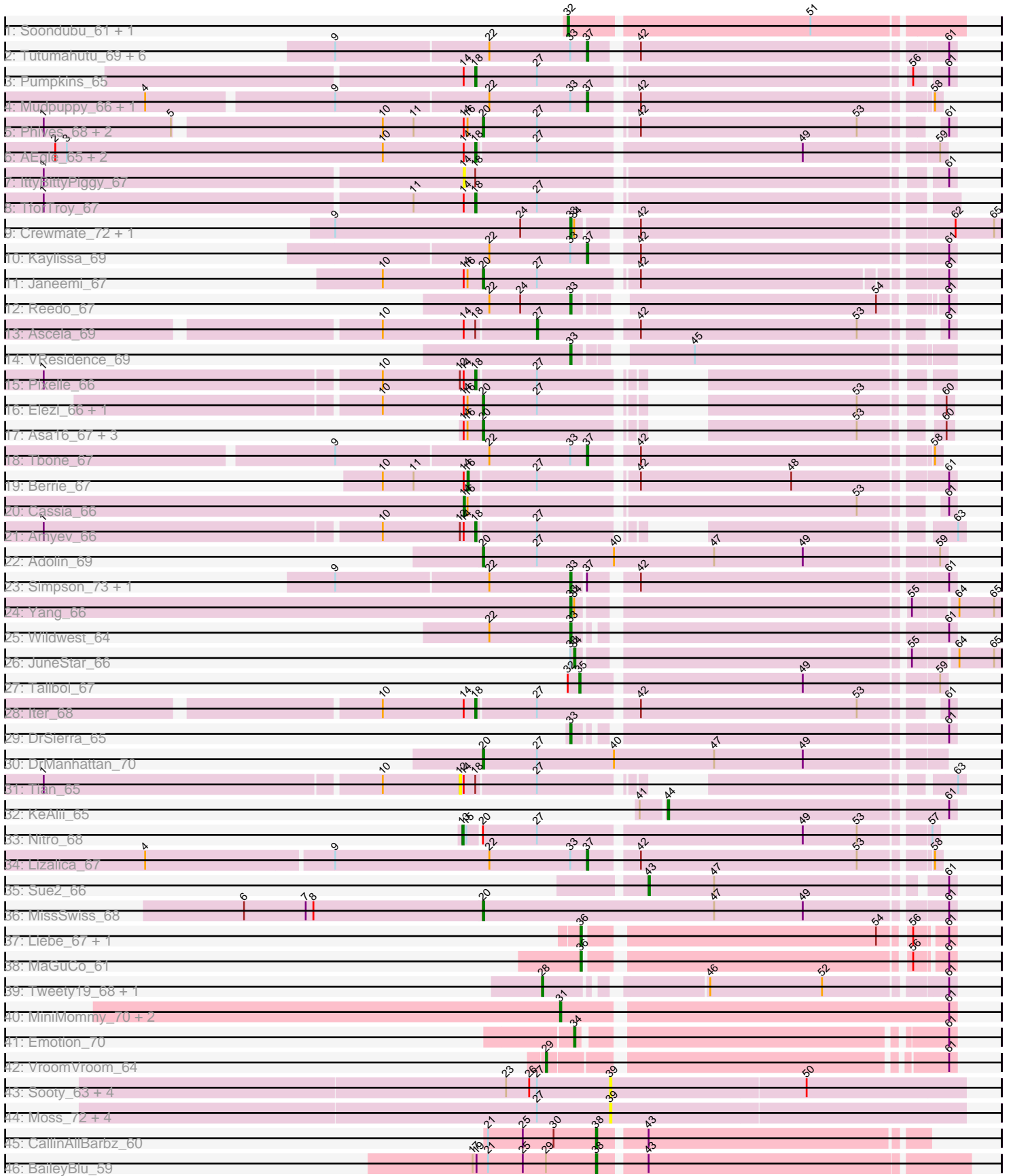


Pham 193958



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 193958 Report

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

Pham number 193958 has 76 members, 21 are drafts.

