



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 283661 Report

This analysis was run 02/23/26 on database version 636.

Pham number 283661 has 102 members, 0 are drafts.

Phages represented in each track:

- Track 1 : MyraDee\_33
- Track 2 : HamSlice\_34
- Track 3 : Lorenzo\_35, Cocoaberry\_35, Florean\_35, Eapen\_35, Bartimeaus\_35, Avle17\_35, Wilbur\_35, Taquarus\_35, Bruiser\_34, Relief\_35, Kyee\_35, Pipcraft\_35, Holli\_35, CentreCat\_35, Baby16\_35, Funston\_35, Thanksgivukkah\_35, Ruin\_35, TygerBlood\_35, Scamp\_35, Phighter1804\_35, Albee\_35, Nemo27\_35, LappelDuVide\_35, Citius\_35, Wizard007\_35, Lemur\_35, Mayonnaise\_35, Caelakin\_35, NotAPhaseMom\_35, SenorClean\_35, LittleB\_35, Lunsford\_36, JoongJeon\_35, Eris\_34, Sultana\_35, Annyong\_35, Chaph\_35, Druantia\_35, Wander\_35, Bombshell\_35, TiroTheta9\_35, Sabertooth\_35, MeeZee\_35, Blackmoor\_35, LochMonster\_35, Skipitt\_35, Kingmustik0402\_35, Iceman\_36, Maverick\_35, Houdini22\_35, Happiness\_35, NorthStar\_35, Phacado\_35, Koan\_35, Mazhar510\_35, Burger\_34, Eros\_35, Peaches\_35, Romney\_35, Millski\_34, BubbleTrouble\_35, Clarenza\_35, Jaykayelowell\_35, PeterPeter\_35, Deano\_35, Shaka\_35, Palestino\_34, YoSam321\_35, Spino\_35, Roosevelt\_35, JetBlade\_35, Connomayer\_35, Flux\_35, Broseidon\_35, KFPoly\_35
- Track 4 : Morpher26\_35, Wile\_35
- Track 5 : Perplexer\_35, Datway\_35, PetiteSangsue\_35, Badger\_35, Backyardigan\_35, Xena\_35, AbbysRanger\_35
- Track 6 : ICleared\_35, Koreni\_34
- Track 7 : Gadost\_35
- Track 8 : Dhanush\_35
- Track 9 : Alberto7\_36
- Track 10 : Camperdownii\_34, Cintron\_35
- Track 11 : Cindaradix\_34
- Track 12 : Bumblebee11\_35, Achebe\_34
- Track 13 : DirtyDunning\_35
- Track 14 : Shygu2\_35
- Track 15 : Katalie136\_35
- Track 16 : Noelle\_35
- Track 17 : Cici\_35

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

The start number called the most often in the published annotations is 6, it was called in 88 of the 102 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Albee\_35, Alberto7\_36, Annyong\_35, Avle17\_35, Baby16\_35, Bartimeaus\_35, Blackmoor\_35, Bombshell\_35, Broseidon\_35, Bruiser\_34, BubbleTrouble\_35, Burger\_34, Caelakin\_35, Camperdownii\_34, CentreCat\_35, Chaph\_35, Cindaradix\_34, Cintron\_35, Citius\_35, Clarenza\_35, Cocoaberry\_35, Connomayer\_35, Deano\_35, Dhanush\_35, DirtyDunning\_35, Druantia\_35, Eapen\_35, Eris\_34, Eros\_35, Floean\_35, Flux\_35, Funston\_35, Gadost\_35, HamSlice\_34, Happiness\_35, Holli\_35, Houdini22\_35, ICleared\_35, Iceman\_36, Jaykayelowell\_35, JetBlade\_35, JoongJeon\_35, KFPoly\_35, Kingmustik0402\_35, Koan\_35, Koreni\_34, Kyee\_35, LappelDuVide\_35, Lemur\_35, LittleB\_35, LochMonster\_35, Lorenzo\_35, Lunsford\_36, Maverick\_35, Mayonnaise\_35, Mazhar510\_35, MeeZee\_35, Millski\_34, MyraDee\_33, Nemo27\_35, NorthStar\_35, NotAPhaseMom\_35, Palestino\_34, Peaches\_35, PeterPeter\_35, Phacado\_35, Phighter1804\_35, Pipcraft\_35, Relief\_35, Romney\_35, Roosevelt\_35, Ruin\_35, Sabertooth\_35, Scamp\_35, SeniorClean\_35, Shaka\_35, Shygu2\_35, Skipitt\_35, Spino\_35, Sultana\_35, Taquarus\_35, Thanksgivukkah\_35, TiroTheta9\_35, TygerBlood\_35, Wander\_35, Wilbur\_35, Wizard007\_35, YoSam321\_35,

