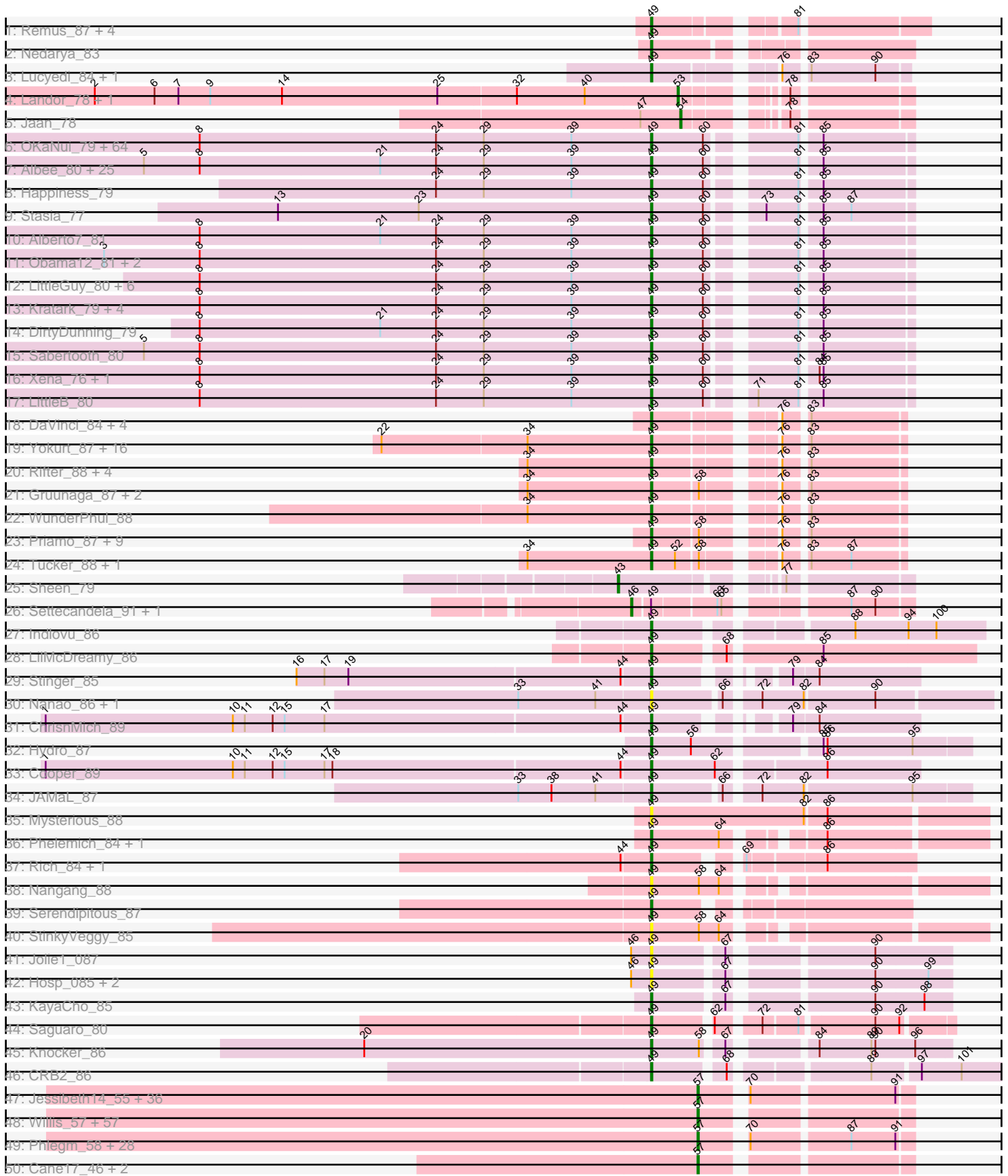
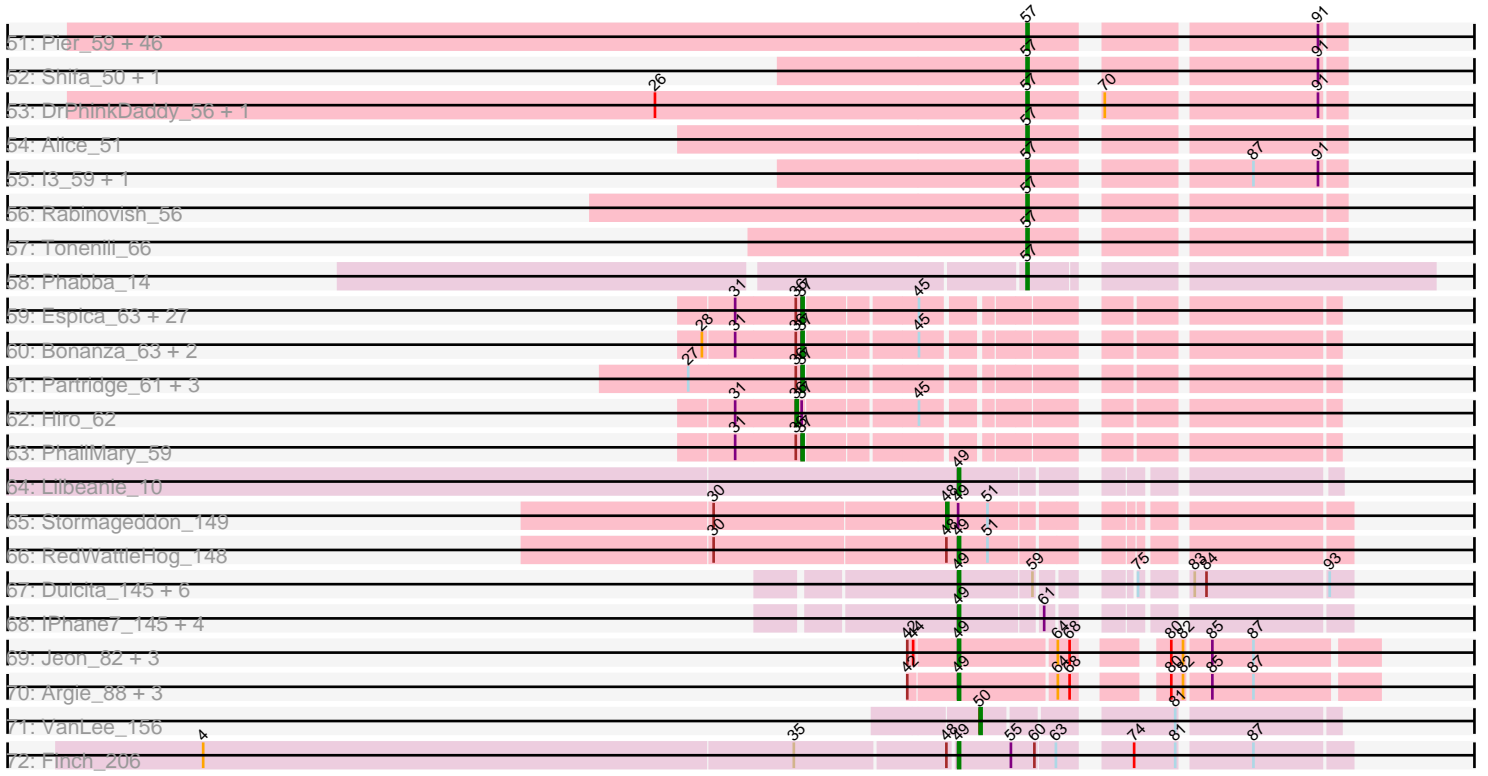


Pham 157485



Pham 157485



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 157485 Report

This analysis was run 04/22/24 on database version 561.

Pham number 157485 has 442 members, 35 are drafts.

Phages represented in each track:

- Track 1 : Remus\_87, Soups\_86, Epsocamisio\_84, Rosalind\_85, Strosahl\_87
- Track 2 : Nedarya\_83
- Track 3 : Lucyedi\_84, EagleEye\_85
- Track 4 : Landor\_78, Bactobuster\_72
- Track 5 : Jaan\_78
- Track 6 : OKaNui\_79, Eurydice\_81, JoongJeon\_79, Burger\_78, LochMonster\_81, Houdini22\_79, Chaph\_80, Mazhar510\_80, Caelakin\_78, Melvin\_82, Bombshell\_80, Millski\_79, Relief\_79, Wilbur\_80, Nemo27\_79, Eapen\_80, Medusa\_79, Romney\_79, Phighter1804\_80, Eris\_79, CentreCat\_80, Nebs\_81, Lorenzo\_80, SheldonCooper\_80, Cerulean\_82, Bruiser\_79, Thanksgivukkah\_79, Ulysses\_79, Scamp\_80, Flux\_81, Skipitt\_79, Kampy\_79, Dhanush\_80, ChampagnePapi\_83, Kyee\_80, Palestino\_79, Spino\_79, PeterPeter\_80, Ruin\_80, Cocoaberry\_80, TygerBlood\_80, Pipcraft\_76, Avle17\_80, Phacado\_80, Kremtemulon\_74, MeeZee\_79, Ohfah\_81, Maverick\_79, Eagle\_79, Maxo\_82, NorthStar\_77, Gadost\_80, Clarenza\_79, Kingmustik0402\_80, Cintron\_80, KFPoly\_79, BangNhom\_77, ICleared\_79, Wander\_80, TroyPia\_81, Arturo\_77, Koreni\_79, NotAPhaseMom\_79, Iracema64\_80, Funston\_79
- Track 7 : Albee\_80, Pumbaa\_80, Connomayer\_80, TinaFeyge\_78, TiroTheta9\_79, Jaykayelowell\_77, Polymorphads\_81, Florean\_80, Holli\_79, Baby16\_80, BubbleTrouble\_79, Sparxx\_81, Roosevelt\_78, JetBlade\_81, Abdiel\_79, Citius\_80, Broseidon\_80, Blackmoor\_79, LappelDuVide\_76, Deano\_77, HamSlice\_76, Lunsford\_80, Morrow\_82, Bartimeaus\_80, Shaka\_78, Annyong\_79
- Track 8 : Happiness\_79
- Track 9 : Stasia\_77
- Track 10 : Alberto7\_81
- Track 11 : Obama12\_81, Tinybot\_79, LHTSCC\_82
- Track 12 : LittleGuy\_80, Eros\_80, Phontbonne\_80, Nyxis\_79, Taquarus\_79, Commander\_78, Peaches\_78
- Track 13 : Kratak\_79, Iceman\_78, Shygu2\_78, YoSam321\_80, Lemur\_80
- Track 14 : DirtyDunning\_79
- Track 15 : Sabertooth\_80
- Track 16 : Xena\_76, Datway\_77
- Track 17 : LittleB\_80
- Track 18 : DaVinci\_84, McFly\_86, Chartreuse\_84, Dorothea\_83, Kipper29\_86
- Track 19 : Yokurt\_87, Neeharika16\_85, Koko\_89, Cookiedough\_86, Helmet\_89, Pmask\_85, SuperAwesome\_86, Jordennis\_84, GreedyLawyer\_79, Blue7\_89, Newrala\_85, Zaka\_88, Indra\_91, BABullseye\_79, JewelBug\_78, Garak\_89, Wiks\_87

- Track 20 : Rifter\_88, Artemis2UCLA\_87, CloudWang3\_88, Hexamo\_87, Roksolana\_88
- Track 21 : Gruunaga\_87, Hammer\_88, Gladiator\_84
- Track 22 : WunderPhul\_88
- Track 23 : Priamo\_87, Kazan\_87, Zulu\_89, EricB\_84, Candra\_84, SuperCallie99\_82, VohminGhazi\_86, Hoot\_81, Isiphiwo\_82, SmellyB\_86
- Track 24 : Tucker\_88, ToneTone\_85
- Track 25 : Sheen\_79
- Track 26 : Settecandela\_91, Phrappuccino\_91
- Track 27 : Indlovu\_86
- Track 28 : LilMcDreamy\_86
- Track 29 : Stinger\_85
- Track 30 : Nanao\_86, Poster\_85
- Track 31 : ChrisnMich\_89
- Track 32 : Hydro\_87
- Track 33 : Cooper\_89
- Track 34 : JAMaL\_87
- Track 35 : Mysterious\_88
- Track 36 : Phelemich\_84, Reprobate\_86
- Track 37 : Rich\_84, Bae\_85
- Track 38 : Nangang\_88
- Track 39 : Serendipitous\_87
- Track 40 : StinkyVeggy\_85
- Track 41 : Jolie1\_087
- Track 42 : Hosp\_085, 39HC\_090, 40BC\_090
- Track 43 : KayaCho\_85
- Track 44 : Saguaro\_80
- Track 45 : Knocker\_86
- Track 46 : CRB2\_86
- Track 47 : Jessibeth14\_55, BadAgartude\_56, QBert\_51, Janiyra\_58, ChickenPhender\_52, LinStu\_58, Dietrick\_50, Cali\_54, Nidhogg\_57, Trinitium\_52, BigCity\_62, Iota\_51, MoMoMixon\_57, CharlieB\_54, LRRHood\_53, ScottMcG\_55, Turret\_51, Grasshills\_62, Koguma\_53, IkeLoa\_51, Catera\_55, ChaylaJr\_52, Ronan\_51, Izajani\_58, Shaqnato\_51, Grungle\_48, Lukilu\_50, Shelob\_59, Phox\_55, Sebata\_59, BeanWater\_50, JulietS\_51, ET08\_48, Rahel\_57, EggyFarm\_62, NoodleTree\_57, Yassified\_54
- Track 48 : Willis\_57, NedWong\_58, Mikro\_55, ZygoTaiga\_57, ErnieJ\_56, Fludd\_56, Lee7\_55, Flabslab\_53, Cactojaque\_51, Loanshark\_57, Rizal\_55, Salacia\_59, FoxtrotP1\_57, StubbySaigey\_56, BananaFence\_58, Ewok\_57, Bipolarisk\_56, Pinkcreek\_49, Darko\_56, Bread\_57, Kboogie\_57, Naval22\_63, Ava3\_58, Astraea\_58, Delilah\_57, McWolfish\_55, PurduePete\_56, FrayBell\_63, Erdmann\_58, Shrimp\_57, TinyTim\_57, Khaleesi\_56, Napoleon13\_54, YemiJoy2021\_57, Zalkecks\_58, Wally\_55, Daffodil\_59, Norm\_57, Basquiat\_52, Maby2021\_57, EmToTheThree\_60, Megamind\_56, LordLeafolot\_62, ParkTD\_56, Blackbrain\_51, Gizmo\_58, Delylah\_57, MikeLiesIn\_57, Spud\_57, Stubby\_52, SrishMeg2525\_56, Yucca\_57, Zeenon\_59, Issimir\_56, FudgeTart\_58, Chargie21\_52, Pleione\_59, Bonray\_57
- Track 49 : Phlegm\_58, Gamgam\_56, CindyLou\_57, Audrick\_58, Patter\_56, InigoMontoya\_57, Derek\_57, Capablanca\_58, Atlantean\_55, Naija\_55, ValleyTerrace\_56, Amataga\_56, Littleton\_56, Pivoine\_55, Latch\_56, YoungMoneyMata\_56, SilverDipper\_57, JPickles\_54, Babyland\_55, SmallFry\_56, JustHall\_52, Jemmno\_56, Momo\_55, Quasimodo\_56, McGee\_55, Ghost\_56, Ading\_56, Tyke\_58, Ngannou\_51

- Track 50 : Cane17\_46, Colt\_48, Blubba\_46
- Track 51 : Pier\_59, Bangla1971\_57, Adlitam\_56, Bigswole\_63, Gabriel\_58, Roots515\_56, Drazdys\_56, Morizzled23\_59, Specks\_62, Essence\_55, DTDevon\_57, Concombre\_62, LifeSavor\_56, DirtMonster\_53, Matsumoto\_55, Sauce\_58, BackyardAgain\_54, RoMag\_51, Halldule\_51, Caravan\_53, ShiaLabeouf\_56, ArcherS7\_56, Sprinklers\_53, StephanieG\_57, Jaygup\_56, EasyJones\_59, Chomp\_54, Bxz1\_57, Breeniome\_58, Pio\_61, Tortoise16\_54, JayJay\_60, Shnickers\_56, Burrough\_57, Nappy\_59, Jedediah\_57, Asterius\_54, Melpomini\_52, Guwapp\_55, InterFolia\_65, Dandelion\_62, LolaVinca\_60, Phusco\_56, Teardrop\_56, NuevoMundo\_62, Spec\_54, EmmaElysia\_55
- Track 52 : Shifa\_50, HyRo\_52
- Track 53 : DrPhinkDaddy\_56, Kamryn\_56
- Track 54 : Alice\_51
- Track 55 : l3\_59, Mangeria\_60
- Track 56 : Rabinovish\_56
- Track 57 : Tonenili\_66
- Track 58 : Phabba\_14
- Track 59 : Espica\_63, Nancinator\_61, Phrankenstein\_62, Rhodalysa\_62, Belenaria\_63, RER2\_56, Swann\_62, Krishelle\_62, Shuman\_63, UhSalsa\_62, Gollum\_62, BobbyDazzler\_62, Naiad\_61, Yoncess\_61, Harlequin\_62, TWAMP\_62, CosmicSans\_62, Alatin\_61, Bryce\_61, Erik\_62, Jester\_61, AppleCloud\_59, Rasputin\_62, Bradshaw\_62, Lillie\_62, Natosaleda\_61, StCroix\_61, RexFury\_61
- Track 60 : Bonanza\_63, Alpacados\_61, Yogi\_63
- Track 61 : Partridge\_61, Dinger\_61, AngryOrchard\_59, Takoda\_62
- Track 62 : Hiro\_62
- Track 63 : PhailMary\_59
- Track 64 : Lilbeanie\_10
- Track 65 : Stormageddon\_149
- Track 66 : RedWattleHog\_148
- Track 67 : Dulcita\_145, Skinny\_151, LilhomieP\_144, Diminimus\_145, PegLeg\_148, Glaske16\_147, Bongo\_142
- Track 68 : IPHane7\_145, Bricole\_150, SlimJimmy\_145, Auspice\_148, TyDawg\_141
- Track 69 : Jeon\_82, Taptic\_88, Cepens\_87, GodPhather\_87
- Track 70 : Argie\_88, Megabear\_85, D12\_85, PR\_86
- Track 71 : VanLee\_156
- Track 72 : Finch\_206

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

The start number called the most often in the published annotations is 49, it was called in 196 of the 407 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 39HC\_090, 40BC\_090, Abdiel\_79, Albee\_80, Alberto7\_81, Annyong\_79, Argie\_88, Artemis2UCLA\_87, Arturo\_77, Auspice\_148, Avle17\_80, BABullseye\_79, Baby16\_80, Bae\_85, BangNhom\_77, Bartimeaus\_80, Blackmoor\_79, Blue7\_89, Bombshell\_80, Bongo\_142, Bricole\_150, Broseidon\_80, Bruiser\_79, BubbleTrouble\_79, Burger\_78, CRB2\_86, Caelakin\_78, Candra\_84, CentreCat\_80, Cepens\_87, Cerulean\_82, ChampagnePapi\_83, Chaph\_80, Chartreuse\_84, ChrisnMich\_89, Cintron\_80, Citius\_80, Clarenza\_79, CloudWang3\_88,

