



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 508 Report

This analysis was run 04/05/24 on database version 557.

Pham number 508 has 182 members, 15 are drafts.

Phages represented in each track:

- Track 1 : Cactojaque\_139, Fludd\_145, Delilah\_143, MikeLiesIn\_145, ArcherS7\_142, StephanieG\_141, DrPhinkDaddy\_142, Grungle\_130, Maby2021\_143, Pier\_147, Derek\_142, TinyTim\_143, FrayBell\_148, Momo\_143, Latch\_144, ErnieJ\_137, Phox\_141, McGee\_145, LRRHood\_137, QBert\_137, Lukilu\_134, Norm\_144, Caravan\_137, Bangla1971\_144, Essence\_140, Tyke\_143, BigCity\_151, Blubba\_137, Bxz1\_141, StubbySaigey\_147, NoodleTree\_150, Ava3\_144, Iota\_138, Alice\_136, Yucca\_142, Sprinklers\_139, Morizzled23\_144, Jemmno\_143, Janiyra\_146, InigoMontoya\_146, Shnickers\_143, Shaqnato\_137, EmmaElysia\_144, Lee7\_141, Nappy\_145, Jaygup\_143, Capablanca\_146, Atlantean\_143, ParkTD\_144, Jedediah\_146, BackyardAgain\_140, Daffodil\_148, Nidhogg\_145, FoxtrotP1\_143, Trinitium\_141, Patter\_144, Pivoine\_143, Adlitam\_144, Zalkecks\_144, SilverDipper\_145, EmToTheThree\_145, Cane17\_136, DTDevon\_143, Salacia\_147, LinStu\_141, SrishMeg2525\_142, McWolfish\_141, PurduePete\_143, Sebata\_143, ChaylaJr\_139, Ronan\_137, Jessibeth14\_143, Bonray\_144, Babyland\_145, Tortoise16\_140, Colt\_135, Pio\_148, LordLeafolot\_147, Flabslab\_138, Bigswole\_146, Roots515\_142, NuevoMundo\_148, YemiJoy2021\_144, JustHall\_141, Drazdys\_141, Guwapp\_142, Audrick\_146, Rabinovish\_143, FudgeTart\_141, Matsumoto\_140, ShiaLabeouf\_142, Pleione\_146, DirtMonster\_137, InterFolia\_149, Concombre\_149, Chomp\_142, Rizal\_138, CindyLou\_145, IkeLoa\_137, ValleyTerrace\_144, RoMag\_138, Gamgam\_144, Spud\_142, Dandelion\_148, Delylah\_146, Breeniome\_143, Blackbrain\_139, Ading\_143, Loanshark\_142, Ghost\_142, Willis\_144, HyRo\_135, ScottMcG\_139, Basquiat\_140, Naval22\_148, Astraea\_139, BadAgartude\_139, BeanWater\_135, I3\_148, Ewok\_144, NedWong\_144, Bipolarisk\_142, Stubby\_136, LifeSavor\_141, Spec\_139, EasyJones\_146, Megamind\_142, Teardrop\_143, Napoleon13\_139, Bread\_142, Shelob\_146, Gabriel\_143, Rahel\_142, Khaleesi\_142, SmallFry\_143, Ngannou\_140, Issimir\_142, ChickenPhender\_140, Cali\_139, JPickles\_140, Shrimp\_143, Kamryn\_143, Melpomini\_137, JulietS\_138, Littleton\_143, Darko\_143, Chergie21\_140, Kboogie\_147, CharlieB\_141, LolaVinca\_144, Koguma\_141, Phusco\_143, Catera\_139, ZygoTaiga\_141, Erdmann\_143, MoMoMixon\_143, BananaFence\_142, Zeenon\_144, Burrough\_144, Dietrick\_135, EggyFarm\_151, Amataga\_144, YoungMoneyMata\_145, Izajani\_143, Yassified\_140, Sauce\_143, JayJay\_143, Shifa\_133, Turret\_139, Grasshills\_150, Mikro\_140, Phlegm\_147, Quasimodo\_145, Specks\_148, Wally\_142, Naija\_143, ET08\_131, Asterius\_140, Mangeria\_144, Gizmo\_148, Pinkcreek\_134
- Track 2 : Tonenili\_156

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

The start number called the most often in the published annotations is 1, it was called in 167 of the 167 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Ading\_143, Adlitam\_144, Alice\_136, Amataga\_144, ArcherS7\_142, Asterius\_140, Astraea\_139, Atlantean\_143, Audrick\_146, Ava3\_144, Babyland\_145, BackyardAgain\_140, BadAgartude\_139, BananaFence\_142, Bangla1971\_144, Basquiat\_140, BeanWater\_135, BigCity\_151, Bigswole\_146, Bipolarisk\_142, Blackbrain\_139, Blubba\_137, Bonray\_144, Bread\_142, Breeniome\_143, Burrough\_144, Bxz1\_141, Cactojaque\_139, Cali\_139, Cane17\_136, Capablanca\_146, Caravan\_137, Catera\_139, Chargie21\_140, CharlieB\_141, ChaylaJr\_139, ChickenPhender\_140, Chomp\_142, CindyLou\_145, Colt\_135, Concombre\_149, DTDevon\_143, Daffodil\_148, Dandelion\_148, Darko\_143, Delilah\_143, Delylah\_146, Derek\_142, Dietrick\_135, DirtMonster\_137, DrPhinkDaddy\_142, Drazdys\_141, ET08\_131, EasyJones\_146, EggyFarm\_151, EmToTheThree\_145, EmmaElysia\_144, Erdmann\_143, ErnieJ\_137, Essence\_140, Ewok\_144, Flabslab\_138, Fludd\_145, FoxtrotP1\_143, FrayBell\_148, FudgeTart\_141, Gabriel\_143, Gangam\_144, Ghost\_142, Gizmo\_148, Grasshills\_150, Grungle\_130, Guwapp\_142, HyRo\_135, I3\_148, IkeLoa\_137, InigoMontoya\_146, InterFolia\_149, Iota\_138, Issimir\_142, Izajani\_143, JPickles\_140, Janiyra\_146, JayJay\_143, Jaygup\_143, Jedediah\_146, Jemmno\_143, Jessibeth14\_143, JulietS\_138, JustHall\_141, Kamryn\_143, Kboogie\_147, Khaleesi\_142, Koguma\_141, LRRHood\_137, Latch\_144, Lee7\_141, LifeSavor\_141, LinStu\_141, Littleton\_143, Loanshark\_142, LolaVinca\_144, LordLeafolot\_147, Lukilu\_134, Maby2021\_143, Mangeria\_144, Matsumoto\_140, McGee\_145, McWolfish\_141, Megamind\_142, Melpomini\_137, MikeLiesIn\_145, Mikro\_140, MoMoMixon\_143, Momo\_143, Morizzled23\_144, Naija\_143, Napoleon13\_139, Nappy\_145, Naval22\_148, NedWong\_144, Ngannou\_140, Nidhogg\_145, NoodleTree\_150, Norm\_144, NuevoMundo\_148, ParkTD\_144, Patter\_144, Phlegm\_147, Phox\_141, Phusco\_143, Pier\_147, Pinkcreek\_134, Pio\_148, Pivoine\_143, Pleione\_146, PurduePete\_143, QBert\_137, Quasimodo\_145, Rabinovish\_143, Rahel\_142, Rizal\_138, RoMag\_138, Ronan\_137, Roots515\_142, Salacia\_147, Sauce\_143, ScottMcG\_139, Sebata\_143, Shaqnato\_137, Shelob\_146, ShiaLabeouf\_142, Shifa\_133, Shnickers\_143, Shrimp\_143, SilverDipper\_145, SmallFry\_143, Spec\_139, Specks\_148, Sprinklers\_139, Spud\_142, SrishMeg2525\_142, StephanieG\_141, StubbySaigey\_147, Stubby\_136, Teardrop\_143, TinyTim\_143, Tonenili\_156, Tortoise16\_140, Trinitium\_141, Turret\_139, Tyke\_143, ValleyTerrace\_144, Wally\_142, Willis\_144, Yassified\_140, YemiJoy2021\_144, YoungMoneyMata\_145, Yucca\_142, Zalkecks\_144, Zeenon\_144, ZygoTaiga\_141,

