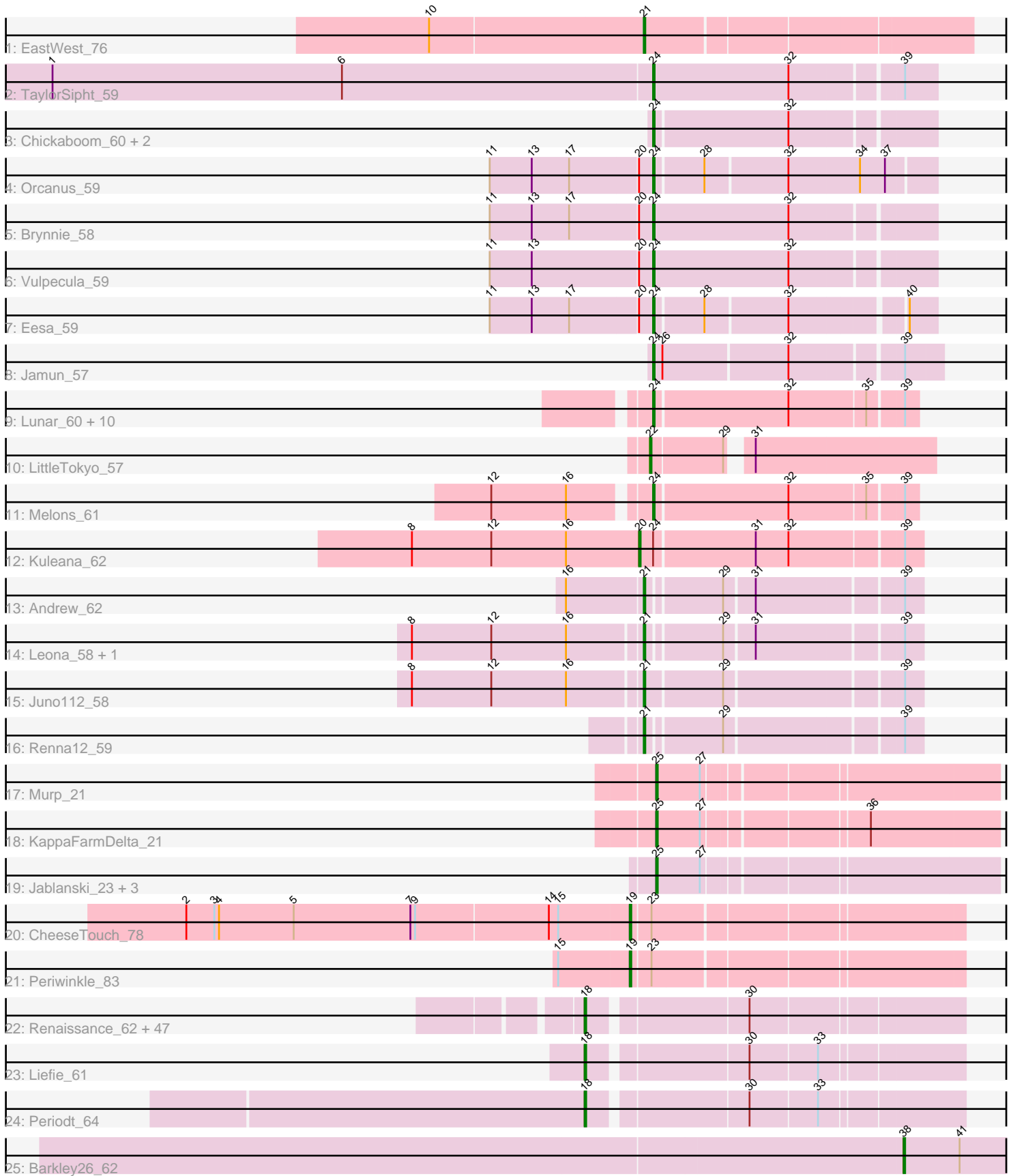


# Pham 196458



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 196458 Report

This analysis was run 12/09/24 on database version 580.

Pham number 196458 has 88 members, 3 are drafts.

