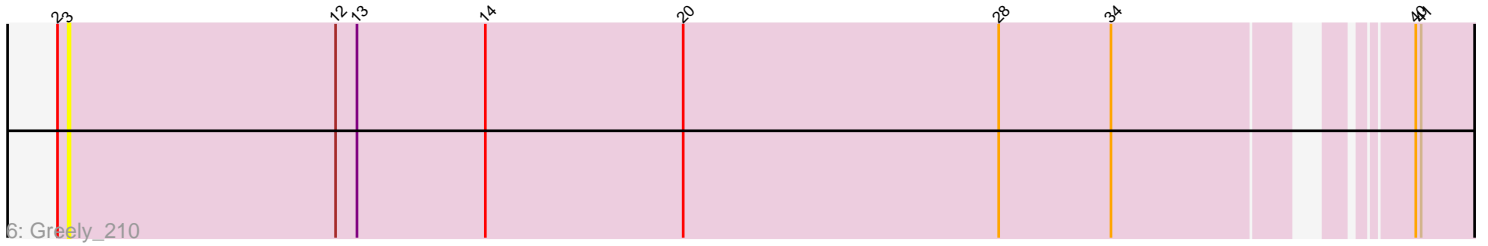
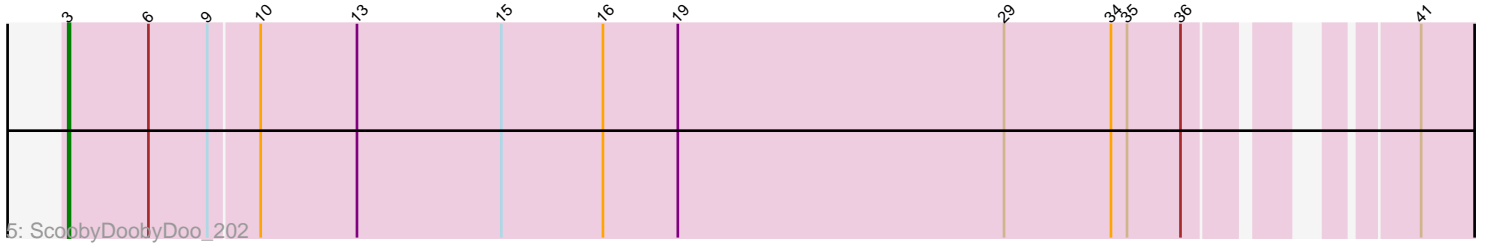
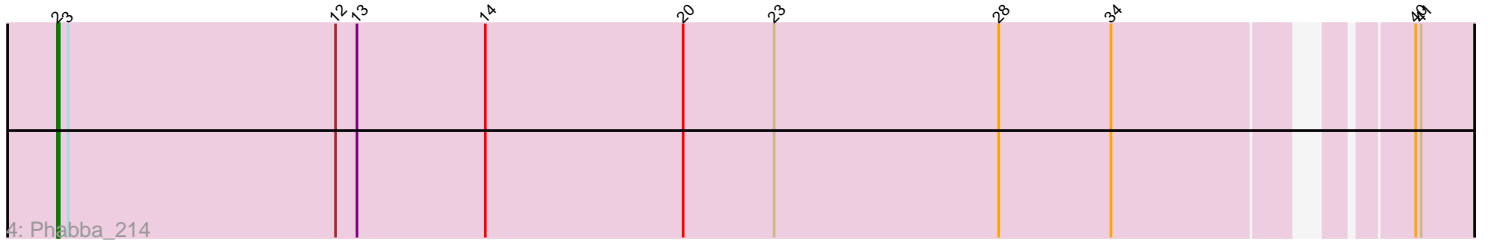
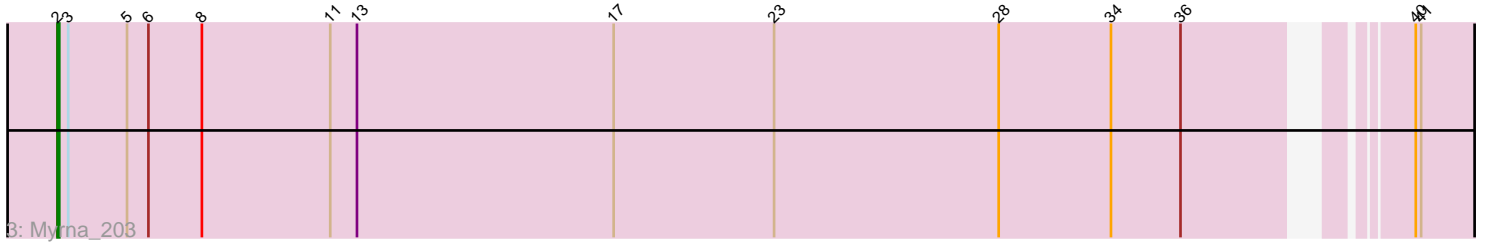
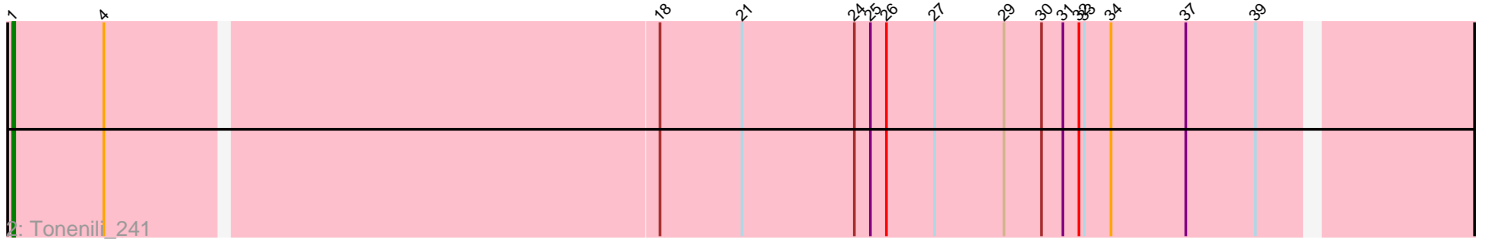
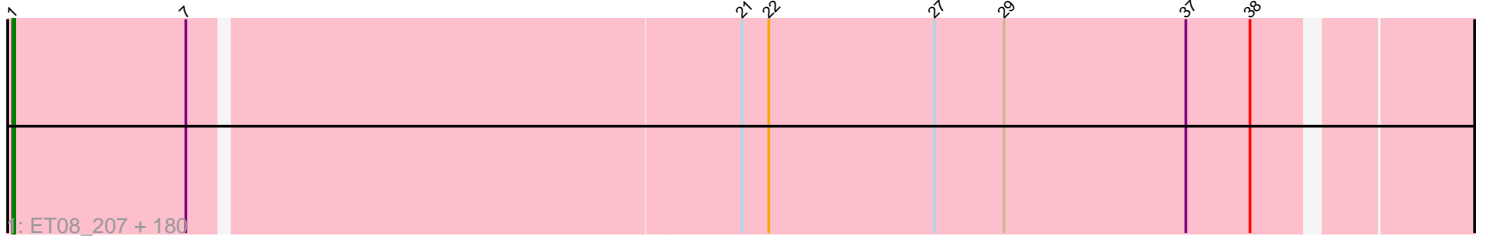


# Pham 157616



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 157616 Report

This analysis was run 04/13/24 on database version 558.

Pham number 157616 has 186 members, 16 are drafts.

Phages represented in each track:

- Track 1 : ET08\_207, Drazdys\_217, Naija\_220, SrishMeg2525\_216, Loanshark\_216, Nidhogg\_220, Khaleesi\_218, Essence\_216, JustHall\_213, Ghost\_219, Caravan\_210, I3\_229, Rizal\_211, Willis\_220, CindyLou\_220, Naval22\_224, YemiJoy2021\_220, Bipolarisk\_217, SilverDipper\_223, Gabriel\_222, Spud\_213, ValleyTerrace\_220, Colt\_210, BananaFence\_216, CharlieB\_213, LRRHood\_212, Jessibeth14\_219, Grasshills\_227, Catera\_211, Stubby\_203, ChaylaJr\_217, ErnieJ\_212, Sebata\_220, ArcherS7\_219, ShiaLabeouf\_216, Delylah\_221, BadAgartude\_213, DTDevon\_221, Ewok\_218, Dietrick\_208, Ava3\_218, Shelob\_220, Gamgam\_220, BeanWater\_211, Melpomini\_214, Patter\_220, Roots515\_221, Kboogie\_223, EasyJones\_222, Capablanca\_224, QBert\_211, Cali\_212, LolaVinca\_217, MoMoMixon\_217, Megamind\_216, Breeniome\_218, Erdmann\_220, Bigswole\_224, Yassified\_216, Issimir\_215, Momo\_220, NedWong\_218, Spec\_214, Bread\_214, Delilah\_217, Pinkcreek\_203, ZygoTaiga\_216, Lukilu\_210, Latch\_219, Ngannou\_216, Grungle\_203, McGee\_218, Amataga\_220, Maby2021\_219, Rabinovish\_212, Mangeria\_220, ChickenPhender\_215, BackyardAgain\_215, Shnickers\_217, Shifa\_196, Blubba\_215, Ading\_220, Burrough\_221, EggyFarm\_228, StephanieG\_215, Astraea\_213, JayJay\_217, LordLeafolot\_221, Quasimodo\_221, Sprinklers\_217, Alice\_206, TinyTim\_217, SmallFry\_219, Phusco\_217, Fludd\_219, Jaygup\_215, Jedediah\_219, Bonray\_221, Shaqnato\_210, Asterius\_215, Atlantean\_219, Specks\_223, Basquiat\_216, Pier\_220, Shrimp\_221, Rahel\_220, Zeenon\_221, Trinitium\_215, Phlegm\_223, Napoleon13\_216, YoungMoneyMata\_218, Sauce\_215, Pleione\_223, DrPhinkDaddy\_216, Derek\_216, ScottMcG\_213, Chergie21\_216, FrayBell\_222, Blackbrain\_216, Nappy\_220, NoodleTree\_225, Teardrop\_216, Pivoine\_220, Bangla1971\_219, ParkTD\_218, Chomp\_218, Ronan\_215, Phox\_220, Flabslab\_214, JulietS\_212, MikeLiesIn\_221, Tortoise16\_217, Morizzled23\_216, JPickles\_215, Jemmno\_218, DirtMonster\_212, Janiyra\_222, Turret\_212, Cane17\_210, EmmaElysia\_223, Dandelion\_227, LifeSavor\_218, PurduePete\_219, RoMag\_214, Bxz1\_209, Izajani\_217, Wally\_217, Mikro\_215, Babyland\_222, Lee7\_219, Adlitam\_218, Gizmo\_225, Guwapp\_214, Tyke\_217, Zalkecks\_218, Koguma\_218, Pio\_227, NuevoMundo\_222, IkeLoa\_211, Iota\_214, Yucca\_219, Salacia\_219, StubbySaigey\_224, Kamryn\_218, Norm\_219, InigoMontoya\_222, Littleton\_222, Darko\_218, Matsumoto\_218, Concombre\_224, LinStu\_218, Daffodil\_224, Audrick\_221, InterFolia\_222, Cactojaque\_214, HyRo\_207, McWolfish\_216, FoxtrotP1\_217, FudgeTart\_214, EmToTheThree\_219, BigCity\_228
- Track 2 : Tonenili\_241
- Track 3 : Myrna\_203
- Track 4 : Phabba\_214

