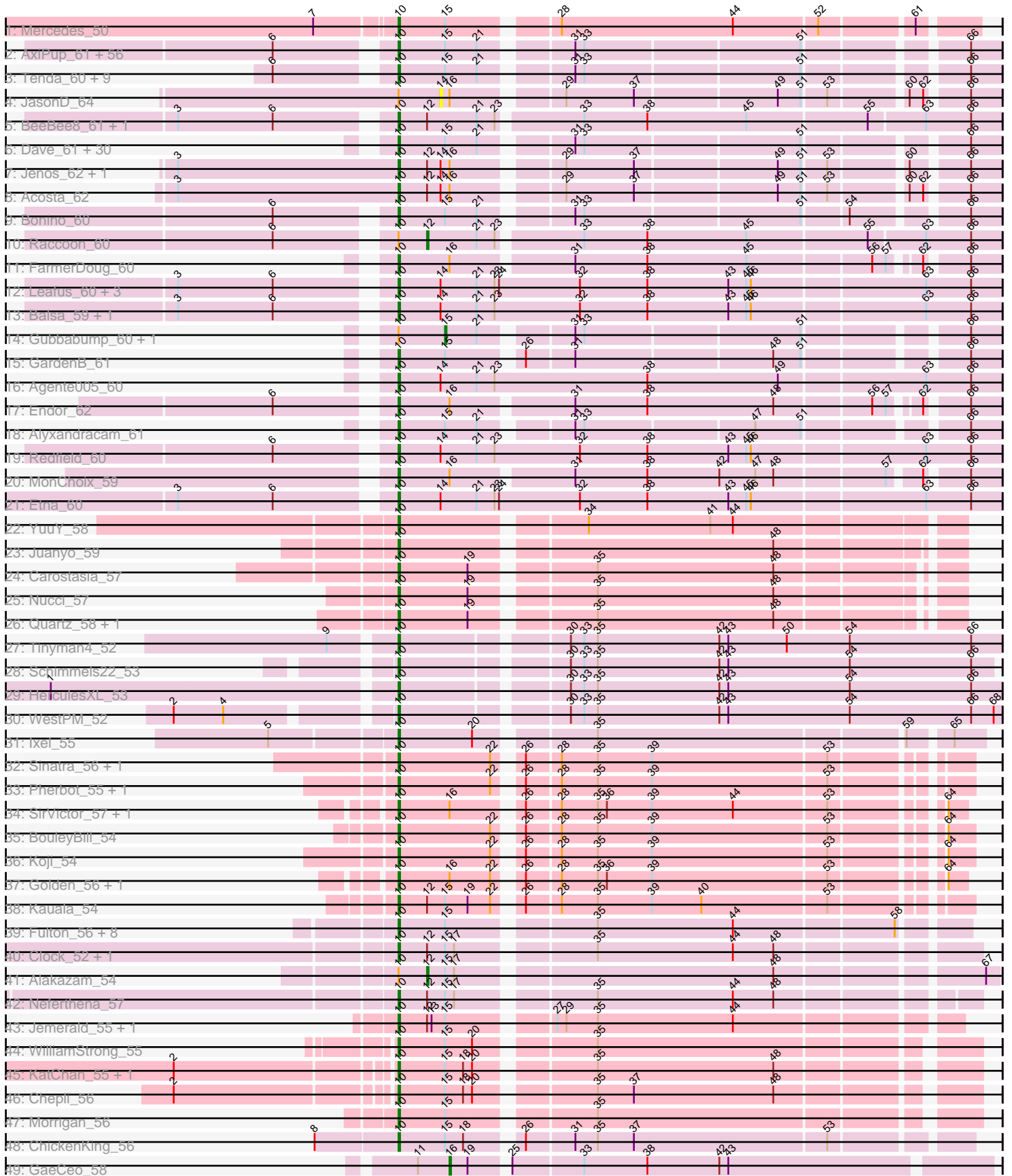


Pham 185380



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 185380 Report

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

Pham number 185380 has 167 members, 5 are drafts.

Phages represented in each track:

- Track 1 : Mercedes\_50
- Track 2 : AxiPup\_61, Convict\_61, Baines\_60, Phriends\_60, Byron23\_62, Stanktossa\_60, Pherferi\_61, Chako\_60, ParleG\_61, PhredFlintston\_61, Dothraki\_61, Raptor\_61, NickSell\_61, OldNelly\_61, Martin\_62, BonesMcCoy\_61, HungryHenry\_60, ShaiHulud\_62, Kale\_60, Bandik\_61, Zada\_62, MrWorldwide\_61, Thorongil\_61, StirfryIV\_60, Ioannes\_61, SJay\_61, Gelo\_60, Benjalauren\_61, Duocatuli\_60, BeautPeep30\_61, Knox\_61, StingRay\_60, Inventa\_61, Phireproof\_61, Jerbirus\_62, Robinson\_61, HanSolo\_60, Ilzat\_60, HankSprout\_61, JasperRussell\_60, Shee\_61, KannH\_60, TinSulphur\_62, Velene\_61, Clancy\_60, MillyPhilly\_61, Delphidian\_60, Kurt1\_61, Gargoyle\_61, TatarkaPM\_61, Winzigespinne\_60, Papafritta\_60, Nagem\_61, Vispistious\_61, Rog141\_60, PuppyEggo\_61, Phiderman\_61
- Track 3 : Tenda\_60, Oats\_60, Gershwin\_60, Christoph\_60, Espinosa\_60, TeddyBear\_60, Aubergine\_60, Teagan\_61, Asta\_60, Janus167\_60
- Track 4 : JasonD\_64
- Track 5 : BeeBee8\_61, Hamlet\_60
- Track 6 : Dave\_61, Calix\_60, Den3\_61, WildNOOut\_61, Blage\_61, Superfresh\_61, MaeLinda\_61, Erla\_60, Greys\_61, Renzie\_61, Sedgewig\_60, Strathdee\_61, Etta\_60, Klimt\_61, ManRay\_60, BigRedClifford\_61, Pocket\_60, Oxtober96\_62, Lovelyunicorn\_61, Ludgate\_61, Rapheph\_61, AranulaLuti\_60, SonOfLevi\_61, Riyhil\_61, Nattles\_60, Garey24\_61, Chamuel\_60, AlexAdler\_61, Antoinette\_61, Thompsone\_61, Peep\_61
- Track 7 : Jenos\_62, McGalleon\_61
- Track 8 : Acosta\_62
- Track 9 : Bonino\_60
- Track 10 : Raccoon\_60
- Track 11 : FarmerDoug\_60
- Track 12 : Leafus\_60, Stormbreaker8\_59, KingJulien\_60, Peppino\_60
- Track 13 : Balsa\_59, Schnapsidee\_60
- Track 14 : Gubbabump\_60, Figueroism\_61
- Track 15 : GardenB\_61
- Track 16 : Agente005\_60
- Track 17 : Endor\_62
- Track 18 : Alyxandracam\_61
- Track 19 : Redfield\_60
- Track 20 : MonChoix\_59
- Track 21 : Etna\_60

- Track 22 : YuuY\_58
- Track 23 : Juanyo\_59
- Track 24 : Carostasia\_57
- Track 25 : Nucci\_57
- Track 26 : Quartz\_58, Mandalorian\_57
- Track 27 : Tinyman4\_52
- Track 28 : Schimmels22\_53
- Track 29 : HerculesXL\_53
- Track 30 : WestPM\_52
- Track 31 : Ixel\_55
- Track 32 : Sinatra\_56, PrincePhergus\_55
- Track 33 : Pherbot\_55, Bustleton\_55
- Track 34 : SirVictor\_57, Guetzie\_57
- Track 35 : BouleyBill\_54
- Track 36 : Koji\_54
- Track 37 : Golden\_56, Lucky3\_56
- Track 38 : Kauala\_54
- Track 39 : Fulton\_56, Greenlvy\_55, LilTerminator\_56, Hasitha\_56, CaptainRex\_56, Librie\_56, Zepp\_56, QuadZero\_56, Zayuliv\_56
- Track 40 : Clock\_52, Nebulous\_52
- Track 41 : Alakazam\_54
- Track 42 : Neferthena\_57
- Track 43 : Jemerald\_55, Juicer\_55
- Track 44 : WilliamStrong\_55
- Track 45 : KatChan\_55, Luna18\_56
- Track 46 : Chepli\_56
- Track 47 : Morigan\_56
- Track 48 : ChickenKing\_56
- Track 49 : GaeCeo\_58

