (145, 1220),

Gene: Zaka\_90 Start: 47310, Stop: 46660, Start Num: 17

Candidate Starts for Zaka\_90:

(Start: 17 @47310 has 45 MA's), (Start: 22 @47286 has 5 MA's), (31, 47232), (Start: 32 @47229 has 15 MA's), (Start: 36 @47211 has 6 MA's), (117, 46905), (127, 46824), (128, 46821), (131, 46800), (139, 46725), (140, 46722),

Gene: Zakhe101\_6 Start: 2163, Stop: 1594, Start Num: 12

Candidate Starts for Zakhe101\_6:

(Start: 12 @2163 has 20 MA's), (Start: 32 @2046 has 15 MA's), (Start: 35 @2031 has 1 MA's), (Start: 46 @1980 has 29 MA's), (Start: 66 @1977 has 3 MA's), (109, 1863), (112, 1854), (127, 1725), (128, 1722), (141, 1647), (145, 1611),

Gene: Zebo\_5 Start: 1765, Stop: 1196, Start Num: 12

Candidate Starts for Zebo\_5:

(Start: 12 @1765 has 20 MA's), (Start: 32 @1648 has 15 MA's), (Start: 35 @1633 has 1 MA's), (Start: 46 @1582 has 29 MA's), (Start: 66 @1579 has 3 MA's), (109, 1465), (112, 1456), (115, 1432), (127, 1327), (128, 1324), (134, 1288), (141, 1249), (145, 1213),

Gene: Zimmer\_80 Start: 47793, Stop: 47140, Start Num: 17

Candidate Starts for Zimmer\_80:

(Start: 17 @47793 has 45 MA's), (Start: 22 @47769 has 5 MA's), (Start: 32 @47712 has 15 MA's), (109, 47451), (114, 47427), (127, 47304), (128, 47301), (139, 47208), (140, 47205), (143, 47166),