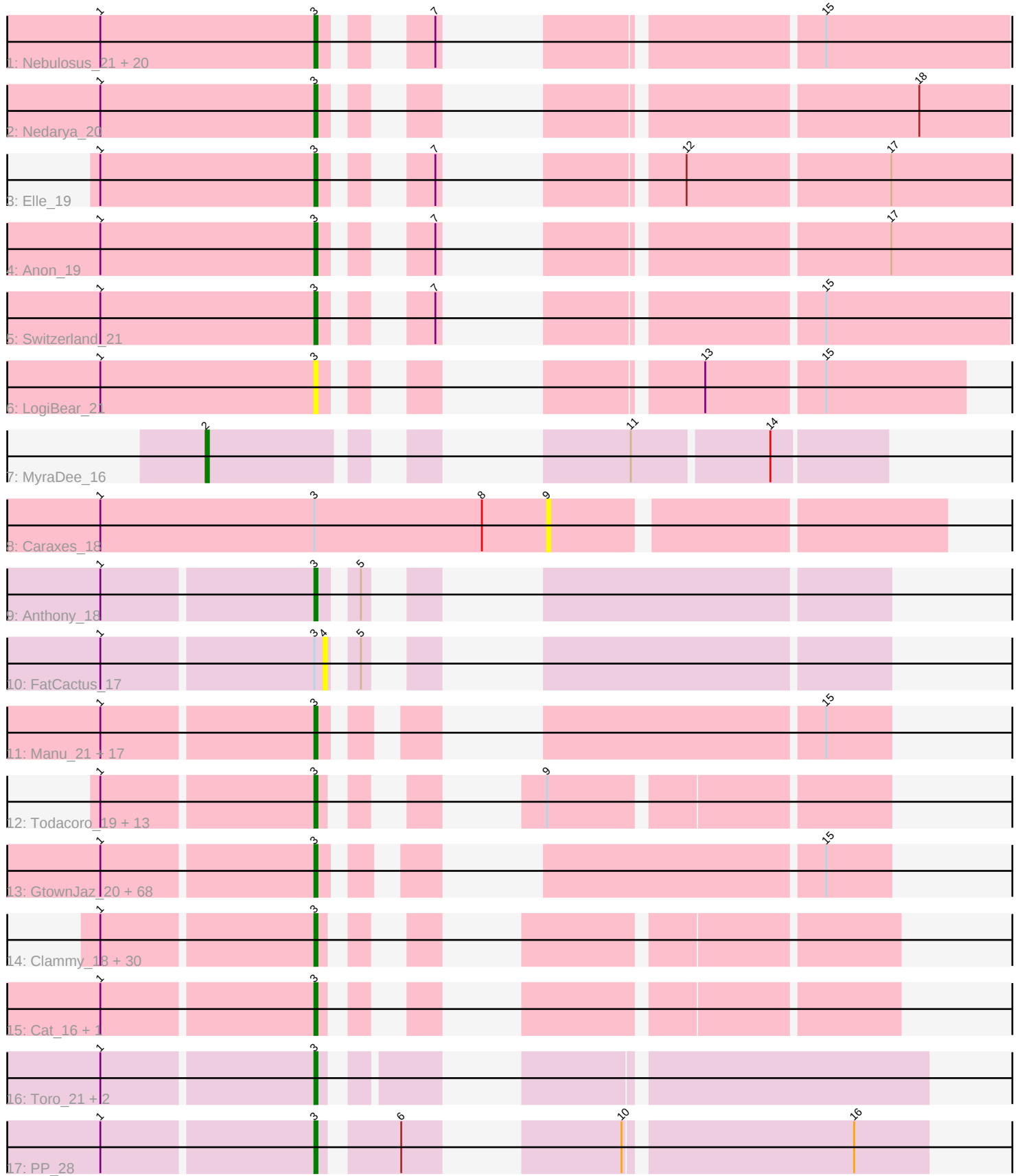


# Pham 330541



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 330541 Report

This analysis was run 09/05/26 on database version 662.

Pham number 330541 has 168 members, 22 are drafts.

Phages represented in each track:

- Track 1 : Nebulosus\_21, Epsocamisio\_21, Remus\_21, KatherineG\_21, Ravana\_21, MinecraftSteve\_22, DekHockey33\_21, Looper\_22, Battleship\_22, ReMo\_21, LastResort\_21, Anaysia\_21, Oofda\_21, JSwag\_21, Waits\_21, Boohoo\_21, ShayRa\_22, Strosahl\_21, Warrior24\_21, Rosalind\_21, Soups\_21
- Track 2 : Nedarya\_20
- Track 3 : Elle\_19
- Track 4 : Anon\_19
- Track 5 : Switzerland\_21
- Track 6 : LogiBear\_21
- Track 7 : MyraDee\_16
- Track 8 : Caraxes\_18
- Track 9 : Anthony\_18
- Track 10 : FatCactus\_17
- Track 11 : Manu\_21, Phranny\_21, Calvinny\_20, PhishRPhriends\_19, PurpleHaze\_20, ClownCar\_20, Kalb97\_21, JeppNRM\_21, HaveUMetTed\_21, ACFishhook\_20, Kalnoky\_21, OlanP\_20, Heliosoles\_20, Gemma\_20, Marius\_21, Pawn\_20, Reba\_21, Groupthink\_21
- Track 12 : Todacoro\_19, Norbert\_18, Popcicle\_19, Veracruz\_18, Hookmount\_19, Noella\_19, ResDef\_19, EtoileNova\_19, Lambert1\_19, Margo\_19, QuinnKiro\_18, Texage\_18, Caviar\_19, Pocahontas\_19
- Track 13 : GtownJaz\_20, MoneyMay\_20, Grif\_20, BuzzBuzz\_19, Tiffany\_20, Marie\_20, HashRod\_21, Anubis\_22, Colbster\_20, DaHudson\_20, SoYo\_20, Sabinator\_20, Bxz2\_19, Beauxregard13\_20, LugYA\_22, Penny1\_20, Gwennie\_20, JHC117\_20, EpicPhail\_20, Louie6\_20, KADY\_21, JenCasNa\_20, Misomonster\_22, LarryKay\_20, Iowa\_20, Montavir\_19, Mainiac\_20, Snickers\_20, Farber\_20, Croquant\_21, Daishi\_19, Pembroke\_20, Ollie\_20, PotatoSplit\_21, Cullens\_20, SoilDragon\_20, Aglet\_20, Phoxy\_20, Malinsilva\_22, Wooldri\_22, PGHhamlin\_22, MarQuardt\_20, Watson\_20, Spike509\_20, AugsMagnumOpus\_22, Microwolf\_20, Fernando\_20, Hercules11\_20, P28Green\_20, Grum1\_20, Sabia\_20, Jobu08\_20, Bigflo\_20, Lilith\_20, AgronaGT15\_20, Zetzy\_19, Grub\_20, Vix\_20, GingkoMaracino\_20, Phoebe\_20, Taurus\_20, Dieselweasel\_20, LBerry\_20, Rummer\_20, TinyPebbles\_20, MadMarie\_20, Stagni\_20, MuchMore\_22, BreSam8\_20
- Track 14 : Clammy\_18, Goose1D\_18, Chiqui\_17, TNguyen7\_18, Shep\_18, Marchesa\_18, B1\_16, HelDan\_18, Rockstar\_18, Pistachio\_19, Heathen\_18, Puppy\_19, BlueBird\_19, Idleandcovert\_18, MA5\_18, BabyJohn\_17, JF2\_18, Isca\_18, Zarafa\_18, Phantastic\_18, JF4\_18, Scout\_18, Kachowdy\_18, Goose1X\_18,