- Track 5 : ScoobyDoobyDoo\_202
- Track 6 : Greely\_210

**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 170 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Ading\_220, Adlitam\_218, Alice\_206, Amataga\_220, ArcherS7\_219, Asterius\_215, Astraea\_213, Atlantean\_219, Audrick\_221, Ava3\_218, Babyland\_222, BackyardAgain\_215, BadAgartude\_213, BananaFence\_216, Bangla1971\_219, Basquiat\_216, BeanWater\_211, BigCity\_228, Bigswole\_224, Bipolarisk\_217, Blackbrain\_216, Blubba\_215, Bonray\_221, Bread\_214, Breeniome\_218, Burrough\_221, Bxz1\_209, Cactojaque\_214, Cali\_212, Cane17\_210, Capablanca\_224, Caravan\_210, Catera\_211, Chargie21\_216, CharlieB\_213, ChaylaJr\_217, ChickenPhender\_215, Chomp\_218, CindyLou\_220, Colt\_210, Concombre\_224, DTDevon\_221, Daffodil\_224, Dandelion\_227, Darko\_218, Delilah\_217, Delylah\_221, Derek\_216, Dietrick\_208, DirtMonster\_212, DrPhinkDaddy\_216, Drazdys\_217, ET08\_207, EasyJones\_222, EggyFarm\_228, EmToTheThree\_219, EmmaElysia\_223, Erdmann\_220, ErnieJ\_212, Essence\_216, Ewok\_218, Flabslab\_214, Fludd\_219, FoxtrotP1\_217, FrayBell\_222, FudgeTart\_214, Gabriel\_222, Gangam\_220, Ghost\_219, Gizmo\_225, Grasshills\_227, Grungle\_203, Guwapp\_214, HyRo\_207, I3\_229, IkeLoa\_211, InigoMontoya\_222, InterFolia\_222, Iota\_214, Issimir\_215, Izajani\_217, JPickles\_215, Janiyra\_222, JayJay\_217, Jaygup\_215, Jedediah\_219, Jemmno\_218, Jessibeth14\_219, JulietS\_212, JustHall\_213, Kamryn\_218, Kboogie\_223, Khaleesi\_218, Koguma\_218, LRRHood\_212, Latch\_219, Lee7\_219, LifeSavor\_218, LinStu\_218, Littleton\_222, Loanshark\_216, LolaVinca\_217, LordLeafolot\_221, Lukilu\_210, Maby2021\_219, Mangeria\_220, Matsumoto\_218, McGee\_218, McWolfish\_216, Megamind\_216, Melpomini\_214, MikeLiesIn\_221, Mikro\_215, MoMoMixon\_217, Momo\_220, Morizzled23\_216, Naija\_220, Napoleon13\_216, Nappy\_220, Naval22\_224, NedWong\_218, Ngannou\_216, Nidhogg\_220, NoodleTree\_225, Norm\_219, NuevoMundo\_222, ParkTD\_218, Patter\_220, Phlegm\_223, Phox\_220, Phusco\_217, Pier\_220, Pinkcreek\_203, Pio\_227, Pivoine\_220, Pleione\_223, PurduePete\_219, QBert\_211, Quasimodo\_221, Rabinovish\_212, Rahel\_220, Rizal\_211, RoMag\_214, Ronan\_215, Roots515\_221, Salacia\_219, Sauce\_215, ScottMcG\_213, Sebata\_220, Shaqnato\_210, Shelob\_220, ShiaLabeouf\_216, Shifa\_196, Shnickers\_217, Shrimp\_221, SilverDipper\_223, SmallFry\_219, Spec\_214, Specks\_223, Sprinklers\_217, Spud\_213, SrishMeg2525\_216, StephanieG\_215, StubbySaigey\_224, Stubby\_203, Teardrop\_216, TinyTim\_217, Tonenili\_241, Tortoise16\_217, Trinitium\_215, Turret\_212, Tyke\_217, ValleyTerrace\_220, Wally\_217, Willis\_220, Yassified\_216, YemiJoy2021\_220, YoungMoneyMata\_218, Yucca\_219, Zalkecks\_218, Zeenon\_221, ZygoTaiga\_216,

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

- 

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

- Greely\_210, Myrna\_203, Phabba\_214, ScoobyDoobyDoo\_202,

## Summary by start number:

Start 1:

- Found in 182 of 186 ( 97.8% ) of genes in pham
- Manual Annotations of this start: 167 of 170
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ading\_220 (C1), Adlitam\_218 (C1), Alice\_206 (C1), Amataga\_220 (C1), ArcherS7\_219 (C1), Asterius\_215 (C1), Astraea\_213 (C1), Atlantean\_219 (C1), Audrick\_221 (C1), Ava3\_218 (C1), Babyland\_222 (C1), BackyardAgain\_215 (C1), BadAgartude\_213 (C1), BananaFence\_216 (C1), Bangla1971\_219 (C1), Basquiat\_216 (C1), BeanWater\_211 (C1), BigCity\_228 (C1), Bigswole\_224 (C1), Bipolarisk\_217 (C1), Blackbrain\_216 (C1), Blubba\_215 (C1), Bonray\_221 (C1), Bread\_214 (C1), Breeniome\_218 (C1), Burrough\_221 (C1), Bxz1\_209 (C1), Cactojaque\_214 (C1), Cali\_212 (C1), Cane17\_210 (C1), Capablanca\_224 (C1), Caravan\_210 (C1), Catera\_211 (C1), Chargie21\_216 (C1), CharlieB\_213 (C1), ChaylaJr\_217 (C1), ChickenPhender\_215 (C1), Chomp\_218 (C1), CindyLou\_220 (C1), Colt\_210 (C1), Concombres\_224 (C1), DTDevon\_221 (C1), Daffodil\_224 (C1), Dandelion\_227 (C1), Darko\_218 (C1), Delilah\_217 (C1), Delylah\_221 (C1), Derek\_216 (C1), Dietrick\_208 (C1), DirtMonster\_212 (C1), DrPhinkDaddy\_216 (C1), Drazdys\_217 (C1), ET08\_207 (C1), EasyJones\_222 (C1), EggyFarm\_228 (C1), EmToTheThree\_219 (C1), EmmaElysia\_223 (C1), Erdmann\_220 (C1), ErnieJ\_212 (C1), Essence\_216 (C1), Ewok\_218 (C1), Flabslab\_214 (C1), Fludd\_219 (C1), FoxtrotP1\_217 (C1), FrayBell\_222 (C1), FudgeTart\_214 (C1), Gabriel\_222 (C1), Gamgam\_220 (C1), Ghost\_219 (C1), Gizmo\_225 (C1), Grasshills\_227 (C1), Grungle\_203 (C1), Guwapp\_214 (C1), HyRo\_207 (C1), I3\_229 (C1), IkeLoa\_211 (C1), InigoMontoya\_222 (C1), InterFolia\_222 (C1), Iota\_214 (C1), Issimir\_215 (C1), Izajani\_217 (C1), JPickles\_215 (C1), Janiyr\_222 (C1), JayJay\_217 (C1), Jaygup\_215 (C1), Jedediah\_219 (C1), Jemmno\_218 (C1), Jessibeth14\_219 (C1), JulietS\_212 (C1), JustHall\_213 (C1), Kamryn\_218 (C1), Kboogie\_223 (C1), Khaleesi\_218 (C1), Koguma\_218 (C1), LRRHood\_212 (C1), Latch\_219 (C1), Lee7\_219 (C1), LifeSavor\_218 (C1), LinStu\_218 (C1), Littleton\_222 (C1), Loanshark\_216 (C1), LolaVinca\_217 (C1), LordLeafolot\_221 (C1), Lukilu\_210 (C1), Maby2021\_219 (C1), Mangeria\_220 (C1), Matsumoto\_218 (C1), McGee\_218 (C1), McWolfish\_216 (C1), Megamind\_216 (C1), Melpomini\_214 (C1), MikeLiesIn\_221 (C1), Mikro\_215 (C1), MoMoMixon\_217 (C1), Momo\_220 (C1), Morizzled23\_216 (C1), Naija\_220 (C1), Napoleon13\_216 (C1), Nappy\_220 (C1), Naval22\_224 (C1), NedWong\_218 (C1), Ngannou\_216 (C1), Nidhogg\_220 (C1), NoodleTree\_225 (C1), Norm\_219 (C1), NuevoMundo\_222 (C1), ParkTD\_218 (C1), Patter\_220 (C1), Phlegm\_223 (C1), Phox\_220 (C1), Phusco\_217 (C1), Pier\_220 (C1), Pinkcreek\_203 (C1), Pio\_227 (C1), Pivoine\_220 (C1), Pleione\_223 (C1), PurduePete\_219 (C1), QBert\_211 (C1), Quasimodo\_221 (C1), Rabinovish\_212 (C1), Rahel\_220 (C1), Rizal\_211 (C1), RoMag\_214 (C1), Ronan\_215 (C1), Roots515\_221 (C1), Salacia\_219 (C1), Sauce\_215 (C1), ScottMcG\_213 (C1), Sebata\_220 (C1), Shaqato\_210 (C1), Shelob\_220 (C1), ShiaLabeouf\_216 (C1), Shifa\_196 (C1), Shnickers\_217 (C1), Shrimp\_221 (C1), SilverDipper\_223 (C1), SmallFry\_219 (C1), Spec\_214 (C1), Specks\_223 (C1), Sprinklers\_217 (C1), Spud\_213 (C1), SrishMeg2525\_216 (C1), StephanieG\_215 (C1), StubbySaigey\_224 (C1), Stubby\_203 (C1), Teardrop\_216 (C1), TinyTim\_217 (C1), Tonenili\_241 (C1), Tortoise16\_217 (C1), Trinitium\_215 (C1), Turret\_212 (C1), Tyke\_217 (C1), ValleyTerrace\_220 (C1), Wally\_217 (C1), Willis\_220 (C1), Yassified\_216 (C1), YemiJoy2021\_220 (C1), YoungMoneyMata\_218 (C1), Yucca\_219 (C1),

