



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 304828 Report

This analysis was run 06/08/26 on database version 649.

Pham number 304828 has 121 members, 4 are drafts.

Phages represented in each track:

- Track 1 : Eros\_77, Baby16\_77, Sabertooth\_77, Holli\_76, Shaka\_75, DirtyDunning\_76, Eapen\_77, TiroTheta9\_76, MeeZee\_76, Caelakin\_75, Obama12\_78, Morrow\_79, LochMonster\_78, Kingmustik0402\_77, Iceman\_75, Jaykayelowell\_74, Kampy\_76, Mazhar510\_77, Melvin\_79, Eagle\_76, Happiness\_76, Koan\_74, Sparxx\_78, Burger\_75, Peaches\_75, NorthStar\_74, Romney\_76, Houdini22\_76, LittleB\_77, Deano\_74, PeterPeter\_77, Spino\_76, SenorClean\_78, Ohfah\_78, Phelipe\_78, LHTSCC\_79, JetBlade\_78, Broseidon\_77, Nyxis\_76, Connomayer\_77, Bartimeaus\_77, TroyPia\_78, Cocoaberry\_77, Lorenzo\_77, Pumbaa\_77, SheldonCooper\_77, BangNhom\_74, ICleared\_76, Albee\_77, YoSam321\_77, Alberto7\_78, Taquarus\_76, Dhanush\_77, Wilbur\_77, Pipcraft\_73, Phighter1804\_77, Relief\_76, Kyee\_77, CentreCat\_77, Arturo\_74, Commander\_75, Ruin\_77, Polymorphads\_78, SteMason\_73, LittleGuy\_77, TygerBlood\_77, Koreni\_76, Citius\_77, Scamp\_77, Nemo27\_76, Flux\_78, Rosa24\_73, Skipitt\_76, Lemur\_77, Tinybot\_76, Gadost\_77, Eurydice\_78, Lunsford\_77, BellusTerra\_78, Phontbonne\_77, NotAPhaseMom\_76, Nebs\_78, Medusa\_76, Ulysses\_76, Druantia\_76, Chaph\_77, RockieBear\_74
- Track 2 : OKaNui\_76
- Track 3 : Kratark\_76, Maverick\_76, JoongJeon\_76, Phacado\_77, Blackmoor\_76, Iracema64\_77, Clarenza\_76, ChampagnePapi\_80, BubbleTrouble\_76, Millski\_76, Avle17\_77, Roosevelt\_75, KFPoly\_76, Abdiel\_76, Palestino\_76, Wander\_77, HamSlice\_73, Florean\_77, Bruiser\_76, TinaFeyge\_75, Thanksgivukkah\_76, Maxo\_79, Funston\_76, Mundrea\_76, LappelDuVide\_77, Bombshell\_77, Eris\_76, Annyong\_76, Sultana\_77, Cerulean\_79
- Track 4 : KekoraPapaka\_74
- Track 5 : Mayonnaise\_74
- Track 6 : Stink\_77

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

The start number called the most often in the published annotations is 8, it was called in 86 of the 117 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Albee\_77, Alberto7\_78, Arturo\_74, Baby16\_77, BangNhom\_74, Bartimeaus\_77, BellusTerra\_78, Broseidon\_77, Burger\_75, Caelakin\_75, CentreCat\_77, Chaph\_77, Citius\_77, Cocoaberry\_77, Commander\_75, Connomayer\_77, Deano\_74, Dhanush\_77, DirtyDunning\_76, Druantia\_76, Eagle\_76, Eapen\_77, Eros\_77, Eurydice\_78, Flux\_78, Gadost\_77, Happiness\_76, Holli\_76, Houdini22\_76, ICleared\_76, Iceman\_75, Jaykayelowell\_74, JetBlade\_78, Kamy\_76, KekoraPapaka\_74, Kingmustik0402\_77, Koan\_74, Koreni\_76, Kyee\_77, LHTSCC\_79, Lemur\_77, LittleB\_77, LittleGuy\_77, LochMonster\_78, Lorenzo\_77, Lunsford\_77, Mazhar510\_77, Medusa\_76, MeeZee\_76, Melvin\_79, Morrow\_79, Nebs\_78, Nemo27\_76, NorthStar\_74, NotAPhaseMom\_76, Nyxis\_76, OKaNui\_76, Obama12\_78, Ohfah\_78, Peaches\_75, PeterPeter\_77, Phelipe\_78, Phighter1804\_77, Phontbonne\_77, Pipcraft\_73, Polymorphads\_78, Pumbaa\_77, Relief\_76, RockieBear\_74, Romney\_76, Rosa24\_73, Ruin\_77, Sabertooth\_77, Scamp\_77, SeniorClean\_78, Shaka\_75, SheldonCooper\_77, Skipitt\_76, Sparxx\_78, Spino\_76, SteMason\_73, Stink\_77, Taquarus\_76, Tinybot\_76, TiroTheta9\_76, TroyPia\_78, TygerBlood\_77, Ulysses\_76, Wilbur\_77, YoSam321\_77,