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

The start number called the most often in the published annotations is 10, it was called in 157 of the 162 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acosta\_62, Agente005\_60, AlexAdler\_61, Alyxandracam\_61, Antoinette\_61, AranulaLuti\_60, Asta\_60, Aubergine\_60, AxiPup\_61, Baines\_60, Balsa\_59, Bandik\_61, BeautPeep30\_61, BeeBee8\_61, Benjalauren\_61, BigRedClifford\_61, Blage\_61, BonesMcCoy\_61, Bonino\_60, BouleyBill\_54, Bustleton\_55, Byron23\_62, Calix\_60, CaptainRex\_56, Carostasia\_57, Chako\_60, Chamuel\_60, Chepli\_56, ChickenKing\_56, Christoph\_60, Clancy\_60, Clock\_52, Convict\_61, Dave\_61, Delphidian\_60, Den3\_61, Dothraki\_61, Duocatuli\_60, Endor\_62, Erla\_60, Espinosa\_60, Etna\_60, Etta\_60, FarmerDoug\_60, Fulton\_56, GardenB\_61, Garey24\_61, Gargoyle\_61, Gelo\_60, Gershwin\_60, Golden\_56, Greenlvy\_55, Greys\_61, Guetzie\_57, Hamlet\_60, HanSolo\_60, HankSprout\_61, Hasitha\_56, HerculesXL\_53, HungryHenry\_60, Ilzat\_60, Inventa\_61, Ioannes\_61, Ixel\_55, Janus167\_60, JasperRussell\_60, Jemerald\_55, Jenos\_62, Jerbirus\_62, Juanyo\_59, Juicer\_55, Kale\_60, KannH\_60, KatChan\_55, Kauala\_54, KingJulien\_60, Klimt\_61, Knox\_61, Koji\_54, Kurt1\_61, Leafus\_60, Librie\_56, LilTerminator\_56,

Lovelyunicorn\_61, Lucky3\_56, Ludgate\_61, Luna18\_56, MaeLinda\_61, ManRay\_60, Mandalorian\_57, Martin\_62, McGalleon\_61, Mercedes\_50, MillyPhilly\_61, MonChoix\_59, Morrigan\_56, MrWorldwide\_61, Nagem\_61, Nattles\_60, Nebulous\_52, Neferthema\_57, NickSell\_61, Nucci\_57, Oats\_60, OldNelly\_61, Oxtober96\_62, Papafritta\_60, ParleG\_61, Peep\_61, Peppino\_60, Pherbot\_55, Pherferi\_61, Phiderman\_61, Phireproof\_61, PhredFlintston\_61, Phriends\_60, Pocket\_60, PrincePhergus\_55, PuppyEggo\_61, QuadZero\_56, Quartz\_58, Rappheph\_61, Raptor\_61, Redfield\_60, Renzie\_61, Riyhil\_61, Robinson\_61, Rog141\_60, SJay\_61, Schimmels22\_53, Schnapsidee\_60, Sedgewig\_60, ShaiHulud\_62, Shee\_61, Sinatra\_56, SirVictor\_57, SonOfLevi\_61, Stanktossa\_60, StingRay\_60, StirfryIV\_60, Stormbreaker8\_59, Strathdee\_61, Superfresh\_61, TatarkaPM\_61, Teagan\_61, TeddyBear\_60, Tenda\_60, Thompsone\_61, Thorongil\_61, TinSulphur\_62, Tinyman4\_52, Velene\_61, Vispistious\_61, WestPM\_52, WildNOut\_61, WilliamStrong\_55, Winzigespinne\_60, YuuY\_58, Zada\_62, Zayuliv\_56, Zepp\_56,

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

- Alakazam\_54, Figueroism\_61, Gubbabump\_60, JasonD\_64, Raccoon\_60,

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

- GaeCeo\_58,

### Summary by start number:

Start 10:

- Found in 166 of 167 ( 99.4% ) of genes in pham
- Manual Annotations of this start: 157 of 162
- Called 97.0% of time when present
- Phage (with cluster) where this start called: Acosta\_62 (EA1), Agente005\_60 (EA1), AlexAdler\_61 (EA1), Alyxandracam\_61 (EA1), Antoinette\_61 (EA1), AranulaLuti\_60 (EA1), Asta\_60 (EA1), Aubergine\_60 (EA1), AxiPup\_61 (EA1), Baines\_60 (EA1), Balsa\_59 (EA1), Bandik\_61 (EA1), BeautPeep30\_61 (EA1), BeeBee8\_61 (EA1), Benjalauen\_61 (EA1), BigRedClifford\_61 (EA1), Blage\_61 (EA1), BonesMcCoy\_61 (EA1), Bonino\_60 (EA1), BouleyBill\_54 (EA4), Bustleton\_55 (EA4), Byron23\_62 (EA1), Calix\_60 (EA1), CaptainRex\_56 (EA5), Carostasia\_57 (EA10), Chako\_60 (EA1), Chamuel\_60 (EA1), Chepli\_56 (EA6), ChickenKing\_56 (EA9), Christoph\_60 (EA1), Clancy\_60 (EA1), Clock\_52 (EA5), Convict\_61 (EA1), Dave\_61 (EA1), Delphidian\_60 (EA1), Den3\_61 (EA1), Dothraki\_61 (EA1), Duocatuli\_60 (EA1), Endor\_62 (EA1), Erla\_60 (EA1), Espinosa\_60 (EA1), Etna\_60 (EA1), Etta\_60 (EA1), FarmerDoug\_60 (EA1), Fulton\_56 (EA5), GardenB\_61 (EA1), Garey24\_61 (EA1), Gargoyle\_61 (EA1), Gelo\_60 (EA1), Gershwin\_60 (EA1), Golden\_56 (EA4), Greenlvy\_55 (EA5), Greys\_61 (EA1), Guetzie\_57 (EA4), Hamlet\_60 (EA1), HanSolo\_60 (EA1), HankSprout\_61 (EA1), Hasitha\_56 (EA5), HerculesXL\_53 (EA11), HungryHenry\_60 (EA1), Ilzat\_60 (EA1), Inventa\_61 (EA1), Ioannes\_61 (EA1), Ixel\_55 (EA11), Janus167\_60 (EA1), JasperRussell\_60 (EA1), Jemerald\_55 (EA6), Jenos\_62 (EA1), Jerbirus\_62 (EA1), Juanyo\_59 (EA10), Juicer\_55 (EA6), Kale\_60 (EA1), KannH\_60 (EA1), KatChan\_55 (EA6), Kaula\_54 (EA4), KingJulien\_60 (EA1), Klimt\_61 (EA1), Knox\_61 (EA1), Koji\_54 (EA4), Kurt1\_61 (EA1), Leafus\_60 (EA1), Librie\_56 (EA5), LiTerminator\_56 (EA5), Lovelyunicorn\_61 (EA1), Lucky3\_56 (EA4), Ludgate\_61 (EA1), Luna18\_56 (EA6), MaeLinda\_61 (EA1), ManRay\_60 (EA1), Mandalorian\_57 (EA10), Martin\_62 (EA1), McGalleon\_61 (EA1), Mercedes\_50 (EA), MillyPhilly\_61 (EA1), MonChoix\_59 (EA1), Morrigan\_56 (EA6), MrWorldwide\_61 (EA1), Nagem\_61 (EA1), Nattles\_60 (EA1), Nebulous\_52 (EA5), Neferthema\_57 (EA5), NickSell\_61 (EA1), Nucci\_57 (EA10), Oats\_60 (EA1),

OldNelly\_61 (EA1), Oxtober96\_62 (EA1), Papafritta\_60 (EA1), ParleG\_61 (EA1), Peep\_61 (EA1), Peppino\_60 (EA1), Pherbot\_55 (EA4), Pherferi\_61 (EA1), Phiderman\_61 (EA1), Phireproof\_61 (EA1), PhredFlintston\_61 (EA1), Phriends\_60 (EA1), Pocket\_60 (EA1), PrincePhergus\_55 (EA4), PuppyEggo\_61 (EA1), QuadZero\_56 (EA5), Quartz\_58 (EA10), Rapheph\_61 (EA1), Raptor\_61 (EA1), Redfield\_60 (EA1), Renzie\_61 (EA1), Riyhil\_61 (EA1), Robinson\_61 (EA1), Rog141\_60 (EA1), SJay\_61 (EA1), Schimmels22\_53 (EA11), Schnapsidee\_60 (EA1), Sedgewig\_60 (EA1), ShaiHulud\_62 (EA1), Shee\_61 (EA1), Sinatra\_56 (EA4), SirVictor\_57 (EA4), SonOfLevi\_61 (EA1), Stanktossa\_60 (EA1), StingRay\_60 (EA1), SturfryIV\_60 (EA1), Stormbreaker8\_59 (EA1), Strathdee\_61 (EA1), Superfresh\_61 (EA1), TatarkaPM\_61 (EA1), Teagan\_61 (EA1), TeddyBear\_60 (EA1), Tenda\_60 (EA1), Thompsone\_61 (EA1), Thorongil\_61 (EA1), TinSulphur\_62 (EA1), Tinyman4\_52 (EA11), Velene\_61 (EA1), Vispistious\_61 (EA1), WestPM\_52 (EA11), WildNOut\_61 (EA1), WilliamStrong\_55 (EA6), Winzigespinne\_60 (EA1), YuuY\_58 (EA10), Zada\_62 (EA1), Zayuliv\_56 (EA5), Zepp\_56 (EA5),

Start 12:

- Found in 13 of 167 ( 7.8% ) of genes in pham
- Manual Annotations of this start: 2 of 162
- Called 15.4% of time when present
- Phage (with cluster) where this start called: Alakazam\_54 (EA5), Raccoon\_60 (EA1),

Start 14:

- Found in 13 of 167 ( 7.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 7.7% of time when present
- Phage (with cluster) where this start called: JasonD\_64 (EA1),

Start 15:

- Found in 126 of 167 ( 75.4% ) of genes in pham
- Manual Annotations of this start: 2 of 162
- Called 1.6% of time when present
- Phage (with cluster) where this start called: Figueroism\_61 (EA1), Gubbabump\_60 (EA1),

Start 16:

- Found in 12 of 167 ( 7.2% ) of genes in pham
- Manual Annotations of this start: 1 of 162
- Called 8.3% of time when present
- Phage (with cluster) where this start called: GaeCeo\_58 (EA9),

### Summary by clusters:

There are 8 clusters represented in this pham: EA11, EA10, EA, EA9, EA1, EA5, EA4, EA6,

Info for manual annotations of cluster EA:

- Start number 10 was manually annotated 1 time for cluster EA.