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

- 

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

- 

**Summary by start number:**

#### Start 1:

- Found in 182 of 182 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 167 of 167
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ading\_143 (C1), Adlitam\_144 (C1), Alice\_136 (C1), Amataga\_144 (C1), ArcherS7\_142 (C1), Asterius\_140 (C1), Astraea\_139 (C1), Atlantean\_143 (C1), Audrick\_146 (C1), Ava3\_144 (C1), Babyland\_145 (C1), BackyardAgain\_140 (C1), BadAgartude\_139 (C1), BananaFence\_142 (C1), Bangla1971\_144 (C1), Basquiat\_140 (C1), BeanWater\_135 (C1), BigCity\_151 (C1), Bigswole\_146 (C1), Bipolarisk\_142 (C1), Blackbrain\_139 (C1), Blubba\_137 (C1), Bonray\_144 (C1), Bread\_142 (C1), Breeniome\_143 (C1), Burrough\_144 (C1), Bxz1\_141 (C1), Cactojaque\_139 (C1), Cali\_139 (C1), Cane17\_136 (C1), Capablanca\_146 (C1), Caravan\_137 (C1), Catera\_139 (C1), Chargie21\_140 (C1), CharlieB\_141 (C1), ChaylaJr\_139 (C1), ChickenPhender\_140 (C1), Chomp\_142 (C1), CindyLou\_145 (C1), Colt\_135 (C1), Concombre\_149 (C1), DTDevon\_143 (C1), Daffodil\_148 (C1), Dandelion\_148 (C1), Darko\_143 (C1), Delilah\_143 (C1), Delylah\_146 (C1), Derek\_142 (C1), Dietrick\_135 (C1), DirtMonster\_137 (C1), DrPhinkDaddy\_142 (C1), Drazdys\_141 (C1), ET08\_131 (C1), EasyJones\_146 (C1), EggyFarm\_151 (C1), EmToTheThree\_145 (C1), EmmaElysia\_144 (C1), Erdmann\_143 (C1), ErnieJ\_137 (C1), Essence\_140 (C1), Ewok\_144 (C1), Flabslab\_138 (C1), Fludd\_145 (C1), FoxtrotP1\_143 (C1), FrayBell\_148 (C1), FudgeTart\_141 (C1), Gabriel\_143 (C1), Gamgam\_144 (C1), Ghost\_142 (C1), Gizmo\_148 (C1), Grasshills\_150 (C1), Grungle\_130 (C1), Guwapp\_142 (C1), HyRo\_135 (C1), I3\_148 (C1), IkeLoa\_137 (C1), InigoMontoya\_146 (C1), InterFolia\_149 (C1), Iota\_138 (C1), Issimir\_142 (C1), Izajani\_143 (C1), JPickles\_140 (C1), Janiyr\_146 (C1), JayJay\_143 (C1), Jaygup\_143 (C1), Jedediah\_146 (C1), Jemmno\_143 (C1), Jessibeth14\_143 (C1), JulietS\_138 (C1), JustHall\_141 (C1), Kamryn\_143 (C1), Kboogie\_147 (C1), Khaleesi\_142 (C1), Koguma\_141 (C1), LRRHood\_137 (C1), Latch\_144 (C1), Lee7\_141 (C1), LifeSavor\_141 (C1), LinStu\_141 (C1), Littleton\_143 (C1), Loanshark\_142 (C1), LolaVinca\_144 (C1), LordLeafolot\_147 (C1), Lukilu\_134 (C1), Maby2021\_143 (C1), Mangeria\_144 (C1), Matsumoto\_140 (C1), McGee\_145 (C1), McWolfish\_141 (C1), Megamind\_142 (C1), Melpomini\_137 (C1), MikeLiesIn\_145 (C1), Mikro\_140 (C1), MoMoMixon\_143 (C1), Momo\_143 (C1), Morizzled23\_144 (C1), Naija\_143 (C1), Napoleon13\_139 (C1), Nappy\_145 (C1), Naval22\_148 (C1), NedWong\_144 (C1), Ngannou\_140 (C1), Nidhogg\_145 (C1), NoodleTree\_150 (C1), Norm\_144 (C1), NuevoMundo\_148 (C1), ParkTD\_144 (C1), Patter\_144 (C1), Phlegm\_147 (C1), Phox\_141 (C1), Phusco\_143 (C1), Pier\_147 (C1), Pinkcreek\_134 (C1), Pio\_148 (C1), Pivoine\_143 (C1), Pleione\_146 (C1), PurduePete\_143 (C1), QBert\_137 (C1), Quasimodo\_145 (C1), Rabinovish\_143 (C1), Rahel\_142 (C1), Rizal\_138 (C1), RoMag\_138 (C1), Ronan\_137 (C1), Roots515\_142 (C1), Salacia\_147 (C1), Sauce\_143 (C1), ScottMcG\_139 (C1), Sebata\_143 (C1), Shaqato\_137 (C1), Shelob\_146 (C1), ShiaLabeouf\_142 (C1), Shifa\_133 (C1), Shnickers\_143 (C1), Shrimp\_143 (C1), SilverDipper\_145 (C1), SmallFry\_143 (C1), Spec\_139 (C1), Specks\_148 (C1), Sprinklers\_139 (C1), Spud\_142 (C1), SrishMeg2525\_142 (C1), StephanieG\_141 (C1), StubbySaigey\_147 (C1), Stubby\_136 (C1), Teardrop\_143 (C1), TinyTim\_143 (C1), Tonenili\_156 (C1), Tortoise16\_140 (C1), Trinitium\_141 (C1), Turret\_139 (C1), Tyke\_143 (C1), ValleyTerrace\_144 (C1), Wally\_142 (C1), Willis\_144 (C1), Yassified\_140 (C1), YemiJoy2021\_144 (C1), YoungMoneyMata\_145 (C1), Yucca\_142 (C1), Zalkecks\_144 (C1), Zeenon\_144 (C1), ZygoTaiga\_141 (C1),

#### Summary by clusters:

There is one cluster represented in this pham: C1

Info for manual annotations of cluster C1:

•Start number 1 was manually annotated 167 times for cluster C1.