Zalkecks\_218 (C1), Zeenon\_221 (C1), ZygoTaiga\_216 (C1),

Start 2:

- Found in 3 of 186 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 2 of 170
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Myrna\_203 (C2), Phabba\_214 (C2),

Start 3:

- Found in 4 of 186 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 1 of 170
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Greely\_210 (C2), ScoobyDoobyDoo\_202 (C2),

### **Summary by clusters:**

There are 2 clusters represented in this pham: C2, C1,

Info for manual annotations of cluster C1:

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

Info for manual annotations of cluster C2:

- Start number 2 was manually annotated 2 times for cluster C2.
- Start number 3 was manually annotated 1 time for cluster C2.

### **Gene Information:**

Gene: Ading\_220 Start: 123510, Stop: 124319, Start Num: 1

Candidate Starts for Ading\_220:

(Start: 1 @123510 has 167 MA's), (7, 123606), (21, 123906), (22, 123921), (27, 124014), (29, 124053), (37, 124155), (38, 124191),

Gene: Adlitam\_218 Start: 122114, Stop: 122923, Start Num: 1

Candidate Starts for Adlitam\_218:

(Start: 1 @122114 has 167 MA's), (7, 122210), (21, 122510), (22, 122525), (27, 122618), (29, 122657), (37, 122759), (38, 122795),

Gene: Alice\_206 Start: 121089, Stop: 121886, Start Num: 1

Candidate Starts for Alice\_206:

(Start: 1 @121089 has 167 MA's), (7, 121185), (21, 121485), (22, 121500), (27, 121593), (29, 121632), (37, 121734), (38, 121770),

Gene: Amataga\_220 Start: 121926, Stop: 122735, Start Num: 1

Candidate Starts for Amataga\_220:

(Start: 1 @121926 has 167 MA's), (7, 122022), (21, 122322), (22, 122337), (27, 122430), (29, 122469), (37, 122571), (38, 122607),

Gene: ArcherS7\_219 Start: 122968, Stop: 123777, Start Num: 1

Candidate Starts for ArcherS7\_219:

(Start: 1 @122968 has 167 MA's), (7, 123064), (21, 123364), (22, 123379), (27, 123472), (29, 123511), (37, 123613), (38, 123649),

Gene: Asterius\_215 Start: 122335, Stop: 123144, Start Num: 1

Candidate Starts for Asterius\_215:

(Start: 1 @122335 has 167 MA's), (7, 122431), (21, 122731), (22, 122746), (27, 122839), (29, 122878), (37, 122980), (38, 123016),

Gene: Astraea\_213 Start: 121530, Stop: 122339, Start Num: 1

Candidate Starts for Astraea\_213:

(Start: 1 @121530 has 167 MA's), (7, 121626), (21, 121926), (22, 121941), (27, 122034), (29, 122073), (37, 122175), (38, 122211),

Gene: Atlantean\_219 Start: 121926, Stop: 122735, Start Num: 1

Candidate Starts for Atlantean\_219:

(Start: 1 @121926 has 167 MA's), (7, 122022), (21, 122322), (22, 122337), (27, 122430), (29, 122469), (37, 122571), (38, 122607),

Gene: Audrick\_221 Start: 121816, Stop: 122625, Start Num: 1

Candidate Starts for Audrick\_221:

(Start: 1 @121816 has 167 MA's), (7, 121912), (21, 122212), (22, 122227), (27, 122320), (29, 122359), (37, 122461), (38, 122497),

Gene: Ava3\_218 Start: 122360, Stop: 123157, Start Num: 1

Candidate Starts for Ava3\_218:

(Start: 1 @122360 has 167 MA's), (7, 122456), (21, 122756), (22, 122771), (27, 122864), (29, 122903), (37, 123005), (38, 123041),

Gene: Babyland\_222 Start: 122703, Stop: 123512, Start Num: 1

Candidate Starts for Babyland\_222:

(Start: 1 @122703 has 167 MA's), (7, 122799), (21, 123099), (22, 123114), (27, 123207), (29, 123246), (37, 123348), (38, 123384),

Gene: BackyardAgain\_215 Start: 119891, Stop: 120688, Start Num: 1

Candidate Starts for BackyardAgain\_215:

(Start: 1 @119891 has 167 MA's), (7, 119987), (21, 120287), (22, 120302), (27, 120395), (29, 120434), (37, 120536), (38, 120572),

Gene: BadAgartude\_213 Start: 122028, Stop: 122825, Start Num: 1

Candidate Starts for BadAgartude\_213:

(Start: 1 @122028 has 167 MA's), (7, 122124), (21, 122424), (22, 122439), (27, 122532), (29, 122571), (37, 122673), (38, 122709),

Gene: BananaFence\_216 Start: 122159, Stop: 122968, Start Num: 1

Candidate Starts for BananaFence\_216:

(Start: 1 @122159 has 167 MA's), (7, 122255), (21, 122555), (22, 122570), (27, 122663), (29, 122702), (37, 122804), (38, 122840),

Gene: Bangla1971\_219 Start: 121932, Stop: 122741, Start Num: 1

Candidate Starts for Bangla1971\_219:

(Start: 1 @121932 has 167 MA's), (7, 122028), (21, 122328), (22, 122343), (27, 122436), (29, 122475), (37, 122577), (38, 122613),

Gene: Basquiat\_216 Start: 120445, Stop: 121254, Start Num: 1  
Candidate Starts for Basquiat\_216:  
(Start: 1 @120445 has 167 MA's), (7, 120541), (21, 120841), (22, 120856), (27, 120949), (29, 120988), (37, 121090), (38, 121126),

Gene: BeanWater\_211 Start: 120971, Stop: 121768, Start Num: 1  
Candidate Starts for BeanWater\_211:  
(Start: 1 @120971 has 167 MA's), (7, 121067), (21, 121367), (22, 121382), (27, 121475), (29, 121514), (37, 121616), (38, 121652),

Gene: BigCity\_228 Start: 124542, Stop: 125339, Start Num: 1  
Candidate Starts for BigCity\_228:  
(Start: 1 @124542 has 167 MA's), (7, 124638), (21, 124938), (22, 124953), (27, 125046), (29, 125085), (37, 125187), (38, 125223),

Gene: Bigswole\_224 Start: 124396, Stop: 125193, Start Num: 1  
Candidate Starts for Bigswole\_224:  
(Start: 1 @124396 has 167 MA's), (7, 124492), (21, 124792), (22, 124807), (27, 124900), (29, 124939), (37, 125041), (38, 125077),

Gene: Bipolarisk\_217 Start: 122629, Stop: 123426, Start Num: 1  
Candidate Starts for Bipolarisk\_217:  
(Start: 1 @122629 has 167 MA's), (7, 122725), (21, 123025), (22, 123040), (27, 123133), (29, 123172), (37, 123274), (38, 123310),

Gene: Blackbrain\_216 Start: 121530, Stop: 122327, Start Num: 1  
Candidate Starts for Blackbrain\_216:  
(Start: 1 @121530 has 167 MA's), (7, 121626), (21, 121926), (22, 121941), (27, 122034), (29, 122073), (37, 122175), (38, 122211),

Gene: Blubba\_215 Start: 125611, Stop: 126408, Start Num: 1  
Candidate Starts for Blubba\_215:  
(Start: 1 @125611 has 167 MA's), (7, 125707), (21, 126007), (22, 126022), (27, 126115), (29, 126154), (37, 126256), (38, 126292),

Gene: Bonray\_221 Start: 124031, Stop: 124828, Start Num: 1  
Candidate Starts for Bonray\_221:  
(Start: 1 @124031 has 167 MA's), (7, 124127), (21, 124427), (22, 124442), (27, 124535), (29, 124574), (37, 124676), (38, 124712),

Gene: Bread\_214 Start: 122029, Stop: 122838, Start Num: 1  
Candidate Starts for Bread\_214:  
(Start: 1 @122029 has 167 MA's), (7, 122125), (21, 122425), (22, 122440), (27, 122533), (29, 122572), (37, 122674), (38, 122710),

Gene: Breeniome\_218 Start: 121483, Stop: 122292, Start Num: 1  
Candidate Starts for Breeniome\_218:  
(Start: 1 @121483 has 167 MA's), (7, 121579), (21, 121879), (22, 121894), (27, 121987), (29, 122026), (37, 122128), (38, 122164),