Info for manual annotations of cluster EA1:

- Start number 10 was manually annotated 115 times for cluster EA1.
- Start number 12 was manually annotated 1 time for cluster EA1.

- Start number 15 was manually annotated 2 times for cluster EA1.

Info for manual annotations of cluster EA10:

- Start number 10 was manually annotated 6 times for cluster EA10.

Info for manual annotations of cluster EA11:

- Start number 10 was manually annotated 5 times for cluster EA11.

Info for manual annotations of cluster EA4:

- Start number 10 was manually annotated 11 times for cluster EA4.

Info for manual annotations of cluster EA5:

- Start number 10 was manually annotated 11 times for cluster EA5.
- Start number 12 was manually annotated 1 time for cluster EA5.

Info for manual annotations of cluster EA6:

- Start number 10 was manually annotated 7 times for cluster EA6.

Info for manual annotations of cluster EA9:

- Start number 10 was manually annotated 1 time for cluster EA9.
- Start number 16 was manually annotated 1 time for cluster EA9.

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

Gene: Acosta\_62 Start: 40455, Stop: 40096, Start Num: 10

Candidate Starts for Acosta\_62:

(3, 40602), (Start: 10 @40455 has 157 MA's), (Start: 12 @40437 has 2 MA's), (14, 40428), (Start: 16 @40422 has 1 MA's), (29, 40359), (37, 40314), (49, 40224), (51, 40209), (53, 40194), (60, 40149), (62, 40140), (66, 40116),

Gene: Agente005\_60 Start: 40271, Stop: 39876, Start Num: 10

Candidate Starts for Agente005\_60:

(Start: 10 @40271 has 157 MA's), (14, 40244), (21, 40220), (23, 40208), (38, 40106), (49, 40019), (63, 39926), (66, 39896),

Gene: Alakazam\_54 Start: 38059, Stop: 37712, Start Num: 12

Candidate Starts for Alakazam\_54:

(Start: 10 @38077 has 157 MA's), (Start: 12 @38059 has 2 MA's), (Start: 15 @38047 has 2 MA's), (17, 38041), (48, 37843), (67, 37720),

Gene: AlexAdler\_61 Start: 40415, Stop: 40056, Start Num: 10

Candidate Starts for AlexAdler\_61:

(Start: 10 @40415 has 157 MA's), (Start: 15 @40385 has 2 MA's), (21, 40364), (31, 40313), (33, 40307), (51, 40169), (66, 40076),

Gene: Alyxandracam\_61 Start: 40352, Stop: 39993, Start Num: 10

Candidate Starts for Alyxandracam\_61:

(Start: 10 @40352 has 157 MA's), (Start: 15 @40322 has 2 MA's), (21, 40301), (31, 40250), (33, 40244), (47, 40136), (51, 40106), (66, 40013),

Gene: Antoinette\_61 Start: 40440, Stop: 40081, Start Num: 10

Candidate Starts for Antoinette\_61:

(Start: 10 @40440 has 157 MA's), (Start: 15 @40410 has 2 MA's), (21, 40389), (31, 40338), (33, 40332), (51, 40194), (66, 40101),

Gene: AranulaLuti\_60 Start: 40132, Stop: 39773, Start Num: 10

Candidate Starts for AranulaLuti\_60:

(Start: 10 @40132 has 157 MA's), (Start: 15 @40102 has 2 MA's), (21, 40081), (31, 40030), (33, 40024), (51, 39886), (66, 39793),

Gene: Asta\_60 Start: 40137, Stop: 39778, Start Num: 10

Candidate Starts for Asta\_60:

(6, 40206), (Start: 10 @40137 has 157 MA's), (Start: 15 @40107 has 2 MA's), (21, 40086), (31, 40035), (33, 40029), (51, 39891), (66, 39798),

Gene: Aubergine\_60 Start: 40137, Stop: 39778, Start Num: 10

Candidate Starts for Aubergine\_60:

(6, 40206), (Start: 10 @40137 has 157 MA's), (Start: 15 @40107 has 2 MA's), (21, 40086), (31, 40035), (33, 40029), (51, 39891), (66, 39798),

Gene: AxiPup\_61 Start: 40351, Stop: 39992, Start Num: 10

Candidate Starts for AxiPup\_61:

(6, 40420), (Start: 10 @40351 has 157 MA's), (Start: 15 @40321 has 2 MA's), (21, 40300), (31, 40249), (33, 40243), (51, 40105), (66, 40012),

Gene: Baines\_60 Start: 40136, Stop: 39777, Start Num: 10

Candidate Starts for Baines\_60:

(6, 40205), (Start: 10 @40136 has 157 MA's), (Start: 15 @40106 has 2 MA's), (21, 40085), (31, 40034), (33, 40028), (51, 39890), (66, 39797),

Gene: Balsa\_59 Start: 40302, Stop: 39907, Start Num: 10

Candidate Starts for Balsa\_59:

(3, 40434), (6, 40371), (Start: 10 @40302 has 157 MA's), (14, 40275), (21, 40251), (23, 40239), (32, 40182), (38, 40137), (43, 40083), (45, 40071), (46, 40068), (63, 39957), (66, 39927),

Gene: Bandik\_61 Start: 40384, Stop: 40025, Start Num: 10

Candidate Starts for Bandik\_61:

(6, 40453), (Start: 10 @40384 has 157 MA's), (Start: 15 @40354 has 2 MA's), (21, 40333), (31, 40282), (33, 40276), (51, 40138), (66, 40045),

Gene: BeautPeep30\_61 Start: 40390, Stop: 40031, Start Num: 10

Candidate Starts for BeautPeep30\_61:

(6, 40459), (Start: 10 @40390 has 157 MA's), (Start: 15 @40360 has 2 MA's), (21, 40339), (31, 40288), (33, 40282), (51, 40144), (66, 40051),

Gene: BeeBee8\_61 Start: 40467, Stop: 40081, Start Num: 10

Candidate Starts for BeeBee8\_61:

(3, 40599), (6, 40536), (Start: 10 @40467 has 157 MA's), (Start: 12 @40449 has 2 MA's), (21, 40416), (23, 40404), (33, 40353), (38, 40311), (45, 40245), (55, 40167), (63, 40131), (66, 40101),

Gene: Benjalauren\_61 Start: 40143, Stop: 39784, Start Num: 10

Candidate Starts for Benjalauren\_61:

(6, 40212), (Start: 10 @40143 has 157 MA's), (Start: 15 @40113 has 2 MA's), (21, 40092), (31, 40041), (33, 40035), (51, 39897), (66, 39804),

Gene: BigRedClifford\_61 Start: 40378, Stop: 40019, Start Num: 10

Candidate Starts for BigRedClifford\_61:

(Start: 10 @40378 has 157 MA's), (Start: 15 @40348 has 2 MA's), (21, 40327), (31, 40276), (33, 40270), (51, 40132), (66, 40039),

Gene: Blage\_61 Start: 40378, Stop: 40019, Start Num: 10

Candidate Starts for Blage\_61:

(Start: 10 @40378 has 157 MA's), (Start: 15 @40348 has 2 MA's), (21, 40327), (31, 40276), (33, 40270), (51, 40132), (66, 40039),

Gene: BonesMcCoy\_61 Start: 40379, Stop: 40020, Start Num: 10

Candidate Starts for BonesMcCoy\_61:

(6, 40448), (Start: 10 @40379 has 157 MA's), (Start: 15 @40349 has 2 MA's), (21, 40328), (31, 40277), (33, 40271), (51, 40133), (66, 40040),

Gene: Bonino\_60 Start: 40116, Stop: 39757, Start Num: 10

Candidate Starts for Bonino\_60:

(6, 40185), (Start: 10 @40116 has 157 MA's), (Start: 15 @40086 has 2 MA's), (21, 40065), (31, 40014), (33, 40008), (51, 39870), (54, 39843), (66, 39777),

Gene: BouleyBill\_54 Start: 38200, Stop: 37856, Start Num: 10

Candidate Starts for BouleyBill\_54:

(Start: 10 @38200 has 157 MA's), (22, 38140), (26, 38128), (28, 38107), (35, 38083), (39, 38047), (53, 37933), (64, 37873),

Gene: Bustleton\_55 Start: 38162, Stop: 37818, Start Num: 10

Candidate Starts for Bustleton\_55:

(Start: 10 @38162 has 157 MA's), (22, 38102), (26, 38090), (28, 38069), (35, 38045), (39, 38009), (53, 37895),

Gene: Byron23\_62 Start: 40387, Stop: 40028, Start Num: 10

Candidate Starts for Byron23\_62:

(6, 40456), (Start: 10 @40387 has 157 MA's), (Start: 15 @40357 has 2 MA's), (21, 40336), (31, 40285), (33, 40279), (51, 40141), (66, 40048),

Gene: Calix\_60 Start: 40123, Stop: 39764, Start Num: 10

Candidate Starts for Calix\_60:

(Start: 10 @40123 has 157 MA's), (Start: 15 @40093 has 2 MA's), (21, 40072), (31, 40021), (33, 40015), (51, 39877), (66, 39784),