**Gene Information:**

Gene: Ading\_143 Start: 83031, Stop: 83174, Start Num: 1

Candidate Starts for Ading\_143:

(Start: 1 @83031 has 167 MA's), (3, 83055), (5, 83070), (6, 83121), (7, 83166),

Gene: Adlitam\_144 Start: 83527, Stop: 83670, Start Num: 1

Candidate Starts for Adlitam\_144:

(Start: 1 @83527 has 167 MA's), (3, 83551), (5, 83566), (6, 83617), (7, 83662),

Gene: Alice\_136 Start: 82752, Stop: 82895, Start Num: 1

Candidate Starts for Alice\_136:

(Start: 1 @82752 has 167 MA's), (3, 82776), (5, 82791), (6, 82842), (7, 82887),

Gene: Amataga\_144 Start: 82772, Stop: 82915, Start Num: 1

Candidate Starts for Amataga\_144:

(Start: 1 @82772 has 167 MA's), (3, 82796), (5, 82811), (6, 82862), (7, 82907),

Gene: ArcherS7\_142 Start: 82611, Stop: 82754, Start Num: 1

Candidate Starts for ArcherS7\_142:

(Start: 1 @82611 has 167 MA's), (3, 82635), (5, 82650), (6, 82701), (7, 82746),

Gene: Asterius\_140 Start: 83288, Stop: 83431, Start Num: 1

Candidate Starts for Asterius\_140:

(Start: 1 @83288 has 167 MA's), (3, 83312), (5, 83327), (6, 83378), (7, 83423),

Gene: Astraea\_139 Start: 82123, Stop: 82266, Start Num: 1

Candidate Starts for Astraea\_139:

(Start: 1 @82123 has 167 MA's), (3, 82147), (5, 82162), (6, 82213), (7, 82258),

Gene: Atlantean\_143 Start: 82772, Stop: 82915, Start Num: 1

Candidate Starts for Atlantean\_143:

(Start: 1 @82772 has 167 MA's), (3, 82796), (5, 82811), (6, 82862), (7, 82907),

Gene: Audrick\_146 Start: 82751, Stop: 82894, Start Num: 1

Candidate Starts for Audrick\_146:

(Start: 1 @82751 has 167 MA's), (3, 82775), (5, 82790), (6, 82841), (7, 82886),

Gene: Ava3\_144 Start: 83196, Stop: 83339, Start Num: 1

Candidate Starts for Ava3\_144:

(Start: 1 @83196 has 167 MA's), (3, 83220), (5, 83235), (6, 83286), (7, 83331),

Gene: Babyland\_145 Start: 82850, Stop: 82993, Start Num: 1

Candidate Starts for Babyland\_145:

(Start: 1 @82850 has 167 MA's), (3, 82874), (5, 82889), (6, 82940), (7, 82985),

Gene: BackyardAgain\_140 Start: 82199, Stop: 82342, Start Num: 1  
Candidate Starts for BackyardAgain\_140:  
(Start: 1 @82199 has 167 MA's), (3, 82223), (5, 82238), (6, 82289), (7, 82334),

Gene: BadAgartude\_139 Start: 83498, Stop: 83641, Start Num: 1  
Candidate Starts for BadAgartude\_139:  
(Start: 1 @83498 has 167 MA's), (3, 83522), (5, 83537), (6, 83588), (7, 83633),

Gene: BananaFence\_142 Start: 83452, Stop: 83595, Start Num: 1  
Candidate Starts for BananaFence\_142:  
(Start: 1 @83452 has 167 MA's), (3, 83476), (5, 83491), (6, 83542), (7, 83587),

Gene: Bangla1971\_144 Start: 82741, Stop: 82884, Start Num: 1  
Candidate Starts for Bangla1971\_144:  
(Start: 1 @82741 has 167 MA's), (3, 82765), (5, 82780), (6, 82831), (7, 82876),

Gene: Basquiat\_140 Start: 82350, Stop: 82493, Start Num: 1  
Candidate Starts for Basquiat\_140:  
(Start: 1 @82350 has 167 MA's), (3, 82374), (5, 82389), (6, 82440), (7, 82485),

Gene: BeanWater\_135 Start: 83050, Stop: 83193, Start Num: 1  
Candidate Starts for BeanWater\_135:  
(Start: 1 @83050 has 167 MA's), (3, 83074), (5, 83089), (6, 83140), (7, 83185),

Gene: BigCity\_151 Start: 85722, Stop: 85865, Start Num: 1  
Candidate Starts for BigCity\_151:  
(Start: 1 @85722 has 167 MA's), (3, 85746), (5, 85761), (6, 85812), (7, 85857),

Gene: Bigswole\_146 Start: 85007, Stop: 85150, Start Num: 1  
Candidate Starts for Bigswole\_146:  
(Start: 1 @85007 has 167 MA's), (3, 85031), (5, 85046), (6, 85097), (7, 85142),

Gene: Bipolarisk\_142 Start: 83464, Stop: 83607, Start Num: 1  
Candidate Starts for Bipolarisk\_142:  
(Start: 1 @83464 has 167 MA's), (3, 83488), (5, 83503), (6, 83554), (7, 83599),

Gene: Blackbrain\_139 Start: 82235, Stop: 82378, Start Num: 1  
Candidate Starts for Blackbrain\_139:  
(Start: 1 @82235 has 167 MA's), (3, 82259), (5, 82274), (6, 82325), (7, 82370),

Gene: Blubba\_137 Start: 84597, Stop: 84740, Start Num: 1  
Candidate Starts for Blubba\_137:  
(Start: 1 @84597 has 167 MA's), (3, 84621), (5, 84636), (6, 84687), (7, 84732),

Gene: Bonray\_144 Start: 84106, Stop: 84249, Start Num: 1  
Candidate Starts for Bonray\_144:  
(Start: 1 @84106 has 167 MA's), (3, 84130), (5, 84145), (6, 84196), (7, 84241),

Gene: Bread\_142 Start: 83283, Stop: 83426, Start Num: 1  
Candidate Starts for Bread\_142:  
(Start: 1 @83283 has 167 MA's), (3, 83307), (5, 83322), (6, 83373), (7, 83418),

Gene: Breeniome\_143 Start: 82044, Stop: 82187, Start Num: 1  
Candidate Starts for Breeniome\_143:  
(Start: 1 @82044 has 167 MA's), (3, 82068), (5, 82083), (6, 82134), (7, 82179),

Gene: Burrough\_144 Start: 84195, Stop: 84338, Start Num: 1  
Candidate Starts for Burrough\_144:  
(Start: 1 @84195 has 167 MA's), (3, 84219), (5, 84234), (6, 84285), (7, 84330),

Gene: Bxz1\_141 Start: 85398, Stop: 85541, Start Num: 1  
Candidate Starts for Bxz1\_141:  
(Start: 1 @85398 has 167 MA's), (3, 85422), (5, 85437), (6, 85488), (7, 85533),

Gene: Cactojaque\_139 Start: 82342, Stop: 82485, Start Num: 1  
Candidate Starts for Cactojaque\_139:  
(Start: 1 @82342 has 167 MA's), (3, 82366), (5, 82381), (6, 82432), (7, 82477),

Gene: Cali\_139 Start: 84197, Stop: 84340, Start Num: 1  
Candidate Starts for Cali\_139:  
(Start: 1 @84197 has 167 MA's), (3, 84221), (5, 84236), (6, 84287), (7, 84332),

Gene: Cane17\_136 Start: 85059, Stop: 85202, Start Num: 1  
Candidate Starts for Cane17\_136:  
(Start: 1 @85059 has 167 MA's), (3, 85083), (5, 85098), (6, 85149), (7, 85194),

Gene: Capablanca\_146 Start: 84522, Stop: 84665, Start Num: 1  
Candidate Starts for Capablanca\_146:  
(Start: 1 @84522 has 167 MA's), (3, 84546), (5, 84561), (6, 84612), (7, 84657),

Gene: Caravan\_137 Start: 83150, Stop: 83293, Start Num: 1  
Candidate Starts for Caravan\_137:  
(Start: 1 @83150 has 167 MA's), (3, 83174), (5, 83189), (6, 83240), (7, 83285),

Gene: Catera\_139 Start: 82057, Stop: 82200, Start Num: 1  
Candidate Starts for Catera\_139:  
(Start: 1 @82057 has 167 MA's), (3, 82081), (5, 82096), (6, 82147), (7, 82192),