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

- Abdiel\_76, Annyong\_76, Avle17\_77, Blackmoor\_76, Bombshell\_77, Bruiser\_76, BubbleTrouble\_76, Cerulean\_79, ChampagnePapi\_80, Clarenza\_76, Eris\_76, Florean\_77, Funston\_76, HamSlice\_73, Iracema64\_77, JoongJeon\_76, KFPoly\_76, Kratark\_76, LappelDuVide\_77, Maverick\_76, Maxo\_79, Mayonnaise\_74, Millski\_76, Mundrea\_76, Palestino\_76, Phacado\_77, Roosevelt\_75, Sultana\_77, Thanksgivukkah\_76, TinaFeyge\_75, Wander\_77,

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

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### Summary by start number:

Start 4:

- Found in 119 of 121 ( 98.3% ) of genes in pham
- Manual Annotations of this start: 30 of 117
- Called 25.2% of time when present
- Phage (with cluster) where this start called: Abdiel\_76 (A4), Annyong\_76 (A4), Avle17\_77 (A4), Blackmoor\_76 (A4), Bombshell\_77 (A4), Bruiser\_76 (A4), BubbleTrouble\_76 (A4), Cerulean\_79 (A4), ChampagnePapi\_80 (A4), Clarenza\_76 (A4), Eris\_76 (A4), Florean\_77 (A4), Funston\_76 (A4), HamSlice\_73 (A4), Iracema64\_77 (A4), JoongJeon\_76 (A4), KFPoly\_76 (A4), Kratark\_76 (A4), LappelDuVide\_77 (A4), Maverick\_76 (A4), Maxo\_79 (A4), Millski\_76 (A4), Mundrea\_76 (A4), Palestino\_76 (A4), Phacado\_77 (A4), Roosevelt\_75 (A4), Sultana\_77 (A4), Thanksgivukkah\_76 (A4), TinaFeyge\_75 (A4), Wander\_77 (A4),

Start 7:

- Found in 1 of 121 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 117
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mayonnaise\_74 (A4),

Start 8:

- Found in 121 of 121 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 86 of 117
- Called 74.4% of time when present

- Phage (with cluster) where this start called: Albee\_77 (A4), Alberto7\_78 (A4), Arturo\_74 (A4), Baby16\_77 (A4), BangNhom\_74 (A4), Bartimeaus\_77 (A4), BellusTerra\_78 (A4), Broseidon\_77 (A4), Burger\_75 (A4), Caelakin\_75 (A4), CentreCat\_77 (A4), Chaph\_77 (A4), Citius\_77 (A4), Cocoaberry\_77 (A4), Commander\_75 (A4), Connomayer\_77 (A4), Deano\_74 (A4), Dhanush\_77 (A4), DirtyDunning\_76 (A4), Druantia\_76 (A4), Eagle\_76 (A4), Eapen\_77 (A4), Eros\_77 (A4), Eurydice\_78 (A4), Flux\_78 (A4), Gadost\_77 (A4), Happiness\_76 (A4), Holli\_76 (A4), Houdini22\_76 (A4), ICleared\_76 (A4), Iceman\_75 (A4), Jaykayelowell\_74 (A4), JetBlade\_78 (A4), Kampy\_76 (A4), KekoraPapaka\_74 (A4), Kingmustik0402\_77 (A4), Koan\_74 (A4), Koreni\_76 (A4), Kyee\_77 (A4), LHTSCC\_79 (A4), Lemur\_77 (A4), LittleB\_77 (A4), LittleGuy\_77 (A4), LochMonster\_78 (A4), Lorenzo\_77 (A4), Lunsford\_77 (A4), Mazhar510\_77 (A4), Medusa\_76 (A4), MeeZee\_76 (A4), Melvin\_79 (A4), Morrow\_79 (A4), Nebs\_78 (A4), Nemo27\_76 (A4), NorthStar\_74 (A4), NotAPhaseMom\_76 (A4), Nyxis\_76 (A4), OKaNui\_76 (A4), Obama12\_78 (A4), Ohfah\_78 (A4), Peaches\_75 (A4), PeterPeter\_77 (A4), Phelipe\_78 (A4), Phighter1804\_77 (A4), Phontbonne\_77 (A4), Pipcraft\_73 (A4), Polymorphads\_78 (A4), Pumbaa\_77 (A4), Relief\_76 (A4), RockieBear\_74 (A4), Romney\_76 (A4), Rosa24\_73 (A4), Ruin\_77 (A4), Sabertooth\_77 (A4), Scamp\_77 (A4), SenorClean\_78 (A4), Shaka\_75 (A4), SheldonCooper\_77 (A4), Skipitt\_76 (A4), Sparxx\_78 (A4), Spino\_76 (A4), SteMason\_73 (A4), Stink\_77 (A4), Taquarus\_76 (A4), Tinybot\_76 (A4), TiroTheta9\_76 (A4), TroyPia\_78 (A4), TygerBlood\_77 (A4), Ulysses\_76 (A4), Wilbur\_77 (A4), YoSam321\_77 (A4),

### Summary by clusters:

There is one cluster represented in this pham: A4

Info for manual annotations of cluster A4:

- Start number 4 was manually annotated 30 times for cluster A4.
- Start number 7 was manually annotated 1 time for cluster A4.
- Start number 8 was manually annotated 86 times for cluster A4.