Phages represented in each track:

- Track 1 : Soondubu\_61, Exile\_59
- Track 2 : Tutumahutu\_69, Powerpuff\_69, Joemato\_69, YesChef\_67, Lego\_67, AGrandiflora\_69, Cyan\_68
- Track 3 : Pumpkins\_65
- Track 4 : Mudpuppy\_66, Warda\_68
- Track 5 : Phives\_68, Tuck\_67, Community\_67
- Track 6 : AEgle\_65, Adumb2043\_66, Turab\_66
- Track 7 : IttyBittyPiggy\_67
- Track 8 : TforTroy\_67
- Track 9 : Crewmate\_72, ObiToo\_72
- Track 10 : Kaylissa\_69
- Track 11 : Janeemi\_67
- Track 12 : Reedo\_67
- Track 13 : Ascela\_69
- Track 14 : VResidence\_69
- Track 15 : Pixelle\_66
- Track 16 : Elezi\_66, Jstan\_68
- Track 17 : Asa16\_67, Eraser\_67, London\_67, Niobe\_67
- Track 18 : Tbone\_67
- Track 19 : Berrie\_67
- Track 20 : Cassia\_66
- Track 21 : Amyev\_66
- Track 22 : Adolin\_69
- Track 23 : Simpson\_73, JohnDoe\_68
- Track 24 : Yang\_66
- Track 25 : Wildwest\_64
- Track 26 : JuneStar\_66
- Track 27 : Tallboi\_67
- Track 28 : lter\_68
- Track 29 : DrSierra\_65
- Track 30 : DrManhattan\_70
- Track 31 : Tian\_65
- Track 32 : KeAlii\_65
- Track 33 : Nitro\_68
- Track 34 : Lizalica\_67
- Track 35 : Sue2\_66
- Track 36 : MissSwiss\_68

- Track 37 : Liebe\_67, Maureen\_67
- Track 38 : MaGuCo\_61
- Track 39 : Tweety19\_68, Snek\_67
- Track 40 : MiniMommy\_70, ShakeltOph\_69, JasmineDragon\_67
- Track 41 : Emotion\_70
- Track 42 : VroomVroom\_64
- Track 43 : Sooty\_63, Kalimba\_62, Cappuccino\_62, Donkey\_63, Gambol\_63
- Track 44 : Moss\_72, Mysterium\_63, Ashes\_66, SpecialK\_71, Halsey\_75
- Track 45 : CallinAllBarbz\_60
- Track 46 : BaileyBlu\_59

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

The start number called the most often in the published annotations is 20, it was called in 11 of the 55 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Adolin\_69, Asa16\_67, Community\_67, DrManhattan\_70, Elezi\_66, Eraser\_67, Janeemi\_67, Jstan\_68, London\_67, MissSwiss\_68, Niobe\_67, Phives\_68, Tuck\_67,

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

- Nitro\_68,

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

- AEgle\_65, AGrandiflora\_69, Adumb2043\_66, Amyev\_66, Ascela\_69, Ashes\_66, BaileyBlu\_59, Berrie\_67, CallinAllBarbz\_60, Cappuccino\_62, Cassia\_66, Crewmate\_72, Cyan\_68, Donkey\_63, DrSierra\_65, Emotion\_70, Exile\_59, Gambol\_63, Halsey\_75, Iter\_68, IttyBittyPiggy\_67, JasmineDragon\_67, Joemato\_69, JohnDoe\_68, JuneStar\_66, Kalimba\_62, Kaylissa\_69, KeAlii\_65, Lego\_67, Liebe\_67, Lizalica\_67, MaGuCo\_61, Maureen\_67, MiniMommy\_70, Moss\_72, Mudpuppy\_66, Mysterium\_63, ObiToo\_72, Pixelle\_66, Powerpuff\_69, Pumpkins\_65, Reedo\_67, ShakeltOph\_69, Simpson\_73, Snek\_67, Soondubu\_61, Sooty\_63, SpecialK\_71, Sue2\_66, Tallboi\_67, Tbone\_67, TforTroy\_67, Tian\_65, Turab\_66, Tutumahutu\_69, Tweety19\_68, VResidence\_69, VroomVroom\_64, Warda\_68, Wildwest\_64, Yang\_66, YesChef\_67,

**Summary by start number:**

Start 12:

- Found in 3 of 76 ( 3.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Tian\_65 (AZ1),

Start 13:

- Found in 1 of 76 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Nitro\_68 (AZ1),

Start 14:

- Found in 23 of 76 ( 30.3% ) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 8.7% of time when present
- Phage (with cluster) where this start called: Cassia\_66 (AZ1), IttyBittyPiggy\_67 (AZ1),

Start 16:

- Found in 12 of 76 ( 15.8% ) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 8.3% of time when present
- Phage (with cluster) where this start called: Berrie\_67 (AZ1),

Start 18:

- Found in 11 of 76 ( 14.5% ) of genes in pham
- Manual Annotations of this start: 6 of 55
- Called 72.7% of time when present
- Phage (with cluster) where this start called: AEgle\_65 (AZ1), Adumb2043\_66 (AZ1), Amyev\_66 (AZ1), Iter\_68 (AZ1), Pixelle\_66 (AZ1), Pumpkins\_65 (AZ1), TforTroy\_67 (AZ1), Turab\_66 (AZ1),