Phages represented in each track:

- Track 1 : EastWest\_76
- Track 2 : TaylorSipht\_59
- Track 3 : Chickaboom\_60, Basilisk\_59, Ruchi\_58
- Track 4 : Orcanus\_59
- Track 5 : Brynnie\_58
- Track 6 : Vulpecula\_59
- Track 7 : Eesa\_59
- Track 8 : Jamun\_57
- Track 9 : Lunar\_60, Coral\_58, Colusalem\_61, Daob\_60, Kepler\_60, Jerole\_68, HannahPhantana\_60, Cote\_61, Bedetta\_63, Polka\_58, Amelia\_58
- Track 10 : LittleTokyo\_57
- Track 11 : Melons\_61
- Track 12 : Kuleana\_62
- Track 13 : Andrew\_62
- Track 14 : Leona\_58, RedFox\_59
- Track 15 : Juno112\_58
- Track 16 : Renna12\_59
- Track 17 : Murp\_21
- Track 18 : KappaFarmDelta\_21
- Track 19 : Jablanski\_23, Posh\_23, Pytheas\_23, Wrigley\_23
- Track 20 : CheeseTouch\_78
- Track 21 : Periwinkle\_83
- Track 22 : Renaissance\_62, Camri\_63, LouisV14\_65, Gideon\_63, Aroostook\_63, ShaboiShabazz\_62, Hope\_63, Mowgli\_63, Jonghyun\_61, DNAlll\_0060, Marmie\_63, Kasen3\_64, PinkYoshi\_63, Gomashi\_62, ECartman\_61, Grizzly\_62, JorRay\_64, Phish\_62, Phreak\_63, Hotshotbaby7\_63, CassieYates\_63, Remy19\_63, CLED96\_62, Coleslaw\_62, Avrafan\_62, ZoMa\_62, Schiebel\_61, Cedasite\_63, Jolene\_63, Crespo\_62, Darionha\_63, BruceB\_63, Angel\_61, Sweets\_63, Olga\_64, Plagueis\_63, Kareem\_64, GoldenAsh\_61, Zombie\_63, Peeb\_62, Annihilator\_62, BPs\_63, Frosty24\_63, Cherrybomb426\_62, TomBrady\_63, Chance64\_63, OctaviousRex\_62, Sizemore\_64
- Track 23 : Liefie\_61
- Track 24 : Periodt\_64
- Track 25 : Barkley26\_62

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

The start number called the most often in the published annotations is 18, it was called in 50 of the 85 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Angel\_61, Annihilator\_62, Aroostook\_63, Avrafan\_62, BPs\_63, BruceB\_63, CLED96\_62, Camri\_63, CassieYates\_63, Cedasite\_63, Chance64\_63, Cherrybomb426\_62, Coleslaw\_62, Crespo\_62, DNAIII\_0060, Darionha\_63, ECartman\_61, Frosty24\_63, Gideon\_63, GoldenAsh\_61, Gomashi\_62, Grizzly\_62, Hope\_63, Hotshotbaby7\_63, Jolene\_63, Jonghyun\_61, JorRay\_64, Kareem\_64, Kasen3\_64, Liefie\_61, LouisV14\_65, Marmie\_63, Mowgli\_63, OctaviousRex\_62, Olga\_64, Peeb\_62, Periodt\_64, Phish\_62, Phreak\_63, PinkYoshi\_63, Plagueis\_63, Remy19\_63, Renaissance\_62, Schiebel\_61, ShaboiShabazz\_62, Sizemore\_64, Sweets\_63, TomBrady\_63, ZoMa\_62, Zombie\_63,

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

- 

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

- Amelia\_58, Andrew\_62, Barkley26\_62, Basilisk\_59, Bedetta\_63, Brynnie\_58, CheeseTouch\_78, Chickaboom\_60, Colusalem\_61, Coral\_58, Cote\_61, Daob\_60, EastWest\_76, Eesa\_59, HannahPhantana\_60, Jablanski\_23, Jamun\_57, Jerole\_68, Juno112\_58, KappaFarmDelta\_21, Kepler\_60, Kuleana\_62, Leona\_58, LittleTokyo\_57, Lunar\_60, Melons\_61, Murp\_21, Orcanus\_59, Periwinkle\_83, Polka\_58, Posh\_23, Pytheas\_23, RedFox\_59, Renna12\_59, Ruchi\_58, TaylorSipht\_59, Vulpecula\_59, Wrigley\_23,