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

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

- AbbysRanger\_35, Achebe\_34, Backyardigan\_35, Badger\_35, Bumblebee11\_35, Cici\_35, Datway\_35, Katalie136\_35, Morpher26\_35, Noelle\_35, Perplexer\_35, PetiteSangsue\_35, Wile\_35, Xena\_35,

### Summary by start number:

Start 4:

- Found in 14 of 102 ( 13.7% ) of genes in pham
- Manual Annotations of this start: 2 of 102
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Achebe\_34 (A4), Bumblebee11\_35 (A4),

Start 5:

- Found in 14 of 102 ( 13.7% ) of genes in pham
- Manual Annotations of this start: 12 of 102
- Called 85.7% of time when present
- Phage (with cluster) where this start called: AbbysRanger\_35 (A4), Backyardigan\_35 (A4), Badger\_35 (A4), Cici\_35 (A4), Datway\_35 (A4), Katalie136\_35 (A4), Morpher26\_35 (A4), Noelle\_35 (A4), Perplexer\_35 (A4), PetiteSangsue\_35 (A4), Wile\_35 (A4), Xena\_35 (A4),

Start 6:

- Found in 88 of 102 ( 86.3% ) of genes in pham
- Manual Annotations of this start: 88 of 102
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Albee\_35 (A4), Alberto7\_36 (A4), Annyong\_35 (A4), Avle17\_35 (A4), Baby16\_35 (A4), Bartimeaus\_35 (A4), Blackmoor\_35 (A4), Bombshell\_35 (A4), Broseidon\_35 (A4), Bruiser\_34 (A4),

BubbleTrouble\_35 (A4), Burger\_34 (A4), Caelakin\_35 (A4), Camperdownii\_34 (A4), CentreCat\_35 (A4), Chaph\_35 (A4), Cindaradix\_34 (A4), Cintron\_35 (A4), Citius\_35 (A4), Clarenza\_35 (A4), Cocoaberry\_35 (A4), Connomayer\_35 (A4), Deano\_35 (A4), Dhanush\_35 (A4), DirtyDunning\_35 (A4), Druantia\_35 (A4), Eapen\_35 (A4), Eris\_34 (A4), Eros\_35 (A4), Florean\_35 (A4), Flux\_35 (A4), Funston\_35 (A4), Gadost\_35 (A4), HamSlice\_34 (A4), Happiness\_35 (A4), Holli\_35 (A4), Houdini22\_35 (A4), ICleared\_35 (A4), Iceman\_36 (A4), Jaykayelowell\_35 (A4), JetBlade\_35 (A4), JoongJeon\_35 (A4), KFPoly\_35 (A4), Kingmustik0402\_35 (A4), Koan\_35 (A4), Koreni\_34 (A4), Kyee\_35 (A4), LappelDuVide\_35 (A4), Lemur\_35 (A4), LittleB\_35 (A4), LochMonster\_35 (A4), Lorenzo\_35 (A4), Lunsford\_36 (A4), Maverick\_35 (A4), Mayonnaise\_35 (A4), Mazhar510\_35 (A4), MeeZee\_35 (A4), Millski\_34 (A4), MyraDee\_33 (A18), Nemo27\_35 (A4), NorthStar\_35 (A4), NotAPhaseMom\_35 (A4), Palestino\_34 (A4), Peaches\_35 (A4), PeterPeter\_35 (A4), Phacado\_35 (A4), Phighter1804\_35 (A4), Pipcraft\_35 (A4), Relief\_35 (A4), Romney\_35 (A4), Roosevelt\_35 (A4), Ruin\_35 (A4), Sabertooth\_35 (A4), Scamp\_35 (A4), SenorClean\_35 (A4), Shaka\_35 (A4), Shygu2\_35 (A4), Skipitt\_35 (A4), Spino\_35 (A4), Sultana\_35 (A4), Taquarus\_35 (A4), Thanksgivukkah\_35 (A4), TiroTheta9\_35 (A4), TygerBlood\_35 (A4), Wander\_35 (A4), Wilbur\_35 (A4), Wizard007\_35 (A4), YoSam321\_35 (A4),

### **Summary by clusters:**

There are 2 clusters represented in this pham: A4, A18,

Info for manual annotations of cluster A18:

- Start number 6 was manually annotated 1 time for cluster A18.