Roimos\_18, Giroux\_19, Fred313\_18, Bugatti\_18, SaturnRing\_18, MK4\_18, DropBear\_18

- Track 15 : Cat\_16, BabyRay\_18
- Track 16 : Toro\_21, Sheen\_20, FlyCatcher\_22
- Track 17 : PP\_28

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

The start number called the most often in the published annotations is 3, it was called in 145 of the 146 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ACFishhook\_20, Aglet\_20, AgronaGT15\_20, Anaysia\_21, Anon\_19, Anthony\_18, Anubis\_22, AugsMagnumOpus\_22, B1\_16, BabyJohn\_17, BabyRay\_18, Battleship\_22, Beauxregard13\_20, Bigflo\_20, BlueBird\_19, Boohoo\_21, BreSam8\_20, Bugatti\_18, BuzzBuzz\_19, Bxz2\_191, Calvinny\_20, Cat\_16, Caviar\_19, Chiqui\_17, Clammy\_18, ClownCar\_20, Colbster\_20, Croquant\_21, Cullens\_20, DaHudson\_20, Daishi\_19, DekHockey33\_21, Dieselweasel\_20, DropBear\_18, Elle\_19, EpicPhail\_20, Epsocamisio\_21, EtoileNova\_19, Farber\_20, Fernando\_20, FlyCatcher\_22, Fred313\_18, Gemma\_20, GingkoMaracino\_20, Giroux\_19, Goose1D\_18, Goose1X\_18, Grif\_20, Groupthink\_21, Grub\_20, Grum1\_20, GtownJaz\_20, Gwennie\_20, HashRod\_21, HaveUMetTed\_21, Heathen\_18, HelDan\_18, Heliosoles\_20, Hercules11\_20, Hookmount\_19, Idleandcovert\_18, Isca\_18, JF2\_18, JF4\_18, JHC117\_20, JSwag\_21, JenCasNa\_20, JeppNRM\_21, Jobu08\_20, KADY\_21, Kachowdy\_18, Kalb97\_21, Kalnoky\_21, KatherineG\_21, LBerry\_20, Lambert1\_19, LarryKay\_20, LastResort\_21, Lilith\_20, LogiBear\_21, Looper\_22, Louie6\_20, Lowa\_20, LugYA\_22, MA5\_18, MK4\_18, MadMarie\_20, Mainiac\_20, Malinsilva\_22, Manu\_21, MarQuardt\_20, Marchesa\_18, Margo\_19, Marie\_20, Marius\_21, Microwolf\_20, MinecraftSteve\_22, Misomonster\_22, MoneyMay\_20, Montavir\_19, MuchMore\_22, Nebulosus\_21, Nedarya\_20, Noella\_19, Norbert\_18, OlanP\_20, Ollie\_20, Oofda\_21, P28Green\_20, PGHhamlin\_22, PP\_28, Pawn\_20, Pembroke\_20, Penny1\_20, Phantastic\_18, PhishRPhriends\_19, Phoebe\_20, Phoxy\_20, Phranny\_21, Pistachio\_19, Pocahontas\_19, Popcicle\_19, PotatoSplit\_21, Puppy\_19, PurpleHaze\_20, QuinnKiro\_18, Ravana\_21, ReMo\_21, Reba\_21, Remus\_21, ResDef\_19, Rockstar\_18, Roimos\_18, Rosalind\_21, Rummer\_20, Sabia\_20, Sabinator\_20, SaturnRing\_18, Scout\_18, ShayRa\_22, Sheen\_20, Shep\_18, Snickers\_20, SoYo\_20, SoilDragon\_20, Soups\_21, Spike509\_20, Stagni\_20, Strosahl\_21, Switzerland\_21, TNguyen7\_18, Taurus\_20, Texage\_18, Tiffany\_20, TinyPebbles\_20, Todacoro\_19, Toro\_21, Veracruz\_18, Vix\_20, Waits\_21, Warrior24\_21, Watson\_20, Wooldri\_22, Zarafa\_18, Zetzy\_19,

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

- Caraxes\_18, FatCactus\_17,

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

- MyraDee\_16,

### **Summary by start number:**

Start 2:

- Found in 1 of 168 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 146
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MyraDee\_16 (A18),

