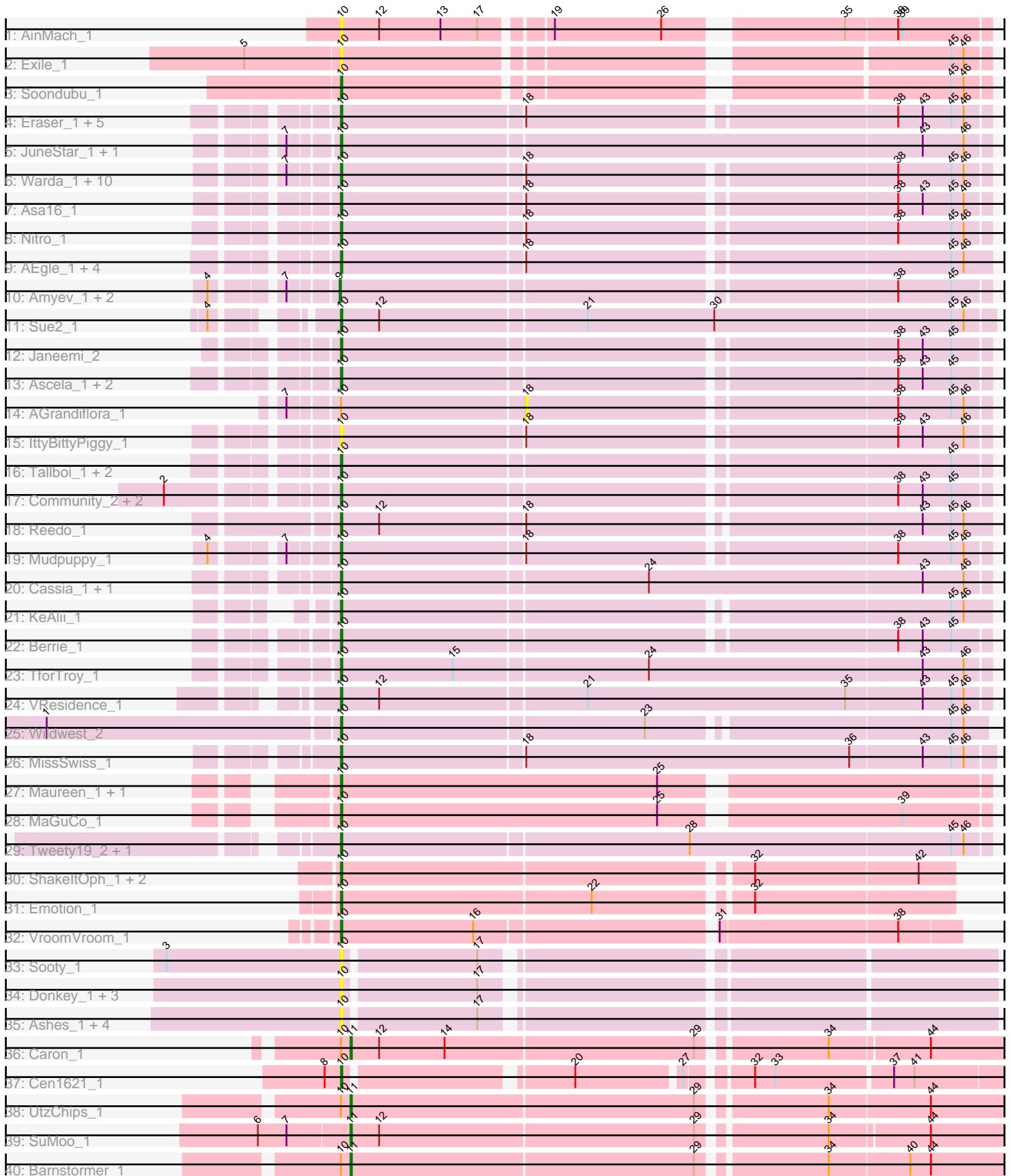


Pham 192514



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 192514 Report

This analysis was run 11/02/24 on database version 579.