Info for manual annotations of cluster A4:

- Start number 4 was manually annotated 2 times for cluster A4.
- Start number 5 was manually annotated 12 times for cluster A4.
- Start number 6 was manually annotated 87 times for cluster A4.

### **Gene Information:**

Gene: AbbysRanger\_35 Start: 27851, Stop: 27276, Start Num: 5

Candidate Starts for AbbysRanger\_35:

(Start: 4 @27881 has 2 MA's), (Start: 5 @27851 has 12 MA's), (11, 27488), (14, 27452), (16, 27383), (18, 27338), (19, 27326),

Gene: Achebe\_34 Start: 27864, Stop: 27259, Start Num: 4

Candidate Starts for Achebe\_34:

(Start: 4 @27864 has 2 MA's), (Start: 5 @27834 has 12 MA's), (11, 27471), (14, 27435), (16, 27366), (18, 27321), (19, 27309),

Gene: Albee\_35 Start: 27804, Stop: 27208, Start Num: 6

Candidate Starts for Albee\_35:

(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Alberto7\_36 Start: 28144, Stop: 27569, Start Num: 6

Candidate Starts for Alberto7\_36:

(Start: 6 @28144 has 88 MA's), (11, 27781), (14, 27745), (16, 27676), (18, 27631),

Gene: Annyong\_35 Start: 27805, Stop: 27209, Start Num: 6

Candidate Starts for Annyong\_35:

(Start: 6 @27805 has 88 MA's), (10, 27445), (11, 27442), (14, 27406), (15, 27340), (16, 27337), (18, 27292), (19, 27280),

Gene: Avle17\_35 Start: 27804, Stop: 27208, Start Num: 6

Candidate Starts for Avle17\_35:

(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Baby16\_35 Start: 27815, Stop: 27219, Start Num: 6

Candidate Starts for Baby16\_35:

(Start: 6 @27815 has 88 MA's), (10, 27455), (11, 27452), (14, 27416), (15, 27350), (16, 27347), (18, 27302), (19, 27290),

Gene: Backyardigan\_35 Start: 27867, Stop: 27271, Start Num: 5

Candidate Starts for Backyardigan\_35:

(Start: 4 @27897 has 2 MA's), (Start: 5 @27867 has 12 MA's), (11, 27504), (14, 27468), (16, 27399), (18, 27354), (19, 27342),

Gene: Badger\_35 Start: 27835, Stop: 27260, Start Num: 5

Candidate Starts for Badger\_35:

(Start: 4 @27865 has 2 MA's), (Start: 5 @27835 has 12 MA's), (11, 27472), (14, 27436), (16, 27367), (18, 27322), (19, 27310),

Gene: Bartimeaus\_35 Start: 27806, Stop: 27210, Start Num: 6

Candidate Starts for Bartimeaus\_35:

(Start: 6 @27806 has 88 MA's), (10, 27446), (11, 27443), (14, 27407), (15, 27341), (16, 27338), (18, 27293), (19, 27281),

Gene: Blackmoor\_35 Start: 27806, Stop: 27210, Start Num: 6

Candidate Starts for Blackmoor\_35:

(Start: 6 @27806 has 88 MA's), (10, 27446), (11, 27443), (14, 27407), (15, 27341), (16, 27338), (18, 27293), (19, 27281),

Gene: Bombshell\_35 Start: 27804, Stop: 27208, Start Num: 6

Candidate Starts for Bombshell\_35:

(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Broseidon\_35 Start: 27806, Stop: 27210, Start Num: 6

Candidate Starts for Broseidon\_35:

(Start: 6 @27806 has 88 MA's), (10, 27446), (11, 27443), (14, 27407), (15, 27341), (16, 27338), (18, 27293), (19, 27281),

Gene: Bruiser\_34 Start: 27804, Stop: 27208, Start Num: 6

Candidate Starts for Bruiser\_34:

(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: BubbleTrouble\_35 Start: 27804, Stop: 27208, Start Num: 6

Candidate Starts for BubbleTrouble\_35:

(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Bumblebee11\_35 Start: 27867, Stop: 27262, Start Num: 4

Candidate Starts for Bumblebee11\_35:

(Start: 4 @27867 has 2 MA's), (Start: 5 @27837 has 12 MA's), (11, 27474), (14, 27438), (16, 27369), (18, 27324), (19, 27312),

Gene: Burger\_34 Start: 27804, Stop: 27208, Start Num: 6

Candidate Starts for Burger\_34:

(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Caelakin\_35 Start: 27804, Stop: 27208, Start Num: 6

Candidate Starts for Caelakin\_35:

(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Camperdownii\_34 Start: 27498, Stop: 26902, Start Num: 6

Candidate Starts for Camperdownii\_34:

(Start: 6 @27498 has 88 MA's), (10, 27138), (11, 27135), (12, 27123), (14, 27099), (16, 27030), (18, 26985), (19, 26973),

Gene: CentreCat\_35 Start: 27807, Stop: 27211, Start Num: 6

Candidate Starts for CentreCat\_35:

(Start: 6 @27807 has 88 MA's), (10, 27447), (11, 27444), (14, 27408), (15, 27342), (16, 27339), (18, 27294), (19, 27282),

Gene: Chaph\_35 Start: 27815, Stop: 27219, Start Num: 6

Candidate Starts for Chaph\_35:

(Start: 6 @27815 has 88 MA's), (10, 27455), (11, 27452), (14, 27416), (15, 27350), (16, 27347), (18, 27302), (19, 27290),

Gene: Cici\_35 Start: 27852, Stop: 27256, Start Num: 5

Candidate Starts for Cici\_35:

(Start: 4 @27882 has 2 MA's), (Start: 5 @27852 has 12 MA's), (11, 27489), (14, 27453), (15, 27387), (16, 27384), (18, 27339), (19, 27327),

Gene: Cindaradix\_34 Start: 27606, Stop: 27010, Start Num: 6

Candidate Starts for Cindaradix\_34:

(Start: 6 @27606 has 88 MA's), (7, 27561), (8, 27528), (9, 27432), (14, 27207), (16, 27138), (18, 27093), (19, 27081),

Gene: Cintron\_35 Start: 27870, Stop: 27274, Start Num: 6

Candidate Starts for Cintron\_35:

(Start: 6 @27870 has 88 MA's), (10, 27510), (11, 27507), (12, 27495), (14, 27471), (16, 27402), (18, 27357), (19, 27345),

Gene: Citius\_35 Start: 27819, Stop: 27223, Start Num: 6

Candidate Starts for Citius\_35:

(Start: 6 @27819 has 88 MA's), (10, 27459), (11, 27456), (14, 27420), (15, 27354), (16, 27351), (18, 27306), (19, 27294),

Gene: Clarenza\_35 Start: 27801, Stop: 27205, Start Num: 6

Candidate Starts for Clarenza\_35:

(Start: 6 @27801 has 88 MA's), (10, 27441), (11, 27438), (14, 27402), (15, 27336), (16, 27333), (18, 27288), (19, 27276),

Gene: Cocoaberry\_35 Start: 27808, Stop: 27212, Start Num: 6

Candidate Starts for Cocoaberry\_35:

(Start: 6 @27808 has 88 MA's), (10, 27448), (11, 27445), (14, 27409), (15, 27343), (16, 27340), (18, 27295), (19, 27283),

Gene: Connomayer\_35 Start: 27804, Stop: 27208, Start Num: 6

Candidate Starts for Connomayer\_35:

(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Datway\_35 Start: 27823, Stop: 27227, Start Num: 5

Candidate Starts for Datway\_35:

(Start: 4 @27853 has 2 MA's), (Start: 5 @27823 has 12 MA's), (11, 27460), (14, 27424), (16, 27355), (18, 27310), (19, 27298),

Gene: Deano\_35 Start: 27812, Stop: 27216, Start Num: 6

Candidate Starts for Deano\_35:

(Start: 6 @27812 has 88 MA's), (10, 27452), (11, 27449), (14, 27413), (15, 27347), (16, 27344), (18, 27299), (19, 27287),

Gene: Dhanush\_35 Start: 27807, Stop: 27211, Start Num: 6

Candidate Starts for Dhanush\_35:

(Start: 6 @27807 has 88 MA's), (10, 27447), (11, 27444), (13, 27423), (14, 27408), (15, 27342), (16, 27339), (18, 27294), (19, 27282),

Gene: DirtyDunning\_35 Start: 27843, Stop: 27268, Start Num: 6

Candidate Starts for DirtyDunning\_35:

(Start: 6 @27843 has 88 MA's), (11, 27480), (14, 27444), (16, 27375), (18, 27330), (19, 27318),

Gene: Druantia\_35 Start: 27807, Stop: 27211, Start Num: 6

Candidate Starts for Druantia\_35:

(Start: 6 @27807 has 88 MA's), (10, 27447), (11, 27444), (14, 27408), (15, 27342), (16, 27339), (18, 27294), (19, 27282),

Gene: Eapen\_35 Start: 27802, Stop: 27206, Start Num: 6

Candidate Starts for Eapen\_35:

(Start: 6 @27802 has 88 MA's), (10, 27442), (11, 27439), (14, 27403), (15, 27337), (16, 27334), (18, 27289), (19, 27277),

Gene: Eris\_34 Start: 27804, Stop: 27208, Start Num: 6

Candidate Starts for Eris\_34:

(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Eros\_35 Start: 27806, Stop: 27210, Start Num: 6

Candidate Starts for Eros\_35:

(Start: 6 @27806 has 88 MA's), (10, 27446), (11, 27443), (14, 27407), (15, 27341), (16, 27338), (18, 27293), (19, 27281),

Gene: Florean\_35 Start: 27803, Stop: 27207, Start Num: 6

Candidate Starts for Florean\_35:

(Start: 6 @27803 has 88 MA's), (10, 27443), (11, 27440), (14, 27404), (15, 27338), (16, 27335), (18, 27290), (19, 27278),

Gene: Flux\_35 Start: 27806, Stop: 27210, Start Num: 6

Candidate Starts for Flux\_35:

(Start: 6 @27806 has 88 MA's), (10, 27446), (11, 27443), (14, 27407), (15, 27341), (16, 27338), (18, 27293), (19, 27281),

Gene: Funston\_35 Start: 27804, Stop: 27208, Start Num: 6

Candidate Starts for Funston\_35:

(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Gadost\_35 Start: 27808, Stop: 27212, Start Num: 6

Candidate Starts for Gadost\_35:

(Start: 6 @27808 has 88 MA's), (10, 27448), (11, 27445), (14, 27409), (15, 27343), (16, 27340), (18, 27295), (19, 27283),

Gene: HamSlice\_34 Start: 27802, Stop: 27206, Start Num: 6

Candidate Starts for HamSlice\_34:

(Start: 6 @27802 has 88 MA's), (10, 27442), (14, 27403), (15, 27337), (16, 27334), (18, 27289), (19, 27277),

Gene: Happiness\_35 Start: 27809, Stop: 27213, Start Num: 6

Candidate Starts for Happiness\_35:

(Start: 6 @27809 has 88 MA's), (10, 27449), (11, 27446), (14, 27410), (15, 27344), (16, 27341), (18, 27296), (19, 27284),

Gene: Holli\_35 Start: 27594, Stop: 26998, Start Num: 6

Candidate Starts for Holli\_35:

(Start: 6 @27594 has 88 MA's), (10, 27234), (11, 27231), (14, 27195), (15, 27129), (16, 27126), (18, 27081), (19, 27069),

Gene: Houdini22\_35 Start: 27808, Stop: 27212, Start Num: 6

Candidate Starts for Houdini22\_35:

(Start: 6 @27808 has 88 MA's), (10, 27448), (11, 27445), (14, 27409), (15, 27343), (16, 27340), (18, 27295), (19, 27283),

Gene: ICleared\_35 Start: 27836, Stop: 27261, Start Num: 6

Candidate Starts for ICleared\_35:

(Start: 6 @27836 has 88 MA's), (11, 27473), (14, 27437), (16, 27368), (18, 27323), (19, 27311),

Gene: Iceman\_36 Start: 28093, Stop: 27497, Start Num: 6

Candidate Starts for Iceman\_36:

(Start: 6 @28093 has 88 MA's), (10, 27733), (11, 27730), (14, 27694), (15, 27628), (16, 27625), (18, 27580), (19, 27568),

Gene: Jaykayelowell\_35 Start: 27800, Stop: 27204, Start Num: 6

Candidate Starts for Jaykayelowell\_35:

(Start: 6 @27800 has 88 MA's), (10, 27440), (11, 27437), (14, 27401), (15, 27335), (16, 27332), (18, 27287), (19, 27275),

Gene: JetBlade\_35 Start: 27801, Stop: 27205, Start Num: 6

Candidate Starts for JetBlade\_35:

(Start: 6 @27801 has 88 MA's), (10, 27441), (11, 27438), (14, 27402), (15, 27336), (16, 27333), (18, 27288), (19, 27276),

Gene: JoongJeon\_35 Start: 27804, Stop: 27208, Start Num: 6

Candidate Starts for JoongJeon\_35:

(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: KFPoly\_35 Start: 27801, Stop: 27205, Start Num: 6