#### Start 3:

- Found in 167 of 168 ( 99.4% ) of genes in pham
- Manual Annotations of this start: 145 of 146
- Called 98.8% of time when present
- Phage (with cluster) where this start called: ACFishhook\_20 (A3), Aglet\_20 (A3), AgronaGT15\_20 (A3), Anaysia\_21 (A15), Anon\_19 (A15), Anthony\_18 (A20), Anubis\_22 (A3), AugsMagnumOpus\_22 (A3), B1\_16 (A3), BabyJohn\_17 (A3), BabyRay\_18 (A3), Battleship\_22 (A15), Beauxregard13\_20 (A3), Bigflo\_20 (A3), BlueBird\_19 (A3), Boohoo\_21 (A15), BreSam8\_20 (A3), Bugatti\_18 (A3), BuzzBuzz\_19 (A3), Bxz2\_191 (A3), Calvinny\_20 (A3), Cat\_16 (A3), Caviar\_19 (A3), Chiqui\_17 (A3), Clammy\_18 (A3), ClownCar\_20 (A3), Colbster\_20 (A3), Croquant\_21 (A3), Cullens\_20 (A3), DaHudson\_20 (A3), Daishi\_19 (A3), DeKHockey33\_21 (A15), Dieselweasel\_20 (A3), DropBear\_18 (A3), Elle\_19 (A15), EpicPhail\_20 (A3), Epsocamisio\_21 (A15), EtoileNova\_19 (A3), Farber\_20 (A3), Fernando\_20 (A3), FlyCatcher\_22 (A7), Fred313\_18 (A3), Gemma\_20 (A3), GinkgoMaracino\_20 (A3), Giroux\_19 (A3), Goose1D\_18 (A3), Goose1X\_18 (A3), Grif\_20 (A3), Groupthink\_21 (A3), Grub\_20 (A3), Grum1\_20 (A3), GtownJaz\_20 (A3), Gwennie\_20 (A3), HashRod\_21 (A3), HaveUMetTed\_21 (A3), Heathen\_18 (A3), HelDan\_18 (A3), Heliosoles\_20 (A3), Hercules11\_20 (A3), Hookmount\_19 (A3), Idleandcovert\_18 (A3), Isca\_18 (A3), JF2\_18 (A3), JF4\_18 (A3), JHC117\_20 (A3), JSwag\_21 (A15), JenCasNa\_20 (A3), JeppNRM\_21 (A3), Jobu08\_20 (A3), KADY\_21 (A3), Kachowdy\_18 (A3), Kalb97\_21 (A3), Kalnoky\_21 (A3), KatherineG\_21 (A15), LBerry\_20 (A3), Lambert1\_19 (A3), LarryKay\_20 (A3), LastResort\_21 (A15), Lilith\_20 (A3), LogiBear\_21 (A15), Looper\_22 (A15), Louie6\_20 (A3), Iowa\_20 (A3), LugYA\_22 (A3), MA5\_18 (A3), MK4\_18 (A3), MadMarie\_20 (A3), Mainiac\_20 (A3), Malinsilva\_22 (A3), Manu\_21 (A3), MarQuardt\_20 (A3), Marchesa\_18 (A3), Margo\_19 (A3), Marie\_20 (A3), Marius\_21 (A3), Microwolf\_20 (A3), MinecraftSteve\_22 (A15), Misomonster\_22 (A3), MoneyMay\_20 (A3), Montavir\_19 (A3), MuchMore\_22 (A3), Nebulosus\_21 (A15), Nedarya\_20 (A15), Noella\_19 (A3), Norbert\_18 (A3), OlanP\_20 (A3), Ollie\_20 (A3), Oofda\_21 (A15), P28Green\_20 (A3), PGHhamlin\_22 (A3), PP\_28 (A7), Pawn\_20 (A3), Pembroke\_20 (A3), Penny1\_20 (A3), Phantastic\_18 (A3), PhishRPhriends\_19 (A3), Phoebe\_20 (A3), Phoxy\_20 (A3), Phranny\_21 (A3), Pistachio\_19 (A3), Pocahontas\_19 (A3), Popcicle\_19 (A3), PotatoSplit\_21 (A3), Puppy\_19 (A3), PurpleHaze\_20 (A3), QuinnKiro\_18 (A3), Ravana\_21 (A15), ReMo\_21 (A15), Reba\_21 (A3), Remus\_21 (A15), ResDef\_19 (A3), Rockstar\_18 (A3), Roimos\_18 (A3), Rosalind\_21 (A15), Rummer\_20 (A3), Sabia\_20 (A3), Sabinator\_20 (A3), SaturnRing\_18 (A3), Scout\_18 (A3), ShayRa\_22 (A15), Sheen\_20 (A7), Shep\_18 (A3), Snickers\_20 (A3), SoYo\_20 (A3), SoilDragon\_20 (A3), Soups\_21 (A15), Spike509\_20 (A3), Stagni\_20 (A3), Strosahl\_21 (A15), Switzerland\_21 (A15), TNguyen7\_18 (A3), Taurus\_20 (A3), Texage\_18 (A3), Tiffany\_20 (A3), TinyPebbles\_20 (A3), Todacoro\_19 (A3), Toro\_21 (A7), Veracruz\_18 (A3), Vix\_20 (A3), Waits\_21 (A15), Warrior24\_21 (A15), Watson\_20 (A3), Wooldri\_22 (A3), Zarafa\_18 (A3), Zetzy\_19 (A3),

#### Start 4:

- Found in 1 of 168 ( 0.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present

- Phage (with cluster) where this start called: FatCactus\_17 (A20),

Start 9:

- Found in 15 of 168 ( 8.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 6.7% of time when present
- Phage (with cluster) where this start called: Caraxes\_18 (A2),

### **Summary by clusters:**

There are 6 clusters represented in this pham: A15, A20, A18, A3, A2, A7,

Info for manual annotations of cluster A15:

- Start number 3 was manually annotated 25 times for cluster A15.

Info for manual annotations of cluster A18:

- Start number 2 was manually annotated 1 time for cluster A18.

Info for manual annotations of cluster A20:

- Start number 3 was manually annotated 1 time for cluster A20.

Info for manual annotations of cluster A3:

- Start number 3 was manually annotated 117 times for cluster A3.

Info for manual annotations of cluster A7:

- Start number 3 was manually annotated 2 times for cluster A7.

### **Gene Information:**

Gene: ACFishhook\_20 Start: 13319, Stop: 13453, Start Num: 3

Candidate Starts for ACFishhook\_20:

(1, 13253), (Start: 3 @13319 has 145 MA's), (15, 13433),

Gene: Aglet\_20 Start: 13165, Stop: 13299, Start Num: 3

Candidate Starts for Aglet\_20:

(1, 13099), (Start: 3 @13165 has 145 MA's), (15, 13279),

Gene: AgronaGT15\_20 Start: 13072, Stop: 13206, Start Num: 3

Candidate Starts for AgronaGT15\_20:

(1, 13006), (Start: 3 @13072 has 145 MA's), (15, 13186),

Gene: Anaysia\_21 Start: 12864, Stop: 13061, Start Num: 3

Candidate Starts for Anaysia\_21:

(1, 12795), (Start: 3 @12864 has 145 MA's), (7, 12885), (15, 12969),

Gene: Anon\_19 Start: 13210, Stop: 13380, Start Num: 3

Candidate Starts for Anon\_19:

(1, 13141), (Start: 3 @13210 has 145 MA's), (7, 13231), (17, 13336),

Gene: Anthony\_18 Start: 11969, Stop: 12100, Start Num: 3

Candidate Starts for Anthony\_18:

(1, 11903), (Start: 3 @11969 has 145 MA's), (5, 11978),

Gene: Anubis\_22 Start: 13050, Stop: 13184, Start Num: 3

Candidate Starts for Anubis\_22:

(1, 12984), (Start: 3 @13050 has 145 MA's), (15, 13164),

Gene: AugsMagnumOpus\_22 Start: 13156, Stop: 13290, Start Num: 3

Candidate Starts for AugsMagnumOpus\_22:

(1, 13090), (Start: 3 @13156 has 145 MA's), (15, 13270),

Gene: B1\_16 Start: 12367, Stop: 12501, Start Num: 3

Candidate Starts for B1\_16:

(1, 12301), (Start: 3 @12367 has 145 MA's),

Gene: BabyJohn\_17 Start: 12951, Stop: 13088, Start Num: 3

Candidate Starts for BabyJohn\_17:

(1, 12885), (Start: 3 @12951 has 145 MA's),

Gene: BabyRay\_18 Start: 12940, Stop: 13074, Start Num: 3

Candidate Starts for BabyRay\_18:

(1, 12874), (Start: 3 @12940 has 145 MA's),

Gene: Battleship\_22 Start: 12979, Stop: 13176, Start Num: 3

Candidate Starts for Battleship\_22:

(1, 12910), (Start: 3 @12979 has 145 MA's), (7, 13000), (15, 13084),

Gene: Beauxregard13\_20 Start: 13164, Stop: 13298, Start Num: 3

Candidate Starts for Beauxregard13\_20:

(1, 13098), (Start: 3 @13164 has 145 MA's), (15, 13278),

Gene: Bigflo\_20 Start: 13162, Stop: 13296, Start Num: 3

Candidate Starts for Bigflo\_20:

(1, 13096), (Start: 3 @13162 has 145 MA's), (15, 13276),

Gene: BlueBird\_19 Start: 12714, Stop: 12848, Start Num: 3

Candidate Starts for BlueBird\_19:

(1, 12648), (Start: 3 @12714 has 145 MA's),

Gene: Boohoo\_21 Start: 12864, Stop: 13061, Start Num: 3

Candidate Starts for Boohoo\_21:

(1, 12795), (Start: 3 @12864 has 145 MA's), (7, 12885), (15, 12969),

Gene: BreSam8\_20 Start: 13157, Stop: 13291, Start Num: 3

Candidate Starts for BreSam8\_20:

(1, 13091), (Start: 3 @13157 has 145 MA's), (15, 13271),

Gene: Bugatti\_18 Start: 12714, Stop: 12848, Start Num: 3

Candidate Starts for Bugatti\_18:

(1, 12648), (Start: 3 @12714 has 145 MA's),

Gene: BuzzBuzz\_19 Start: 13248, Stop: 13382, Start Num: 3

Candidate Starts for BuzzBuzz\_19:

(1, 13182), (Start: 3 @13248 has 145 MA's), (15, 13362),

Gene: Bxz2\_191 Start: 13258, Stop: 13392, Start Num: 3

Candidate Starts for Bxz2\_191:

(1, 13192), (Start: 3 @13258 has 145 MA's), (15, 13372),

Gene: Calvinny\_20 Start: 13238, Stop: 13372, Start Num: 3

Candidate Starts for Calvinny\_20:

(1, 13172), (Start: 3 @13238 has 145 MA's), (15, 13352),

Gene: Caraxes\_18 Start: 12468, Stop: 12587, Start Num: 9

Candidate Starts for Caraxes\_18:

(1, 12324), (Start: 3 @12393 has 145 MA's), (8, 12447), (9, 12468),

Gene: Cat\_16 Start: 12559, Stop: 12693, Start Num: 3

Candidate Starts for Cat\_16:

(1, 12493), (Start: 3 @12559 has 145 MA's),

Gene: Caviar\_19 Start: 13255, Stop: 13386, Start Num: 3

Candidate Starts for Caviar\_19:

(1, 13189), (Start: 3 @13255 has 145 MA's), (9, 13285),

Gene: Chiqui\_17 Start: 12951, Stop: 13088, Start Num: 3

Candidate Starts for Chiqui\_17:

(1, 12885), (Start: 3 @12951 has 145 MA's),

Gene: Clammy\_18 Start: 12714, Stop: 12848, Start Num: 3

Candidate Starts for Clammy\_18:

(1, 12648), (Start: 3 @12714 has 145 MA's),

Gene: ClownCar\_20 Start: 13230, Stop: 13364, Start Num: 3

Candidate Starts for ClownCar\_20:

(1, 13164), (Start: 3 @13230 has 145 MA's), (15, 13344),

Gene: Colbster\_20 Start: 13164, Stop: 13298, Start Num: 3

Candidate Starts for Colbster\_20:

(1, 13098), (Start: 3 @13164 has 145 MA's), (15, 13278),

Gene: Croquant\_21 Start: 13162, Stop: 13296, Start Num: 3

Candidate Starts for Croquant\_21:

(1, 13096), (Start: 3 @13162 has 145 MA's), (15, 13276),

Gene: Cullens\_20 Start: 13162, Stop: 13296, Start Num: 3

Candidate Starts for Cullens\_20:

(1, 13096), (Start: 3 @13162 has 145 MA's), (15, 13276),

Gene: DaHudson\_20 Start: 13156, Stop: 13290, Start Num: 3

Candidate Starts for DaHudson\_20:

(1, 13090), (Start: 3 @13156 has 145 MA's), (15, 13270),

Gene: Daishi\_19 Start: 12089, Stop: 12223, Start Num: 3

Candidate Starts for Daishi\_19:

(1, 12023), (Start: 3 @12089 has 145 MA's), (15, 12203),

Gene: DekHockey33\_21 Start: 12986, Stop: 13183, Start Num: 3  
Candidate Starts for DekHockey33\_21:  
(1, 12917), (Start: 3 @12986 has 145 MA's), (7, 13007), (15, 13091),

Gene: Dieselweasel\_20 Start: 13165, Stop: 13299, Start Num: 3  
Candidate Starts for Dieselweasel\_20:  
(1, 13099), (Start: 3 @13165 has 145 MA's), (15, 13279),

Gene: DropBear\_18 Start: 12774, Stop: 12908, Start Num: 3  
Candidate Starts for DropBear\_18:  
(1, 12708), (Start: 3 @12774 has 145 MA's),

Gene: Elle\_19 Start: 12578, Stop: 12748, Start Num: 3  
Candidate Starts for Elle\_19:  
(1, 12509), (Start: 3 @12578 has 145 MA's), (7, 12599), (12, 12641), (17, 12704),

Gene: EpicPhail\_20 Start: 13164, Stop: 13298, Start Num: 3  
Candidate Starts for EpicPhail\_20:  
(1, 13098), (Start: 3 @13164 has 145 MA's), (15, 13278),

Gene: Epsocamisio\_21 Start: 12864, Stop: 13061, Start Num: 3  
Candidate Starts for Epsocamisio\_21:  
(1, 12795), (Start: 3 @12864 has 145 MA's), (7, 12885), (15, 12969),

Gene: EtoileNova\_19 Start: 13258, Stop: 13389, Start Num: 3  
Candidate Starts for EtoileNova\_19:  
(1, 13192), (Start: 3 @13258 has 145 MA's), (9, 13288),

Gene: Farber\_20 Start: 13157, Stop: 13291, Start Num: 3  
Candidate Starts for Farber\_20:  
(1, 13091), (Start: 3 @13157 has 145 MA's), (15, 13271),

Gene: FatCactus\_17 Start: 11903, Stop: 12031, Start Num: 4  
Candidate Starts for FatCactus\_17:  
(1, 11834), (Start: 3 @11900 has 145 MA's), (4, 11903), (5, 11909),

Gene: Fernando\_20 Start: 13162, Stop: 13296, Start Num: 3  
Candidate Starts for Fernando\_20:  
(1, 13096), (Start: 3 @13162 has 145 MA's), (15, 13276),

