

Pham 215912



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 215912 Report

This analysis was run 02/22/25 on database version 588.

Pham number 215912 has 151 members, 7 are drafts.

Phages represented in each track:

- Track 1 : SororFago\_40
- Track 2 : Gail\_40
- Track 3 : Jeeves\_39
- Track 4 : PainterBoy\_39, Lucyedi\_39
- Track 5 : EagleEye\_40
- Track 6 : Iwokeuplikedis\_36
- Track 7 : Jaan\_36
- Track 8 : Tristan\_34
- Track 9 : Pukovnik\_34
- Track 10 : IronMan\_35
- Track 11 : Anthony\_31
- Track 12 : Kinmap\_37
- Track 13 : HamSlice\_31
- Track 14 : Lorenzo\_32, Florean\_32, Cocoaberry\_32, SenorClean\_31, Bartimeaus\_32, Avle17\_32, Dhanush\_32, Wilbur\_32, Eapen\_32, Wizard007\_32, Taquarus\_32, Relief\_32, Kyee\_32, CentreCat\_32, Ruin\_32, TygerBlood\_32, Albee\_32, Citius\_32, Flux\_32, NotAPhaseMom\_32, Caelakin\_32, LittleB\_32, Chaph\_32, Burger\_31, Druantia\_32, TiroTheta9\_32, Iceman\_33, Sabertooth\_32, Blackmoor\_32, Houdini22\_32, Happiness\_32, Phacado\_32, NorthStar\_32, Mazhar510\_32, Scamp\_32, OKaNui\_33, Eros\_32, Romney\_32, PeterPeter\_32, Baby16\_32, MeeZee\_32, Shaka\_32, Deano\_32, Huxley\_32, YoSam321\_32, Spino\_32, Holli\_32, Roosevelt\_32, Broseidon\_32, Connomayer\_32, JetBlade\_32, Peaches\_32
- Track 15 : LeoAvram\_32, TinaFeyge\_32, Maxo\_32, Commander\_32, BellusTerra\_32, Eurydice\_32, Nebs\_32, TroyPia\_32, Medusa\_32, Sparxx\_32, Kamy\_32, Polymorphads\_32, Melvin\_32, Abdiel\_31, Ohfah\_32, Phelipe\_32
- Track 16 : SheldonCooper\_33
- Track 17 : Morpher26\_32, Perplexer\_32, Datway\_32, PetiteSangsue\_32, Badger\_32, Wile\_32, Backyardigan\_32, Xena\_32, Bumblebee11\_32, AbbysRanger\_32, Cici\_32
- Track 18 : Pumbaa\_32
- Track 19 : Stasia\_33
- Track 20 : Pipcraft\_32
- Track 21 : BangNhom\_32
- Track 22 : ICleared\_32, Alberto7\_33, Koreni\_31, LittleGuy\_32, Kremtemulon\_32, Phontbonne\_32, Nyxis\_32
- Track 23 : Tinybot\_31

- Track 24 : Gadost\_32, Thanksgivukkah\_32, Mayonnaise\_32, Annyong\_32, Wander\_32, Skipitt\_32, Kingmustik0402\_32, Koan\_31
- Track 25 : Bruiser\_31
- Track 26 : Arturo\_31
- Track 27 : ChampagnePapi\_33, Cerulean\_33, Eagle\_31, Obama12\_33, LHTSCC\_33
- Track 28 : Funston\_32, Nemo27\_32, JoongJeon\_32, Lemur\_32, Eris\_31, Lunsford\_33, KFPoly\_32, Maverick\_32, Clarenza\_32, BubbleTrouble\_32, Palestino\_31, Bombshell\_32
- Track 29 : Phighter1804\_32, Ulysses\_31, DirtyDunning\_32, Iracema64\_33, LochMonster\_32
- Track 30 : Camperdownii\_31, Rosa24\_31
- Track 31 : LappelDuVide\_32
- Track 32 : Cindaradix\_31
- Track 33 : Mundrea\_32
- Track 34 : Kratak\_32
- Track 35 : Morrow\_32
- Track 36 : Shygu2\_32
- Track 37 : Cintron\_32
- Track 38 : Noelle\_32
- Track 39 : Jaykayelowell\_32
- Track 40 : Katalie136\_32
- Track 41 : Achebe\_31

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

The start number called the most often in the published annotations is 13, it was called in 66 of the 144 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AbbysRanger\_32, Albee\_32, Avle17\_32, Baby16\_32, Backyardigan\_32, Badger\_32, Bartimeaus\_32, Blackmoor\_32, Broseidon\_32, Bumblebee11\_32, Burger\_31, Caelakin\_32, CentreCat\_32, Chaph\_32, Cici\_32, Citius\_32, Cocoaberry\_32, Connomayer\_32, Datway\_32, Deano\_32, Dhanush\_32, Druantia\_32, Eapen\_32, Eros\_32, Florean\_32, Flux\_32, Happiness\_32, Holli\_32, Houdini22\_32, Huxley\_32, Iceman\_33, Jaykayelowell\_32, JetBlade\_32, Kyee\_32, LappelDuVide\_32, LittleB\_32, Lorenzo\_32, Mazhar510\_32, MeeZee\_32, Morpher26\_32, Noelle\_32, NorthStar\_32, NotAPhaseMom\_32, OKaNui\_33, Peaches\_32, Perplexer\_32, PeterPeter\_32, PetiteSangsue\_32, Phacado\_32, Pipcraft\_32, Relief\_32, Romney\_32, Roosevelt\_32, Ruin\_32, Sabertooth\_32, Scamp\_32, SenorClean\_31, Shaka\_32, Shygu2\_32, Spino\_32, Taquarus\_32, TiroTheta9\_32, TygerBlood\_32, Wilbur\_32, Wile\_32, Wizard007\_32, Xena\_32, YoSam321\_32,

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

- Achebe\_31, Annyong\_32, Bombshell\_32, Bruiser\_31, BubbleTrouble\_32, Cintron\_32, Clarenza\_32, Eris\_31, Funston\_32, Gadost\_32, HamSlice\_31, JoongJeon\_32, KFPoly\_32, Katalie136\_32, Kingmustik0402\_32, Koan\_31, Lemur\_32, Lunsford\_33, Maverick\_32, Mayonnaise\_32, Nemo27\_32, Palestino\_31, Skipitt\_32, Stasia\_33, Thanksgivukkah\_32, Wander\_32,

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

- Abdiel\_31, Alberto7\_33, Anthony\_31, Arturo\_31, BangNhom\_32, BellusTerra\_32, Camperdownii\_31, Cerulean\_33, ChampagnePapi\_33, Cindaradix\_31, Commander\_32, DirtyDunning\_32, EagleEye\_40, Eagle\_31, Eurydice\_32, Gail\_40, ICleared\_32, Iracema64\_33, IronMan\_35, Iwokeuplikedis\_36, Jaan\_36, Jeeves\_39, Kamy\_32, Kinmap\_37, Koreni\_31, Kratark\_32, Kremtemulon\_32, LHTSCC\_33, LeoAvram\_32, LittleGuy\_32, LochMonster\_32, Lucyedi\_39, Maxo\_32, Medusa\_32, Melvin\_32, Morrow\_32, Mundrea\_32, Nebs\_32, Nyxis\_32, Obama12\_33, Ohfah\_32, PainterBoy\_39, Phelipe\_32, Phighter1804\_32, Phontbonne\_32, Polymorphads\_32, Pukovnik\_34, Pumbaa\_32, Rosa24\_31, SheldonCooper\_33, SororFago\_40, Sparxx\_32, TinaFeyge\_32, Tinybot\_31, Tristan\_34, TroyPia\_32, Ulysses\_31,

### Summary by start number:

Start 7:

- Found in 3 of 151 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 1 of 144
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Pukovnik\_34 (A2),

Start 9:

- Found in 91 of 151 ( 60.3% ) of genes in pham
- Manual Annotations of this start: 14 of 144
- Called 15.4% of time when present
- Phage (with cluster) where this start called: Achebe\_31 (A4), Bombshell\_32 (A4), Bruiser\_31 (A4), BubbleTrouble\_32 (A4), Clarenza\_32 (A4), Eris\_31 (A4), Funston\_32 (A4), JoongJeon\_32 (A4), KFPoly\_32 (A4), Lemur\_32 (A4), Lunsford\_33 (A4), Maverick\_32 (A4), Nemo27\_32 (A4), Palestino\_31 (A4),

Start 11:

- Found in 8 of 151 ( 5.3% ) of genes in pham
- Manual Annotations of this start: 6 of 144
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Cerulean\_33 (A4), ChampagnePapi\_33 (A4), Cindaradix\_31 (A4), Eagle\_31 (A4), LHTSCC\_33 (A4), Obama12\_33 (A4),

Start 12:

- Found in 94 of 151 ( 62.3% ) of genes in pham
- Manual Annotations of this start: 2 of 144
- Called 2.1% of time when present
- Phage (with cluster) where this start called: HamSlice\_31 (A4), Stasia\_33 (A4),

Start 13:

- Found in 94 of 151 ( 62.3% ) of genes in pham
- Manual Annotations of this start: 66 of 144
- Called 72.3% of time when present
- Phage (with cluster) where this start called: AbbysRanger\_32 (A4), Albee\_32 (A4), Avle17\_32 (A4), Baby16\_32 (A4), Backyardigan\_32 (A4), Badger\_32 (A4), Bartimeaus\_32 (A4), Blackmoor\_32 (A4), Broseidon\_32 (A4), Bumblebee11\_32 (A4), Burger\_31 (A4), Caelakin\_32 (A4), CentreCat\_32 (A4), Chaph\_32 (A4), Cici\_32 (A4), Citius\_32 (A4), Cocoaberry\_32 (A4), Connomayer\_32 (A4), Datway\_32 (A4), Deano\_32 (A4), Dhanush\_32 (A4), Druantia\_32 (A4), Eapen\_32 (A4), Eros\_32 (A4), Florean\_32 (A4), Flux\_32 (A4), Happiness\_32 (A4), Holli\_32 (A4), Houdini22\_32

(A4), Huxley\_32 (A4), Iceman\_33 (A4), Jaykayelowell\_32 (A4), JetBlade\_32 (A4), Kyee\_32 (A4), LappelDuVide\_32 (A4), LittleB\_32 (A4), Lorenzo\_32 (A4), Mazhar510\_32 (A4), MeeZee\_32 (A4), Morpher26\_32 (A4), Noelle\_32 (A4), NorthStar\_32 (A4), NotAPhaseMom\_32 (A4), OKaNui\_33 (A4), Peaches\_32 (A4), Perplexer\_32 (A4), PeterPeter\_32 (A4), PetiteSangsue\_32 (A4), Phacado\_32 (A4), Pipcraft\_32 (A4), Relief\_32 (A4), Romney\_32 (A4), Roosevelt\_32 (A4), Ruin\_32 (A4), Sabertooth\_32 (A4), Scamp\_32 (A4), SenorClean\_31 (A4), Shaka\_32 (A4), Shygu2\_32 (A4), Spino\_32 (A4), Taquarus\_32 (A4), TiroTheta9\_32 (A4), TygerBlood\_32 (A4), Wilbur\_32 (A4), Wile\_32 (A4), Wizard007\_32 (A4), Xena\_32 (A4), YoSam321\_32 (A4),

#### Start 14:

- Found in 51 of 151 ( 33.8% ) of genes in pham
- Manual Annotations of this start: 40 of 144
- Called 82.4% of time when present
- Phage (with cluster) where this start called: Abdiel\_31 (A4), Alberto7\_33 (A4), Arturo\_31 (A4), BangNhom\_32 (A4), BellusTerra\_32 (A4), Camperdownii\_31 (A4), Commander\_32 (A4), DirtyDunning\_32 (A4), Eurydice\_32 (A4), Gail\_40 (A14), ICleared\_32 (A4), Iracema64\_33 (A4), IronMan\_35 (A2), Jaan\_36 (A2), Jeeves\_39 (A14), Kamy\_32 (A4), Koreni\_31 (A4), Kratark\_32 (A4), Kremtemulon\_32 (A4), LeoAvram\_32 (A4), LittleGuy\_32 (A4), LochMonster\_32 (A4), Maxo\_32 (A4), Medusa\_32 (A4), Melvin\_32 (A4), Morrow\_32 (A4), Mundrea\_32 (A4), Nebs\_32 (A4), Nyxis\_32 (A4), Ohfah\_32 (A4), Phelipe\_32 (A4), Phighter1804\_32 (A4), Phontbonne\_32 (A4), Polymorphads\_32 (A4), Pumbaa\_32 (A4), Rosa24\_31 (A4), Sparxx\_32 (A4), TinaFeyge\_32 (A4), Tinybot\_31 (A4), Tristan\_34 (A2), TroyPia\_32 (A4), Ulysses\_31 (A4),

#### Start 15:

- Found in 8 of 151 ( 5.3% ) of genes in pham
- Manual Annotations of this start: 1 of 144
- Called 12.5% of time when present
- Phage (with cluster) where this start called: SheldonCooper\_33 (A4),

#### Start 17:

- Found in 95 of 151 ( 62.9% ) of genes in pham
- Manual Annotations of this start: 11 of 144
- Called 13.7% of time when present
- Phage (with cluster) where this start called: Annyong\_32 (A4), Cintron\_32 (A4), EagleEye\_40 (A16), Gadost\_32 (A4), Katalie136\_32 (A4), Kingmustik0402\_32 (A4), Koan\_31 (A4), Lucyedi\_39 (A16), Mayonnaise\_32 (A4), PainterBoy\_39 (A16), Skipitt\_32 (A4), Thanksgivukkah\_32 (A4), Wander\_32 (A4),

#### Start 18:

- Found in 4 of 151 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 3 of 144
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Anthony\_31 (A20), Iwokeuplikedis\_36 (A2), SororFago\_40 (A14),

#### Start 19:

- Found in 1 of 151 ( 0.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Kinmap\_37 (A21),

### **Summary by clusters:**

There are 6 clusters represented in this pham: A20, A14, A16, A21, A2, A4,

Info for manual annotations of cluster A14:

- Start number 14 was manually annotated 2 times for cluster A14.
- Start number 18 was manually annotated 1 time for cluster A14.

Info for manual annotations of cluster A16:

- Start number 17 was manually annotated 3 times for cluster A16.

Info for manual annotations of cluster A2:

- Start number 7 was manually annotated 1 time for cluster A2.
- Start number 14 was manually annotated 2 times for cluster A2.
- Start number 18 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster A20:

- Start number 18 was manually annotated 1 time for cluster A20.

Info for manual annotations of cluster A4:

- Start number 9 was manually annotated 14 times for cluster A4.
- Start number 11 was manually annotated 6 times for cluster A4.
- Start number 12 was manually annotated 2 times for cluster A4.
- Start number 13 was manually annotated 66 times for cluster A4.
- Start number 14 was manually annotated 36 times for cluster A4.
- Start number 15 was manually annotated 1 time for cluster A4.
- Start number 17 was manually annotated 8 times for cluster A4.