### Gene Information:

Gene: Abdiel\_76 Start: 46040, Stop: 45822, Start Num: 4

Candidate Starts for Abdiel\_76:

(Start: 4 @46040 has 30 MA's), (Start: 8 @45965 has 86 MA's), (9, 45884), (10, 45875),

Gene: Albee\_77 Start: 45953, Stop: 45810, Start Num: 8

Candidate Starts for Albee\_77:

(Start: 4 @46028 has 30 MA's), (Start: 8 @45953 has 86 MA's), (9, 45872), (10, 45863),

Gene: Alberto7\_78 Start: 46290, Stop: 46147, Start Num: 8

Candidate Starts for Alberto7\_78:

(Start: 4 @46365 has 30 MA's), (Start: 8 @46290 has 86 MA's), (9, 46209), (10, 46200),

Gene: Annyong\_76 Start: 46073, Stop: 45855, Start Num: 4

Candidate Starts for Annyong\_76:

(Start: 4 @46073 has 30 MA's), (Start: 8 @45998 has 86 MA's), (9, 45917), (10, 45908),

Gene: Arturo\_74 Start: 46081, Stop: 45938, Start Num: 8

Candidate Starts for Arturo\_74:

(Start: 4 @46156 has 30 MA's), (Start: 8 @46081 has 86 MA's), (9, 46000), (10, 45991),

Gene: Avle17\_77 Start: 46022, Stop: 45804, Start Num: 4

Candidate Starts for Avle17\_77:

(Start: 4 @46022 has 30 MA's), (Start: 8 @45947 has 86 MA's), (9, 45866), (10, 45857),

Gene: Baby16\_77 Start: 45964, Stop: 45821, Start Num: 8

Candidate Starts for Baby16\_77:

(Start: 4 @46039 has 30 MA's), (Start: 8 @45964 has 86 MA's), (9, 45883), (10, 45874),

Gene: BangNhom\_74 Start: 46390, Stop: 46247, Start Num: 8

Candidate Starts for BangNhom\_74:

(Start: 4 @46465 has 30 MA's), (Start: 8 @46390 has 86 MA's), (9, 46309), (10, 46300),

Gene: Bartimeaus\_77 Start: 45955, Stop: 45812, Start Num: 8

Candidate Starts for Bartimeaus\_77:

(Start: 4 @46030 has 30 MA's), (Start: 8 @45955 has 86 MA's), (9, 45874), (10, 45865),

Gene: BellusTerra\_78 Start: 45994, Stop: 45851, Start Num: 8

Candidate Starts for BellusTerra\_78:

(Start: 4 @46069 has 30 MA's), (Start: 8 @45994 has 86 MA's), (9, 45913), (10, 45904),

Gene: Blackmoor\_76 Start: 46030, Stop: 45812, Start Num: 4

Candidate Starts for Blackmoor\_76:

(Start: 4 @46030 has 30 MA's), (Start: 8 @45955 has 86 MA's), (9, 45874), (10, 45865),

Gene: Bombshell\_77 Start: 46025, Stop: 45807, Start Num: 4

Candidate Starts for Bombshell\_77:

(Start: 4 @46025 has 30 MA's), (Start: 8 @45950 has 86 MA's), (9, 45869), (10, 45860),

Gene: Broseidon\_77 Start: 45956, Stop: 45813, Start Num: 8

Candidate Starts for Broseidon\_77:

(Start: 4 @46031 has 30 MA's), (Start: 8 @45956 has 86 MA's), (9, 45875), (10, 45866),

Gene: Bruiser\_76 Start: 46028, Stop: 45810, Start Num: 4

Candidate Starts for Bruiser\_76:

(Start: 4 @46028 has 30 MA's), (Start: 8 @45953 has 86 MA's), (9, 45872), (10, 45863),

Gene: BubbleTrouble\_76 Start: 46055, Stop: 45837, Start Num: 4

Candidate Starts for BubbleTrouble\_76:

(Start: 4 @46055 has 30 MA's), (Start: 8 @45980 has 86 MA's), (9, 45899), (10, 45890),

Gene: Burger\_75 Start: 45953, Stop: 45810, Start Num: 8

Candidate Starts for Burger\_75:

(Start: 4 @46028 has 30 MA's), (Start: 8 @45953 has 86 MA's), (9, 45872), (10, 45863),

Gene: Caelakin\_75 Start: 45953, Stop: 45810, Start Num: 8

Candidate Starts for Caelakin\_75:

(Start: 4 @46028 has 30 MA's), (Start: 8 @45953 has 86 MA's), (9, 45872), (10, 45863),

Gene: CentreCat\_77 Start: 45993, Stop: 45850, Start Num: 8

Candidate Starts for CentreCat\_77:

(Start: 4 @46068 has 30 MA's), (Start: 8 @45993 has 86 MA's), (9, 45912), (10, 45903),

Gene: Cerulean\_79 Start: 46466, Stop: 46248, Start Num: 4

Candidate Starts for Cerulean\_79:

(Start: 4 @46466 has 30 MA's), (Start: 8 @46391 has 86 MA's), (9, 46310), (10, 46301),

Gene: ChampagnePapi\_80 Start: 46468, Stop: 46250, Start Num: 4

Candidate Starts for ChampagnePapi\_80:

(Start: 4 @46468 has 30 MA's), (Start: 8 @46393 has 86 MA's), (9, 46312), (10, 46303),

Gene: Chaph\_77 Start: 45964, Stop: 45821, Start Num: 8

Candidate Starts for Chaph\_77:

(Start: 4 @46039 has 30 MA's), (Start: 8 @45964 has 86 MA's), (9, 45883), (10, 45874),

Gene: Citius\_77 Start: 45974, Stop: 45831, Start Num: 8

Candidate Starts for Citius\_77:

(Start: 4 @46049 has 30 MA's), (Start: 8 @45974 has 86 MA's), (9, 45893), (10, 45884),

Gene: Clarenza\_76 Start: 46025, Stop: 45807, Start Num: 4

Candidate Starts for Clarenza\_76:

(Start: 4 @46025 has 30 MA's), (Start: 8 @45950 has 86 MA's), (9, 45869), (10, 45860),

Gene: Cocoaberry\_77 Start: 45954, Stop: 45811, Start Num: 8

Candidate Starts for Cocoaberry\_77:

(Start: 4 @46029 has 30 MA's), (Start: 8 @45954 has 86 MA's), (9, 45873), (10, 45864),

Gene: Commander\_75 Start: 45951, Stop: 45808, Start Num: 8

Candidate Starts for Commander\_75:

(Start: 4 @46026 has 30 MA's), (Start: 8 @45951 has 86 MA's), (9, 45870), (10, 45861),

Gene: Connomayer\_77 Start: 45953, Stop: 45810, Start Num: 8

Candidate Starts for Connomayer\_77:

(Start: 4 @46028 has 30 MA's), (Start: 8 @45953 has 86 MA's), (9, 45872), (10, 45863),

Gene: Deano\_74 Start: 45961, Stop: 45818, Start Num: 8

Candidate Starts for Deano\_74:

(Start: 4 @46036 has 30 MA's), (Start: 8 @45961 has 86 MA's), (9, 45880), (10, 45871),

Gene: Dhanush\_77 Start: 45956, Stop: 45813, Start Num: 8

Candidate Starts for Dhanush\_77:

(Start: 4 @46031 has 30 MA's), (Start: 8 @45956 has 86 MA's), (9, 45875), (10, 45866),

Gene: DirtyDunning\_76 Start: 45965, Stop: 45822, Start Num: 8

Candidate Starts for DirtyDunning\_76:

(Start: 4 @46040 has 30 MA's), (Start: 8 @45965 has 86 MA's), (9, 45884), (10, 45875),

Gene: Druantia\_76 Start: 45956, Stop: 45813, Start Num: 8

Candidate Starts for Druantia\_76:

(Start: 4 @46031 has 30 MA's), (Start: 8 @45956 has 86 MA's), (9, 45875), (10, 45866),

Gene: Eagle\_76 Start: 46015, Stop: 45872, Start Num: 8

Candidate Starts for Eagle\_76:

(Start: 4 @46090 has 30 MA's), (Start: 8 @46015 has 86 MA's), (9, 45934), (10, 45925),

Gene: Eapen\_77 Start: 45948, Stop: 45805, Start Num: 8

Candidate Starts for Eapen\_77:

(Start: 4 @46023 has 30 MA's), (Start: 8 @45948 has 86 MA's), (9, 45867), (10, 45858),

Gene: Eris\_76 Start: 46040, Stop: 45822, Start Num: 4

Candidate Starts for Eris\_76:

(Start: 4 @46040 has 30 MA's), (Start: 8 @45965 has 86 MA's), (9, 45884), (10, 45875),

Gene: Eros\_77 Start: 45955, Stop: 45812, Start Num: 8

Candidate Starts for Eros\_77:

(Start: 4 @46030 has 30 MA's), (Start: 8 @45955 has 86 MA's), (9, 45874), (10, 45865),

Gene: Eurydice\_78 Start: 45990, Stop: 45847, Start Num: 8

Candidate Starts for Eurydice\_78:

(Start: 4 @46065 has 30 MA's), (Start: 8 @45990 has 86 MA's), (9, 45909), (10, 45900),

Gene: Florean\_77 Start: 46027, Stop: 45809, Start Num: 4

Candidate Starts for Florean\_77:

(Start: 4 @46027 has 30 MA's), (Start: 8 @45952 has 86 MA's), (9, 45871), (10, 45862),

Gene: Flux\_78 Start: 45951, Stop: 45808, Start Num: 8

Candidate Starts for Flux\_78:

(Start: 4 @46026 has 30 MA's), (Start: 8 @45951 has 86 MA's), (9, 45870), (10, 45861),

Gene: Funston\_76 Start: 46025, Stop: 45807, Start Num: 4

Candidate Starts for Funston\_76:

(Start: 4 @46025 has 30 MA's), (Start: 8 @45950 has 86 MA's), (9, 45869), (10, 45860),

Gene: Gadost\_77 Start: 45954, Stop: 45811, Start Num: 8

Candidate Starts for Gadost\_77:

(Start: 4 @46029 has 30 MA's), (Start: 8 @45954 has 86 MA's), (9, 45873), (10, 45864),

Gene: HamSlice\_73 Start: 46027, Stop: 45809, Start Num: 4

Candidate Starts for HamSlice\_73:

(Start: 4 @46027 has 30 MA's), (Start: 8 @45952 has 86 MA's), (9, 45871), (10, 45862),

Gene: Happiness\_76 Start: 45976, Stop: 45833, Start Num: 8

Candidate Starts for Happiness\_76:

(Start: 4 @46051 has 30 MA's), (Start: 8 @45976 has 86 MA's), (9, 45895), (10, 45886),

Gene: Holli\_76 Start: 45743, Stop: 45600, Start Num: 8

Candidate Starts for Holli\_76:

(Start: 4 @45818 has 30 MA's), (Start: 8 @45743 has 86 MA's), (9, 45662), (10, 45653),

Gene: Houdini22\_76 Start: 45954, Stop: 45811, Start Num: 8

Candidate Starts for Houdini22\_76:

(Start: 4 @46029 has 30 MA's), (Start: 8 @45954 has 86 MA's), (9, 45873), (10, 45864),

Gene: ICleared\_76 Start: 46021, Stop: 45878, Start Num: 8

Candidate Starts for ICleared\_76:

(Start: 4 @46096 has 30 MA's), (Start: 8 @46021 has 86 MA's), (9, 45940), (10, 45931),

Gene: Iceman\_75 Start: 46243, Stop: 46100, Start Num: 8  
Candidate Starts for Iceman\_75:  
(Start: 4 @46318 has 30 MA's), (Start: 8 @46243 has 86 MA's), (9, 46162), (10, 46153),

Gene: Iracema64\_77 Start: 46292, Stop: 46074, Start Num: 4  
Candidate Starts for Iracema64\_77:  
(Start: 4 @46292 has 30 MA's), (Start: 8 @46217 has 86 MA's), (9, 46136), (10, 46127),

Gene: Jaykayelowell\_74 Start: 45946, Stop: 45803, Start Num: 8  
Candidate Starts for Jaykayelowell\_74:  
(Start: 4 @46021 has 30 MA's), (Start: 8 @45946 has 86 MA's), (9, 45865), (10, 45856),

Gene: JetBlade\_78 Start: 45981, Stop: 45838, Start Num: 8  
Candidate Starts for JetBlade\_78:  
(Start: 4 @46056 has 30 MA's), (Start: 8 @45981 has 86 MA's), (9, 45900), (10, 45891),

Gene: JoongJeon\_76 Start: 46022, Stop: 45804, Start Num: 4  
Candidate Starts for JoongJeon\_76:  
(Start: 4 @46022 has 30 MA's), (Start: 8 @45947 has 86 MA's), (9, 45866), (10, 45857),

Gene: KFPoly\_76 Start: 46022, Stop: 45804, Start Num: 4  
Candidate Starts for KFPoly\_76:  
(Start: 4 @46022 has 30 MA's), (Start: 8 @45947 has 86 MA's), (9, 45866), (10, 45857),

Gene: Kamy\_76 Start: 45956, Stop: 45813, Start Num: 8  
Candidate Starts for Kamy\_76:  
(Start: 4 @46031 has 30 MA's), (Start: 8 @45956 has 86 MA's), (9, 45875), (10, 45866),

Gene: KekoraPapaka\_74 Start: 45953, Stop: 45810, Start Num: 8  
Candidate Starts for KekoraPapaka\_74:  
(Start: 4 @46028 has 30 MA's), (Start: 8 @45953 has 86 MA's), (9, 45872),

Gene: Kingmustik0402\_77 Start: 45942, Stop: 45799, Start Num: 8  
Candidate Starts for Kingmustik0402\_77:  
(Start: 4 @46017 has 30 MA's), (Start: 8 @45942 has 86 MA's), (9, 45861), (10, 45852),

Gene: Koan\_74 Start: 45953, Stop: 45810, Start Num: 8  
Candidate Starts for Koan\_74:  
(Start: 4 @46028 has 30 MA's), (Start: 8 @45953 has 86 MA's), (9, 45872), (10, 45863),

Gene: Koreni\_76 Start: 45634, Stop: 45491, Start Num: 8  
Candidate Starts for Koreni\_76:  
(Start: 4 @45709 has 30 MA's), (Start: 8 @45634 has 86 MA's), (9, 45553), (10, 45544),

Gene: Kratak\_76 Start: 46062, Stop: 45844, Start Num: 4  
Candidate Starts for Kratak\_76:  
(Start: 4 @46062 has 30 MA's), (Start: 8 @45987 has 86 MA's), (9, 45906), (10, 45897),

Gene: Kyee\_77 Start: 45948, Stop: 45805, Start Num: 8  
Candidate Starts for Kyee\_77:  
(Start: 4 @46023 has 30 MA's), (Start: 8 @45948 has 86 MA's), (9, 45867), (10, 45858),

Gene: LHTSCC\_79 Start: 46393, Stop: 46250, Start Num: 8

Candidate Starts for LHTSCC\_79:

(Start: 4 @46468 has 30 MA's), (Start: 8 @46393 has 86 MA's), (9, 46312), (10, 46303),

Gene: LappelDuVide\_77 Start: 46028, Stop: 45810, Start Num: 4

Candidate Starts for LappelDuVide\_77:

(Start: 4 @46028 has 30 MA's), (Start: 8 @45953 has 86 MA's), (9, 45872), (10, 45863),

Gene: Lemur\_77 Start: 45950, Stop: 45807, Start Num: 8

Candidate Starts for Lemur\_77:

(Start: 4 @46025 has 30 MA's), (Start: 8 @45950 has 86 MA's), (9, 45869), (10, 45860),

Gene: LittleB\_77 Start: 45954, Stop: 45811, Start Num: 8

Candidate Starts for LittleB\_77:

(Start: 4 @46029 has 30 MA's), (Start: 8 @45954 has 86 MA's), (9, 45873), (10, 45864),

Gene: LittleGuy\_77 Start: 45838, Stop: 45695, Start Num: 8

Candidate Starts for LittleGuy\_77:

(Start: 4 @45913 has 30 MA's), (Start: 8 @45838 has 86 MA's), (9, 45757), (10, 45748),

Gene: LochMonster\_78 Start: 46190, Stop: 46047, Start Num: 8

Candidate Starts for LochMonster\_78:

(Start: 4 @46265 has 30 MA's), (Start: 8 @46190 has 86 MA's), (9, 46109), (10, 46100),

Gene: Lorenzo\_77 Start: 45951, Stop: 45808, Start Num: 8

Candidate Starts for Lorenzo\_77:

(Start: 4 @46026 has 30 MA's), (Start: 8 @45951 has 86 MA's), (9, 45870), (10, 45861),

Gene: Lunsford\_77 Start: 45946, Stop: 45803, Start Num: 8

Candidate Starts for Lunsford\_77:

(Start: 4 @46021 has 30 MA's), (Start: 8 @45946 has 86 MA's), (9, 45865), (10, 45856),

Gene: Maverick\_76 Start: 46025, Stop: 45807, Start Num: 4

Candidate Starts for Maverick\_76:

(Start: 4 @46025 has 30 MA's), (Start: 8 @45950 has 86 MA's), (9, 45869), (10, 45860),

Gene: Maxo\_79 Start: 46031, Stop: 45813, Start Num: 4

Candidate Starts for Maxo\_79:

(Start: 4 @46031 has 30 MA's), (Start: 8 @45956 has 86 MA's), (9, 45875), (10, 45866),

Gene: Mayonnaise\_74 Start: 45977, Stop: 45807, Start Num: 7

Candidate Starts for Mayonnaise\_74:

(1, 46277), (3, 46115), (5, 46019), (Start: 7 @45977 has 1 MA's), (Start: 8 @45950 has 86 MA's), (9, 45869), (10, 45860),

Gene: Mazhar510\_77 Start: 45951, Stop: 45808, Start Num: 8

Candidate Starts for Mazhar510\_77:

(Start: 4 @46026 has 30 MA's), (Start: 8 @45951 has 86 MA's), (9, 45870), (10, 45861),

Gene: Medusa\_76 Start: 45966, Stop: 45823, Start Num: 8

Candidate Starts for Medusa\_76:

(Start: 4 @46041 has 30 MA's), (Start: 8 @45966 has 86 MA's), (9, 45885), (10, 45876),

Gene: MeeZee\_76 Start: 45947, Stop: 45804, Start Num: 8

Candidate Starts for MeeZee\_76:

(Start: 4 @46022 has 30 MA's), (Start: 8 @45947 has 86 MA's), (9, 45866), (10, 45857),

Gene: Melvin\_79 Start: 45948, Stop: 45805, Start Num: 8

Candidate Starts for Melvin\_79:

(Start: 4 @46023 has 30 MA's), (Start: 8 @45948 has 86 MA's), (9, 45867), (10, 45858),

Gene: Millski\_76 Start: 46029, Stop: 45811, Start Num: 4

Candidate Starts for Millski\_76:

(Start: 4 @46029 has 30 MA's), (Start: 8 @45954 has 86 MA's), (9, 45873), (10, 45864),

Gene: Morrow\_79 Start: 45993, Stop: 45850, Start Num: 8

Candidate Starts for Morrow\_79:

(Start: 4 @46068 has 30 MA's), (Start: 8 @45993 has 86 MA's), (9, 45912), (10, 45903),

Gene: Mundrea\_76 Start: 46088, Stop: 45867, Start Num: 4

Candidate Starts for Mundrea\_76:

(Start: 4 @46088 has 30 MA's), (Start: 8 @46010 has 86 MA's), (9, 45929), (10, 45920),

Gene: Nebs\_78 Start: 45993, Stop: 45850, Start Num: 8

Candidate Starts for Nebs\_78:

(Start: 4 @46068 has 30 MA's), (Start: 8 @45993 has 86 MA's), (9, 45912), (10, 45903),

Gene: Nemo27\_76 Start: 45949, Stop: 45806, Start Num: 8

Candidate Starts for Nemo27\_76:

(Start: 4 @46024 has 30 MA's), (Start: 8 @45949 has 86 MA's), (9, 45868), (10, 45859),

Gene: NorthStar\_74 Start: 45953, Stop: 45810, Start Num: 8

Candidate Starts for NorthStar\_74:

(Start: 4 @46028 has 30 MA's), (Start: 8 @45953 has 86 MA's), (9, 45872), (10, 45863),

Gene: NotAPhaseMom\_76 Start: 45954, Stop: 45811, Start Num: 8

Candidate Starts for NotAPhaseMom\_76:

(Start: 4 @46029 has 30 MA's), (Start: 8 @45954 has 86 MA's), (9, 45873), (10, 45864),

Gene: Nyxis\_76 Start: 45832, Stop: 45689, Start Num: 8

Candidate Starts for Nyxis\_76:

(Start: 4 @45907 has 30 MA's), (Start: 8 @45832 has 86 MA's), (9, 45751), (10, 45742),

Gene: OKaNui\_76 Start: 46003, Stop: 45860, Start Num: 8

Candidate Starts for OKaNui\_76:

(5, 46066), (6, 46060), (Start: 8 @46003 has 86 MA's), (9, 45922), (10, 45913),

Gene: Obama12\_78 Start: 46377, Stop: 46234, Start Num: 8

Candidate Starts for Obama12\_78:

(Start: 4 @46452 has 30 MA's), (Start: 8 @46377 has 86 MA's), (9, 46296), (10, 46287),

Gene: Ohfah\_78 Start: 45993, Stop: 45850, Start Num: 8

Candidate Starts for Ohfah\_78:

(Start: 4 @46068 has 30 MA's), (Start: 8 @45993 has 86 MA's), (9, 45912), (10, 45903),

Gene: Palestino\_76 Start: 46025, Stop: 45807, Start Num: 4

Candidate Starts for Palestino\_76:

(Start: 4 @46025 has 30 MA's), (Start: 8 @45950 has 86 MA's), (9, 45869), (10, 45860),

Gene: Peaches\_75 Start: 45952, Stop: 45809, Start Num: 8

Candidate Starts for Peaches\_75:

(Start: 4 @46027 has 30 MA's), (Start: 8 @45952 has 86 MA's), (9, 45871), (10, 45862),

Gene: PeterPeter\_77 Start: 45947, Stop: 45804, Start Num: 8

Candidate Starts for PeterPeter\_77:

(Start: 4 @46022 has 30 MA's), (Start: 8 @45947 has 86 MA's), (9, 45866), (10, 45857),

Gene: Phacado\_77 Start: 46024, Stop: 45806, Start Num: 4

Candidate Starts for Phacado\_77:

(Start: 4 @46024 has 30 MA's), (Start: 8 @45949 has 86 MA's), (9, 45868), (10, 45859),

Gene: Phelipe\_78 Start: 45993, Stop: 45850, Start Num: 8

Candidate Starts for Phelipe\_78:

(Start: 4 @46068 has 30 MA's), (Start: 8 @45993 has 86 MA's), (9, 45912), (10, 45903),

Gene: Phighter1804\_77 Start: 46014, Stop: 45871, Start Num: 8

Candidate Starts for Phighter1804\_77:

(Start: 4 @46089 has 30 MA's), (Start: 8 @46014 has 86 MA's), (9, 45933), (10, 45924),

Gene: Phontbonne\_77 Start: 45848, Stop: 45705, Start Num: 8

Candidate Starts for Phontbonne\_77:

(Start: 4 @45923 has 30 MA's), (Start: 8 @45848 has 86 MA's), (9, 45767), (10, 45758),

Gene: Pipcraft\_73 Start: 45954, Stop: 45811, Start Num: 8

Candidate Starts for Pipcraft\_73:

(Start: 4 @46029 has 30 MA's), (Start: 8 @45954 has 86 MA's), (9, 45873), (10, 45864),

Gene: Polymorphads\_78 Start: 45974, Stop: 45831, Start Num: 8

Candidate Starts for Polymorphads\_78:

(Start: 4 @46049 has 30 MA's), (Start: 8 @45974 has 86 MA's), (9, 45893), (10, 45884),

Gene: Pumbaa\_77 Start: 45898, Stop: 45755, Start Num: 8

Candidate Starts for Pumbaa\_77:

(Start: 4 @45973 has 30 MA's), (Start: 8 @45898 has 86 MA's), (9, 45817), (10, 45808),

Gene: Relief\_76 Start: 45950, Stop: 45807, Start Num: 8

Candidate Starts for Relief\_76:

(Start: 4 @46025 has 30 MA's), (Start: 8 @45950 has 86 MA's), (9, 45869), (10, 45860),

Gene: RockieBear\_74 Start: 45952, Stop: 45809, Start Num: 8

Candidate Starts for RockieBear\_74:

(Start: 4 @46027 has 30 MA's), (Start: 8 @45952 has 86 MA's), (9, 45871), (10, 45862),

Gene: Romney\_76 Start: 45950, Stop: 45807, Start Num: 8

Candidate Starts for Romney\_76:

(Start: 4 @46025 has 30 MA's), (Start: 8 @45950 has 86 MA's), (9, 45869), (10, 45860),

Gene: Roosevelt\_75 Start: 46030, Stop: 45812, Start Num: 4

Candidate Starts for Roosevelt\_75:

(Start: 4 @46030 has 30 MA's), (Start: 8 @45955 has 86 MA's), (9, 45874), (10, 45865),

Gene: Rosa24\_73 Start: 45981, Stop: 45838, Start Num: 8

Candidate Starts for Rosa24\_73:

(Start: 4 @46056 has 30 MA's), (Start: 8 @45981 has 86 MA's), (9, 45900), (10, 45891),

Gene: Ruin\_77 Start: 45946, Stop: 45803, Start Num: 8

Candidate Starts for Ruin\_77:

(Start: 4 @46021 has 30 MA's), (Start: 8 @45946 has 86 MA's), (9, 45865), (10, 45856),

Gene: Sabertooth\_77 Start: 45958, Stop: 45815, Start Num: 8

Candidate Starts for Sabertooth\_77:

(Start: 4 @46033 has 30 MA's), (Start: 8 @45958 has 86 MA's), (9, 45877), (10, 45868),

Gene: Scamp\_77 Start: 45955, Stop: 45812, Start Num: 8

Candidate Starts for Scamp\_77:

(Start: 4 @46030 has 30 MA's), (Start: 8 @45955 has 86 MA's), (9, 45874), (10, 45865),