Candidate Starts for KFPoly\_35:

(Start: 6 @27801 has 88 MA's), (10, 27441), (11, 27438), (14, 27402), (15, 27336), (16, 27333), (18, 27288), (19, 27276),

Gene: Katalie136\_35 Start: 27837, Stop: 27262, Start Num: 5

Candidate Starts for Katalie136\_35:

(Start: 4 @27867 has 2 MA's), (Start: 5 @27837 has 12 MA's), (11, 27474), (16, 27369), (18, 27324), (19, 27312),

Gene: Kingmustik0402\_35 Start: 27796, Stop: 27200, Start Num: 6

Candidate Starts for Kingmustik0402\_35:

(Start: 6 @27796 has 88 MA's), (10, 27436), (11, 27433), (14, 27397), (15, 27331), (16, 27328), (18, 27283), (19, 27271),

Gene: Koan\_35 Start: 27804, Stop: 27208, Start Num: 6

Candidate Starts for Koan\_35:

(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Koreni\_34 Start: 27485, Stop: 26910, Start Num: 6

Candidate Starts for Koreni\_34:

(Start: 6 @27485 has 88 MA's), (11, 27122), (14, 27086), (16, 27017), (18, 26972), (19, 26960),

Gene: Kyee\_35 Start: 27802, Stop: 27206, Start Num: 6

Candidate Starts for Kyee\_35:

(Start: 6 @27802 has 88 MA's), (10, 27442), (11, 27439), (14, 27403), (15, 27337), (16, 27334), (18, 27289), (19, 27277),

Gene: LappelDuVide\_35 Start: 27803, Stop: 27207, Start Num: 6

Candidate Starts for LappelDuVide\_35:

(Start: 6 @27803 has 88 MA's), (10, 27443), (11, 27440), (14, 27404), (15, 27338), (16, 27335), (18, 27290), (19, 27278),

Gene: Lemur\_35 Start: 27801, Stop: 27205, Start Num: 6

Candidate Starts for Lemur\_35:

(Start: 6 @27801 has 88 MA's), (10, 27441), (11, 27438), (14, 27402), (15, 27336), (16, 27333), (18, 27288), (19, 27276),

Gene: LittleB\_35 Start: 27805, Stop: 27209, Start Num: 6  
Candidate Starts for LittleB\_35:  
(Start: 6 @27805 has 88 MA's), (10, 27445), (11, 27442), (14, 27406), (15, 27340), (16, 27337), (18, 27292), (19, 27280),

Gene: LochMonster\_35 Start: 27843, Stop: 27247, Start Num: 6  
Candidate Starts for LochMonster\_35:  
(Start: 6 @27843 has 88 MA's), (10, 27483), (11, 27480), (14, 27444), (15, 27378), (16, 27375), (18, 27330), (19, 27318),

Gene: Lorenzo\_35 Start: 27804, Stop: 27208, Start Num: 6  
Candidate Starts for Lorenzo\_35:  
(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Lunsford\_36 Start: 27801, Stop: 27205, Start Num: 6  
Candidate Starts for Lunsford\_36:  
(Start: 6 @27801 has 88 MA's), (10, 27441), (11, 27438), (14, 27402), (15, 27336), (16, 27333), (18, 27288), (19, 27276),

Gene: Maverick\_35 Start: 27804, Stop: 27208, Start Num: 6  
Candidate Starts for Maverick\_35:  
(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Mayonnaise\_35 Start: 27804, Stop: 27208, Start Num: 6  
Candidate Starts for Mayonnaise\_35:  
(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Mazhar510\_35 Start: 27805, Stop: 27209, Start Num: 6  
Candidate Starts for Mazhar510\_35:  
(Start: 6 @27805 has 88 MA's), (10, 27445), (11, 27442), (14, 27406), (15, 27340), (16, 27337), (18, 27292), (19, 27280),

Gene: MeeZee\_35 Start: 27804, Stop: 27208, Start Num: 6  
Candidate Starts for MeeZee\_35:  
(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Millski\_34 Start: 27808, Stop: 27212, Start Num: 6  
Candidate Starts for Millski\_34:  
(Start: 6 @27808 has 88 MA's), (10, 27448), (11, 27445), (14, 27409), (15, 27343), (16, 27340), (18, 27295), (19, 27283),

Gene: Morpher26\_35 Start: 27858, Stop: 27262, Start Num: 5  
Candidate Starts for Morpher26\_35:  
(Start: 4 @27888 has 2 MA's), (Start: 5 @27858 has 12 MA's), (10, 27498), (11, 27495), (14, 27459), (15, 27393), (16, 27390), (18, 27345), (19, 27333),