### **Gene Information:**

Gene: AbbysRanger\_32 Start: 25121, Stop: 24906, Start Num: 13

Candidate Starts for AbbysRanger\_32:

(Start: 9 @25163 has 14 MA's), (Start: 12 @25130 has 2 MA's), (Start: 13 @25121 has 66 MA's), (Start: 17 @25109 has 11 MA's), (28, 25028), (30, 25010), (35, 24995), (36, 24983), (37, 24974), (40, 24950), (42, 24938), (45, 24926),

Gene: Abdiel\_31 Start: 25079, Stop: 24879, Start Num: 14

Candidate Starts for Abdiel\_31:

(Start: 14 @25079 has 40 MA's), (16, 25073), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Achebe\_31 Start: 25146, Stop: 24889, Start Num: 9

Candidate Starts for Achebe\_31:

(Start: 9 @25146 has 14 MA's), (Start: 12 @25113 has 2 MA's), (Start: 13 @25104 has 66 MA's), (Start: 17 @25092 has 11 MA's), (28, 25011), (30, 24993), (35, 24978), (36, 24966), (37, 24957), (40, 24933), (42, 24921), (45, 24909),

Gene: Albee\_32 Start: 25097, Stop: 24879, Start Num: 13

Candidate Starts for Albee\_32:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's),  
(Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Alberto7\_33 Start: 25381, Stop: 25181, Start Num: 14

Candidate Starts for Alberto7\_33:

(Start: 14 @25381 has 40 MA's), (16, 25375), (34, 25276), (37, 25249), (40, 25225), (42, 25213), (45,  
25201),

Gene: Annyong\_32 Start: 25086, Stop: 24880, Start Num: 17

Candidate Starts for Annyong\_32:

(Start: 9 @25140 has 14 MA's), (Start: 12 @25107 has 2 MA's), (Start: 13 @25098 has 66 MA's),  
(Start: 17 @25086 has 11 MA's), (34, 24975), (37, 24948), (40, 24924), (42, 24912), (45, 24900),

Gene: Anthony\_31 Start: 23189, Stop: 22983, Start Num: 18

Candidate Starts for Anthony\_31:

(Start: 14 @23207 has 40 MA's), (Start: 18 @23189 has 3 MA's), (22, 23141), (27, 23120), (40, 23027),  
(42, 23015), (45, 23003),

Gene: Arturo\_31 Start: 25198, Stop: 24983, Start Num: 14

Candidate Starts for Arturo\_31:

(2, 25312), (3, 25303), (10, 25225), (Start: 14 @25198 has 40 MA's), (20, 25174), (35, 25072), (36,  
25060), (37, 25051), (38, 25048), (40, 25027), (42, 25015), (45, 25003),

Gene: Avle17\_32 Start: 25097, Stop: 24879, Start Num: 13

Candidate Starts for Avle17\_32:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's),  
(Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Baby16\_32 Start: 25108, Stop: 24890, Start Num: 13

Candidate Starts for Baby16\_32:

(Start: 9 @25150 has 14 MA's), (Start: 12 @25117 has 2 MA's), (Start: 13 @25108 has 66 MA's),  
(Start: 17 @25096 has 11 MA's), (34, 24985), (37, 24958), (40, 24934), (42, 24922), (45, 24910),

Gene: Backyardigan\_32 Start: 25116, Stop: 24901, Start Num: 13

Candidate Starts for Backyardigan\_32:

(Start: 9 @25158 has 14 MA's), (Start: 12 @25125 has 2 MA's), (Start: 13 @25116 has 66 MA's),  
(Start: 17 @25104 has 11 MA's), (28, 25023), (30, 25005), (35, 24990), (36, 24978), (37, 24969), (40,  
24945), (42, 24933), (45, 24921),

Gene: Badger\_32 Start: 25105, Stop: 24890, Start Num: 13

Candidate Starts for Badger\_32:

(Start: 9 @25147 has 14 MA's), (Start: 12 @25114 has 2 MA's), (Start: 13 @25105 has 66 MA's),  
(Start: 17 @25093 has 11 MA's), (28, 25012), (30, 24994), (35, 24979), (36, 24967), (37, 24958), (40,  
24934), (42, 24922), (45, 24910),

Gene: BangNhom\_32 Start: 25416, Stop: 25195, Start Num: 14

Candidate Starts for BangNhom\_32:

(Start: 11 @25440 has 6 MA's), (Start: 14 @25416 has 40 MA's), (Start: 15 @25413 has 1 MA's), (16,  
25407), (20, 25389), (21, 25380), (38, 25260), (40, 25239), (45, 25215),

Gene: Bartimeaus\_32 Start: 25099, Stop: 24881, Start Num: 13

Candidate Starts for Bartimeaus\_32:

(Start: 9 @25141 has 14 MA's), (Start: 12 @25108 has 2 MA's), (Start: 13 @25099 has 66 MA's), (Start: 17 @25087 has 11 MA's), (34, 24976), (37, 24949), (40, 24925), (42, 24913), (45, 24901),

Gene: BellusTerra\_32 Start: 25078, Stop: 24878, Start Num: 14

Candidate Starts for BellusTerra\_32:

(Start: 14 @25078 has 40 MA's), (16, 25072), (34, 24973), (37, 24946), (40, 24922), (42, 24910), (45, 24898),

Gene: Blackmoor\_32 Start: 25099, Stop: 24881, Start Num: 13

Candidate Starts for Blackmoor\_32:

(Start: 9 @25141 has 14 MA's), (Start: 12 @25108 has 2 MA's), (Start: 13 @25099 has 66 MA's), (Start: 17 @25087 has 11 MA's), (34, 24976), (37, 24949), (40, 24925), (42, 24913), (45, 24901),

Gene: Bombshell\_32 Start: 25139, Stop: 24879, Start Num: 9

Candidate Starts for Bombshell\_32:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's), (Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Broseidon\_32 Start: 25099, Stop: 24881, Start Num: 13

Candidate Starts for Broseidon\_32:

(Start: 9 @25141 has 14 MA's), (Start: 12 @25108 has 2 MA's), (Start: 13 @25099 has 66 MA's), (Start: 17 @25087 has 11 MA's), (34, 24976), (37, 24949), (40, 24925), (42, 24913), (45, 24901),

Gene: Bruiser\_31 Start: 25139, Stop: 24879, Start Num: 9

Candidate Starts for Bruiser\_31:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: BubbleTrouble\_32 Start: 25139, Stop: 24879, Start Num: 9

Candidate Starts for BubbleTrouble\_32:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's), (Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Bumblebee11\_32 Start: 25107, Stop: 24892, Start Num: 13

Candidate Starts for Bumblebee11\_32:

(Start: 9 @25149 has 14 MA's), (Start: 12 @25116 has 2 MA's), (Start: 13 @25107 has 66 MA's), (Start: 17 @25095 has 11 MA's), (28, 25014), (30, 24996), (35, 24981), (36, 24969), (37, 24960), (40, 24936), (42, 24924), (45, 24912),

Gene: Burger\_31 Start: 25097, Stop: 24879, Start Num: 13

Candidate Starts for Burger\_31:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's), (Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Caelakin\_32 Start: 25097, Stop: 24879, Start Num: 13

Candidate Starts for Caelakin\_32:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's), (Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Camperdownii\_31 Start: 24716, Stop: 24498, Start Num: 14

Candidate Starts for Camperdownii\_31:

(Start: 14 @24716 has 40 MA's), (16, 24710), (34, 24593), (40, 24542), (41, 24536), (45, 24518),



Gene: CentreCat\_32 Start: 25100, Stop: 24882, Start Num: 13

Candidate Starts for CentreCat\_32:

(Start: 9 @25142 has 14 MA's), (Start: 12 @25109 has 2 MA's), (Start: 13 @25100 has 66 MA's), (Start: 17 @25088 has 11 MA's), (34, 24977), (37, 24950), (40, 24926), (42, 24914), (45, 24902),

Gene: Cerulean\_33 Start: 25441, Stop: 25196, Start Num: 11

Candidate Starts for Cerulean\_33:

(Start: 11 @25441 has 6 MA's), (Start: 14 @25417 has 40 MA's), (Start: 15 @25414 has 1 MA's), (16, 25408), (20, 25390), (21, 25381), (38, 25261), (40, 25240), (45, 25216),

Gene: ChampagnePapi\_33 Start: 25440, Stop: 25195, Start Num: 11

Candidate Starts for ChampagnePapi\_33:

(Start: 11 @25440 has 6 MA's), (Start: 14 @25416 has 40 MA's), (Start: 15 @25413 has 1 MA's), (16, 25407), (20, 25389), (21, 25380), (38, 25260), (40, 25239), (45, 25215),

Gene: Chaph\_32 Start: 25108, Stop: 24890, Start Num: 13

Candidate Starts for Chaph\_32:

(Start: 9 @25150 has 14 MA's), (Start: 12 @25117 has 2 MA's), (Start: 13 @25108 has 66 MA's), (Start: 17 @25096 has 11 MA's), (34, 24985), (37, 24958), (40, 24934), (42, 24922), (45, 24910),