## **Summary by start number:**

Start 18:

- Found in 50 of 88 ( 56.8% ) of genes in pham
- Manual Annotations of this start: 50 of 85
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Angel\_61 (G1), Annihilator\_62 (G1), Aroostook\_63 (G1), Avrafan\_62 (G1), BPs\_63 (G1), BruceB\_63 (G1), CLED96\_62 (G1), Camri\_63 (G1), CassieYates\_63 (G1), Cedasite\_63 (G1), Chance64\_63 (G1), Cherrybomb426\_62 (G1), Coleslaw\_62 (G1), Crespo\_62 (G1), DNAIII\_0060 (G1), Darionha\_63 (G1), ECartman\_61 (G1), Frosty24\_63 (G1), Gideon\_63 (G1), GoldenAsh\_61 (G1), Gomashi\_62 (G1), Grizzly\_62 (G1), Hope\_63 (G1), Hotshotbaby7\_63 (G1), Jolene\_63 (G1), Jonghyun\_61 (G1), JorRay\_64 (G1), Kareem\_64 (G1), Kasen3\_64 (G1), Liefie\_61 (G1), LouisV14\_65 (G1), Marmie\_63 (G1), Mowgli\_63 (G1), OctaviousRex\_62 (G1), Olga\_64 (G1), Peeb\_62 (G1), Periodt\_64 (G1), Phish\_62 (G1), Phreak\_63 (G1), PinkYoshi\_63 (G1), Plagueis\_63 (G1), Remy19\_63 (G1), Renaissance\_62 (G1), Schiebel\_61 (G1), ShaboiShabazz\_62 (G1), Sizemore\_64 (G1), Sweets\_63 (G1), TomBrady\_63 (G1), ZoMa\_62 (G1), Zombie\_63 (G1),

Start 19:

- Found in 2 of 88 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 2 of 85
- Called 100.0% of time when present

- Phage (with cluster) where this start called: CheeseTouch\_78 (DN1), Periwinkle\_83 (DN1),

#### Start 20:

- Found in 5 of 88 ( 5.7% ) of genes in pham
- Manual Annotations of this start: 1 of 85
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Kuleana\_62 (AS2),

#### Start 21:

- Found in 6 of 88 ( 6.8% ) of genes in pham
- Manual Annotations of this start: 6 of 85
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Andrew\_62 (AS3), EastWest\_76 (AO), Juno112\_58 (AS3), Leona\_58 (AS3), RedFox\_59 (AS3), Renna12\_59 (AS3),

#### Start 22:

- Found in 1 of 88 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 1 of 85
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LittleTokyo\_57 (AS2),

#### Start 24:

- Found in 22 of 88 ( 25.0% ) of genes in pham
- Manual Annotations of this start: 18 of 85
- Called 95.5% of time when present
- Phage (with cluster) where this start called: Amelia\_58 (AS2), Basilisk\_59 (AS1), Bedetta\_63 (AS2), Brynnie\_58 (AS1), Chickaboom\_60 (AS1), Colusalem\_61 (AS2), Coral\_58 (AS2), Cote\_61 (AS2), Daob\_60 (AS2), Eesa\_59 (AS1), HannahPhantana\_60 (AS2), Jamun\_57 (AS1), Jerole\_68 (AS2), Kepler\_60 (AS2), Lunar\_60 (AS2), Melons\_61 (AS2), Orcanus\_59 (AS1), Polka\_58 (AS2), Ruchi\_58 (AS1), TaylorSipht\_59 (AS1), Vulpecula\_59 (AS1),

#### Start 25:

- Found in 6 of 88 ( 6.8% ) of genes in pham
- Manual Annotations of this start: 6 of 85
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jablanski\_23 (CY), KappaFarmDelta\_21 (CV), Murp\_21 (CV), Posh\_23 (CY), Pytheas\_23 (CY), Wrigley\_23 (CY),

#### Start 38:

- Found in 1 of 88 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 1 of 85
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Barkley26\_62 (G1),

### Summary by clusters:

There are 8 clusters represented in this pham: AS3, AS2, AS1, G1, AO, CY, DN1, CV,

Info for manual annotations of cluster AO:

- Start number 21 was manually annotated 1 time for cluster AO.