Pham number 192514 has 80 members, 22 are drafts.

Phages represented in each track:

- Track 1 : AinMach\_1
- Track 2 : Exile\_1
- Track 3 : Soondubu\_1
- Track 4 : Eraser\_1, Elezi\_1, Jstan\_1, Lizalica\_1, London\_1, Niobe\_1
- Track 5 : JuneStar\_1, Yang\_1
- Track 6 : Warda\_1, JohnDoe\_1, Cyan\_1, YesChef\_1, Lego\_1, Tutumahutu\_1, Tbone\_1, Powerpuff\_1, Simpson\_1, Joemato\_1, Kaylissa\_1
- Track 7 : Asa16\_1
- Track 8 : Nitro\_1
- Track 9 : AEgle\_1, Adolin\_1, DrManhattan\_1, Turab\_1, Adumb2043\_1
- Track 10 : Amyev\_1, Pixelle\_1, Tian\_1
- Track 11 : Sue2\_1
- Track 12 : Janeemi\_2
- Track 13 : Ascela\_1, Crewmate\_1, lter\_1
- Track 14 : AGrandiflora\_1
- Track 15 : IttyBittyPiggy\_1
- Track 16 : Tallboi\_1, ObiToo\_1, DrSierra\_1
- Track 17 : Community\_2, Tuck\_2, Phives\_2
- Track 18 : Reedo\_1
- Track 19 : Mudpuppy\_1
- Track 20 : Cassia\_1, Pumpkins\_1
- Track 21 : KeAlii\_1
- Track 22 : Berrie\_1
- Track 23 : TforTroy\_1
- Track 24 : VResidence\_1
- Track 25 : Wildwest\_2
- Track 26 : MissSwiss\_1
- Track 27 : Maureen\_1, Liebe\_1
- Track 28 : MaGuCo\_1
- Track 29 : Tweety19\_2, Snek\_2
- Track 30 : ShakeItOph\_1, JasmineDragon\_1, MiniMommy\_1
- Track 31 : Emotion\_1
- Track 32 : VroomVroom\_1
- Track 33 : Sooty\_1
- Track 34 : Donkey\_1, Kalimba\_1, Gambol\_1, Cappuccino\_1
- Track 35 : Ashes\_1, SpecialK\_1, Halsey\_1, Mysterium\_1, Moss\_1
- Track 36 : Caron\_1

- Track 37 : Cen1621\_1
- Track 38 : UtzChips\_1
- Track 39 : SuMoo\_1
- Track 40 : Barnstormer\_1

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

The start number called the most often in the published annotations is 10, it was called in 52 of the 58 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AEgle\_1, Adolin\_1, Adumb2043\_1, AinMach\_1, Asa16\_1, Ascela\_1, Ashes\_1, Berrie\_1, Cappuccino\_1, Cassia\_1, Cen1621\_1, Community\_2, Crewmate\_1, Cyan\_1, Donkey\_1, DrManhattan\_1, DrSierra\_1, Elezi\_1, Emotion\_1, Eraser\_1, Exile\_1, Gambol\_1, Halsey\_1, Iter\_1, IttyBittyPiggy\_1, Janeemi\_2, JasmineDragon\_1, Joemato\_1, JohnDoe\_1, Jstan\_1, JuneStar\_1, Kalimba\_1, Kaylissa\_1, KeAlii\_1, Lego\_1, Liebe\_1, Lizalica\_1, London\_1, MaGuCo\_1, Maureen\_1, MiniMommy\_1, MissSwiss\_1, Moss\_1, Mudpuppy\_1, Mysterium\_1, Niobe\_1, Nitro\_1, ObiToo\_1, Phives\_2, Powerpuff\_1, Pumpkins\_1, Reedo\_1, ShakeltOph\_1, Simpson\_1, Snek\_2, Soondubu\_1, Sooty\_1, SpecialK\_1, Sue2\_1, Tallboi\_1, Tbone\_1, TforTroy\_1, Tuck\_2, Turab\_1, Tutumahutu\_1, Tweety19\_2, VResidence\_1, VroomVroom\_1, Warda\_1, Wildwest\_2, Yang\_1, YesChef\_1,