Gene: CaptainRex\_56 Start: 36985, Stop: 36638, Start Num: 10

Candidate Starts for CaptainRex\_56:

(Start: 10 @36985 has 157 MA's), (Start: 15 @36955 has 2 MA's), (35, 36868), (44, 36778), (58, 36676),

Gene: Carostasia\_57 Start: 38345, Stop: 38004, Start Num: 10

Candidate Starts for Carostasia\_57:

(Start: 10 @38345 has 157 MA's), (19, 38300), (35, 38228), (48, 38111),

Gene: Chako\_60 Start: 40132, Stop: 39773, Start Num: 10

Candidate Starts for Chako\_60:



(6, 40201), (Start: 10 @40132 has 157 MA's), (Start: 15 @40102 has 2 MA's), (21, 40081), (31, 40030), (33, 40024), (51, 39886), (66, 39793),

Gene: Chamuel\_60 Start: 40149, Stop: 39790, Start Num: 10

Candidate Starts for Chamuel\_60:

(Start: 10 @40149 has 157 MA's), (Start: 15 @40119 has 2 MA's), (21, 40098), (31, 40047), (33, 40041), (51, 39903), (66, 39810),

Gene: Chepli\_56 Start: 37092, Stop: 36742, Start Num: 10

Candidate Starts for Chepli\_56:

(2, 37227), (Start: 10 @37092 has 157 MA's), (Start: 15 @37062 has 2 MA's), (18, 37050), (20, 37044), (35, 36975), (37, 36951), (48, 36858),

Gene: ChickenKing\_56 Start: 39024, Stop: 38674, Start Num: 10

Candidate Starts for ChickenKing\_56:

(8, 39078), (Start: 10 @39024 has 157 MA's), (Start: 15 @38994 has 2 MA's), (18, 38982), (26, 38952), (31, 38922), (35, 38907), (37, 38883), (53, 38757),

Gene: Christoph\_60 Start: 40136, Stop: 39777, Start Num: 10

Candidate Starts for Christoph\_60:

(6, 40205), (Start: 10 @40136 has 157 MA's), (Start: 15 @40106 has 2 MA's), (21, 40085), (31, 40034), (33, 40028), (51, 39890), (66, 39797),

Gene: Clancy\_60 Start: 40136, Stop: 39777, Start Num: 10

Candidate Starts for Clancy\_60:

(6, 40205), (Start: 10 @40136 has 157 MA's), (Start: 15 @40106 has 2 MA's), (21, 40085), (31, 40034), (33, 40028), (51, 39890), (66, 39797),

Gene: Clock\_52 Start: 38493, Stop: 38140, Start Num: 10

Candidate Starts for Clock\_52:

(Start: 10 @38493 has 157 MA's), (Start: 12 @38475 has 2 MA's), (Start: 15 @38463 has 2 MA's), (17, 38457), (35, 38376), (44, 38286), (48, 38259),

Gene: Convict\_61 Start: 40379, Stop: 40020, Start Num: 10

Candidate Starts for Convict\_61:

(6, 40448), (Start: 10 @40379 has 157 MA's), (Start: 15 @40349 has 2 MA's), (21, 40328), (31, 40277), (33, 40271), (51, 40133), (66, 40040),

Gene: Dave\_61 Start: 40440, Stop: 40081, Start Num: 10

Candidate Starts for Dave\_61:

(Start: 10 @40440 has 157 MA's), (Start: 15 @40410 has 2 MA's), (21, 40389), (31, 40338), (33, 40332), (51, 40194), (66, 40101),

Gene: Delphidian\_60 Start: 40177, Stop: 39818, Start Num: 10

Candidate Starts for Delphidian\_60:

(6, 40246), (Start: 10 @40177 has 157 MA's), (Start: 15 @40147 has 2 MA's), (21, 40126), (31, 40075), (33, 40069), (51, 39931), (66, 39838),

Gene: Den3\_61 Start: 40383, Stop: 40024, Start Num: 10

Candidate Starts for Den3\_61:

(Start: 10 @40383 has 157 MA's), (Start: 15 @40353 has 2 MA's), (21, 40332), (31, 40281), (33, 40275), (51, 40137), (66, 40044),

Gene: Dothraki\_61 Start: 40387, Stop: 40028, Start Num: 10

Candidate Starts for Dothraki\_61:

(6, 40456), (Start: 10 @40387 has 157 MA's), (Start: 15 @40357 has 2 MA's), (21, 40336), (31, 40285), (33, 40279), (51, 40141), (66, 40048),

Gene: Duocatuli\_60 Start: 40132, Stop: 39773, Start Num: 10

Candidate Starts for Duocatuli\_60:

(6, 40201), (Start: 10 @40132 has 157 MA's), (Start: 15 @40102 has 2 MA's), (21, 40081), (31, 40030), (33, 40024), (51, 39886), (66, 39793),

Gene: Endor\_62 Start: 40712, Stop: 40344, Start Num: 10

Candidate Starts for Endor\_62:

(6, 40781), (Start: 10 @40712 has 157 MA's), (Start: 16 @40679 has 1 MA's), (31, 40604), (38, 40556), (48, 40472), (56, 40412), (57, 40403), (62, 40388), (66, 40364),

Gene: Erla\_60 Start: 40120, Stop: 39761, Start Num: 10

Candidate Starts for Erla\_60:

(Start: 10 @40120 has 157 MA's), (Start: 15 @40090 has 2 MA's), (21, 40069), (31, 40018), (33, 40012), (51, 39874), (66, 39781),

Gene: Espinosa\_60 Start: 40135, Stop: 39776, Start Num: 10

Candidate Starts for Espinosa\_60:

(6, 40204), (Start: 10 @40135 has 157 MA's), (Start: 15 @40105 has 2 MA's), (21, 40084), (31, 40033), (33, 40027), (51, 39889), (66, 39796),

Gene: Etna\_60 Start: 40349, Stop: 39954, Start Num: 10

Candidate Starts for Etna\_60:

(3, 40481), (6, 40418), (Start: 10 @40349 has 157 MA's), (14, 40322), (21, 40298), (23, 40286), (24, 40283), (32, 40229), (38, 40184), (43, 40130), (45, 40118), (46, 40115), (63, 40004), (66, 39974),

Gene: Etta\_60 Start: 40124, Stop: 39765, Start Num: 10

Candidate Starts for Etta\_60:

(Start: 10 @40124 has 157 MA's), (Start: 15 @40094 has 2 MA's), (21, 40073), (31, 40022), (33, 40016), (51, 39878), (66, 39785),

Gene: FarmerDoug\_60 Start: 40145, Stop: 39777, Start Num: 10

Candidate Starts for FarmerDoug\_60:

(Start: 10 @40145 has 157 MA's), (Start: 16 @40112 has 1 MA's), (31, 40037), (38, 39989), (45, 39923), (56, 39845), (57, 39836), (62, 39821), (66, 39797),

Gene: Figueroism\_61 Start: 40399, Stop: 40070, Start Num: 15

Candidate Starts for Figueroism\_61:

(Start: 10 @40429 has 157 MA's), (Start: 15 @40399 has 2 MA's), (21, 40378), (31, 40327), (33, 40321), (51, 40183), (66, 40090),

Gene: Fulton\_56 Start: 36986, Stop: 36639, Start Num: 10

Candidate Starts for Fulton\_56:

(Start: 10 @36986 has 157 MA's), (Start: 15 @36956 has 2 MA's), (35, 36869), (44, 36779), (58, 36677),

Gene: GaeCeo\_58 Start: 39248, Stop: 38907, Start Num: 16

Candidate Starts for GaeCeo\_58:

(11, 39269), (Start: 16 @39248 has 1 MA's), (19, 39236), (25, 39215), (33, 39170), (38, 39128), (42, 39080), (43, 39074),

Gene: GardenB\_61 Start: 40508, Stop: 40149, Start Num: 10

Candidate Starts for GardenB\_61:

(Start: 10 @40508 has 157 MA's), (Start: 15 @40478 has 2 MA's), (26, 40436), (31, 40406), (48, 40280), (51, 40262), (66, 40169),

Gene: Garey24\_61 Start: 40103, Stop: 39744, Start Num: 10

Candidate Starts for Garey24\_61:

(Start: 10 @40103 has 157 MA's), (Start: 15 @40073 has 2 MA's), (21, 40052), (31, 40001), (33, 39995), (51, 39857), (66, 39764),

Gene: Gargoyle\_61 Start: 40384, Stop: 40025, Start Num: 10

Candidate Starts for Gargoyle\_61:

(6, 40453), (Start: 10 @40384 has 157 MA's), (Start: 15 @40354 has 2 MA's), (21, 40333), (31, 40282), (33, 40276), (51, 40138), (66, 40045),

Gene: Gelo\_60 Start: 40130, Stop: 39771, Start Num: 10

Candidate Starts for Gelo\_60:

(6, 40199), (Start: 10 @40130 has 157 MA's), (Start: 15 @40100 has 2 MA's), (21, 40079), (31, 40028), (33, 40022), (51, 39884), (66, 39791),

Gene: Gershwin\_60 Start: 40137, Stop: 39778, Start Num: 10

Candidate Starts for Gershwin\_60:

(6, 40206), (Start: 10 @40137 has 157 MA's), (Start: 15 @40107 has 2 MA's), (21, 40086), (31, 40035), (33, 40029), (51, 39891), (66, 39798),