Cocoaberry\_80, Commander\_78, Connomayer\_80, Cookiedough\_86, Cooper\_89, D12\_85, DaVinci\_84, Datway\_77, Deano\_77, Dhanush\_80, Diminimus\_145, DirtyDunning\_79, Dorothea\_83, Dulcita\_145, EagleEye\_85, Eagle\_79, Eapen\_80, Epsocamisio\_84, EricB\_84, Eris\_79, Eros\_80, Eurydice\_81, Finch\_206, Florean\_80, Flux\_81, Funston\_79, Gadost\_80, Garak\_89, Gladiator\_84, Glaske16\_147, GodPhather\_87, GreedyLawyer\_79, Gruunaga\_87, HamSlice\_76, Hammer\_88, Happiness\_79, Helmet\_89, Hexamo\_87, Holli\_79, Hoot\_81, Hosp\_085, Houdini22\_79, Hydro\_87, ICleared\_79, IPhone7\_145, Iceman\_78, Indlovu\_86, Indra\_91, Iracema64\_80, Isiphiwo\_82, JAMaL\_87, Jaykayelowell\_77, Jeon\_82, JetBlade\_81, JewelBug\_78, Jolie1\_087, JoongJeon\_79, Jordennis\_84, KFPoly\_79, Kamy\_79, KayaCho\_85, Kazan\_87, Kingmustik0402\_80, Kipper29\_86, Knocker\_86, Koko\_89, Koreni\_79, Kratark\_79, Kremtemulon\_74, Kyee\_80, LHTSCC\_82, LappelDuVide\_76, Lemur\_80, LilMcDreamy\_86, Lilbeanie\_10, LilhomieP\_144, LittleB\_80, LittleGuy\_80, LochMonster\_81, Lorenzo\_80, Lucyedi\_84, Lunsford\_80, Maverick\_79, Maxo\_82, Mazhar510\_80, McFly\_86, Medusa\_79, MeeZee\_79, Megabear\_85, Melvin\_82, Millski\_79, Morrow\_82, Mysterious\_88, Nanao\_86, Nangang\_88, Nebs\_81, Nedarya\_83, Neeharika16\_85, Nemo27\_79, Newrala\_85, NorthStar\_77, NotAPhaseMom\_79, Nyxis\_79, OKaNui\_79, Obama12\_81, Ohfah\_81, PR\_86, Palestino\_79, Peaches\_78, PegLeg\_148, PeterPeter\_80, Phacado\_80, Phelemich\_84, Phighter1804\_80, Phontbonne\_80, Pipcraft\_76, Pmask\_85, Polymorphads\_81, Poster\_85, Priamo\_87, Pumbaa\_80, RedWattleHog\_148, Relief\_79, Remus\_87, Reprobate\_86, Rich\_84, Rifter\_88, Roksolana\_88, Romney\_79, Roosevelt\_78, Rosalind\_85, Ruin\_80, Sabertooth\_80, Saguaro\_80, Scamp\_80, Serendipitous\_87, Shaka\_78, SheldonCooper\_80, Shygu2\_78, Skinny\_151, Skipitt\_79, SlimJimmy\_145, SmellyB\_86, Soups\_86, Sparxx\_81, Spino\_79, Stasia\_77, Stinger\_85, StinkyVeggy\_85, Strosahl\_87, SuperAwesome\_86, SuperCallie99\_82, Taptic\_88, Taquarus\_79, Thanksgivukkah\_79, TinaFeyge\_78, Tinybot\_79, TiroTheta9\_79, ToneTone\_85, TroyPia\_81, Tucker\_88, TyDawg\_141, TygerBlood\_80, Ulysses\_79, VohminGhazi\_86, Wander\_80, Wiks\_87, Wilbur\_80, WunderPhul\_88, Xena\_76, YoSam321\_80, Yokurt\_87, Zaka\_88, Zulu\_89,

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

- Phrappuccino\_91, Settecandela\_91, Stormageddon\_149,

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

- Ading\_56, Adlitam\_56, Alatin\_61, Alice\_51, Alpacados\_61, Amataga\_56, AngryOrchard\_59, AppleCloud\_59, ArcherS7\_56, Asterius\_54, Astraea\_58, Atlantean\_55, Audrick\_58, Ava3\_58, Babyland\_55, BackyardAgain\_54, Bactobuster\_72, BadAgartude\_56, BananaFence\_58, Bangla1971\_57, Basquiat\_52, BeanWater\_50, Belenaria\_63, BigCity\_62, Bigswole\_63, Bipolarisk\_56, Blackbrain\_51, Blubba\_46, BobbyDazzler\_62, Bonanza\_63, Bonray\_57, Bradshaw\_62, Bread\_57, Breeniome\_58, Bryce\_61, Burrough\_57, Bxz1\_57, Cactojaque\_51, Cali\_54, Cane17\_46, Capablanca\_58, Caravan\_53, Catera\_55, Chargie21\_52, CharlieB\_54, ChaylaJr\_52, ChickenPhender\_52, Chomp\_54, CindyLou\_57, Colt\_48, Concombre\_62, CosmicSans\_62, DTDevon\_57, Daffodil\_59, Dandelion\_62, Darko\_56, Delilah\_57, Delylah\_57, Derek\_57, Dietrick\_50, Dinger\_61, DirtMonster\_53, DrPhinkDaddy\_56, Drazdys\_56, ET08\_48, EasyJones\_59, EggyFarm\_62, EmToTheThree\_60, EmmaElysia\_55, Erdmann\_58, Erik\_62, ErnieJ\_56, Espica\_63, Essence\_55, Ewok\_57, Flabslab\_53, Fludd\_56, FoxtrotP1\_57, FrayBell\_63, FudgeTart\_58, Gabriel\_58, Gamgam\_56, Ghost\_56, Gizmo\_58, Gollum\_62, Grasshills\_62, Grungle\_48, Guwapp\_55, Halldule\_51, Harlequin\_62, Hiro\_62, HyRo\_52, I3\_59, IkeLoa\_51, InigoMontoya\_57, InterFolia\_65, Iota\_51, Issimir\_56, Izajani\_58, JPickles\_54, Jaan\_78, Janiyra\_58, JayJay\_60,

Jaygup\_56, Jedediah\_57, Jemmno\_56, Jessibeth14\_55, Jester\_61, JulietS\_51, JustHall\_52, Kamryn\_56, Kboogie\_57, Khaleesi\_56, Koguma\_53, Krishelle\_62, LRRHood\_53, Landor\_78, Latch\_56, Lee7\_55, LifeSavor\_56, Lillie\_62, LinStu\_58, Littleton\_56, Loanshark\_57, LolaVinca\_60, LordLeafolot\_62, Lukilu\_50, Maby2021\_57, Mangeria\_60, Matsumoto\_55, McGee\_55, McWolfish\_55, Megamind\_56, Melpomini\_52, MikeLiesIn\_57, Mikro\_55, MoMoMixon\_57, Momo\_55, Morizzled23\_59, Naiad\_61, Naija\_55, Nancinator\_61, Napoleon13\_54, Nappy\_59, Natosaleda\_61, Naval22\_63, NedWong\_58, Ngannou\_51, Nidhogg\_57, NoodleTree\_57, Norm\_57, NuevoMundo\_62, ParkTD\_56, Partridge\_61, Patter\_56, Phabba\_14, PhailMary\_59, Phlegm\_58, Phox\_55, Phrankenstein\_62, Phusco\_56, Pier\_59, Pinkcreek\_49, Pio\_61, Pivoine\_55, Pleione\_59, PurduePete\_56, QBert\_51, Quasimodo\_56, RER2\_56, Rabinovish\_56, Rahel\_57, Rasputin\_62, RexFury\_61, Rhodalysa\_62, Rizal\_55, RoMag\_51, Ronan\_51, Roots515\_56, Salacia\_59, Sauce\_58, ScottMcG\_55, Sebata\_59, Shaq nato\_51, Sheen\_79, Shelob\_59, ShiaLabeouf\_56, Shifa\_50, Shnickers\_56, Shrimp\_57, Shuman\_63, SilverDipper\_57, SmallFry\_56, Spec\_54, Specks\_62, Sprinklers\_53, Spud\_57, SrishMeg2525\_56, StCroix\_61, StephanieG\_57, StubbySaigey\_56, Stubby\_52, Swann\_62, TWAMP\_62, Takoda\_62, Teardrop\_56, TinyTim\_57, Tonenili\_66, Tortoise16\_54, Trinitium\_52, Turret\_51, Tyke\_58, UhSalsa\_62, ValleyTerrace\_56, VanLee\_156, Wally\_55, Willis\_57, Yassified\_54, YemiJoy2021\_57, Yogi\_63, Yoncess\_61, YoungMoneyMata\_56, Yucca\_57, Zalkecks\_58, Zeenon\_59, ZygoTaiga\_57,

### Summary by start number:

#### Start 36:

- Found in 37 of 442 ( 8.4% ) of genes in pham
- Manual Annotations of this start: 1 of 407
- Called 2.7% of time when present
- Phage (with cluster) where this start called: Hiro\_62 (CA),

#### Start 37:

- Found in 37 of 442 ( 8.4% ) of genes in pham
- Manual Annotations of this start: 35 of 407
- Called 97.3% of time when present
- Phage (with cluster) where this start called: Alatin\_61 (CA), Alpacados\_61 (CA), AngryOrchard\_59 (CA), AppleCloud\_59 (CA), Belenaria\_63 (CA), BobbyDazzler\_62 (CA), Bonanza\_63 (CA), Bradshaw\_62 (CA), Bryce\_61 (CA), CosmicSans\_62 (CA), Dinger\_61 (CA), Erik\_62 (CA), Espica\_63 (CA), Gollum\_62 (CA), Harlequin\_62 (CA), Jester\_61 (CA), Krishelle\_62 (CA), Lillie\_62 (CA), Naiad\_61 (CA), Nancinator\_61 (CA), Natosaleda\_61 (CA), Partridge\_61 (CA), PhailMary\_59 (CA), Phrankenstein\_62 (CA), RER2\_56 (CA), Rasputin\_62 (CA), RexFury\_61 (CA), Rhodalysa\_62 (CA), Shuman\_63 (CA), StCroix\_61 (CA), Swann\_62 (CA), TWAMP\_62 (CA), Takoda\_62 (CA), UhSalsa\_62 (CA), Yogi\_63 (CA), Yoncess\_61 (CA),

#### Start 43:

- Found in 1 of 442 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 407
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sheen\_79 (A7),

#### Start 46:

- Found in 6 of 442 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 2 of 407

- Called 33.3% of time when present
- Phage (with cluster) where this start called: Phrappuccino\_91 (AA), Settecandela\_91 (AA),

#### Start 48:

- Found in 3 of 442 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 407
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Stormageddon\_149 (DX),

#### Start 49:

- Found in 216 of 442 ( 48.9% ) of genes in pham
- Manual Annotations of this start: 196 of 407
- Called 98.6% of time when present
- Phage (with cluster) where this start called: 39HC\_090 (B6), 40BC\_090 (B6), Abdiel\_79 (A4), Albee\_80 (A4), Alberto7\_81 (A4), Annyong\_79 (A4), Argie\_88 (W), Artemis2UCLA\_87 (A6), Arturo\_77 (A4), Auspice\_148 (M1), Avle17\_80 (A4), BABullseye\_79 (A6), Baby16\_80 (A4), Bae\_85 (B5), BangNhom\_77 (A4), Bartimeaus\_80 (A4), Blackmoor\_79 (A4), Blue7\_89 (A6), Bombshell\_80 (A4), Bongo\_142 (M1), Bricole\_150 (M1), Broseidon\_80 (A4), Bruiser\_79 (A4), BubbleTrouble\_79 (A4), Burger\_78 (A4), CRB2\_86 (B9), Caelakin\_78 (A4), Candra\_84 (A6), CentreCat\_80 (A4), Cepens\_87 (W), Cerulean\_82 (A4), ChampagnePapi\_83 (A4), Chaph\_80 (A4), Chartreuse\_84 (A6), ChrisnMich\_89 (B4), Cintron\_80 (A4), Citius\_80 (A4), Clarenza\_79 (A4), CloudWang3\_88 (A6), Cocoaberry\_80 (A4), Commander\_78 (A4), Connomayer\_80 (A4), Cookiedough\_86 (A6), Cooper\_89 (B4), D12\_85 (W), DaVinci\_84 (A6), Datway\_77 (A4), Deano\_77 (A4), Dhanush\_80 (A4), Diminimus\_145 (M1), DirtyDunning\_79 (A4), Dorothea\_83 (A6), Dulcita\_145 (M1), EagleEye\_85 (A16), Eagle\_79 (A4), Eapen\_80 (A4), Epsocamisio\_84 (A15), EricB\_84 (A6), Eris\_79 (A4), Eros\_80 (A4), Eurydice\_81 (A4), Finch\_206 (singleton), Florean\_80 (A4), Flux\_81 (A4), Funston\_79 (A4), Gadost\_80 (A4), Garak\_89 (A6), Gladiator\_84 (A6), Glaske16\_147 (M1), GodPhather\_87 (W), GreedyLawyer\_79 (A6), Gruunaga\_87 (A6), HamSlice\_76 (A4), Hammer\_88 (A6), Happiness\_79 (A4), Helmet\_89 (A6), Hexamo\_87 (A6), Holli\_79 (A4), Hoot\_81 (A6), Hosp\_085 (B6), Houdini22\_79 (A4), Hydro\_87 (B4), ICleared\_79 (A4), IPhone7\_145 (M1), Iceman\_78 (A4), Indlovu\_86 (B11), Indra\_91 (A6), Iracema64\_80 (A4), Isiphiwo\_82 (A6), JAMaL\_87 (B4), Jaykayelowell\_77 (A4), Jeon\_82 (W), JetBlade\_81 (A4), JewelBug\_78 (A6), Jolie1\_087 (B6), JoongJeon\_79 (A4), Jordennis\_84 (A6), KFPoly\_79 (A4), Kampy\_79 (A4), KayaCho\_85 (B6), Kazan\_87 (A6), Kingmustik0402\_80 (A4), Kipper29\_86 (A6), Knocker\_86 (B9), Koko\_89 (A6), Koreni\_79 (A4), Kratak\_79 (A4), Kremtemulon\_74 (A4), Kyee\_80 (A4), LHTSCC\_82 (A4), LappelDuVide\_76 (A4), Lemur\_80 (A4), LilMcDreamy\_86 (B12), Lilbeanie\_10 (DE5), LilhomieP\_144 (M1), LittleB\_80 (A4), LittleGuy\_80 (A4), LochMonster\_81 (A4), Lorenzo\_80 (A4), Lucyedi\_84 (A16), Lunsford\_80 (A4), Maverick\_79 (A4), Maxo\_82 (A4), Mazhar510\_80 (A4), McFly\_86 (A6), Medusa\_79 (A4), MeeZee\_79 (A4), Megabear\_85 (W), Melvin\_82 (A4), Millski\_79 (A4), Morrow\_82 (A4), Mysterious\_88 (B5), Nanao\_86 (B4), Nangang\_88 (B5), Nebs\_81 (A4), Nedarya\_83 (A15), Neeharika16\_85 (A6), Nemo27\_79 (A4), Newrala\_85 (A6), NorthStar\_77 (A4), NotAPhaseMom\_79 (A4), Nyxis\_79 (A4), OKaNui\_79 (A4), Obama12\_81 (A4), Ohfah\_81 (A4), PR\_86 (W), Palestino\_79 (A4), Peaches\_78 (A4), PegLeg\_148 (M1), PeterPeter\_80 (A4), Phacado\_80 (A4), Phelemich\_84 (B5), Phighter1804\_80 (A4), Phontbonne\_80 (A4), Pipcraft\_76 (A4), Pmask\_85 (A6), Polymorphads\_81 (A4), Poster\_85 (B4), Priamo\_87 (A6), Pumbaa\_80 (A4), RedWattleHog\_148 (DX), Relief\_79 (A4), Remus\_87 (A15), Reprobate\_86 (B5), Rich\_84 (B5), Rifter\_88 (A6),



Roksolana\_88 (A6), Romney\_79 (A4), Roosevelt\_78 (A4), Rosalind\_85 (A15),  
Ruin\_80 (A4), Sabertooth\_80 (A4), Saguaro\_80 (B7), Scamp\_80 (A4),  
Serendipitous\_87 (B5), Shaka\_78 (A4), SheldonCooper\_80 (A4), Shygu2\_78 (A4),  
Skinny\_151 (M1), Skipitt\_79 (A4), SlimJimmy\_145 (M1), SmellyB\_86 (A6), Soups\_86  
(A15), Sparxx\_81 (A4), Spino\_79 (A4), Stasia\_77 (A4), Stinger\_85 (B4),  
StinkyVeggy\_85 (B5), Strosahl\_87 (A15), SuperAwesome\_86 (A6), SuperCallie99\_82  
(A6), Taptic\_88 (W), Taquarus\_79 (A4), Thanksgivukkah\_79 (A4), TinaFeyge\_78  
(A4), Tinybot\_79 (A4), TiroTheta9\_79 (A4), ToneTone\_85 (A6), TroyPia\_81 (A4),  
Tucker\_88 (A6), TyDawg\_141 (M1), TygerBlood\_80 (A4), Ulysses\_79 (A4),  
VohminGhazi\_86 (A6), Wander\_80 (A4), Wiks\_87 (A6), Wilbur\_80 (A4),  
WunderPhul\_88 (A6), Xena\_76 (A4), YoSam321\_80 (A4), Yokurt\_87 (A6), Zaka\_88  
(A6), Zulu\_89 (A6),

Start 50:

- Found in 1 of 442 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 407
- Called 100.0% of time when present
- Phage (with cluster) where this start called: VanLee\_156 (singleton),

Start 53:

- Found in 2 of 442 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 407
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bactobuster\_72 (A2), Landor\_78 (A2),

Start 54:

- Found in 1 of 442 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 407
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jaan\_78 (A2),

Start 57:

- Found in 184 of 442 ( 41.6% ) of genes in pham
- Manual Annotations of this start: 168 of 407
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ading\_56 (C1), Adlitam\_56 (C1),  
Alice\_51 (C1), Amataga\_56 (C1), ArcherS7\_56 (C1), Asterius\_54 (C1), Astraea\_58  
(C1), Atlantean\_55 (C1), Audrick\_58 (C1), Ava3\_58 (C1), Babyland\_55 (C1),  
BackyardAgain\_54 (C1), BadAgartude\_56 (C1), BananaFence\_58 (C1),  
Bangla1971\_57 (C1), Basquiat\_52 (C1), BeanWater\_50 (C1), BigCity\_62 (C1),  
Bigswole\_63 (C1), Bipolarisk\_56 (C1), Blackbrain\_51 (C1), Blubba\_46 (C1),  
Bonray\_57 (C1), Bread\_57 (C1), Breeniome\_58 (C1), Burrough\_57 (C1), Bxz1\_57  
(C1), Cactojaque\_51 (C1), Cali\_54 (C1), Cane17\_46 (C1), Capablanca\_58 (C1),  
Caravan\_53 (C1), Catera\_55 (C1), Chargie21\_52 (C1), CharlieB\_54 (C1),  
ChaylaJr\_52 (C1), ChickenPhender\_52 (C1), Chomp\_54 (C1), CindyLou\_57 (C1),  
Colt\_48 (C1), Concombre\_62 (C1), DTDevon\_57 (C1), Daffodil\_59 (C1),  
Dandelion\_62 (C1), Darko\_56 (C1), Delilah\_57 (C1), Delylah\_57 (C1), Derek\_57  
(C1), Dietrick\_50 (C1), DirtMonster\_53 (C1), DrPhinkDaddy\_56 (C1), Drazdys\_56  
(C1), ET08\_48 (C1), EasyJones\_59 (C1), EggyFarm\_62 (C1), EmToTheThree\_60  
(C1), EmmaElysia\_55 (C1), Erdmann\_58 (C1), ErnieJ\_56 (C1), Essence\_55 (C1),  
Ewok\_57 (C1), Flabslab\_53 (C1), Fludd\_56 (C1), FoxtrotP1\_57 (C1), FrayBell\_63  
(C1), FudgeTart\_58 (C1), Gabriel\_58 (C1), Gamgam\_56 (C1), Ghost\_56 (C1),  
Gizmo\_58 (C1), Grasshills\_62 (C1), Grungle\_48 (C1), Guwapp\_55 (C1), Halldule\_51

