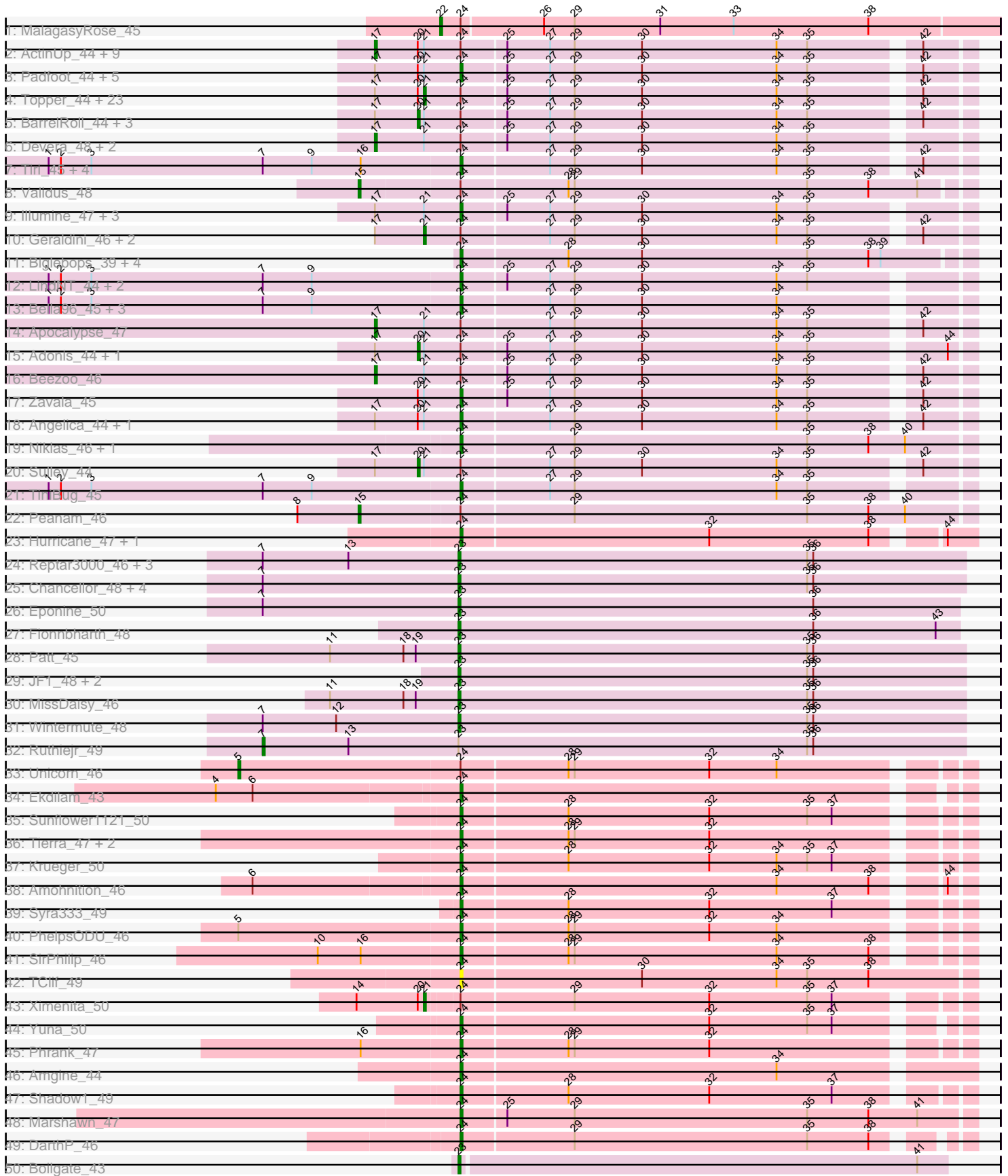


Pham 161706



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 161706 Report

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

Pham number 161706 has 125 members, 3 are drafts.