Gene: Golden\_56 Start: 38623, Stop: 38285, Start Num: 10

Candidate Starts for Golden\_56:

(Start: 10 @38623 has 157 MA's), (Start: 16 @38590 has 1 MA's), (22, 38563), (26, 38551), (28, 38530), (35, 38506), (36, 38500), (39, 38470), (53, 38356), (64, 38296),

Gene: Greenlvy\_55 Start: 37328, Stop: 36981, Start Num: 10

Candidate Starts for Greenlvy\_55:

(Start: 10 @37328 has 157 MA's), (Start: 15 @37298 has 2 MA's), (35, 37211), (44, 37121), (58, 37019),

Gene: Greys\_61 Start: 40379, Stop: 40020, Start Num: 10

Candidate Starts for Greys\_61:

(Start: 10 @40379 has 157 MA's), (Start: 15 @40349 has 2 MA's), (21, 40328), (31, 40277), (33, 40271), (51, 40133), (66, 40040),

Gene: Gubbabump\_60 Start: 40044, Stop: 39715, Start Num: 15

Candidate Starts for Gubbabump\_60:

(Start: 10 @40074 has 157 MA's), (Start: 15 @40044 has 2 MA's), (21, 40023), (31, 39972), (33, 39966), (51, 39828), (66, 39735),

Gene: Guetzie\_57 Start: 38742, Stop: 38404, Start Num: 10

Candidate Starts for Guetzie\_57:

(Start: 10 @38742 has 157 MA's), (Start: 16 @38709 has 1 MA's), (26, 38670), (28, 38649), (35, 38625), (36, 38619), (39, 38589), (44, 38535), (53, 38475), (64, 38415),

Gene: Hamlet\_60 Start: 40386, Stop: 40000, Start Num: 10

Candidate Starts for Hamlet\_60:

(3, 40518), (6, 40455), (Start: 10 @40386 has 157 MA's), (Start: 12 @40368 has 2 MA's), (21, 40335), (23, 40323), (33, 40272), (38, 40230), (45, 40164), (55, 40086), (63, 40050), (66, 40020),

Gene: HanSolo\_60 Start: 40084, Stop: 39725, Start Num: 10

Candidate Starts for HanSolo\_60:

(6, 40153), (Start: 10 @40084 has 157 MA's), (Start: 15 @40054 has 2 MA's), (21, 40033), (31, 39982), (33, 39976), (51, 39838), (66, 39745),

Gene: HankSprout\_61 Start: 40003, Stop: 39644, Start Num: 10

Candidate Starts for HankSprout\_61:

(6, 40072), (Start: 10 @40003 has 157 MA's), (Start: 15 @39973 has 2 MA's), (21, 39952), (31, 39901), (33, 39895), (51, 39757), (66, 39664),

Gene: Hasitha\_56 Start: 36998, Stop: 36651, Start Num: 10

Candidate Starts for Hasitha\_56:

(Start: 10 @36998 has 157 MA's), (Start: 15 @36968 has 2 MA's), (35, 36881), (44, 36791), (58, 36689),

Gene: HerculesXL\_53 Start: 36406, Stop: 36020, Start Num: 10

Candidate Starts for HerculesXL\_53:

(1, 36628), (Start: 10 @36406 has 157 MA's), (30, 36307), (33, 36298), (35, 36289), (42, 36208), (43, 36202), (54, 36121), (66, 36040),

Gene: HungryHenry\_60 Start: 40097, Stop: 39738, Start Num: 10

Candidate Starts for HungryHenry\_60:

(6, 40166), (Start: 10 @40097 has 157 MA's), (Start: 15 @40067 has 2 MA's), (21, 40046), (31, 39995), (33, 39989), (51, 39851), (66, 39758),

Gene: Ilzat\_60 Start: 40107, Stop: 39748, Start Num: 10

Candidate Starts for Ilzat\_60:

(6, 40176), (Start: 10 @40107 has 157 MA's), (Start: 15 @40077 has 2 MA's), (21, 40056), (31, 40005), (33, 39999), (51, 39861), (66, 39768),

Gene: Inventa\_61 Start: 40384, Stop: 40025, Start Num: 10

Candidate Starts for Inventa\_61:

(6, 40453), (Start: 10 @40384 has 157 MA's), (Start: 15 @40354 has 2 MA's), (21, 40333), (31, 40282), (33, 40276), (51, 40138), (66, 40045),

Gene: loannes\_61 Start: 40461, Stop: 40102, Start Num: 10

Candidate Starts for loannes\_61:

(6, 40530), (Start: 10 @40461 has 157 MA's), (Start: 15 @40431 has 2 MA's), (21, 40410), (31, 40359), (33, 40353), (51, 40215), (66, 40122),

Gene: Ixel\_55 Start: 37833, Stop: 37477, Start Num: 10

Candidate Starts for Ixel\_55:

(5, 37911), (Start: 10 @37833 has 157 MA's), (20, 37785), (35, 37716), (59, 37521), (65, 37497),

Gene: Janus167\_60 Start: 40112, Stop: 39753, Start Num: 10

Candidate Starts for Janus167\_60:

(6, 40181), (Start: 10 @40112 has 157 MA's), (Start: 15 @40082 has 2 MA's), (21, 40061), (31, 40010), (33, 40004), (51, 39866), (66, 39773),

Gene: JasonD\_64 Start: 40645, Stop: 40313, Start Num: 14

Candidate Starts for JasonD\_64:

(Start: 10 @40672 has 157 MA's), (14, 40645), (Start: 16 @40639 has 1 MA's), (29, 40576), (37, 40531), (49, 40441), (51, 40426), (53, 40411), (60, 40366), (62, 40357), (66, 40333),

Gene: JasperRussell\_60 Start: 40132, Stop: 39773, Start Num: 10

Candidate Starts for JasperRussell\_60:

(6, 40201), (Start: 10 @40132 has 157 MA's), (Start: 15 @40102 has 2 MA's), (21, 40081), (31, 40030), (33, 40024), (51, 39886), (66, 39793),

Gene: Jemerald\_55 Start: 37998, Stop: 37657, Start Num: 10

Candidate Starts for Jemerald\_55:

(Start: 10 @37998 has 157 MA's), (Start: 12 @37980 has 2 MA's), (13, 37977), (Start: 15 @37968 has 2 MA's), (27, 37908), (29, 37902), (35, 37881), (44, 37791),

Gene: Jenos\_62 Start: 40967, Stop: 40608, Start Num: 10

Candidate Starts for Jenos\_62:

(3, 41114), (Start: 10 @40967 has 157 MA's), (Start: 12 @40949 has 2 MA's), (14, 40940), (Start: 16 @40934 has 1 MA's), (29, 40871), (37, 40826), (49, 40736), (51, 40721), (53, 40706), (60, 40661), (66, 40628),

Gene: Jerbirus\_62 Start: 40127, Stop: 39768, Start Num: 10

Candidate Starts for Jerbirus\_62:

(6, 40196), (Start: 10 @40127 has 157 MA's), (Start: 15 @40097 has 2 MA's), (21, 40076), (31, 40025), (33, 40019), (51, 39881), (66, 39788),

Gene: Juanyo\_59 Start: 39028, Stop: 38684, Start Num: 10

Candidate Starts for Juanyo\_59:

(Start: 10 @39028 has 157 MA's), (48, 38794),

Gene: Juicer\_55 Start: 37998, Stop: 37657, Start Num: 10

Candidate Starts for Juicer\_55:

(Start: 10 @37998 has 157 MA's), (Start: 12 @37980 has 2 MA's), (13, 37977), (Start: 15 @37968 has 2 MA's), (27, 37908), (29, 37902), (35, 37881), (44, 37791),

Gene: Kale\_60 Start: 40139, Stop: 39780, Start Num: 10

Candidate Starts for Kale\_60:

(6, 40208), (Start: 10 @40139 has 157 MA's), (Start: 15 @40109 has 2 MA's), (21, 40088), (31, 40037), (33, 40031), (51, 39893), (66, 39800),

Gene: KannH\_60 Start: 40132, Stop: 39773, Start Num: 10

Candidate Starts for KannH\_60:

(6, 40201), (Start: 10 @40132 has 157 MA's), (Start: 15 @40102 has 2 MA's), (21, 40081), (31, 40030), (33, 40024), (51, 39886), (66, 39793),

Gene: KatChan\_55 Start: 37104, Stop: 36754, Start Num: 10

Candidate Starts for KatChan\_55:

(2, 37239), (Start: 10 @37104 has 157 MA's), (Start: 15 @37074 has 2 MA's), (18, 37062), (20, 37056), (35, 36987), (48, 36870),

Gene: Kauala\_54 Start: 38352, Stop: 38008, Start Num: 10

Candidate Starts for Kauala\_54:

(Start: 10 @38352 has 157 MA's), (Start: 12 @38334 has 2 MA's), (Start: 15 @38322 has 2 MA's), (19, 38307), (22, 38292), (26, 38280), (28, 38259), (35, 38235), (39, 38199), (40, 38166), (53, 38085),

Gene: KingJulien\_60 Start: 40190, Stop: 39795, Start Num: 10

Candidate Starts for KingJulien\_60:

(3, 40322), (6, 40259), (Start: 10 @40190 has 157 MA's), (14, 40163), (21, 40139), (23, 40127), (24, 40124), (32, 40070), (38, 40025), (43, 39971), (45, 39959), (46, 39956), (63, 39845), (66, 39815),