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

- AGrandiflora\_1, Barnstormer\_1, Caron\_1, UtzChips\_1,

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

- Amyev\_1, Pixelle\_1, SuMoo\_1, Tian\_1,

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

Start 9:

- Found in 3 of 80 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 2 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amyev\_1 (AZ1), Pixelle\_1 (AZ1), Tian\_1 (AZ1),

Start 10:

- Found in 76 of 80 ( 95.0% ) of genes in pham
- Manual Annotations of this start: 52 of 58
- Called 94.7% of time when present
- Phage (with cluster) where this start called: AEgle\_1 (AZ1), Adolin\_1 (AZ1), Adumb2043\_1 (AZ1), AinMach\_1 (AZ), Asa16\_1 (AZ1), Ascela\_1 (AZ1), Ashes\_1 (AZ5), Berrie\_1 (AZ1), Cappuccino\_1 (AZ5), Cassia\_1 (AZ1), Cen1621\_1 (EH), Community\_2 (AZ1), Crewmate\_1 (AZ1), Cyan\_1 (AZ1), Donkey\_1 (AZ5), DrManhattan\_1 (AZ1), DrSierra\_1 (AZ1), Elezi\_1 (AZ1), Emotion\_1 (AZ4), Eraser\_1 (AZ1), Exile\_1 (AZ), Gambol\_1 (AZ5), Halsey\_1 (AZ5), Iter\_1 (AZ1), IttyBittyPiggy\_1 (AZ1), Janeemi\_2 (AZ1), JasmineDragon\_1 (AZ4), Joemato\_1 (AZ1), JohnDoe\_1 (AZ1), Jstan\_1 (AZ1), JuneStar\_1 (AZ1), Kalimba\_1 (AZ5), Kaylissa\_1 (AZ1),

KeAlii\_1 (AZ1), Lego\_1 (AZ1), Liebe\_1 (AZ2), Lizalica\_1 (AZ1), London\_1 (AZ1), MaGuCo\_1 (AZ2), Maureen\_1 (AZ2), MiniMommy\_1 (AZ4), MissSwiss\_1 (AZ1), Moss\_1 (AZ5), Mudpuppy\_1 (AZ1), Mysterium\_1 (AZ5), Niobe\_1 (AZ1), Nitro\_1 (AZ1), ObiToo\_1 (AZ1), Phives\_2 (AZ1), Powerpuff\_1 (AZ1), Pumpkins\_1 (AZ1), Reedo\_1 (AZ1), ShakeltOph\_1 (AZ4), Simpson\_1 (AZ1), Snek\_2 (AZ3), Soondubu\_1 (AZ), Sooty\_1 (AZ5), SpecialK\_1 (AZ5), Sue2\_1 (AZ1), Tallboi\_1 (AZ1), Tbone\_1 (AZ1), TforTroy\_1 (AZ1), Tuck\_2 (AZ1), Turab\_1 (AZ1), Tutumahutu\_1 (AZ1), Tweety19\_2 (AZ3), VResidence\_1 (AZ1), VroomVroom\_1 (AZ4), Warda\_1 (AZ1), Wildwest\_2 (AZ1), Yang\_1 (AZ1), YesChef\_1 (AZ1),

Start 11:

- Found in 4 of 80 ( 5.0% ) of genes in pham
- Manual Annotations of this start: 4 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Barnstormer\_1 (EH), Caron\_1 (EH), SuMoo\_1 (EH), UtzChips\_1 (EH),

Start 18:

- Found in 29 of 80 ( 36.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 3.4% of time when present
- Phage (with cluster) where this start called: AGrandiflora\_1 (AZ1),

### **Summary by clusters:**

There are 7 clusters represented in this pham: AZ, EH, AZ1, AZ2, AZ3, AZ4, AZ5,

Info for manual annotations of cluster AZ:

- Start number 10 was manually annotated 1 time for cluster AZ.