(C1), HyRo\_52 (C1), I3\_59 (C1), IkeLoa\_51 (C1), InigoMontoya\_57 (C1), InterFolia\_65 (C1), Iota\_51 (C1), Issimir\_56 (C1), Izajani\_58 (C1), JPickles\_54 (C1), Janiyra\_58 (C1), JayJay\_60 (C1), Jaygup\_56 (C1), Jedediah\_57 (C1), Jemmno\_56 (C1), Jessibeth14\_55 (C1), JulietS\_51 (C1), JustHall\_52 (C1), Kamryn\_56 (C1), Kboogie\_57 (C1), Khaleesi\_56 (C1), Koguma\_53 (C1), LRRHood\_53 (C1), Latch\_56 (C1), Lee7\_55 (C1), LifeSavor\_56 (C1), LinStu\_58 (C1), Littleton\_56 (C1), Loanshark\_57 (C1), LolaVinca\_60 (C1), LordLeafolot\_62 (C1), Lukilu\_50 (C1), Maby2021\_57 (C1), Mangeria\_60 (C1), Matsumoto\_55 (C1), McGee\_55 (C1), McWolfish\_55 (C1), Megamind\_56 (C1), Melpomini\_52 (C1), MikeLiesIn\_57 (C1), Mikro\_55 (C1), MoMoMixon\_57 (C1), Momo\_55 (C1), Morizzled23\_59 (C1), Naija\_55 (C1), Napoleon13\_54 (C1), Nappy\_59 (C1), Naval22\_63 (C1), NedWong\_58 (C1), Ngannou\_51 (C1), Nidhogg\_57 (C1), NoodleTree\_57 (C1), Norm\_57 (C1), NuevoMundo\_62 (C1), ParkTD\_56 (C1), Patter\_56 (C1), Phabba\_14 (C2), Phlegm\_58 (C1), Phox\_55 (C1), Phusco\_56 (C1), Pier\_59 (C1), Pinkcreek\_49 (C1), Pio\_61 (C1), Pivoine\_55 (C1), Pleione\_59 (C1), PurduePete\_56 (C1), QBert\_51 (C1), Quasimodo\_56 (C1), Rabinovish\_56 (C1), Rahel\_57 (C1), Rizal\_55 (C1), RoMag\_51 (C1), Ronan\_51 (C1), Roots515\_56 (C1), Salacia\_59 (C1), Sauce\_58 (C1), ScottMcG\_55 (C1), Sebata\_59 (C1), Shaqnato\_51 (C1), Shelob\_59 (C1), ShiaLabeouf\_56 (C1), Shifa\_50 (C1), Shnickers\_56 (C1), Shrimp\_57 (C1), SilverDipper\_57 (C1), SmallFry\_56 (C1), Spec\_54 (C1), Specks\_62 (C1), Sprinklers\_53 (C1), Spud\_57 (C1), SrishMeg2525\_56 (C1), StephanieG\_57 (C1), StubbySaigey\_56 (C1), Stubby\_52 (C1), Teardrop\_56 (C1), TinyTim\_57 (C1), Tonenili\_66 (C1), Tortoise16\_54 (C1), Trinitium\_52 (C1), Turret\_51 (C1), Tyke\_58 (C1), ValleyTerrace\_56 (C1), Wally\_55 (C1), Willis\_57 (C1), Yassified\_54 (C1), YemiJoy2021\_57 (C1), YoungMoneyMata\_56 (C1), Yucca\_57 (C1), Zalkecks\_58 (C1), Zeenon\_59 (C1), ZygoTaiga\_57 (C1),

### Summary by clusters:

There are 22 clusters represented in this pham: singleton, B12, DX, B11, A15, A16, A2, A4, A7, A6, C2, C1, AA, CA, W, DE5, B4, B5, B6, B7, M1, B9,

Info for manual annotations of cluster A15:

- Start number 49 was manually annotated 6 times for cluster A15.

Info for manual annotations of cluster A16:

- Start number 49 was manually annotated 2 times for cluster A16.

Info for manual annotations of cluster A2:

- Start number 53 was manually annotated 1 time for cluster A2.
- Start number 54 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster A4:

- Start number 49 was manually annotated 112 times for cluster A4.

Info for manual annotations of cluster A6:

- Start number 49 was manually annotated 37 times for cluster A6.

Info for manual annotations of cluster A7:

- Start number 43 was manually annotated 1 time for cluster A7.

Info for manual annotations of cluster AA:

- Start number 46 was manually annotated 2 times for cluster AA.

Info for manual annotations of cluster B11:

- Start number 49 was manually annotated 1 time for cluster B11.

Info for manual annotations of cluster B12:

- Start number 49 was manually annotated 1 time for cluster B12.

Info for manual annotations of cluster B4:

- Start number 49 was manually annotated 5 times for cluster B4.

Info for manual annotations of cluster B5:

- Start number 49 was manually annotated 5 times for cluster B5.

Info for manual annotations of cluster B6:

- Start number 49 was manually annotated 1 time for cluster B6.

Info for manual annotations of cluster B7:

- Start number 49 was manually annotated 1 time for cluster B7.

Info for manual annotations of cluster B9:

- Start number 49 was manually annotated 2 times for cluster B9.

Info for manual annotations of cluster C1:

- Start number 57 was manually annotated 167 times for cluster C1.

Info for manual annotations of cluster C2:

- Start number 57 was manually annotated 1 time for cluster C2.

Info for manual annotations of cluster CA:

- Start number 36 was manually annotated 1 time for cluster CA.
- Start number 37 was manually annotated 35 times for cluster CA.

Info for manual annotations of cluster DE5:

- Start number 49 was manually annotated 1 time for cluster DE5.

Info for manual annotations of cluster DX:

- Start number 48 was manually annotated 1 time for cluster DX.
- Start number 49 was manually annotated 1 time for cluster DX.

Info for manual annotations of cluster M1:

- Start number 49 was manually annotated 12 times for cluster M1.

Info for manual annotations of cluster W:

- Start number 49 was manually annotated 8 times for cluster W.

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

Gene: 39HC\_090 Start: 66017, Stop: 65820, Start Num: 49

Candidate Starts for 39HC\_090:

(Start: 46 @66029 has 2 MA's), (Start: 49 @66017 has 196 MA's), (67, 65969), (90, 65876), (99, 65837),

Gene: 40BC\_090 Start: 66017, Stop: 65820, Start Num: 49

Candidate Starts for 40BC\_090:

(Start: 46 @66029 has 2 MA's), (Start: 49 @66017 has 196 MA's), (67, 65969), (90, 65876), (99, 65837),

Gene: Abdiel\_79 Start: 47438, Stop: 47268, Start Num: 49

Candidate Starts for Abdiel\_79:

(5, 47819), (8, 47777), (21, 47642), (24, 47600), (29, 47564), (39, 47498), (Start: 49 @47438 has 196 MA's), (60, 47399), (81, 47345), (85, 47333),

Gene: Ading\_56 Start: 17144, Stop: 17284, Start Num: 57

Candidate Starts for Ading\_56:

(Start: 57 @17144 has 168 MA's), (70, 17171), (87, 17240), (91, 17273),

Gene: Adlitam\_56 Start: 17161, Stop: 17301, Start Num: 57

Candidate Starts for Adlitam\_56:

(Start: 57 @17161 has 168 MA's), (91, 17290),

Gene: Alatin\_61 Start: 42128, Stop: 41901, Start Num: 37

Candidate Starts for Alatin\_61:

(31, 42161), (Start: 36 @42131 has 1 MA's), (Start: 37 @42128 has 35 MA's), (45, 42077),

Gene: Albee\_80 Start: 47426, Stop: 47256, Start Num: 49

Candidate Starts for Albee\_80:

(5, 47807), (8, 47765), (21, 47630), (24, 47588), (29, 47552), (39, 47486), (Start: 49 @47426 has 196 MA's), (60, 47387), (81, 47333), (85, 47321),

Gene: Alberto7\_81 Start: 47763, Stop: 47593, Start Num: 49

Candidate Starts for Alberto7\_81:

(8, 48102), (21, 47967), (24, 47925), (29, 47889), (39, 47823), (Start: 49 @47763 has 196 MA's), (60, 47724), (81, 47670), (85, 47658),

Gene: Alice\_51 Start: 17217, Stop: 17357, Start Num: 57

Candidate Starts for Alice\_51:

(Start: 57 @17217 has 168 MA's),

Gene: Alpacados\_61 Start: 41951, Stop: 41724, Start Num: 37

Candidate Starts for Alpacados\_61:

(28, 41999), (31, 41984), (Start: 36 @41954 has 1 MA's), (Start: 37 @41951 has 35 MA's), (45, 41900),

Gene: Amataga\_56 Start: 17165, Stop: 17305, Start Num: 57

Candidate Starts for Amataga\_56:

(Start: 57 @17165 has 168 MA's), (70, 17192), (87, 17261), (91, 17294),

Gene: AngryOrchard\_59 Start: 42181, Stop: 41954, Start Num: 37

Candidate Starts for AngryOrchard\_59:

(27, 42238), (Start: 36 @42184 has 1 MA's), (Start: 37 @42181 has 35 MA's),

Gene: Annyong\_79 Start: 47471, Stop: 47301, Start Num: 49

Candidate Starts for Annyong\_79:

(5, 47852), (8, 47810), (21, 47675), (24, 47633), (29, 47597), (39, 47531), (Start: 49 @47471 has 196 MA's), (60, 47432), (81, 47378), (85, 47366),

Gene: AppleCloud\_59 Start: 41845, Stop: 41618, Start Num: 37

Candidate Starts for AppleCloud\_59:

(31, 41878), (Start: 36 @41848 has 1 MA's), (Start: 37 @41845 has 35 MA's), (45, 41794),

Gene: ArcherS7\_56 Start: 17528, Stop: 17668, Start Num: 57

Candidate Starts for ArcherS7\_56:

(Start: 57 @17528 has 168 MA's), (91, 17657),

Gene: Argie\_88 Start: 59134, Stop: 59316, Start Num: 49

Candidate Starts for Argie\_88:

(42, 59113), (Start: 49 @59134 has 196 MA's), (64, 59182), (68, 59188), (80, 59218), (82, 59224), (85, 59236), (87, 59257),

Gene: Artemis2UCLA\_87 Start: 46325, Stop: 46167, Start Num: 49

Candidate Starts for Artemis2UCLA\_87:

(34, 46418), (Start: 49 @46325 has 196 MA's), (76, 46250), (83, 46235),

Gene: Arturo\_77 Start: 47554, Stop: 47384, Start Num: 49

Candidate Starts for Arturo\_77:

(8, 47893), (24, 47716), (29, 47680), (39, 47614), (Start: 49 @47554 has 196 MA's), (60, 47515), (81, 47461), (85, 47449),

Gene: Asterius\_54 Start: 17623, Stop: 17763, Start Num: 57

Candidate Starts for Asterius\_54:

(Start: 57 @17623 has 168 MA's), (91, 17752),

Gene: Astraea\_58 Start: 18620, Stop: 18760, Start Num: 57

Candidate Starts for Astraea\_58:

(Start: 57 @18620 has 168 MA's),

Gene: Atlantean\_55 Start: 17165, Stop: 17305, Start Num: 57

Candidate Starts for Atlantean\_55:

(Start: 57 @17165 has 168 MA's), (70, 17192), (87, 17261), (91, 17294),

Gene: Audrick\_58 Start: 17144, Stop: 17284, Start Num: 57

Candidate Starts for Audrick\_58:

(Start: 57 @17144 has 168 MA's), (70, 17171), (87, 17240), (91, 17273),

Gene: Auspice\_148 Start: 74560, Stop: 74396, Start Num: 49

Candidate Starts for Auspice\_148:

(Start: 49 @74560 has 196 MA's), (61, 74521),

Gene: Ava3\_58 Start: 18222, Stop: 18362, Start Num: 57

Candidate Starts for Ava3\_58:

(Start: 57 @18222 has 168 MA's),

Gene: Avle17\_80 Start: 47420, Stop: 47250, Start Num: 49

Candidate Starts for Avle17\_80:

(8, 47759), (24, 47582), (29, 47546), (39, 47480), (Start: 49 @47420 has 196 MA's), (60, 47381), (81, 47327), (85, 47315),

Gene: BABullseye\_79 Start: 44645, Stop: 44487, Start Num: 49  
Candidate Starts for BABullseye\_79:  
(22, 44846), (34, 44738), (Start: 49 @44645 has 196 MA's), (76, 44570), (83, 44555),

Gene: Baby16\_80 Start: 47437, Stop: 47267, Start Num: 49  
Candidate Starts for Baby16\_80:  
(5, 47818), (8, 47776), (21, 47641), (24, 47599), (29, 47563), (39, 47497), (Start: 49 @47437 has 196 MA's), (60, 47398), (81, 47344), (85, 47332),

Gene: Babyland\_55 Start: 16603, Stop: 16743, Start Num: 57  
Candidate Starts for Babyland\_55:  
(Start: 57 @16603 has 168 MA's), (70, 16630), (87, 16699), (91, 16732),

Gene: BackyardAgain\_54 Start: 17096, Stop: 17236, Start Num: 57  
Candidate Starts for BackyardAgain\_54:  
(Start: 57 @17096 has 168 MA's), (91, 17225),

Gene: Bactobuster\_72 Start: 46044, Stop: 45904, Start Num: 53  
Candidate Starts for Bactobuster\_72:  
(2, 46479), (6, 46434), (7, 46416), (9, 46392), (14, 46338), (25, 46221), (32, 46164), (40, 46113),  
(Start: 53 @46044 has 1 MA's), (78, 45987),

Gene: BadAgartude\_56 Start: 19083, Stop: 19223, Start Num: 57  
Candidate Starts for BadAgartude\_56:  
(Start: 57 @19083 has 168 MA's), (70, 19110), (91, 19212),

Gene: Bae\_85 Start: 65223, Stop: 65053, Start Num: 49  
Candidate Starts for Bae\_85:  
(44, 65241), (Start: 49 @65223 has 196 MA's), (69, 65172), (86, 65118),

Gene: BananaFence\_58 Start: 18106, Stop: 18246, Start Num: 57  
Candidate Starts for BananaFence\_58:  
(Start: 57 @18106 has 168 MA's),

Gene: BangNhom\_77 Start: 47863, Stop: 47693, Start Num: 49  
Candidate Starts for BangNhom\_77:  
(8, 48202), (24, 48025), (29, 47989), (39, 47923), (Start: 49 @47863 has 196 MA's), (60, 47824), (81, 47770), (85, 47758),

Gene: Bangla1971\_57 Start: 17658, Stop: 17798, Start Num: 57  
Candidate Starts for Bangla1971\_57:  
(Start: 57 @17658 has 168 MA's), (91, 17787),

Gene: Bartimeaus\_80 Start: 47428, Stop: 47258, Start Num: 49  
Candidate Starts for Bartimeaus\_80:  
(5, 47809), (8, 47767), (21, 47632), (24, 47590), (29, 47554), (39, 47488), (Start: 49 @47428 has 196 MA's), (60, 47389), (81, 47335), (85, 47323),

Gene: Basquiat\_52 Start: 16592, Stop: 16732, Start Num: 57  
Candidate Starts for Basquiat\_52:  
(Start: 57 @16592 has 168 MA's),

Gene: BeanWater\_50 Start: 17632, Stop: 17772, Start Num: 57  
Candidate Starts for BeanWater\_50:  
(Start: 57 @17632 has 168 MA's), (70, 17659), (91, 17761),

Gene: Belenaria\_63 Start: 41993, Stop: 41766, Start Num: 37  
Candidate Starts for Belenaria\_63:  
(31, 42026), (Start: 36 @41996 has 1 MA's), (Start: 37 @41993 has 35 MA's), (45, 41942),

Gene: BigCity\_62 Start: 19426, Stop: 19566, Start Num: 57  
Candidate Starts for BigCity\_62:  
(Start: 57 @19426 has 168 MA's), (70, 19453), (91, 19555),

Gene: Bigswole\_63 Start: 20460, Stop: 20600, Start Num: 57  
Candidate Starts for Bigswole\_63:  
(Start: 57 @20460 has 168 MA's), (91, 20589),

Gene: Bipolarisk\_56 Start: 17933, Stop: 18073, Start Num: 57  
Candidate Starts for Bipolarisk\_56:  
(Start: 57 @17933 has 168 MA's),

Gene: Blackbrain\_51 Start: 16409, Stop: 16549, Start Num: 57  
Candidate Starts for Blackbrain\_51:  
(Start: 57 @16409 has 168 MA's),

Gene: Blackmoor\_79 Start: 47428, Stop: 47258, Start Num: 49  
Candidate Starts for Blackmoor\_79:  
(5, 47809), (8, 47767), (21, 47632), (24, 47590), (29, 47554), (39, 47488), (Start: 49 @47428 has 196 MA's), (60, 47389), (81, 47335), (85, 47323),

Gene: Blubba\_46 Start: 15453, Stop: 15593, Start Num: 57  
Candidate Starts for Blubba\_46:  
(Start: 57 @15453 has 168 MA's),

Gene: Blue7\_89 Start: 46544, Stop: 46386, Start Num: 49  
Candidate Starts for Blue7\_89:  
(22, 46745), (34, 46637), (Start: 49 @46544 has 196 MA's), (76, 46469), (83, 46454),

Gene: BobbyDazzler\_62 Start: 42099, Stop: 41872, Start Num: 37  
Candidate Starts for BobbyDazzler\_62:  
(31, 42132), (Start: 36 @42102 has 1 MA's), (Start: 37 @42099 has 35 MA's), (45, 42048),

Gene: Bombshell\_80 Start: 47423, Stop: 47253, Start Num: 49  
Candidate Starts for Bombshell\_80:  
(8, 47762), (24, 47585), (29, 47549), (39, 47483), (Start: 49 @47423 has 196 MA's), (60, 47384), (81, 47330), (85, 47318),

Gene: Bonanza\_63 Start: 42403, Stop: 42176, Start Num: 37  
Candidate Starts for Bonanza\_63:  
(28, 42451), (31, 42436), (Start: 36 @42406 has 1 MA's), (Start: 37 @42403 has 35 MA's), (45, 42352),

Gene: Bongo\_142 Start: 73417, Stop: 73256, Start Num: 49  
Candidate Starts for Bongo\_142:

(Start: 49 @73417 has 196 MA's), (59, 73381), (75, 73351), (83, 73333), (84, 73327), (93, 73267),

