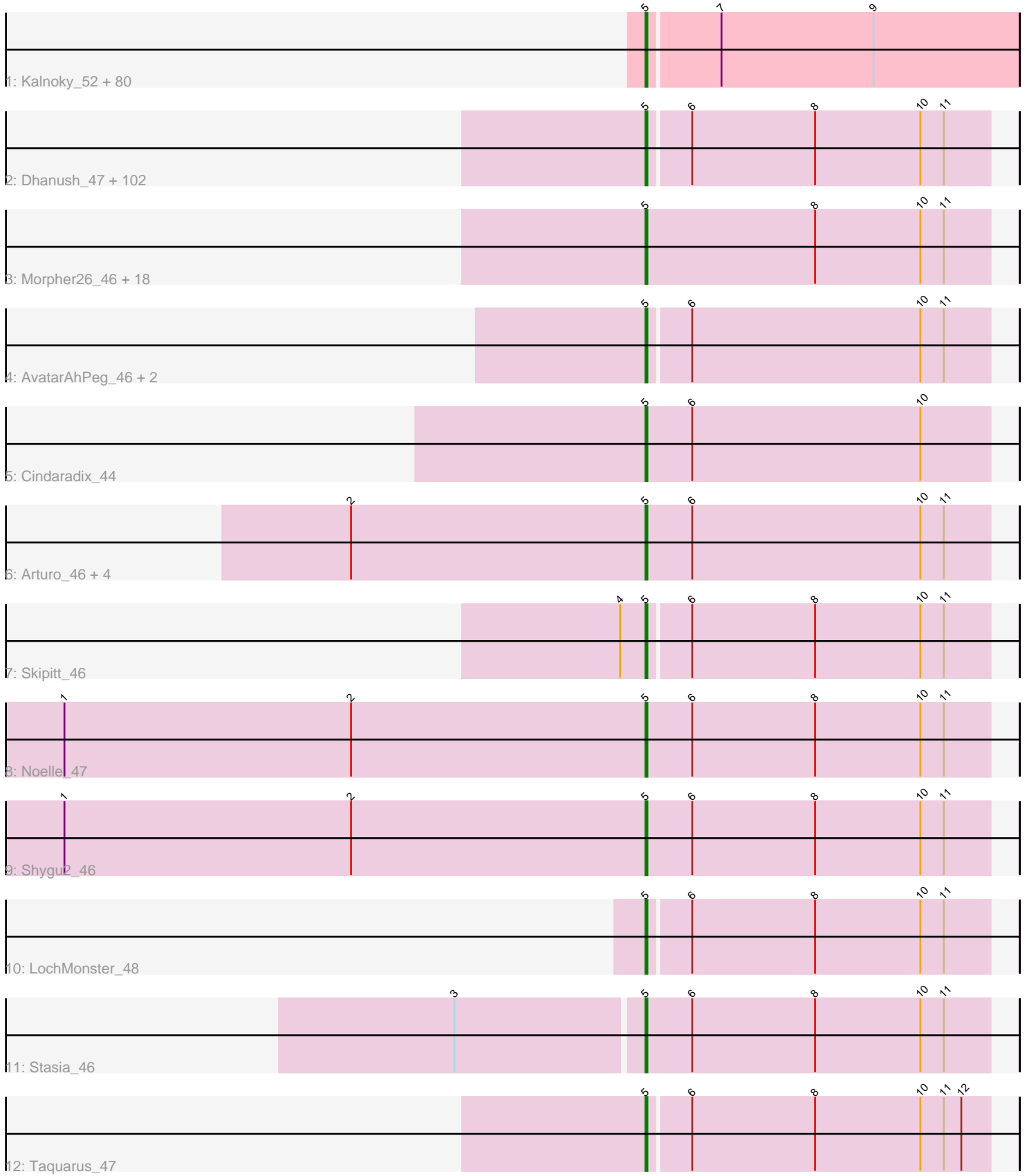


Pham 161577



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 161577 Report

This analysis was run 04/28/24 on database version 559.

Pham number 161577 has 218 members, 4 are drafts.

Phages represented in each track:

- Track 1 : Kalnok\_52, Malinsilva\_53, LugYA\_54, Spike509\_51, OlanP\_50, Wooldri\_53, Sabia\_51, JHC117\_51, Jobu08\_50, Grum1\_51, Ollie\_51, Lilit\_52, Zetzy\_50, Hercules11\_51, Aglet\_52, Heliosoles\_50, SoYo\_51, MarQuardt\_51, Microwolf\_51, Watson\_51, ACFishhook\_50, Taurus\_52, Tiffany\_51, AugsMagnumOpus\_54, StepMih\_51, MadMarie\_51, Snickers\_51, LBerry\_52, DaHudson\_51, Fernando\_51, P28Green\_52, Phoebe\_52, Pawn\_51, BreSam8\_51, AgronaGT15\_50, GtownJaz\_51, Dieselweasel\_52, Beauxregard13\_51, Phranny\_52, Marie\_51, Marius\_52, HaveUMetTed\_52, GingkoMaracino\_51, MuchMore\_54, Anubis\_54, Colbster\_51, Grif\_51, Grub\_51, Soshari\_53, Gemma\_50, Groupthink\_52, Rummer\_50, PGHhamlin\_53, PurpleHaze\_51, Bxz2\_47, Pembroke\_51, MoneyMay\_51, KADY\_51, Vix\_51, Manu\_51, HashRod\_52, BuzzBuzz\_49, Stagni\_51, PhishRPhriends\_49, Misomonster\_52, Louie6\_50, Kalb97\_52, Mainiac\_51, Sabinator\_50, JeppNRM\_52, Daishi\_50, Penny1\_52, Cullens\_51, Reba\_51, Phoxy\_51, Farber\_51, EpicPhail\_52, LarryKay\_51, PotatoSplit\_53, JenCasNa\_52, SoilDragon\_51
- Track 2 : Dhanush\_47, Nebs\_48, Wilbur\_47, Avle17\_47, Flux\_47, Bombshell\_47, Pipcraft\_45, Relief\_46, Clarenza\_46, NotAPhaseMom\_47, Jaykayelowell\_45, Mazhar510\_47, JoongJeon\_46, Ulysses\_46, Chaph\_47, NorthStar\_46, CentreCat\_47, Melvin\_49, Ruin\_47, Nyxis\_47, Annyong\_47, TygerBlood\_47, HamSlice\_46, Broseidon\_47, JetBlade\_47, Lemur\_47, Millski\_46, Caelakin\_47, Wander\_47, Alberto7\_48, Bruiser\_46, Medusa\_47, BellusTerra\_48, Connomayer\_47, KFPoly\_46, Phacado\_47, Phelipe\_48, BubbleTrouble\_46, Romney\_47, Iracema64\_48, Sabertooth\_47, Morrow\_48, Shaka\_47, Camperdownii\_45, LittleB\_47, Houdini22\_47, Lunsford\_48, Bartimeaus\_47, Koreni\_46, Druantia\_47, Cintron\_46, Floean\_47, Iceman\_47, Eurydice\_48, Ohfah\_48, LeoAvram\_47, Peaches\_47, Burger\_45, Happiness\_46, LittleGuy\_47, Sparxx\_48, Thanksgivukkah\_46, Wizard007\_47, Pumbaa\_47, Scamp\_47, Albee\_47, Holli\_46, Citius\_47, Eapen\_47, Deano\_46, Maxo\_48, Baby16\_47, Eros\_47, TroyPia\_48, LappelDuVide\_46, Tinybot\_46, Kingmustik0402\_47, Palestino\_46, Phontbonne\_47, Maverick\_47, Eris\_46, TinaFeyge\_47, Kyee\_47, Kamy\_47, Eagle\_47, Kremtemulon\_45, Abdiel\_47, Funston\_46, OKaNui\_47, Commander\_47, Lorenzo\_47, TiroTheta9\_47, Polymorphads\_48, Cocoaberry\_47, MeeZee\_47, Roosevelt\_46, PeterPeter\_47, Nemo27\_47, ICleared\_47, Gadost\_47, YoSam321\_47, Blackmoor\_47, Spino\_46
- Track 3 : Morpher26\_46, Cici\_46, Datway\_46, BangNhom\_48, Bumblebee11\_45, Cerulean\_48, LHTSCC\_49, SheldonCooper\_49, AbbysRanger\_46, Obama12\_48, Backyardigan\_45, Achebe\_45, Xena\_45, Wile\_46, Badger\_45, PetiteSangsue\_46,

- Katalie136\_46, ChampagnePapi\_49, Perplexer\_46
- Track 4 : AvatarAhPeg\_46, Stink\_47, Miramae\_46
  - Track 5 : Cindradix\_44
  - Track 6 : Arturo\_46, Mundrea\_46, Phighter1804\_47, DirtyDunning\_46, Kratak\_47
  - Track 7 : Skipitt\_46
  - Track 8 : Noelle\_47
  - Track 9 : Shygu2\_46
  - Track 10 : LochMonster\_48
  - Track 11 : Stasia\_46
  - Track 12 : Taquarus\_47