Info for manual annotations of cluster AZ1:

- Start number 9 was manually annotated 2 times for cluster AZ1.
- Start number 10 was manually annotated 42 times for cluster AZ1.

Info for manual annotations of cluster AZ2:

- Start number 10 was manually annotated 3 times for cluster AZ2.

Info for manual annotations of cluster AZ3:

- Start number 10 was manually annotated 2 times for cluster AZ3.

Info for manual annotations of cluster AZ4:

- Start number 10 was manually annotated 3 times for cluster AZ4.

Info for manual annotations of cluster EH:

- Start number 10 was manually annotated 1 time for cluster EH.
- Start number 11 was manually annotated 4 times for cluster EH.

### **Gene Information:**

Gene: AEgle\_1 Start: 85, Stop: 540, Start Num: 10

Candidate Starts for AEgle\_1:

(Start: 10 @85 has 52 MA's), (18, 214), (45, 511), (46, 520),

Gene: AGrandiflora\_1 Start: 213, Stop: 536, Start Num: 18

Candidate Starts for AGrandiflora\_1:

(7, 54), (Start: 10 @84 has 52 MA's), (18, 213), (38, 471), (45, 510), (46, 519),

Gene: Adolin\_1 Start: 85, Stop: 537, Start Num: 10

Candidate Starts for Adolin\_1:

(Start: 10 @85 has 52 MA's), (18, 214), (45, 508), (46, 517),

Gene: Adumb2043\_1 Start: 85, Stop: 540, Start Num: 10

Candidate Starts for Adumb2043\_1:

(Start: 10 @85 has 52 MA's), (18, 214), (45, 511), (46, 520),

Gene: AinMach\_1 Start: 140, Stop: 574, Start Num: 10

Candidate Starts for AinMach\_1:

(Start: 10 @140 has 52 MA's), (12, 167), (13, 212), (17, 239), (19, 281), (26, 359), (35, 473), (38, 509), (39, 512),

Gene: Amyev\_1 Start: 84, Stop: 536, Start Num: 9

Candidate Starts for Amyev\_1:

(4, 12), (7, 54), (Start: 9 @84 has 2 MA's), (38, 471), (45, 510),

Gene: Asa16\_1 Start: 84, Stop: 536, Start Num: 10

Candidate Starts for Asa16\_1:

(Start: 10 @84 has 52 MA's), (18, 213), (38, 471), (43, 489), (45, 510), (46, 519),

Gene: Ascela\_1 Start: 85, Stop: 537, Start Num: 10

Candidate Starts for Ascela\_1:

(Start: 10 @85 has 52 MA's), (38, 472), (43, 490), (45, 511),

Gene: Ashes\_1 Start: 139, Stop: 579, Start Num: 10

Candidate Starts for Ashes\_1:

(Start: 10 @139 has 52 MA's), (17, 232),

Gene: Barnstormer\_1 Start: 114, Stop: 596, Start Num: 11

Candidate Starts for Barnstormer\_1:

(Start: 10 @108 has 52 MA's), (Start: 11 @114 has 4 MA's), (29, 363), (34, 447), (40, 504), (44, 519),

Gene: Berrie\_1 Start: 83, Stop: 535, Start Num: 10

Candidate Starts for Berrie\_1:

(Start: 10 @83 has 52 MA's), (38, 470), (43, 488), (45, 509),

Gene: Cappuccino\_1 Start: 138, Stop: 578, Start Num: 10

Candidate Starts for Cappuccino\_1:

(Start: 10 @138 has 52 MA's), (17, 231),

Gene: Caron\_1 Start: 114, Stop: 593, Start Num: 11

Candidate Starts for Caron\_1:

(Start: 10 @108 has 52 MA's), (Start: 11 @114 has 4 MA's), (12, 135), (14, 183), (29, 363), (34, 447), (44, 516),