Gene: Cici\_32 Start: 25101, Stop: 24886, Start Num: 13

Candidate Starts for Cici\_32:

(Start: 9 @25143 has 14 MA's), (Start: 12 @25110 has 2 MA's), (Start: 13 @25101 has 66 MA's), (Start: 17 @25089 has 11 MA's), (28, 25008), (30, 24990), (35, 24975), (36, 24963), (37, 24954), (40, 24930), (42, 24918), (45, 24906),

Gene: Cindaradix\_31 Start: 24847, Stop: 24602, Start Num: 11

Candidate Starts for Cindaradix\_31:

(2, 24937), (Start: 11 @24847 has 6 MA's), (Start: 14 @24823 has 40 MA's), (Start: 15 @24820 has 1 MA's), (16, 24814), (20, 24796), (21, 24787), (30, 24706), (36, 24679), (38, 24667), (40, 24646), (42, 24634), (45, 24622),

Gene: Cintron\_32 Start: 25133, Stop: 24927, Start Num: 17

Candidate Starts for Cintron\_32:

(1, 25334), (Start: 12 @25154 has 2 MA's), (Start: 13 @25145 has 66 MA's), (Start: 17 @25133 has 11 MA's), (31, 25031), (40, 24971), (41, 24965), (42, 24959), (45, 24947),

Gene: Citius\_32 Start: 25112, Stop: 24894, Start Num: 13

Candidate Starts for Citius\_32:

(Start: 9 @25154 has 14 MA's), (Start: 12 @25121 has 2 MA's), (Start: 13 @25112 has 66 MA's), (Start: 17 @25100 has 11 MA's), (34, 24989), (37, 24962), (40, 24938), (42, 24926), (45, 24914),

Gene: Clarenza\_32 Start: 25136, Stop: 24876, Start Num: 9

Candidate Starts for Clarenza\_32:

(Start: 9 @25136 has 14 MA's), (Start: 12 @25103 has 2 MA's), (Start: 13 @25094 has 66 MA's), (Start: 17 @25082 has 11 MA's), (34, 24971), (37, 24944), (40, 24920), (42, 24908), (45, 24896),

Gene: Cocoaberry\_32 Start: 25101, Stop: 24883, Start Num: 13

Candidate Starts for Cocoaberry\_32:

(Start: 9 @25143 has 14 MA's), (Start: 12 @25110 has 2 MA's), (Start: 13 @25101 has 66 MA's), (Start: 17 @25089 has 11 MA's), (34, 24978), (37, 24951), (40, 24927), (42, 24915), (45, 24903),

Gene: Commander\_32 Start: 25079, Stop: 24879, Start Num: 14

Candidate Starts for Commander\_32:

(Start: 14 @25079 has 40 MA's), (16, 25073), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Connomayer\_32 Start: 25097, Stop: 24879, Start Num: 13

Candidate Starts for Connomayer\_32:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's), (Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Datway\_32 Start: 25116, Stop: 24901, Start Num: 13

Candidate Starts for Datway\_32:

(Start: 9 @25158 has 14 MA's), (Start: 12 @25125 has 2 MA's), (Start: 13 @25116 has 66 MA's), (Start: 17 @25104 has 11 MA's), (28, 25023), (30, 25005), (35, 24990), (36, 24978), (37, 24969), (40, 24945), (42, 24933), (45, 24921),

Gene: Deano\_32 Start: 25105, Stop: 24887, Start Num: 13

Candidate Starts for Deano\_32:

(Start: 9 @25147 has 14 MA's), (Start: 12 @25114 has 2 MA's), (Start: 13 @25105 has 66 MA's), (Start: 17 @25093 has 11 MA's), (34, 24982), (37, 24955), (40, 24931), (42, 24919), (45, 24907),

Gene: Dhanush\_32 Start: 25100, Stop: 24882, Start Num: 13

Candidate Starts for Dhanush\_32:

(Start: 9 @25142 has 14 MA's), (Start: 12 @25109 has 2 MA's), (Start: 13 @25100 has 66 MA's), (Start: 17 @25088 has 11 MA's), (34, 24977), (37, 24950), (40, 24926), (42, 24914), (45, 24902),

Gene: DirtyDunning\_32 Start: 25082, Stop: 24867, Start Num: 14

Candidate Starts for DirtyDunning\_32:

(10, 25109), (Start: 14 @25082 has 40 MA's), (20, 25058), (28, 24989), (35, 24956), (36, 24944), (37, 24935), (38, 24932), (40, 24911), (42, 24899), (45, 24887),

Gene: Druantia\_32 Start: 25100, Stop: 24882, Start Num: 13

Candidate Starts for Druantia\_32:

(Start: 9 @25142 has 14 MA's), (Start: 12 @25109 has 2 MA's), (Start: 13 @25100 has 66 MA's), (Start: 17 @25088 has 11 MA's), (34, 24977), (37, 24950), (40, 24926), (42, 24914), (45, 24902),

Gene: Eagle\_31 Start: 25126, Stop: 24881, Start Num: 11

Candidate Starts for Eagle\_31:

(Start: 11 @25126 has 6 MA's), (Start: 14 @25102 has 40 MA's), (Start: 15 @25099 has 1 MA's), (16, 25093), (20, 25075), (21, 25066), (38, 24946), (40, 24925), (45, 24901),

Gene: EagleEye\_40 Start: 27446, Stop: 27649, Start Num: 17

Candidate Starts for EagleEye\_40:

(Start: 17 @27446 has 11 MA's), (23, 27506), (24, 27509), (33, 27557),

Gene: Eapen\_32 Start: 25095, Stop: 24877, Start Num: 13

Candidate Starts for Eapen\_32:

(Start: 9 @25137 has 14 MA's), (Start: 12 @25104 has 2 MA's), (Start: 13 @25095 has 66 MA's), (Start: 17 @25083 has 11 MA's), (34, 24972), (37, 24945), (40, 24921), (42, 24909), (45, 24897),

Gene: Eris\_31 Start: 25139, Stop: 24879, Start Num: 9

Candidate Starts for Eris\_31:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's), (Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Eros\_32 Start: 25099, Stop: 24881, Start Num: 13

Candidate Starts for Eros\_32:

(Start: 9 @25141 has 14 MA's), (Start: 12 @25108 has 2 MA's), (Start: 13 @25099 has 66 MA's),  
(Start: 17 @25087 has 11 MA's), (34, 24976), (37, 24949), (40, 24925), (42, 24913), (45, 24901),

Gene: Eurydice\_32 Start: 25077, Stop: 24877, Start Num: 14

Candidate Starts for Eurydice\_32:

(Start: 14 @25077 has 40 MA's), (16, 25071), (34, 24972), (37, 24945), (40, 24921), (42, 24909), (45,  
24897),

Gene: Florean\_32 Start: 25096, Stop: 24878, Start Num: 13

Candidate Starts for Florean\_32:

(Start: 9 @25138 has 14 MA's), (Start: 12 @25105 has 2 MA's), (Start: 13 @25096 has 66 MA's),  
(Start: 17 @25084 has 11 MA's), (34, 24973), (37, 24946), (40, 24922), (42, 24910), (45, 24898),

Gene: Flux\_32 Start: 25099, Stop: 24881, Start Num: 13

Candidate Starts for Flux\_32:

(Start: 9 @25141 has 14 MA's), (Start: 12 @25108 has 2 MA's), (Start: 13 @25099 has 66 MA's),  
(Start: 17 @25087 has 11 MA's), (34, 24976), (37, 24949), (40, 24925), (42, 24913), (45, 24901),

Gene: Funston\_32 Start: 25139, Stop: 24879, Start Num: 9

Candidate Starts for Funston\_32:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's),  
(Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Gadost\_32 Start: 25089, Stop: 24883, Start Num: 17

Candidate Starts for Gadost\_32:

(Start: 9 @25143 has 14 MA's), (Start: 12 @25110 has 2 MA's), (Start: 13 @25101 has 66 MA's),  
(Start: 17 @25089 has 11 MA's), (34, 24978), (37, 24951), (40, 24927), (42, 24915), (45, 24903),