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

The start number called the most often in the published annotations is 5, it was called in 214 of the 214 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ACFishhook\_50, AbbysRanger\_46, Abdiel\_47, Achebe\_45, Aglet\_52, AgronaGT15\_50, Albee\_47, Alberto7\_48, Annyong\_47, Anubis\_54, Arturo\_46, AugsMagnumOpus\_54, AvatarAhPeg\_46, Avle17\_47, Baby16\_47, Backyardigan\_45, Badger\_45, BangNhom\_48, Bartimeaus\_47, Beauxregard13\_51, BellusTerra\_48, Blackmoor\_47, Bombshell\_47, BreSam8\_51, Broseidon\_47, Bruiser\_46, BubbleTrouble\_46, Bumblebee11\_45, Burger\_45, BuzzBuzz\_49, Bxz2\_47, Caelakin\_47, Camperdownii\_45, CentreCat\_47, Cerulean\_48, ChampagnePapi\_49, Chaph\_47, Cici\_46, Cindradix\_44, Cintron\_46, Citius\_47, Clarenza\_46, Cocoaberry\_47, Colbster\_51, Commander\_47, Connomayer\_47, Cullens\_51, DaHudson\_51, Daishi\_50, Datway\_46, Deano\_46, Dhanush\_47, Dieselweasel\_52, DirtyDunning\_46, Druantia\_47, Eagle\_47, Eapen\_47, EpicPhail\_52, Eris\_46, Eros\_47, Eurydice\_48, Farber\_51, Fernando\_51, Floean\_47, Flux\_47, Funston\_46, Gadost\_47, Gemma\_50, GingkoMaracino\_51, Grif\_51, Groupthink\_52, Grub\_51, Grum1\_51, GtownJaz\_51, HamSlice\_46, Happiness\_46, HashRod\_52, HaveUMetTed\_52, Heliosoles\_50, Hercules11\_51, Holli\_46, Houdini22\_47, ICleared\_47, Iceman\_47, Iracema64\_48, JHC117\_51, Jaykayelowell\_45, JenCasNa\_52, JeppNRM\_52, JetBlade\_47, Jobu08\_50, JoongJeon\_46, KADY\_51, KFPoly\_46, Kalb97\_52, Kalnoky\_52, Kampy\_47, Katalie136\_46, Kingmustik0402\_47, Koreni\_46, Kratak\_47, Kremtemulon\_45, Kyee\_47, LBerry\_52, LHTSCC\_49, LappelDuVide\_46, LarryKay\_51, Lemur\_47, LeoAvram\_47, Lilith\_52, LittleB\_47, LittleGuy\_47, LochMonster\_48, Lorenzo\_47, Louie6\_50, LugYA\_54, Lunsford\_48, MadMarie\_51, Mainiac\_51, Malinsilva\_53, Manu\_51, MarQuardt\_51, Marie\_51, Marius\_52, Maverick\_47, Maxo\_48, Mazhar510\_47, Medusa\_47, MeeZee\_47, Melvin\_49, Microwolf\_51, Millski\_46, Miramae\_46, Misomonster\_52, MoneyMay\_51, Morpher26\_46, Morrow\_48, MuchMore\_54, Mundrea\_46, Nebs\_48, Nemo27\_47, Noelle\_47, NorthStar\_46, NotAPhaseMom\_47, Nyxis\_47, OKaNui\_47, Obama12\_48, Ohfah\_48, OlanP\_50, Ollie\_51, P28Green\_52, PGHhamlin\_53, Palestino\_46, Pawn\_51, Peaches\_47, Pembroke\_51, Penny1\_52, Perplexer\_46, PeterPeter\_47, PetiteSangsue\_46, Phacado\_47, Felipe\_48, Phighter1804\_47, PhishRPhriends\_49, Phoebe\_52, Phontbonne\_47, Phoxy\_51, Phranny\_52, Pipcraft\_45, Polymorphads\_48, PotatoSplit\_53, Pumbaa\_47, PurpleHaze\_51, Reba\_51, Relief\_46, Romney\_47, Roosevelt\_46, Ruin\_47, Rummer\_50, Sabertooth\_47, Sabia\_51, Sabinator\_50, Scamp\_47, Shaka\_47, SheldonCooper\_49, Shygu2\_46,

Skipitt\_46, Snickers\_51, SoYo\_51, SoilDragon\_51, Soshari\_53, Sparxx\_48, Spike509\_51, Spino\_46, Stagni\_51, Stasia\_46, StepMih\_51, Stink\_47, Taquarus\_47, Taurus\_52, Thanksgivukkah\_46, Tiffany\_51, TinaFeyge\_47, Tinybot\_46, TiroTheta9\_47, TroyPia\_48, TygerBlood\_47, Ulysses\_46, Vix\_51, Wander\_47, Watson\_51, Wilbur\_47, Wile\_46, Wizard007\_47, Wooldri\_53, Xena\_45, YoSam321\_47, Zetzy\_50,

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

- 

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

- 

### Summary by start number:

Start 5:

- Found in 218 of 218 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 214 of 214
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ACFishhook\_50 (A3), AbbysRanger\_46 (A4), Abdiel\_47 (A4), Achebe\_45 (A4), Aglet\_52 (A3), AgronaGT15\_50 (A3), Albee\_47 (A4), Alberto7\_48 (A4), Annyong\_47 (A4), Anubis\_54 (A3), Arturo\_46 (A4), AugsMagnumOpus\_54 (A3), AvatarAhPeg\_46 (A4), Avle17\_47 (A4), Baby16\_47 (A4), Backyardigan\_45 (A4), Badger\_45 (A4), BangNhom\_48 (A4), Bartimeaus\_47 (A4), Beauxregard13\_51 (A3), BellusTerra\_48 (A4), Blackmoor\_47 (A4), Bombshell\_47 (A4), BreSam8\_51 (A3), Broseidon\_47 (A4), Bruiser\_46 (A4), BubbleTrouble\_46 (A4), Bumblebee11\_45 (A4), Burger\_45 (A4), BuzzBuzz\_49 (A3), Bxz2\_47 (A3), Caelakin\_47 (A4), Camperdownii\_45 (A4), CentreCat\_47 (A4), Cerulean\_48 (A4), ChampagnePapi\_49 (A4), Chaph\_47 (A4), Cici\_46 (A4), Cindaradix\_44 (A4), Cintron\_46 (A4), Citius\_47 (A4), Clarenza\_46 (A4), Cocoaberry\_47 (A4), Colbster\_51 (A3), Commander\_47 (A4), Connomayer\_47 (A4), Cullens\_51 (A3), DaHudson\_51 (A3), Daishi\_50 (A3), Datway\_46 (A4), Deano\_46 (A4), Dhanush\_47 (A4), Dieselweasel\_52 (A3), DirtyDunning\_46 (A4), Druantia\_47 (A4), Eagle\_47 (A4), Eapen\_47 (A4), EpicPhail\_52 (A3), Eris\_46 (A4), Eros\_47 (A4), Eurydice\_48 (A4), Farber\_51 (A3), Fernando\_51 (A3), Florean\_47 (A4), Flux\_47 (A4), Funston\_46 (A4), Gadost\_47 (A4), Gemma\_50 (A3), GingkoMaracino\_51 (A3), Grif\_51 (A3), Groupthink\_52 (A3), Grub\_51 (A3), Grum1\_51 (A3), GtownJaz\_51 (A3), HamSlice\_46 (A4), Happiness\_46 (A4), HashRod\_52 (A3), HaveUMetTed\_52 (A3), Heliosoles\_50 (A3), Hercules11\_51 (A3), Holli\_46 (A4), Houdini22\_47 (A4), ICleared\_47 (A4), Iceman\_47 (A4), Iracema64\_48 (A4), JHC117\_51 (A3), Jaykayelowell\_45 (A4), JenCasNa\_52 (A3), JeppNRM\_52 (A3), JetBlade\_47 (A4), Jobu08\_50 (A3), JoongJeon\_46 (A4), KADY\_51 (A3), KFPoly\_46 (A4), Kalb97\_52 (A3), Kalnoky\_52 (A3), Kampy\_47 (A4), Katalie136\_46 (A4), Kingmustik0402\_47 (A4), Koreni\_46 (A4), Kratark\_47 (A4), Kremtemulon\_45 (A4), Kyee\_47 (A4), LBerry\_52 (A3), LHTSCC\_49 (A4), LappelDuVide\_46 (A4), LarryKay\_51 (A3), Lemur\_47 (A4), LeoAvram\_47 (A4), Lilith\_52 (A3), LittleB\_47 (A4), LittleGuy\_47 (A4), LochMonster\_48 (A4), Lorenzo\_47 (A4), Louie6\_50 (A3), LugYA\_54 (A3), Lunsford\_48 (A4), MadMarie\_51 (A3), Mainiac\_51 (A3), Malinsilva\_53 (A3), Manu\_51 (A3), MarQuardt\_51 (A3), Marie\_51 (A3), Marius\_52 (A3), Maverick\_47 (A4), Maxo\_48 (A4), Mazhar510\_47 (A4), Medusa\_47 (A4), MeeZee\_47 (A4), Melvin\_49 (A4), Microwolf\_51 (A3), Millski\_46 (A4), Miramae\_46 (A4), Misomonster\_52 (A3), MoneyMay\_51 (A3), Morpher26\_46 (A4), Morrow\_48 (A4), MuchMore\_54 (A3), Mundrea\_46 (A4), Nebs\_48 (A4), Nemo27\_47 (A4), Noelle\_47 (A4), NorthStar\_46