Gene: Cassia\_1 Start: 86, Stop: 550, Start Num: 10  
Candidate Starts for Cassia\_1:  
(Start: 10 @86 has 52 MA's), (24, 305), (43, 503), (46, 533),

Gene: Cen1621\_1 Start: 100, Stop: 576, Start Num: 10  
Candidate Starts for Cen1621\_1:  
(8, 88), (Start: 10 @100 has 52 MA's), (20, 250), (27, 322), (32, 361), (33, 376), (37, 457), (41, 472),

Gene: Community\_2 Start: 1157, Stop: 1609, Start Num: 10  
Candidate Starts for Community\_2:  
(2, 1052), (Start: 10 @1157 has 52 MA's), (38, 1544), (43, 1562), (45, 1583),

Gene: Crewmate\_1 Start: 85, Stop: 549, Start Num: 10  
Candidate Starts for Crewmate\_1:  
(Start: 10 @85 has 52 MA's), (38, 484), (43, 502), (45, 523),

Gene: Cyan\_1 Start: 84, Stop: 536, Start Num: 10  
Candidate Starts for Cyan\_1:  
(7, 54), (Start: 10 @84 has 52 MA's), (18, 213), (38, 471), (45, 510), (46, 519),

Gene: Donkey\_1 Start: 138, Stop: 578, Start Num: 10  
Candidate Starts for Donkey\_1:  
(Start: 10 @138 has 52 MA's), (17, 231),

Gene: DrManhattan\_1 Start: 85, Stop: 537, Start Num: 10  
Candidate Starts for DrManhattan\_1:  
(Start: 10 @85 has 52 MA's), (18, 214), (45, 508), (46, 517),

Gene: DrSierra\_1 Start: 87, Stop: 551, Start Num: 10  
Candidate Starts for DrSierra\_1:  
(Start: 10 @87 has 52 MA's), (45, 525),

Gene: Elezi\_1 Start: 85, Stop: 537, Start Num: 10  
Candidate Starts for Elezi\_1:  
(Start: 10 @85 has 52 MA's), (18, 214), (38, 472), (43, 490), (45, 511), (46, 520),

Gene: Emotion\_1 Start: 130, Stop: 558, Start Num: 10  
Candidate Starts for Emotion\_1:  
(Start: 10 @130 has 52 MA's), (22, 310), (32, 415),

Gene: Eraser\_1 Start: 85, Stop: 537, Start Num: 10  
Candidate Starts for Eraser\_1:  
(Start: 10 @85 has 52 MA's), (18, 214), (38, 472), (43, 490), (45, 511), (46, 520),

Gene: Exile\_1 Start: 140, Stop: 571, Start Num: 10  
Candidate Starts for Exile\_1:  
(5, 71), (Start: 10 @140 has 52 MA's), (45, 545), (46, 554),

Gene: Gambol\_1 Start: 138, Stop: 578, Start Num: 10  
Candidate Starts for Gambol\_1:  
(Start: 10 @138 has 52 MA's), (17, 231),

Gene: Halsey\_1 Start: 139, Stop: 579, Start Num: 10

Candidate Starts for Halsey\_1:  
(Start: 10 @139 has 52 MA's), (17, 232),

Gene: Iter\_1 Start: 85, Stop: 537, Start Num: 10  
Candidate Starts for Iter\_1:  
(Start: 10 @85 has 52 MA's), (38, 472), (43, 490), (45, 511),

Gene: IttyBittyPiggy\_1 Start: 86, Stop: 538, Start Num: 10  
Candidate Starts for IttyBittyPiggy\_1:  
(Start: 10 @86 has 52 MA's), (18, 215), (38, 473), (43, 491), (46, 521),

Gene: Janeemi\_2 Start: 1168, Stop: 1620, Start Num: 10  
Candidate Starts for Janeemi\_2:  
(Start: 10 @1168 has 52 MA's), (38, 1555), (43, 1573), (45, 1594),