Info for manual annotations of cluster AS1:

- Start number 24 was manually annotated 9 times for cluster AS1.

Info for manual annotations of cluster AS2:

- Start number 20 was manually annotated 1 time for cluster AS2.
- Start number 22 was manually annotated 1 time for cluster AS2.
- Start number 24 was manually annotated 9 times for cluster AS2.

Info for manual annotations of cluster AS3:

- Start number 21 was manually annotated 5 times for cluster AS3.

Info for manual annotations of cluster CV:

- Start number 25 was manually annotated 2 times for cluster CV.

Info for manual annotations of cluster CY:

- Start number 25 was manually annotated 4 times for cluster CY.

Info for manual annotations of cluster DN1:

- Start number 19 was manually annotated 2 times for cluster DN1.

Info for manual annotations of cluster G1:

- Start number 18 was manually annotated 50 times for cluster G1.
- Start number 38 was manually annotated 1 time for cluster G1.

### ***Gene Information:***

Gene: Amelia\_58 Start: 34705, Stop: 34866, Start Num: 24

Candidate Starts for Amelia\_58:

(Start: 24 @34705 has 18 MA's), (32, 34789), (35, 34837), (39, 34858),

Gene: Andrew\_62 Start: 36132, Stop: 36293, Start Num: 21

Candidate Starts for Andrew\_62:

(16, 36084), (Start: 21 @36132 has 6 MA's), (29, 36177), (31, 36195), (39, 36282),

Gene: Angel\_61 Start: 41085, Stop: 41306, Start Num: 18

Candidate Starts for Angel\_61:

(Start: 18 @41085 has 50 MA's), (30, 41178),

Gene: Annihilator\_62 Start: 41537, Stop: 41758, Start Num: 18

Candidate Starts for Annihilator\_62:

(Start: 18 @41537 has 50 MA's), (30, 41630),

Gene: Aroostook\_63 Start: 41547, Stop: 41768, Start Num: 18

Candidate Starts for Aroostook\_63:

(Start: 18 @41547 has 50 MA's), (30, 41640),

Gene: Avrafan\_62 Start: 41545, Stop: 41766, Start Num: 18

Candidate Starts for Avrafan\_62:

(Start: 18 @41545 has 50 MA's), (30, 41638),

Gene: BPs\_63 Start: 41545, Stop: 41766, Start Num: 18  
Candidate Starts for BPs\_63:  
(Start: 18 @41545 has 50 MA's), (30, 41638),

Gene: Barkley26\_62 Start: 41400, Stop: 41621, Start Num: 38  
Candidate Starts for Barkley26\_62:  
(Start: 38 @41400 has 1 MA's), (41, 41436),

Gene: Basilisk\_59 Start: 36355, Stop: 36525, Start Num: 24  
Candidate Starts for Basilisk\_59:  
(Start: 24 @36355 has 18 MA's), (32, 36439),

Gene: Bedetta\_63 Start: 34865, Stop: 35026, Start Num: 24  
Candidate Starts for Bedetta\_63:  
(Start: 24 @34865 has 18 MA's), (32, 34949), (35, 34997), (39, 35018),

Gene: BruceB\_63 Start: 41545, Stop: 41766, Start Num: 18  
Candidate Starts for BruceB\_63:  
(Start: 18 @41545 has 50 MA's), (30, 41638),

Gene: Brynnie\_58 Start: 36288, Stop: 36461, Start Num: 24  
Candidate Starts for Brynnie\_58:  
(11, 36186), (13, 36213), (17, 36237), (Start: 20 @36279 has 1 MA's), (Start: 24 @36288 has 18 MA's), (32, 36375),

Gene: CLED96\_62 Start: 41100, Stop: 41321, Start Num: 18  
Candidate Starts for CLED96\_62:  
(Start: 18 @41100 has 50 MA's), (30, 41193),

Gene: Camri\_63 Start: 41545, Stop: 41766, Start Num: 18  
Candidate Starts for Camri\_63:  
(Start: 18 @41545 has 50 MA's), (30, 41638),