Gene: Burrough\_221 Start: 123799, Stop: 124608, Start Num: 1  
Candidate Starts for Burrough\_221:

(Start: 1 @123799 has 167 MA's), (7, 123895), (21, 124195), (22, 124210), (27, 124303), (29, 124342), (37, 124444), (38, 124480),

Gene: Bxz1\_209 Start: 124005, Stop: 124814, Start Num: 1

Candidate Starts for Bxz1\_209:

(Start: 1 @124005 has 167 MA's), (7, 124101), (21, 124401), (22, 124416), (27, 124509), (29, 124548), (37, 124650), (38, 124686),

Gene: Cactojaque\_214 Start: 120465, Stop: 121274, Start Num: 1

Candidate Starts for Cactojaque\_214:

(Start: 1 @120465 has 167 MA's), (7, 120561), (21, 120861), (22, 120876), (27, 120969), (29, 121008), (37, 121110), (38, 121146),

Gene: Cali\_212 Start: 122412, Stop: 123209, Start Num: 1

Candidate Starts for Cali\_212:

(Start: 1 @122412 has 167 MA's), (7, 122508), (21, 122808), (22, 122823), (27, 122916), (29, 122955), (37, 123057), (38, 123093),

Gene: Cane17\_210 Start: 126020, Stop: 126817, Start Num: 1

Candidate Starts for Cane17\_210:

(Start: 1 @126020 has 167 MA's), (7, 126116), (21, 126416), (22, 126431), (27, 126524), (29, 126563), (37, 126665), (38, 126701),

Gene: Capablanca\_224 Start: 124626, Stop: 125423, Start Num: 1

Candidate Starts for Capablanca\_224:

(Start: 1 @124626 has 167 MA's), (7, 124722), (21, 125022), (22, 125037), (27, 125130), (29, 125169), (37, 125271), (38, 125307),

Gene: Caravan\_210 Start: 122746, Stop: 123543, Start Num: 1

Candidate Starts for Caravan\_210:

(Start: 1 @122746 has 167 MA's), (7, 122842), (21, 123142), (22, 123157), (27, 123250), (29, 123289), (37, 123391), (38, 123427),

Gene: Catera\_211 Start: 121139, Stop: 121948, Start Num: 1

Candidate Starts for Catera\_211:

(Start: 1 @121139 has 167 MA's), (7, 121235), (21, 121535), (22, 121550), (27, 121643), (29, 121682), (37, 121784), (38, 121820),

Gene: Chargie21\_216 Start: 120445, Stop: 121254, Start Num: 1

Candidate Starts for Chargie21\_216:

(Start: 1 @120445 has 167 MA's), (7, 120541), (21, 120841), (22, 120856), (27, 120949), (29, 120988), (37, 121090), (38, 121126),

Gene: CharlieB\_213 Start: 122166, Stop: 122963, Start Num: 1

Candidate Starts for CharlieB\_213:

(Start: 1 @122166 has 167 MA's), (7, 122262), (21, 122562), (22, 122577), (27, 122670), (29, 122709), (37, 122811), (38, 122847),

Gene: ChaylaJr\_217 Start: 121145, Stop: 121942, Start Num: 1

Candidate Starts for ChaylaJr\_217:

(Start: 1 @121145 has 167 MA's), (7, 121241), (21, 121541), (22, 121556), (27, 121649), (29, 121688), (37, 121790), (38, 121826),



Gene: ChickenPhender\_215 Start: 120592, Stop: 121401, Start Num: 1

Candidate Starts for ChickenPhender\_215:

(Start: 1 @120592 has 167 MA's), (7, 120688), (21, 120988), (22, 121003), (27, 121096), (29, 121135), (37, 121237), (38, 121273),

Gene: Chomp\_218 Start: 123215, Stop: 124024, Start Num: 1

Candidate Starts for Chomp\_218:

(Start: 1 @123215 has 167 MA's), (7, 123311), (21, 123611), (22, 123626), (27, 123719), (29, 123758), (37, 123860), (38, 123896),

Gene: CindyLou\_220 Start: 123475, Stop: 124284, Start Num: 1

Candidate Starts for CindyLou\_220:

(Start: 1 @123475 has 167 MA's), (7, 123571), (21, 123871), (22, 123886), (27, 123979), (29, 124018), (37, 124120), (38, 124156),

Gene: Colt\_210 Start: 125251, Stop: 126048, Start Num: 1

Candidate Starts for Colt\_210:

(Start: 1 @125251 has 167 MA's), (7, 125347), (21, 125647), (22, 125662), (27, 125755), (29, 125794), (37, 125896), (38, 125932),

Gene: Concombres\_224 Start: 124085, Stop: 124882, Start Num: 1

Candidate Starts for Concombres\_224:

(Start: 1 @124085 has 167 MA's), (7, 124181), (21, 124481), (22, 124496), (27, 124589), (29, 124628), (37, 124730), (38, 124766),

Gene: DTDevon\_221 Start: 123964, Stop: 124773, Start Num: 1

Candidate Starts for DTDevon\_221:

(Start: 1 @123964 has 167 MA's), (7, 124060), (21, 124360), (22, 124375), (27, 124468), (29, 124507), (37, 124609), (38, 124645),

Gene: Daffodil\_224 Start: 122929, Stop: 123726, Start Num: 1

Candidate Starts for Daffodil\_224:

(Start: 1 @122929 has 167 MA's), (7, 123025), (21, 123325), (22, 123340), (27, 123433), (29, 123472), (37, 123574), (38, 123610),

Gene: Dandelion\_227 Start: 125569, Stop: 126366, Start Num: 1

Candidate Starts for Dandelion\_227:

(Start: 1 @125569 has 167 MA's), (7, 125665), (21, 125965), (22, 125980), (27, 126073), (29, 126112), (37, 126214), (38, 126250),

Gene: Darko\_218 Start: 122163, Stop: 122972, Start Num: 1

Candidate Starts for Darko\_218:

(Start: 1 @122163 has 167 MA's), (7, 122259), (21, 122559), (22, 122574), (27, 122667), (29, 122706), (37, 122808), (38, 122844),

Gene: Delilah\_217 Start: 123047, Stop: 123856, Start Num: 1

Candidate Starts for Delilah\_217:

(Start: 1 @123047 has 167 MA's), (7, 123143), (21, 123443), (22, 123458), (27, 123551), (29, 123590), (37, 123692), (38, 123728),

Gene: Delylah\_221 Start: 123336, Stop: 124133, Start Num: 1

Candidate Starts for Delylah\_221:

(Start: 1 @123336 has 167 MA's), (7, 123432), (21, 123732), (22, 123747), (27, 123840), (29, 123879), (37, 123981), (38, 124017),

Gene: Derek\_216 Start: 122492, Stop: 123301, Start Num: 1

Candidate Starts for Derek\_216:

(Start: 1 @122492 has 167 MA's), (7, 122588), (21, 122888), (22, 122903), (27, 122996), (29, 123035), (37, 123137), (38, 123173),

Gene: Dietrick\_208 Start: 121168, Stop: 121977, Start Num: 1

Candidate Starts for Dietrick\_208:

(Start: 1 @121168 has 167 MA's), (7, 121264), (21, 121564), (22, 121579), (27, 121672), (29, 121711), (37, 121813), (38, 121849),

Gene: DirtMonster\_212 Start: 122408, Stop: 123205, Start Num: 1

Candidate Starts for DirtMonster\_212:

(Start: 1 @122408 has 167 MA's), (7, 122504), (21, 122804), (22, 122819), (27, 122912), (29, 122951), (37, 123053), (38, 123089),

Gene: DrPhinkDaddy\_216 Start: 123707, Stop: 124504, Start Num: 1

Candidate Starts for DrPhinkDaddy\_216:

(Start: 1 @123707 has 167 MA's), (7, 123803), (21, 124103), (22, 124118), (27, 124211), (29, 124250), (37, 124352), (38, 124388),

Gene: Drazdys\_217 Start: 122609, Stop: 123418, Start Num: 1

Candidate Starts for Drazdys\_217:

(Start: 1 @122609 has 167 MA's), (7, 122705), (21, 123005), (22, 123020), (27, 123113), (29, 123152), (37, 123254), (38, 123290),

Gene: ET08\_207 Start: 122200, Stop: 122997, Start Num: 1

Candidate Starts for ET08\_207:

(Start: 1 @122200 has 167 MA's), (7, 122296), (21, 122596), (22, 122611), (27, 122704), (29, 122743), (37, 122845), (38, 122881),

Gene: EasyJones\_222 Start: 121688, Stop: 122497, Start Num: 1

Candidate Starts for EasyJones\_222:

(Start: 1 @121688 has 167 MA's), (7, 121784), (21, 122084), (22, 122099), (27, 122192), (29, 122231), (37, 122333), (38, 122369),

Gene: EggyFarm\_228 Start: 124543, Stop: 125340, Start Num: 1

Candidate Starts for EggyFarm\_228:

(Start: 1 @124543 has 167 MA's), (7, 124639), (21, 124939), (22, 124954), (27, 125047), (29, 125086), (37, 125188), (38, 125224),

Gene: EmToTheThree\_219 Start: 123080, Stop: 123877, Start Num: 1

Candidate Starts for EmToTheThree\_219:

(Start: 1 @123080 has 167 MA's), (7, 123176), (21, 123476), (22, 123491), (27, 123584), (29, 123623), (37, 123725), (38, 123761),

Gene: EmmaElysia\_223 Start: 123371, Stop: 124180, Start Num: 1

Candidate Starts for EmmaElysia\_223:

(Start: 1 @123371 has 167 MA's), (7, 123467), (21, 123767), (22, 123782), (27, 123875), (29, 123914), (37, 124016), (38, 124052),