Start 20:

- Found in 14 of 76 ( 18.4% ) of genes in pham
- Manual Annotations of this start: 11 of 55
- Called 92.9% of time when present
- Phage (with cluster) where this start called: Adolin\_69 (AZ1), Asa16\_67 (AZ1), Community\_67 (AZ1), DrManhattan\_70 (AZ1), Elezi\_66 (AZ1), Eraser\_67 (AZ1), Janeemi\_67 (AZ1), Jstan\_68 (AZ1), London\_67 (AZ1), MissSwiss\_68 (AZ1), Niobe\_67 (AZ1), Phives\_68 (AZ1), Tuck\_67 (AZ1),

Start 27:

- Found in 30 of 76 ( 39.5% ) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 3.3% of time when present
- Phage (with cluster) where this start called: Ascela\_69 (AZ1),

Start 28:

- Found in 2 of 76 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 2 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sneek\_67 (AZ3), Tweety19\_68 (AZ3),

Start 29:

- Found in 2 of 76 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 50.0% of time when present
- Phage (with cluster) where this start called: VroomVroom\_64 (AZ4),

Start 31:

- Found in 3 of 76 ( 3.9% ) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 100.0% of time when present

- Phage (with cluster) where this start called: JasmineDragon\_67 (AZ4), MiniMommy\_70 (AZ4), ShakeltOph\_69 (AZ4),

Start 32:

- Found in 3 of 76 ( 3.9% ) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Exile\_59 (AZ), Soondubu\_61 (AZ),

Start 33:

- Found in 22 of 76 ( 28.9% ) of genes in pham
- Manual Annotations of this start: 8 of 55
- Called 40.9% of time when present
- Phage (with cluster) where this start called: Crewmate\_72 (AZ1), DrSierra\_65 (AZ1), JohnDoe\_68 (AZ1), ObiToo\_72 (AZ1), Reedo\_67 (AZ1), Simpson\_73 (AZ1), VResidence\_69 (AZ1), Wildwest\_64 (AZ1), Yang\_66 (AZ1),

Start 34:

- Found in 5 of 76 ( 6.6% ) of genes in pham
- Manual Annotations of this start: 2 of 55
- Called 40.0% of time when present
- Phage (with cluster) where this start called: Emotion\_70 (AZ4), JuneStar\_66 (AZ1),

Start 35:

- Found in 1 of 76 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Tallboi\_67 (AZ1),

Start 36:

- Found in 3 of 76 ( 3.9% ) of genes in pham
- Manual Annotations of this start: 3 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Liebe\_67 (AZ2), MaGuCo\_61 (AZ2), Maureen\_67 (AZ2),

Start 37:

- Found in 14 of 76 ( 18.4% ) of genes in pham
- Manual Annotations of this start: 11 of 55
- Called 85.7% of time when present
- Phage (with cluster) where this start called: AGrandiflora\_69 (AZ1), Cyan\_68 (AZ1), Joemato\_69 (AZ1), Kaylissa\_69 (AZ1), Lego\_67 (AZ1), Lizalica\_67 (AZ1), Mudpuppy\_66 (AZ1), Powerpuff\_69 (AZ1), Tbone\_67 (AZ1), Tutumahutu\_69 (AZ1), Warda\_68 (AZ1), YesChef\_67 (AZ1),

Start 38:

- Found in 2 of 76 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 2 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BaileyBlu\_59 (FP), CallinAllBarbz\_60 (FP),

Start 39:

- Found in 10 of 76 ( 13.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ashes\_66 (AZ5), Cappuccino\_62 (AZ5), Donkey\_63 (AZ5), Gambol\_63 (AZ5), Halsey\_75 (AZ5), Kalimba\_62 (AZ5), Moss\_72 (AZ5), Mysterium\_63 (AZ5), Sooty\_63 (AZ5), SpecialK\_71 (AZ5),

Start 43:

- Found in 3 of 76 ( 3.9% ) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Sue2\_66 (AZ1),

Start 44:

- Found in 1 of 76 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: KeAlii\_65 (AZ1),

### **Summary by clusters:**

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

Info for manual annotations of cluster AZ:

- Start number 32 was manually annotated 1 time for cluster AZ.