Gene: CassieYates\_63 Start: 41545, Stop: 41766, Start Num: 18  
Candidate Starts for CassieYates\_63:  
(Start: 18 @41545 has 50 MA's), (30, 41638),

Gene: Cedasite\_63 Start: 41545, Stop: 41766, Start Num: 18  
Candidate Starts for Cedasite\_63:  
(Start: 18 @41545 has 50 MA's), (30, 41638),

Gene: Chance64\_63 Start: 41547, Stop: 41768, Start Num: 18  
Candidate Starts for Chance64\_63:  
(Start: 18 @41547 has 50 MA's), (30, 41640),

Gene: CheeseTouch\_78 Start: 40545, Stop: 40745, Start Num: 19  
Candidate Starts for CheeseTouch\_78:  
(2, 40263), (3, 40281), (4, 40284), (5, 40332), (7, 40407), (9, 40410), (14, 40494), (15, 40500), (Start: 19 @40545 has 2 MA's), (23, 40557),

Gene: Cherrybomb426\_62 Start: 41100, Stop: 41321, Start Num: 18  
Candidate Starts for Cherrybomb426\_62:  
(Start: 18 @41100 has 50 MA's), (30, 41193),

Gene: Chickaboom\_60 Start: 36691, Stop: 36861, Start Num: 24

Candidate Starts for Chickaboom\_60:

(Start: 24 @36691 has 18 MA's), (32, 36775),

Gene: Coleslaw\_62 Start: 41537, Stop: 41758, Start Num: 18

Candidate Starts for Coleslaw\_62:

(Start: 18 @41537 has 50 MA's), (30, 41630),

Gene: Colusalem\_61 Start: 34682, Stop: 34843, Start Num: 24

Candidate Starts for Colusalem\_61:

(Start: 24 @34682 has 18 MA's), (32, 34766), (35, 34814), (39, 34835),

Gene: Coral\_58 Start: 34610, Stop: 34771, Start Num: 24

Candidate Starts for Coral\_58:

(Start: 24 @34610 has 18 MA's), (32, 34694), (35, 34742), (39, 34763),

Gene: Cote\_61 Start: 35043, Stop: 35204, Start Num: 24

Candidate Starts for Cote\_61:

(Start: 24 @35043 has 18 MA's), (32, 35127), (35, 35175), (39, 35196),

Gene: Crespo\_62 Start: 41546, Stop: 41767, Start Num: 18

Candidate Starts for Crespo\_62:

(Start: 18 @41546 has 50 MA's), (30, 41639),

Gene: DNAlll\_0060 Start: 39174, Stop: 39395, Start Num: 18

Candidate Starts for DNAlll\_0060:

(Start: 18 @39174 has 50 MA's), (30, 39267),

Gene: Daob\_60 Start: 35054, Stop: 35215, Start Num: 24

Candidate Starts for Daob\_60:

(Start: 24 @35054 has 18 MA's), (32, 35138), (35, 35186), (39, 35207),

Gene: Darionha\_63 Start: 41545, Stop: 41766, Start Num: 18

Candidate Starts for Darionha\_63:

(Start: 18 @41545 has 50 MA's), (30, 41638),

Gene: ECartman\_61 Start: 41545, Stop: 41766, Start Num: 18

Candidate Starts for ECartman\_61:

(Start: 18 @41545 has 50 MA's), (30, 41638),

Gene: EastWest\_76 Start: 45392, Stop: 45592, Start Num: 21

Candidate Starts for EastWest\_76:

(10, 45257), (Start: 21 @45392 has 6 MA's),

Gene: Eesa\_59 Start: 37502, Stop: 37666, Start Num: 24

Candidate Starts for Eesa\_59:

(11, 37400), (13, 37427), (17, 37451), (Start: 20 @37493 has 1 MA's), (Start: 24 @37502 has 18 MA's), (28, 37532), (32, 37583), (40, 37649),

Gene: Frosty24\_63 Start: 41545, Stop: 41766, Start Num: 18

Candidate Starts for Frosty24\_63:

(Start: 18 @41545 has 50 MA's), (30, 41638),

Gene: Gideon\_63 Start: 41547, Stop: 41768, Start Num: 18  
Candidate Starts for Gideon\_63:  
(Start: 18 @41547 has 50 MA's), (30, 41640),