(A4), NotAPhaseMom\_47 (A4), Nyxis\_47 (A4), OKaNui\_47 (A4), Obama12\_48 (A4), Ohfah\_48 (A4), OlanP\_50 (A3), Ollie\_51 (A3), P28Green\_52 (A3), PGHhamlin\_53 (A3), Palestino\_46 (A4), Pawn\_51 (A3), Peaches\_47 (A4), Pembroke\_51 (A3), Penny1\_52 (A3), Perplexer\_46 (A4), PeterPeter\_47 (A4), PetiteSangsue\_46 (A4), Phacado\_47 (A4), Felipe\_48 (A4), Phighter1804\_47 (A4), PhishRPhriends\_49 (A3), Phoebe\_52 (A3), Phontbonne\_47 (A4), Phoxy\_51 (A3), Phranny\_52 (A3), Pipcraft\_45 (A4), Polymorphads\_48 (A4), PotatoSplit\_53 (A3), Pumbaa\_47 (A4), PurpleHaze\_51 (A3), Reba\_51 (A3), Relief\_46 (A4), Romney\_47 (A4), Roosevelt\_46 (A4), Ruin\_47 (A4), Rummer\_50 (A3), Sabertooth\_47 (A4), Sabia\_51 (A3), Sabinator\_50 (A3), Scamp\_47 (A4), Shaka\_47 (A4), SheldonCooper\_49 (A4), Shygu2\_46 (A4), Skipitt\_46 (A4), Snickers\_51 (A3), SoYo\_51 (A3), SoilDragon\_51 (A3), Soshari\_53 (A3), Sparxx\_48 (A4), Spike509\_51 (A3), Spino\_46 (A4), Stagni\_51 (A3), Stasia\_46 (A4), StepMih\_51 (A3), Stink\_47 (A4), Taquarus\_47 (A4), Taurus\_52 (A3), Thanksgivukkah\_46 (A4), Tiffany\_51 (A3), TinaFeyge\_47 (A4), Tinybot\_46 (A4), TiroTheta9\_47 (A4), TroyPia\_48 (A4), TygerBlood\_47 (A4), Ulysses\_46 (A4), Vix\_51 (A3), Wander\_47 (A4), Watson\_51 (A3), Wilbur\_47 (A4), Wile\_46 (A4), Wizard007\_47 (A4), Wooldri\_53 (A3), Xena\_45 (A4), YoSam321\_47 (A4), Zetzy\_50 (A3),

### **Summary by clusters:**

There are 2 clusters represented in this pham: A3, A4,

Info for manual annotations of cluster A3:

- Start number 5 was manually annotated 79 times for cluster A3.

Info for manual annotations of cluster A4:

- Start number 5 was manually annotated 135 times for cluster A4.

### **Gene Information:**

Gene: ACFishhook\_50 Start: 32461, Stop: 32273, Start Num: 5

Candidate Starts for ACFishhook\_50:

(Start: 5 @32461 has 214 MA's), (7, 32425), (9, 32347),

Gene: AbbysRanger\_46 Start: 32043, Stop: 31867, Start Num: 5

Candidate Starts for AbbysRanger\_46:

(Start: 5 @32043 has 214 MA's), (8, 31956), (10, 31902), (11, 31890),

Gene: Abdiel\_47 Start: 32054, Stop: 31881, Start Num: 5

Candidate Starts for Abdiel\_47:

(Start: 5 @32054 has 214 MA's), (6, 32033), (8, 31970), (10, 31916), (11, 31904),

Gene: Achebe\_45 Start: 32026, Stop: 31850, Start Num: 5

Candidate Starts for Achebe\_45:

(Start: 5 @32026 has 214 MA's), (8, 31939), (10, 31885), (11, 31873),

Gene: Aglet\_52 Start: 32490, Stop: 32302, Start Num: 5

Candidate Starts for Aglet\_52:

(Start: 5 @32490 has 214 MA's), (7, 32454), (9, 32376),

Gene: AgronaGT15\_50 Start: 32341, Stop: 32153, Start Num: 5

Candidate Starts for AgronaGT15\_50:

(Start: 5 @32341 has 214 MA's), (7, 32305), (9, 32227),

Gene: Albee\_47 Start: 32053, Stop: 31880, Start Num: 5

Candidate Starts for Albee\_47:

(Start: 5 @32053 has 214 MA's), (6, 32032), (8, 31969), (10, 31915), (11, 31903),

Gene: Alberto7\_48 Start: 32390, Stop: 32217, Start Num: 5

Candidate Starts for Alberto7\_48:

(Start: 5 @32390 has 214 MA's), (6, 32369), (8, 32306), (10, 32252), (11, 32240),

Gene: Annyong\_47 Start: 32098, Stop: 31925, Start Num: 5

Candidate Starts for Annyong\_47:

(Start: 5 @32098 has 214 MA's), (6, 32077), (8, 32014), (10, 31960), (11, 31948),

Gene: Anubis\_54 Start: 32376, Stop: 32188, Start Num: 5

Candidate Starts for Anubis\_54:

(Start: 5 @32376 has 214 MA's), (7, 32340), (9, 32262),

Gene: Arturo\_46 Start: 32333, Stop: 32157, Start Num: 5

Candidate Starts for Arturo\_46:

(2, 32483), (Start: 5 @32333 has 214 MA's), (6, 32309), (10, 32192), (11, 32180),

Gene: AugsMagnumOpus\_54 Start: 32481, Stop: 32293, Start Num: 5

Candidate Starts for AugsMagnumOpus\_54:

(Start: 5 @32481 has 214 MA's), (7, 32445), (9, 32367),

Gene: AvatarAhPeg\_46 Start: 32552, Stop: 32379, Start Num: 5

Candidate Starts for AvatarAhPeg\_46:

(Start: 5 @32552 has 214 MA's), (6, 32531), (10, 32414), (11, 32402),

Gene: Avle17\_47 Start: 32050, Stop: 31877, Start Num: 5

Candidate Starts for Avle17\_47:

(Start: 5 @32050 has 214 MA's), (6, 32029), (8, 31966), (10, 31912), (11, 31900),

Gene: Baby16\_47 Start: 32064, Stop: 31891, Start Num: 5

Candidate Starts for Baby16\_47:

(Start: 5 @32064 has 214 MA's), (6, 32043), (8, 31980), (10, 31926), (11, 31914),

Gene: Backyardigan\_45 Start: 32059, Stop: 31883, Start Num: 5

Candidate Starts for Backyardigan\_45:

(Start: 5 @32059 has 214 MA's), (8, 31972), (10, 31918), (11, 31906),

Gene: Badger\_45 Start: 32027, Stop: 31851, Start Num: 5

Candidate Starts for Badger\_45:

(Start: 5 @32027 has 214 MA's), (8, 31940), (10, 31886), (11, 31874),

Gene: BangNhom\_48 Start: 32475, Stop: 32302, Start Num: 5

Candidate Starts for BangNhom\_48:

(Start: 5 @32475 has 214 MA's), (8, 32391), (10, 32337), (11, 32325),

Gene: Bartimeaus\_47 Start: 32055, Stop: 31882, Start Num: 5

Candidate Starts for Bartimeaus\_47:

(Start: 5 @32055 has 214 MA's), (6, 32034), (8, 31971), (10, 31917), (11, 31905),

Gene: Beauxregard13\_51 Start: 32493, Stop: 32305, Start Num: 5

Candidate Starts for Beauxregard13\_51:

(Start: 5 @32493 has 214 MA's), (7, 32457), (9, 32379),

Gene: BellusTerra\_48 Start: 32054, Stop: 31881, Start Num: 5

Candidate Starts for BellusTerra\_48:

(Start: 5 @32054 has 214 MA's), (6, 32033), (8, 31970), (10, 31916), (11, 31904),

Gene: Blackmoor\_47 Start: 32055, Stop: 31882, Start Num: 5

Candidate Starts for Blackmoor\_47:

(Start: 5 @32055 has 214 MA's), (6, 32034), (8, 31971), (10, 31917), (11, 31905),

Gene: Bombshell\_47 Start: 32050, Stop: 31877, Start Num: 5

Candidate Starts for Bombshell\_47:

(Start: 5 @32050 has 214 MA's), (6, 32029), (8, 31966), (10, 31912), (11, 31900),

Gene: BreSam8\_51 Start: 32483, Stop: 32295, Start Num: 5

Candidate Starts for BreSam8\_51:

(Start: 5 @32483 has 214 MA's), (7, 32447), (9, 32369),

Gene: Broseidon\_47 Start: 32055, Stop: 31882, Start Num: 5

Candidate Starts for Broseidon\_47:

(Start: 5 @32055 has 214 MA's), (6, 32034), (8, 31971), (10, 31917), (11, 31905),

Gene: Bruiser\_46 Start: 32053, Stop: 31880, Start Num: 5

Candidate Starts for Bruiser\_46:

(Start: 5 @32053 has 214 MA's), (6, 32032), (8, 31969), (10, 31915), (11, 31903),