Phages represented in each track:

- Track 1 : MalagasyRose\_45
- Track 2 : ActinUp\_44, Ramen\_44, CaseJules\_45, Joy99\_44, Blizzard\_44, Atiba\_44, Zabiza\_40, Hyperbowlee\_44, Durfee\_44, Piatt\_44
- Track 3 : Padfoot\_44, Asayake\_44, BEEST\_44, Mynx\_45, Padpat\_45, ShiaSurprise\_45
- Track 4 : Topper\_44, Llorens\_44, Dalmuri\_44, Jeckyll\_44, Rosmarinus\_44, CREW\_44, TruffulaTree\_44, Boiiii\_44, BGlluviae\_44, Belladonna\_44, Veliki\_44, Rapunzel97\_44, Homura\_44, Inky\_44, Spock\_44, Lunahalos\_44, Capricorn\_44, Peel\_44, HedwigODU\_44, YoureAdopted\_43, Emerson\_45, Jarvi\_44, Twitch\_44, Slimphazie\_44
- Track 5 : BarrelRoll\_44, Adephagia\_44, JAWS\_44, Tachez\_44
- Track 6 : Devera\_48, Ageofdapage\_46, Murucutumbu\_45
- Track 7 : Tiri\_45, MeaningOfLife\_45, Ganymede\_45, QuincyRose\_43, CrimD\_44
- Track 8 : Validus\_48
- Track 9 : Illumine\_47, LaterM\_45, Stinson\_45, Dole\_47
- Track 10 : Geraldini\_46, BaghaKamala\_43, Pokerus\_43
- Track 11 : Biglebops\_39, Amelie\_39, Nutello\_39, LilPharaoh\_39, Mdavu\_40
- Track 12 : LindNT\_44, Prithvi\_45, TreyKay\_45
- Track 13 : Bella96\_45, Urkel\_45, SamuelLPlaqson\_45, DrHayes\_45
- Track 14 : Apocalypse\_47
- Track 15 : Adonis\_44, Anaya\_46
- Track 16 : Beezoo\_46
- Track 17 : Zavala\_45
- Track 18 : Angelica\_44, Deby\_44
- Track 19 : Niklas\_46, Shaobing\_46
- Track 20 : Sulley\_44
- Track 21 : TiniBug\_45
- Track 22 : Peanam\_46
- Track 23 : Hurricane\_47, Keshu\_48
- Track 24 : Reptar3000\_46, Juliette\_50, OmniCritical\_47, Malthus\_49
- Track 25 : Chancellor\_48, Mitti\_48, Slarp\_48, Cheetobro\_48, Taquito\_48
- Track 26 : Eponine\_50
- Track 27 : Fionnbharth\_48
- Track 28 : Patt\_45
- Track 29 : JF1\_48, Y10\_47, Y2\_47
- Track 30 : MissDaisy\_46
- Track 31 : Wintermute\_48

- Track 32 : Ruthiejr\_49
- Track 33 : Unicorn\_46
- Track 34 : Ekdilam\_43
- Track 35 : Sunflower1121\_50
- Track 36 : Tierra\_47, Cain\_47, Bryler\_47
- Track 37 : Krueger\_50
- Track 38 : Amohnition\_46
- Track 39 : Syra333\_49
- Track 40 : PhelpsODU\_46
- Track 41 : SirPhilip\_46
- Track 42 : TClif\_49
- Track 43 : Ximenita\_50
- Track 44 : Yuna\_50
- Track 45 : Phrank\_47
- Track 46 : Amgine\_44
- Track 47 : Shadow1\_49
- Track 48 : Marshawn\_47
- Track 49 : DARTH\_P\_46
- Track 50 : Boilgate\_43

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

The start number called the most often in the published annotations is 24, it was called in 51 of the 122 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Amelie\_39, Amgine\_44, Amohnition\_46, Angelica\_44, Asayake\_44, BEEST\_44, Bella96\_45, Biglebops\_39, Bryler\_47, Cain\_47, CrimD\_44, DARTH\_P\_46, Deby\_44, Dole\_47, DrHayes\_45, Ekdilam\_43, Ganymede\_45, Hurricane\_47, Illumine\_47, Keshu\_48, Krueger\_50, LaterM\_45, LilPharaoh\_39, LindNT\_44, Marshawn\_47, Mdavu\_40, MeaningOfLife\_45, Mynx\_45, Niklas\_46, Nutello\_39, Padfoot\_44, Padpat\_45, PhelpsODU\_46, Phrank\_47, Prithvi\_45, QuincyRose\_43, SamuelLPlaqson\_45, Shadow1\_49, Shaobing\_46, ShiaSurprise\_45, SirPhilip\_46, Stinson\_45, Sunflower1121\_50, Syra333\_49, TClif\_49, Tierra\_47, TiniBug\_45, Tiri\_45, TreyKay\_45, Urkel\_45, Yuna\_50, Zavala\_45,