Info for manual annotations of cluster AZ1:

- Start number 13 was manually annotated 1 time for cluster AZ1.
- Start number 14 was manually annotated 1 time for cluster AZ1.
- Start number 16 was manually annotated 1 time for cluster AZ1.
- Start number 18 was manually annotated 6 times for cluster AZ1.
- Start number 20 was manually annotated 11 times for cluster AZ1.
- Start number 27 was manually annotated 1 time for cluster AZ1.
- Start number 33 was manually annotated 8 times for cluster AZ1.
- Start number 34 was manually annotated 1 time for cluster AZ1.
- Start number 35 was manually annotated 1 time for cluster AZ1.
- Start number 37 was manually annotated 11 times for cluster AZ1.
- Start number 43 was manually annotated 1 time for cluster AZ1.
- Start number 44 was manually annotated 1 time for cluster AZ1.

Info for manual annotations of cluster AZ2:

- Start number 36 was manually annotated 3 times for cluster AZ2.

Info for manual annotations of cluster AZ3:

- Start number 28 was manually annotated 2 times for cluster AZ3.

Info for manual annotations of cluster AZ4:

- Start number 29 was manually annotated 1 time for cluster AZ4.
- Start number 31 was manually annotated 1 time for cluster AZ4.
- Start number 34 was manually annotated 1 time for cluster AZ4.

Info for manual annotations of cluster FP:

- Start number 38 was manually annotated 2 times for cluster FP.

### **Gene Information:**

Gene: AEgle\_65 Start: 41928, Stop: 42272, Start Num: 18

Candidate Starts for AEgle\_65:

(2, 41601), (3, 41610), (10, 41856), (Start: 14 @41919 has 1 MA's), (Start: 18 @41928 has 6 MA's), (Start: 27 @41973 has 1 MA's), (49, 42171), (59, 42267),

Gene: AGrandiflora\_69 Start: 42827, Stop: 43090, Start Num: 37

Candidate Starts for AGrandiflora\_69:

(9, 42638), (22, 42755), (Start: 33 @42818 has 8 MA's), (Start: 37 @42827 has 11 MA's), (42, 42857), (61, 43085),

Gene: Adolin\_69 Start: 41878, Stop: 42228, Start Num: 20

Candidate Starts for Adolin\_69:

(Start: 20 @41878 has 11 MA's), (Start: 27 @41920 has 1 MA's), (40, 41980), (47, 42058), (49, 42127), (59, 42223),

Gene: Adumb2043\_66 Start: 41952, Stop: 42296, Start Num: 18

Candidate Starts for Adumb2043\_66:

(2, 41625), (3, 41634), (10, 41880), (Start: 14 @41943 has 1 MA's), (Start: 18 @41952 has 6 MA's), (Start: 27 @41997 has 1 MA's), (49, 42195), (59, 42291),

Gene: Amyev\_66 Start: 43156, Stop: 43452, Start Num: 18

Candidate Starts for Amyev\_66:

(1, 42829), (10, 43084), (12, 43144), (Start: 14 @43147 has 1 MA's), (Start: 18 @43156 has 6 MA's), (Start: 27 @43201 has 1 MA's), (63, 43447),

Gene: Asa16\_67 Start: 42516, Stop: 42797, Start Num: 20

Candidate Starts for Asa16\_67:

(Start: 14 @42504 has 1 MA's), (Start: 16 @42507 has 1 MA's), (Start: 20 @42516 has 11 MA's), (53, 42744), (60, 42792),

Gene: Ascela\_69 Start: 43040, Stop: 43333, Start Num: 27

Candidate Starts for Ascela\_69:

(10, 42923), (Start: 14 @42986 has 1 MA's), (Start: 18 @42995 has 6 MA's), (Start: 27 @43040 has 1 MA's), (42, 43112), (53, 43280), (61, 43328),

Gene: Ashes\_66 Start: 38817, Stop: 39089, Start Num: 39

Candidate Starts for Ashes\_66:

(Start: 27 @38760 has 1 MA's), (39, 38817),

Gene: BaileyBlu\_59 Start: 39085, Stop: 39360, Start Num: 38

Candidate Starts for BaileyBlu\_59:

(17, 38989), (19, 38992), (21, 39001), (25, 39028), (Start: 29 @39046 has 1 MA's), (Start: 38 @39085 has 2 MA's), (Start: 43 @39118 has 1 MA's),

Gene: Berrie\_67 Start: 42601, Stop: 42954, Start Num: 16

Candidate Starts for Berrie\_67:

(10, 42535), (11, 42559), (Start: 14 @42598 has 1 MA's), (Start: 16 @42601 has 1 MA's), (Start: 27 @42652 has 1 MA's), (42, 42721), (48, 42838), (61, 42949),

Gene: CallinAllBarbz\_60 Start: 39859, Stop: 40101, Start Num: 38

Candidate Starts for CallinAllBarbz\_60:

(21, 39775), (25, 39802), (30, 39826), (Start: 38 @39859 has 2 MA's), (Start: 43 @39892 has 1 MA's),

Gene: Cappuccino\_62 Start: 38667, Stop: 38939, Start Num: 39

Candidate Starts for Cappuccino\_62:

(23, 38586), (26, 38604), (Start: 27 @38610 has 1 MA's), (39, 38667), (50, 38817),

Gene: Cassia\_66 Start: 42270, Stop: 42614, Start Num: 14

Candidate Starts for Cassia\_66:

(Start: 14 @42270 has 1 MA's), (Start: 16 @42273 has 1 MA's), (53, 42561), (61, 42609),

Gene: Community\_67 Start: 42884, Stop: 43216, Start Num: 20

Candidate Starts for Community\_67:

(1, 42557), (5, 42656), (10, 42809), (11, 42833), (Start: 14 @42872 has 1 MA's), (Start: 16 @42875 has 1 MA's), (Start: 20 @42884 has 11 MA's), (Start: 27 @42926 has 1 MA's), (42, 42995), (53, 43163), (61, 43211),

Gene: Crewmate\_72 Start: 43229, Stop: 43537, Start Num: 33

Candidate Starts for Crewmate\_72:

(9, 43046), (24, 43190), (Start: 33 @43229 has 8 MA's), (Start: 34 @43232 has 2 MA's), (42, 43268), (62, 43502), (65, 43532),

Gene: Cyan\_68 Start: 42571, Stop: 42834, Start Num: 37

Candidate Starts for Cyan\_68:

(9, 42382), (22, 42499), (Start: 33 @42562 has 8 MA's), (Start: 37 @42571 has 11 MA's), (42, 42601), (61, 42829),

Gene: Donkey\_63 Start: 38657, Stop: 38929, Start Num: 39

Candidate Starts for Donkey\_63:

(23, 38576), (26, 38594), (Start: 27 @38600 has 1 MA's), (39, 38657), (50, 38807),

Gene: DrManhattan\_70 Start: 41432, Stop: 41782, Start Num: 20

Candidate Starts for DrManhattan\_70:

(Start: 20 @41432 has 11 MA's), (Start: 27 @41474 has 1 MA's), (40, 41534), (47, 41612), (49, 41681),

Gene: DrSierra\_65 Start: 41681, Stop: 41947, Start Num: 33

Candidate Starts for DrSierra\_65:

(Start: 33 @41681 has 8 MA's), (61, 41942),

Gene: Elezi\_66 Start: 42273, Stop: 42554, Start Num: 20

Candidate Starts for Elezi\_66:

(10, 42198), (Start: 14 @42261 has 1 MA's), (Start: 16 @42264 has 1 MA's), (Start: 20 @42273 has 11 MA's), (Start: 27 @42315 has 1 MA's), (53, 42501), (60, 42549),

Gene: Emotion\_70 Start: 43720, Stop: 43983, Start Num: 34

Candidate Starts for Emotion\_70:

(Start: 34 @43720 has 2 MA's), (61, 43978),



Gene: Eraser\_67 Start: 42523, Stop: 42804, Start Num: 20  
Candidate Starts for Eraser\_67:  
(Start: 14 @42511 has 1 MA's), (Start: 16 @42514 has 1 MA's), (Start: 20 @42523 has 11 MA's), (53, 42751), (60, 42799),

Gene: Exile\_59 Start: 43115, Stop: 43405, Start Num: 32  
Candidate Starts for Exile\_59:  
(Start: 32 @43115 has 1 MA's), (51, 43295),

Gene: Gambol\_63 Start: 38676, Stop: 38948, Start Num: 39  
Candidate Starts for Gambol\_63:  
(23, 38595), (26, 38613), (Start: 27 @38619 has 1 MA's), (39, 38676), (50, 38826),

Gene: Halsey\_75 Start: 38807, Stop: 39079, Start Num: 39  
Candidate Starts for Halsey\_75:  
(Start: 27 @38750 has 1 MA's), (39, 38807),

Gene: Iter\_68 Start: 42766, Stop: 43104, Start Num: 18  
Candidate Starts for Iter\_68:  
(10, 42694), (Start: 14 @42757 has 1 MA's), (Start: 18 @42766 has 6 MA's), (Start: 27 @42811 has 1 MA's), (42, 42883), (53, 43051), (61, 43099),

Gene: IttyBittyPiggy\_67 Start: 40991, Stop: 41344, Start Num: 14  
Candidate Starts for IttyBittyPiggy\_67:  
(1, 40670), (Start: 14 @40991 has 1 MA's), (Start: 18 @41000 has 6 MA's), (61, 41339),