Gene: BubbleTrouble\_46 Start: 32053, Stop: 31880, Start Num: 5

Candidate Starts for BubbleTrouble\_46:

(Start: 5 @32053 has 214 MA's), (6, 32032), (8, 31969), (10, 31915), (11, 31903),

Gene: Bumblebee11\_45 Start: 32029, Stop: 31853, Start Num: 5

Candidate Starts for Bumblebee11\_45:

(Start: 5 @32029 has 214 MA's), (8, 31942), (10, 31888), (11, 31876),

Gene: Burger\_45 Start: 32053, Stop: 31880, Start Num: 5

Candidate Starts for Burger\_45:

(Start: 5 @32053 has 214 MA's), (6, 32032), (8, 31969), (10, 31915), (11, 31903),

Gene: BuzzBuzz\_49 Start: 32520, Stop: 32332, Start Num: 5

Candidate Starts for BuzzBuzz\_49:

(Start: 5 @32520 has 214 MA's), (7, 32484), (9, 32406),

Gene: Bxz2\_47 Start: 32527, Stop: 32339, Start Num: 5

Candidate Starts for Bxz2\_47:

(Start: 5 @32527 has 214 MA's), (7, 32491), (9, 32413),

Gene: Caelakin\_47 Start: 32053, Stop: 31880, Start Num: 5

Candidate Starts for Caelakin\_47:

(Start: 5 @32053 has 214 MA's), (6, 32032), (8, 31969), (10, 31915), (11, 31903),

Gene: Camperdownii\_45 Start: 31726, Stop: 31553, Start Num: 5

Candidate Starts for Camperdownii\_45:

(Start: 5 @31726 has 214 MA's), (6, 31705), (8, 31642), (10, 31588), (11, 31576),

Gene: CentreCat\_47 Start: 32056, Stop: 31883, Start Num: 5

Candidate Starts for CentreCat\_47:

(Start: 5 @32056 has 214 MA's), (6, 32035), (8, 31972), (10, 31918), (11, 31906),

Gene: Cerulean\_48 Start: 32476, Stop: 32303, Start Num: 5

Candidate Starts for Cerulean\_48:

(Start: 5 @32476 has 214 MA's), (8, 32392), (10, 32338), (11, 32326),

Gene: ChampagnePapi\_49 Start: 32475, Stop: 32302, Start Num: 5

Candidate Starts for ChampagnePapi\_49:

(Start: 5 @32475 has 214 MA's), (8, 32391), (10, 32337), (11, 32325),

Gene: Chaph\_47 Start: 32064, Stop: 31891, Start Num: 5

Candidate Starts for Chaph\_47:

(Start: 5 @32064 has 214 MA's), (6, 32043), (8, 31980), (10, 31926), (11, 31914),

Gene: Cici\_46 Start: 32044, Stop: 31868, Start Num: 5

Candidate Starts for Cici\_46:

(Start: 5 @32044 has 214 MA's), (8, 31957), (10, 31903), (11, 31891),

Gene: Cindaradix\_44 Start: 31669, Stop: 31493, Start Num: 5

Candidate Starts for Cindaradix\_44:

(Start: 5 @31669 has 214 MA's), (6, 31645), (10, 31528),

Gene: Cintron\_46 Start: 32033, Stop: 31860, Start Num: 5

Candidate Starts for Cintron\_46:

(Start: 5 @32033 has 214 MA's), (6, 32012), (8, 31949), (10, 31895), (11, 31883),

Gene: Citius\_47 Start: 32074, Stop: 31901, Start Num: 5

Candidate Starts for Citius\_47:

(Start: 5 @32074 has 214 MA's), (6, 32053), (8, 31990), (10, 31936), (11, 31924),

Gene: Clarenza\_46 Start: 32050, Stop: 31877, Start Num: 5

Candidate Starts for Clarenza\_46:

(Start: 5 @32050 has 214 MA's), (6, 32029), (8, 31966), (10, 31912), (11, 31900),

Gene: Cocoaberry\_47 Start: 32057, Stop: 31884, Start Num: 5

Candidate Starts for Cocoaberry\_47:

(Start: 5 @32057 has 214 MA's), (6, 32036), (8, 31973), (10, 31919), (11, 31907),

Gene: Colbster\_51 Start: 32493, Stop: 32305, Start Num: 5

Candidate Starts for Colbster\_51:

(Start: 5 @32493 has 214 MA's), (7, 32457), (9, 32379),

Gene: Commander\_47 Start: 32052, Stop: 31879, Start Num: 5

Candidate Starts for Commander\_47:

(Start: 5 @32052 has 214 MA's), (6, 32031), (8, 31968), (10, 31914), (11, 31902),



Gene: Connomayer\_47 Start: 32053, Stop: 31880, Start Num: 5  
Candidate Starts for Connomayer\_47:  
(Start: 5 @32053 has 214 MA's), (6, 32032), (8, 31969), (10, 31915), (11, 31903),

Gene: Cullens\_51 Start: 32489, Stop: 32301, Start Num: 5  
Candidate Starts for Cullens\_51:  
(Start: 5 @32489 has 214 MA's), (7, 32453), (9, 32375),

Gene: DaHudson\_51 Start: 32482, Stop: 32294, Start Num: 5  
Candidate Starts for DaHudson\_51:  
(Start: 5 @32482 has 214 MA's), (7, 32446), (9, 32368),

Gene: Daishi\_50 Start: 31361, Stop: 31173, Start Num: 5  
Candidate Starts for Daishi\_50:  
(Start: 5 @31361 has 214 MA's), (7, 31325), (9, 31247),

Gene: Datway\_46 Start: 32015, Stop: 31839, Start Num: 5  
Candidate Starts for Datway\_46:  
(Start: 5 @32015 has 214 MA's), (8, 31928), (10, 31874), (11, 31862),

Gene: Deano\_46 Start: 32061, Stop: 31888, Start Num: 5  
Candidate Starts for Deano\_46:  
(Start: 5 @32061 has 214 MA's), (6, 32040), (8, 31977), (10, 31923), (11, 31911),

Gene: Dhanush\_47 Start: 32056, Stop: 31883, Start Num: 5  
Candidate Starts for Dhanush\_47:  
(Start: 5 @32056 has 214 MA's), (6, 32035), (8, 31972), (10, 31918), (11, 31906),

Gene: Dieselweasel\_52 Start: 32492, Stop: 32304, Start Num: 5  
Candidate Starts for Dieselweasel\_52:  
(Start: 5 @32492 has 214 MA's), (7, 32456), (9, 32378),

Gene: DirtyDunning\_46 Start: 32074, Stop: 31898, Start Num: 5  
Candidate Starts for DirtyDunning\_46:  
(2, 32224), (Start: 5 @32074 has 214 MA's), (6, 32050), (10, 31933), (11, 31921),

Gene: Druantia\_47 Start: 32056, Stop: 31883, Start Num: 5  
Candidate Starts for Druantia\_47:  
(Start: 5 @32056 has 214 MA's), (6, 32035), (8, 31972), (10, 31918), (11, 31906),

Gene: Eagle\_47 Start: 32078, Stop: 31905, Start Num: 5  
Candidate Starts for Eagle\_47:  
(Start: 5 @32078 has 214 MA's), (6, 32057), (8, 31994), (10, 31940), (11, 31928),

Gene: Eapen\_47 Start: 32048, Stop: 31875, Start Num: 5  
Candidate Starts for Eapen\_47:  
(Start: 5 @32048 has 214 MA's), (6, 32027), (8, 31964), (10, 31910), (11, 31898),

Gene: EpicPhail\_52 Start: 32493, Stop: 32305, Start Num: 5  
Candidate Starts for EpicPhail\_52:  
(Start: 5 @32493 has 214 MA's), (7, 32457), (9, 32379),

Gene: Eris\_46 Start: 32053, Stop: 31880, Start Num: 5  
Candidate Starts for Eris\_46:  
(Start: 5 @32053 has 214 MA's), (6, 32032), (8, 31969), (10, 31915), (11, 31903),

Gene: Eros\_47 Start: 32055, Stop: 31882, Start Num: 5  
Candidate Starts for Eros\_47:  
(Start: 5 @32055 has 214 MA's), (6, 32034), (8, 31971), (10, 31917), (11, 31905),

Gene: Eurydice\_48 Start: 32050, Stop: 31877, Start Num: 5  
Candidate Starts for Eurydice\_48:  
(Start: 5 @32050 has 214 MA's), (6, 32029), (8, 31966), (10, 31912), (11, 31900),

Gene: Farber\_51 Start: 32482, Stop: 32294, Start Num: 5  
Candidate Starts for Farber\_51:  
(Start: 5 @32482 has 214 MA's), (7, 32446), (9, 32368),

Gene: Fernando\_51 Start: 32489, Stop: 32301, Start Num: 5  
Candidate Starts for Fernando\_51:  
(Start: 5 @32489 has 214 MA's), (7, 32453), (9, 32375),

Gene: Florean\_47 Start: 32052, Stop: 31879, Start Num: 5  
Candidate Starts for Florean\_47:  
(Start: 5 @32052 has 214 MA's), (6, 32031), (8, 31968), (10, 31914), (11, 31902),