Gene: Gail\_40 Start: 28919, Stop: 29125, Start Num: 14

Candidate Starts for Gail\_40:

(Start: 14 @28919 has 40 MA's), (22, 28973), (24, 28982), (32, 29027), (35, 29036), (38, 29060), (40,  
29081), (45, 29105),

Gene: HamSlice\_31 Start: 25104, Stop: 24877, Start Num: 12

Candidate Starts for HamSlice\_31:

(Start: 9 @25137 has 14 MA's), (Start: 12 @25104 has 2 MA's), (Start: 13 @25095 has 66 MA's),  
(Start: 17 @25083 has 11 MA's), (28, 25002), (34, 24972), (37, 24945), (40, 24921), (42, 24909), (45,  
24897),

Gene: Happiness\_32 Start: 25102, Stop: 24884, Start Num: 13

Candidate Starts for Happiness\_32:

(Start: 9 @25144 has 14 MA's), (Start: 12 @25111 has 2 MA's), (Start: 13 @25102 has 66 MA's),  
(Start: 17 @25090 has 11 MA's), (34, 24979), (37, 24952), (40, 24928), (42, 24916), (45, 24904),

Gene: Holli\_32 Start: 24887, Stop: 24669, Start Num: 13

Candidate Starts for Holli\_32:

(Start: 9 @24929 has 14 MA's), (Start: 12 @24896 has 2 MA's), (Start: 13 @24887 has 66 MA's),  
(Start: 17 @24875 has 11 MA's), (34, 24764), (37, 24737), (40, 24713), (42, 24701), (45, 24689),

Gene: Houdini22\_32 Start: 25101, Stop: 24883, Start Num: 13

Candidate Starts for Houdini22\_32:

(Start: 9 @25143 has 14 MA's), (Start: 12 @25110 has 2 MA's), (Start: 13 @25101 has 66 MA's), (Start: 17 @25089 has 11 MA's), (34, 24978), (37, 24951), (40, 24927), (42, 24915), (45, 24903),

Gene: Huxley\_32 Start: 25158, Stop: 24940, Start Num: 13

Candidate Starts for Huxley\_32:

(Start: 9 @25200 has 14 MA's), (Start: 12 @25167 has 2 MA's), (Start: 13 @25158 has 66 MA's), (Start: 17 @25146 has 11 MA's), (34, 25035), (37, 25008), (40, 24984), (42, 24972), (45, 24960),

Gene: ICleared\_32 Start: 25076, Stop: 24876, Start Num: 14

Candidate Starts for ICleared\_32:

(Start: 14 @25076 has 40 MA's), (16, 25070), (34, 24971), (37, 24944), (40, 24920), (42, 24908), (45, 24896),

Gene: Iceman\_33 Start: 25386, Stop: 25168, Start Num: 13

Candidate Starts for Iceman\_33:

(Start: 9 @25428 has 14 MA's), (Start: 12 @25395 has 2 MA's), (Start: 13 @25386 has 66 MA's), (Start: 17 @25374 has 11 MA's), (34, 25263), (37, 25236), (40, 25212), (42, 25200), (45, 25188),

Gene: Iracema64\_33 Start: 25397, Stop: 25182, Start Num: 14

Candidate Starts for Iracema64\_33:

(10, 25424), (Start: 14 @25397 has 40 MA's), (20, 25373), (28, 25304), (35, 25271), (36, 25259), (37, 25250), (38, 25247), (40, 25226), (42, 25214), (45, 25202),

Gene: IronMan\_35 Start: 26874, Stop: 26668, Start Num: 14

Candidate Starts for IronMan\_35:

(Start: 14 @26874 has 40 MA's), (38, 26733), (40, 26712), (44, 26691), (45, 26688),

Gene: Iwokeuplikedis\_36 Start: 27079, Stop: 27276, Start Num: 18

Candidate Starts for Iwokeuplikedis\_36:

(Start: 18 @27079 has 3 MA's), (23, 27130), (31, 27175), (42, 27244), (45, 27256),

Gene: Jaan\_36 Start: 27278, Stop: 27060, Start Num: 14

Candidate Starts for Jaan\_36:

(Start: 7 @27329 has 1 MA's), (8, 27323), (Start: 14 @27278 has 40 MA's), (20, 27254), (21, 27245), (28, 27182), (30, 27164), (36, 27137), (37, 27128), (38, 27125), (40, 27104), (45, 27080),

Gene: Jaykayelowell\_32 Start: 25093, Stop: 24875, Start Num: 13

Candidate Starts for Jaykayelowell\_32:

(Start: 9 @25135 has 14 MA's), (Start: 12 @25102 has 2 MA's), (Start: 13 @25093 has 66 MA's), (Start: 17 @25081 has 11 MA's), (34, 24970), (37, 24943), (40, 24919), (42, 24907), (45, 24895),

Gene: Jeeves\_39 Start: 27596, Stop: 27802, Start Num: 14

Candidate Starts for Jeeves\_39:

(Start: 14 @27596 has 40 MA's), (24, 27659), (32, 27704), (35, 27713), (40, 27758), (42, 27770), (44, 27779), (45, 27782),

Gene: JetBlade\_32 Start: 25094, Stop: 24876, Start Num: 13

Candidate Starts for JetBlade\_32:

(Start: 9 @25136 has 14 MA's), (Start: 12 @25103 has 2 MA's), (Start: 13 @25094 has 66 MA's), (Start: 17 @25082 has 11 MA's), (34, 24971), (37, 24944), (40, 24920), (42, 24908), (45, 24896),

Gene: JoongJeon\_32 Start: 25139, Stop: 24879, Start Num: 9

Candidate Starts for JoongJeon\_32:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's),  
(Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: KFPoly\_32 Start: 25136, Stop: 24876, Start Num: 9

Candidate Starts for KFPoly\_32:

(Start: 9 @25136 has 14 MA's), (Start: 12 @25103 has 2 MA's), (Start: 13 @25094 has 66 MA's),  
(Start: 17 @25082 has 11 MA's), (34, 24971), (37, 24944), (40, 24920), (42, 24908), (45, 24896),

Gene: Kamy\_32 Start: 25079, Stop: 24879, Start Num: 14

Candidate Starts for Kamy\_32:

(Start: 14 @25079 has 40 MA's), (16, 25073), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45,  
24899),

Gene: Katalie136\_32 Start: 25095, Stop: 24892, Start Num: 17

Candidate Starts for Katalie136\_32:

(Start: 9 @25149 has 14 MA's), (Start: 12 @25116 has 2 MA's), (Start: 13 @25107 has 66 MA's),  
(Start: 17 @25095 has 11 MA's), (28, 25014), (30, 24996), (35, 24981), (36, 24969), (37, 24960), (40,  
24936), (42, 24924), (45, 24912),

Gene: Kingmustik0402\_32 Start: 25077, Stop: 24871, Start Num: 17

Candidate Starts for Kingmustik0402\_32:

(Start: 9 @25131 has 14 MA's), (Start: 12 @25098 has 2 MA's), (Start: 13 @25089 has 66 MA's),  
(Start: 17 @25077 has 11 MA's), (34, 24966), (37, 24939), (40, 24915), (42, 24903), (45, 24891),

Gene: Kinmap\_37 Start: 27332, Stop: 27529, Start Num: 19

Candidate Starts for Kinmap\_37:

(Start: 18 @27326 has 3 MA's), (19, 27332), (24, 27380), (25, 27383), (26, 27389), (38, 27464), (40,  
27485), (42, 27497), (45, 27509),

Gene: Koan\_31 Start: 25085, Stop: 24879, Start Num: 17

Candidate Starts for Koan\_31:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's),  
(Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Koreni\_31 Start: 24725, Stop: 24525, Start Num: 14

Candidate Starts for Koreni\_31:

(Start: 14 @24725 has 40 MA's), (16, 24719), (34, 24620), (37, 24593), (40, 24569), (42, 24557), (45,  
24545),

Gene: Kratark\_32 Start: 25081, Stop: 24866, Start Num: 14

Candidate Starts for Kratark\_32:

(2, 25195), (3, 25186), (10, 25108), (Start: 14 @25081 has 40 MA's), (20, 25057), (30, 24970), (35,  
24955), (36, 24943), (37, 24934), (38, 24931), (40, 24910), (42, 24898), (45, 24886),

Gene: Kremtemulon\_32 Start: 25131, Stop: 24931, Start Num: 14

Candidate Starts for Kremtemulon\_32:

(Start: 14 @25131 has 40 MA's), (16, 25125), (34, 25026), (37, 24999), (40, 24975), (42, 24963), (45,  
24951),

Gene: Kyee\_32 Start: 25095, Stop: 24877, Start Num: 13

Candidate Starts for Kyee\_32:

(Start: 9 @25137 has 14 MA's), (Start: 12 @25104 has 2 MA's), (Start: 13 @25095 has 66 MA's),  
(Start: 17 @25083 has 11 MA's), (34, 24972), (37, 24945), (40, 24921), (42, 24909), (45, 24897),

Gene: LHTSCC\_33 Start: 25440, Stop: 25195, Start Num: 11

Candidate Starts for LHTSCC\_33:

(Start: 11 @25440 has 6 MA's), (Start: 14 @25416 has 40 MA's), (Start: 15 @25413 has 1 MA's), (16,  
25407), (20, 25389), (21, 25380), (38, 25260), (40, 25239), (45, 25215),

Gene: LappelDuVide\_32 Start: 25096, Stop: 24878, Start Num: 13

Candidate Starts for LappelDuVide\_32:

(Start: 9 @25138 has 14 MA's), (Start: 12 @25105 has 2 MA's), (Start: 13 @25096 has 66 MA's),  
(Start: 17 @25084 has 11 MA's), (27, 25012), (34, 24973), (37, 24946), (40, 24922), (42, 24910), (45,  
24898),

Gene: Lemur\_32 Start: 25136, Stop: 24876, Start Num: 9

Candidate Starts for Lemur\_32:

(Start: 9 @25136 has 14 MA's), (Start: 12 @25103 has 2 MA's), (Start: 13 @25094 has 66 MA's),  
(Start: 17 @25082 has 11 MA's), (34, 24971), (37, 24944), (40, 24920), (42, 24908), (45, 24896),

Gene: LeoAvram\_32 Start: 25077, Stop: 24877, Start Num: 14

Candidate Starts for LeoAvram\_32:

(Start: 14 @25077 has 40 MA's), (16, 25071), (34, 24972), (37, 24945), (40, 24921), (42, 24909), (45,  
24897),

Gene: LittleB\_32 Start: 25098, Stop: 24880, Start Num: 13

Candidate Starts for LittleB\_32:

(Start: 9 @25140 has 14 MA's), (Start: 12 @25107 has 2 MA's), (Start: 13 @25098 has 66 MA's),  
(Start: 17 @25086 has 11 MA's), (34, 24975), (37, 24948), (40, 24924), (42, 24912), (45, 24900),

Gene: LittleGuy\_32 Start: 25026, Stop: 24826, Start Num: 14

Candidate Starts for LittleGuy\_32:

(Start: 14 @25026 has 40 MA's), (16, 25020), (34, 24921), (37, 24894), (40, 24870), (42, 24858), (45,  
24846),

Gene: LochMonster\_32 Start: 25061, Stop: 24846, Start Num: 14

Candidate Starts for LochMonster\_32:

(10, 25088), (Start: 14 @25061 has 40 MA's), (20, 25037), (28, 24968), (35, 24935), (36, 24923), (37,  
24914), (38, 24911), (40, 24890), (42, 24878), (45, 24866),

Gene: Lorenzo\_32 Start: 25097, Stop: 24879, Start Num: 13

Candidate Starts for Lorenzo\_32:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's),  
(Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Lucyedi\_39 Start: 27447, Stop: 27650, Start Num: 17

Candidate Starts for Lucyedi\_39:

(Start: 17 @27447 has 11 MA's), (23, 27507), (24, 27510), (33, 27558), (45, 27636),

Gene: Lunsford\_33 Start: 25136, Stop: 24876, Start Num: 9

Candidate Starts for Lunsford\_33:

(Start: 9 @25136 has 14 MA's), (Start: 12 @25103 has 2 MA's), (Start: 13 @25094 has 66 MA's),  
(Start: 17 @25082 has 11 MA's), (34, 24971), (37, 24944), (40, 24920), (42, 24908), (45, 24896),

Gene: Maverick\_32 Start: 25139, Stop: 24879, Start Num: 9

Candidate Starts for Maverick\_32:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's),  
(Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Maxo\_32 Start: 25079, Stop: 24879, Start Num: 14

Candidate Starts for Maxo\_32:

(Start: 14 @25079 has 40 MA's), (16, 25073), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45,  
24899),

Gene: Mayonnaise\_32 Start: 25085, Stop: 24879, Start Num: 17

Candidate Starts for Mayonnaise\_32:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's),  
(Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Mazhar510\_32 Start: 25098, Stop: 24880, Start Num: 13

Candidate Starts for Mazhar510\_32:

(Start: 9 @25140 has 14 MA's), (Start: 12 @25107 has 2 MA's), (Start: 13 @25098 has 66 MA's),  
(Start: 17 @25086 has 11 MA's), (34, 24975), (37, 24948), (40, 24924), (42, 24912), (45, 24900),

Gene: Medusa\_32 Start: 25080, Stop: 24880, Start Num: 14

Candidate Starts for Medusa\_32:

(Start: 14 @25080 has 40 MA's), (16, 25074), (34, 24975), (37, 24948), (40, 24924), (42, 24912), (45,  
24900),

Gene: MeeZee\_32 Start: 25097, Stop: 24879, Start Num: 13

Candidate Starts for MeeZee\_32:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's),  
(Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Melvin\_32 Start: 25078, Stop: 24878, Start Num: 14

Candidate Starts for Melvin\_32:

(Start: 14 @25078 has 40 MA's), (16, 25072), (34, 24973), (37, 24946), (40, 24922), (42, 24910), (45,  
24898),

Gene: Morpher26\_32 Start: 25107, Stop: 24892, Start Num: 13

Candidate Starts for Morpher26\_32:

(Start: 9 @25149 has 14 MA's), (Start: 12 @25116 has 2 MA's), (Start: 13 @25107 has 66 MA's),  
(Start: 17 @25095 has 11 MA's), (28, 25014), (30, 24996), (35, 24981), (36, 24969), (37, 24960), (40,  
24936), (42, 24924), (45, 24912),

Gene: Morrow\_32 Start: 25083, Stop: 24883, Start Num: 14

Candidate Starts for Morrow\_32:

(Start: 14 @25083 has 40 MA's), (16, 25077), (34, 24978), (37, 24951), (40, 24927), (42, 24915), (45,  
24903),

Gene: Mundrea\_32 Start: 25060, Stop: 24842, Start Num: 14

Candidate Starts for Mundrea\_32:

(2, 25174), (10, 25087), (Start: 14 @25060 has 40 MA's), (30, 24946), (36, 24919), (40, 24886), (42,  
24874), (45, 24862),

Gene: Nebs\_32 Start: 25077, Stop: 24877, Start Num: 14

Candidate Starts for Nebs\_32:

(Start: 14 @25077 has 40 MA's), (16, 25071), (34, 24972), (37, 24945), (40, 24921), (42, 24909), (45, 24897),

Gene: Nemo27\_32 Start: 25138, Stop: 24878, Start Num: 9

Candidate Starts for Nemo27\_32:

(Start: 9 @25138 has 14 MA's), (Start: 12 @25105 has 2 MA's), (Start: 13 @25096 has 66 MA's), (Start: 17 @25084 has 11 MA's), (34, 24973), (37, 24946), (40, 24922), (42, 24910), (45, 24898),

Gene: Noelle\_32 Start: 25174, Stop: 24959, Start Num: 13

Candidate Starts for Noelle\_32:

(6, 25240), (Start: 12 @25183 has 2 MA's), (Start: 13 @25174 has 66 MA's), (35, 25048), (36, 25036), (37, 25027), (38, 25024), (40, 25003), (44, 24982), (45, 24979),