Gene: JasmineDragon\_1 Start: 132, Stop: 560, Start Num: 10  
Candidate Starts for JasmineDragon\_1:  
(Start: 10 @132 has 52 MA's), (32, 417), (42, 534),

Gene: Joemato\_1 Start: 84, Stop: 536, Start Num: 10  
Candidate Starts for Joemato\_1:  
(7, 54), (Start: 10 @84 has 52 MA's), (18, 213), (38, 471), (45, 510), (46, 519),

Gene: JohnDoe\_1 Start: 84, Stop: 536, Start Num: 10  
Candidate Starts for JohnDoe\_1:  
(7, 54), (Start: 10 @84 has 52 MA's), (18, 213), (38, 471), (45, 510), (46, 519),

Gene: Jstan\_1 Start: 85, Stop: 537, Start Num: 10  
Candidate Starts for Jstan\_1:  
(Start: 10 @85 has 52 MA's), (18, 214), (38, 472), (43, 490), (45, 511), (46, 520),

Gene: JuneStar\_1 Start: 84, Stop: 548, Start Num: 10  
Candidate Starts for JuneStar\_1:  
(7, 54), (Start: 10 @84 has 52 MA's), (43, 501), (46, 531),

Gene: Kalimba\_1 Start: 138, Stop: 578, Start Num: 10  
Candidate Starts for Kalimba\_1:  
(Start: 10 @138 has 52 MA's), (17, 231),

Gene: Kaylissa\_1 Start: 84, Stop: 536, Start Num: 10  
Candidate Starts for Kaylissa\_1:  
(7, 54), (Start: 10 @84 has 52 MA's), (18, 213), (38, 471), (45, 510), (46, 519),

Gene: KeAlii\_1 Start: 69, Stop: 521, Start Num: 10  
Candidate Starts for KeAlii\_1:  
(Start: 10 @69 has 52 MA's), (45, 492), (46, 501),

Gene: Lego\_1 Start: 84, Stop: 536, Start Num: 10  
Candidate Starts for Lego\_1:  
(7, 54), (Start: 10 @84 has 52 MA's), (18, 213), (38, 471), (45, 510), (46, 519),

Gene: Liebe\_1 Start: 80, Stop: 535, Start Num: 10  
Candidate Starts for Liebe\_1:

(Start: 10 @80 has 52 MA's), (25, 311),

Gene: Lizalica\_1 Start: 85, Stop: 534, Start Num: 10

Candidate Starts for Lizalica\_1:

(Start: 10 @85 has 52 MA's), (18, 214), (38, 469), (43, 487), (45, 508), (46, 517),

Gene: London\_1 Start: 85, Stop: 537, Start Num: 10

Candidate Starts for London\_1:

(Start: 10 @85 has 52 MA's), (18, 214), (38, 472), (43, 490), (45, 511), (46, 520),

Gene: MaGuCo\_1 Start: 80, Stop: 535, Start Num: 10

Candidate Starts for MaGuCo\_1:

(Start: 10 @80 has 52 MA's), (25, 311), (39, 473),

Gene: Maureen\_1 Start: 80, Stop: 535, Start Num: 10

Candidate Starts for Maureen\_1:

(Start: 10 @80 has 52 MA's), (25, 311),

Gene: MiniMommy\_1 Start: 132, Stop: 560, Start Num: 10

Candidate Starts for MiniMommy\_1:

(Start: 10 @132 has 52 MA's), (32, 417), (42, 534),

Gene: MissSwiss\_1 Start: 87, Stop: 554, Start Num: 10

Candidate Starts for MissSwiss\_1:

(Start: 10 @87 has 52 MA's), (18, 216), (36, 453), (43, 504), (45, 525), (46, 534),

Gene: Moss\_1 Start: 139, Stop: 579, Start Num: 10

Candidate Starts for Moss\_1:

(Start: 10 @139 has 52 MA's), (17, 232),

Gene: Mudpuppy\_1 Start: 84, Stop: 536, Start Num: 10

Candidate Starts for Mudpuppy\_1:

(4, 12), (7, 54), (Start: 10 @84 has 52 MA's), (18, 213), (38, 471), (45, 510), (46, 519),

Gene: Mysterium\_1 Start: 139, Stop: 579, Start Num: 10

Candidate Starts for Mysterium\_1:

(Start: 10 @139 has 52 MA's), (17, 232),

Gene: Niobe\_1 Start: 85, Stop: 537, Start Num: 10

Candidate Starts for Niobe\_1:

(Start: 10 @85 has 52 MA's), (18, 214), (38, 472), (43, 490), (45, 511), (46, 520),

Gene: Nitro\_1 Start: 86, Stop: 538, Start Num: 10

Candidate Starts for Nitro\_1:

(Start: 10 @86 has 52 MA's), (18, 215), (38, 473), (45, 512), (46, 521),

Gene: ObiToo\_1 Start: 85, Stop: 549, Start Num: 10

Candidate Starts for ObiToo\_1:

(Start: 10 @85 has 52 MA's), (45, 523),

Gene: Phives\_2 Start: 1157, Stop: 1609, Start Num: 10

Candidate Starts for Phives\_2:

(2, 1052), (Start: 10 @1157 has 52 MA's), (38, 1544), (43, 1562), (45, 1583),



Gene: Pixelle\_1 Start: 84, Stop: 536, Start Num: 9  
Candidate Starts for Pixelle\_1:  
(4, 12), (7, 54), (Start: 9 @84 has 2 MA's), (38, 471), (45, 510),

Gene: Powerpuff\_1 Start: 84, Stop: 536, Start Num: 10  
Candidate Starts for Powerpuff\_1:  
(7, 54), (Start: 10 @84 has 52 MA's), (18, 213), (38, 471), (45, 510), (46, 519),

Gene: Pumpkins\_1 Start: 86, Stop: 550, Start Num: 10  
Candidate Starts for Pumpkins\_1:  
(Start: 10 @86 has 52 MA's), (24, 305), (43, 503), (46, 533),

Gene: Reedo\_1 Start: 95, Stop: 547, Start Num: 10  
Candidate Starts for Reedo\_1:  
(Start: 10 @95 has 52 MA's), (12, 122), (18, 224), (43, 497), (45, 518), (46, 527),

Gene: ShakeltOph\_1 Start: 132, Stop: 560, Start Num: 10  
Candidate Starts for ShakeltOph\_1:  
(Start: 10 @132 has 52 MA's), (32, 417), (42, 534),

Gene: Simpson\_1 Start: 84, Stop: 536, Start Num: 10  
Candidate Starts for Simpson\_1:  
(7, 54), (Start: 10 @84 has 52 MA's), (18, 213), (38, 471), (45, 510), (46, 519),

Gene: Snek\_2 Start: 958, Stop: 1422, Start Num: 10  
Candidate Starts for Snek\_2:  
(Start: 10 @958 has 52 MA's), (28, 1207), (45, 1396), (46, 1405),

Gene: Soondubu\_1 Start: 140, Stop: 571, Start Num: 10  
Candidate Starts for Soondubu\_1:  
(Start: 10 @140 has 52 MA's), (45, 545), (46, 554),

Gene: Sooty\_1 Start: 138, Stop: 578, Start Num: 10  
Candidate Starts for Sooty\_1:  
(3, 12), (Start: 10 @138 has 52 MA's), (17, 231),

Gene: SpecialK\_1 Start: 139, Stop: 579, Start Num: 10  
Candidate Starts for SpecialK\_1:  
(Start: 10 @139 has 52 MA's), (17, 232),

Gene: SuMoo\_1 Start: 124, Stop: 603, Start Num: 11  
Candidate Starts for SuMoo\_1:  
(6, 58), (7, 79), (Start: 11 @124 has 4 MA's), (12, 145), (29, 373), (34, 457), (44, 526),