Gene: Bonray\_57 Start: 18210, Stop: 18350, Start Num: 57

Candidate Starts for Bonray\_57:

(Start: 57 @18210 has 168 MA's),

Gene: Bradshaw\_62 Start: 42061, Stop: 41834, Start Num: 37

Candidate Starts for Bradshaw\_62:

(31, 42094), (Start: 36 @42064 has 1 MA's), (Start: 37 @42061 has 35 MA's), (45, 42010),

Gene: Bread\_57 Start: 17903, Stop: 18043, Start Num: 57

Candidate Starts for Bread\_57:

(Start: 57 @17903 has 168 MA's),

Gene: Breeniome\_58 Start: 17407, Stop: 17547, Start Num: 57

Candidate Starts for Breeniome\_58:

(Start: 57 @17407 has 168 MA's), (91, 17536),

Gene: Bricole\_150 Start: 74323, Stop: 74159, Start Num: 49

Candidate Starts for Bricole\_150:

(Start: 49 @74323 has 196 MA's), (61, 74284),

Gene: Broseidon\_80 Start: 47429, Stop: 47259, Start Num: 49

Candidate Starts for Broseidon\_80:

(5, 47810), (8, 47768), (21, 47633), (24, 47591), (29, 47555), (39, 47489), (Start: 49 @47429 has 196 MA's), (60, 47390), (81, 47336), (85, 47324),

Gene: Bruiser\_79 Start: 47426, Stop: 47256, Start Num: 49

Candidate Starts for Bruiser\_79:

(8, 47765), (24, 47588), (29, 47552), (39, 47486), (Start: 49 @47426 has 196 MA's), (60, 47387), (81, 47333), (85, 47321),

Gene: Bryce\_61 Start: 41807, Stop: 41580, Start Num: 37

Candidate Starts for Bryce\_61:

(31, 41840), (Start: 36 @41810 has 1 MA's), (Start: 37 @41807 has 35 MA's), (45, 41756),

Gene: BubbleTrouble\_79 Start: 47453, Stop: 47283, Start Num: 49

Candidate Starts for BubbleTrouble\_79:

(5, 47834), (8, 47792), (21, 47657), (24, 47615), (29, 47579), (39, 47513), (Start: 49 @47453 has 196 MA's), (60, 47414), (81, 47360), (85, 47348),

Gene: Burger\_78 Start: 47426, Stop: 47256, Start Num: 49

Candidate Starts for Burger\_78:

(8, 47765), (24, 47588), (29, 47552), (39, 47486), (Start: 49 @47426 has 196 MA's), (60, 47387), (81, 47333), (85, 47321),

Gene: Burrough\_57 Start: 17933, Stop: 18073, Start Num: 57

Candidate Starts for Burrough\_57:

(Start: 57 @17933 has 168 MA's), (91, 18062),

Gene: Bxz1\_57 Start: 18984, Stop: 19124, Start Num: 57

Candidate Starts for Bxz1\_57:

(Start: 57 @18984 has 168 MA's), (91, 19113),



Gene: CRB2\_86 Start: 67074, Stop: 66823, Start Num: 49  
Candidate Starts for CRB2\_86:  
(Start: 49 @67074 has 196 MA's), (68, 67026), (89, 66936), (97, 66903), (101, 66873),

Gene: Cactojaque\_51 Start: 16516, Stop: 16656, Start Num: 57  
Candidate Starts for Cactojaque\_51:  
(Start: 57 @16516 has 168 MA's),

Gene: Caelakin\_78 Start: 47426, Stop: 47256, Start Num: 49  
Candidate Starts for Caelakin\_78:  
(8, 47765), (24, 47588), (29, 47552), (39, 47486), (Start: 49 @47426 has 196 MA's), (60, 47387), (81, 47333), (85, 47321),

Gene: Cali\_54 Start: 18869, Stop: 19009, Start Num: 57  
Candidate Starts for Cali\_54:  
(Start: 57 @18869 has 168 MA's), (70, 18896), (91, 18998),

Gene: Candra\_84 Start: 46350, Stop: 46192, Start Num: 49  
Candidate Starts for Candra\_84:  
(Start: 49 @46350 has 196 MA's), (58, 46317), (76, 46275), (83, 46260),

Gene: Cane17\_46 Start: 15171, Stop: 15311, Start Num: 57  
Candidate Starts for Cane17\_46:  
(Start: 57 @15171 has 168 MA's),

Gene: Capablanca\_58 Start: 18290, Stop: 18430, Start Num: 57  
Candidate Starts for Capablanca\_58:  
(Start: 57 @18290 has 168 MA's), (70, 18317), (87, 18386), (91, 18419),

Gene: Caravan\_53 Start: 17274, Stop: 17414, Start Num: 57  
Candidate Starts for Caravan\_53:  
(Start: 57 @17274 has 168 MA's), (91, 17403),

Gene: Catera\_55 Start: 17100, Stop: 17240, Start Num: 57  
Candidate Starts for Catera\_55:  
(Start: 57 @17100 has 168 MA's), (70, 17127), (91, 17229),

Gene: CentreCat\_80 Start: 47466, Stop: 47296, Start Num: 49  
Candidate Starts for CentreCat\_80:  
(8, 47805), (24, 47628), (29, 47592), (39, 47526), (Start: 49 @47466 has 196 MA's), (60, 47427), (81, 47373), (85, 47361),

Gene: Cepens\_87 Start: 58243, Stop: 58425, Start Num: 49  
Candidate Starts for Cepens\_87:  
(42, 58222), (44, 58225), (Start: 49 @58243 has 196 MA's), (64, 58291), (68, 58297), (80, 58327), (82, 58333), (85, 58345), (87, 58366),

Gene: Cerulean\_82 Start: 47864, Stop: 47694, Start Num: 49  
Candidate Starts for Cerulean\_82:  
(8, 48203), (24, 48026), (29, 47990), (39, 47924), (Start: 49 @47864 has 196 MA's), (60, 47825), (81, 47771), (85, 47759),

Gene: ChampagnePapi\_83 Start: 47866, Stop: 47696, Start Num: 49  
Candidate Starts for ChampagnePapi\_83:  
(8, 48205), (24, 48028), (29, 47992), (39, 47926), (Start: 49 @47866 has 196 MA's), (60, 47827), (81, 47773), (85, 47761),

Gene: Chaph\_80 Start: 47437, Stop: 47267, Start Num: 49  
Candidate Starts for Chaph\_80:  
(8, 47776), (24, 47599), (29, 47563), (39, 47497), (Start: 49 @47437 has 196 MA's), (60, 47398), (81, 47344), (85, 47332),

Gene: Chargie21\_52 Start: 16592, Stop: 16732, Start Num: 57  
Candidate Starts for Chargie21\_52:  
(Start: 57 @16592 has 168 MA's),

Gene: CharlieB\_54 Start: 16867, Stop: 17007, Start Num: 57  
Candidate Starts for CharlieB\_54:  
(Start: 57 @16867 has 168 MA's), (70, 16894), (91, 16996),

Gene: Chartreuse\_84 Start: 45651, Stop: 45493, Start Num: 49  
Candidate Starts for Chartreuse\_84:  
(Start: 49 @45651 has 196 MA's), (76, 45576), (83, 45561),

Gene: ChaylaJr\_52 Start: 16679, Stop: 16819, Start Num: 57  
Candidate Starts for ChaylaJr\_52:  
(Start: 57 @16679 has 168 MA's), (70, 16706), (91, 16808),

Gene: ChickenPhender\_52 Start: 16638, Stop: 16778, Start Num: 57  
Candidate Starts for ChickenPhender\_52:  
(Start: 57 @16638 has 168 MA's), (70, 16665), (91, 16767),

Gene: Chomp\_54 Start: 17165, Stop: 17305, Start Num: 57  
Candidate Starts for Chomp\_54:  
(Start: 57 @17165 has 168 MA's), (91, 17294),

Gene: ChrisnMich\_89 Start: 65230, Stop: 65066, Start Num: 49  
Candidate Starts for ChrisnMich\_89:  
(1, 65677), (10, 65536), (11, 65527), (12, 65506), (15, 65497), (17, 65467), (44, 65248), (Start: 49 @65230 has 196 MA's), (79, 65158), (84, 65140),

Gene: CindyLou\_57 Start: 17690, Stop: 17830, Start Num: 57  
Candidate Starts for CindyLou\_57:  
(Start: 57 @17690 has 168 MA's), (70, 17717), (87, 17786), (91, 17819),

Gene: Cintron\_80 Start: 47542, Stop: 47372, Start Num: 49  
Candidate Starts for Cintron\_80:  
(8, 47881), (24, 47704), (29, 47668), (39, 47602), (Start: 49 @47542 has 196 MA's), (60, 47503), (81, 47449), (85, 47437),

Gene: Citius\_80 Start: 47447, Stop: 47277, Start Num: 49  
Candidate Starts for Citius\_80:  
(5, 47828), (8, 47786), (21, 47651), (24, 47609), (29, 47573), (39, 47507), (Start: 49 @47447 has 196 MA's), (60, 47408), (81, 47354), (85, 47342),

Gene: Clarenza\_79 Start: 47423, Stop: 47253, Start Num: 49

Candidate Starts for Clarenza\_79:

(8, 47762), (24, 47585), (29, 47549), (39, 47483), (Start: 49 @47423 has 196 MA's), (60, 47384), (81, 47330), (85, 47318),

Gene: CloudWang3\_88 Start: 46854, Stop: 46696, Start Num: 49

Candidate Starts for CloudWang3\_88:

(34, 46947), (Start: 49 @46854 has 196 MA's), (76, 46779), (83, 46764),

Gene: Cocoaberry\_80 Start: 47427, Stop: 47257, Start Num: 49

Candidate Starts for Cocoaberry\_80:

(8, 47766), (24, 47589), (29, 47553), (39, 47487), (Start: 49 @47427 has 196 MA's), (60, 47388), (81, 47334), (85, 47322),

Gene: Colt\_48 Start: 16038, Stop: 16178, Start Num: 57

Candidate Starts for Colt\_48:

(Start: 57 @16038 has 168 MA's),

Gene: Commander\_78 Start: 47424, Stop: 47254, Start Num: 49

Candidate Starts for Commander\_78:

(8, 47763), (24, 47586), (29, 47550), (39, 47484), (Start: 49 @47424 has 196 MA's), (60, 47385), (81, 47331), (85, 47319),

Gene: Concombres\_62 Start: 20107, Stop: 20247, Start Num: 57

Candidate Starts for Concombres\_62:

(Start: 57 @20107 has 168 MA's), (91, 20236),

Gene: Connomayer\_80 Start: 47426, Stop: 47256, Start Num: 49

Candidate Starts for Connomayer\_80:

(5, 47807), (8, 47765), (21, 47630), (24, 47588), (29, 47552), (39, 47486), (Start: 49 @47426 has 196 MA's), (60, 47387), (81, 47333), (85, 47321),

Gene: Cookiedough\_86 Start: 46958, Stop: 46800, Start Num: 49

Candidate Starts for Cookiedough\_86:

(22, 47159), (34, 47051), (Start: 49 @46958 has 196 MA's), (76, 46883), (83, 46868),

Gene: Cooper\_89 Start: 65767, Stop: 65579, Start Num: 49

Candidate Starts for Cooper\_89:

(1, 66214), (10, 66073), (11, 66064), (12, 66043), (15, 66034), (17, 66004), (18, 65998), (44, 65785), (Start: 49 @65767 has 196 MA's), (62, 65719), (86, 65647),

Gene: CosmicSans\_62 Start: 42052, Stop: 41825, Start Num: 37

Candidate Starts for CosmicSans\_62:

(31, 42085), (Start: 36 @42055 has 1 MA's), (Start: 37 @42052 has 35 MA's), (45, 42001),

Gene: D12\_85 Start: 58877, Stop: 59059, Start Num: 49

Candidate Starts for D12\_85:

(42, 58856), (Start: 49 @58877 has 196 MA's), (64, 58925), (68, 58931), (80, 58961), (82, 58967), (85, 58979), (87, 59000),

Gene: DTDevon\_57 Start: 18329, Stop: 18469, Start Num: 57

Candidate Starts for DTDevon\_57:

(Start: 57 @18329 has 168 MA's), (91, 18458),

Gene: DaVinci\_84 Start: 45705, Stop: 45547, Start Num: 49  
Candidate Starts for DaVinci\_84:  
(Start: 49 @45705 has 196 MA's), (76, 45630), (83, 45615),

Gene: Daffodil\_59 Start: 18222, Stop: 18362, Start Num: 57  
Candidate Starts for Daffodil\_59:  
(Start: 57 @18222 has 168 MA's),

Gene: Dandelion\_62 Start: 20004, Stop: 20144, Start Num: 57  
Candidate Starts for Dandelion\_62:  
(Start: 57 @20004 has 168 MA's), (91, 20133),

Gene: Darko\_56 Start: 18075, Stop: 18215, Start Num: 57  
Candidate Starts for Darko\_56:  
(Start: 57 @18075 has 168 MA's),

Gene: Datway\_77 Start: 47237, Stop: 47067, Start Num: 49  
Candidate Starts for Datway\_77:  
(8, 47576), (24, 47399), (29, 47363), (39, 47297), (Start: 49 @47237 has 196 MA's), (60, 47198), (81, 47144), (84, 47135), (85, 47132),

Gene: Deano\_77 Start: 47434, Stop: 47264, Start Num: 49  
Candidate Starts for Deano\_77:  
(5, 47815), (8, 47773), (21, 47638), (24, 47596), (29, 47560), (39, 47494), (Start: 49 @47434 has 196 MA's), (60, 47395), (81, 47341), (85, 47329),

Gene: Delilah\_57 Start: 18222, Stop: 18362, Start Num: 57  
Candidate Starts for Delilah\_57:  
(Start: 57 @18222 has 168 MA's),

Gene: Delylah\_57 Start: 18000, Stop: 18140, Start Num: 57  
Candidate Starts for Delylah\_57:  
(Start: 57 @18000 has 168 MA's),

Gene: Derek\_57 Start: 17496, Stop: 17636, Start Num: 57  
Candidate Starts for Derek\_57:  
(Start: 57 @17496 has 168 MA's), (70, 17523), (87, 17592), (91, 17625),

Gene: Dhanush\_80 Start: 47429, Stop: 47259, Start Num: 49  
Candidate Starts for Dhanush\_80:  
(8, 47768), (24, 47591), (29, 47555), (39, 47489), (Start: 49 @47429 has 196 MA's), (60, 47390), (81, 47336), (85, 47324),

Gene: Dietrick\_50 Start: 16338, Stop: 16478, Start Num: 57  
Candidate Starts for Dietrick\_50:  
(Start: 57 @16338 has 168 MA's), (70, 16365), (91, 16467),

Gene: Diminimus\_145 Start: 73233, Stop: 73072, Start Num: 49  
Candidate Starts for Diminimus\_145:  
(Start: 49 @73233 has 196 MA's), (59, 73197), (75, 73167), (83, 73149), (84, 73143), (93, 73083),

Gene: Dinger\_61 Start: 42199, Stop: 41972, Start Num: 37

Candidate Starts for Dinger\_61:  
(27, 42256), (Start: 36 @42202 has 1 MA's), (Start: 37 @42199 has 35 MA's),

Gene: DirtMonster\_53 Start: 18135, Stop: 18275, Start Num: 57  
Candidate Starts for DirtMonster\_53:  
(Start: 57 @18135 has 168 MA's), (91, 18264),

Gene: DirtyDunning\_79 Start: 47438, Stop: 47268, Start Num: 49  
Candidate Starts for DirtyDunning\_79:  
(8, 47777), (21, 47642), (24, 47600), (29, 47564), (39, 47498), (Start: 49 @47438 has 196 MA's), (60, 47399), (81, 47345), (85, 47333),

Gene: Dorothea\_83 Start: 46951, Stop: 46793, Start Num: 49  
Candidate Starts for Dorothea\_83:  
(Start: 49 @46951 has 196 MA's), (76, 46876), (83, 46861),

Gene: DrPhinkDaddy\_56 Start: 18271, Stop: 18411, Start Num: 57  
Candidate Starts for DrPhinkDaddy\_56:  
(26, 18082), (Start: 57 @18271 has 168 MA's), (70, 18298), (91, 18400),

Gene: Drazdys\_56 Start: 18002, Stop: 18142, Start Num: 57  
Candidate Starts for Drazdys\_56:  
(Start: 57 @18002 has 168 MA's), (91, 18131),

Gene: Dulcita\_145 Start: 73234, Stop: 73073, Start Num: 49  
Candidate Starts for Dulcita\_145:  
(Start: 49 @73234 has 196 MA's), (59, 73198), (75, 73168), (83, 73150), (84, 73144), (93, 73084),

Gene: ET08\_48 Start: 16735, Stop: 16875, Start Num: 57  
Candidate Starts for ET08\_48:  
(Start: 57 @16735 has 168 MA's), (70, 16762), (91, 16864),

Gene: Eagle\_79 Start: 47488, Stop: 47318, Start Num: 49  
Candidate Starts for Eagle\_79:  
(8, 47827), (24, 47650), (29, 47614), (39, 47548), (Start: 49 @47488 has 196 MA's), (60, 47449), (81, 47395), (85, 47383),

Gene: EagleEye\_85 Start: 47807, Stop: 47646, Start Num: 49  
Candidate Starts for EagleEye\_85:  
(Start: 49 @47807 has 196 MA's), (76, 47732), (83, 47717), (90, 47669),

Gene: Eapen\_80 Start: 47421, Stop: 47251, Start Num: 49  
Candidate Starts for Eapen\_80:  
(8, 47760), (24, 47583), (29, 47547), (39, 47481), (Start: 49 @47421 has 196 MA's), (60, 47382), (81, 47328), (85, 47316),

Gene: EasyJones\_59 Start: 18298, Stop: 18438, Start Num: 57  
Candidate Starts for EasyJones\_59:  
(Start: 57 @18298 has 168 MA's), (91, 18427),

Gene: EggyFarm\_62 Start: 19426, Stop: 19566, Start Num: 57  
Candidate Starts for EggyFarm\_62:  
(Start: 57 @19426 has 168 MA's), (70, 19453), (91, 19555),

Gene: EmToTheThree\_60 Start: 19636, Stop: 19776, Start Num: 57  
Candidate Starts for EmToTheThree\_60:  
(Start: 57 @19636 has 168 MA's),

Gene: EmmaElysia\_55 Start: 16735, Stop: 16875, Start Num: 57  
Candidate Starts for EmmaElysia\_55:  
(Start: 57 @16735 has 168 MA's), (91, 16864),

Gene: Epsocamisio\_84 Start: 46230, Stop: 46054, Start Num: 49  
Candidate Starts for Epsocamisio\_84:  
(Start: 49 @46230 has 196 MA's), (81, 46143),

Gene: Erdmann\_58 Start: 18222, Stop: 18362, Start Num: 57  
Candidate Starts for Erdmann\_58:  
(Start: 57 @18222 has 168 MA's),

Gene: EricB\_84 Start: 45848, Stop: 45690, Start Num: 49  
Candidate Starts for EricB\_84:  
(Start: 49 @45848 has 196 MA's), (58, 45815), (76, 45773), (83, 45758),

Gene: Erik\_62 Start: 41883, Stop: 41656, Start Num: 37  
Candidate Starts for Erik\_62:  
(31, 41916), (Start: 36 @41886 has 1 MA's), (Start: 37 @41883 has 35 MA's), (45, 41832),