Gene: FlyCatcher\_22 Start: 14707, Stop: 14862, Start Num: 3  
Candidate Starts for FlyCatcher\_22:  
(1, 14641), (Start: 3 @14707 has 145 MA's),

Gene: Fred313\_18 Start: 12432, Stop: 12566, Start Num: 3  
Candidate Starts for Fred313\_18:  
(1, 12366), (Start: 3 @12432 has 145 MA's),

Gene: Gemma\_20 Start: 13238, Stop: 13372, Start Num: 3  
Candidate Starts for Gemma\_20:  
(1, 13172), (Start: 3 @13238 has 145 MA's), (15, 13352),

Gene: GingkoMaracino\_20 Start: 13050, Stop: 13184, Start Num: 3  
Candidate Starts for GingkoMaracino\_20:  
(1, 12984), (Start: 3 @13050 has 145 MA's), (15, 13164),

Gene: Giroux\_19 Start: 12714, Stop: 12848, Start Num: 3  
Candidate Starts for Giroux\_19:  
(1, 12648), (Start: 3 @12714 has 145 MA's),

Gene: Goose1D\_18 Start: 11969, Stop: 12103, Start Num: 3  
Candidate Starts for Goose1D\_18:  
(1, 11903), (Start: 3 @11969 has 145 MA's),

Gene: Goose1X\_18 Start: 12041, Stop: 12175, Start Num: 3  
Candidate Starts for Goose1X\_18:  
(1, 11975), (Start: 3 @12041 has 145 MA's),

Gene: Grif\_20 Start: 13247, Stop: 13381, Start Num: 3  
Candidate Starts for Grif\_20:  
(1, 13181), (Start: 3 @13247 has 145 MA's), (15, 13361),

Gene: Groupthink\_21 Start: 13238, Stop: 13372, Start Num: 3  
Candidate Starts for Groupthink\_21:  
(1, 13172), (Start: 3 @13238 has 145 MA's), (15, 13352),

Gene: Grub\_20 Start: 13156, Stop: 13290, Start Num: 3  
Candidate Starts for Grub\_20:  
(1, 13090), (Start: 3 @13156 has 145 MA's), (15, 13270),

Gene: Grum1\_20 Start: 13157, Stop: 13291, Start Num: 3  
Candidate Starts for Grum1\_20:  
(1, 13091), (Start: 3 @13157 has 145 MA's), (15, 13271),

Gene: GtownJaz\_20 Start: 13165, Stop: 13299, Start Num: 3  
Candidate Starts for GtownJaz\_20:  
(1, 13099), (Start: 3 @13165 has 145 MA's), (15, 13279),

Gene: Gwennie\_20 Start: 13164, Stop: 13298, Start Num: 3  
Candidate Starts for Gwennie\_20:  
(1, 13098), (Start: 3 @13164 has 145 MA's), (15, 13278),

Gene: HashRod\_21 Start: 13248, Stop: 13382, Start Num: 3  
Candidate Starts for HashRod\_21:  
(1, 13182), (Start: 3 @13248 has 145 MA's), (15, 13362),

Gene: HaveUMetTed\_21 Start: 13232, Stop: 13366, Start Num: 3  
Candidate Starts for HaveUMetTed\_21:  
(1, 13166), (Start: 3 @13232 has 145 MA's), (15, 13346),

Gene: Heathen\_18 Start: 12515, Stop: 12649, Start Num: 3  
Candidate Starts for Heathen\_18:  
(1, 12449), (Start: 3 @12515 has 145 MA's),

Gene: HelDan\_18 Start: 12767, Stop: 12901, Start Num: 3

Candidate Starts for HelDan\_18:

(1, 12701), (Start: 3 @12767 has 145 MA's),

Gene: Heliosoles\_20 Start: 13238, Stop: 13372, Start Num: 3

Candidate Starts for Heliosoles\_20:

(1, 13172), (Start: 3 @13238 has 145 MA's), (15, 13352),

Gene: Hercules11\_20 Start: 13171, Stop: 13305, Start Num: 3

Candidate Starts for Hercules11\_20:

(1, 13105), (Start: 3 @13171 has 145 MA's), (15, 13285),

Gene: Hookmount\_19 Start: 13255, Stop: 13386, Start Num: 3

Candidate Starts for Hookmount\_19:

(1, 13189), (Start: 3 @13255 has 145 MA's), (9, 13285),

Gene: Idleandcovert\_18 Start: 12714, Stop: 12848, Start Num: 3

Candidate Starts for Idleandcovert\_18:

(1, 12648), (Start: 3 @12714 has 145 MA's),

Gene: Isca\_18 Start: 12602, Stop: 12736, Start Num: 3

Candidate Starts for Isca\_18:

(1, 12536), (Start: 3 @12602 has 145 MA's),

Gene: JF2\_18 Start: 12367, Stop: 12501, Start Num: 3

Candidate Starts for JF2\_18:

(1, 12301), (Start: 3 @12367 has 145 MA's),

Gene: JF4\_18 Start: 12367, Stop: 12501, Start Num: 3

Candidate Starts for JF4\_18:

(1, 12301), (Start: 3 @12367 has 145 MA's),

Gene: JHC117\_20 Start: 13162, Stop: 13296, Start Num: 3

Candidate Starts for JHC117\_20:

(1, 13096), (Start: 3 @13162 has 145 MA's), (15, 13276),

Gene: JSwag\_21 Start: 12850, Stop: 13047, Start Num: 3

Candidate Starts for JSwag\_21:

(1, 12781), (Start: 3 @12850 has 145 MA's), (7, 12871), (15, 12955),

Gene: JenCasNa\_20 Start: 13162, Stop: 13296, Start Num: 3

Candidate Starts for JenCasNa\_20:

(1, 13096), (Start: 3 @13162 has 145 MA's), (15, 13276),

Gene: JeppNRM\_21 Start: 13236, Stop: 13370, Start Num: 3

Candidate Starts for JeppNRM\_21:

(1, 13170), (Start: 3 @13236 has 145 MA's), (15, 13350),

Gene: Jobu08\_20 Start: 13231, Stop: 13365, Start Num: 3

Candidate Starts for Jobu08\_20:

(1, 13165), (Start: 3 @13231 has 145 MA's), (15, 13345),

Gene: KADY\_21 Start: 13248, Stop: 13382, Start Num: 3

Candidate Starts for KADY\_21:

(1, 13182), (Start: 3 @13248 has 145 MA's), (15, 13362),

Gene: Kachowdy\_18 Start: 12767, Stop: 12901, Start Num: 3

Candidate Starts for Kachowdy\_18:

(1, 12701), (Start: 3 @12767 has 145 MA's),

Gene: Kalb97\_21 Start: 13236, Stop: 13370, Start Num: 3

Candidate Starts for Kalb97\_21:

(1, 13170), (Start: 3 @13236 has 145 MA's), (15, 13350),

Gene: Kalnoky\_21 Start: 13238, Stop: 13372, Start Num: 3

Candidate Starts for Kalnoky\_21:

(1, 13172), (Start: 3 @13238 has 145 MA's), (15, 13352),

Gene: KatherineG\_21 Start: 12986, Stop: 13183, Start Num: 3

Candidate Starts for KatherineG\_21:

(1, 12917), (Start: 3 @12986 has 145 MA's), (7, 13007), (15, 13091),

Gene: LBerry\_20 Start: 13164, Stop: 13298, Start Num: 3

Candidate Starts for LBerry\_20:

(1, 13098), (Start: 3 @13164 has 145 MA's), (15, 13278),

Gene: Lambert1\_19 Start: 13255, Stop: 13386, Start Num: 3

Candidate Starts for Lambert1\_19:

(1, 13189), (Start: 3 @13255 has 145 MA's), (9, 13285),

Gene: LarryKay\_20 Start: 13250, Stop: 13384, Start Num: 3

Candidate Starts for LarryKay\_20:

(1, 13184), (Start: 3 @13250 has 145 MA's), (15, 13364),

Gene: LastResort\_21 Start: 12864, Stop: 13061, Start Num: 3

Candidate Starts for LastResort\_21:

(1, 12795), (Start: 3 @12864 has 145 MA's), (7, 12885), (15, 12969),

Gene: Lilith\_20 Start: 13157, Stop: 13291, Start Num: 3

Candidate Starts for Lilith\_20:

(1, 13091), (Start: 3 @13157 has 145 MA's), (15, 13271),

Gene: LogiBear\_21 Start: 13629, Stop: 13778, Start Num: 3

Candidate Starts for LogiBear\_21:

(1, 13560), (Start: 3 @13629 has 145 MA's), (13, 13698), (15, 13734),

Gene: Looper\_22 Start: 12864, Stop: 13061, Start Num: 3

Candidate Starts for Looper\_22:

(1, 12795), (Start: 3 @12864 has 145 MA's), (7, 12885), (15, 12969),

Gene: Louie6\_20 Start: 13251, Stop: 13385, Start Num: 3

Candidate Starts for Louie6\_20:

(1, 13185), (Start: 3 @13251 has 145 MA's), (15, 13365),

Gene: Lowa\_20 Start: 13156, Stop: 13290, Start Num: 3

Candidate Starts for Lowa\_20:

(1, 13090), (Start: 3 @13156 has 145 MA's), (15, 13270),

Gene: LugYA\_22 Start: 13162, Stop: 13296, Start Num: 3  
Candidate Starts for LugYA\_22:  
(1, 13096), (Start: 3 @13162 has 145 MA's), (15, 13276),

Gene: MA5\_18 Start: 12311, Stop: 12445, Start Num: 3  
Candidate Starts for MA5\_18:  
(1, 12245), (Start: 3 @12311 has 145 MA's),

Gene: MK4\_18 Start: 12601, Stop: 12735, Start Num: 3  
Candidate Starts for MK4\_18:  
(1, 12535), (Start: 3 @12601 has 145 MA's),

Gene: MadMarie\_20 Start: 13166, Stop: 13300, Start Num: 3  
Candidate Starts for MadMarie\_20:  
(1, 13100), (Start: 3 @13166 has 145 MA's), (15, 13280),

Gene: Mainiac\_20 Start: 13157, Stop: 13291, Start Num: 3  
Candidate Starts for Mainiac\_20:  
(1, 13091), (Start: 3 @13157 has 145 MA's), (15, 13271),

Gene: Malinsilva\_22 Start: 13156, Stop: 13290, Start Num: 3  
Candidate Starts for Malinsilva\_22:  
(1, 13090), (Start: 3 @13156 has 145 MA's), (15, 13270),

Gene: Manu\_21 Start: 13238, Stop: 13372, Start Num: 3  
Candidate Starts for Manu\_21:  
(1, 13172), (Start: 3 @13238 has 145 MA's), (15, 13352),

Gene: MarQuardt\_20 Start: 13165, Stop: 13299, Start Num: 3  
Candidate Starts for MarQuardt\_20:  
(1, 13099), (Start: 3 @13165 has 145 MA's), (15, 13279),

Gene: Marchesa\_18 Start: 12765, Stop: 12899, Start Num: 3  
Candidate Starts for Marchesa\_18:  
(1, 12699), (Start: 3 @12765 has 145 MA's),

Gene: Margo\_19 Start: 13280, Stop: 13411, Start Num: 3  
Candidate Starts for Margo\_19:  
(1, 13214), (Start: 3 @13280 has 145 MA's), (9, 13310),

Gene: Marie\_20 Start: 13162, Stop: 13296, Start Num: 3  
Candidate Starts for Marie\_20:  
(1, 13096), (Start: 3 @13162 has 145 MA's), (15, 13276),

Gene: Marius\_21 Start: 13238, Stop: 13372, Start Num: 3  
Candidate Starts for Marius\_21:  
(1, 13172), (Start: 3 @13238 has 145 MA's), (15, 13352),

Gene: Microwolf\_20 Start: 13165, Stop: 13299, Start Num: 3  
Candidate Starts for Microwolf\_20:  
(1, 13099), (Start: 3 @13165 has 145 MA's), (15, 13279),

Gene: MinecraftSteve\_22 Start: 12986, Stop: 13183, Start Num: 3  
Candidate Starts for MinecraftSteve\_22:  
(1, 12917), (Start: 3 @12986 has 145 MA's), (7, 13007), (15, 13091),

Gene: Misomonster\_22 Start: 13247, Stop: 13381, Start Num: 3  
Candidate Starts for Misomonster\_22:  
(1, 13181), (Start: 3 @13247 has 145 MA's), (15, 13361),

Gene: MoneyMay\_20 Start: 13162, Stop: 13296, Start Num: 3  
Candidate Starts for MoneyMay\_20:  
(1, 13096), (Start: 3 @13162 has 145 MA's), (15, 13276),

Gene: Montavir\_19 Start: 13164, Stop: 13298, Start Num: 3  
Candidate Starts for Montavir\_19:  
(1, 13098), (Start: 3 @13164 has 145 MA's), (15, 13278),

Gene: MuchMore\_22 Start: 13156, Stop: 13290, Start Num: 3  
Candidate Starts for MuchMore\_22:  
(1, 13090), (Start: 3 @13156 has 145 MA's), (15, 13270),

Gene: MyraDee\_16 Start: 11265, Stop: 11429, Start Num: 2  
Candidate Starts for MyraDee\_16:  
(Start: 2 @11265 has 1 MA's), (11, 11352), (14, 11394),

Gene: Nebulosus\_21 Start: 12864, Stop: 13061, Start Num: 3  
Candidate Starts for Nebulosus\_21:  
(1, 12795), (Start: 3 @12864 has 145 MA's), (7, 12885), (15, 12969),