Gene: Erdmann\_220 Start: 123039, Stop: 123848, Start Num: 1  
Candidate Starts for Erdmann\_220:  
(Start: 1 @123039 has 167 MA's), (7, 123135), (21, 123435), (22, 123450), (27, 123543), (29, 123582), (37, 123684), (38, 123720),

Gene: ErnieJ\_212 Start: 119867, Stop: 120676, Start Num: 1  
Candidate Starts for ErnieJ\_212:  
(Start: 1 @119867 has 167 MA's), (7, 119963), (21, 120263), (22, 120278), (27, 120371), (29, 120410), (37, 120512), (38, 120548),

Gene: Essence\_216 Start: 121821, Stop: 122630, Start Num: 1  
Candidate Starts for Essence\_216:  
(Start: 1 @121821 has 167 MA's), (7, 121917), (21, 122217), (22, 122232), (27, 122325), (29, 122364), (37, 122466), (38, 122502),

Gene: Ewok\_218 Start: 122957, Stop: 123754, Start Num: 1  
Candidate Starts for Ewok\_218:  
(Start: 1 @122957 has 167 MA's), (7, 123053), (21, 123353), (22, 123368), (27, 123461), (29, 123500), (37, 123602), (38, 123638),

Gene: Flabslab\_214 Start: 120009, Stop: 120806, Start Num: 1  
Candidate Starts for Flabslab\_214:  
(Start: 1 @120009 has 167 MA's), (7, 120105), (21, 120405), (22, 120420), (27, 120513), (29, 120552), (37, 120654), (38, 120690),

Gene: Fludd\_219 Start: 121400, Stop: 122209, Start Num: 1  
Candidate Starts for Fludd\_219:  
(Start: 1 @121400 has 167 MA's), (7, 121496), (21, 121796), (22, 121811), (27, 121904), (29, 121943), (37, 122045), (38, 122081),

Gene: FoxtrotP1\_217 Start: 123637, Stop: 124434, Start Num: 1  
Candidate Starts for FoxtrotP1\_217:  
(Start: 1 @123637 has 167 MA's), (7, 123733), (21, 124033), (22, 124048), (27, 124141), (29, 124180), (37, 124282), (38, 124318),

Gene: FrayBell\_222 Start: 121490, Stop: 122287, Start Num: 1  
Candidate Starts for FrayBell\_222:  
(Start: 1 @121490 has 167 MA's), (7, 121586), (21, 121886), (22, 121901), (27, 121994), (29, 122033), (37, 122135), (38, 122171),

Gene: FudgeTart\_214 Start: 122104, Stop: 122901, Start Num: 1  
Candidate Starts for FudgeTart\_214:  
(Start: 1 @122104 has 167 MA's), (7, 122200), (21, 122500), (22, 122515), (27, 122608), (29, 122647), (37, 122749), (38, 122785),

Gene: Gabriel\_222 Start: 121559, Stop: 122368, Start Num: 1  
Candidate Starts for Gabriel\_222:  
(Start: 1 @121559 has 167 MA's), (7, 121655), (21, 121955), (22, 121970), (27, 122063), (29, 122102), (37, 122204), (38, 122240),

Gene: Gamgam\_220 Start: 121916, Stop: 122725, Start Num: 1  
Candidate Starts for Gamgam\_220:

(Start: 1 @121916 has 167 MA's), (7, 122012), (21, 122312), (22, 122327), (27, 122420), (29, 122459), (37, 122561), (38, 122597),

Gene: Ghost\_219 Start: 121837, Stop: 122646, Start Num: 1

Candidate Starts for Ghost\_219:

(Start: 1 @121837 has 167 MA's), (7, 121933), (21, 122233), (22, 122248), (27, 122341), (29, 122380), (37, 122482), (38, 122518),

Gene: Gizmo\_225 Start: 124955, Stop: 125764, Start Num: 1

Candidate Starts for Gizmo\_225:

(Start: 1 @124955 has 167 MA's), (7, 125051), (21, 125351), (22, 125366), (27, 125459), (29, 125498), (37, 125600), (38, 125636),

Gene: Grasshills\_227 Start: 124542, Stop: 125339, Start Num: 1

Candidate Starts for Grasshills\_227:

(Start: 1 @124542 has 167 MA's), (7, 124638), (21, 124938), (22, 124953), (27, 125046), (29, 125085), (37, 125187), (38, 125223),

Gene: Greely\_210 Start: 119184, Stop: 119945, Start Num: 3

Candidate Starts for Greely\_210:

(Start: 2 @119178 has 2 MA's), (Start: 3 @119184 has 1 MA's), (12, 119334), (13, 119346), (14, 119418), (20, 119529), (28, 119706), (34, 119769), (40, 119907), (41, 119910),

Gene: Grungle\_203 Start: 119874, Stop: 120671, Start Num: 1

Candidate Starts for Grungle\_203:

(Start: 1 @119874 has 167 MA's), (7, 119970), (21, 120270), (22, 120285), (27, 120378), (29, 120417), (37, 120519), (38, 120555),

Gene: Guwapp\_214 Start: 120671, Stop: 121480, Start Num: 1

Candidate Starts for Guwapp\_214:

(Start: 1 @120671 has 167 MA's), (7, 120767), (21, 121067), (22, 121082), (27, 121175), (29, 121214), (37, 121316), (38, 121352),

Gene: HyRo\_207 Start: 121187, Stop: 121984, Start Num: 1

Candidate Starts for HyRo\_207:

(Start: 1 @121187 has 167 MA's), (7, 121283), (21, 121583), (22, 121598), (27, 121691), (29, 121730), (37, 121832), (38, 121868),

Gene: I3\_229 Start: 123632, Stop: 124429, Start Num: 1

Candidate Starts for I3\_229:

(Start: 1 @123632 has 167 MA's), (7, 123728), (21, 124028), (22, 124043), (27, 124136), (29, 124175), (37, 124277), (38, 124313),

Gene: IkeLoa\_211 Start: 121581, Stop: 122378, Start Num: 1

Candidate Starts for IkeLoa\_211:

(Start: 1 @121581 has 167 MA's), (7, 121677), (21, 121977), (22, 121992), (27, 122085), (29, 122124), (37, 122226), (38, 122262),

Gene: InigoMontoya\_222 Start: 122590, Stop: 123399, Start Num: 1

Candidate Starts for InigoMontoya\_222:

(Start: 1 @122590 has 167 MA's), (7, 122686), (21, 122986), (22, 123001), (27, 123094), (29, 123133), (37, 123235), (38, 123271),

Gene: InterFolia\_222 Start: 123295, Stop: 124092, Start Num: 1  
Candidate Starts for InterFolia\_222:  
(Start: 1 @123295 has 167 MA's), (7, 123391), (21, 123691), (22, 123706), (27, 123799), (29, 123838), (37, 123940), (38, 123976),

Gene: Iota\_214 Start: 122275, Stop: 123072, Start Num: 1  
Candidate Starts for Iota\_214:  
(Start: 1 @122275 has 167 MA's), (7, 122371), (21, 122671), (22, 122686), (27, 122779), (29, 122818), (37, 122920), (38, 122956),

Gene: Issimir\_215 Start: 122228, Stop: 123037, Start Num: 1  
Candidate Starts for Issimir\_215:  
(Start: 1 @122228 has 167 MA's), (7, 122324), (21, 122624), (22, 122639), (27, 122732), (29, 122771), (37, 122873), (38, 122909),

Gene: Izajani\_217 Start: 123097, Stop: 123894, Start Num: 1  
Candidate Starts for Izajani\_217:  
(Start: 1 @123097 has 167 MA's), (7, 123193), (21, 123493), (22, 123508), (27, 123601), (29, 123640), (37, 123742), (38, 123778),

Gene: JPickles\_215 Start: 120575, Stop: 121384, Start Num: 1  
Candidate Starts for JPickles\_215:  
(Start: 1 @120575 has 167 MA's), (7, 120671), (21, 120971), (22, 120986), (27, 121079), (29, 121118), (37, 121220), (38, 121256),

Gene: Janiyra\_222 Start: 122815, Stop: 123624, Start Num: 1  
Candidate Starts for Janiyra\_222:  
(Start: 1 @122815 has 167 MA's), (7, 122911), (21, 123211), (22, 123226), (27, 123319), (29, 123358), (37, 123460), (38, 123496),

Gene: JayJay\_217 Start: 122519, Stop: 123316, Start Num: 1  
Candidate Starts for JayJay\_217:  
(Start: 1 @122519 has 167 MA's), (7, 122615), (21, 122915), (22, 122930), (27, 123023), (29, 123062), (37, 123164), (38, 123200),

Gene: Jaygup\_215 Start: 121636, Stop: 122445, Start Num: 1  
Candidate Starts for Jaygup\_215:  
(Start: 1 @121636 has 167 MA's), (7, 121732), (21, 122032), (22, 122047), (27, 122140), (29, 122179), (37, 122281), (38, 122317),

Gene: Jedediah\_219 Start: 122689, Stop: 123498, Start Num: 1  
Candidate Starts for Jedediah\_219:  
(Start: 1 @122689 has 167 MA's), (7, 122785), (21, 123085), (22, 123100), (27, 123193), (29, 123232), (37, 123334), (38, 123370),

Gene: Jemmno\_218 Start: 121518, Stop: 122327, Start Num: 1  
Candidate Starts for Jemmno\_218:  
(Start: 1 @121518 has 167 MA's), (7, 121614), (21, 121914), (22, 121929), (27, 122022), (29, 122061), (37, 122163), (38, 122199),

Gene: Jessibeth14\_219 Start: 123706, Stop: 124503, Start Num: 1  
Candidate Starts for Jessibeth14\_219:

(Start: 1 @123706 has 167 MA's), (7, 123802), (21, 124102), (22, 124117), (27, 124210), (29, 124249), (37, 124351), (38, 124387),

Gene: JulietS\_212 Start: 119816, Stop: 120613, Start Num: 1

Candidate Starts for JulietS\_212:

(Start: 1 @119816 has 167 MA's), (7, 119912), (21, 120212), (22, 120227), (27, 120320), (29, 120359), (37, 120461), (38, 120497),

Gene: JustHall\_213 Start: 121722, Stop: 122519, Start Num: 1

Candidate Starts for JustHall\_213:

(Start: 1 @121722 has 167 MA's), (7, 121818), (21, 122118), (22, 122133), (27, 122226), (29, 122265), (37, 122367), (38, 122403),

Gene: Kamryn\_218 Start: 123352, Stop: 124149, Start Num: 1

Candidate Starts for Kamryn\_218:

(Start: 1 @123352 has 167 MA's), (7, 123448), (21, 123748), (22, 123763), (27, 123856), (29, 123895), (37, 123997), (38, 124033),

Gene: Kboogie\_223 Start: 122380, Stop: 123189, Start Num: 1

Candidate Starts for Kboogie\_223:

(Start: 1 @122380 has 167 MA's), (7, 122476), (21, 122776), (22, 122791), (27, 122884), (29, 122923), (37, 123025), (38, 123061),

Gene: Khaleesi\_218 Start: 123173, Stop: 123970, Start Num: 1

Candidate Starts for Khaleesi\_218:

(Start: 1 @123173 has 167 MA's), (7, 123269), (21, 123569), (22, 123584), (27, 123677), (29, 123716), (37, 123818), (38, 123854),

Gene: Koguma\_218 Start: 122033, Stop: 122830, Start Num: 1

Candidate Starts for Koguma\_218:

(Start: 1 @122033 has 167 MA's), (7, 122129), (21, 122429), (22, 122444), (27, 122537), (29, 122576), (37, 122678), (38, 122714),

Gene: LRRHood\_212 Start: 121385, Stop: 122182, Start Num: 1

Candidate Starts for LRRHood\_212:

(Start: 1 @121385 has 167 MA's), (7, 121481), (21, 121781), (22, 121796), (27, 121889), (29, 121928), (37, 122030), (38, 122066),

Gene: Latch\_219 Start: 121926, Stop: 122735, Start Num: 1

Candidate Starts for Latch\_219:

(Start: 1 @121926 has 167 MA's), (7, 122022), (21, 122322), (22, 122337), (27, 122430), (29, 122469), (37, 122571), (38, 122607),

Gene: Lee7\_219 Start: 124553, Stop: 125350, Start Num: 1

Candidate Starts for Lee7\_219:

(Start: 1 @124553 has 167 MA's), (7, 124649), (21, 124949), (22, 124964), (27, 125057), (29, 125096), (37, 125198), (38, 125234),

Gene: LifeSavor\_218 Start: 122451, Stop: 123260, Start Num: 1

Candidate Starts for LifeSavor\_218:

(Start: 1 @122451 has 167 MA's), (7, 122547), (21, 122847), (22, 122862), (27, 122955), (29, 122994), (37, 123096), (38, 123132),

Gene: LinStu\_218 Start: 121672, Stop: 122469, Start Num: 1

Candidate Starts for LinStu\_218:

(Start: 1 @121672 has 167 MA's), (7, 121768), (21, 122068), (22, 122083), (27, 122176), (29, 122215), (37, 122317), (38, 122353),

Gene: Littleton\_222 Start: 123163, Stop: 123972, Start Num: 1

Candidate Starts for Littleton\_222:

(Start: 1 @123163 has 167 MA's), (7, 123259), (21, 123559), (22, 123574), (27, 123667), (29, 123706), (37, 123808), (38, 123844),

Gene: Loanshark\_216 Start: 122488, Stop: 123285, Start Num: 1

Candidate Starts for Loanshark\_216:

(Start: 1 @122488 has 167 MA's), (7, 122584), (21, 122884), (22, 122899), (27, 122992), (29, 123031), (37, 123133), (38, 123169),

Gene: LolaVinca\_217 Start: 122725, Stop: 123522, Start Num: 1

Candidate Starts for LolaVinca\_217:

(Start: 1 @122725 has 167 MA's), (7, 122821), (21, 123121), (22, 123136), (27, 123229), (29, 123268), (37, 123370), (38, 123406),

Gene: LordLeafolot\_221 Start: 122338, Stop: 123135, Start Num: 1

Candidate Starts for LordLeafolot\_221:

(Start: 1 @122338 has 167 MA's), (7, 122434), (21, 122734), (22, 122749), (27, 122842), (29, 122881), (37, 122983), (38, 123019),

Gene: Lukilu\_210 Start: 123388, Stop: 124185, Start Num: 1

Candidate Starts for Lukilu\_210:

(Start: 1 @123388 has 167 MA's), (7, 123484), (21, 123784), (22, 123799), (27, 123892), (29, 123931), (37, 124033), (38, 124069),

Gene: Maby2021\_219 Start: 123617, Stop: 124426, Start Num: 1

Candidate Starts for Maby2021\_219:

(Start: 1 @123617 has 167 MA's), (7, 123713), (21, 124013), (22, 124028), (27, 124121), (29, 124160), (37, 124262), (38, 124298),

Gene: Mangeria\_220 Start: 123719, Stop: 124528, Start Num: 1

Candidate Starts for Mangeria\_220:

(Start: 1 @123719 has 167 MA's), (7, 123815), (21, 124115), (22, 124130), (27, 124223), (29, 124262), (37, 124364), (38, 124400),

Gene: Matsumoto\_218 Start: 122368, Stop: 123177, Start Num: 1

Candidate Starts for Matsumoto\_218:

(Start: 1 @122368 has 167 MA's), (7, 122464), (21, 122764), (22, 122779), (27, 122872), (29, 122911), (37, 123013), (38, 123049),

Gene: McGee\_218 Start: 121562, Stop: 122371, Start Num: 1

Candidate Starts for McGee\_218:

(Start: 1 @121562 has 167 MA's), (7, 121658), (21, 121958), (22, 121973), (27, 122066), (29, 122105), (37, 122207), (38, 122243),

Gene: McWolfish\_216 Start: 122384, Stop: 123181, Start Num: 1

Candidate Starts for McWolfish\_216:

(Start: 1 @122384 has 167 MA's), (7, 122480), (21, 122780), (22, 122795), (27, 122888), (29, 122927), (37, 123029), (38, 123065),

Gene: Megamind\_216 Start: 122675, Stop: 123472, Start Num: 1

Candidate Starts for Megamind\_216:

(Start: 1 @122675 has 167 MA's), (7, 122771), (21, 123071), (22, 123086), (27, 123179), (29, 123218), (37, 123320), (38, 123356),

Gene: Melpomini\_214 Start: 121460, Stop: 122269, Start Num: 1

Candidate Starts for Melpomini\_214:

(Start: 1 @121460 has 167 MA's), (7, 121556), (21, 121856), (22, 121871), (27, 121964), (29, 122003), (37, 122105), (38, 122141),

Gene: MikeLiesIn\_221 Start: 123811, Stop: 124608, Start Num: 1

Candidate Starts for MikeLiesIn\_221:

(Start: 1 @123811 has 167 MA's), (7, 123907), (21, 124207), (22, 124222), (27, 124315), (29, 124354), (37, 124456), (38, 124492),

Gene: Mikro\_215 Start: 124360, Stop: 125157, Start Num: 1

Candidate Starts for Mikro\_215:

(Start: 1 @124360 has 167 MA's), (7, 124456), (21, 124756), (22, 124771), (27, 124864), (29, 124903), (37, 125005), (38, 125041),

Gene: MoMoMixon\_217 Start: 122850, Stop: 123647, Start Num: 1

Candidate Starts for MoMoMixon\_217:

(Start: 1 @122850 has 167 MA's), (7, 122946), (21, 123246), (22, 123261), (27, 123354), (29, 123393), (37, 123495), (38, 123531),

Gene: Momo\_220 Start: 121926, Stop: 122735, Start Num: 1

Candidate Starts for Momo\_220:

(Start: 1 @121926 has 167 MA's), (7, 122022), (21, 122322), (22, 122337), (27, 122430), (29, 122469), (37, 122571), (38, 122607),

Gene: Morizzled23\_216 Start: 121293, Stop: 122102, Start Num: 1

Candidate Starts for Morizzled23\_216:

(Start: 1 @121293 has 167 MA's), (7, 121389), (21, 121689), (22, 121704), (27, 121797), (29, 121836), (37, 121938), (38, 121974),

Gene: Myrna\_203 Start: 118551, Stop: 119318, Start Num: 2

Candidate Starts for Myrna\_203:

(Start: 2 @118551 has 2 MA's), (Start: 3 @118557 has 1 MA's), (5, 118590), (6, 118602), (8, 118632), (11, 118704), (13, 118719), (17, 118863), (23, 118953), (28, 119079), (34, 119142), (36, 119181), (40, 119280), (41, 119283),

Gene: Naija\_220 Start: 122629, Stop: 123438, Start Num: 1

Candidate Starts for Naija\_220:

(Start: 1 @122629 has 167 MA's), (7, 122725), (21, 123025), (22, 123040), (27, 123133), (29, 123172), (37, 123274), (38, 123310),

Gene: Napoleon13\_216 Start: 121657, Stop: 122466, Start Num: 1

Candidate Starts for Napoleon13\_216:

(Start: 1 @121657 has 167 MA's), (7, 121753), (21, 122053), (22, 122068), (27, 122161), (29, 122200), (37, 122302), (38, 122338),



Gene: Nappy\_220 Start: 123330, Stop: 124127, Start Num: 1

Candidate Starts for Nappy\_220:

(Start: 1 @123330 has 167 MA's), (7, 123426), (21, 123726), (22, 123741), (27, 123834), (29, 123873), (37, 123975), (38, 124011),

Gene: Naval22\_224 Start: 124406, Stop: 125215, Start Num: 1

Candidate Starts for Naval22\_224:

(Start: 1 @124406 has 167 MA's), (7, 124502), (21, 124802), (22, 124817), (27, 124910), (29, 124949), (37, 125051), (38, 125087),