Gene: GoldenAsh\_61 Start: 41085, Stop: 41306, Start Num: 18  
Candidate Starts for GoldenAsh\_61:  
(Start: 18 @41085 has 50 MA's), (30, 41178),

Gene: Gomashi\_62 Start: 41547, Stop: 41768, Start Num: 18  
Candidate Starts for Gomashi\_62:  
(Start: 18 @41547 has 50 MA's), (30, 41640),

Gene: Grizzly\_62 Start: 41396, Stop: 41617, Start Num: 18  
Candidate Starts for Grizzly\_62:  
(Start: 18 @41396 has 50 MA's), (30, 41489),

Gene: HannahPhantana\_60 Start: 34700, Stop: 34861, Start Num: 24  
Candidate Starts for HannahPhantana\_60:  
(Start: 24 @34700 has 18 MA's), (32, 34784), (35, 34832), (39, 34853),

Gene: Hope\_63 Start: 41545, Stop: 41766, Start Num: 18  
Candidate Starts for Hope\_63:  
(Start: 18 @41545 has 50 MA's), (30, 41638),

Gene: Hotshotbaby7\_63 Start: 41547, Stop: 41768, Start Num: 18  
Candidate Starts for Hotshotbaby7\_63:  
(Start: 18 @41547 has 50 MA's), (30, 41640),

Gene: Jablanski\_23 Start: 20497, Stop: 20700, Start Num: 25  
Candidate Starts for Jablanski\_23:  
(Start: 25 @20497 has 6 MA's), (27, 20524),

Gene: Jamun\_57 Start: 36628, Stop: 36801, Start Num: 24  
Candidate Starts for Jamun\_57:  
(Start: 24 @36628 has 18 MA's), (26, 36634), (32, 36712), (39, 36778),

Gene: Jerole\_68 Start: 34824, Stop: 34985, Start Num: 24  
Candidate Starts for Jerole\_68:  
(Start: 24 @34824 has 18 MA's), (32, 34908), (35, 34956), (39, 34977),

Gene: Jolene\_63 Start: 41949, Stop: 42170, Start Num: 18  
Candidate Starts for Jolene\_63:  
(Start: 18 @41949 has 50 MA's), (30, 42042),

Gene: Jonghyun\_61 Start: 41548, Stop: 41769, Start Num: 18  
Candidate Starts for Jonghyun\_61:  
(Start: 18 @41548 has 50 MA's), (30, 41641),

Gene: JorRay\_64 Start: 41545, Stop: 41766, Start Num: 18  
Candidate Starts for JorRay\_64:  
(Start: 18 @41545 has 50 MA's), (30, 41638),



Gene: Juno112\_58 Start: 35606, Stop: 35770, Start Num: 21  
Candidate Starts for Juno112\_58:  
(8, 35462), (12, 35513), (16, 35561), (Start: 21 @35606 has 6 MA's), (29, 35654), (39, 35759),

Gene: KappaFarmDelta\_21 Start: 19185, Stop: 19388, Start Num: 25  
Candidate Starts for KappaFarmDelta\_21:  
(Start: 25 @19185 has 6 MA's), (27, 19212), (36, 19308),

Gene: Kareem\_64 Start: 41545, Stop: 41766, Start Num: 18  
Candidate Starts for Kareem\_64:  
(Start: 18 @41545 has 50 MA's), (30, 41638),

Gene: Kasen3\_64 Start: 41534, Stop: 41755, Start Num: 18  
Candidate Starts for Kasen3\_64:  
(Start: 18 @41534 has 50 MA's), (30, 41627),

Gene: Kepler\_60 Start: 34821, Stop: 34982, Start Num: 24  
Candidate Starts for Kepler\_60:  
(Start: 24 @34821 has 18 MA's), (32, 34905), (35, 34953), (39, 34974),

Gene: Kuleana\_62 Start: 35611, Stop: 35784, Start Num: 20  
Candidate Starts for Kuleana\_62:  
(8, 35467), (12, 35518), (16, 35566), (Start: 20 @35611 has 1 MA's), (Start: 24 @35620 has 18 MA's),  
(31, 35683), (32, 35704), (39, 35773),