Gene: Nedarya\_20 Start: 13453, Stop: 13650, Start Num: 3  
Candidate Starts for Nedarya\_20:  
(1, 13384), (Start: 3 @13453 has 145 MA's), (18, 13588),

Gene: Noella\_19 Start: 13255, Stop: 13386, Start Num: 3  
Candidate Starts for Noella\_19:  
(1, 13189), (Start: 3 @13255 has 145 MA's), (9, 13285),

Gene: Norbert\_18 Start: 13255, Stop: 13386, Start Num: 3  
Candidate Starts for Norbert\_18:  
(1, 13189), (Start: 3 @13255 has 145 MA's), (9, 13285),

Gene: OlanP\_20 Start: 13418, Stop: 13552, Start Num: 3  
Candidate Starts for OlanP\_20:  
(1, 13352), (Start: 3 @13418 has 145 MA's), (15, 13532),

Gene: Ollie\_20 Start: 13035, Stop: 13169, Start Num: 3  
Candidate Starts for Ollie\_20:  
(1, 12969), (Start: 3 @13035 has 145 MA's), (15, 13149),

Gene: Oofda\_21 Start: 12835, Stop: 13032, Start Num: 3  
Candidate Starts for Oofda\_21:  
(1, 12766), (Start: 3 @12835 has 145 MA's), (7, 12856), (15, 12940),

Gene: P28Green\_20 Start: 13163, Stop: 13297, Start Num: 3

Candidate Starts for P28Green\_20:

(1, 13097), (Start: 3 @13163 has 145 MA's), (15, 13277),

Gene: PGHhamlin\_22 Start: 13156, Stop: 13290, Start Num: 3

Candidate Starts for PGHhamlin\_22:

(1, 13090), (Start: 3 @13156 has 145 MA's), (15, 13270),

Gene: PP\_28 Start: 18919, Stop: 19077, Start Num: 3

Candidate Starts for PP\_28:

(1, 18853), (Start: 3 @18919 has 145 MA's), (6, 18940), (10, 18985), (16, 19054),

Gene: Pawn\_20 Start: 13238, Stop: 13372, Start Num: 3

Candidate Starts for Pawn\_20:

(1, 13172), (Start: 3 @13238 has 145 MA's), (15, 13352),

Gene: Pembroke\_20 Start: 13165, Stop: 13299, Start Num: 3

Candidate Starts for Pembroke\_20:

(1, 13099), (Start: 3 @13165 has 145 MA's), (15, 13279),

Gene: Penny1\_20 Start: 13164, Stop: 13298, Start Num: 3

Candidate Starts for Penny1\_20:

(1, 13098), (Start: 3 @13164 has 145 MA's), (15, 13278),

Gene: Phantastic\_18 Start: 12680, Stop: 12814, Start Num: 3

Candidate Starts for Phantastic\_18:

(1, 12614), (Start: 3 @12680 has 145 MA's),

Gene: PhishRPhriends\_19 Start: 12423, Stop: 12557, Start Num: 3

Candidate Starts for PhishRPhriends\_19:

(1, 12357), (Start: 3 @12423 has 145 MA's), (15, 12537),

Gene: Phoebe\_20 Start: 13162, Stop: 13296, Start Num: 3

Candidate Starts for Phoebe\_20:

(1, 13096), (Start: 3 @13162 has 145 MA's), (15, 13276),

Gene: Phoxy\_20 Start: 13248, Stop: 13382, Start Num: 3

Candidate Starts for Phoxy\_20:

(1, 13182), (Start: 3 @13248 has 145 MA's), (15, 13362),

Gene: Phranny\_21 Start: 13230, Stop: 13364, Start Num: 3

Candidate Starts for Phranny\_21:

(1, 13164), (Start: 3 @13230 has 145 MA's), (15, 13344),

Gene: Pistachio\_19 Start: 12261, Stop: 12395, Start Num: 3

Candidate Starts for Pistachio\_19:

(1, 12195), (Start: 3 @12261 has 145 MA's),

Gene: Pocahontas\_19 Start: 13252, Stop: 13383, Start Num: 3

Candidate Starts for Pocahontas\_19:

(1, 13186), (Start: 3 @13252 has 145 MA's), (9, 13282),

Gene: Popcicle\_19 Start: 13252, Stop: 13383, Start Num: 3

Candidate Starts for Popcicle\_19:

(1, 13186), (Start: 3 @13252 has 145 MA's), (9, 13282),

Gene: PotatoSplit\_21 Start: 13164, Stop: 13298, Start Num: 3

Candidate Starts for PotatoSplit\_21:

(1, 13098), (Start: 3 @13164 has 145 MA's), (15, 13278),

Gene: Puppy\_19 Start: 12333, Stop: 12467, Start Num: 3

Candidate Starts for Puppy\_19:

(1, 12267), (Start: 3 @12333 has 145 MA's),

Gene: PurpleHaze\_20 Start: 13237, Stop: 13371, Start Num: 3

Candidate Starts for PurpleHaze\_20:

(1, 13171), (Start: 3 @13237 has 145 MA's), (15, 13351),

Gene: QuinnKiro\_18 Start: 13255, Stop: 13386, Start Num: 3

Candidate Starts for QuinnKiro\_18:

(1, 13189), (Start: 3 @13255 has 145 MA's), (9, 13285),

Gene: Ravana\_21 Start: 12825, Stop: 13022, Start Num: 3

Candidate Starts for Ravana\_21:

(1, 12756), (Start: 3 @12825 has 145 MA's), (7, 12846), (15, 12930),

Gene: ReMo\_21 Start: 12864, Stop: 13061, Start Num: 3

Candidate Starts for ReMo\_21:

(1, 12795), (Start: 3 @12864 has 145 MA's), (7, 12885), (15, 12969),

Gene: Reba\_21 Start: 12903, Stop: 13037, Start Num: 3

Candidate Starts for Reba\_21:

(1, 12837), (Start: 3 @12903 has 145 MA's), (15, 13017),

Gene: Remus\_21 Start: 12825, Stop: 13022, Start Num: 3

Candidate Starts for Remus\_21:

(1, 12756), (Start: 3 @12825 has 145 MA's), (7, 12846), (15, 12930),

Gene: ResDef\_19 Start: 13255, Stop: 13386, Start Num: 3

Candidate Starts for ResDef\_19:

(1, 13189), (Start: 3 @13255 has 145 MA's), (9, 13285),

Gene: Rockstar\_18 Start: 12607, Stop: 12741, Start Num: 3

Candidate Starts for Rockstar\_18:

(1, 12541), (Start: 3 @12607 has 145 MA's),

Gene: Roimos\_18 Start: 12683, Stop: 12817, Start Num: 3

Candidate Starts for Roimos\_18:

(1, 12617), (Start: 3 @12683 has 145 MA's),

Gene: Rosalind\_21 Start: 12986, Stop: 13183, Start Num: 3

Candidate Starts for Rosalind\_21:

(1, 12917), (Start: 3 @12986 has 145 MA's), (7, 13007), (15, 13091),

Gene: Rummer\_20 Start: 13248, Stop: 13382, Start Num: 3

Candidate Starts for Rummer\_20:

(1, 13182), (Start: 3 @13248 has 145 MA's), (15, 13362),

Gene: Sabia\_20 Start: 13157, Stop: 13291, Start Num: 3  
Candidate Starts for Sabia\_20:  
(1, 13091), (Start: 3 @13157 has 145 MA's), (15, 13271),

Gene: Sabinator\_20 Start: 13162, Stop: 13296, Start Num: 3  
Candidate Starts for Sabinator\_20:  
(1, 13096), (Start: 3 @13162 has 145 MA's), (15, 13276),

Gene: SaturnRing\_18 Start: 12714, Stop: 12848, Start Num: 3  
Candidate Starts for SaturnRing\_18:  
(1, 12648), (Start: 3 @12714 has 145 MA's),

Gene: Scout\_18 Start: 12014, Stop: 12148, Start Num: 3  
Candidate Starts for Scout\_18:  
(1, 11948), (Start: 3 @12014 has 145 MA's),

Gene: ShayRa\_22 Start: 12986, Stop: 13183, Start Num: 3  
Candidate Starts for ShayRa\_22:  
(1, 12917), (Start: 3 @12986 has 145 MA's), (7, 13007), (15, 13091),

Gene: Sheen\_20 Start: 14765, Stop: 14920, Start Num: 3  
Candidate Starts for Sheen\_20:  
(1, 14699), (Start: 3 @14765 has 145 MA's),

Gene: Shep\_18 Start: 11969, Stop: 12103, Start Num: 3  
Candidate Starts for Shep\_18:  
(1, 11903), (Start: 3 @11969 has 145 MA's),

Gene: Snickers\_20 Start: 13138, Stop: 13272, Start Num: 3  
Candidate Starts for Snickers\_20:  
(1, 13072), (Start: 3 @13138 has 145 MA's), (15, 13252),

Gene: SoYo\_20 Start: 13075, Stop: 13209, Start Num: 3  
Candidate Starts for SoYo\_20:  
(1, 13009), (Start: 3 @13075 has 145 MA's), (15, 13189),

Gene: SoilDragon\_20 Start: 12847, Stop: 12981, Start Num: 3  
Candidate Starts for SoilDragon\_20:  
(1, 12781), (Start: 3 @12847 has 145 MA's), (15, 12961),

Gene: Soups\_21 Start: 12986, Stop: 13183, Start Num: 3  
Candidate Starts for Soups\_21:  
(1, 12917), (Start: 3 @12986 has 145 MA's), (7, 13007), (15, 13091),

Gene: Spike509\_20 Start: 13248, Stop: 13382, Start Num: 3  
Candidate Starts for Spike509\_20:  
(1, 13182), (Start: 3 @13248 has 145 MA's), (15, 13362),

Gene: Stagni\_20 Start: 13166, Stop: 13300, Start Num: 3  
Candidate Starts for Stagni\_20:  
(1, 13100), (Start: 3 @13166 has 145 MA's), (15, 13280),

Gene: Strosahl\_21 Start: 12825, Stop: 13022, Start Num: 3  
Candidate Starts for Strosahl\_21:  
(1, 12756), (Start: 3 @12825 has 145 MA's), (7, 12846), (15, 12930),

Gene: Switzerland\_21 Start: 12979, Stop: 13176, Start Num: 3  
Candidate Starts for Switzerland\_21:  
(1, 12910), (Start: 3 @12979 has 145 MA's), (7, 13000), (15, 13084),

Gene: TNguyen7\_18 Start: 12684, Stop: 12818, Start Num: 3  
Candidate Starts for TNguyen7\_18:  
(1, 12618), (Start: 3 @12684 has 145 MA's),

Gene: Taurus\_20 Start: 13162, Stop: 13296, Start Num: 3  
Candidate Starts for Taurus\_20:  
(1, 13096), (Start: 3 @13162 has 145 MA's), (15, 13276),

Gene: Texage\_18 Start: 13255, Stop: 13386, Start Num: 3  
Candidate Starts for Texage\_18:  
(1, 13189), (Start: 3 @13255 has 145 MA's), (9, 13285),

Gene: Tiffany\_20 Start: 13058, Stop: 13192, Start Num: 3  
Candidate Starts for Tiffany\_20:  
(1, 12992), (Start: 3 @13058 has 145 MA's), (15, 13172),

Gene: TinyPebbles\_20 Start: 13247, Stop: 13381, Start Num: 3  
Candidate Starts for TinyPebbles\_20:  
(1, 13181), (Start: 3 @13247 has 145 MA's), (15, 13361),

Gene: Todacoro\_19 Start: 13255, Stop: 13386, Start Num: 3  
Candidate Starts for Todacoro\_19:  
(1, 13189), (Start: 3 @13255 has 145 MA's), (9, 13285),

Gene: Toro\_21 Start: 14707, Stop: 14862, Start Num: 3  
Candidate Starts for Toro\_21:  
(1, 14641), (Start: 3 @14707 has 145 MA's),

Gene: Veracruz\_18 Start: 13255, Stop: 13386, Start Num: 3  
Candidate Starts for Veracruz\_18:  
(1, 13189), (Start: 3 @13255 has 145 MA's), (9, 13285),

Gene: Vix\_20 Start: 13246, Stop: 13380, Start Num: 3  
Candidate Starts for Vix\_20:  
(1, 13180), (Start: 3 @13246 has 145 MA's), (15, 13360),

Gene: Waits\_21 Start: 12831, Stop: 13028, Start Num: 3  
Candidate Starts for Waits\_21:  
(1, 12762), (Start: 3 @12831 has 145 MA's), (7, 12852), (15, 12936),

Gene: Warrior24\_21 Start: 12835, Stop: 13032, Start Num: 3  
Candidate Starts for Warrior24\_21:  
(1, 12766), (Start: 3 @12835 has 145 MA's), (7, 12856), (15, 12940),

Gene: Watson\_20 Start: 13156, Stop: 13290, Start Num: 3

Candidate Starts for Watson\_20:

(1, 13090), (Start: 3 @13156 has 145 MA's), (15, 13270),

Gene: Wooldri\_22 Start: 13075, Stop: 13209, Start Num: 3

Candidate Starts for Wooldri\_22:

(1, 13009), (Start: 3 @13075 has 145 MA's), (15, 13189),

Gene: Zarafa\_18 Start: 12776, Stop: 12910, Start Num: 3

Candidate Starts for Zarafa\_18:

(1, 12710), (Start: 3 @12776 has 145 MA's),

Gene: Zetzy\_19 Start: 12696, Stop: 12830, Start Num: 3

Candidate Starts for Zetzy\_19:

(1, 12630), (Start: 3 @12696 has 145 MA's), (15, 12810),