Gene: Flux\_47 Start: 32052, Stop: 31879, Start Num: 5  
Candidate Starts for Flux\_47:  
(Start: 5 @32052 has 214 MA's), (6, 32031), (8, 31968), (10, 31914), (11, 31902),

Gene: Funston\_46 Start: 32053, Stop: 31880, Start Num: 5  
Candidate Starts for Funston\_46:  
(Start: 5 @32053 has 214 MA's), (6, 32032), (8, 31969), (10, 31915), (11, 31903),

Gene: Gadost\_47 Start: 32057, Stop: 31884, Start Num: 5  
Candidate Starts for Gadost\_47:  
(Start: 5 @32057 has 214 MA's), (6, 32036), (8, 31973), (10, 31919), (11, 31907),

Gene: Gemma\_50 Start: 32385, Stop: 32197, Start Num: 5  
Candidate Starts for Gemma\_50:  
(Start: 5 @32385 has 214 MA's), (7, 32349), (9, 32271),

Gene: GingkoMaracino\_51 Start: 32375, Stop: 32187, Start Num: 5  
Candidate Starts for GingkoMaracino\_51:  
(Start: 5 @32375 has 214 MA's), (7, 32339), (9, 32261),

Gene: Grif\_51 Start: 32564, Stop: 32376, Start Num: 5  
Candidate Starts for Grif\_51:  
(Start: 5 @32564 has 214 MA's), (7, 32528), (9, 32450),

Gene: Groupthink\_52 Start: 32389, Stop: 32201, Start Num: 5  
Candidate Starts for Groupthink\_52:  
(Start: 5 @32389 has 214 MA's), (7, 32353), (9, 32275),

Gene: Grub\_51 Start: 32481, Stop: 32293, Start Num: 5

Candidate Starts for Grub\_51:  
(Start: 5 @32481 has 214 MA's), (7, 32445), (9, 32367),

Gene: Grum1\_51 Start: 32489, Stop: 32301, Start Num: 5  
Candidate Starts for Grum1\_51:  
(Start: 5 @32489 has 214 MA's), (7, 32453), (9, 32375),

Gene: GtownJaz\_51 Start: 32491, Stop: 32303, Start Num: 5  
Candidate Starts for GtownJaz\_51:  
(Start: 5 @32491 has 214 MA's), (7, 32455), (9, 32377),

Gene: HamSlice\_46 Start: 32051, Stop: 31878, Start Num: 5  
Candidate Starts for HamSlice\_46:  
(Start: 5 @32051 has 214 MA's), (6, 32030), (8, 31967), (10, 31913), (11, 31901),

Gene: Happiness\_46 Start: 32058, Stop: 31885, Start Num: 5  
Candidate Starts for Happiness\_46:  
(Start: 5 @32058 has 214 MA's), (6, 32037), (8, 31974), (10, 31920), (11, 31908),

Gene: HashRod\_52 Start: 32520, Stop: 32332, Start Num: 5  
Candidate Starts for HashRod\_52:  
(Start: 5 @32520 has 214 MA's), (7, 32484), (9, 32406),

Gene: HaveUMetTed\_52 Start: 32371, Stop: 32183, Start Num: 5  
Candidate Starts for HaveUMetTed\_52:  
(Start: 5 @32371 has 214 MA's), (7, 32335), (9, 32257),

Gene: Heliosoles\_50 Start: 32392, Stop: 32204, Start Num: 5  
Candidate Starts for Heliosoles\_50:  
(Start: 5 @32392 has 214 MA's), (7, 32356), (9, 32278),

Gene: Hercules11\_51 Start: 32498, Stop: 32310, Start Num: 5  
Candidate Starts for Hercules11\_51:  
(Start: 5 @32498 has 214 MA's), (7, 32462), (9, 32384),

Gene: Holli\_46 Start: 31843, Stop: 31670, Start Num: 5  
Candidate Starts for Holli\_46:  
(Start: 5 @31843 has 214 MA's), (6, 31822), (8, 31759), (10, 31705), (11, 31693),

Gene: Houdini22\_47 Start: 32057, Stop: 31884, Start Num: 5  
Candidate Starts for Houdini22\_47:  
(Start: 5 @32057 has 214 MA's), (6, 32036), (8, 31973), (10, 31919), (11, 31907),

Gene: ICleared\_47 Start: 32082, Stop: 31909, Start Num: 5  
Candidate Starts for ICleared\_47:  
(Start: 5 @32082 has 214 MA's), (6, 32061), (8, 31998), (10, 31944), (11, 31932),

Gene: Iceman\_47 Start: 32339, Stop: 32166, Start Num: 5  
Candidate Starts for Iceman\_47:  
(Start: 5 @32339 has 214 MA's), (6, 32318), (8, 32255), (10, 32201), (11, 32189),

Gene: Iracema64\_48 Start: 32317, Stop: 32144, Start Num: 5  
Candidate Starts for Iracema64\_48:

(Start: 5 @32317 has 214 MA's), (6, 32296), (8, 32233), (10, 32179), (11, 32167),

Gene: JHC117\_51 Start: 32488, Stop: 32300, Start Num: 5

Candidate Starts for JHC117\_51:

(Start: 5 @32488 has 214 MA's), (7, 32452), (9, 32374),

Gene: Jaykayelowell\_45 Start: 32046, Stop: 31873, Start Num: 5

Candidate Starts for Jaykayelowell\_45:

(Start: 5 @32046 has 214 MA's), (6, 32025), (8, 31962), (10, 31908), (11, 31896),

Gene: JenCasNa\_52 Start: 32489, Stop: 32301, Start Num: 5

Candidate Starts for JenCasNa\_52:

(Start: 5 @32489 has 214 MA's), (7, 32453), (9, 32375),

Gene: JeppNRM\_52 Start: 32390, Stop: 32202, Start Num: 5

Candidate Starts for JeppNRM\_52:

(Start: 5 @32390 has 214 MA's), (7, 32354), (9, 32276),

Gene: JetBlade\_47 Start: 32047, Stop: 31874, Start Num: 5

Candidate Starts for JetBlade\_47:

(Start: 5 @32047 has 214 MA's), (6, 32026), (8, 31963), (10, 31909), (11, 31897),

Gene: Jobu08\_50 Start: 32321, Stop: 32133, Start Num: 5

Candidate Starts for Jobu08\_50:

(Start: 5 @32321 has 214 MA's), (7, 32285), (9, 32207),

Gene: JoongJeon\_46 Start: 32050, Stop: 31877, Start Num: 5

Candidate Starts for JoongJeon\_46:

(Start: 5 @32050 has 214 MA's), (6, 32029), (8, 31966), (10, 31912), (11, 31900),

Gene: KADY\_51 Start: 32520, Stop: 32332, Start Num: 5

Candidate Starts for KADY\_51:

(Start: 5 @32520 has 214 MA's), (7, 32484), (9, 32406),

Gene: KFPoly\_46 Start: 32047, Stop: 31874, Start Num: 5

Candidate Starts for KFPoly\_46:

(Start: 5 @32047 has 214 MA's), (6, 32026), (8, 31963), (10, 31909), (11, 31897),

Gene: Kalb97\_52 Start: 32388, Stop: 32200, Start Num: 5

Candidate Starts for Kalb97\_52:

(Start: 5 @32388 has 214 MA's), (7, 32352), (9, 32274),

Gene: Kalnoky\_52 Start: 32386, Stop: 32198, Start Num: 5

Candidate Starts for Kalnoky\_52:

(Start: 5 @32386 has 214 MA's), (7, 32350), (9, 32272),

Gene: Kampy\_47 Start: 32055, Stop: 31882, Start Num: 5

Candidate Starts for Kampy\_47:

(Start: 5 @32055 has 214 MA's), (6, 32034), (8, 31971), (10, 31917), (11, 31905),

Gene: Katalie136\_46 Start: 32029, Stop: 31853, Start Num: 5

Candidate Starts for Katalie136\_46:

(Start: 5 @32029 has 214 MA's), (8, 31942), (10, 31888), (11, 31876),

Gene: Kingmustik0402\_47 Start: 32042, Stop: 31869, Start Num: 5  
Candidate Starts for Kingmustik0402\_47:  
(Start: 5 @32042 has 214 MA's), (6, 32021), (8, 31958), (10, 31904), (11, 31892),

Gene: Koreni\_46 Start: 31734, Stop: 31561, Start Num: 5  
Candidate Starts for Koreni\_46:  
(Start: 5 @31734 has 214 MA's), (6, 31713), (8, 31650), (10, 31596), (11, 31584),

Gene: Kratark\_47 Start: 32216, Stop: 32040, Start Num: 5  
Candidate Starts for Kratark\_47:  
(2, 32366), (Start: 5 @32216 has 214 MA's), (6, 32192), (10, 32075), (11, 32063),

Gene: Kremtemulon\_45 Start: 32004, Stop: 31831, Start Num: 5  
Candidate Starts for Kremtemulon\_45:  
(Start: 5 @32004 has 214 MA's), (6, 31983), (8, 31920), (10, 31866), (11, 31854),

Gene: Kyee\_47 Start: 32051, Stop: 31878, Start Num: 5  
Candidate Starts for Kyee\_47:  
(Start: 5 @32051 has 214 MA's), (6, 32030), (8, 31967), (10, 31913), (11, 31901),