Gene: Sue2\_1 Start: 75, Stop: 542, Start Num: 10  
Candidate Starts for Sue2\_1:  
(4, 12), (Start: 10 @75 has 52 MA's), (12, 102), (21, 249), (30, 342), (45, 513), (46, 522),

Gene: Tallboi\_1 Start: 85, Stop: 537, Start Num: 10  
Candidate Starts for Tallboi\_1:  
(Start: 10 @85 has 52 MA's), (45, 511),

Gene: Tbone\_1 Start: 84, Stop: 536, Start Num: 10  
Candidate Starts for Tbone\_1:  
(7, 54), (Start: 10 @84 has 52 MA's), (18, 213), (38, 471), (45, 510), (46, 519),

Gene: TforTroy\_1 Start: 86, Stop: 550, Start Num: 10  
Candidate Starts for TforTroy\_1:  
(Start: 10 @86 has 52 MA's), (15, 167), (24, 305), (43, 503), (46, 533),

Gene: Tian\_1 Start: 84, Stop: 536, Start Num: 9  
Candidate Starts for Tian\_1:  
(4, 12), (7, 54), (Start: 9 @84 has 2 MA's), (38, 471), (45, 510),

Gene: Tuck\_2 Start: 1145, Stop: 1597, Start Num: 10  
Candidate Starts for Tuck\_2:  
(2, 1040), (Start: 10 @1145 has 52 MA's), (38, 1532), (43, 1550), (45, 1571),

Gene: Turab\_1 Start: 85, Stop: 540, Start Num: 10  
Candidate Starts for Turab\_1:  
(Start: 10 @85 has 52 MA's), (18, 214), (45, 511), (46, 520),

Gene: Tutumahutu\_1 Start: 84, Stop: 536, Start Num: 10  
Candidate Starts for Tutumahutu\_1:  
(7, 54), (Start: 10 @84 has 52 MA's), (18, 213), (38, 471), (45, 510), (46, 519),

Gene: Tweety19\_2 Start: 958, Stop: 1422, Start Num: 10  
Candidate Starts for Tweety19\_2:  
(Start: 10 @958 has 52 MA's), (28, 1207), (45, 1396), (46, 1405),

Gene: UtzChips\_1 Start: 114, Stop: 596, Start Num: 11  
Candidate Starts for UtzChips\_1:  
(Start: 10 @108 has 52 MA's), (Start: 11 @114 has 4 MA's), (29, 363), (34, 447), (44, 519),

Gene: VResidence\_1 Start: 140, Stop: 604, Start Num: 10  
Candidate Starts for VResidence\_1:  
(Start: 10 @140 has 52 MA's), (12, 167), (21, 314), (35, 503), (43, 557), (45, 578), (46, 587),

Gene: VroomVroom\_1 Start: 132, Stop: 563, Start Num: 10  
Candidate Starts for VroomVroom\_1:  
(Start: 10 @132 has 52 MA's), (16, 228), (31, 393), (38, 519),

Gene: Warda\_1 Start: 84, Stop: 536, Start Num: 10  
Candidate Starts for Warda\_1:  
(7, 54), (Start: 10 @84 has 52 MA's), (18, 213), (38, 471), (45, 510), (46, 519),

Gene: Wildwest\_2 Start: 1032, Stop: 1481, Start Num: 10  
Candidate Starts for Wildwest\_2:  
(1, 825), (Start: 10 @1032 has 52 MA's), (23, 1248), (45, 1455), (46, 1464),

Gene: Yang\_1 Start: 84, Stop: 548, Start Num: 10  
Candidate Starts for Yang\_1:  
(7, 54), (Start: 10 @84 has 52 MA's), (43, 501), (46, 531),

Gene: YesChef\_1 Start: 84, Stop: 536, Start Num: 10

Candidate Starts for YesChef\_1:

(7, 54), (Start: 10 @84 has 52 MA's), (18, 213), (38, 471), (45, 510), (46, 519),