Gene: Klimt\_61 Start: 40155, Stop: 39796, Start Num: 10

Candidate Starts for Klimt\_61:

(Start: 10 @40155 has 157 MA's), (Start: 15 @40125 has 2 MA's), (21, 40104), (31, 40053), (33, 40047), (51, 39909), (66, 39816),

Gene: Knox\_61 Start: 40379, Stop: 40020, Start Num: 10

Candidate Starts for Knox\_61:

(6, 40448), (Start: 10 @40379 has 157 MA's), (Start: 15 @40349 has 2 MA's), (21, 40328), (31, 40277), (33, 40271), (51, 40133), (66, 40040),

Gene: Koji\_54 Start: 38381, Stop: 38037, Start Num: 10

Candidate Starts for Koji\_54:

(Start: 10 @38381 has 157 MA's), (22, 38321), (26, 38309), (28, 38288), (35, 38264), (39, 38228), (53, 38114), (64, 38054),

Gene: Kurt1\_61 Start: 40384, Stop: 40025, Start Num: 10

Candidate Starts for Kurt1\_61:

(6, 40453), (Start: 10 @40384 has 157 MA's), (Start: 15 @40354 has 2 MA's), (21, 40333), (31, 40282), (33, 40276), (51, 40138), (66, 40045),

Gene: Leafus\_60 Start: 40452, Stop: 40057, Start Num: 10

Candidate Starts for Leafus\_60:

(3, 40584), (6, 40521), (Start: 10 @40452 has 157 MA's), (14, 40425), (21, 40401), (23, 40389), (24, 40386), (32, 40332), (38, 40287), (43, 40233), (45, 40221), (46, 40218), (63, 40107), (66, 40077),

Gene: Librie\_56 Start: 36985, Stop: 36638, Start Num: 10

Candidate Starts for Librie\_56:

(Start: 10 @36985 has 157 MA's), (Start: 15 @36955 has 2 MA's), (35, 36868), (44, 36778), (58, 36676),

Gene: LilTerminator\_56 Start: 36994, Stop: 36647, Start Num: 10

Candidate Starts for LilTerminator\_56:

(Start: 10 @36994 has 157 MA's), (Start: 15 @36964 has 2 MA's), (35, 36877), (44, 36787), (58, 36685),

Gene: Lovelyunicorn\_61 Start: 40379, Stop: 40020, Start Num: 10

Candidate Starts for Lovelyunicorn\_61:

(Start: 10 @40379 has 157 MA's), (Start: 15 @40349 has 2 MA's), (21, 40328), (31, 40277), (33, 40271), (51, 40133), (66, 40040),

Gene: Lucky3\_56 Start: 38623, Stop: 38285, Start Num: 10

Candidate Starts for Lucky3\_56:

(Start: 10 @38623 has 157 MA's), (Start: 16 @38590 has 1 MA's), (22, 38563), (26, 38551), (28, 38530), (35, 38506), (36, 38500), (39, 38470), (53, 38356), (64, 38296),

Gene: Ludgate\_61 Start: 40380, Stop: 40021, Start Num: 10  
Candidate Starts for Ludgate\_61:  
(Start: 10 @40380 has 157 MA's), (Start: 15 @40350 has 2 MA's), (21, 40329), (31, 40278), (33, 40272), (51, 40134), (66, 40041),

Gene: Luna18\_56 Start: 37104, Stop: 36754, Start Num: 10  
Candidate Starts for Luna18\_56:  
(2, 37239), (Start: 10 @37104 has 157 MA's), (Start: 15 @37074 has 2 MA's), (18, 37062), (20, 37056), (35, 36987), (48, 36870),

Gene: MaeLinda\_61 Start: 40391, Stop: 40032, Start Num: 10  
Candidate Starts for MaeLinda\_61:  
(Start: 10 @40391 has 157 MA's), (Start: 15 @40361 has 2 MA's), (21, 40340), (31, 40289), (33, 40283), (51, 40145), (66, 40052),

Gene: ManRay\_60 Start: 40137, Stop: 39778, Start Num: 10  
Candidate Starts for ManRay\_60:  
(Start: 10 @40137 has 157 MA's), (Start: 15 @40107 has 2 MA's), (21, 40086), (31, 40035), (33, 40029), (51, 39891), (66, 39798),

Gene: Mandalorian\_57 Start: 38356, Stop: 38015, Start Num: 10  
Candidate Starts for Mandalorian\_57:  
(Start: 10 @38356 has 157 MA's), (19, 38311), (35, 38239), (48, 38122),

Gene: Martin\_62 Start: 40393, Stop: 40034, Start Num: 10  
Candidate Starts for Martin\_62:  
(6, 40462), (Start: 10 @40393 has 157 MA's), (Start: 15 @40363 has 2 MA's), (21, 40342), (31, 40291), (33, 40285), (51, 40147), (66, 40054),

Gene: McGalleon\_61 Start: 41108, Stop: 40749, Start Num: 10  
Candidate Starts for McGalleon\_61:  
(3, 41255), (Start: 10 @41108 has 157 MA's), (Start: 12 @41090 has 2 MA's), (14, 41081), (Start: 16 @41075 has 1 MA's), (29, 41012), (37, 40967), (49, 40877), (51, 40862), (53, 40847), (60, 40802), (66, 40769),

Gene: Mercedes\_50 Start: 37148, Stop: 36795, Start Num: 10  
Candidate Starts for Mercedes\_50:  
(7, 37196), (Start: 10 @37148 has 157 MA's), (Start: 15 @37118 has 2 MA's), (28, 37055), (44, 36941), (52, 36887), (61, 36830),

Gene: MillyPhilly\_61 Start: 40381, Stop: 40022, Start Num: 10  
Candidate Starts for MillyPhilly\_61:  
(6, 40450), (Start: 10 @40381 has 157 MA's), (Start: 15 @40351 has 2 MA's), (21, 40330), (31, 40279), (33, 40273), (51, 40135), (66, 40042),

Gene: MonChoix\_59 Start: 40074, Stop: 39703, Start Num: 10  
Candidate Starts for MonChoix\_59:  
(Start: 10 @40074 has 157 MA's), (Start: 16 @40041 has 1 MA's), (31, 39966), (38, 39918), (42, 39870), (47, 39846), (48, 39834), (57, 39765), (62, 39747), (66, 39723),

Gene: Morrigan\_56 Start: 36925, Stop: 36575, Start Num: 10  
Candidate Starts for Morrigan\_56:  
(Start: 10 @36925 has 157 MA's), (Start: 15 @36895 has 2 MA's), (35, 36808),

Gene: MrWorldwide\_61 Start: 40391, Stop: 40032, Start Num: 10

Candidate Starts for MrWorldwide\_61:

(6, 40460), (Start: 10 @40391 has 157 MA's), (Start: 15 @40361 has 2 MA's), (21, 40340), (31, 40289), (33, 40283), (51, 40145), (66, 40052),

Gene: Nagem\_61 Start: 40427, Stop: 40068, Start Num: 10

Candidate Starts for Nagem\_61:

(6, 40496), (Start: 10 @40427 has 157 MA's), (Start: 15 @40397 has 2 MA's), (21, 40376), (31, 40325), (33, 40319), (51, 40181), (66, 40088),

Gene: Nattles\_60 Start: 40124, Stop: 39765, Start Num: 10

Candidate Starts for Nattles\_60:

(Start: 10 @40124 has 157 MA's), (Start: 15 @40094 has 2 MA's), (21, 40073), (31, 40022), (33, 40016), (51, 39878), (66, 39785),

Gene: Nebulous\_52 Start: 38837, Stop: 38487, Start Num: 10

Candidate Starts for Nebulous\_52:

(Start: 10 @38837 has 157 MA's), (Start: 12 @38819 has 2 MA's), (Start: 15 @38807 has 2 MA's), (17, 38801), (35, 38720), (44, 38630), (48, 38603),

Gene: Neferthema\_57 Start: 38578, Stop: 38228, Start Num: 10

Candidate Starts for Neferthema\_57:

(Start: 10 @38578 has 157 MA's), (Start: 12 @38560 has 2 MA's), (Start: 15 @38548 has 2 MA's), (17, 38542), (35, 38461), (44, 38371), (48, 38344),

Gene: NickSell\_61 Start: 40394, Stop: 40035, Start Num: 10

Candidate Starts for NickSell\_61:

(6, 40463), (Start: 10 @40394 has 157 MA's), (Start: 15 @40364 has 2 MA's), (21, 40343), (31, 40292), (33, 40286), (51, 40148), (66, 40055),

Gene: Nucci\_57 Start: 38325, Stop: 37984, Start Num: 10

Candidate Starts for Nucci\_57:

(Start: 10 @38325 has 157 MA's), (19, 38280), (35, 38208), (48, 38091),

Gene: Oats\_60 Start: 40137, Stop: 39778, Start Num: 10

Candidate Starts for Oats\_60:

(6, 40206), (Start: 10 @40137 has 157 MA's), (Start: 15 @40107 has 2 MA's), (21, 40086), (31, 40035), (33, 40029), (51, 39891), (66, 39798),

Gene: OldNelly\_61 Start: 40181, Stop: 39822, Start Num: 10

Candidate Starts for OldNelly\_61:

(6, 40250), (Start: 10 @40181 has 157 MA's), (Start: 15 @40151 has 2 MA's), (21, 40130), (31, 40079), (33, 40073), (51, 39935), (66, 39842),

Gene: Oxtober96\_62 Start: 40379, Stop: 40020, Start Num: 10

Candidate Starts for Oxtober96\_62:

(Start: 10 @40379 has 157 MA's), (Start: 15 @40349 has 2 MA's), (21, 40328), (31, 40277), (33, 40271), (51, 40133), (66, 40040),

Gene: Papafritta\_60 Start: 40142, Stop: 39783, Start Num: 10

Candidate Starts for Papafritta\_60:



(6, 40211), (Start: 10 @40142 has 157 MA's), (Start: 15 @40112 has 2 MA's), (21, 40091), (31, 40040), (33, 40034), (51, 39896), (66, 39803),

Gene: ParleG\_61 Start: 40391, Stop: 40032, Start Num: 10

Candidate Starts for ParleG\_61:

(6, 40460), (Start: 10 @40391 has 157 MA's), (Start: 15 @40361 has 2 MA's), (21, 40340), (31, 40289), (33, 40283), (51, 40145), (66, 40052),

Gene: Peep\_61 Start: 40437, Stop: 40078, Start Num: 10

Candidate Starts for Peep\_61:

(Start: 10 @40437 has 157 MA's), (Start: 15 @40407 has 2 MA's), (21, 40386), (31, 40335), (33, 40329), (51, 40191), (66, 40098),

Gene: Peppino\_60 Start: 40372, Stop: 39977, Start Num: 10

Candidate Starts for Peppino\_60:

(3, 40504), (6, 40441), (Start: 10 @40372 has 157 MA's), (14, 40345), (21, 40321), (23, 40309), (24, 40306), (32, 40252), (38, 40207), (43, 40153), (45, 40141), (46, 40138), (63, 40027), (66, 39997),

Gene: Pherbot\_55 Start: 38149, Stop: 37805, Start Num: 10

Candidate Starts for Pherbot\_55:

(Start: 10 @38149 has 157 MA's), (22, 38089), (26, 38077), (28, 38056), (35, 38032), (39, 37996), (53, 37882),

Gene: Pherferi\_61 Start: 40384, Stop: 40025, Start Num: 10

Candidate Starts for Pherferi\_61:

(6, 40453), (Start: 10 @40384 has 157 MA's), (Start: 15 @40354 has 2 MA's), (21, 40333), (31, 40282), (33, 40276), (51, 40138), (66, 40045),

Gene: Phiderman\_61 Start: 40381, Stop: 40022, Start Num: 10

Candidate Starts for Phiderman\_61:

(6, 40450), (Start: 10 @40381 has 157 MA's), (Start: 15 @40351 has 2 MA's), (21, 40330), (31, 40279), (33, 40273), (51, 40135), (66, 40042),

Gene: Phireproof\_61 Start: 40390, Stop: 40031, Start Num: 10

Candidate Starts for Phireproof\_61:

(6, 40459), (Start: 10 @40390 has 157 MA's), (Start: 15 @40360 has 2 MA's), (21, 40339), (31, 40288), (33, 40282), (51, 40144), (66, 40051),

Gene: PhredFlintston\_61 Start: 40384, Stop: 40025, Start Num: 10

Candidate Starts for PhredFlintston\_61:

(6, 40453), (Start: 10 @40384 has 157 MA's), (Start: 15 @40354 has 2 MA's), (21, 40333), (31, 40282), (33, 40276), (51, 40138), (66, 40045),

Gene: Phriends\_60 Start: 40185, Stop: 39826, Start Num: 10

Candidate Starts for Phriends\_60:

(6, 40254), (Start: 10 @40185 has 157 MA's), (Start: 15 @40155 has 2 MA's), (21, 40134), (31, 40083), (33, 40077), (51, 39939), (66, 39846),

Gene: Pocket\_60 Start: 40164, Stop: 39805, Start Num: 10

Candidate Starts for Pocket\_60:

(Start: 10 @40164 has 157 MA's), (Start: 15 @40134 has 2 MA's), (21, 40113), (31, 40062), (33, 40056), (51, 39918), (66, 39825),

Gene: PrincePhergus\_55 Start: 38165, Stop: 37821, Start Num: 10

Candidate Starts for PrincePhergus\_55:

(Start: 10 @38165 has 157 MA's), (22, 38105), (26, 38093), (28, 38072), (35, 38048), (39, 38012), (53, 37898),

Gene: PuppyEggo\_61 Start: 40384, Stop: 40025, Start Num: 10

Candidate Starts for PuppyEggo\_61:

(6, 40453), (Start: 10 @40384 has 157 MA's), (Start: 15 @40354 has 2 MA's), (21, 40333), (31, 40282), (33, 40276), (51, 40138), (66, 40045),

Gene: QuadZero\_56 Start: 37089, Stop: 36742, Start Num: 10

Candidate Starts for QuadZero\_56:

(Start: 10 @37089 has 157 MA's), (Start: 15 @37059 has 2 MA's), (35, 36972), (44, 36882), (58, 36780),

Gene: Quartz\_58 Start: 38469, Stop: 38128, Start Num: 10

Candidate Starts for Quartz\_58:

(Start: 10 @38469 has 157 MA's), (19, 38424), (35, 38352), (48, 38235),

Gene: Raccoon\_60 Start: 40316, Stop: 39948, Start Num: 12

Candidate Starts for Raccoon\_60:

(6, 40403), (Start: 10 @40334 has 157 MA's), (Start: 12 @40316 has 2 MA's), (21, 40283), (23, 40271), (33, 40220), (38, 40178), (45, 40112), (55, 40034), (63, 39998), (66, 39968),

Gene: Rapheph\_61 Start: 40384, Stop: 40025, Start Num: 10

Candidate Starts for Rapheph\_61:

(Start: 10 @40384 has 157 MA's), (Start: 15 @40354 has 2 MA's), (21, 40333), (31, 40282), (33, 40276), (51, 40138), (66, 40045),

Gene: Raptor\_61 Start: 40382, Stop: 40023, Start Num: 10

Candidate Starts for Raptor\_61:

(6, 40451), (Start: 10 @40382 has 157 MA's), (Start: 15 @40352 has 2 MA's), (21, 40331), (31, 40280), (33, 40274), (51, 40136), (66, 40043),

Gene: Redfield\_60 Start: 40382, Stop: 39987, Start Num: 10

Candidate Starts for Redfield\_60:

(6, 40451), (Start: 10 @40382 has 157 MA's), (14, 40355), (21, 40331), (23, 40319), (32, 40262), (38, 40217), (43, 40163), (45, 40151), (46, 40148), (63, 40037), (66, 40007),

Gene: Renzie\_61 Start: 40440, Stop: 40081, Start Num: 10

Candidate Starts for Renzie\_61:

(Start: 10 @40440 has 157 MA's), (Start: 15 @40410 has 2 MA's), (21, 40389), (31, 40338), (33, 40332), (51, 40194), (66, 40101),

Gene: Riyhil\_61 Start: 40394, Stop: 40035, Start Num: 10

Candidate Starts for Riyhil\_61:

(Start: 10 @40394 has 157 MA's), (Start: 15 @40364 has 2 MA's), (21, 40343), (31, 40292), (33, 40286), (51, 40148), (66, 40055),

Gene: Robinson\_61 Start: 40456, Stop: 40097, Start Num: 10

Candidate Starts for Robinson\_61:

(6, 40525), (Start: 10 @40456 has 157 MA's), (Start: 15 @40426 has 2 MA's), (21, 40405), (31, 40354), (33, 40348), (51, 40210), (66, 40117),

Gene: Rog141\_60 Start: 40127, Stop: 39768, Start Num: 10

Candidate Starts for Rog141\_60:

(6, 40196), (Start: 10 @40127 has 157 MA's), (Start: 15 @40097 has 2 MA's), (21, 40076), (31, 40025), (33, 40019), (51, 39881), (66, 39788),

Gene: SJay\_61 Start: 40428, Stop: 40069, Start Num: 10

Candidate Starts for SJay\_61:

(6, 40497), (Start: 10 @40428 has 157 MA's), (Start: 15 @40398 has 2 MA's), (21, 40377), (31, 40326), (33, 40320), (51, 40182), (66, 40089),

Gene: Schimmels22\_53 Start: 36893, Stop: 36513, Start Num: 10

Candidate Starts for Schimmels22\_53:

(Start: 10 @36893 has 157 MA's), (30, 36794), (33, 36785), (35, 36776), (42, 36695), (43, 36689), (54, 36608), (66, 36527),

Gene: Schnapsidee\_60 Start: 40324, Stop: 39929, Start Num: 10

Candidate Starts for Schnapsidee\_60:

(3, 40456), (6, 40393), (Start: 10 @40324 has 157 MA's), (14, 40297), (21, 40273), (23, 40261), (32, 40204), (38, 40159), (43, 40105), (45, 40093), (46, 40090), (63, 39979), (66, 39949),

Gene: Sedgewig\_60 Start: 40088, Stop: 39729, Start Num: 10

Candidate Starts for Sedgewig\_60:

(Start: 10 @40088 has 157 MA's), (Start: 15 @40058 has 2 MA's), (21, 40037), (31, 39986), (33, 39980), (51, 39842), (66, 39749),