Gene: Leona\_58 Start: 35698, Stop: 35859, Start Num: 21  
Candidate Starts for Leona\_58:  
(8, 35554), (12, 35605), (16, 35653), (Start: 21 @35698 has 6 MA's), (29, 35743), (31, 35761), (39, 35848),

Gene: Liefie\_61 Start: 41294, Stop: 41515, Start Num: 18  
Candidate Starts for Liefie\_61:  
(Start: 18 @41294 has 50 MA's), (30, 41387), (33, 41429),

Gene: LittleTokyo\_57 Start: 34219, Stop: 34386, Start Num: 22  
Candidate Starts for LittleTokyo\_57:  
(Start: 22 @34219 has 1 MA's), (29, 34264), (31, 34273),

Gene: LouisV14\_65 Start: 43789, Stop: 44010, Start Num: 18  
Candidate Starts for LouisV14\_65:  
(Start: 18 @43789 has 50 MA's), (30, 43882),

Gene: Lunar\_60 Start: 34733, Stop: 34894, Start Num: 24  
Candidate Starts for Lunar\_60:  
(Start: 24 @34733 has 18 MA's), (32, 34817), (35, 34865), (39, 34886),

Gene: Marmie\_63 Start: 41546, Stop: 41767, Start Num: 18  
Candidate Starts for Marmie\_63:  
(Start: 18 @41546 has 50 MA's), (30, 41639),

Gene: Melons\_61 Start: 34888, Stop: 35049, Start Num: 24  
Candidate Starts for Melons\_61:  
(12, 34795), (16, 34843), (Start: 24 @34888 has 18 MA's), (32, 34972), (35, 35020), (39, 35041),

Gene: Mowgli\_63 Start: 41546, Stop: 41767, Start Num: 18  
Candidate Starts for Mowgli\_63:  
(Start: 18 @41546 has 50 MA's), (30, 41639),

Gene: Murp\_21 Start: 19085, Stop: 19288, Start Num: 25  
Candidate Starts for Murp\_21:  
(Start: 25 @19085 has 6 MA's), (27, 19112),

Gene: OctaviousRex\_62 Start: 41524, Stop: 41745, Start Num: 18  
Candidate Starts for OctaviousRex\_62:  
(Start: 18 @41524 has 50 MA's), (30, 41617),

Gene: Olga\_64 Start: 41546, Stop: 41767, Start Num: 18  
Candidate Starts for Olga\_64:  
(Start: 18 @41546 has 50 MA's), (30, 41639),

Gene: Orcanus\_59 Start: 36837, Stop: 37007, Start Num: 24  
Candidate Starts for Orcanus\_59:  
(11, 36735), (13, 36762), (17, 36786), (Start: 20 @36828 has 1 MA's), (Start: 24 @36837 has 18 MA's), (28, 36867), (32, 36918), (34, 36963), (37, 36978),

Gene: Peeb\_62 Start: 41520, Stop: 41741, Start Num: 18  
Candidate Starts for Peeb\_62:  
(Start: 18 @41520 has 50 MA's), (30, 41613),

Gene: Periodt\_64 Start: 42142, Stop: 42363, Start Num: 18  
Candidate Starts for Periodt\_64:  
(Start: 18 @42142 has 50 MA's), (30, 42235), (33, 42277),

Gene: Periwinkle\_83 Start: 46446, Stop: 46646, Start Num: 19  
Candidate Starts for Periwinkle\_83:  
(15, 46401), (Start: 19 @46446 has 2 MA's), (23, 46458),

Gene: Phish\_62 Start: 41545, Stop: 41766, Start Num: 18  
Candidate Starts for Phish\_62:  
(Start: 18 @41545 has 50 MA's), (30, 41638),

Gene: Phreak\_63 Start: 41545, Stop: 41766, Start Num: 18  
Candidate Starts for Phreak\_63:  
(Start: 18 @41545 has 50 MA's), (30, 41638),

Gene: PinkYoshi\_63 Start: 41537, Stop: 41758, Start Num: 18  
Candidate Starts for PinkYoshi\_63:  
(Start: 18 @41537 has 50 MA's), (30, 41630),