Gene: LBerry\_52 Start: 32493, Stop: 32305, Start Num: 5  
Candidate Starts for LBerry\_52:  
(Start: 5 @32493 has 214 MA's), (7, 32457), (9, 32379),

Gene: LHTSCC\_49 Start: 32475, Stop: 32302, Start Num: 5  
Candidate Starts for LHTSCC\_49:  
(Start: 5 @32475 has 214 MA's), (8, 32391), (10, 32337), (11, 32325),

Gene: LappelDuVide\_46 Start: 32052, Stop: 31879, Start Num: 5  
Candidate Starts for LappelDuVide\_46:  
(Start: 5 @32052 has 214 MA's), (6, 32031), (8, 31968), (10, 31914), (11, 31902),

Gene: LarryKay\_51 Start: 32522, Stop: 32334, Start Num: 5  
Candidate Starts for LarryKay\_51:  
(Start: 5 @32522 has 214 MA's), (7, 32486), (9, 32408),

Gene: Lemur\_47 Start: 32050, Stop: 31877, Start Num: 5  
Candidate Starts for Lemur\_47:  
(Start: 5 @32050 has 214 MA's), (6, 32029), (8, 31966), (10, 31912), (11, 31900),

Gene: LeoAvram\_47 Start: 32053, Stop: 31880, Start Num: 5  
Candidate Starts for LeoAvram\_47:  
(Start: 5 @32053 has 214 MA's), (6, 32032), (8, 31969), (10, 31915), (11, 31903),

Gene: Lilith\_52 Start: 32482, Stop: 32294, Start Num: 5  
Candidate Starts for Lilith\_52:  
(Start: 5 @32482 has 214 MA's), (7, 32446), (9, 32368),

Gene: LittleB\_47 Start: 32054, Stop: 31881, Start Num: 5  
Candidate Starts for LittleB\_47:  
(Start: 5 @32054 has 214 MA's), (6, 32033), (8, 31970), (10, 31916), (11, 31904),

Gene: LittleGuy\_47 Start: 31949, Stop: 31776, Start Num: 5  
Candidate Starts for LittleGuy\_47:  
(Start: 5 @31949 has 214 MA's), (6, 31928), (8, 31865), (10, 31811), (11, 31799),

Gene: LochMonster\_48 Start: 32289, Stop: 32116, Start Num: 5  
Candidate Starts for LochMonster\_48:  
(Start: 5 @32289 has 214 MA's), (6, 32268), (8, 32205), (10, 32151), (11, 32139),

Gene: Lorenzo\_47 Start: 32053, Stop: 31880, Start Num: 5  
Candidate Starts for Lorenzo\_47:  
(Start: 5 @32053 has 214 MA's), (6, 32032), (8, 31969), (10, 31915), (11, 31903),

Gene: Louie6\_50 Start: 32521, Stop: 32333, Start Num: 5  
Candidate Starts for Louie6\_50:  
(Start: 5 @32521 has 214 MA's), (7, 32485), (9, 32407),

Gene: LugYA\_54 Start: 32490, Stop: 32302, Start Num: 5  
Candidate Starts for LugYA\_54:  
(Start: 5 @32490 has 214 MA's), (7, 32454), (9, 32376),

Gene: Lunsford\_48 Start: 32047, Stop: 31874, Start Num: 5  
Candidate Starts for Lunsford\_48:  
(Start: 5 @32047 has 214 MA's), (6, 32026), (8, 31963), (10, 31909), (11, 31897),

Gene: MadMarie\_51 Start: 32491, Stop: 32303, Start Num: 5  
Candidate Starts for MadMarie\_51:  
(Start: 5 @32491 has 214 MA's), (7, 32455), (9, 32377),

Gene: Mainiac\_51 Start: 32483, Stop: 32295, Start Num: 5  
Candidate Starts for Mainiac\_51:  
(Start: 5 @32483 has 214 MA's), (7, 32447), (9, 32369),

Gene: Malinsilva\_53 Start: 32481, Stop: 32293, Start Num: 5  
Candidate Starts for Malinsilva\_53:  
(Start: 5 @32481 has 214 MA's), (7, 32445), (9, 32367),

Gene: Manu\_51 Start: 32389, Stop: 32201, Start Num: 5  
Candidate Starts for Manu\_51:  
(Start: 5 @32389 has 214 MA's), (7, 32353), (9, 32275),

Gene: MarQuardt\_51 Start: 32491, Stop: 32303, Start Num: 5  
Candidate Starts for MarQuardt\_51:  
(Start: 5 @32491 has 214 MA's), (7, 32455), (9, 32377),

Gene: Marie\_51 Start: 32489, Stop: 32301, Start Num: 5  
Candidate Starts for Marie\_51:  
(Start: 5 @32489 has 214 MA's), (7, 32453), (9, 32375),

Gene: Marius\_52 Start: 32386, Stop: 32198, Start Num: 5  
Candidate Starts for Marius\_52:  
(Start: 5 @32386 has 214 MA's), (7, 32350), (9, 32272),

Gene: Maverick\_47 Start: 32053, Stop: 31880, Start Num: 5

Candidate Starts for Maverick\_47:

(Start: 5 @32053 has 214 MA's), (6, 32032), (8, 31969), (10, 31915), (11, 31903),

Gene: Maxo\_48 Start: 32055, Stop: 31882, Start Num: 5

Candidate Starts for Maxo\_48:

(Start: 5 @32055 has 214 MA's), (6, 32034), (8, 31971), (10, 31917), (11, 31905),

Gene: Mazhar510\_47 Start: 32054, Stop: 31881, Start Num: 5

Candidate Starts for Mazhar510\_47:

(Start: 5 @32054 has 214 MA's), (6, 32033), (8, 31970), (10, 31916), (11, 31904),

Gene: Medusa\_47 Start: 32052, Stop: 31879, Start Num: 5

Candidate Starts for Medusa\_47:

(Start: 5 @32052 has 214 MA's), (6, 32031), (8, 31968), (10, 31914), (11, 31902),

Gene: MeeZee\_47 Start: 32050, Stop: 31877, Start Num: 5

Candidate Starts for MeeZee\_47:

(Start: 5 @32050 has 214 MA's), (6, 32029), (8, 31966), (10, 31912), (11, 31900),

Gene: Melvin\_49 Start: 32048, Stop: 31875, Start Num: 5

Candidate Starts for Melvin\_49:

(Start: 5 @32048 has 214 MA's), (6, 32027), (8, 31964), (10, 31910), (11, 31898),

Gene: Microwolf\_51 Start: 32490, Stop: 32302, Start Num: 5

Candidate Starts for Microwolf\_51:

(Start: 5 @32490 has 214 MA's), (7, 32454), (9, 32376),

Gene: Millski\_46 Start: 32054, Stop: 31881, Start Num: 5

Candidate Starts for Millski\_46:

(Start: 5 @32054 has 214 MA's), (6, 32033), (8, 31970), (10, 31916), (11, 31904),

Gene: Miramae\_46 Start: 32214, Stop: 32041, Start Num: 5

Candidate Starts for Miramae\_46:

(Start: 5 @32214 has 214 MA's), (6, 32193), (10, 32076), (11, 32064),

Gene: Misomonster\_52 Start: 32519, Stop: 32331, Start Num: 5

Candidate Starts for Misomonster\_52:

(Start: 5 @32519 has 214 MA's), (7, 32483), (9, 32405),

Gene: MoneyMay\_51 Start: 32489, Stop: 32301, Start Num: 5

Candidate Starts for MoneyMay\_51:

(Start: 5 @32489 has 214 MA's), (7, 32453), (9, 32375),

Gene: Morpher26\_46 Start: 32050, Stop: 31874, Start Num: 5

Candidate Starts for Morpher26\_46:

(Start: 5 @32050 has 214 MA's), (8, 31963), (10, 31909), (11, 31897),

Gene: Morrow\_48 Start: 32059, Stop: 31886, Start Num: 5

Candidate Starts for Morrow\_48:

(Start: 5 @32059 has 214 MA's), (6, 32038), (8, 31975), (10, 31921), (11, 31909),

Gene: MuchMore\_54 Start: 32481, Stop: 32293, Start Num: 5

Candidate Starts for MuchMore\_54:

(Start: 5 @32481 has 214 MA's), (7, 32445), (9, 32367),

Gene: Mundrea\_46 Start: 32037, Stop: 31861, Start Num: 5

Candidate Starts for Mundrea\_46:

(2, 32187), (Start: 5 @32037 has 214 MA's), (6, 32013), (10, 31896), (11, 31884),

Gene: Nebs\_48 Start: 32053, Stop: 31880, Start Num: 5

Candidate Starts for Nebs\_48:

(Start: 5 @32053 has 214 MA's), (6, 32032), (8, 31969), (10, 31915), (11, 31903),

Gene: Nemo27\_47 Start: 32052, Stop: 31879, Start Num: 5

Candidate Starts for Nemo27\_47:

(Start: 5 @32052 has 214 MA's), (6, 32031), (8, 31968), (10, 31914), (11, 31902),