Gene: ShaiHulud\_62 Start: 40393, Stop: 40034, Start Num: 10

Candidate Starts for ShaiHulud\_62:

(6, 40462), (Start: 10 @40393 has 157 MA's), (Start: 15 @40363 has 2 MA's), (21, 40342), (31, 40291), (33, 40285), (51, 40147), (66, 40054),

Gene: Shee\_61 Start: 40381, Stop: 40022, Start Num: 10

Candidate Starts for Shee\_61:

(6, 40450), (Start: 10 @40381 has 157 MA's), (Start: 15 @40351 has 2 MA's), (21, 40330), (31, 40279), (33, 40273), (51, 40135), (66, 40042),

Gene: Sinatra\_56 Start: 38160, Stop: 37816, Start Num: 10

Candidate Starts for Sinatra\_56:

(Start: 10 @38160 has 157 MA's), (22, 38100), (26, 38088), (28, 38067), (35, 38043), (39, 38007), (53, 37893),

Gene: SirVictor\_57 Start: 38742, Stop: 38404, Start Num: 10

Candidate Starts for SirVictor\_57:

(Start: 10 @38742 has 157 MA's), (Start: 16 @38709 has 1 MA's), (26, 38670), (28, 38649), (35, 38625), (36, 38619), (39, 38589), (44, 38535), (53, 38475), (64, 38415),

Gene: SonOfLevi\_61 Start: 40155, Stop: 39796, Start Num: 10

Candidate Starts for SonOfLevi\_61:

(Start: 10 @40155 has 157 MA's), (Start: 15 @40125 has 2 MA's), (21, 40104), (31, 40053), (33, 40047), (51, 39909), (66, 39816),

Gene: Stanktossa\_60 Start: 40384, Stop: 40025, Start Num: 10

Candidate Starts for Stanktossa\_60:

(6, 40453), (Start: 10 @40384 has 157 MA's), (Start: 15 @40354 has 2 MA's), (21, 40333), (31, 40282), (33, 40276), (51, 40138), (66, 40045),

Gene: StingRay\_60 Start: 40178, Stop: 39819, Start Num: 10

Candidate Starts for StingRay\_60:

(6, 40247), (Start: 10 @40178 has 157 MA's), (Start: 15 @40148 has 2 MA's), (21, 40127), (31, 40076), (33, 40070), (51, 39932), (66, 39839),

Gene: StirfryIV\_60 Start: 40100, Stop: 39741, Start Num: 10

Candidate Starts for StirfryIV\_60:

(6, 40169), (Start: 10 @40100 has 157 MA's), (Start: 15 @40070 has 2 MA's), (21, 40049), (31, 39998), (33, 39992), (51, 39854), (66, 39761),

Gene: Stormbreaker8\_59 Start: 40191, Stop: 39796, Start Num: 10

Candidate Starts for Stormbreaker8\_59:

(3, 40323), (6, 40260), (Start: 10 @40191 has 157 MA's), (14, 40164), (21, 40140), (23, 40128), (24, 40125), (32, 40071), (38, 40026), (43, 39972), (45, 39960), (46, 39957), (63, 39846), (66, 39816),

Gene: Strathdee\_61 Start: 40383, Stop: 40024, Start Num: 10

Candidate Starts for Strathdee\_61:

(Start: 10 @40383 has 157 MA's), (Start: 15 @40353 has 2 MA's), (21, 40332), (31, 40281), (33, 40275), (51, 40137), (66, 40044),

Gene: Superfresh\_61 Start: 40440, Stop: 40081, Start Num: 10

Candidate Starts for Superfresh\_61:

(Start: 10 @40440 has 157 MA's), (Start: 15 @40410 has 2 MA's), (21, 40389), (31, 40338), (33, 40332), (51, 40194), (66, 40101),

Gene: TatarkaPM\_61 Start: 40394, Stop: 40035, Start Num: 10

Candidate Starts for TatarkaPM\_61:

(6, 40463), (Start: 10 @40394 has 157 MA's), (Start: 15 @40364 has 2 MA's), (21, 40343), (31, 40292), (33, 40286), (51, 40148), (66, 40055),

Gene: Teagan\_61 Start: 40374, Stop: 40015, Start Num: 10

Candidate Starts for Teagan\_61:

(6, 40443), (Start: 10 @40374 has 157 MA's), (Start: 15 @40344 has 2 MA's), (21, 40323), (31, 40272), (33, 40266), (51, 40128), (66, 40035),

Gene: TeddyBear\_60 Start: 40137, Stop: 39778, Start Num: 10

Candidate Starts for TeddyBear\_60:

(6, 40206), (Start: 10 @40137 has 157 MA's), (Start: 15 @40107 has 2 MA's), (21, 40086), (31, 40035), (33, 40029), (51, 39891), (66, 39798),

Gene: Tenda\_60 Start: 40135, Stop: 39776, Start Num: 10

Candidate Starts for Tenda\_60:

(6, 40204), (Start: 10 @40135 has 157 MA's), (Start: 15 @40105 has 2 MA's), (21, 40084), (31, 40033), (33, 40027), (51, 39889), (66, 39796),

Gene: Thompsone\_61 Start: 40381, Stop: 40022, Start Num: 10

Candidate Starts for Thompsone\_61:

(Start: 10 @40381 has 157 MA's), (Start: 15 @40351 has 2 MA's), (21, 40330), (31, 40279), (33, 40273), (51, 40135), (66, 40042),

Gene: Thorongil\_61 Start: 39898, Stop: 39539, Start Num: 10

Candidate Starts for Thorongil\_61:

(6, 39967), (Start: 10 @39898 has 157 MA's), (Start: 15 @39868 has 2 MA's), (21, 39847), (31, 39796), (33, 39790), (51, 39652), (66, 39559),

Gene: TinSulphur\_62 Start: 40390, Stop: 40031, Start Num: 10

Candidate Starts for TinSulphur\_62:

(6, 40459), (Start: 10 @40390 has 157 MA's), (Start: 15 @40360 has 2 MA's), (21, 40339), (31, 40288), (33, 40282), (51, 40144), (66, 40051),

Gene: Tinyman4\_52 Start: 36402, Stop: 36016, Start Num: 10

Candidate Starts for Tinyman4\_52:

(9, 36441), (Start: 10 @36402 has 157 MA's), (30, 36303), (33, 36294), (35, 36285), (42, 36204), (43, 36198), (50, 36159), (54, 36117), (66, 36036),

Gene: Velene\_61 Start: 40380, Stop: 40021, Start Num: 10

Candidate Starts for Velene\_61:

(6, 40449), (Start: 10 @40380 has 157 MA's), (Start: 15 @40350 has 2 MA's), (21, 40329), (31, 40278), (33, 40272), (51, 40134), (66, 40041),

Gene: Vispitious\_61 Start: 40384, Stop: 40025, Start Num: 10

Candidate Starts for Vispitious\_61:

(6, 40453), (Start: 10 @40384 has 157 MA's), (Start: 15 @40354 has 2 MA's), (21, 40333), (31, 40282), (33, 40276), (51, 40138), (66, 40045),

Gene: WestPM\_52 Start: 36620, Stop: 36234, Start Num: 10

Candidate Starts for WestPM\_52:

(2, 36749), (4, 36716), (Start: 10 @36620 has 157 MA's), (30, 36521), (33, 36512), (35, 36503), (42, 36422), (43, 36416), (54, 36335), (66, 36254), (68, 36239),

Gene: WildNOut\_61 Start: 40377, Stop: 40018, Start Num: 10

Candidate Starts for WildNOut\_61:

(Start: 10 @40377 has 157 MA's), (Start: 15 @40347 has 2 MA's), (21, 40326), (31, 40275), (33, 40269), (51, 40131), (66, 40038),

Gene: WilliamStrong\_55 Start: 37542, Stop: 37192, Start Num: 10

Candidate Starts for WilliamStrong\_55:

(Start: 10 @37542 has 157 MA's), (Start: 15 @37512 has 2 MA's), (20, 37494), (35, 37425),

Gene: Winzigespinne\_60 Start: 40123, Stop: 39764, Start Num: 10

Candidate Starts for Winzigespinne\_60:

(6, 40192), (Start: 10 @40123 has 157 MA's), (Start: 15 @40093 has 2 MA's), (21, 40072), (31, 40021), (33, 40015), (51, 39877), (66, 39784),

Gene: YuuY\_58 Start: 38898, Stop: 38551, Start Num: 10

Candidate Starts for YuuY\_58:

(Start: 10 @38898 has 157 MA's), (34, 38787), (41, 38706), (44, 38691),

Gene: Zada\_62 Start: 40396, Stop: 40037, Start Num: 10

Candidate Starts for Zada\_62:

(6, 40465), (Start: 10 @40396 has 157 MA's), (Start: 15 @40366 has 2 MA's), (21, 40345), (31, 40294), (33, 40288), (51, 40150), (66, 40057),

Gene: Zayuliv\_56 Start: 37658, Stop: 37311, Start Num: 10

Candidate Starts for Zayuliv\_56:

(Start: 10 @37658 has 157 MA's), (Start: 15 @37628 has 2 MA's), (35, 37541), (44, 37451), (58, 37349),

Gene: Zepp\_56 Start: 37045, Stop: 36698, Start Num: 10

Candidate Starts for Zepp\_56:

(Start: 10 @37045 has 157 MA's), (Start: 15 @37015 has 2 MA's), (35, 36928), (44, 36838), (58, 36736),