Gene: Plagueis\_63 Start: 41366, Stop: 41587, Start Num: 18  
Candidate Starts for Plagueis\_63:  
(Start: 18 @41366 has 50 MA's), (30, 41459),

Gene: Polka\_58 Start: 34555, Stop: 34716, Start Num: 24  
Candidate Starts for Polka\_58:  
(Start: 24 @34555 has 18 MA's), (32, 34639), (35, 34687), (39, 34708),

Gene: Posh\_23 Start: 20350, Stop: 20553, Start Num: 25

Candidate Starts for Posh\_23:

(Start: 25 @20350 has 6 MA's), (27, 20377),

Gene: Pytheas\_23 Start: 20496, Stop: 20699, Start Num: 25

Candidate Starts for Pytheas\_23:

(Start: 25 @20496 has 6 MA's), (27, 20523),

Gene: RedFox\_59 Start: 35703, Stop: 35867, Start Num: 21

Candidate Starts for RedFox\_59:

(8, 35559), (12, 35610), (16, 35658), (Start: 21 @35703 has 6 MA's), (29, 35751), (31, 35769), (39, 35856),

Gene: Remy19\_63 Start: 41545, Stop: 41766, Start Num: 18

Candidate Starts for Remy19\_63:

(Start: 18 @41545 has 50 MA's), (30, 41638),

Gene: Renaissance\_62 Start: 41523, Stop: 41744, Start Num: 18

Candidate Starts for Renaissance\_62:

(Start: 18 @41523 has 50 MA's), (30, 41616),

Gene: Renna12\_59 Start: 35816, Stop: 35977, Start Num: 21

Candidate Starts for Renna12\_59:

(Start: 21 @35816 has 6 MA's), (29, 35861), (39, 35966),

Gene: Ruchi\_58 Start: 36277, Stop: 36447, Start Num: 24

Candidate Starts for Ruchi\_58:

(Start: 24 @36277 has 18 MA's), (32, 36361),

Gene: Schiebel\_61 Start: 41085, Stop: 41306, Start Num: 18

Candidate Starts for Schiebel\_61:

(Start: 18 @41085 has 50 MA's), (30, 41178),

Gene: ShaboiShabazz\_62 Start: 41545, Stop: 41766, Start Num: 18

Candidate Starts for ShaboiShabazz\_62:

(Start: 18 @41545 has 50 MA's), (30, 41638),

Gene: Sizemore\_64 Start: 41534, Stop: 41755, Start Num: 18

Candidate Starts for Sizemore\_64:

(Start: 18 @41534 has 50 MA's), (30, 41627),

Gene: Sweets\_63 Start: 41540, Stop: 41761, Start Num: 18

Candidate Starts for Sweets\_63:

(Start: 18 @41540 has 50 MA's), (30, 41633),

Gene: TaylorSipht\_59 Start: 36450, Stop: 36623, Start Num: 24

Candidate Starts for TaylorSipht\_59:

(1, 36066), (6, 36252), (Start: 24 @36450 has 18 MA's), (32, 36537), (39, 36603),

Gene: TomBrady\_63 Start: 41546, Stop: 41767, Start Num: 18

Candidate Starts for TomBrady\_63:

(Start: 18 @41546 has 50 MA's), (30, 41639),

Gene: Vulpecula\_59 Start: 36124, Stop: 36297, Start Num: 24

Candidate Starts for Vulpecula\_59:

(11, 36022), (13, 36049), (Start: 20 @36115 has 1 MA's), (Start: 24 @36124 has 18 MA's), (32, 36211),

Gene: Wrigley\_23 Start: 20247, Stop: 20450, Start Num: 25

Candidate Starts for Wrigley\_23:

(Start: 25 @20247 has 6 MA's), (27, 20274),

Gene: ZoMa\_62 Start: 41545, Stop: 41766, Start Num: 18

Candidate Starts for ZoMa\_62:

(Start: 18 @41545 has 50 MA's), (30, 41638),

Gene: Zombie\_63 Start: 41545, Stop: 41766, Start Num: 18

Candidate Starts for Zombie\_63:

(Start: 18 @41545 has 50 MA's), (30, 41638),