Gene: Janeemi\_67 Start: 42677, Stop: 43015, Start Num: 20  
Candidate Starts for Janeemi\_67:  
(10, 42602), (Start: 14 @42665 has 1 MA's), (Start: 16 @42668 has 1 MA's), (Start: 20 @42677 has 11 MA's), (Start: 27 @42719 has 1 MA's), (42, 42788), (61, 43010),

Gene: JasmineDragon\_67 Start: 42320, Stop: 42616, Start Num: 31  
Candidate Starts for JasmineDragon\_67:  
(Start: 31 @42320 has 1 MA's), (61, 42611),

Gene: Joemato\_69 Start: 42748, Stop: 43011, Start Num: 37  
Candidate Starts for Joemato\_69:  
(9, 42559), (22, 42676), (Start: 33 @42739 has 8 MA's), (Start: 37 @42748 has 11 MA's), (42, 42778), (61, 43006),

Gene: JohnDoe\_68 Start: 42656, Stop: 42928, Start Num: 33  
Candidate Starts for JohnDoe\_68:  
(9, 42476), (22, 42593), (Start: 33 @42656 has 8 MA's), (Start: 37 @42665 has 11 MA's), (42, 42695), (61, 42923),

Gene: Jstan\_68 Start: 42277, Stop: 42558, Start Num: 20  
Candidate Starts for Jstan\_68:  
(10, 42202), (Start: 14 @42265 has 1 MA's), (Start: 16 @42268 has 1 MA's), (Start: 20 @42277 has 11 MA's), (Start: 27 @42319 has 1 MA's), (53, 42505), (60, 42553),

Gene: JuneStar\_66 Start: 43398, Stop: 43697, Start Num: 34  
Candidate Starts for JuneStar\_66:  
(Start: 33 @43395 has 8 MA's), (Start: 34 @43398 has 2 MA's), (55, 43635), (64, 43665), (65, 43692),

Gene: Kalimba\_62 Start: 38654, Stop: 38926, Start Num: 39

Candidate Starts for Kalimba\_62:

(23, 38573), (26, 38591), (Start: 27 @38597 has 1 MA's), (39, 38654), (50, 38804),

Gene: Kaylissa\_69 Start: 43024, Stop: 43287, Start Num: 37

Candidate Starts for Kaylissa\_69:

(22, 42952), (Start: 33 @43015 has 8 MA's), (Start: 37 @43024 has 11 MA's), (42, 43054), (61, 43282),

Gene: KeAlii\_65 Start: 40879, Stop: 41094, Start Num: 44

Candidate Starts for KeAlii\_65:

(41, 40861), (Start: 44 @40879 has 1 MA's), (61, 41089),

Gene: Lego\_67 Start: 42346, Stop: 42609, Start Num: 37

Candidate Starts for Lego\_67:

(9, 42157), (22, 42274), (Start: 33 @42337 has 8 MA's), (Start: 37 @42346 has 11 MA's), (42, 42376), (61, 42604),

Gene: Liebe\_67 Start: 44554, Stop: 44811, Start Num: 36

Candidate Starts for Liebe\_67:

(Start: 36 @44554 has 3 MA's), (54, 44767), (56, 44785), (61, 44806),

Gene: Lizalica\_67 Start: 41945, Stop: 42199, Start Num: 37

Candidate Starts for Lizalica\_67:

(4, 41612), (9, 41753), (22, 41873), (Start: 33 @41936 has 8 MA's), (Start: 37 @41945 has 11 MA's), (42, 41978), (53, 42146), (58, 42194),

Gene: London\_67 Start: 42514, Stop: 42795, Start Num: 20

Candidate Starts for London\_67:

(Start: 14 @42502 has 1 MA's), (Start: 16 @42505 has 1 MA's), (Start: 20 @42514 has 11 MA's), (53, 42742), (60, 42790),

Gene: MaGuCo\_61 Start: 42675, Stop: 42932, Start Num: 36

Candidate Starts for MaGuCo\_61:

(Start: 36 @42675 has 3 MA's), (56, 42906), (61, 42927),

Gene: Maureen\_67 Start: 44553, Stop: 44810, Start Num: 36

Candidate Starts for Maureen\_67:

(Start: 36 @44553 has 3 MA's), (54, 44766), (56, 44784), (61, 44805),

Gene: MiniMommy\_70 Start: 42328, Stop: 42624, Start Num: 31

Candidate Starts for MiniMommy\_70:

(Start: 31 @42328 has 1 MA's), (61, 42619),

Gene: MissSwiss\_68 Start: 41433, Stop: 41789, Start Num: 20

Candidate Starts for MissSwiss\_68:

(6, 41250), (7, 41298), (8, 41304), (Start: 20 @41433 has 11 MA's), (47, 41613), (49, 41682), (61, 41784),

Gene: Moss\_72 Start: 38754, Stop: 39026, Start Num: 39

Candidate Starts for Moss\_72:

(Start: 27 @38697 has 1 MA's), (39, 38754),

Gene: Mudpuppy\_66 Start: 42711, Stop: 42965, Start Num: 37

Candidate Starts for Mudpuppy\_66:

(4, 42384), (9, 42522), (22, 42639), (Start: 33 @42702 has 8 MA's), (Start: 37 @42711 has 11 MA's), (42, 42744), (58, 42960),

Gene: Mysterium\_63 Start: 38595, Stop: 38867, Start Num: 39

Candidate Starts for Mysterium\_63:

(Start: 27 @38538 has 1 MA's), (39, 38595),

Gene: Niobe\_67 Start: 42517, Stop: 42798, Start Num: 20

Candidate Starts for Niobe\_67:

(Start: 14 @42505 has 1 MA's), (Start: 16 @42508 has 1 MA's), (Start: 20 @42517 has 11 MA's), (53, 42745), (60, 42793),

Gene: Nitro\_68 Start: 43178, Stop: 43525, Start Num: 13

Candidate Starts for Nitro\_68:

(Start: 13 @43178 has 1 MA's), (15, 43181), (Start: 20 @43190 has 11 MA's), (Start: 27 @43232 has 1 MA's), (49, 43430), (53, 43472), (57, 43520),

Gene: ObiToo\_72 Start: 42845, Stop: 43153, Start Num: 33

Candidate Starts for ObiToo\_72:

(9, 42662), (24, 42806), (Start: 33 @42845 has 8 MA's), (Start: 34 @42848 has 2 MA's), (42, 42884), (62, 43118), (65, 43148),

Gene: Phives\_68 Start: 42999, Stop: 43331, Start Num: 20

Candidate Starts for Phives\_68:

(1, 42672), (5, 42771), (10, 42924), (11, 42948), (Start: 14 @42987 has 1 MA's), (Start: 16 @42990 has 1 MA's), (Start: 20 @42999 has 11 MA's), (Start: 27 @43041 has 1 MA's), (42, 43110), (53, 43278), (61, 43326),

Gene: Pixelle\_66 Start: 43257, Stop: 43547, Start Num: 18

Candidate Starts for Pixelle\_66:

(1, 42930), (10, 43185), (12, 43245), (Start: 14 @43248 has 1 MA's), (Start: 18 @43257 has 6 MA's), (Start: 27 @43302 has 1 MA's),

Gene: Powerpuff\_69 Start: 43550, Stop: 43813, Start Num: 37

Candidate Starts for Powerpuff\_69:

(9, 43361), (22, 43478), (Start: 33 @43541 has 8 MA's), (Start: 37 @43550 has 11 MA's), (42, 43580), (61, 43808),

Gene: Pumpkins\_65 Start: 42797, Stop: 43141, Start Num: 18

Candidate Starts for Pumpkins\_65:

(Start: 14 @42788 has 1 MA's), (Start: 18 @42797 has 6 MA's), (Start: 27 @42845 has 1 MA's), (56, 43115), (61, 43136),

Gene: Reedo\_67 Start: 40786, Stop: 41046, Start Num: 33

Candidate Starts for Reedo\_67:

(22, 40723), (24, 40747), (Start: 33 @40786 has 8 MA's), (54, 41002), (61, 41041),

Gene: ShakeltOph\_69 Start: 42320, Stop: 42616, Start Num: 31

Candidate Starts for ShakeltOph\_69:

(Start: 31 @42320 has 1 MA's), (61, 42611),

Gene: Simpson\_73 Start: 42743, Stop: 43015, Start Num: 33

Candidate Starts for Simpson\_73:

(9, 42563), (22, 42680), (Start: 33 @42743 has 8 MA's), (Start: 37 @42752 has 11 MA's), (42, 42782), (61, 43010),

Gene: Snek\_67 Start: 39932, Stop: 40216, Start Num: 28

Candidate Starts for Snek\_67:

(Start: 28 @39932 has 2 MA's), (46, 40037), (52, 40124), (61, 40211),

Gene: Soondubu\_61 Start: 44124, Stop: 44414, Start Num: 32

Candidate Starts for Soondubu\_61:

(Start: 32 @44124 has 1 MA's), (51, 44304),

Gene: Sooty\_63 Start: 38669, Stop: 38941, Start Num: 39

Candidate Starts for Sooty\_63:

(23, 38588), (26, 38606), (Start: 27 @38612 has 1 MA's), (39, 38669), (50, 38819),

Gene: SpecialK\_71 Start: 38663, Stop: 38935, Start Num: 39

Candidate Starts for SpecialK\_71:

(Start: 27 @38606 has 1 MA's), (39, 38663),

Gene: Sue2\_66 Start: 41273, Stop: 41494, Start Num: 43

Candidate Starts for Sue2\_66:

(Start: 43 @41273 has 1 MA's), (47, 41324), (61, 41489),

Gene: Tallboi\_67 Start: 42522, Stop: 42788, Start Num: 35

Candidate Starts for Tallboi\_67:

(Start: 32 @42513 has 1 MA's), (Start: 35 @42522 has 1 MA's), (49, 42687), (59, 42783),

Gene: Tbone\_67 Start: 42998, Stop: 43252, Start Num: 37

Candidate Starts for Tbone\_67:

(9, 42809), (22, 42926), (Start: 33 @42989 has 8 MA's), (Start: 37 @42998 has 11 MA's), (42, 43031), (58, 43247),

Gene: TforTroy\_67 Start: 42451, Stop: 42801, Start Num: 18

Candidate Starts for TforTroy\_67:

(1, 42121), (11, 42403), (Start: 14 @42442 has 1 MA's), (Start: 18 @42451 has 6 MA's), (Start: 27 @42499 has 1 MA's),

Gene: Tian\_65 Start: 43143, Stop: 43451, Start Num: 12

Candidate Starts for Tian\_65:

(1, 42828), (10, 43083), (12, 43143), (Start: 14 @43146 has 1 MA's), (Start: 18 @43155 has 6 MA's), (Start: 27 @43200 has 1 MA's), (63, 43446),

Gene: Tuck\_67 Start: 42787, Stop: 43119, Start Num: 20

Candidate Starts for Tuck\_67:

(1, 42460), (5, 42559), (10, 42712), (11, 42736), (Start: 14 @42775 has 1 MA's), (Start: 16 @42778 has 1 MA's), (Start: 20 @42787 has 11 MA's), (Start: 27 @42829 has 1 MA's), (42, 42898), (53, 43066), (61, 43114),

Gene: Turab\_66 Start: 41972, Stop: 42316, Start Num: 18

Candidate Starts for Turab\_66:

(2, 41645), (3, 41654), (10, 41900), (Start: 14 @41963 has 1 MA's), (Start: 18 @41972 has 6 MA's), (Start: 27 @42017 has 1 MA's), (49, 42215), (59, 42311),

Gene: Tutumahutu\_69 Start: 42593, Stop: 42856, Start Num: 37

Candidate Starts for Tutumahutu\_69:

(9, 42404), (22, 42521), (Start: 33 @42584 has 8 MA's), (Start: 37 @42593 has 11 MA's), (42, 42623), (61, 42851),

Gene: Tweety19\_68 Start: 39933, Stop: 40217, Start Num: 28

Candidate Starts for Tweety19\_68:

(Start: 28 @39933 has 2 MA's), (46, 40038), (52, 40125), (61, 40212),

Gene: VResidence\_69 Start: 40961, Stop: 41224, Start Num: 33

Candidate Starts for VResidence\_69:

(Start: 33 @40961 has 8 MA's), (45, 41036),

Gene: VroomVroom\_64 Start: 41876, Stop: 42163, Start Num: 29

Candidate Starts for VroomVroom\_64:

(Start: 29 @41876 has 1 MA's), (61, 42158),

Gene: Warda\_68 Start: 42724, Stop: 42978, Start Num: 37

Candidate Starts for Warda\_68:

(4, 42397), (9, 42535), (22, 42652), (Start: 33 @42715 has 8 MA's), (Start: 37 @42724 has 11 MA's), (42, 42757), (58, 42973),

Gene: Wildwest\_64 Start: 42676, Stop: 42942, Start Num: 33

Candidate Starts for Wildwest\_64:

(22, 42613), (Start: 33 @42676 has 8 MA's), (61, 42937),

Gene: Yang\_66 Start: 42085, Stop: 42387, Start Num: 33

Candidate Starts for Yang\_66:

(Start: 33 @42085 has 8 MA's), (Start: 34 @42088 has 2 MA's), (55, 42325), (64, 42355), (65, 42382),

Gene: YesChef\_67 Start: 42409, Stop: 42672, Start Num: 37

Candidate Starts for YesChef\_67:

(9, 42220), (22, 42337), (Start: 33 @42400 has 8 MA's), (Start: 37 @42409 has 11 MA's), (42, 42439), (61, 42667),