Gene: Chargie21\_140 Start: 82350, Stop: 82493, Start Num: 1  
Candidate Starts for Chargie21\_140:  
(Start: 1 @82350 has 167 MA's), (3, 82374), (5, 82389), (6, 82440), (7, 82485),

Gene: CharlieB\_141 Start: 83080, Stop: 83223, Start Num: 1  
Candidate Starts for CharlieB\_141:  
(Start: 1 @83080 has 167 MA's), (3, 83104), (5, 83119), (6, 83170), (7, 83215),

Gene: ChaylaJr\_139 Start: 82158, Stop: 82301, Start Num: 1  
Candidate Starts for ChaylaJr\_139:  
(Start: 1 @82158 has 167 MA's), (3, 82182), (5, 82197), (6, 82248), (7, 82293),

Gene: ChickenPhender\_140 Start: 82386, Stop: 82529, Start Num: 1  
Candidate Starts for ChickenPhender\_140:  
(Start: 1 @82386 has 167 MA's), (3, 82410), (5, 82425), (6, 82476), (7, 82521),

Gene: Chomp\_142 Start: 84061, Stop: 84204, Start Num: 1

Candidate Starts for Chomp\_142:

(Start: 1 @84061 has 167 MA's), (3, 84085), (5, 84100), (6, 84151), (7, 84196),

Gene: CindyLou\_145 Start: 84101, Stop: 84244, Start Num: 1

Candidate Starts for CindyLou\_145:

(Start: 1 @84101 has 167 MA's), (3, 84125), (5, 84140), (6, 84191), (7, 84236),

Gene: Colt\_135 Start: 84772, Stop: 84915, Start Num: 1

Candidate Starts for Colt\_135:

(Start: 1 @84772 has 167 MA's), (3, 84796), (5, 84811), (6, 84862), (7, 84907),

Gene: Concombres\_149 Start: 85956, Stop: 86099, Start Num: 1

Candidate Starts for Concombres\_149:

(Start: 1 @85956 has 167 MA's), (3, 85980), (5, 85995), (6, 86046), (7, 86091),

Gene: DTDevon\_143 Start: 83823, Stop: 83966, Start Num: 1

Candidate Starts for DTDevon\_143:

(Start: 1 @83823 has 167 MA's), (3, 83847), (5, 83862), (6, 83913), (7, 83958),

Gene: Daffodil\_148 Start: 83764, Stop: 83907, Start Num: 1

Candidate Starts for Daffodil\_148:

(Start: 1 @83764 has 167 MA's), (3, 83788), (5, 83803), (6, 83854), (7, 83899),

Gene: Dandelion\_148 Start: 85956, Stop: 86099, Start Num: 1

Candidate Starts for Dandelion\_148:

(Start: 1 @85956 has 167 MA's), (3, 85980), (5, 85995), (6, 86046), (7, 86091),

Gene: Darko\_143 Start: 83456, Stop: 83599, Start Num: 1

Candidate Starts for Darko\_143:

(Start: 1 @83456 has 167 MA's), (3, 83480), (5, 83495), (6, 83546), (7, 83591),

Gene: Delilah\_143 Start: 83918, Stop: 84061, Start Num: 1

Candidate Starts for Delilah\_143:

(Start: 1 @83918 has 167 MA's), (3, 83942), (5, 83957), (6, 84008), (7, 84053),

Gene: Delylah\_146 Start: 83457, Stop: 83600, Start Num: 1

Candidate Starts for Delylah\_146:

(Start: 1 @83457 has 167 MA's), (3, 83481), (5, 83496), (6, 83547), (7, 83592),

Gene: Derek\_142 Start: 83383, Stop: 83526, Start Num: 1

Candidate Starts for Derek\_142:

(Start: 1 @83383 has 167 MA's), (3, 83407), (5, 83422), (6, 83473), (7, 83518),

Gene: Dietrick\_135 Start: 81459, Stop: 81602, Start Num: 1

Candidate Starts for Dietrick\_135:

(Start: 1 @81459 has 167 MA's), (3, 81483), (5, 81498), (6, 81549), (7, 81594),

Gene: DirtMonster\_137 Start: 82788, Stop: 82931, Start Num: 1

Candidate Starts for DirtMonster\_137:

(Start: 1 @82788 has 167 MA's), (3, 82812), (5, 82827), (6, 82878), (7, 82923),

Gene: DrPhinkDaddy\_142 Start: 83976, Stop: 84119, Start Num: 1

Candidate Starts for DrPhinkDaddy\_142:

(Start: 1 @83976 has 167 MA's), (3, 84000), (5, 84015), (6, 84066), (7, 84111),

Gene: Drazdys\_141 Start: 82447, Stop: 82590, Start Num: 1

Candidate Starts for Drazdys\_141:

(Start: 1 @82447 has 167 MA's), (3, 82471), (5, 82486), (6, 82537), (7, 82582),

Gene: ET08\_131 Start: 82437, Stop: 82580, Start Num: 1

Candidate Starts for ET08\_131:

(Start: 1 @82437 has 167 MA's), (3, 82461), (5, 82476), (6, 82527), (7, 82572),

Gene: EasyJones\_146 Start: 83004, Stop: 83147, Start Num: 1

Candidate Starts for EasyJones\_146:

(Start: 1 @83004 has 167 MA's), (3, 83028), (5, 83043), (6, 83094), (7, 83139),

Gene: EggyFarm\_151 Start: 85722, Stop: 85865, Start Num: 1

Candidate Starts for EggyFarm\_151:

(Start: 1 @85722 has 167 MA's), (3, 85746), (5, 85761), (6, 85812), (7, 85857),

Gene: EmToTheThree\_145 Start: 84716, Stop: 84859, Start Num: 1

Candidate Starts for EmToTheThree\_145:

(Start: 1 @84716 has 167 MA's), (3, 84740), (5, 84755), (6, 84806), (7, 84851),

Gene: EmmaElysia\_144 Start: 82991, Stop: 83134, Start Num: 1

Candidate Starts for EmmaElysia\_144:

(Start: 1 @82991 has 167 MA's), (3, 83015), (5, 83030), (6, 83081), (7, 83126),

Gene: Erdmann\_143 Start: 83765, Stop: 83908, Start Num: 1

Candidate Starts for Erdmann\_143:

(Start: 1 @83765 has 167 MA's), (3, 83789), (5, 83804), (6, 83855), (7, 83900),

Gene: ErnieJ\_137 Start: 81734, Stop: 81877, Start Num: 1

Candidate Starts for ErnieJ\_137:

(Start: 1 @81734 has 167 MA's), (3, 81758), (5, 81773), (6, 81824), (7, 81869),

Gene: Essence\_140 Start: 82613, Stop: 82756, Start Num: 1

Candidate Starts for Essence\_140:

(Start: 1 @82613 has 167 MA's), (3, 82637), (5, 82652), (6, 82703), (7, 82748),

Gene: Ewok\_144 Start: 83142, Stop: 83285, Start Num: 1

Candidate Starts for Ewok\_144:

(Start: 1 @83142 has 167 MA's), (3, 83166), (5, 83181), (6, 83232), (7, 83277),

Gene: Flabslab\_138 Start: 81324, Stop: 81467, Start Num: 1

Candidate Starts for Flabslab\_138:

(Start: 1 @81324 has 167 MA's), (3, 81348), (5, 81363), (6, 81414), (7, 81459),

Gene: Fludd\_145 Start: 83194, Stop: 83337, Start Num: 1

Candidate Starts for Fludd\_145:

(Start: 1 @83194 has 167 MA's), (3, 83218), (5, 83233), (6, 83284), (7, 83329),

Gene: FoxtrotP1\_143 Start: 84925, Stop: 85068, Start Num: 1

Candidate Starts for FoxtrotP1\_143:

(Start: 1 @84925 has 167 MA's), (3, 84949), (5, 84964), (6, 85015), (7, 85060),

Gene: FrayBell\_148 Start: 84089, Stop: 84232, Start Num: 1  
Candidate Starts for FrayBell\_148:  
(Start: 1 @84089 has 167 MA's), (3, 84113), (5, 84128), (6, 84179), (7, 84224),

Gene: FudgeTart\_141 Start: 82796, Stop: 82939, Start Num: 1  
Candidate Starts for FudgeTart\_141:  
(Start: 1 @82796 has 167 MA's), (3, 82820), (5, 82835), (6, 82886), (7, 82931),

Gene: Gabriel\_143 Start: 82019, Stop: 82162, Start Num: 1  
Candidate Starts for Gabriel\_143:  
(Start: 1 @82019 has 167 MA's), (3, 82043), (5, 82058), (6, 82109), (7, 82154),

Gene: Gamgam\_144 Start: 82762, Stop: 82905, Start Num: 1  
Candidate Starts for Gamgam\_144:  
(Start: 1 @82762 has 167 MA's), (3, 82786), (5, 82801), (6, 82852), (7, 82897),

Gene: Ghost\_142 Start: 82772, Stop: 82915, Start Num: 1  
Candidate Starts for Ghost\_142:  
(Start: 1 @82772 has 167 MA's), (3, 82796), (5, 82811), (6, 82862), (7, 82907),

Gene: Gizmo\_148 Start: 85394, Stop: 85537, Start Num: 1  
Candidate Starts for Gizmo\_148:  
(Start: 1 @85394 has 167 MA's), (3, 85418), (5, 85433), (6, 85484), (7, 85529),

Gene: Grasshills\_150 Start: 85722, Stop: 85865, Start Num: 1  
Candidate Starts for Grasshills\_150:  
(Start: 1 @85722 has 167 MA's), (3, 85746), (5, 85761), (6, 85812), (7, 85857),

Gene: Grungle\_130 Start: 80037, Stop: 80180, Start Num: 1  
Candidate Starts for Grungle\_130:  
(Start: 1 @80037 has 167 MA's), (3, 80061), (5, 80076), (6, 80127), (7, 80172),

Gene: Guwapp\_142 Start: 82184, Stop: 82327, Start Num: 1  
Candidate Starts for Guwapp\_142:  
(Start: 1 @82184 has 167 MA's), (3, 82208), (5, 82223), (6, 82274), (7, 82319),

Gene: HyRo\_135 Start: 83119, Stop: 83262, Start Num: 1  
Candidate Starts for HyRo\_135:  
(Start: 1 @83119 has 167 MA's), (3, 83143), (5, 83158), (6, 83209), (7, 83254),

Gene: I3\_148 Start: 84250, Stop: 84393, Start Num: 1  
Candidate Starts for I3\_148:  
(Start: 1 @84250 has 167 MA's), (3, 84274), (5, 84289), (6, 84340), (7, 84385),

Gene: IkeLoa\_137 Start: 82670, Stop: 82813, Start Num: 1  
Candidate Starts for IkeLoa\_137:  
(Start: 1 @82670 has 167 MA's), (3, 82694), (5, 82709), (6, 82760), (7, 82805),

Gene: InigoMontoya\_146 Start: 82733, Stop: 82876, Start Num: 1  
Candidate Starts for InigoMontoya\_146:  
(Start: 1 @82733 has 167 MA's), (3, 82757), (5, 82772), (6, 82823), (7, 82868),

Gene: InterFolia\_149 Start: 85095, Stop: 85238, Start Num: 1  
Candidate Starts for InterFolia\_149:  
(Start: 1 @85095 has 167 MA's), (3, 85119), (5, 85134), (6, 85185), (7, 85230),

Gene: Iota\_138 Start: 82721, Stop: 82864, Start Num: 1  
Candidate Starts for Iota\_138:  
(Start: 1 @82721 has 167 MA's), (3, 82745), (5, 82760), (6, 82811), (7, 82856),

Gene: Issimir\_142 Start: 83729, Stop: 83872, Start Num: 1  
Candidate Starts for Issimir\_142:  
(Start: 1 @83729 has 167 MA's), (3, 83753), (5, 83768), (6, 83819), (7, 83864),

Gene: Izajani\_143 Start: 83935, Stop: 84078, Start Num: 1  
Candidate Starts for Izajani\_143:  
(Start: 1 @83935 has 167 MA's), (3, 83959), (5, 83974), (6, 84025), (7, 84070),

Gene: JPickles\_140 Start: 81524, Stop: 81667, Start Num: 1  
Candidate Starts for JPickles\_140:  
(Start: 1 @81524 has 167 MA's), (3, 81548), (5, 81563), (6, 81614), (7, 81659),

Gene: Janiyra\_146 Start: 83699, Stop: 83842, Start Num: 1  
Candidate Starts for Janiyra\_146:  
(Start: 1 @83699 has 167 MA's), (3, 83723), (5, 83738), (6, 83789), (7, 83834),

Gene: JayJay\_143 Start: 84730, Stop: 84873, Start Num: 1  
Candidate Starts for JayJay\_143:  
(Start: 1 @84730 has 167 MA's), (3, 84754), (5, 84769), (6, 84820), (7, 84865),

Gene: Jaygup\_143 Start: 83049, Stop: 83192, Start Num: 1  
Candidate Starts for Jaygup\_143:  
(Start: 1 @83049 has 167 MA's), (3, 83073), (5, 83088), (6, 83139), (7, 83184),

Gene: Jedediah\_146 Start: 83582, Stop: 83725, Start Num: 1  
Candidate Starts for Jedediah\_146:  
(Start: 1 @83582 has 167 MA's), (3, 83606), (5, 83621), (6, 83672), (7, 83717),

Gene: Jemmno\_143 Start: 83029, Stop: 83172, Start Num: 1  
Candidate Starts for Jemmno\_143:  
(Start: 1 @83029 has 167 MA's), (3, 83053), (5, 83068), (6, 83119), (7, 83164),

Gene: Jessibeth14\_143 Start: 83965, Stop: 84108, Start Num: 1  
Candidate Starts for Jessibeth14\_143:  
(Start: 1 @83965 has 167 MA's), (3, 83989), (5, 84004), (6, 84055), (7, 84100),

Gene: JulietS\_138 Start: 80916, Stop: 81059, Start Num: 1  
Candidate Starts for JulietS\_138:  
(Start: 1 @80916 has 167 MA's), (3, 80940), (5, 80955), (6, 81006), (7, 81051),

Gene: JustHall\_141 Start: 83557, Stop: 83700, Start Num: 1  
Candidate Starts for JustHall\_141:  
(Start: 1 @83557 has 167 MA's), (3, 83581), (5, 83596), (6, 83647), (7, 83692),

Gene: Kamryn\_143 Start: 84367, Stop: 84510, Start Num: 1

Candidate Starts for Kamryn\_143:

(Start: 1 @84367 has 167 MA's), (3, 84391), (5, 84406), (6, 84457), (7, 84502),

Gene: Kboogie\_147 Start: 82722, Stop: 82865, Start Num: 1

Candidate Starts for Kboogie\_147:

(Start: 1 @82722 has 167 MA's), (3, 82746), (5, 82761), (6, 82812), (7, 82857),

Gene: Khaleesi\_142 Start: 83664, Stop: 83807, Start Num: 1

Candidate Starts for Khaleesi\_142:

(Start: 1 @83664 has 167 MA's), (3, 83688), (5, 83703), (6, 83754), (7, 83799),

Gene: Koguma\_141 Start: 81603, Stop: 81746, Start Num: 1

Candidate Starts for Koguma\_141:

(Start: 1 @81603 has 167 MA's), (3, 81627), (5, 81642), (6, 81693), (7, 81738),

Gene: LRRHood\_137 Start: 83411, Stop: 83554, Start Num: 1

Candidate Starts for LRRHood\_137:

(Start: 1 @83411 has 167 MA's), (3, 83435), (5, 83450), (6, 83501), (7, 83546),

Gene: Latch\_144 Start: 82772, Stop: 82915, Start Num: 1

Candidate Starts for Latch\_144:

(Start: 1 @82772 has 167 MA's), (3, 82796), (5, 82811), (6, 82862), (7, 82907),

Gene: Lee7\_141 Start: 84289, Stop: 84432, Start Num: 1

Candidate Starts for Lee7\_141:

(Start: 1 @84289 has 167 MA's), (3, 84313), (5, 84328), (6, 84379), (7, 84424),

Gene: LifeSavor\_141 Start: 82981, Stop: 83124, Start Num: 1

Candidate Starts for LifeSavor\_141:

(Start: 1 @82981 has 167 MA's), (3, 83005), (5, 83020), (6, 83071), (7, 83116),

Gene: LinStu\_141 Start: 83616, Stop: 83759, Start Num: 1

Candidate Starts for LinStu\_141:

(Start: 1 @83616 has 167 MA's), (3, 83640), (5, 83655), (6, 83706), (7, 83751),

Gene: Littleton\_143 Start: 83101, Stop: 83244, Start Num: 1

Candidate Starts for Littleton\_143:

(Start: 1 @83101 has 167 MA's), (3, 83125), (5, 83140), (6, 83191), (7, 83236),

Gene: Loanshark\_142 Start: 83632, Stop: 83775, Start Num: 1

Candidate Starts for Loanshark\_142:

(Start: 1 @83632 has 167 MA's), (3, 83656), (5, 83671), (6, 83722), (7, 83767),

Gene: LolaVinca\_144 Start: 84379, Stop: 84522, Start Num: 1

Candidate Starts for LolaVinca\_144:

(Start: 1 @84379 has 167 MA's), (3, 84403), (5, 84418), (6, 84469), (7, 84514),

Gene: LordLeafolot\_147 Start: 84941, Stop: 85084, Start Num: 1

Candidate Starts for LordLeafolot\_147:

(Start: 1 @84941 has 167 MA's), (3, 84965), (5, 84980), (6, 85031), (7, 85076),

Gene: Lukilu\_134 Start: 84421, Stop: 84564, Start Num: 1

Candidate Starts for Lukilu\_134:

(Start: 1 @84421 has 167 MA's), (3, 84445), (5, 84460), (6, 84511), (7, 84556),

Gene: Maby2021\_143 Start: 83749, Stop: 83892, Start Num: 1

Candidate Starts for Maby2021\_143:

(Start: 1 @83749 has 167 MA's), (3, 83773), (5, 83788), (6, 83839), (7, 83884),

Gene: Mangeria\_144 Start: 84222, Stop: 84365, Start Num: 1

Candidate Starts for Mangeria\_144:

(Start: 1 @84222 has 167 MA's), (3, 84246), (5, 84261), (6, 84312), (7, 84357),

Gene: Matsumoto\_140 Start: 82609, Stop: 82752, Start Num: 1

Candidate Starts for Matsumoto\_140:

(Start: 1 @82609 has 167 MA's), (3, 82633), (5, 82648), (6, 82699), (7, 82744),

Gene: McGee\_145 Start: 82363, Stop: 82506, Start Num: 1

Candidate Starts for McGee\_145:

(Start: 1 @82363 has 167 MA's), (3, 82387), (5, 82402), (6, 82453), (7, 82498),

Gene: McWolfish\_141 Start: 83537, Stop: 83680, Start Num: 1

Candidate Starts for McWolfish\_141:

(Start: 1 @83537 has 167 MA's), (3, 83561), (5, 83576), (6, 83627), (7, 83672),

Gene: Megamind\_142 Start: 83422, Stop: 83565, Start Num: 1

Candidate Starts for Megamind\_142:

(Start: 1 @83422 has 167 MA's), (3, 83446), (5, 83461), (6, 83512), (7, 83557),

Gene: Melpomini\_137 Start: 80887, Stop: 81030, Start Num: 1

Candidate Starts for Melpomini\_137:

(Start: 1 @80887 has 167 MA's), (3, 80911), (5, 80926), (6, 80977), (7, 81022),

Gene: MikeLiesIn\_145 Start: 84182, Stop: 84325, Start Num: 1

Candidate Starts for MikeLiesIn\_145:

(Start: 1 @84182 has 167 MA's), (3, 84206), (5, 84221), (6, 84272), (7, 84317),

Gene: Mikro\_140 Start: 84991, Stop: 85134, Start Num: 1

Candidate Starts for Mikro\_140:

(Start: 1 @84991 has 167 MA's), (3, 85015), (5, 85030), (6, 85081), (7, 85126),

Gene: MoMoMixon\_143 Start: 83254, Stop: 83397, Start Num: 1

Candidate Starts for MoMoMixon\_143:

(Start: 1 @83254 has 167 MA's), (3, 83278), (5, 83293), (6, 83344), (7, 83389),

Gene: Momo\_143 Start: 82772, Stop: 82915, Start Num: 1

Candidate Starts for Momo\_143:

(Start: 1 @82772 has 167 MA's), (3, 82796), (5, 82811), (6, 82862), (7, 82907),

Gene: Morizzled23\_144 Start: 83127, Stop: 83270, Start Num: 1

Candidate Starts for Morizzled23\_144:

(Start: 1 @83127 has 167 MA's), (3, 83151), (5, 83166), (6, 83217), (7, 83262),

Gene: Naija\_143 Start: 82772, Stop: 82915, Start Num: 1

Candidate Starts for Naija\_143:

(Start: 1 @82772 has 167 MA's), (3, 82796), (5, 82811), (6, 82862), (7, 82907),

Gene: Napoleon13\_139 Start: 81325, Stop: 81468, Start Num: 1  
Candidate Starts for Napoleon13\_139:  
(Start: 1 @81325 has 167 MA's), (3, 81349), (5, 81364), (6, 81415), (7, 81460),

Gene: Nappy\_145 Start: 84688, Stop: 84831, Start Num: 1  
Candidate Starts for Nappy\_145:  
(Start: 1 @84688 has 167 MA's), (3, 84712), (5, 84727), (6, 84778), (7, 84823),

Gene: Naval22\_148 Start: 85221, Stop: 85364, Start Num: 1  
Candidate Starts for Naval22\_148:  
(Start: 1 @85221 has 167 MA's), (3, 85245), (5, 85260), (6, 85311), (7, 85356),

Gene: NedWong\_144 Start: 83756, Stop: 83899, Start Num: 1  
Candidate Starts for NedWong\_144:  
(Start: 1 @83756 has 167 MA's), (3, 83780), (5, 83795), (6, 83846), (7, 83891),

Gene: Ngannou\_140 Start: 81754, Stop: 81897, Start Num: 1  
Candidate Starts for Ngannou\_140:  
(Start: 1 @81754 has 167 MA's), (3, 81778), (5, 81793), (6, 81844), (7, 81889),