Gene: Eris\_79 Start: 47438, Stop: 47268, Start Num: 49  
Candidate Starts for Eris\_79:  
(8, 47777), (24, 47600), (29, 47564), (39, 47498), (Start: 49 @47438 has 196 MA's), (60, 47399), (81, 47345), (85, 47333),

Gene: ErnieJ\_56 Start: 17511, Stop: 17651, Start Num: 57  
Candidate Starts for ErnieJ\_56:  
(Start: 57 @17511 has 168 MA's),

Gene: Eros\_80 Start: 47428, Stop: 47258, Start Num: 49  
Candidate Starts for Eros\_80:  
(8, 47767), (24, 47590), (29, 47554), (39, 47488), (Start: 49 @47428 has 196 MA's), (60, 47389), (81, 47335), (85, 47323),

Gene: Espica\_63 Start: 41993, Stop: 41766, Start Num: 37  
Candidate Starts for Espica\_63:  
(31, 42026), (Start: 36 @41996 has 1 MA's), (Start: 37 @41993 has 35 MA's), (45, 41942),

Gene: Essence\_55 Start: 17019, Stop: 17159, Start Num: 57  
Candidate Starts for Essence\_55:  
(Start: 57 @17019 has 168 MA's), (91, 17148),

Gene: Eurydice\_81 Start: 47463, Stop: 47293, Start Num: 49  
Candidate Starts for Eurydice\_81:  
(8, 47802), (24, 47625), (29, 47589), (39, 47523), (Start: 49 @47463 has 196 MA's), (60, 47424), (81, 47370), (85, 47358),

Gene: Ewok\_57 Start: 18225, Stop: 18365, Start Num: 57

Candidate Starts for Ewok\_57:  
(Start: 57 @18225 has 168 MA's),

Gene: Finch\_206 Start: 120593, Stop: 120769, Start Num: 49  
Candidate Starts for Finch\_206:  
(4, 120215), (35, 120515), (Start: 48 @120590 has 1 MA's), (Start: 49 @120593 has 196 MA's), (55, 120620), (60, 120632), (63, 120641), (74, 120668), (81, 120689), (87, 120722),

Gene: Flabslab\_53 Start: 17244, Stop: 17384, Start Num: 57  
Candidate Starts for Flabslab\_53:  
(Start: 57 @17244 has 168 MA's),

Gene: Florean\_80 Start: 47425, Stop: 47255, Start Num: 49  
Candidate Starts for Florean\_80:  
(5, 47806), (8, 47764), (21, 47629), (24, 47587), (29, 47551), (39, 47485), (Start: 49 @47425 has 196 MA's), (60, 47386), (81, 47332), (85, 47320),

Gene: Fludd\_56 Start: 17097, Stop: 17237, Start Num: 57  
Candidate Starts for Fludd\_56:  
(Start: 57 @17097 has 168 MA's),

Gene: Flux\_81 Start: 47424, Stop: 47254, Start Num: 49  
Candidate Starts for Flux\_81:  
(8, 47763), (24, 47586), (29, 47550), (39, 47484), (Start: 49 @47424 has 196 MA's), (60, 47385), (81, 47331), (85, 47319),

Gene: FoxtrotP1\_57 Start: 18550, Stop: 18690, Start Num: 57  
Candidate Starts for FoxtrotP1\_57:  
(Start: 57 @18550 has 168 MA's),

Gene: FrayBell\_63 Start: 19736, Stop: 19876, Start Num: 57  
Candidate Starts for FrayBell\_63:  
(Start: 57 @19736 has 168 MA's),

Gene: FudgeTart\_58 Start: 18086, Stop: 18226, Start Num: 57  
Candidate Starts for FudgeTart\_58:  
(Start: 57 @18086 has 168 MA's),

Gene: Funston\_79 Start: 47423, Stop: 47253, Start Num: 49  
Candidate Starts for Funston\_79:  
(8, 47762), (24, 47585), (29, 47549), (39, 47483), (Start: 49 @47423 has 196 MA's), (60, 47384), (81, 47330), (85, 47318),

Gene: Gabriel\_58 Start: 17398, Stop: 17538, Start Num: 57  
Candidate Starts for Gabriel\_58:  
(Start: 57 @17398 has 168 MA's), (91, 17527),

Gene: Gadost\_80 Start: 47427, Stop: 47257, Start Num: 49  
Candidate Starts for Gadost\_80:  
(8, 47766), (24, 47589), (29, 47553), (39, 47487), (Start: 49 @47427 has 196 MA's), (60, 47388), (81, 47334), (85, 47322),

Gene: Gamgam\_56 Start: 17165, Stop: 17305, Start Num: 57

Candidate Starts for Gamgam\_56:  
(Start: 57 @17165 has 168 MA's), (70, 17192), (87, 17261), (91, 17294),

Gene: Garak\_89 Start: 46787, Stop: 46629, Start Num: 49  
Candidate Starts for Garak\_89:  
(22, 46988), (34, 46880), (Start: 49 @46787 has 196 MA's), (76, 46712), (83, 46697),

Gene: Ghost\_56 Start: 17165, Stop: 17305, Start Num: 57  
Candidate Starts for Ghost\_56:  
(Start: 57 @17165 has 168 MA's), (70, 17192), (87, 17261), (91, 17294),

Gene: Gizmo\_58 Start: 17905, Stop: 18045, Start Num: 57  
Candidate Starts for Gizmo\_58:  
(Start: 57 @17905 has 168 MA's),

Gene: Gladiator\_84 Start: 46510, Stop: 46352, Start Num: 49  
Candidate Starts for Gladiator\_84:  
(34, 46603), (Start: 49 @46510 has 196 MA's), (58, 46477), (76, 46435), (83, 46420),

Gene: Glaske16\_147 Start: 74352, Stop: 74191, Start Num: 49  
Candidate Starts for Glaske16\_147:  
(Start: 49 @74352 has 196 MA's), (59, 74316), (75, 74286), (83, 74268), (84, 74262), (93, 74202),

Gene: GodPhather\_87 Start: 59020, Stop: 59202, Start Num: 49  
Candidate Starts for GodPhather\_87:  
(42, 58999), (44, 59002), (Start: 49 @59020 has 196 MA's), (64, 59068), (68, 59074), (80, 59104), (82, 59110), (85, 59122), (87, 59143),

Gene: Gollum\_62 Start: 41994, Stop: 41767, Start Num: 37  
Candidate Starts for Gollum\_62:  
(31, 42027), (Start: 36 @41997 has 1 MA's), (Start: 37 @41994 has 35 MA's), (45, 41943),

Gene: Grasshills\_62 Start: 19426, Stop: 19566, Start Num: 57  
Candidate Starts for Grasshills\_62:  
(Start: 57 @19426 has 168 MA's), (70, 19453), (91, 19555),

Gene: GreedyLawyer\_79 Start: 46280, Stop: 46122, Start Num: 49  
Candidate Starts for GreedyLawyer\_79:  
(22, 46481), (34, 46373), (Start: 49 @46280 has 196 MA's), (76, 46205), (83, 46190),

Gene: Grungle\_48 Start: 15817, Stop: 15957, Start Num: 57  
Candidate Starts for Grungle\_48:  
(Start: 57 @15817 has 168 MA's), (70, 15844), (91, 15946),

Gene: Gruunaga\_87 Start: 46465, Stop: 46307, Start Num: 49  
Candidate Starts for Gruunaga\_87:  
(34, 46558), (Start: 49 @46465 has 196 MA's), (58, 46432), (76, 46390), (83, 46375),

Gene: Guwapp\_55 Start: 17260, Stop: 17400, Start Num: 57  
Candidate Starts for Guwapp\_55:  
(Start: 57 @17260 has 168 MA's), (91, 17389),

Gene: Halldule\_51 Start: 16269, Stop: 16409, Start Num: 57



Candidate Starts for Halldule\_51:  
(Start: 57 @16269 has 168 MA's), (91, 16398),

Gene: HamSlice\_76 Start: 47425, Stop: 47255, Start Num: 49  
Candidate Starts for HamSlice\_76:  
(5, 47806), (8, 47764), (21, 47629), (24, 47587), (29, 47551), (39, 47485), (Start: 49 @47425 has 196 MA's), (60, 47386), (81, 47332), (85, 47320),

Gene: Hammer\_88 Start: 46172, Stop: 46014, Start Num: 49  
Candidate Starts for Hammer\_88:  
(34, 46265), (Start: 49 @46172 has 196 MA's), (58, 46139), (76, 46097), (83, 46082),

Gene: Happiness\_79 Start: 47449, Stop: 47279, Start Num: 49  
Candidate Starts for Happiness\_79:  
(24, 47611), (29, 47575), (39, 47509), (Start: 49 @47449 has 196 MA's), (60, 47410), (81, 47356), (85, 47344),

Gene: Harlequin\_62 Start: 41842, Stop: 41615, Start Num: 37  
Candidate Starts for Harlequin\_62:  
(31, 41875), (Start: 36 @41845 has 1 MA's), (Start: 37 @41842 has 35 MA's), (45, 41791),

Gene: Helmet\_89 Start: 46787, Stop: 46629, Start Num: 49  
Candidate Starts for Helmet\_89:  
(22, 46988), (34, 46880), (Start: 49 @46787 has 196 MA's), (76, 46712), (83, 46697),

Gene: Hexamo\_87 Start: 46340, Stop: 46182, Start Num: 49  
Candidate Starts for Hexamo\_87:  
(34, 46433), (Start: 49 @46340 has 196 MA's), (76, 46265), (83, 46250),

Gene: Hiro\_62 Start: 42316, Stop: 42086, Start Num: 36  
Candidate Starts for Hiro\_62:  
(31, 42346), (Start: 36 @42316 has 1 MA's), (Start: 37 @42313 has 35 MA's), (45, 42262),

Gene: Holli\_79 Start: 47216, Stop: 47046, Start Num: 49  
Candidate Starts for Holli\_79:  
(5, 47597), (8, 47555), (21, 47420), (24, 47378), (29, 47342), (39, 47276), (Start: 49 @47216 has 196 MA's), (60, 47177), (81, 47123), (85, 47111),

Gene: Hoot\_81 Start: 44165, Stop: 44007, Start Num: 49  
Candidate Starts for Hoot\_81:  
(Start: 49 @44165 has 196 MA's), (58, 44132), (76, 44090), (83, 44075),

Gene: Hosp\_085 Start: 63309, Stop: 63112, Start Num: 49  
Candidate Starts for Hosp\_085:  
(Start: 46 @63321 has 2 MA's), (Start: 49 @63309 has 196 MA's), (67, 63261), (90, 63168), (99, 63129),

Gene: Houdini22\_79 Start: 47427, Stop: 47257, Start Num: 49  
Candidate Starts for Houdini22\_79:  
(8, 47766), (24, 47589), (29, 47553), (39, 47487), (Start: 49 @47427 has 196 MA's), (60, 47388), (81, 47334), (85, 47322),

Gene: HyRo\_52 Start: 17627, Stop: 17767, Start Num: 57

Candidate Starts for HyRo\_52:  
(Start: 57 @17627 has 168 MA's), (91, 17756),

Gene: Hydro\_87 Start: 66400, Stop: 66179, Start Num: 49  
Candidate Starts for Hydro\_87:  
(Start: 49 @66400 has 196 MA's), (56, 66370), (85, 66286), (86, 66283), (95, 66220),

Gene: I3\_59 Start: 17958, Stop: 18098, Start Num: 57  
Candidate Starts for I3\_59:  
(Start: 57 @17958 has 168 MA's), (87, 18054), (91, 18087),

Gene: ICleared\_79 Start: 47494, Stop: 47324, Start Num: 49  
Candidate Starts for ICleared\_79:  
(8, 47833), (24, 47656), (29, 47620), (39, 47554), (Start: 49 @47494 has 196 MA's), (60, 47455), (81, 47401), (85, 47389),

Gene: IPhane7\_145 Start: 74176, Stop: 74012, Start Num: 49  
Candidate Starts for IPhane7\_145:  
(Start: 49 @74176 has 196 MA's), (61, 74137),

Gene: Iceman\_78 Start: 47716, Stop: 47546, Start Num: 49  
Candidate Starts for Iceman\_78:  
(8, 48055), (24, 47878), (29, 47842), (39, 47776), (Start: 49 @47716 has 196 MA's), (60, 47677), (81, 47623), (85, 47611),

Gene: IkeLoa\_51 Start: 17025, Stop: 17165, Start Num: 57  
Candidate Starts for IkeLoa\_51:  
(Start: 57 @17025 has 168 MA's), (70, 17052), (91, 17154),

Gene: Indlovu\_86 Start: 66392, Stop: 66171, Start Num: 49  
Candidate Starts for Indlovu\_86:  
(Start: 49 @66392 has 196 MA's), (88, 66266), (94, 66227), (100, 66206),

Gene: Indra\_91 Start: 46788, Stop: 46630, Start Num: 49  
Candidate Starts for Indra\_91:  
(22, 46989), (34, 46881), (Start: 49 @46788 has 196 MA's), (76, 46713), (83, 46698),

Gene: InigoMontoya\_57 Start: 17126, Stop: 17266, Start Num: 57  
Candidate Starts for InigoMontoya\_57:  
(Start: 57 @17126 has 168 MA's), (70, 17153), (87, 17222), (91, 17255),

Gene: InterFolia\_65 Start: 20791, Stop: 20931, Start Num: 57  
Candidate Starts for InterFolia\_65:  
(Start: 57 @20791 has 168 MA's), (91, 20920),

Gene: Iota\_51 Start: 17323, Stop: 17463, Start Num: 57  
Candidate Starts for Iota\_51:  
(Start: 57 @17323 has 168 MA's), (70, 17350), (91, 17452),

Gene: Iracema64\_80 Start: 47690, Stop: 47520, Start Num: 49  
Candidate Starts for Iracema64\_80:  
(8, 48029), (24, 47852), (29, 47816), (39, 47750), (Start: 49 @47690 has 196 MA's), (60, 47651), (81, 47597), (85, 47585),

Gene: Isiphiwo\_82 Start: 45876, Stop: 45718, Start Num: 49  
Candidate Starts for Isiphiwo\_82:  
(Start: 49 @45876 has 196 MA's), (58, 45843), (76, 45801), (83, 45786),

Gene: Issimir\_56 Start: 18165, Stop: 18305, Start Num: 57  
Candidate Starts for Issimir\_56:  
(Start: 57 @18165 has 168 MA's),

Gene: Izajani\_58 Start: 18235, Stop: 18375, Start Num: 57  
Candidate Starts for Izajani\_58:  
(Start: 57 @18235 has 168 MA's), (70, 18262), (91, 18364),

Gene: JAMaL\_87 Start: 65869, Stop: 65651, Start Num: 49  
Candidate Starts for JAMaL\_87:  
(33, 65962), (38, 65938), (41, 65905), (Start: 49 @65869 has 196 MA's), (66, 65821), (72, 65800), (82, 65770), (95, 65692),

Gene: JPickles\_54 Start: 16359, Stop: 16499, Start Num: 57  
Candidate Starts for JPickles\_54:  
(Start: 57 @16359 has 168 MA's), (70, 16386), (87, 16455), (91, 16488),

Gene: Jaan\_78 Start: 47674, Stop: 47534, Start Num: 54  
Candidate Starts for Jaan\_78:  
(47, 47704), (Start: 54 @47674 has 1 MA's), (78, 47617),

Gene: Janiyra\_58 Start: 17925, Stop: 18065, Start Num: 57  
Candidate Starts for Janiyra\_58:  
(Start: 57 @17925 has 168 MA's), (70, 17952), (91, 18054),

Gene: JayJay\_60 Start: 18713, Stop: 18853, Start Num: 57  
Candidate Starts for JayJay\_60:  
(Start: 57 @18713 has 168 MA's), (91, 18842),

Gene: Jaygup\_56 Start: 17161, Stop: 17301, Start Num: 57  
Candidate Starts for Jaygup\_56:  
(Start: 57 @17161 has 168 MA's), (91, 17290),

Gene: Jaykayelowell\_77 Start: 47419, Stop: 47249, Start Num: 49  
Candidate Starts for Jaykayelowell\_77:  
(5, 47800), (8, 47758), (21, 47623), (24, 47581), (29, 47545), (39, 47479), (Start: 49 @47419 has 196 MA's), (60, 47380), (81, 47326), (85, 47314),

Gene: Jedediah\_57 Start: 17662, Stop: 17802, Start Num: 57  
Candidate Starts for Jedediah\_57:  
(Start: 57 @17662 has 168 MA's), (91, 17791),

Gene: Jemmno\_56 Start: 17165, Stop: 17305, Start Num: 57  
Candidate Starts for Jemmno\_56:  
(Start: 57 @17165 has 168 MA's), (70, 17192), (87, 17261), (91, 17294),

Gene: Jeon\_82 Start: 58513, Stop: 58695, Start Num: 49  
Candidate Starts for Jeon\_82:

(42, 58492), (44, 58495), (Start: 49 @58513 has 196 MA's), (64, 58561), (68, 58567), (80, 58597), (82, 58603), (85, 58615), (87, 58636),

Gene: Jessibeth14\_55 Start: 17623, Stop: 17763, Start Num: 57

Candidate Starts for Jessibeth14\_55:

(Start: 57 @17623 has 168 MA's), (70, 17650), (91, 17752),

Gene: Jester\_61 Start: 41773, Stop: 41546, Start Num: 37

Candidate Starts for Jester\_61:

(31, 41806), (Start: 36 @41776 has 1 MA's), (Start: 37 @41773 has 35 MA's), (45, 41722),

Gene: JetBlade\_81 Start: 47454, Stop: 47284, Start Num: 49

Candidate Starts for JetBlade\_81:

(5, 47835), (8, 47793), (21, 47658), (24, 47616), (29, 47580), (39, 47514), (Start: 49 @47454 has 196 MA's), (60, 47415), (81, 47361), (85, 47349),

Gene: JewelBug\_78 Start: 44643, Stop: 44485, Start Num: 49

Candidate Starts for JewelBug\_78:

(22, 44844), (34, 44736), (Start: 49 @44643 has 196 MA's), (76, 44568), (83, 44553),

Gene: Jolie1\_087 Start: 65336, Stop: 65139, Start Num: 49

Candidate Starts for Jolie1\_087:

(Start: 46 @65348 has 2 MA's), (Start: 49 @65336 has 196 MA's), (67, 65288), (90, 65195),

Gene: JoongJeon\_79 Start: 47420, Stop: 47250, Start Num: 49

Candidate Starts for JoongJeon\_79:

(8, 47759), (24, 47582), (29, 47546), (39, 47480), (Start: 49 @47420 has 196 MA's), (60, 47381), (81, 47327), (85, 47315),

Gene: Jordennis\_84 Start: 46547, Stop: 46389, Start Num: 49

Candidate Starts for Jordennis\_84:

(22, 46748), (34, 46640), (Start: 49 @46547 has 196 MA's), (76, 46472), (83, 46457),

Gene: JulietS\_51 Start: 16120, Stop: 16260, Start Num: 57

Candidate Starts for JulietS\_51:

(Start: 57 @16120 has 168 MA's), (70, 16147), (91, 16249),

Gene: JustHall\_52 Start: 17484, Stop: 17624, Start Num: 57

Candidate Starts for JustHall\_52:

(Start: 57 @17484 has 168 MA's), (70, 17511), (87, 17580), (91, 17613),

Gene: KFPoly\_79 Start: 47420, Stop: 47250, Start Num: 49

Candidate Starts for KFPoly\_79:

(8, 47759), (24, 47582), (29, 47546), (39, 47480), (Start: 49 @47420 has 196 MA's), (60, 47381), (81, 47327), (85, 47315),

Gene: Kamy\_79 Start: 47429, Stop: 47259, Start Num: 49

Candidate Starts for Kamy\_79:

(8, 47768), (24, 47591), (29, 47555), (39, 47489), (Start: 49 @47429 has 196 MA's), (60, 47390), (81, 47336), (85, 47324),

Gene: Kamryn\_56 Start: 17838, Stop: 17978, Start Num: 57

Candidate Starts for Kamryn\_56:

(26, 17649), (Start: 57 @17838 has 168 MA's), (70, 17865), (91, 17967),

Gene: KayaCho\_85 Start: 65227, Stop: 65030, Start Num: 49

Candidate Starts for KayaCho\_85:

(Start: 49 @65227 has 196 MA's), (67, 65179), (90, 65086), (98, 65050),

Gene: Kazan\_87 Start: 46320, Stop: 46162, Start Num: 49

Candidate Starts for Kazan\_87:

(Start: 49 @46320 has 196 MA's), (58, 46287), (76, 46245), (83, 46230),

Gene: Kboogie\_57 Start: 17151, Stop: 17291, Start Num: 57

Candidate Starts for Kboogie\_57:

(Start: 57 @17151 has 168 MA's),

Gene: Khaleesi\_56 Start: 17969, Stop: 18109, Start Num: 57

Candidate Starts for Khaleesi\_56:

(Start: 57 @17969 has 168 MA's),

Gene: Kingmustik0402\_80 Start: 47415, Stop: 47245, Start Num: 49

Candidate Starts for Kingmustik0402\_80:

(8, 47754), (24, 47577), (29, 47541), (39, 47475), (Start: 49 @47415 has 196 MA's), (60, 47376), (81, 47322), (85, 47310),

Gene: Kipper29\_86 Start: 46323, Stop: 46165, Start Num: 49

Candidate Starts for Kipper29\_86:

(Start: 49 @46323 has 196 MA's), (76, 46248), (83, 46233),

Gene: Knocker\_86 Start: 66737, Stop: 66540, Start Num: 49

Candidate Starts for Knocker\_86:

(20, 66950), (Start: 49 @66737 has 196 MA's), (58, 66701), (67, 66689), (84, 66638), (89, 66599), (90, 66596), (96, 66566),

Gene: Koguma\_53 Start: 16463, Stop: 16603, Start Num: 57

Candidate Starts for Koguma\_53:

(Start: 57 @16463 has 168 MA's), (70, 16490), (91, 16592),

Gene: Koko\_89 Start: 47177, Stop: 47019, Start Num: 49

Candidate Starts for Koko\_89:

(22, 47378), (34, 47270), (Start: 49 @47177 has 196 MA's), (76, 47102), (83, 47087),

Gene: Koreni\_79 Start: 47107, Stop: 46937, Start Num: 49

Candidate Starts for Koreni\_79:

(8, 47446), (24, 47269), (29, 47233), (39, 47167), (Start: 49 @47107 has 196 MA's), (60, 47068), (81, 47014), (85, 47002),

Gene: Kratark\_79 Start: 47460, Stop: 47290, Start Num: 49

Candidate Starts for Kratark\_79:

(8, 47799), (24, 47622), (29, 47586), (39, 47520), (Start: 49 @47460 has 196 MA's), (60, 47421), (81, 47367), (85, 47355),

Gene: Kremtemulon\_74 Start: 47306, Stop: 47136, Start Num: 49

Candidate Starts for Kremtemulon\_74:

(8, 47645), (24, 47468), (29, 47432), (39, 47366), (Start: 49 @47306 has 196 MA's), (60, 47267), (81, 47213), (85, 47201),

Gene: Krishelle\_62 Start: 42421, Stop: 42194, Start Num: 37

Candidate Starts for Krishelle\_62:

(31, 42454), (Start: 36 @42424 has 1 MA's), (Start: 37 @42421 has 35 MA's), (45, 42370),

Gene: Kyee\_80 Start: 47421, Stop: 47251, Start Num: 49

Candidate Starts for Kyee\_80:

(8, 47760), (24, 47583), (29, 47547), (39, 47481), (Start: 49 @47421 has 196 MA's), (60, 47382), (81, 47328), (85, 47316),

Gene: LHTSCC\_82 Start: 47866, Stop: 47696, Start Num: 49

Candidate Starts for LHTSCC\_82:

(3, 48277), (8, 48205), (24, 48028), (29, 47992), (39, 47926), (Start: 49 @47866 has 196 MA's), (60, 47827), (81, 47773), (85, 47761),

Gene: LRRHood\_53 Start: 18386, Stop: 18526, Start Num: 57

Candidate Starts for LRRHood\_53:

(Start: 57 @18386 has 168 MA's), (70, 18413), (91, 18515),

Gene: Landor\_78 Start: 47601, Stop: 47461, Start Num: 53

Candidate Starts for Landor\_78:

(2, 48036), (6, 47991), (7, 47973), (9, 47949), (14, 47895), (25, 47778), (32, 47721), (40, 47670), (Start: 53 @47601 has 1 MA's), (78, 47544),

Gene: LappelDuVide\_76 Start: 47426, Stop: 47256, Start Num: 49

Candidate Starts for LappelDuVide\_76:

(5, 47807), (8, 47765), (21, 47630), (24, 47588), (29, 47552), (39, 47486), (Start: 49 @47426 has 196 MA's), (60, 47387), (81, 47333), (85, 47321),

Gene: Latch\_56 Start: 17165, Stop: 17305, Start Num: 57

Candidate Starts for Latch\_56:

(Start: 57 @17165 has 168 MA's), (70, 17192), (87, 17261), (91, 17294),

Gene: Lee7\_55 Start: 17900, Stop: 18040, Start Num: 57

Candidate Starts for Lee7\_55:

(Start: 57 @17900 has 168 MA's),

Gene: Lemur\_80 Start: 47423, Stop: 47253, Start Num: 49

Candidate Starts for Lemur\_80:

(8, 47762), (24, 47585), (29, 47549), (39, 47483), (Start: 49 @47423 has 196 MA's), (60, 47384), (81, 47330), (85, 47318),

Gene: LifeSavor\_56 Start: 16884, Stop: 17024, Start Num: 57

Candidate Starts for LifeSavor\_56:

(Start: 57 @16884 has 168 MA's), (91, 17013),

Gene: LilMcDreamy\_86 Start: 65203, Stop: 64979, Start Num: 49

Candidate Starts for LilMcDreamy\_86:

(Start: 49 @65203 has 196 MA's), (68, 65155), (85, 65092),

Gene: Lilbeanie\_10 Start: 4272, Stop: 4433, Start Num: 49

Candidate Starts for Lilbeanie\_10:  
(Start: 49 @4272 has 196 MA's),

Gene: LilhomieP\_144 Start: 74263, Stop: 74102, Start Num: 49  
Candidate Starts for LilhomieP\_144:  
(Start: 49 @74263 has 196 MA's), (59, 74227), (75, 74197), (83, 74179), (84, 74173), (93, 74113),

Gene: Lillie\_62 Start: 42052, Stop: 41825, Start Num: 37  
Candidate Starts for Lillie\_62:  
(31, 42085), (Start: 36 @42055 has 1 MA's), (Start: 37 @42052 has 35 MA's), (45, 42001),

Gene: LinStu\_58 Start: 18972, Stop: 19112, Start Num: 57  
Candidate Starts for LinStu\_58:  
(Start: 57 @18972 has 168 MA's), (70, 18999), (91, 19101),

Gene: LittleB\_80 Start: 47427, Stop: 47257, Start Num: 49  
Candidate Starts for LittleB\_80:  
(8, 47766), (24, 47589), (29, 47553), (39, 47487), (Start: 49 @47427 has 196 MA's), (60, 47388), (71, 47364), (81, 47334), (85, 47322),

Gene: LittleGuy\_80 Start: 47311, Stop: 47141, Start Num: 49  
Candidate Starts for LittleGuy\_80:  
(8, 47650), (24, 47473), (29, 47437), (39, 47371), (Start: 49 @47311 has 196 MA's), (60, 47272), (81, 47218), (85, 47206),

Gene: Littleton\_56 Start: 17165, Stop: 17305, Start Num: 57  
Candidate Starts for Littleton\_56:  
(Start: 57 @17165 has 168 MA's), (70, 17192), (87, 17261), (91, 17294),

Gene: Loanshark\_57 Start: 18222, Stop: 18362, Start Num: 57  
Candidate Starts for Loanshark\_57:  
(Start: 57 @18222 has 168 MA's),

Gene: LochMonster\_81 Start: 47663, Stop: 47493, Start Num: 49  
Candidate Starts for LochMonster\_81:  
(8, 48002), (24, 47825), (29, 47789), (39, 47723), (Start: 49 @47663 has 196 MA's), (60, 47624), (81, 47570), (85, 47558),

Gene: LolaVince\_60 Start: 19380, Stop: 19520, Start Num: 57  
Candidate Starts for LolaVince\_60:  
(Start: 57 @19380 has 168 MA's), (91, 19509),

Gene: LordLeafolot\_62 Start: 19735, Stop: 19875, Start Num: 57  
Candidate Starts for LordLeafolot\_62:  
(Start: 57 @19735 has 168 MA's),

Gene: Lorenzo\_80 Start: 47424, Stop: 47254, Start Num: 49  
Candidate Starts for Lorenzo\_80:  
(8, 47763), (24, 47586), (29, 47550), (39, 47484), (Start: 49 @47424 has 196 MA's), (60, 47385), (81, 47331), (85, 47319),

Gene: Lucyedi\_84 Start: 48006, Stop: 47845, Start Num: 49  
Candidate Starts for Lucyedi\_84:

(Start: 49 @48006 has 196 MA's), (76, 47931), (83, 47916), (90, 47868),

Gene: Lukilu\_50 Start: 17588, Stop: 17728, Start Num: 57

Candidate Starts for Lukilu\_50:

(Start: 57 @17588 has 168 MA's), (70, 17615), (91, 17717),

Gene: Lunsford\_80 Start: 47419, Stop: 47249, Start Num: 49

Candidate Starts for Lunsford\_80:

(5, 47800), (8, 47758), (21, 47623), (24, 47581), (29, 47545), (39, 47479), (Start: 49 @47419 has 196 MA's), (60, 47380), (81, 47326), (85, 47314),

Gene: Maby2021\_57 Start: 17903, Stop: 18043, Start Num: 57

Candidate Starts for Maby2021\_57:

(Start: 57 @17903 has 168 MA's),

Gene: Mangeria\_60 Start: 19250, Stop: 19390, Start Num: 57

Candidate Starts for Mangeria\_60:

(Start: 57 @19250 has 168 MA's), (87, 19346), (91, 19379),

Gene: Matsumoto\_55 Start: 17126, Stop: 17266, Start Num: 57

Candidate Starts for Matsumoto\_55:

(Start: 57 @17126 has 168 MA's), (91, 17255),

Gene: Maverick\_79 Start: 47423, Stop: 47253, Start Num: 49

Candidate Starts for Maverick\_79:

(8, 47762), (24, 47585), (29, 47549), (39, 47483), (Start: 49 @47423 has 196 MA's), (60, 47384), (81, 47330), (85, 47318),

Gene: Maxo\_82 Start: 47429, Stop: 47259, Start Num: 49

Candidate Starts for Maxo\_82:

(8, 47768), (24, 47591), (29, 47555), (39, 47489), (Start: 49 @47429 has 196 MA's), (60, 47390), (81, 47336), (85, 47324),

Gene: Mazhar510\_80 Start: 47424, Stop: 47254, Start Num: 49

Candidate Starts for Mazhar510\_80:

(8, 47763), (24, 47586), (29, 47550), (39, 47484), (Start: 49 @47424 has 196 MA's), (60, 47385), (81, 47331), (85, 47319),

Gene: McFly\_86 Start: 46659, Stop: 46501, Start Num: 49

Candidate Starts for McFly\_86:

(Start: 49 @46659 has 196 MA's), (76, 46584), (83, 46569),

Gene: McGee\_55 Start: 16349, Stop: 16489, Start Num: 57

Candidate Starts for McGee\_55:

(Start: 57 @16349 has 168 MA's), (70, 16376), (87, 16445), (91, 16478),

Gene: McWolfish\_55 Start: 17650, Stop: 17790, Start Num: 57

Candidate Starts for McWolfish\_55:

(Start: 57 @17650 has 168 MA's),

Gene: Medusa\_79 Start: 47439, Stop: 47269, Start Num: 49

Candidate Starts for Medusa\_79:



(8, 47778), (24, 47601), (29, 47565), (39, 47499), (Start: 49 @47439 has 196 MA's), (60, 47400), (81, 47346), (85, 47334),

Gene: MeeZee\_79 Start: 47420, Stop: 47250, Start Num: 49

Candidate Starts for MeeZee\_79:

(8, 47759), (24, 47582), (29, 47546), (39, 47480), (Start: 49 @47420 has 196 MA's), (60, 47381), (81, 47327), (85, 47315),

Gene: Megabear\_85 Start: 58166, Stop: 58348, Start Num: 49

Candidate Starts for Megabear\_85:

(42, 58145), (Start: 49 @58166 has 196 MA's), (64, 58214), (68, 58220), (80, 58250), (82, 58256), (85, 58268), (87, 58289),

Gene: Megamind\_56 Start: 17888, Stop: 18028, Start Num: 57

Candidate Starts for Megamind\_56:

(Start: 57 @17888 has 168 MA's),

Gene: Melpomini\_52 Start: 16576, Stop: 16716, Start Num: 57

Candidate Starts for Melpomini\_52:

(Start: 57 @16576 has 168 MA's), (91, 16705),

Gene: Melvin\_82 Start: 47421, Stop: 47251, Start Num: 49

Candidate Starts for Melvin\_82:

(8, 47760), (24, 47583), (29, 47547), (39, 47481), (Start: 49 @47421 has 196 MA's), (60, 47382), (81, 47328), (85, 47316),

Gene: MikeLiesIn\_57 Start: 18235, Stop: 18375, Start Num: 57

Candidate Starts for MikeLiesIn\_57:

(Start: 57 @18235 has 168 MA's),

Gene: Mikro\_55 Start: 18709, Stop: 18849, Start Num: 57

Candidate Starts for Mikro\_55:

(Start: 57 @18709 has 168 MA's),

Gene: Millski\_79 Start: 47427, Stop: 47257, Start Num: 49

Candidate Starts for Millski\_79:

(8, 47766), (24, 47589), (29, 47553), (39, 47487), (Start: 49 @47427 has 196 MA's), (60, 47388), (81, 47334), (85, 47322),

Gene: MoMoMixon\_57 Start: 18317, Stop: 18457, Start Num: 57

Candidate Starts for MoMoMixon\_57:

(Start: 57 @18317 has 168 MA's), (70, 18344), (91, 18446),

Gene: Momo\_55 Start: 17165, Stop: 17305, Start Num: 57

Candidate Starts for Momo\_55:

(Start: 57 @17165 has 168 MA's), (70, 17192), (87, 17261), (91, 17294),

Gene: Morizzled23\_59 Start: 18311, Stop: 18451, Start Num: 57

Candidate Starts for Morizzled23\_59:

(Start: 57 @18311 has 168 MA's), (91, 18440),

Gene: Morrow\_82 Start: 47466, Stop: 47296, Start Num: 49

Candidate Starts for Morrow\_82:

(5, 47847), (8, 47805), (21, 47670), (24, 47628), (29, 47592), (39, 47526), (Start: 49 @47466 has 196 MA's), (60, 47427), (81, 47373), (85, 47361),

Gene: Mysterious\_88 Start: 64978, Stop: 64736, Start Num: 49  
Candidate Starts for Mysterious\_88:  
(Start: 49 @64978 has 196 MA's), (82, 64864), (86, 64849),

Gene: Naiad\_61 Start: 42074, Stop: 41847, Start Num: 37  
Candidate Starts for Naiad\_61:  
(31, 42107), (Start: 36 @42077 has 1 MA's), (Start: 37 @42074 has 35 MA's), (45, 42023),

Gene: Naija\_55 Start: 17165, Stop: 17305, Start Num: 57  
Candidate Starts for Naija\_55:  
(Start: 57 @17165 has 168 MA's), (70, 17192), (87, 17261), (91, 17294),

Gene: Nanao\_86 Start: 65195, Stop: 64962, Start Num: 49  
Candidate Starts for Nanao\_86:  
(33, 65288), (41, 65231), (Start: 49 @65195 has 196 MA's), (66, 65147), (72, 65126), (82, 65096), (90, 65045),

Gene: Nancinator\_61 Start: 41391, Stop: 41164, Start Num: 37  
Candidate Starts for Nancinator\_61:  
(31, 41424), (Start: 36 @41394 has 1 MA's), (Start: 37 @41391 has 35 MA's), (45, 41340),

Gene: Nangang\_88 Start: 65412, Stop: 65194, Start Num: 49  
Candidate Starts for Nangang\_88:  
(Start: 49 @65412 has 196 MA's), (58, 65376), (64, 65361),

Gene: Napoleon13\_54 Start: 16561, Stop: 16701, Start Num: 57  
Candidate Starts for Napoleon13\_54:  
(Start: 57 @16561 has 168 MA's),

Gene: Nappy\_59 Start: 18520, Stop: 18660, Start Num: 57  
Candidate Starts for Nappy\_59:  
(Start: 57 @18520 has 168 MA's), (91, 18649),

Gene: Natosaleda\_61 Start: 41992, Stop: 41765, Start Num: 37  
Candidate Starts for Natosaleda\_61:  
(31, 42025), (Start: 36 @41995 has 1 MA's), (Start: 37 @41992 has 35 MA's), (45, 41941),

Gene: Naval22\_63 Start: 19245, Stop: 19385, Start Num: 57  
Candidate Starts for Naval22\_63:  
(Start: 57 @19245 has 168 MA's),

Gene: Nebs\_81 Start: 47466, Stop: 47296, Start Num: 49  
Candidate Starts for Nebs\_81:  
(8, 47805), (24, 47628), (29, 47592), (39, 47526), (Start: 49 @47466 has 196 MA's), (60, 47427), (81, 47373), (85, 47361),

Gene: NedWong\_58 Start: 18222, Stop: 18362, Start Num: 57  
Candidate Starts for NedWong\_58:  
(Start: 57 @18222 has 168 MA's),

Gene: Nedarya\_83 Start: 46655, Stop: 46488, Start Num: 49  
Candidate Starts for Nedarya\_83:  
(Start: 49 @46655 has 196 MA's),

Gene: Neeharika16\_85 Start: 46409, Stop: 46251, Start Num: 49  
Candidate Starts for Neeharika16\_85:  
(22, 46610), (34, 46502), (Start: 49 @46409 has 196 MA's), (76, 46334), (83, 46319),

Gene: Nemo27\_79 Start: 47422, Stop: 47252, Start Num: 49  
Candidate Starts for Nemo27\_79:  
(8, 47761), (24, 47584), (29, 47548), (39, 47482), (Start: 49 @47422 has 196 MA's), (60, 47383), (81, 47329), (85, 47317),