Gene: NedWong\_218 Start: 123062, Stop: 123859, Start Num: 1

Candidate Starts for NedWong\_218:

(Start: 1 @123062 has 167 MA's), (7, 123158), (21, 123458), (22, 123473), (27, 123566), (29, 123605), (37, 123707), (38, 123743),

Gene: Ngannou\_216 Start: 120908, Stop: 121717, Start Num: 1

Candidate Starts for Ngannou\_216:

(Start: 1 @120908 has 167 MA's), (7, 121004), (21, 121304), (22, 121319), (27, 121412), (29, 121451), (37, 121553), (38, 121589),

Gene: Nidhogg\_220 Start: 123455, Stop: 124264, Start Num: 1

Candidate Starts for Nidhogg\_220:

(Start: 1 @123455 has 167 MA's), (7, 123551), (21, 123851), (22, 123866), (27, 123959), (29, 123998), (37, 124100), (38, 124136),

Gene: NoodleTree\_225 Start: 123362, Stop: 124159, Start Num: 1

Candidate Starts for NoodleTree\_225:

(Start: 1 @123362 has 167 MA's), (7, 123458), (21, 123758), (22, 123773), (27, 123866), (29, 123905), (37, 124007), (38, 124043),

Gene: Norm\_219 Start: 123364, Stop: 124164, Start Num: 1

Candidate Starts for Norm\_219:

(Start: 1 @123364 has 167 MA's), (7, 123460), (21, 123760), (22, 123775), (27, 123868), (29, 123907), (37, 124009), (38, 124045),

Gene: NuevoMundo\_222 Start: 123923, Stop: 124720, Start Num: 1

Candidate Starts for NuevoMundo\_222:

(Start: 1 @123923 has 167 MA's), (7, 124019), (21, 124319), (22, 124334), (27, 124427), (29, 124466), (37, 124568), (38, 124604),

Gene: ParkTD\_218 Start: 122926, Stop: 123735, Start Num: 1

Candidate Starts for ParkTD\_218:

(Start: 1 @122926 has 167 MA's), (7, 123022), (21, 123322), (22, 123337), (27, 123430), (29, 123469), (37, 123571), (38, 123607),

Gene: Patter\_220 Start: 121940, Stop: 122749, Start Num: 1

Candidate Starts for Patter\_220:

(Start: 1 @121940 has 167 MA's), (7, 122036), (21, 122336), (22, 122351), (27, 122444), (29, 122483), (37, 122585), (38, 122621),

Gene: Phabba\_214 Start: 118526, Stop: 119296, Start Num: 2

Candidate Starts for Phabba\_214:

(Start: 2 @118526 has 2 MA's), (Start: 3 @118532 has 1 MA's), (12, 118682), (13, 118694), (14, 118766), (20, 118877), (23, 118928), (28, 119054), (34, 119117), (40, 119258), (41, 119261),

Gene: Phlegm\_223 Start: 122629, Stop: 123438, Start Num: 1

Candidate Starts for Phlegm\_223:

(Start: 1 @122629 has 167 MA's), (7, 122725), (21, 123025), (22, 123040), (27, 123133), (29, 123172), (37, 123274), (38, 123310),

Gene: Phox\_220 Start: 122591, Stop: 123388, Start Num: 1

Candidate Starts for Phox\_220:

(Start: 1 @122591 has 167 MA's), (7, 122687), (21, 122987), (22, 123002), (27, 123095), (29, 123134), (37, 123236), (38, 123272),

Gene: Phusco\_217 Start: 121461, Stop: 122270, Start Num: 1

Candidate Starts for Phusco\_217:

(Start: 1 @121461 has 167 MA's), (7, 121557), (21, 121857), (22, 121872), (27, 121965), (29, 122004), (37, 122106), (38, 122142),

Gene: Pier\_220 Start: 123468, Stop: 124265, Start Num: 1

Candidate Starts for Pier\_220:

(Start: 1 @123468 has 167 MA's), (7, 123564), (21, 123864), (22, 123879), (27, 123972), (29, 124011), (37, 124113), (38, 124149),

Gene: Pinkcreek\_203 Start: 120844, Stop: 121641, Start Num: 1

Candidate Starts for Pinkcreek\_203:

(Start: 1 @120844 has 167 MA's), (7, 120940), (21, 121240), (22, 121255), (27, 121348), (29, 121387), (37, 121489), (38, 121525),

Gene: Pio\_227 Start: 124660, Stop: 125469, Start Num: 1

Candidate Starts for Pio\_227:

(Start: 1 @124660 has 167 MA's), (7, 124756), (21, 125056), (22, 125071), (27, 125164), (29, 125203), (37, 125305), (38, 125341),

Gene: Pivoine\_220 Start: 122629, Stop: 123438, Start Num: 1

Candidate Starts for Pivoine\_220:

(Start: 1 @122629 has 167 MA's), (7, 122725), (21, 123025), (22, 123040), (27, 123133), (29, 123172), (37, 123274), (38, 123310),

Gene: Pleione\_223 Start: 123404, Stop: 124201, Start Num: 1

Candidate Starts for Pleione\_223:

(Start: 1 @123404 has 167 MA's), (7, 123500), (21, 123800), (22, 123815), (27, 123908), (29, 123947), (37, 124049), (38, 124085),

Gene: PurduePete\_219 Start: 123632, Stop: 124429, Start Num: 1

Candidate Starts for PurduePete\_219:

(Start: 1 @123632 has 167 MA's), (7, 123728), (21, 124028), (22, 124043), (27, 124136), (29, 124175), (37, 124277), (38, 124313),

Gene: QBert\_211 Start: 120992, Stop: 121789, Start Num: 1

Candidate Starts for QBert\_211:

(Start: 1 @120992 has 167 MA's), (7, 121088), (21, 121388), (22, 121403), (27, 121496), (29, 121535), (37, 121637), (38, 121673),

Gene: Quasimodo\_221 Start: 122262, Stop: 123071, Start Num: 1  
Candidate Starts for Quasimodo\_221:  
(Start: 1 @122262 has 167 MA's), (7, 122358), (21, 122658), (22, 122673), (27, 122766), (29, 122805), (37, 122907), (38, 122943),

Gene: Rabinovish\_212 Start: 122537, Stop: 123334, Start Num: 1  
Candidate Starts for Rabinovish\_212:  
(Start: 1 @122537 has 167 MA's), (7, 122633), (21, 122933), (22, 122948), (27, 123041), (29, 123080), (37, 123182), (38, 123218),

Gene: Rahel\_220 Start: 122364, Stop: 123173, Start Num: 1  
Candidate Starts for Rahel\_220:  
(Start: 1 @122364 has 167 MA's), (7, 122460), (21, 122760), (22, 122775), (27, 122868), (29, 122907), (37, 123009), (38, 123045),

Gene: Rizal\_211 Start: 120882, Stop: 121691, Start Num: 1  
Candidate Starts for Rizal\_211:  
(Start: 1 @120882 has 167 MA's), (7, 120978), (21, 121278), (22, 121293), (27, 121386), (29, 121425), (37, 121527), (38, 121563),

Gene: RoMag\_214 Start: 122675, Stop: 123472, Start Num: 1  
Candidate Starts for RoMag\_214:  
(Start: 1 @122675 has 167 MA's), (7, 122771), (21, 123071), (22, 123086), (27, 123179), (29, 123218), (37, 123320), (38, 123356),

Gene: Ronan\_215 Start: 121067, Stop: 121864, Start Num: 1  
Candidate Starts for Ronan\_215:  
(Start: 1 @121067 has 167 MA's), (7, 121163), (21, 121463), (22, 121478), (27, 121571), (29, 121610), (37, 121712), (38, 121748),

Gene: Roots515\_221 Start: 124183, Stop: 124980, Start Num: 1  
Candidate Starts for Roots515\_221:  
(Start: 1 @124183 has 167 MA's), (7, 124279), (21, 124579), (22, 124594), (27, 124687), (29, 124726), (37, 124828), (38, 124864),

Gene: Salacia\_219 Start: 122767, Stop: 123576, Start Num: 1  
Candidate Starts for Salacia\_219:  
(Start: 1 @122767 has 167 MA's), (7, 122863), (21, 123163), (22, 123178), (27, 123271), (29, 123310), (37, 123412), (38, 123448),

Gene: Sauce\_215 Start: 121590, Stop: 122387, Start Num: 1  
Candidate Starts for Sauce\_215:  
(Start: 1 @121590 has 167 MA's), (7, 121686), (21, 121986), (22, 122001), (27, 122094), (29, 122133), (37, 122235), (38, 122271),

Gene: ScoobyDoobyDoo\_202 Start: 116738, Stop: 117490, Start Num: 3  
Candidate Starts for ScoobyDoobyDoo\_202:  
(Start: 3 @116738 has 1 MA's), (6, 116783), (9, 116816), (10, 116843), (13, 116897), (15, 116978), (16, 117035), (19, 117077), (29, 117260), (34, 117320), (35, 117329), (36, 117359), (41, 117455),

Gene: ScottMcG\_213 Start: 121660, Stop: 122469, Start Num: 1  
Candidate Starts for ScottMcG\_213:

(Start: 1 @121660 has 167 MA's), (7, 121756), (21, 122056), (22, 122071), (27, 122164), (29, 122203), (37, 122305), (38, 122341),

Gene: Sebata\_220 Start: 123097, Stop: 123894, Start Num: 1

Candidate Starts for Sebata\_220:

(Start: 1 @123097 has 167 MA's), (7, 123193), (21, 123493), (22, 123508), (27, 123601), (29, 123640), (37, 123742), (38, 123778),

Gene: Shaqnato\_210 Start: 121798, Stop: 122595, Start Num: 1

Candidate Starts for Shaqnato\_210:

(Start: 1 @121798 has 167 MA's), (7, 121894), (21, 122194), (22, 122209), (27, 122302), (29, 122341), (37, 122443), (38, 122479),