Gene: SenorClean\_78 Start: 45953, Stop: 45810, Start Num: 8

Candidate Starts for SenorClean\_78:

(Start: 4 @46028 has 30 MA's), (Start: 8 @45953 has 86 MA's), (9, 45872), (10, 45863),

Gene: Shaka\_75 Start: 45951, Stop: 45808, Start Num: 8

Candidate Starts for Shaka\_75:

(Start: 4 @46026 has 30 MA's), (Start: 8 @45951 has 86 MA's), (9, 45870), (10, 45861),

Gene: SheldonCooper\_77 Start: 46391, Stop: 46248, Start Num: 8

Candidate Starts for SheldonCooper\_77:

(Start: 4 @46466 has 30 MA's), (Start: 8 @46391 has 86 MA's), (9, 46310), (10, 46301),

Gene: Skipitt\_76 Start: 45947, Stop: 45804, Start Num: 8

Candidate Starts for Skipitt\_76:

(Start: 4 @46022 has 30 MA's), (Start: 8 @45947 has 86 MA's), (9, 45866), (10, 45857),

Gene: Sparxx\_78 Start: 45949, Stop: 45806, Start Num: 8

Candidate Starts for Sparxx\_78:

(Start: 4 @46024 has 30 MA's), (Start: 8 @45949 has 86 MA's), (9, 45868), (10, 45859),

Gene: Spino\_76 Start: 45953, Stop: 45810, Start Num: 8

Candidate Starts for Spino\_76:

(Start: 4 @46028 has 30 MA's), (Start: 8 @45953 has 86 MA's), (9, 45872), (10, 45863),

Gene: SteMason\_73 Start: 45950, Stop: 45807, Start Num: 8

Candidate Starts for SteMason\_73:

(Start: 4 @46025 has 30 MA's), (Start: 8 @45950 has 86 MA's), (9, 45869), (10, 45860),

Gene: Stink\_77 Start: 46085, Stop: 45942, Start Num: 8

Candidate Starts for Stink\_77:

(2, 46256), (Start: 4 @46163 has 30 MA's), (Start: 8 @46085 has 86 MA's), (9, 46004),

Gene: Sultana\_77 Start: 46025, Stop: 45807, Start Num: 4

Candidate Starts for Sultana\_77:

(Start: 4 @46025 has 30 MA's), (Start: 8 @45950 has 86 MA's), (9, 45869), (10, 45860),

Gene: Taquarus\_76 Start: 45956, Stop: 45813, Start Num: 8  
Candidate Starts for Taquarus\_76:  
(Start: 4 @46031 has 30 MA's), (Start: 8 @45956 has 86 MA's), (9, 45875), (10, 45866),

Gene: Thanksgivukkah\_76 Start: 46026, Stop: 45808, Start Num: 4  
Candidate Starts for Thanksgivukkah\_76:  
(Start: 4 @46026 has 30 MA's), (Start: 8 @45951 has 86 MA's), (9, 45870), (10, 45861),

Gene: TinaFeyge\_75 Start: 46023, Stop: 45805, Start Num: 4  
Candidate Starts for TinaFeyge\_75:  
(Start: 4 @46023 has 30 MA's), (Start: 8 @45948 has 86 MA's), (9, 45867), (10, 45858),

Gene: Tinybot\_76 Start: 45980, Stop: 45837, Start Num: 8  
Candidate Starts for Tinybot\_76:  
(Start: 4 @46055 has 30 MA's), (Start: 8 @45980 has 86 MA's), (9, 45899), (10, 45890),

Gene: TiroTheta9\_76 Start: 45947, Stop: 45804, Start Num: 8  
Candidate Starts for TiroTheta9\_76:  
(Start: 4 @46022 has 30 MA's), (Start: 8 @45947 has 86 MA's), (9, 45866), (10, 45857),

Gene: TroyPia\_78 Start: 45988, Stop: 45845, Start Num: 8  
Candidate Starts for TroyPia\_78:  
(Start: 4 @46063 has 30 MA's), (Start: 8 @45988 has 86 MA's), (9, 45907), (10, 45898),

Gene: TygerBlood\_77 Start: 45953, Stop: 45810, Start Num: 8  
Candidate Starts for TygerBlood\_77:  
(Start: 4 @46028 has 30 MA's), (Start: 8 @45953 has 86 MA's), (9, 45872), (10, 45863),

Gene: Ulysses\_76 Start: 45636, Stop: 45493, Start Num: 8  
Candidate Starts for Ulysses\_76:  
(Start: 4 @45711 has 30 MA's), (Start: 8 @45636 has 86 MA's), (9, 45555), (10, 45546),

Gene: Wander\_77 Start: 46022, Stop: 45804, Start Num: 4  
Candidate Starts for Wander\_77:  
(Start: 4 @46022 has 30 MA's), (Start: 8 @45947 has 86 MA's), (9, 45866), (10, 45857),

Gene: Wilbur\_77 Start: 45950, Stop: 45807, Start Num: 8  
Candidate Starts for Wilbur\_77:  
(Start: 4 @46025 has 30 MA's), (Start: 8 @45950 has 86 MA's), (9, 45869), (10, 45860),

Gene: YoSam321\_77 Start: 45948, Stop: 45805, Start Num: 8  
Candidate Starts for YoSam321\_77:  
(Start: 4 @46023 has 30 MA's), (Start: 8 @45948 has 86 MA's), (9, 45867), (10, 45858),