Gene: MyraDee\_33 Start: 25725, Stop: 25126, Start Num: 6  
Candidate Starts for MyraDee\_33:

(1, 26043), (2, 25971), (Start: 6 @25725 has 88 MA's), (7, 25677), (10, 25362), (11, 25359), (17, 25227), (20, 25134),

Gene: Nemo27\_35 Start: 27803, Stop: 27207, Start Num: 6

Candidate Starts for Nemo27\_35:

(Start: 6 @27803 has 88 MA's), (10, 27443), (11, 27440), (14, 27404), (15, 27338), (16, 27335), (18, 27290), (19, 27278),

Gene: Noelle\_35 Start: 27902, Stop: 27306, Start Num: 5

Candidate Starts for Noelle\_35:

(3, 28055), (Start: 4 @27932 has 2 MA's), (Start: 5 @27902 has 12 MA's), (11, 27539), (14, 27503), (16, 27434), (18, 27389), (19, 27377),

Gene: NorthStar\_35 Start: 27804, Stop: 27208, Start Num: 6

Candidate Starts for NorthStar\_35:

(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: NotAPhaseMom\_35 Start: 27808, Stop: 27212, Start Num: 6

Candidate Starts for NotAPhaseMom\_35:

(Start: 6 @27808 has 88 MA's), (10, 27448), (11, 27445), (14, 27409), (15, 27343), (16, 27340), (18, 27295), (19, 27283),

Gene: Palestino\_34 Start: 27804, Stop: 27208, Start Num: 6

Candidate Starts for Palestino\_34:

(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Peaches\_35 Start: 27803, Stop: 27207, Start Num: 6

Candidate Starts for Peaches\_35:

(Start: 6 @27803 has 88 MA's), (10, 27443), (11, 27440), (14, 27404), (15, 27338), (16, 27335), (18, 27290), (19, 27278),

Gene: Perplexer\_35 Start: 27834, Stop: 27259, Start Num: 5

Candidate Starts for Perplexer\_35:

(Start: 4 @27864 has 2 MA's), (Start: 5 @27834 has 12 MA's), (11, 27471), (14, 27435), (16, 27366), (18, 27321), (19, 27309),

Gene: PeterPeter\_35 Start: 27804, Stop: 27208, Start Num: 6

Candidate Starts for PeterPeter\_35:

(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: PetiteSangsue\_35 Start: 27837, Stop: 27262, Start Num: 5

Candidate Starts for PetiteSangsue\_35:

(Start: 4 @27867 has 2 MA's), (Start: 5 @27837 has 12 MA's), (11, 27474), (14, 27438), (16, 27369), (18, 27324), (19, 27312),

Gene: Phacado\_35 Start: 27803, Stop: 27207, Start Num: 6

Candidate Starts for Phacado\_35:

(Start: 6 @27803 has 88 MA's), (10, 27443), (11, 27440), (14, 27404), (15, 27338), (16, 27335), (18, 27290), (19, 27278),

Gene: Phighter1804\_35 Start: 27846, Stop: 27250, Start Num: 6  
Candidate Starts for Phighter1804\_35:  
(Start: 6 @27846 has 88 MA's), (10, 27486), (11, 27483), (14, 27447), (15, 27381), (16, 27378), (18, 27333), (19, 27321),

Gene: Pipcraft\_35 Start: 27804, Stop: 27208, Start Num: 6  
Candidate Starts for Pipcraft\_35:  
(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Relief\_35 Start: 27804, Stop: 27208, Start Num: 6  
Candidate Starts for Relief\_35:  
(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Romney\_35 Start: 27804, Stop: 27208, Start Num: 6  
Candidate Starts for Romney\_35:  
(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Roosevelt\_35 Start: 27806, Stop: 27210, Start Num: 6  
Candidate Starts for Roosevelt\_35:  
(Start: 6 @27806 has 88 MA's), (10, 27446), (11, 27443), (14, 27407), (15, 27341), (16, 27338), (18, 27293), (19, 27281),

Gene: Ruin\_35 Start: 27800, Stop: 27204, Start Num: 6  
Candidate Starts for Ruin\_35:  
(Start: 6 @27800 has 88 MA's), (10, 27440), (11, 27437), (14, 27401), (15, 27335), (16, 27332), (18, 27287), (19, 27275),