Gene: Newrala\_85 Start: 46755, Stop: 46597, Start Num: 49  
Candidate Starts for Newrala\_85:  
(22, 46956), (34, 46848), (Start: 49 @46755 has 196 MA's), (76, 46680), (83, 46665),

Gene: Ngannou\_51 Start: 16147, Stop: 16287, Start Num: 57  
Candidate Starts for Ngannou\_51:  
(Start: 57 @16147 has 168 MA's), (70, 16174), (87, 16243), (91, 16276),

Gene: Nidhogg\_57 Start: 18073, Stop: 18213, Start Num: 57  
Candidate Starts for Nidhogg\_57:  
(Start: 57 @18073 has 168 MA's), (70, 18100), (91, 18202),

Gene: NoodleTree\_57 Start: 18143, Stop: 18283, Start Num: 57  
Candidate Starts for NoodleTree\_57:  
(Start: 57 @18143 has 168 MA's), (70, 18170), (91, 18272),

Gene: Norm\_57 Start: 18223, Stop: 18363, Start Num: 57  
Candidate Starts for Norm\_57:  
(Start: 57 @18223 has 168 MA's),

Gene: NorthStar\_77 Start: 47426, Stop: 47256, Start Num: 49  
Candidate Starts for NorthStar\_77:  
(8, 47765), (24, 47588), (29, 47552), (39, 47486), (Start: 49 @47426 has 196 MA's), (60, 47387), (81, 47333), (85, 47321),

Gene: NotAPhaseMom\_79 Start: 47427, Stop: 47257, Start Num: 49  
Candidate Starts for NotAPhaseMom\_79:  
(8, 47766), (24, 47589), (29, 47553), (39, 47487), (Start: 49 @47427 has 196 MA's), (60, 47388), (81, 47334), (85, 47322),

Gene: NuevoMundo\_62 Start: 19221, Stop: 19361, Start Num: 57  
Candidate Starts for NuevoMundo\_62:  
(Start: 57 @19221 has 168 MA's), (91, 19350),

Gene: Nyxis\_79 Start: 47305, Stop: 47135, Start Num: 49  
Candidate Starts for Nyxis\_79:  
(8, 47644), (24, 47467), (29, 47431), (39, 47365), (Start: 49 @47305 has 196 MA's), (60, 47266), (81, 47212), (85, 47200),

Gene: OKaNui\_79 Start: 47477, Stop: 47307, Start Num: 49

Candidate Starts for OKaNui\_79:

(8, 47816), (24, 47639), (29, 47603), (39, 47537), (Start: 49 @47477 has 196 MA's), (60, 47438), (81, 47384), (85, 47372),

Gene: Obama12\_81 Start: 47850, Stop: 47680, Start Num: 49

Candidate Starts for Obama12\_81:

(3, 48261), (8, 48189), (24, 48012), (29, 47976), (39, 47910), (Start: 49 @47850 has 196 MA's), (60, 47811), (81, 47757), (85, 47745),

Gene: Ohfah\_81 Start: 47466, Stop: 47296, Start Num: 49

Candidate Starts for Ohfah\_81:

(8, 47805), (24, 47628), (29, 47592), (39, 47526), (Start: 49 @47466 has 196 MA's), (60, 47427), (81, 47373), (85, 47361),

Gene: PR\_86 Start: 58854, Stop: 59036, Start Num: 49

Candidate Starts for PR\_86:

(42, 58833), (Start: 49 @58854 has 196 MA's), (64, 58902), (68, 58908), (80, 58938), (82, 58944), (85, 58956), (87, 58977),

Gene: Palestino\_79 Start: 47423, Stop: 47253, Start Num: 49

Candidate Starts for Palestino\_79:

(8, 47762), (24, 47585), (29, 47549), (39, 47483), (Start: 49 @47423 has 196 MA's), (60, 47384), (81, 47330), (85, 47318),

Gene: ParkTD\_56 Start: 18222, Stop: 18362, Start Num: 57

Candidate Starts for ParkTD\_56:

(Start: 57 @18222 has 168 MA's),

Gene: Partridge\_61 Start: 42353, Stop: 42126, Start Num: 37

Candidate Starts for Partridge\_61:

(27, 42410), (Start: 36 @42356 has 1 MA's), (Start: 37 @42353 has 35 MA's),

Gene: Patter\_56 Start: 17182, Stop: 17322, Start Num: 57

Candidate Starts for Patter\_56:

(Start: 57 @17182 has 168 MA's), (70, 17209), (87, 17278), (91, 17311),

Gene: Peaches\_78 Start: 47425, Stop: 47255, Start Num: 49

Candidate Starts for Peaches\_78:

(8, 47764), (24, 47587), (29, 47551), (39, 47485), (Start: 49 @47425 has 196 MA's), (60, 47386), (81, 47332), (85, 47320),

Gene: PegLeg\_148 Start: 74147, Stop: 73986, Start Num: 49

Candidate Starts for PegLeg\_148:

(Start: 49 @74147 has 196 MA's), (59, 74111), (75, 74081), (83, 74063), (84, 74057), (93, 73997),

Gene: PeterPeter\_80 Start: 47420, Stop: 47250, Start Num: 49

Candidate Starts for PeterPeter\_80:

(8, 47759), (24, 47582), (29, 47546), (39, 47480), (Start: 49 @47420 has 196 MA's), (60, 47381), (81, 47327), (85, 47315),

Gene: Phabba\_14 Start: 5257, Stop: 5442, Start Num: 57

Candidate Starts for Phabba\_14:

(Start: 57 @5257 has 168 MA's),

Gene: Phacado\_80 Start: 47422, Stop: 47252, Start Num: 49

Candidate Starts for Phacado\_80:

(8, 47761), (24, 47584), (29, 47548), (39, 47482), (Start: 49 @47422 has 196 MA's), (60, 47383), (81, 47329), (85, 47317),

Gene: PhailMary\_59 Start: 41069, Stop: 40842, Start Num: 37

Candidate Starts for PhailMary\_59:

(31, 41102), (Start: 36 @41072 has 1 MA's), (Start: 37 @41069 has 35 MA's),

Gene: Phelemich\_84 Start: 64879, Stop: 64661, Start Num: 49

Candidate Starts for Phelemich\_84:

(Start: 49 @64879 has 196 MA's), (64, 64828), (86, 64774),

Gene: Phighter1804\_80 Start: 47487, Stop: 47317, Start Num: 49

Candidate Starts for Phighter1804\_80:

(8, 47826), (24, 47649), (29, 47613), (39, 47547), (Start: 49 @47487 has 196 MA's), (60, 47448), (81, 47394), (85, 47382),

Gene: Phlegm\_58 Start: 17165, Stop: 17305, Start Num: 57

Candidate Starts for Phlegm\_58:

(Start: 57 @17165 has 168 MA's), (70, 17192), (87, 17261), (91, 17294),

Gene: Phontbonne\_80 Start: 47321, Stop: 47151, Start Num: 49

Candidate Starts for Phontbonne\_80:

(8, 47660), (24, 47483), (29, 47447), (39, 47381), (Start: 49 @47321 has 196 MA's), (60, 47282), (81, 47228), (85, 47216),

Gene: Phox\_55 Start: 19068, Stop: 19208, Start Num: 57

Candidate Starts for Phox\_55:

(Start: 57 @19068 has 168 MA's), (70, 19095), (91, 19197),

Gene: Phrankenstein\_62 Start: 41998, Stop: 41771, Start Num: 37

Candidate Starts for Phrankenstein\_62:

(31, 42031), (Start: 36 @42001 has 1 MA's), (Start: 37 @41998 has 35 MA's), (45, 41947),

Gene: Phrappuccino\_91 Start: 70787, Stop: 70966, Start Num: 46

Candidate Starts for Phrappuccino\_91:

(Start: 46 @70787 has 2 MA's), (Start: 49 @70799 has 196 MA's), (63, 70844), (65, 70847), (87, 70922), (90, 70940),

Gene: Phusco\_56 Start: 17975, Stop: 18115, Start Num: 57

Candidate Starts for Phusco\_56:

(Start: 57 @17975 has 168 MA's), (91, 18104),

Gene: Pier\_59 Start: 18039, Stop: 18179, Start Num: 57

Candidate Starts for Pier\_59:

(Start: 57 @18039 has 168 MA's), (91, 18168),

Gene: Pinkcreek\_49 Start: 16524, Stop: 16664, Start Num: 57

Candidate Starts for Pinkcreek\_49:

(Start: 57 @16524 has 168 MA's),

Gene: Pio\_61 Start: 19373, Stop: 19513, Start Num: 57

Candidate Starts for Pio\_61:

(Start: 57 @19373 has 168 MA's), (91, 19502),

Gene: Pipcraft\_76 Start: 47427, Stop: 47257, Start Num: 49

Candidate Starts for Pipcraft\_76:

(8, 47766), (24, 47589), (29, 47553), (39, 47487), (Start: 49 @47427 has 196 MA's), (60, 47388), (81, 47334), (85, 47322),

Gene: Pivoine\_55 Start: 17165, Stop: 17305, Start Num: 57

Candidate Starts for Pivoine\_55:

(Start: 57 @17165 has 168 MA's), (70, 17192), (87, 17261), (91, 17294),

Gene: Pleione\_59 Start: 18221, Stop: 18361, Start Num: 57

Candidate Starts for Pleione\_59:

(Start: 57 @18221 has 168 MA's),

Gene: Pmask\_85 Start: 46956, Stop: 46798, Start Num: 49

Candidate Starts for Pmask\_85:

(22, 47157), (34, 47049), (Start: 49 @46956 has 196 MA's), (76, 46881), (83, 46866),

Gene: Polymorphads\_81 Start: 47447, Stop: 47277, Start Num: 49

Candidate Starts for Polymorphads\_81:

(5, 47828), (8, 47786), (21, 47651), (24, 47609), (29, 47573), (39, 47507), (Start: 49 @47447 has 196 MA's), (60, 47408), (81, 47354), (85, 47342),

Gene: Poster\_85 Start: 65196, Stop: 64963, Start Num: 49

Candidate Starts for Poster\_85:

(33, 65289), (41, 65232), (Start: 49 @65196 has 196 MA's), (66, 65148), (72, 65127), (82, 65097), (90, 65046),

Gene: Priamo\_87 Start: 46200, Stop: 46042, Start Num: 49

Candidate Starts for Priamo\_87:

(Start: 49 @46200 has 196 MA's), (58, 46167), (76, 46125), (83, 46110),

Gene: Pumbaa\_80 Start: 47371, Stop: 47201, Start Num: 49

Candidate Starts for Pumbaa\_80:

(5, 47752), (8, 47710), (21, 47575), (24, 47533), (29, 47497), (39, 47431), (Start: 49 @47371 has 196 MA's), (60, 47332), (81, 47278), (85, 47266),

Gene: PurduePete\_56 Start: 17946, Stop: 18086, Start Num: 57

Candidate Starts for PurduePete\_56:

(Start: 57 @17946 has 168 MA's),

Gene: QBert\_51 Start: 17952, Stop: 18092, Start Num: 57

Candidate Starts for QBert\_51:

(Start: 57 @17952 has 168 MA's), (70, 17979), (91, 18081),

Gene: Quasimodo\_56 Start: 18183, Stop: 18323, Start Num: 57

Candidate Starts for Quasimodo\_56:

(Start: 57 @18183 has 168 MA's), (70, 18210), (87, 18279), (91, 18312),

Gene: RER2\_56 Start: 38924, Stop: 38697, Start Num: 37

Candidate Starts for RER2\_56:

(31, 38957), (Start: 36 @38927 has 1 MA's), (Start: 37 @38924 has 35 MA's), (45, 38873),

Gene: Rabinovish\_56 Start: 19242, Stop: 19382, Start Num: 57

Candidate Starts for Rabinovish\_56:

(Start: 57 @19242 has 168 MA's),

Gene: Rahel\_57 Start: 17534, Stop: 17674, Start Num: 57

Candidate Starts for Rahel\_57:

(Start: 57 @17534 has 168 MA's), (70, 17561), (91, 17663),

Gene: Rasputin\_62 Start: 42022, Stop: 41795, Start Num: 37

Candidate Starts for Rasputin\_62:

(31, 42055), (Start: 36 @42025 has 1 MA's), (Start: 37 @42022 has 35 MA's), (45, 41971),

Gene: RedWattleHog\_148 Start: 102235, Stop: 102399, Start Num: 49

Candidate Starts for RedWattleHog\_148:

(30, 102112), (Start: 48 @102229 has 1 MA's), (Start: 49 @102235 has 196 MA's), (51, 102250),

Gene: Relief\_79 Start: 47423, Stop: 47253, Start Num: 49

Candidate Starts for Relief\_79:

(8, 47762), (24, 47585), (29, 47549), (39, 47483), (Start: 49 @47423 has 196 MA's), (60, 47384), (81, 47330), (85, 47318),

Gene: Remus\_87 Start: 46685, Stop: 46509, Start Num: 49

Candidate Starts for Remus\_87:

(Start: 49 @46685 has 196 MA's), (81, 46598),

Gene: Reprobate\_86 Start: 64884, Stop: 64666, Start Num: 49

Candidate Starts for Reprobate\_86:

(Start: 49 @64884 has 196 MA's), (64, 64833), (86, 64779),

Gene: RexFury\_61 Start: 42082, Stop: 41855, Start Num: 37

Candidate Starts for RexFury\_61:

(31, 42115), (Start: 36 @42085 has 1 MA's), (Start: 37 @42082 has 35 MA's), (45, 42031),

Gene: Rhodalysa\_62 Start: 42052, Stop: 41825, Start Num: 37

Candidate Starts for Rhodalysa\_62:

(31, 42085), (Start: 36 @42055 has 1 MA's), (Start: 37 @42052 has 35 MA's), (45, 42001),

Gene: Rich\_84 Start: 65290, Stop: 65120, Start Num: 49

Candidate Starts for Rich\_84:

(44, 65308), (Start: 49 @65290 has 196 MA's), (69, 65239), (86, 65185),

Gene: Rifter\_88 Start: 45967, Stop: 45809, Start Num: 49

Candidate Starts for Rifter\_88:

(34, 46060), (Start: 49 @45967 has 196 MA's), (76, 45892), (83, 45877),

Gene: Rizal\_55 Start: 17139, Stop: 17279, Start Num: 57

Candidate Starts for Rizal\_55:

(Start: 57 @17139 has 168 MA's),

Gene: RoMag\_51 Start: 17134, Stop: 17274, Start Num: 57

Candidate Starts for RoMag\_51:  
(Start: 57 @17134 has 168 MA's), (91, 17263),

Gene: Roksolana\_88 Start: 46683, Stop: 46525, Start Num: 49  
Candidate Starts for Roksolana\_88:  
(34, 46776), (Start: 49 @46683 has 196 MA's), (76, 46608), (83, 46593),

Gene: Romney\_79 Start: 47423, Stop: 47253, Start Num: 49  
Candidate Starts for Romney\_79:  
(8, 47762), (24, 47585), (29, 47549), (39, 47483), (Start: 49 @47423 has 196 MA's), (60, 47384), (81, 47330), (85, 47318),

Gene: Ronan\_51 Start: 15885, Stop: 16025, Start Num: 57  
Candidate Starts for Ronan\_51:  
(Start: 57 @15885 has 168 MA's), (70, 15912), (91, 16014),

Gene: Roosevelt\_78 Start: 47428, Stop: 47258, Start Num: 49  
Candidate Starts for Roosevelt\_78:  
(5, 47809), (8, 47767), (21, 47632), (24, 47590), (29, 47554), (39, 47488), (Start: 49 @47428 has 196 MA's), (60, 47389), (81, 47335), (85, 47323),

Gene: Roots515\_56 Start: 18020, Stop: 18160, Start Num: 57  
Candidate Starts for Roots515\_56:  
(Start: 57 @18020 has 168 MA's), (91, 18149),

Gene: Rosalind\_85 Start: 46579, Stop: 46403, Start Num: 49  
Candidate Starts for Rosalind\_85:  
(Start: 49 @46579 has 196 MA's), (81, 46492),

Gene: Ruin\_80 Start: 47419, Stop: 47249, Start Num: 49  
Candidate Starts for Ruin\_80:  
(8, 47758), (24, 47581), (29, 47545), (39, 47479), (Start: 49 @47419 has 196 MA's), (60, 47380), (81, 47326), (85, 47314),

Gene: Sabertooth\_80 Start: 47431, Stop: 47261, Start Num: 49  
Candidate Starts for Sabertooth\_80:  
(5, 47812), (8, 47770), (24, 47593), (29, 47557), (39, 47491), (Start: 49 @47431 has 196 MA's), (60, 47392), (81, 47338), (85, 47326),

Gene: Saguaro\_80 Start: 63591, Stop: 63397, Start Num: 49  
Candidate Starts for Saguaro\_80:  
(Start: 49 @63591 has 196 MA's), (62, 63552), (72, 63525), (81, 63501), (90, 63450), (92, 63432),

Gene: Salacia\_59 Start: 18222, Stop: 18362, Start Num: 57  
Candidate Starts for Salacia\_59:  
(Start: 57 @18222 has 168 MA's),

Gene: Sauce\_58 Start: 18161, Stop: 18301, Start Num: 57  
Candidate Starts for Sauce\_58:  
(Start: 57 @18161 has 168 MA's), (91, 18290),

Gene: Scamp\_80 Start: 47428, Stop: 47258, Start Num: 49  
Candidate Starts for Scamp\_80:



(8, 47767), (24, 47590), (29, 47554), (39, 47488), (Start: 49 @47428 has 196 MA's), (60, 47389), (81, 47335), (85, 47323),

Gene: ScottMcG\_55 Start: 17998, Stop: 18138, Start Num: 57  
Candidate Starts for ScottMcG\_55:  
(Start: 57 @17998 has 168 MA's), (70, 18025), (91, 18127),

Gene: Sebata\_59 Start: 19091, Stop: 19231, Start Num: 57  
Candidate Starts for Sebata\_59:  
(Start: 57 @19091 has 168 MA's), (70, 19118), (91, 19220),

Gene: Serendipitous\_87 Start: 64709, Stop: 64542, Start Num: 49  
Candidate Starts for Serendipitous\_87:  
(Start: 49 @64709 has 196 MA's),

Gene: Settecandela\_91 Start: 70787, Stop: 70966, Start Num: 46  
Candidate Starts for Settecandela\_91:  
(Start: 46 @70787 has 2 MA's), (Start: 49 @70799 has 196 MA's), (63, 70844), (65, 70847), (87, 70922), (90, 70940),

Gene: Shaka\_78 Start: 47424, Stop: 47254, Start Num: 49  
Candidate Starts for Shaka\_78:  
(5, 47805), (8, 47763), (21, 47628), (24, 47586), (29, 47550), (39, 47484), (Start: 49 @47424 has 196 MA's), (60, 47385), (81, 47331), (85, 47319),

Gene: Shaqnato\_51 Start: 16808, Stop: 16948, Start Num: 57  
Candidate Starts for Shaqnato\_51:  
(Start: 57 @16808 has 168 MA's), (70, 16835), (91, 16937),

Gene: Sheen\_79 Start: 49954, Stop: 49772, Start Num: 43  
Candidate Starts for Sheen\_79:  
(Start: 43 @49954 has 1 MA's), (77, 49858),