Gene: Noelle\_47 Start: 32339, Stop: 32163, Start Num: 5

Candidate Starts for Noelle\_47:

(1, 32636), (2, 32489), (Start: 5 @32339 has 214 MA's), (6, 32315), (8, 32252), (10, 32198), (11, 32186),

Gene: NorthStar\_46 Start: 32053, Stop: 31880, Start Num: 5

Candidate Starts for NorthStar\_46:

(Start: 5 @32053 has 214 MA's), (6, 32032), (8, 31969), (10, 31915), (11, 31903),

Gene: NotAPhaseMom\_47 Start: 32057, Stop: 31884, Start Num: 5

Candidate Starts for NotAPhaseMom\_47:

(Start: 5 @32057 has 214 MA's), (6, 32036), (8, 31973), (10, 31919), (11, 31907),

Gene: Nyxis\_47 Start: 31943, Stop: 31770, Start Num: 5

Candidate Starts for Nyxis\_47:

(Start: 5 @31943 has 214 MA's), (6, 31922), (8, 31859), (10, 31805), (11, 31793),

Gene: OKaNui\_47 Start: 32103, Stop: 31930, Start Num: 5

Candidate Starts for OKaNui\_47:

(Start: 5 @32103 has 214 MA's), (6, 32082), (8, 32019), (10, 31965), (11, 31953),

Gene: Obama12\_48 Start: 32477, Stop: 32304, Start Num: 5

Candidate Starts for Obama12\_48:

(Start: 5 @32477 has 214 MA's), (8, 32393), (10, 32339), (11, 32327),

Gene: Ohfah\_48 Start: 32053, Stop: 31880, Start Num: 5

Candidate Starts for Ohfah\_48:

(Start: 5 @32053 has 214 MA's), (6, 32032), (8, 31969), (10, 31915), (11, 31903),

Gene: OlanP\_50 Start: 32559, Stop: 32371, Start Num: 5

Candidate Starts for OlanP\_50:

(Start: 5 @32559 has 214 MA's), (7, 32523), (9, 32445),

Gene: Ollie\_51 Start: 32360, Stop: 32172, Start Num: 5

Candidate Starts for Ollie\_51:

(Start: 5 @32360 has 214 MA's), (7, 32324), (9, 32246),

Gene: P28Green\_52 Start: 32492, Stop: 32304, Start Num: 5

Candidate Starts for P28Green\_52:



(Start: 5 @32492 has 214 MA's), (7, 32456), (9, 32378),

Gene: PGHhamlin\_53 Start: 32481, Stop: 32293, Start Num: 5

Candidate Starts for PGHhamlin\_53:

(Start: 5 @32481 has 214 MA's), (7, 32445), (9, 32367),

Gene: Palestino\_46 Start: 32053, Stop: 31880, Start Num: 5

Candidate Starts for Palestino\_46:

(Start: 5 @32053 has 214 MA's), (6, 32032), (8, 31969), (10, 31915), (11, 31903),

Gene: Pawn\_51 Start: 32393, Stop: 32205, Start Num: 5

Candidate Starts for Pawn\_51:

(Start: 5 @32393 has 214 MA's), (7, 32357), (9, 32279),

Gene: Peaches\_47 Start: 32052, Stop: 31879, Start Num: 5

Candidate Starts for Peaches\_47:

(Start: 5 @32052 has 214 MA's), (6, 32031), (8, 31968), (10, 31914), (11, 31902),

Gene: Pembroke\_51 Start: 32490, Stop: 32302, Start Num: 5

Candidate Starts for Pembroke\_51:

(Start: 5 @32490 has 214 MA's), (7, 32454), (9, 32376),

Gene: Penny1\_52 Start: 32493, Stop: 32305, Start Num: 5

Candidate Starts for Penny1\_52:

(Start: 5 @32493 has 214 MA's), (7, 32457), (9, 32379),

Gene: Perplexer\_46 Start: 32026, Stop: 31850, Start Num: 5

Candidate Starts for Perplexer\_46:

(Start: 5 @32026 has 214 MA's), (8, 31939), (10, 31885), (11, 31873),

Gene: PeterPeter\_47 Start: 32050, Stop: 31877, Start Num: 5

Candidate Starts for PeterPeter\_47:

(Start: 5 @32050 has 214 MA's), (6, 32029), (8, 31966), (10, 31912), (11, 31900),

Gene: PetiteSangsue\_46 Start: 32029, Stop: 31853, Start Num: 5

Candidate Starts for PetiteSangsue\_46:

(Start: 5 @32029 has 214 MA's), (8, 31942), (10, 31888), (11, 31876),

Gene: Phacado\_47 Start: 32052, Stop: 31879, Start Num: 5

Candidate Starts for Phacado\_47:

(Start: 5 @32052 has 214 MA's), (6, 32031), (8, 31968), (10, 31914), (11, 31902),

Gene: Felipe\_48 Start: 32053, Stop: 31880, Start Num: 5

Candidate Starts for Felipe\_48:

(Start: 5 @32053 has 214 MA's), (6, 32032), (8, 31969), (10, 31915), (11, 31903),

Gene: Phighter1804\_47 Start: 32119, Stop: 31943, Start Num: 5

Candidate Starts for Phighter1804\_47:

(2, 32269), (Start: 5 @32119 has 214 MA's), (6, 32095), (10, 31978), (11, 31966),

Gene: PhishRPhriends\_49 Start: 31567, Stop: 31379, Start Num: 5

Candidate Starts for PhishRPhriends\_49:

(Start: 5 @31567 has 214 MA's), (7, 31531), (9, 31453),

Gene: Phoebe\_52 Start: 32482, Stop: 32294, Start Num: 5

Candidate Starts for Phoebe\_52:

(Start: 5 @32482 has 214 MA's), (7, 32446), (9, 32368),

Gene: Phontbonne\_47 Start: 31944, Stop: 31771, Start Num: 5

Candidate Starts for Phontbonne\_47:

(Start: 5 @31944 has 214 MA's), (6, 31923), (8, 31860), (10, 31806), (11, 31794),

Gene: Phoxy\_51 Start: 32517, Stop: 32329, Start Num: 5

Candidate Starts for Phoxy\_51:

(Start: 5 @32517 has 214 MA's), (7, 32481), (9, 32403),

Gene: Phranny\_52 Start: 32375, Stop: 32187, Start Num: 5

Candidate Starts for Phranny\_52:

(Start: 5 @32375 has 214 MA's), (7, 32339), (9, 32261),

Gene: Pipcraft\_45 Start: 32053, Stop: 31880, Start Num: 5

Candidate Starts for Pipcraft\_45:

(Start: 5 @32053 has 214 MA's), (6, 32032), (8, 31969), (10, 31915), (11, 31903),

Gene: Polymorphads\_48 Start: 32046, Stop: 31873, Start Num: 5

Candidate Starts for Polymorphads\_48:

(Start: 5 @32046 has 214 MA's), (6, 32025), (8, 31962), (10, 31908), (11, 31896),

Gene: PotatoSplit\_53 Start: 32493, Stop: 32305, Start Num: 5

Candidate Starts for PotatoSplit\_53:

(Start: 5 @32493 has 214 MA's), (7, 32457), (9, 32379),

Gene: Pumbaa\_47 Start: 31998, Stop: 31825, Start Num: 5

Candidate Starts for Pumbaa\_47:

(Start: 5 @31998 has 214 MA's), (6, 31977), (8, 31914), (10, 31860), (11, 31848),

Gene: PurpleHaze\_51 Start: 32388, Stop: 32200, Start Num: 5

Candidate Starts for PurpleHaze\_51:

(Start: 5 @32388 has 214 MA's), (7, 32352), (9, 32274),

Gene: Reba\_51 Start: 32048, Stop: 31860, Start Num: 5

Candidate Starts for Reba\_51:

(Start: 5 @32048 has 214 MA's), (7, 32012), (9, 31934),

Gene: Relief\_46 Start: 32050, Stop: 31877, Start Num: 5

Candidate Starts for Relief\_46:

(Start: 5 @32050 has 214 MA's), (6, 32029), (8, 31966), (10, 31912), (11, 31900),

Gene: Romney\_47 Start: 32050, Stop: 31877, Start Num: 5

Candidate Starts for Romney\_47:

(Start: 5 @32050 has 214 MA's), (6, 32029), (8, 31966), (10, 31912), (11, 31900),

Gene: Roosevelt\_46 Start: 32055, Stop: 31882, Start Num: 5

Candidate Starts for Roosevelt\_46:

(Start: 5 @32055 has 214 MA's), (6, 32034), (8, 31971), (10, 31917), (11, 31905),

Gene: Ruin\_47 Start: 32046, Stop: 31873, Start Num: 5  
Candidate Starts for Ruin\_47:  
(Start: 5 @32046 has 214 MA's), (6, 32025), (8, 31962), (10, 31908), (11, 31896),

Gene: Rummer\_50 Start: 32520, Stop: 32332, Start Num: 5  
Candidate Starts for Rummer\_50:  
(Start: 5 @32520 has 214 MA's), (7, 32484), (9, 32406),

Gene: Sabertooth\_47 Start: 32055, Stop: 31882, Start Num: 5  
Candidate Starts for Sabertooth\_47:  
(Start: 5 @32055 has 214 MA's), (6, 32034), (8, 31971), (10, 31917), (11, 31905),