Gene: Sabertooth\_35 Start: 27803, Stop: 27207, Start Num: 6  
Candidate Starts for Sabertooth\_35:  
(Start: 6 @27803 has 88 MA's), (10, 27443), (11, 27440), (14, 27404), (15, 27338), (16, 27335), (18, 27290), (19, 27278),

Gene: Scamp\_35 Start: 27806, Stop: 27210, Start Num: 6  
Candidate Starts for Scamp\_35:  
(Start: 6 @27806 has 88 MA's), (10, 27446), (11, 27443), (14, 27407), (15, 27341), (16, 27338), (18, 27293), (19, 27281),

Gene: SenorClean\_35 Start: 27804, Stop: 27208, Start Num: 6  
Candidate Starts for SenorClean\_35:  
(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Shaka\_35 Start: 27804, Stop: 27208, Start Num: 6  
Candidate Starts for Shaka\_35:  
(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Shygu2\_35 Start: 27798, Stop: 27202, Start Num: 6  
Candidate Starts for Shygu2\_35:

(Start: 6 @27798 has 88 MA's), (10, 27438), (11, 27435), (14, 27399), (15, 27333), (16, 27330), (18, 27285), (19, 27273),

Gene: Skipitt\_35 Start: 27801, Stop: 27205, Start Num: 6

Candidate Starts for Skipitt\_35:

(Start: 6 @27801 has 88 MA's), (10, 27441), (11, 27438), (14, 27402), (15, 27336), (16, 27333), (18, 27288), (19, 27276),

Gene: Spino\_35 Start: 27804, Stop: 27208, Start Num: 6

Candidate Starts for Spino\_35:

(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Sultana\_35 Start: 27804, Stop: 27208, Start Num: 6

Candidate Starts for Sultana\_35:

(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Taquarus\_35 Start: 27807, Stop: 27211, Start Num: 6

Candidate Starts for Taquarus\_35:

(Start: 6 @27807 has 88 MA's), (10, 27447), (11, 27444), (14, 27408), (15, 27342), (16, 27339), (18, 27294), (19, 27282),

Gene: Thanksgivukkah\_35 Start: 27805, Stop: 27209, Start Num: 6

Candidate Starts for Thanksgivukkah\_35:

(Start: 6 @27805 has 88 MA's), (10, 27445), (11, 27442), (14, 27406), (15, 27340), (16, 27337), (18, 27292), (19, 27280),

Gene: TiroTheta9\_35 Start: 27801, Stop: 27205, Start Num: 6

Candidate Starts for TiroTheta9\_35:

(Start: 6 @27801 has 88 MA's), (10, 27441), (11, 27438), (14, 27402), (15, 27336), (16, 27333), (18, 27288), (19, 27276),

Gene: TygerBlood\_35 Start: 27804, Stop: 27208, Start Num: 6

Candidate Starts for TygerBlood\_35:

(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Wander\_35 Start: 27804, Stop: 27208, Start Num: 6

Candidate Starts for Wander\_35:

(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Wilbur\_35 Start: 27804, Stop: 27208, Start Num: 6

Candidate Starts for Wilbur\_35:

(Start: 6 @27804 has 88 MA's), (10, 27444), (11, 27441), (14, 27405), (15, 27339), (16, 27336), (18, 27291), (19, 27279),

Gene: Wile\_35 Start: 27868, Stop: 27272, Start Num: 5

Candidate Starts for Wile\_35:

(Start: 4 @27898 has 2 MA's), (Start: 5 @27868 has 12 MA's), (10, 27508), (11, 27505), (14, 27469), (15, 27403), (16, 27400), (18, 27355), (19, 27343),

Gene: Wizard007\_35 Start: 27809, Stop: 27213, Start Num: 6

Candidate Starts for Wizard007\_35:

(Start: 6 @27809 has 88 MA's), (10, 27449), (11, 27446), (14, 27410), (15, 27344), (16, 27341), (18, 27296), (19, 27284),

Gene: Xena\_35 Start: 27834, Stop: 27259, Start Num: 5

Candidate Starts for Xena\_35:

(Start: 4 @27864 has 2 MA's), (Start: 5 @27834 has 12 MA's), (11, 27471), (14, 27435), (16, 27366), (18, 27321), (19, 27309),

Gene: YoSam321\_35 Start: 27801, Stop: 27205, Start Num: 6

Candidate Starts for YoSam321\_35:

(Start: 6 @27801 has 88 MA's), (10, 27441), (11, 27438), (14, 27402), (15, 27336), (16, 27333), (18, 27288), (19, 27276),