Gene: SheldonCooper\_80 Start: 47864, Stop: 47694, Start Num: 49  
Candidate Starts for SheldonCooper\_80:  
(8, 48203), (24, 48026), (29, 47990), (39, 47924), (Start: 49 @47864 has 196 MA's), (60, 47825), (81, 47771), (85, 47759),

Gene: Shelob\_59 Start: 19331, Stop: 19471, Start Num: 57  
Candidate Starts for Shelob\_59:  
(Start: 57 @19331 has 168 MA's), (70, 19358), (91, 19460),

Gene: ShiaLabeouf\_56 Start: 17602, Stop: 17742, Start Num: 57  
Candidate Starts for ShiaLabeouf\_56:  
(Start: 57 @17602 has 168 MA's), (91, 17731),

Gene: Shifa\_50 Start: 17073, Stop: 17213, Start Num: 57  
Candidate Starts for Shifa\_50:  
(Start: 57 @17073 has 168 MA's), (91, 17202),

Gene: Shnickers\_56 Start: 17161, Stop: 17301, Start Num: 57  
Candidate Starts for Shnickers\_56:  
(Start: 57 @17161 has 168 MA's), (91, 17290),

Gene: Shrimp\_57 Start: 18226, Stop: 18366, Start Num: 57

Candidate Starts for Shrimp\_57:

(Start: 57 @18226 has 168 MA's),

Gene: Shuman\_63 Start: 42003, Stop: 41776, Start Num: 37

Candidate Starts for Shuman\_63:

(31, 42036), (Start: 36 @42006 has 1 MA's), (Start: 37 @42003 has 35 MA's), (45, 41952),

Gene: Shygu2\_78 Start: 47370, Stop: 47200, Start Num: 49

Candidate Starts for Shygu2\_78:

(8, 47709), (24, 47532), (29, 47496), (39, 47430), (Start: 49 @47370 has 196 MA's), (60, 47331), (81, 47277), (85, 47265),

Gene: SilverDipper\_57 Start: 17165, Stop: 17305, Start Num: 57

Candidate Starts for SilverDipper\_57:

(Start: 57 @17165 has 168 MA's), (70, 17192), (87, 17261), (91, 17294),

Gene: Skinny\_151 Start: 75264, Stop: 75103, Start Num: 49

Candidate Starts for Skinny\_151:

(Start: 49 @75264 has 196 MA's), (59, 75228), (75, 75198), (83, 75180), (84, 75174), (93, 75114),

Gene: Skipitt\_79 Start: 47420, Stop: 47250, Start Num: 49

Candidate Starts for Skipitt\_79:

(8, 47759), (24, 47582), (29, 47546), (39, 47480), (Start: 49 @47420 has 196 MA's), (60, 47381), (81, 47327), (85, 47315),

Gene: SlimJimmy\_145 Start: 74734, Stop: 74570, Start Num: 49

Candidate Starts for SlimJimmy\_145:

(Start: 49 @74734 has 196 MA's), (61, 74695),

Gene: SmallFry\_56 Start: 17161, Stop: 17301, Start Num: 57

Candidate Starts for SmallFry\_56:

(Start: 57 @17161 has 168 MA's), (70, 17188), (87, 17257), (91, 17290),

Gene: SmellyB\_86 Start: 46314, Stop: 46156, Start Num: 49

Candidate Starts for SmellyB\_86:

(Start: 49 @46314 has 196 MA's), (58, 46281), (76, 46239), (83, 46224),

Gene: Soups\_86 Start: 46474, Stop: 46298, Start Num: 49

Candidate Starts for Soups\_86:

(Start: 49 @46474 has 196 MA's), (81, 46387),

Gene: Sparxx\_81 Start: 47422, Stop: 47252, Start Num: 49

Candidate Starts for Sparxx\_81:

(5, 47803), (8, 47761), (21, 47626), (24, 47584), (29, 47548), (39, 47482), (Start: 49 @47422 has 196 MA's), (60, 47383), (81, 47329), (85, 47317),

Gene: Spec\_54 Start: 17305, Stop: 17445, Start Num: 57

Candidate Starts for Spec\_54:

(Start: 57 @17305 has 168 MA's), (91, 17434),

Gene: Specks\_62 Start: 19814, Stop: 19954, Start Num: 57

Candidate Starts for Specks\_62:  
(Start: 57 @19814 has 168 MA's), (91, 19943),

Gene: Spino\_79 Start: 47426, Stop: 47256, Start Num: 49  
Candidate Starts for Spino\_79:  
(8, 47765), (24, 47588), (29, 47552), (39, 47486), (Start: 49 @47426 has 196 MA's), (60, 47387), (81, 47333), (85, 47321),

Gene: Sprinklers\_53 Start: 17133, Stop: 17273, Start Num: 57  
Candidate Starts for Sprinklers\_53:  
(Start: 57 @17133 has 168 MA's), (91, 17262),

Gene: Spud\_57 Start: 18537, Stop: 18677, Start Num: 57  
Candidate Starts for Spud\_57:  
(Start: 57 @18537 has 168 MA's),

Gene: SrishMeg2525\_56 Start: 17933, Stop: 18073, Start Num: 57  
Candidate Starts for SrishMeg2525\_56:  
(Start: 57 @17933 has 168 MA's),

Gene: StCroix\_61 Start: 42074, Stop: 41847, Start Num: 37  
Candidate Starts for StCroix\_61:  
(31, 42107), (Start: 36 @42077 has 1 MA's), (Start: 37 @42074 has 35 MA's), (45, 42023),

Gene: Stasia\_77 Start: 47383, Stop: 47213, Start Num: 49  
Candidate Starts for Stasia\_77:  
(13, 47662), (23, 47557), (Start: 49 @47383 has 196 MA's), (60, 47344), (73, 47314), (81, 47290), (85, 47278), (87, 47257),

Gene: StephanieG\_57 Start: 18533, Stop: 18673, Start Num: 57  
Candidate Starts for StephanieG\_57:  
(Start: 57 @18533 has 168 MA's), (91, 18662),

Gene: Stinger\_85 Start: 64772, Stop: 64608, Start Num: 49  
Candidate Starts for Stinger\_85:  
(16, 65030), (17, 65009), (19, 64991), (44, 64790), (Start: 49 @64772 has 196 MA's), (79, 64700), (84, 64682),

Gene: StinkyVeggy\_85 Start: 64809, Stop: 64591, Start Num: 49  
Candidate Starts for StinkyVeggy\_85:  
(Start: 49 @64809 has 196 MA's), (58, 64773), (64, 64758),

Gene: Stormageddon\_149 Start: 103193, Stop: 103363, Start Num: 48  
Candidate Starts for Stormageddon\_149:  
(30, 103076), (Start: 48 @103193 has 1 MA's), (Start: 49 @103199 has 196 MA's), (51, 103214),

Gene: Strosahl\_87 Start: 46685, Stop: 46509, Start Num: 49  
Candidate Starts for Strosahl\_87:  
(Start: 49 @46685 has 196 MA's), (81, 46598),

Gene: Stubby\_52 Start: 17855, Stop: 17995, Start Num: 57  
Candidate Starts for Stubby\_52:  
(Start: 57 @17855 has 168 MA's),

Gene: StubbySaigey\_56 Start: 16862, Stop: 17002, Start Num: 57  
Candidate Starts for StubbySaigey\_56:  
(Start: 57 @16862 has 168 MA's),

Gene: SuperAwesome\_86 Start: 46995, Stop: 46837, Start Num: 49  
Candidate Starts for SuperAwesome\_86:  
(22, 47196), (34, 47088), (Start: 49 @46995 has 196 MA's), (76, 46920), (83, 46905),

Gene: SuperCallie99\_82 Start: 46377, Stop: 46219, Start Num: 49  
Candidate Starts for SuperCallie99\_82:  
(Start: 49 @46377 has 196 MA's), (58, 46344), (76, 46302), (83, 46287),

Gene: Swann\_62 Start: 42050, Stop: 41823, Start Num: 37  
Candidate Starts for Swann\_62:  
(31, 42083), (Start: 36 @42053 has 1 MA's), (Start: 37 @42050 has 35 MA's), (45, 41999),

Gene: TWAMP\_62 Start: 42052, Stop: 41825, Start Num: 37  
Candidate Starts for TWAMP\_62:  
(31, 42085), (Start: 36 @42055 has 1 MA's), (Start: 37 @42052 has 35 MA's), (45, 42001),

Gene: Takoda\_62 Start: 42235, Stop: 42008, Start Num: 37  
Candidate Starts for Takoda\_62:  
(27, 42292), (Start: 36 @42238 has 1 MA's), (Start: 37 @42235 has 35 MA's),

Gene: Taptic\_88 Start: 58560, Stop: 58742, Start Num: 49  
Candidate Starts for Taptic\_88:  
(42, 58539), (44, 58542), (Start: 49 @58560 has 196 MA's), (64, 58608), (68, 58614), (80, 58644), (82, 58650), (85, 58662), (87, 58683),

Gene: Taquarus\_79 Start: 47429, Stop: 47259, Start Num: 49  
Candidate Starts for Taquarus\_79:  
(8, 47768), (24, 47591), (29, 47555), (39, 47489), (Start: 49 @47429 has 196 MA's), (60, 47390), (81, 47336), (85, 47324),

Gene: Teardrop\_56 Start: 17138, Stop: 17278, Start Num: 57  
Candidate Starts for Teardrop\_56:  
(Start: 57 @17138 has 168 MA's), (91, 17267),

Gene: Thanksgivukkah\_79 Start: 47424, Stop: 47254, Start Num: 49  
Candidate Starts for Thanksgivukkah\_79:  
(8, 47763), (24, 47586), (29, 47550), (39, 47484), (Start: 49 @47424 has 196 MA's), (60, 47385), (81, 47331), (85, 47319),

Gene: TinaFeyge\_78 Start: 47421, Stop: 47251, Start Num: 49  
Candidate Starts for TinaFeyge\_78:  
(5, 47802), (8, 47760), (21, 47625), (24, 47583), (29, 47547), (39, 47481), (Start: 49 @47421 has 196 MA's), (60, 47382), (81, 47328), (85, 47316),

Gene: TinyTim\_57 Start: 18222, Stop: 18362, Start Num: 57  
Candidate Starts for TinyTim\_57:  
(Start: 57 @18222 has 168 MA's),

Gene: Tinybot\_79 Start: 47453, Stop: 47283, Start Num: 49  
Candidate Starts for Tinybot\_79:  
(3, 47864), (8, 47792), (24, 47615), (29, 47579), (39, 47513), (Start: 49 @47453 has 196 MA's), (60, 47414), (81, 47360), (85, 47348),

Gene: TiroTheta9\_79 Start: 47420, Stop: 47250, Start Num: 49  
Candidate Starts for TiroTheta9\_79:  
(5, 47801), (8, 47759), (21, 47624), (24, 47582), (29, 47546), (39, 47480), (Start: 49 @47420 has 196 MA's), (60, 47381), (81, 47327), (85, 47315),

Gene: ToneTone\_85 Start: 46347, Stop: 46189, Start Num: 49  
Candidate Starts for ToneTone\_85:  
(34, 46440), (Start: 49 @46347 has 196 MA's), (52, 46329), (58, 46314), (76, 46272), (83, 46257), (87, 46227),

Gene: Tonenili\_66 Start: 20565, Stop: 20705, Start Num: 57  
Candidate Starts for Tonenili\_66:  
(Start: 57 @20565 has 168 MA's),

Gene: Tortoise16\_54 Start: 17669, Stop: 17809, Start Num: 57  
Candidate Starts for Tortoise16\_54:  
(Start: 57 @17669 has 168 MA's), (91, 17798),

Gene: Trinitium\_52 Start: 16623, Stop: 16763, Start Num: 57  
Candidate Starts for Trinitium\_52:  
(Start: 57 @16623 has 168 MA's), (70, 16650), (91, 16752),

Gene: TroyPia\_81 Start: 47461, Stop: 47291, Start Num: 49  
Candidate Starts for TroyPia\_81:  
(8, 47800), (24, 47623), (29, 47587), (39, 47521), (Start: 49 @47461 has 196 MA's), (60, 47422), (81, 47368), (85, 47356),

Gene: Tucker\_88 Start: 46550, Stop: 46392, Start Num: 49  
Candidate Starts for Tucker\_88:  
(34, 46643), (Start: 49 @46550 has 196 MA's), (52, 46532), (58, 46517), (76, 46475), (83, 46460), (87, 46430),

Gene: Turret\_51 Start: 16347, Stop: 16487, Start Num: 57  
Candidate Starts for Turret\_51:  
(Start: 57 @16347 has 168 MA's), (70, 16374), (91, 16476),

Gene: TyDawg\_141 Start: 74179, Stop: 74015, Start Num: 49  
Candidate Starts for TyDawg\_141:  
(Start: 49 @74179 has 196 MA's), (61, 74140),

Gene: TygerBlood\_80 Start: 47426, Stop: 47256, Start Num: 49  
Candidate Starts for TygerBlood\_80:  
(8, 47765), (24, 47588), (29, 47552), (39, 47486), (Start: 49 @47426 has 196 MA's), (60, 47387), (81, 47333), (85, 47321),

Gene: Tyke\_58 Start: 18573, Stop: 18713, Start Num: 57  
Candidate Starts for Tyke\_58:  
(Start: 57 @18573 has 168 MA's), (70, 18600), (87, 18669), (91, 18702),

Gene: UhSalsa\_62 Start: 41993, Stop: 41766, Start Num: 37

Candidate Starts for UhSalsa\_62:

(31, 42026), (Start: 36 @41996 has 1 MA's), (Start: 37 @41993 has 35 MA's), (45, 41942),

Gene: Ulysses\_79 Start: 47109, Stop: 46939, Start Num: 49

Candidate Starts for Ulysses\_79:

(8, 47448), (24, 47271), (29, 47235), (39, 47169), (Start: 49 @47109 has 196 MA's), (60, 47070), (81, 47016), (85, 47004),

Gene: ValleyTerrace\_56 Start: 17165, Stop: 17305, Start Num: 57

Candidate Starts for ValleyTerrace\_56:

(Start: 57 @17165 has 168 MA's), (70, 17192), (87, 17261), (91, 17294),

Gene: VanLee\_156 Start: 79104, Stop: 78949, Start Num: 50

Candidate Starts for VanLee\_156:

(Start: 50 @79104 has 1 MA's), (81, 79023),

Gene: VohminGhazi\_86 Start: 46315, Stop: 46157, Start Num: 49

Candidate Starts for VohminGhazi\_86:

(Start: 49 @46315 has 196 MA's), (58, 46282), (76, 46240), (83, 46225),

Gene: Wally\_55 Start: 16778, Stop: 16918, Start Num: 57

Candidate Starts for Wally\_55:

(Start: 57 @16778 has 168 MA's),

Gene: Wander\_80 Start: 47420, Stop: 47250, Start Num: 49

Candidate Starts for Wander\_80:

(8, 47759), (24, 47582), (29, 47546), (39, 47480), (Start: 49 @47420 has 196 MA's), (60, 47381), (81, 47327), (85, 47315),

Gene: Wiks\_87 Start: 46418, Stop: 46260, Start Num: 49

Candidate Starts for Wiks\_87:

(22, 46619), (34, 46511), (Start: 49 @46418 has 196 MA's), (76, 46343), (83, 46328),

Gene: Wilbur\_80 Start: 47423, Stop: 47253, Start Num: 49

Candidate Starts for Wilbur\_80:

(8, 47762), (24, 47585), (29, 47549), (39, 47483), (Start: 49 @47423 has 196 MA's), (60, 47384), (81, 47330), (85, 47318),

Gene: Willis\_57 Start: 18117, Stop: 18257, Start Num: 57

Candidate Starts for Willis\_57:

(Start: 57 @18117 has 168 MA's),

Gene: WunderPhul\_88 Start: 46416, Stop: 46258, Start Num: 49

Candidate Starts for WunderPhul\_88:

(34, 46509), (Start: 49 @46416 has 196 MA's), (76, 46341), (83, 46326),

Gene: Xena\_76 Start: 47245, Stop: 47075, Start Num: 49

Candidate Starts for Xena\_76:

(8, 47584), (24, 47407), (29, 47371), (39, 47305), (Start: 49 @47245 has 196 MA's), (60, 47206), (81, 47152), (84, 47143), (85, 47140),

Gene: Yassified\_54 Start: 17645, Stop: 17785, Start Num: 57  
Candidate Starts for Yassified\_54:  
(Start: 57 @17645 has 168 MA's), (70, 17672), (91, 17774),

Gene: YemiJoy2021\_57 Start: 17903, Stop: 18043, Start Num: 57  
Candidate Starts for YemiJoy2021\_57:  
(Start: 57 @17903 has 168 MA's),

Gene: YoSam321\_80 Start: 47421, Stop: 47251, Start Num: 49  
Candidate Starts for YoSam321\_80:  
(8, 47760), (24, 47583), (29, 47547), (39, 47481), (Start: 49 @47421 has 196 MA's), (60, 47382), (81, 47328), (85, 47316),

Gene: Yogi\_63 Start: 42403, Stop: 42176, Start Num: 37  
Candidate Starts for Yogi\_63:  
(28, 42451), (31, 42436), (Start: 36 @42406 has 1 MA's), (Start: 37 @42403 has 35 MA's), (45, 42352),

Gene: Yokurt\_87 Start: 46418, Stop: 46260, Start Num: 49  
Candidate Starts for Yokurt\_87:  
(22, 46619), (34, 46511), (Start: 49 @46418 has 196 MA's), (76, 46343), (83, 46328),

Gene: Yoncess\_61 Start: 41810, Stop: 41583, Start Num: 37  
Candidate Starts for Yoncess\_61:  
(31, 41843), (Start: 36 @41813 has 1 MA's), (Start: 37 @41810 has 35 MA's), (45, 41759),

Gene: YoungMoneyMata\_56 Start: 16916, Stop: 17056, Start Num: 57  
Candidate Starts for YoungMoneyMata\_56:  
(Start: 57 @16916 has 168 MA's), (70, 16943), (87, 17012), (91, 17045),

Gene: Yucca\_57 Start: 18144, Stop: 18284, Start Num: 57  
Candidate Starts for Yucca\_57:  
(Start: 57 @18144 has 168 MA's),

Gene: Zaka\_88 Start: 46418, Stop: 46260, Start Num: 49  
Candidate Starts for Zaka\_88:  
(22, 46619), (34, 46511), (Start: 49 @46418 has 196 MA's), (76, 46343), (83, 46328),

Gene: Zalkecks\_58 Start: 17907, Stop: 18047, Start Num: 57  
Candidate Starts for Zalkecks\_58:  
(Start: 57 @17907 has 168 MA's),

Gene: Zeenon\_59 Start: 18209, Stop: 18349, Start Num: 57  
Candidate Starts for Zeenon\_59:  
(Start: 57 @18209 has 168 MA's),

Gene: Zulu\_89 Start: 46796, Stop: 46638, Start Num: 49  
Candidate Starts for Zulu\_89:  
(Start: 49 @46796 has 196 MA's), (58, 46763), (76, 46721), (83, 46706),

Gene: ZygoTaiga\_57 Start: 18223, Stop: 18363, Start Num: 57  
Candidate Starts for ZygoTaiga\_57:  
(Start: 57 @18223 has 168 MA's),