Gene: NorthStar\_32 Start: 25097, Stop: 24879, Start Num: 13

Candidate Starts for NorthStar\_32:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's), (Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: NotAPhaseMom\_32 Start: 25101, Stop: 24883, Start Num: 13

Candidate Starts for NotAPhaseMom\_32:

(Start: 9 @25143 has 14 MA's), (Start: 12 @25110 has 2 MA's), (Start: 13 @25101 has 66 MA's), (Start: 17 @25089 has 11 MA's), (34, 24978), (37, 24951), (40, 24927), (42, 24915), (45, 24903),

Gene: Nyxis\_32 Start: 25020, Stop: 24820, Start Num: 14

Candidate Starts for Nyxis\_32:

(Start: 14 @25020 has 40 MA's), (16, 25014), (34, 24915), (37, 24888), (40, 24864), (42, 24852), (45, 24840),

Gene: OKaNui\_33 Start: 25150, Stop: 24932, Start Num: 13

Candidate Starts for OKaNui\_33:

(Start: 9 @25192 has 14 MA's), (Start: 12 @25159 has 2 MA's), (Start: 13 @25150 has 66 MA's), (Start: 17 @25138 has 11 MA's), (34, 25027), (37, 25000), (40, 24976), (42, 24964), (45, 24952),

Gene: Obama12\_33 Start: 25442, Stop: 25197, Start Num: 11

Candidate Starts for Obama12\_33:

(Start: 11 @25442 has 6 MA's), (Start: 14 @25418 has 40 MA's), (Start: 15 @25415 has 1 MA's), (16, 25409), (20, 25391), (21, 25382), (38, 25262), (40, 25241), (45, 25217),

Gene: Ohfah\_32 Start: 25077, Stop: 24877, Start Num: 14

Candidate Starts for Ohfah\_32:

(Start: 14 @25077 has 40 MA's), (16, 25071), (34, 24972), (37, 24945), (40, 24921), (42, 24909), (45, 24897),

Gene: PainterBoy\_39 Start: 27383, Stop: 27586, Start Num: 17

Candidate Starts for PainterBoy\_39:

(Start: 17 @27383 has 11 MA's), (23, 27443), (24, 27446), (33, 27494), (45, 27572),

Gene: Palestino\_31 Start: 25139, Stop: 24879, Start Num: 9

Candidate Starts for Palestino\_31:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's), (Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Peaches\_32 Start: 25096, Stop: 24878, Start Num: 13



Candidate Starts for Peaches\_32:

(Start: 9 @25138 has 14 MA's), (Start: 12 @25105 has 2 MA's), (Start: 13 @25096 has 66 MA's), (Start: 17 @25084 has 11 MA's), (34, 24973), (37, 24946), (40, 24922), (42, 24910), (45, 24898),

Gene: Perplexer\_32 Start: 25104, Stop: 24889, Start Num: 13

Candidate Starts for Perplexer\_32:

(Start: 9 @25146 has 14 MA's), (Start: 12 @25113 has 2 MA's), (Start: 13 @25104 has 66 MA's), (Start: 17 @25092 has 11 MA's), (28, 25011), (30, 24993), (35, 24978), (36, 24966), (37, 24957), (40, 24933), (42, 24921), (45, 24909),

Gene: PeterPeter\_32 Start: 25097, Stop: 24879, Start Num: 13

Candidate Starts for PeterPeter\_32:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's), (Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: PetiteSangsue\_32 Start: 25107, Stop: 24892, Start Num: 13

Candidate Starts for PetiteSangsue\_32:

(Start: 9 @25149 has 14 MA's), (Start: 12 @25116 has 2 MA's), (Start: 13 @25107 has 66 MA's), (Start: 17 @25095 has 11 MA's), (28, 25014), (30, 24996), (35, 24981), (36, 24969), (37, 24960), (40, 24936), (42, 24924), (45, 24912),

Gene: Phacado\_32 Start: 25096, Stop: 24878, Start Num: 13

Candidate Starts for Phacado\_32:

(Start: 9 @25138 has 14 MA's), (Start: 12 @25105 has 2 MA's), (Start: 13 @25096 has 66 MA's), (Start: 17 @25084 has 11 MA's), (34, 24973), (37, 24946), (40, 24922), (42, 24910), (45, 24898),

Gene: Phelipe\_32 Start: 25080, Stop: 24880, Start Num: 14

Candidate Starts for Phelipe\_32:

(Start: 14 @25080 has 40 MA's), (16, 25074), (34, 24975), (37, 24948), (40, 24924), (42, 24912), (45, 24900),

Gene: Phighter1804\_32 Start: 25064, Stop: 24849, Start Num: 14

Candidate Starts for Phighter1804\_32:

(10, 25091), (Start: 14 @25064 has 40 MA's), (20, 25040), (28, 24971), (35, 24938), (36, 24926), (37, 24917), (38, 24914), (40, 24893), (42, 24881), (45, 24869),

Gene: Phontbonne\_32 Start: 25021, Stop: 24821, Start Num: 14

Candidate Starts for Phontbonne\_32:

(Start: 14 @25021 has 40 MA's), (16, 25015), (34, 24916), (37, 24889), (40, 24865), (42, 24853), (45, 24841),

Gene: Pipcraft\_32 Start: 25097, Stop: 24879, Start Num: 13

Candidate Starts for Pipcraft\_32:

(5, 25172), (Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's), (Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Polymorphads\_32 Start: 25077, Stop: 24877, Start Num: 14

Candidate Starts for Polymorphads\_32:

(Start: 14 @25077 has 40 MA's), (16, 25071), (34, 24972), (37, 24945), (40, 24921), (42, 24909), (45, 24897),

Gene: Pukovnik\_34 Start: 26424, Stop: 26155, Start Num: 7

Candidate Starts for Pukovnik\_34:

(Start: 7 @26424 has 1 MA's), (8, 26418), (Start: 14 @26373 has 40 MA's), (20, 26349), (21, 26340), (30, 26259), (36, 26232), (38, 26220), (40, 26199), (45, 26175),

Gene: Pumbaa\_32 Start: 25072, Stop: 24854, Start Num: 14

Candidate Starts for Pumbaa\_32:

(4, 25156), (Start: 14 @25072 has 40 MA's), (16, 25066), (34, 24949), (40, 24898), (41, 24892), (45, 24874),

Gene: Relief\_32 Start: 25097, Stop: 24879, Start Num: 13

Candidate Starts for Relief\_32:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's), (Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Romney\_32 Start: 25097, Stop: 24879, Start Num: 13

Candidate Starts for Romney\_32:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's), (Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Roosevelt\_32 Start: 25099, Stop: 24881, Start Num: 13

Candidate Starts for Roosevelt\_32:

(Start: 9 @25141 has 14 MA's), (Start: 12 @25108 has 2 MA's), (Start: 13 @25099 has 66 MA's), (Start: 17 @25087 has 11 MA's), (34, 24976), (37, 24949), (40, 24925), (42, 24913), (45, 24901),

Gene: Rosa24\_31 Start: 25071, Stop: 24853, Start Num: 14

Candidate Starts for Rosa24\_31:

(Start: 14 @25071 has 40 MA's), (16, 25065), (34, 24948), (40, 24897), (41, 24891), (45, 24873),

Gene: Ruin\_32 Start: 25093, Stop: 24875, Start Num: 13

Candidate Starts for Ruin\_32:

(Start: 9 @25135 has 14 MA's), (Start: 12 @25102 has 2 MA's), (Start: 13 @25093 has 66 MA's), (Start: 17 @25081 has 11 MA's), (34, 24970), (37, 24943), (40, 24919), (42, 24907), (45, 24895),

Gene: Sabertooth\_32 Start: 25096, Stop: 24878, Start Num: 13

Candidate Starts for Sabertooth\_32:

(Start: 9 @25138 has 14 MA's), (Start: 12 @25105 has 2 MA's), (Start: 13 @25096 has 66 MA's), (Start: 17 @25084 has 11 MA's), (34, 24973), (37, 24946), (40, 24922), (42, 24910), (45, 24898),