Gene: Sabia\_51 Start: 32483, Stop: 32295, Start Num: 5  
Candidate Starts for Sabia\_51:  
(Start: 5 @32483 has 214 MA's), (7, 32447), (9, 32369),

Gene: Sabinator\_50 Start: 32488, Stop: 32300, Start Num: 5  
Candidate Starts for Sabinator\_50:  
(Start: 5 @32488 has 214 MA's), (7, 32452), (9, 32374),

Gene: Scamp\_47 Start: 32055, Stop: 31882, Start Num: 5  
Candidate Starts for Scamp\_47:  
(Start: 5 @32055 has 214 MA's), (6, 32034), (8, 31971), (10, 31917), (11, 31905),

Gene: Shaka\_47 Start: 32050, Stop: 31877, Start Num: 5  
Candidate Starts for Shaka\_47:  
(Start: 5 @32050 has 214 MA's), (6, 32029), (8, 31966), (10, 31912), (11, 31900),

Gene: SheldonCooper\_49 Start: 32476, Stop: 32303, Start Num: 5  
Candidate Starts for SheldonCooper\_49:  
(Start: 5 @32476 has 214 MA's), (8, 32392), (10, 32338), (11, 32326),

Gene: Shygu2\_46 Start: 32029, Stop: 31853, Start Num: 5  
Candidate Starts for Shygu2\_46:  
(1, 32326), (2, 32179), (Start: 5 @32029 has 214 MA's), (6, 32005), (8, 31942), (10, 31888), (11, 31876),

Gene: Skipitt\_46 Start: 32047, Stop: 31874, Start Num: 5  
Candidate Starts for Skipitt\_46:  
(4, 32059), (Start: 5 @32047 has 214 MA's), (6, 32026), (8, 31963), (10, 31909), (11, 31897),

Gene: Snickers\_51 Start: 32463, Stop: 32275, Start Num: 5  
Candidate Starts for Snickers\_51:  
(Start: 5 @32463 has 214 MA's), (7, 32427), (9, 32349),

Gene: SoYo\_51 Start: 32401, Stop: 32213, Start Num: 5  
Candidate Starts for SoYo\_51:  
(Start: 5 @32401 has 214 MA's), (7, 32365), (9, 32287),

Gene: SoilDragon\_51 Start: 31937, Stop: 31749, Start Num: 5  
Candidate Starts for SoilDragon\_51:  
(Start: 5 @31937 has 214 MA's), (7, 31901), (9, 31823),

Gene: Soshari\_53 Start: 32516, Stop: 32328, Start Num: 5

Candidate Starts for Soshari\_53:

(Start: 5 @32516 has 214 MA's), (7, 32480), (9, 32402),

Gene: Sparxx\_48 Start: 32048, Stop: 31875, Start Num: 5

Candidate Starts for Sparxx\_48:

(Start: 5 @32048 has 214 MA's), (6, 32027), (8, 31964), (10, 31910), (11, 31898),

Gene: Spike509\_51 Start: 32517, Stop: 32329, Start Num: 5

Candidate Starts for Spike509\_51:

(Start: 5 @32517 has 214 MA's), (7, 32481), (9, 32403),

Gene: Spino\_46 Start: 32053, Stop: 31880, Start Num: 5

Candidate Starts for Spino\_46:

(Start: 5 @32053 has 214 MA's), (6, 32032), (8, 31969), (10, 31915), (11, 31903),

Gene: Stagni\_51 Start: 32492, Stop: 32304, Start Num: 5

Candidate Starts for Stagni\_51:

(Start: 5 @32492 has 214 MA's), (7, 32456), (9, 32378),

Gene: Stasia\_46 Start: 31928, Stop: 31752, Start Num: 5

Candidate Starts for Stasia\_46:

(3, 32021), (Start: 5 @31928 has 214 MA's), (6, 31904), (8, 31841), (10, 31787), (11, 31775),

Gene: StepMih\_51 Start: 32483, Stop: 32295, Start Num: 5

Candidate Starts for StepMih\_51:

(Start: 5 @32483 has 214 MA's), (7, 32447), (9, 32369),

Gene: Stink\_47 Start: 32494, Stop: 32321, Start Num: 5

Candidate Starts for Stink\_47:

(Start: 5 @32494 has 214 MA's), (6, 32473), (10, 32356), (11, 32344),

Gene: Taquarus\_47 Start: 32056, Stop: 31883, Start Num: 5

Candidate Starts for Taquarus\_47:

(Start: 5 @32056 has 214 MA's), (6, 32035), (8, 31972), (10, 31918), (11, 31906), (12, 31897),

Gene: Taurus\_52 Start: 32489, Stop: 32301, Start Num: 5

Candidate Starts for Taurus\_52:

(Start: 5 @32489 has 214 MA's), (7, 32453), (9, 32375),

Gene: Thanksgivukkah\_46 Start: 32051, Stop: 31878, Start Num: 5

Candidate Starts for Thanksgivukkah\_46:

(Start: 5 @32051 has 214 MA's), (6, 32030), (8, 31967), (10, 31913), (11, 31901),

Gene: Tiffany\_51 Start: 32375, Stop: 32187, Start Num: 5

Candidate Starts for Tiffany\_51:

(Start: 5 @32375 has 214 MA's), (7, 32339), (9, 32261),

Gene: TinaFeyge\_47 Start: 32048, Stop: 31875, Start Num: 5

Candidate Starts for TinaFeyge\_47:

(Start: 5 @32048 has 214 MA's), (6, 32027), (8, 31964), (10, 31910), (11, 31898),

Gene: Tinybot\_46 Start: 32080, Stop: 31907, Start Num: 5

Candidate Starts for Tinybot\_46:

(Start: 5 @32080 has 214 MA's), (6, 32059), (8, 31996), (10, 31942), (11, 31930),

Gene: TiroTheta9\_47 Start: 32047, Stop: 31874, Start Num: 5

Candidate Starts for TiroTheta9\_47:

(Start: 5 @32047 has 214 MA's), (6, 32026), (8, 31963), (10, 31909), (11, 31897),

Gene: TroyPia\_48 Start: 32051, Stop: 31878, Start Num: 5

Candidate Starts for TroyPia\_48:

(Start: 5 @32051 has 214 MA's), (6, 32030), (8, 31967), (10, 31913), (11, 31901),

Gene: TygerBlood\_47 Start: 32053, Stop: 31880, Start Num: 5

Candidate Starts for TygerBlood\_47:

(Start: 5 @32053 has 214 MA's), (6, 32032), (8, 31969), (10, 31915), (11, 31903),

Gene: Ulysses\_46 Start: 31730, Stop: 31557, Start Num: 5

Candidate Starts for Ulysses\_46:

(Start: 5 @31730 has 214 MA's), (6, 31709), (8, 31646), (10, 31592), (11, 31580),

Gene: Vix\_51 Start: 32572, Stop: 32384, Start Num: 5

Candidate Starts for Vix\_51:

(Start: 5 @32572 has 214 MA's), (7, 32536), (9, 32458),

Gene: Wander\_47 Start: 32050, Stop: 31877, Start Num: 5

Candidate Starts for Wander\_47:

(Start: 5 @32050 has 214 MA's), (6, 32029), (8, 31966), (10, 31912), (11, 31900),

Gene: Watson\_51 Start: 32481, Stop: 32293, Start Num: 5

Candidate Starts for Watson\_51:

(Start: 5 @32481 has 214 MA's), (7, 32445), (9, 32367),

Gene: Wilbur\_47 Start: 32050, Stop: 31877, Start Num: 5

Candidate Starts for Wilbur\_47:

(Start: 5 @32050 has 214 MA's), (6, 32029), (8, 31966), (10, 31912), (11, 31900),

Gene: Wile\_46 Start: 32060, Stop: 31884, Start Num: 5

Candidate Starts for Wile\_46:

(Start: 5 @32060 has 214 MA's), (8, 31973), (10, 31919), (11, 31907),

Gene: Wizard007\_47 Start: 32058, Stop: 31885, Start Num: 5

Candidate Starts for Wizard007\_47:

(Start: 5 @32058 has 214 MA's), (6, 32037), (8, 31974), (10, 31920), (11, 31908),

Gene: Wooldri\_53 Start: 32401, Stop: 32213, Start Num: 5

Candidate Starts for Wooldri\_53:

(Start: 5 @32401 has 214 MA's), (7, 32365), (9, 32287),

Gene: Xena\_45 Start: 32026, Stop: 31850, Start Num: 5

Candidate Starts for Xena\_45:

(Start: 5 @32026 has 214 MA's), (8, 31939), (10, 31885), (11, 31873),

Gene: YoSam321\_47 Start: 32047, Stop: 31874, Start Num: 5

Candidate Starts for YoSam321\_47:

(Start: 5 @32047 has 214 MA's), (6, 32026), (8, 31963), (10, 31909), (11, 31897),

Gene: Zetzy\_50 Start: 32052, Stop: 31864, Start Num: 5

Candidate Starts for Zetzy\_50:

(Start: 5 @32052 has 214 MA's), (7, 32016), (9, 31938),