Gene: Shelob\_220 Start: 124538, Stop: 125335, Start Num: 1

Candidate Starts for Shelob\_220:

(Start: 1 @124538 has 167 MA's), (7, 124634), (21, 124934), (22, 124949), (27, 125042), (29, 125081), (37, 125183), (38, 125219),

Gene: ShiaLabeouf\_216 Start: 121572, Stop: 122381, Start Num: 1

Candidate Starts for ShiaLabeouf\_216:

(Start: 1 @121572 has 167 MA's), (7, 121668), (21, 121968), (22, 121983), (27, 122076), (29, 122115), (37, 122217), (38, 122253),

Gene: Shifa\_196 Start: 121156, Stop: 121953, Start Num: 1

Candidate Starts for Shifa\_196:

(Start: 1 @121156 has 167 MA's), (7, 121252), (21, 121552), (22, 121567), (27, 121660), (29, 121699), (37, 121801), (38, 121837),

Gene: Shnickers\_217 Start: 121636, Stop: 122445, Start Num: 1

Candidate Starts for Shnickers\_217:

(Start: 1 @121636 has 167 MA's), (7, 121732), (21, 122032), (22, 122047), (27, 122140), (29, 122179), (37, 122281), (38, 122317),

Gene: Shrimp\_221 Start: 123693, Stop: 124502, Start Num: 1

Candidate Starts for Shrimp\_221:

(Start: 1 @123693 has 167 MA's), (7, 123789), (21, 124089), (22, 124104), (27, 124197), (29, 124236), (37, 124338), (38, 124374),

Gene: SilverDipper\_223 Start: 123185, Stop: 123994, Start Num: 1

Candidate Starts for SilverDipper\_223:

(Start: 1 @123185 has 167 MA's), (7, 123281), (21, 123581), (22, 123596), (27, 123689), (29, 123728), (37, 123830), (38, 123866),

Gene: SmallFry\_219 Start: 121730, Stop: 122539, Start Num: 1

Candidate Starts for SmallFry\_219:

(Start: 1 @121730 has 167 MA's), (7, 121826), (21, 122126), (22, 122141), (27, 122234), (29, 122273), (37, 122375), (38, 122411),

Gene: Spec\_214 Start: 121921, Stop: 122718, Start Num: 1

Candidate Starts for Spec\_214:

(Start: 1 @121921 has 167 MA's), (7, 122017), (21, 122317), (22, 122332), (27, 122425), (29, 122464), (37, 122566), (38, 122602),

Gene: Specks\_223 Start: 123046, Stop: 123843, Start Num: 1

Candidate Starts for Specks\_223:

(Start: 1 @123046 has 167 MA's), (7, 123142), (21, 123442), (22, 123457), (27, 123550), (29, 123589), (37, 123691), (38, 123727),

Gene: Sprinklers\_217 Start: 122288, Stop: 123085, Start Num: 1

Candidate Starts for Sprinklers\_217:

(Start: 1 @122288 has 167 MA's), (7, 122384), (21, 122684), (22, 122699), (27, 122792), (29, 122831), (37, 122933), (38, 122969),

Gene: Spud\_213 Start: 122000, Stop: 122809, Start Num: 1

Candidate Starts for Spud\_213:

(Start: 1 @122000 has 167 MA's), (7, 122096), (21, 122396), (22, 122411), (27, 122504), (29, 122543), (37, 122645), (38, 122681),

Gene: SrishMeg2525\_216 Start: 123164, Stop: 123961, Start Num: 1

Candidate Starts for SrishMeg2525\_216:

(Start: 1 @123164 has 167 MA's), (7, 123260), (21, 123560), (22, 123575), (27, 123668), (29, 123707), (37, 123809), (38, 123845),

Gene: StephanieG\_215 Start: 123198, Stop: 123995, Start Num: 1

Candidate Starts for StephanieG\_215:

(Start: 1 @123198 has 167 MA's), (7, 123294), (21, 123594), (22, 123609), (27, 123702), (29, 123741), (37, 123843), (38, 123879),

Gene: Stubby\_203 Start: 121047, Stop: 121844, Start Num: 1

Candidate Starts for Stubby\_203:

(Start: 1 @121047 has 167 MA's), (7, 121143), (21, 121443), (22, 121458), (27, 121551), (29, 121590), (37, 121692), (38, 121728),

Gene: StubbySaigey\_224 Start: 122719, Stop: 123528, Start Num: 1

Candidate Starts for StubbySaigey\_224:

(Start: 1 @122719 has 167 MA's), (7, 122815), (21, 123115), (22, 123130), (27, 123223), (29, 123262), (37, 123364), (38, 123400),

Gene: Teardrop\_216 Start: 121232, Stop: 122041, Start Num: 1

Candidate Starts for Teardrop\_216:

(Start: 1 @121232 has 167 MA's), (7, 121328), (21, 121628), (22, 121643), (27, 121736), (29, 121775), (37, 121877), (38, 121913),

Gene: TinyTim\_217 Start: 122013, Stop: 122822, Start Num: 1

Candidate Starts for TinyTim\_217:

(Start: 1 @122013 has 167 MA's), (7, 122109), (21, 122409), (22, 122424), (27, 122517), (29, 122556), (37, 122658), (38, 122694),

Gene: Tonenili\_241 Start: 127843, Stop: 128643, Start Num: 1

Candidate Starts for Tonenili\_241:

(Start: 1 @127843 has 167 MA's), (4, 127894), (18, 128194), (21, 128239), (24, 128302), (25, 128311), (26, 128320), (27, 128347), (29, 128386), (30, 128407), (31, 128419), (32, 128428), (33, 128431), (34, 128446), (37, 128488), (39, 128527),

Gene: Tortoise16\_217 Start: 122475, Stop: 123284, Start Num: 1

Candidate Starts for Tortoise16\_217:

(Start: 1 @122475 has 167 MA's), (7, 122571), (21, 122871), (22, 122886), (27, 122979), (29, 123018), (37, 123120), (38, 123156),

Gene: Trinitium\_215 Start: 120767, Stop: 121576, Start Num: 1

Candidate Starts for Trinitium\_215:

(Start: 1 @120767 has 167 MA's), (7, 120863), (21, 121163), (22, 121178), (27, 121271), (29, 121310), (37, 121412), (38, 121448),

Gene: Turret\_212 Start: 120349, Stop: 121158, Start Num: 1

Candidate Starts for Turret\_212:

(Start: 1 @120349 has 167 MA's), (7, 120445), (21, 120745), (22, 120760), (27, 120853), (29, 120892), (37, 120994), (38, 121030),

Gene: Tyke\_217 Start: 123842, Stop: 124651, Start Num: 1

Candidate Starts for Tyke\_217:

(Start: 1 @123842 has 167 MA's), (7, 123938), (21, 124238), (22, 124253), (27, 124346), (29, 124385), (37, 124487), (38, 124523),

Gene: ValleyTerrace\_220 Start: 121926, Stop: 122735, Start Num: 1

Candidate Starts for ValleyTerrace\_220:

(Start: 1 @121926 has 167 MA's), (7, 122022), (21, 122322), (22, 122337), (27, 122430), (29, 122469), (37, 122571), (38, 122607),

Gene: Wally\_217 Start: 121910, Stop: 122719, Start Num: 1

Candidate Starts for Wally\_217:

(Start: 1 @121910 has 167 MA's), (7, 122006), (21, 122306), (22, 122321), (27, 122414), (29, 122453), (37, 122555), (38, 122591),

Gene: Willis\_220 Start: 122824, Stop: 123621, Start Num: 1

Candidate Starts for Willis\_220:

(Start: 1 @122824 has 167 MA's), (7, 122920), (21, 123220), (22, 123235), (27, 123328), (29, 123367), (37, 123469), (38, 123505),

Gene: Yassified\_216 Start: 122274, Stop: 123071, Start Num: 1

Candidate Starts for Yassified\_216:

(Start: 1 @122274 has 167 MA's), (7, 122370), (21, 122670), (22, 122685), (27, 122778), (29, 122817), (37, 122919), (38, 122955),

Gene: YemiJoy2021\_220 Start: 123580, Stop: 124389, Start Num: 1

Candidate Starts for YemiJoy2021\_220:

(Start: 1 @123580 has 167 MA's), (7, 123676), (21, 123976), (22, 123991), (27, 124084), (29, 124123), (37, 124225), (38, 124261),

Gene: YoungMoneyMata\_218 Start: 122394, Stop: 123203, Start Num: 1

Candidate Starts for YoungMoneyMata\_218:

(Start: 1 @122394 has 167 MA's), (7, 122490), (21, 122790), (22, 122805), (27, 122898), (29, 122937), (37, 123039), (38, 123075),

Gene: Yucca\_219 Start: 123572, Stop: 124381, Start Num: 1

Candidate Starts for Yucca\_219:

(Start: 1 @123572 has 167 MA's), (7, 123668), (21, 123968), (22, 123983), (27, 124076), (29, 124115), (37, 124217), (38, 124253),

Gene: Zalkecks\_218 Start: 122653, Stop: 123450, Start Num: 1

Candidate Starts for Zalkecks\_218:

(Start: 1 @122653 has 167 MA's), (7, 122749), (21, 123049), (22, 123064), (27, 123157), (29, 123196), (37, 123298), (38, 123334),

Gene: Zeenon\_221 Start: 123224, Stop: 124021, Start Num: 1

Candidate Starts for Zeenon\_221:

(Start: 1 @123224 has 167 MA's), (7, 123320), (21, 123620), (22, 123635), (27, 123728), (29, 123767), (37, 123869), (38, 123905),

Gene: ZygoTaiga\_216 Start: 123844, Stop: 124641, Start Num: 1

Candidate Starts for ZygoTaiga\_216:

(Start: 1 @123844 has 167 MA's), (7, 123940), (21, 124240), (22, 124255), (27, 124348), (29, 124387), (37, 124489), (38, 124525),