Gene: Scamp\_32 Start: 25099, Stop: 24881, Start Num: 13

Candidate Starts for Scamp\_32:

(Start: 9 @25141 has 14 MA's), (Start: 12 @25108 has 2 MA's), (Start: 13 @25099 has 66 MA's), (Start: 17 @25087 has 11 MA's), (34, 24976), (37, 24949), (40, 24925), (42, 24913), (45, 24901),

Gene: SenorClean\_31 Start: 25097, Stop: 24879, Start Num: 13

Candidate Starts for SenorClean\_31:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's), (Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Shaka\_32 Start: 25097, Stop: 24879, Start Num: 13

Candidate Starts for Shaka\_32:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's), (Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: SheldonCooper\_33 Start: 25414, Stop: 25196, Start Num: 15

Candidate Starts for SheldonCooper\_33:

(Start: 11 @25441 has 6 MA's), (Start: 14 @25417 has 40 MA's), (Start: 15 @25414 has 1 MA's), (16, 25408), (20, 25390), (21, 25381), (38, 25261), (40, 25240), (45, 25216),

Gene: Shygu2\_32 Start: 25091, Stop: 24876, Start Num: 13

Candidate Starts for Shygu2\_32:

(Start: 9 @25133 has 14 MA's), (Start: 12 @25100 has 2 MA's), (Start: 13 @25091 has 66 MA's), (Start: 17 @25079 has 11 MA's), (38, 24941), (40, 24920), (45, 24896),

Gene: Skipitt\_32 Start: 25082, Stop: 24876, Start Num: 17

Candidate Starts for Skipitt\_32:

(Start: 9 @25136 has 14 MA's), (Start: 12 @25103 has 2 MA's), (Start: 13 @25094 has 66 MA's), (Start: 17 @25082 has 11 MA's), (34, 24971), (37, 24944), (40, 24920), (42, 24908), (45, 24896),

Gene: SororFago\_40 Start: 29178, Stop: 29375, Start Num: 18

Candidate Starts for SororFago\_40:

(Start: 18 @29178 has 3 MA's), (29, 29265), (39, 29319), (43, 29349), (45, 29355),

Gene: Sparxx\_32 Start: 25078, Stop: 24878, Start Num: 14

Candidate Starts for Sparxx\_32:

(Start: 14 @25078 has 40 MA's), (16, 25072), (34, 24973), (37, 24946), (40, 24922), (42, 24910), (45, 24898),

Gene: Spino\_32 Start: 25097, Stop: 24879, Start Num: 13

Candidate Starts for Spino\_32:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's), (Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Stasia\_33 Start: 25530, Stop: 25306, Start Num: 12

Candidate Starts for Stasia\_33:

(Start: 12 @25530 has 2 MA's), (Start: 13 @25521 has 66 MA's), (Start: 17 @25509 has 11 MA's), (35, 25395), (36, 25383), (37, 25374), (38, 25371), (40, 25350), (44, 25329), (45, 25326),

Gene: Taquarus\_32 Start: 25100, Stop: 24882, Start Num: 13

Candidate Starts for Taquarus\_32:

(Start: 9 @25142 has 14 MA's), (Start: 12 @25109 has 2 MA's), (Start: 13 @25100 has 66 MA's), (Start: 17 @25088 has 11 MA's), (34, 24977), (37, 24950), (40, 24926), (42, 24914), (45, 24902),

Gene: Thanksgivukkah\_32 Start: 25086, Stop: 24880, Start Num: 17

Candidate Starts for Thanksgivukkah\_32:

(Start: 9 @25140 has 14 MA's), (Start: 12 @25107 has 2 MA's), (Start: 13 @25098 has 66 MA's), (Start: 17 @25086 has 11 MA's), (34, 24975), (37, 24948), (40, 24924), (42, 24912), (45, 24900),

Gene: TinaFeyge\_32 Start: 25076, Stop: 24876, Start Num: 14

Candidate Starts for TinaFeyge\_32:

(Start: 14 @25076 has 40 MA's), (16, 25070), (34, 24971), (37, 24944), (40, 24920), (42, 24908), (45, 24896),

Gene: Tinybot\_31 Start: 25073, Stop: 24855, Start Num: 14

Candidate Starts for Tinybot\_31:

(2, 25187), (3, 25178), (Start: 14 @25073 has 40 MA's), (16, 25067), (40, 24899), (41, 24893), (42, 24887), (45, 24875),

Gene: TiroTheta9\_32 Start: 25094, Stop: 24876, Start Num: 13

Candidate Starts for TiroTheta9\_32:

(Start: 9 @25136 has 14 MA's), (Start: 12 @25103 has 2 MA's), (Start: 13 @25094 has 66 MA's), (Start: 17 @25082 has 11 MA's), (34, 24971), (37, 24944), (40, 24920), (42, 24908), (45, 24896),

Gene: Tristan\_34 Start: 26949, Stop: 26731, Start Num: 14

Candidate Starts for Tristan\_34:

(Start: 7 @27000 has 1 MA's), (8, 26994), (Start: 14 @26949 has 40 MA's), (16, 26943), (20, 26925), (21, 26916), (30, 26835), (36, 26808), (37, 26799), (38, 26796), (40, 26775), (45, 26751),

Gene: TroyPia\_32 Start: 25079, Stop: 24879, Start Num: 14

Candidate Starts for TroyPia\_32:

(Start: 14 @25079 has 40 MA's), (16, 25073), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: TygerBlood\_32 Start: 25097, Stop: 24879, Start Num: 13

Candidate Starts for TygerBlood\_32:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's), (Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Ulysses\_31 Start: 24807, Stop: 24592, Start Num: 14

Candidate Starts for Ulysses\_31:

(10, 24834), (Start: 14 @24807 has 40 MA's), (20, 24783), (28, 24714), (35, 24681), (36, 24669), (37, 24660), (38, 24657), (40, 24636), (42, 24624), (45, 24612),

Gene: Wander\_32 Start: 25085, Stop: 24879, Start Num: 17

Candidate Starts for Wander\_32:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's), (Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Wilbur\_32 Start: 25097, Stop: 24879, Start Num: 13

Candidate Starts for Wilbur\_32:

(Start: 9 @25139 has 14 MA's), (Start: 12 @25106 has 2 MA's), (Start: 13 @25097 has 66 MA's), (Start: 17 @25085 has 11 MA's), (34, 24974), (37, 24947), (40, 24923), (42, 24911), (45, 24899),

Gene: Wile\_32 Start: 25117, Stop: 24902, Start Num: 13

Candidate Starts for Wile\_32:

(Start: 9 @25159 has 14 MA's), (Start: 12 @25126 has 2 MA's), (Start: 13 @25117 has 66 MA's), (Start: 17 @25105 has 11 MA's), (28, 25024), (30, 25006), (35, 24991), (36, 24979), (37, 24970), (40, 24946), (42, 24934), (45, 24922),

Gene: Wizard007\_32 Start: 25102, Stop: 24884, Start Num: 13

Candidate Starts for Wizard007\_32:

(Start: 9 @25144 has 14 MA's), (Start: 12 @25111 has 2 MA's), (Start: 13 @25102 has 66 MA's), (Start: 17 @25090 has 11 MA's), (34, 24979), (37, 24952), (40, 24928), (42, 24916), (45, 24904),

Gene: Xena\_32 Start: 25104, Stop: 24889, Start Num: 13

Candidate Starts for Xena\_32:

(Start: 9 @25146 has 14 MA's), (Start: 12 @25113 has 2 MA's), (Start: 13 @25104 has 66 MA's), (Start: 17 @25092 has 11 MA's), (28, 25011), (30, 24993), (35, 24978), (36, 24966), (37, 24957), (40, 24933), (42, 24921), (45, 24909),

Gene: YoSam321\_32 Start: 25094, Stop: 24876, Start Num: 13

Candidate Starts for YoSam321\_32:

(Start: 9 @25136 has 14 MA's), (Start: 12 @25103 has 2 MA's), (Start: 13 @25094 has 66 MA's),  
(Start: 17 @25082 has 11 MA's), (34, 24971), (37, 24944), (40, 24920), (42, 24908), (45, 24896),