Gene: Nidhogg\_145 Start: 83978, Stop: 84121, Start Num: 1  
Candidate Starts for Nidhogg\_145:  
(Start: 1 @83978 has 167 MA's), (3, 84002), (5, 84017), (6, 84068), (7, 84113),

Gene: NoodleTree\_150 Start: 83848, Stop: 83991, Start Num: 1  
Candidate Starts for NoodleTree\_150:  
(Start: 1 @83848 has 167 MA's), (3, 83872), (5, 83887), (6, 83938), (7, 83983),

Gene: Norm\_144 Start: 84450, Stop: 84593, Start Num: 1  
Candidate Starts for Norm\_144:  
(Start: 1 @84450 has 167 MA's), (3, 84474), (5, 84489), (6, 84540), (7, 84585),

Gene: NuevoMundo\_148 Start: 86030, Stop: 86173, Start Num: 1  
Candidate Starts for NuevoMundo\_148:  
(Start: 1 @86030 has 167 MA's), (3, 86054), (5, 86069), (6, 86120), (7, 86165),

Gene: ParkTD\_144 Start: 83761, Stop: 83904, Start Num: 1  
Candidate Starts for ParkTD\_144:  
(Start: 1 @83761 has 167 MA's), (3, 83785), (5, 83800), (6, 83851), (7, 83896),

Gene: Patter\_144 Start: 82789, Stop: 82932, Start Num: 1  
Candidate Starts for Patter\_144:  
(Start: 1 @82789 has 167 MA's), (3, 82813), (5, 82828), (6, 82879), (7, 82924),

Gene: Phlegm\_147 Start: 82772, Stop: 82915, Start Num: 1  
Candidate Starts for Phlegm\_147:  
(Start: 1 @82772 has 167 MA's), (3, 82796), (5, 82811), (6, 82862), (7, 82907),

Gene: Phox\_141 Start: 84445, Stop: 84588, Start Num: 1  
Candidate Starts for Phox\_141:  
(Start: 1 @84445 has 167 MA's), (3, 84469), (5, 84484), (6, 84535), (7, 84580),

Gene: Phusco\_143 Start: 83048, Stop: 83191, Start Num: 1  
Candidate Starts for Phusco\_143:  
(Start: 1 @83048 has 167 MA's), (3, 83072), (5, 83087), (6, 83138), (7, 83183),

Gene: Pier\_147 Start: 86038, Stop: 86181, Start Num: 1  
Candidate Starts for Pier\_147:  
(Start: 1 @86038 has 167 MA's), (3, 86062), (5, 86077), (6, 86128), (7, 86173),

Gene: Pinkcreek\_134 Start: 81382, Stop: 81525, Start Num: 1  
Candidate Starts for Pinkcreek\_134:  
(Start: 1 @81382 has 167 MA's), (3, 81406), (5, 81421), (6, 81472), (7, 81517),

Gene: Pio\_148 Start: 86054, Stop: 86197, Start Num: 1  
Candidate Starts for Pio\_148:  
(Start: 1 @86054 has 167 MA's), (3, 86078), (5, 86093), (6, 86144), (7, 86189),

Gene: Pivoine\_143 Start: 82772, Stop: 82915, Start Num: 1  
Candidate Starts for Pivoine\_143:  
(Start: 1 @82772 has 167 MA's), (3, 82796), (5, 82811), (6, 82862), (7, 82907),

Gene: Pleione\_146 Start: 83928, Stop: 84071, Start Num: 1  
Candidate Starts for Pleione\_146:  
(Start: 1 @83928 has 167 MA's), (3, 83952), (5, 83967), (6, 84018), (7, 84063),

Gene: PurduePete\_143 Start: 84175, Stop: 84318, Start Num: 1  
Candidate Starts for PurduePete\_143:  
(Start: 1 @84175 has 167 MA's), (3, 84199), (5, 84214), (6, 84265), (7, 84310),

Gene: QBert\_137 Start: 82765, Stop: 82908, Start Num: 1  
Candidate Starts for QBert\_137:  
(Start: 1 @82765 has 167 MA's), (3, 82789), (5, 82804), (6, 82855), (7, 82900),

Gene: Quasimodo\_145 Start: 84189, Stop: 84332, Start Num: 1  
Candidate Starts for Quasimodo\_145:  
(Start: 1 @84189 has 167 MA's), (3, 84213), (5, 84228), (6, 84279), (7, 84324),

Gene: Rabinovish\_143 Start: 84777, Stop: 84920, Start Num: 1  
Candidate Starts for Rabinovish\_143:  
(Start: 1 @84777 has 167 MA's), (3, 84801), (5, 84816), (6, 84867), (7, 84912),

Gene: Rahel\_142 Start: 82650, Stop: 82793, Start Num: 1  
Candidate Starts for Rahel\_142:  
(Start: 1 @82650 has 167 MA's), (3, 82674), (5, 82689), (6, 82740), (7, 82785),

Gene: Rizal\_138 Start: 81798, Stop: 81941, Start Num: 1  
Candidate Starts for Rizal\_138:  
(Start: 1 @81798 has 167 MA's), (3, 81822), (5, 81837), (6, 81888), (7, 81933),

Gene: RoMag\_138 Start: 82962, Stop: 83105, Start Num: 1  
Candidate Starts for RoMag\_138:  
(Start: 1 @82962 has 167 MA's), (3, 82986), (5, 83001), (6, 83052), (7, 83097),

Gene: Ronan\_137 Start: 80911, Stop: 81054, Start Num: 1

Candidate Starts for Ronan\_137:

(Start: 1 @80911 has 167 MA's), (3, 80935), (5, 80950), (6, 81001), (7, 81046),

Gene: Roots515\_142 Start: 84427, Stop: 84570, Start Num: 1

Candidate Starts for Roots515\_142:

(Start: 1 @84427 has 167 MA's), (3, 84451), (5, 84466), (6, 84517), (7, 84562),

Gene: Salacia\_147 Start: 84089, Stop: 84232, Start Num: 1

Candidate Starts for Salacia\_147:

(Start: 1 @84089 has 167 MA's), (3, 84113), (5, 84128), (6, 84179), (7, 84224),

Gene: Sauce\_143 Start: 82705, Stop: 82848, Start Num: 1

Candidate Starts for Sauce\_143:

(Start: 1 @82705 has 167 MA's), (3, 82729), (5, 82744), (6, 82795), (7, 82840),

Gene: ScottMcG\_139 Start: 82711, Stop: 82854, Start Num: 1

Candidate Starts for ScottMcG\_139:

(Start: 1 @82711 has 167 MA's), (3, 82735), (5, 82750), (6, 82801), (7, 82846),

Gene: Sebata\_143 Start: 84174, Stop: 84317, Start Num: 1

Candidate Starts for Sebata\_143:

(Start: 1 @84174 has 167 MA's), (3, 84198), (5, 84213), (6, 84264), (7, 84309),

Gene: Shaqnato\_137 Start: 82159, Stop: 82302, Start Num: 1

Candidate Starts for Shaqnato\_137:

(Start: 1 @82159 has 167 MA's), (3, 82183), (5, 82198), (6, 82249), (7, 82294),

Gene: Shelob\_146 Start: 84961, Stop: 85104, Start Num: 1

Candidate Starts for Shelob\_146:

(Start: 1 @84961 has 167 MA's), (3, 84985), (5, 85000), (6, 85051), (7, 85096),

Gene: ShiaLabeouf\_142 Start: 83085, Stop: 83228, Start Num: 1

Candidate Starts for ShiaLabeouf\_142:

(Start: 1 @83085 has 167 MA's), (3, 83109), (5, 83124), (6, 83175), (7, 83220),

Gene: Shifa\_133 Start: 82385, Stop: 82528, Start Num: 1

Candidate Starts for Shifa\_133:

(Start: 1 @82385 has 167 MA's), (3, 82409), (5, 82424), (6, 82475), (7, 82520),

Gene: Shnickers\_143 Start: 83049, Stop: 83192, Start Num: 1

Candidate Starts for Shnickers\_143:

(Start: 1 @83049 has 167 MA's), (3, 83073), (5, 83088), (6, 83139), (7, 83184),

Gene: Shrimp\_143 Start: 83768, Stop: 83911, Start Num: 1

Candidate Starts for Shrimp\_143:

(Start: 1 @83768 has 167 MA's), (3, 83792), (5, 83807), (6, 83858), (7, 83903),

Gene: SilverDipper\_145 Start: 82772, Stop: 82915, Start Num: 1

Candidate Starts for SilverDipper\_145:

(Start: 1 @82772 has 167 MA's), (3, 82796), (5, 82811), (6, 82862), (7, 82907),

Gene: SmallFry\_143 Start: 82274, Stop: 82417, Start Num: 1

Candidate Starts for SmallFry\_143:

(Start: 1 @82274 has 167 MA's), (3, 82298), (5, 82313), (6, 82364), (7, 82409),

Gene: Spec\_139 Start: 82814, Stop: 82957, Start Num: 1

Candidate Starts for Spec\_139:

(Start: 1 @82814 has 167 MA's), (3, 82838), (5, 82853), (6, 82904), (7, 82949),

Gene: Specks\_148 Start: 84939, Stop: 85082, Start Num: 1

Candidate Starts for Specks\_148:

(Start: 1 @84939 has 167 MA's), (3, 84963), (5, 84978), (6, 85029), (7, 85074),

Gene: Sprinklers\_139 Start: 82330, Stop: 82473, Start Num: 1

Candidate Starts for Sprinklers\_139:

(Start: 1 @82330 has 167 MA's), (3, 82354), (5, 82369), (6, 82420), (7, 82465),

Gene: Spud\_142 Start: 83835, Stop: 83978, Start Num: 1

Candidate Starts for Spud\_142:

(Start: 1 @83835 has 167 MA's), (3, 83859), (5, 83874), (6, 83925), (7, 83970),

Gene: SrishMeg2525\_142 Start: 83858, Stop: 84001, Start Num: 1

Candidate Starts for SrishMeg2525\_142:

(Start: 1 @83858 has 167 MA's), (3, 83882), (5, 83897), (6, 83948), (7, 83993),

Gene: StephanieG\_141 Start: 84667, Stop: 84810, Start Num: 1

Candidate Starts for StephanieG\_141:

(Start: 1 @84667 has 167 MA's), (3, 84691), (5, 84706), (6, 84757), (7, 84802),

Gene: Stubby\_136 Start: 82297, Stop: 82440, Start Num: 1

Candidate Starts for Stubby\_136:

(Start: 1 @82297 has 167 MA's), (3, 82321), (5, 82336), (6, 82387), (7, 82432),

Gene: StubbySaigey\_147 Start: 82932, Stop: 83075, Start Num: 1

Candidate Starts for StubbySaigey\_147:

(Start: 1 @82932 has 167 MA's), (3, 82956), (5, 82971), (6, 83022), (7, 83067),

Gene: Teardrop\_143 Start: 82667, Stop: 82810, Start Num: 1

Candidate Starts for Teardrop\_143:

(Start: 1 @82667 has 167 MA's), (3, 82691), (5, 82706), (6, 82757), (7, 82802),

Gene: TinyTim\_143 Start: 83515, Stop: 83658, Start Num: 1

Candidate Starts for TinyTim\_143:

(Start: 1 @83515 has 167 MA's), (3, 83539), (5, 83554), (6, 83605), (7, 83650),

Gene: Tonenili\_156 Start: 86314, Stop: 86457, Start Num: 1

Candidate Starts for Tonenili\_156:

(Start: 1 @86314 has 167 MA's), (2, 86323), (4, 86350), (5, 86353), (6, 86404), (7, 86449),

Gene: Tortoise16\_140 Start: 82874, Stop: 83017, Start Num: 1

Candidate Starts for Tortoise16\_140:

(Start: 1 @82874 has 167 MA's), (3, 82898), (5, 82913), (6, 82964), (7, 83009),

Gene: Trinitium\_141 Start: 82698, Stop: 82841, Start Num: 1

Candidate Starts for Trinitium\_141:

(Start: 1 @82698 has 167 MA's), (3, 82722), (5, 82737), (6, 82788), (7, 82833),

Gene: Turret\_139 Start: 82143, Stop: 82286, Start Num: 1

Candidate Starts for Turret\_139:

(Start: 1 @82143 has 167 MA's), (3, 82167), (5, 82182), (6, 82233), (7, 82278),

Gene: Tyke\_143 Start: 84170, Stop: 84313, Start Num: 1

Candidate Starts for Tyke\_143:

(Start: 1 @84170 has 167 MA's), (3, 84194), (5, 84209), (6, 84260), (7, 84305),

Gene: ValleyTerrace\_144 Start: 82772, Stop: 82915, Start Num: 1

Candidate Starts for ValleyTerrace\_144:

(Start: 1 @82772 has 167 MA's), (3, 82796), (5, 82811), (6, 82862), (7, 82907),

Gene: Wally\_142 Start: 82293, Stop: 82436, Start Num: 1

Candidate Starts for Wally\_142:

(Start: 1 @82293 has 167 MA's), (3, 82317), (5, 82332), (6, 82383), (7, 82428),

Gene: Willis\_144 Start: 83660, Stop: 83803, Start Num: 1

Candidate Starts for Willis\_144:

(Start: 1 @83660 has 167 MA's), (3, 83684), (5, 83699), (6, 83750), (7, 83795),

Gene: Yassified\_140 Start: 82370, Stop: 82513, Start Num: 1

Candidate Starts for Yassified\_140:

(Start: 1 @82370 has 167 MA's), (3, 82394), (5, 82409), (6, 82460), (7, 82505),

Gene: YemiJoy2021\_144 Start: 83753, Stop: 83896, Start Num: 1

Candidate Starts for YemiJoy2021\_144:

(Start: 1 @83753 has 167 MA's), (3, 83777), (5, 83792), (6, 83843), (7, 83888),

Gene: YoungMoneyMata\_145 Start: 83398, Stop: 83541, Start Num: 1

Candidate Starts for YoungMoneyMata\_145:

(Start: 1 @83398 has 167 MA's), (3, 83422), (5, 83437), (6, 83488), (7, 83533),

Gene: Yucca\_142 Start: 83435, Stop: 83578, Start Num: 1

Candidate Starts for Yucca\_142:

(Start: 1 @83435 has 167 MA's), (3, 83459), (5, 83474), (6, 83525), (7, 83570),

Gene: Zalkecks\_144 Start: 83436, Stop: 83579, Start Num: 1

Candidate Starts for Zalkecks\_144:

(Start: 1 @83436 has 167 MA's), (3, 83460), (5, 83475), (6, 83526), (7, 83571),

Gene: Zeenon\_144 Start: 83521, Stop: 83664, Start Num: 1

Candidate Starts for Zeenon\_144:

(Start: 1 @83521 has 167 MA's), (3, 83545), (5, 83560), (6, 83611), (7, 83656),

Gene: ZygoTaiga\_141 Start: 84680, Stop: 84823, Start Num: 1

Candidate Starts for ZygoTaiga\_141:

(Start: 1 @84680 has 167 MA's), (3, 84704), (5, 84719), (6, 84770), (7, 84815),