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

- ActinUp\_44, Adephegia\_44, Adonis\_44, Ageofdapage\_46, Anaya\_46, Apocalypse\_47, Atiba\_44, BGlluviae\_44, BaghaKamala\_43, BarrelRoll\_44, Beezoo\_46, Belladonna\_44, Blizzard\_44, Boiiii\_44, CREW\_44, Capricorn\_44, CaseJules\_45, Dalmuri\_44, Devera\_48, Durfee\_44, Emerson\_45, Geraldini\_46, HedwigODU\_44, Homura\_44, Hyperbowlee\_44, Inky\_44, JAWS\_44, Jarvi\_44, Jeckyll\_44, Joy99\_44, Llorens\_44, Lunahalos\_44, MalagasyRose\_45, Murucutumbu\_45, Peanam\_46, Peel\_44, Piatt\_44, Pokerus\_43, Ramen\_44, Rapunzel97\_44, Rosmarinus\_44, Slimphazie\_44, Spock\_44, Sulley\_44, Tachez\_44, Topper\_44, TruffulaTree\_44, Twitch\_44, Unicorn\_46, Validus\_48, Veliki\_44, Ximenita\_50, YoureAdopted\_43, Zabiza\_40,

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

- Boilgate\_43, Chancellor\_48, Cheetobro\_48, Eponine\_50, Fionnbharth\_48, JF1\_48, Juliette\_50, Malthus\_49, MissDaisy\_46, Mitti\_48, OmniCritical\_47, Patt\_45, Reptar3000\_46, Ruthiejr\_49, Slarp\_48, Taquito\_48, Wintermute\_48, Y10\_47, Y2\_47,

### Summary by start number:

#### Start 5:

- Found in 2 of 125 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 122
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Unicorn\_46 (K6),

#### Start 7:

- Found in 25 of 125 ( 20.0% ) of genes in pham
- Manual Annotations of this start: 1 of 122
- Called 4.0% of time when present
- Phage (with cluster) where this start called: Ruthiejr\_49 (K4),

#### Start 15:

- Found in 2 of 125 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 2 of 122
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Peanam\_46 (K1), Validus\_48 (K1),

#### Start 17:

- Found in 61 of 125 ( 48.8% ) of genes in pham
- Manual Annotations of this start: 14 of 122
- Called 24.6% of time when present
- Phage (with cluster) where this start called: ActinUp\_44 (K1), Ageofdapage\_46 (K1), Apocalypse\_47 (K1), Atiba\_44 (K1), Beezoo\_46 (K1), Blizzard\_44 (K1), CaseJules\_45 (K1), Devera\_48 (K1), Durfee\_44 (K1), Hyperbowlee\_44 (K1), Joy99\_44 (K1), Murucutumbu\_45 (K1), Piatt\_44 (K1), Ramen\_44 (K1), Zabiza\_40 (K1),

#### Start 20:

- Found in 51 of 125 ( 40.8% ) of genes in pham
- Manual Annotations of this start: 7 of 122
- Called 13.7% of time when present
- Phage (with cluster) where this start called: Adephagia\_44 (K1), Adonis\_44 (K1), Anaya\_46 (K1), BarrelRoll\_44 (K1), JAWS\_44 (K1), Sulley\_44 (K1), Tachez\_44 (K1),

#### Start 21:

- Found in 63 of 125 ( 50.4% ) of genes in pham
- Manual Annotations of this start: 27 of 122
- Called 44.4% of time when present
- Phage (with cluster) where this start called: BGlluviae\_44 (K1), BaghaKamala\_43 (K1), Belladonna\_44 (K1), Boiii\_44 (K1), CREW\_44 (K1), Capricorn\_44 (K1), Dalmuri\_44 (K1), Emerson\_45 (K1), Geraldini\_46 (K1), HedwigODU\_44 (K1), Homura\_44 (K1), Inky\_44 (K1), Jarvi\_44 (K1), Jeckyll\_44 (K1), Llorens\_44 (K1), Lunahalos\_44 (K1), Peel\_44 (K1), Pokerus\_43 (K1), Rapunzel97\_44 (K1), Rosmarinus\_44 (K1), Slimphazie\_44 (K1), Spock\_44 (K1), Topper\_44 (K1), TruffulaTree\_44 (K1), Twitch\_44 (K1), Veliki\_44 (K1), Ximenita\_50 (K6), YoureAdopted\_43 (K1),

Start 22:

- Found in 1 of 125 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 122
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MalagasyRose\_45 (AG),

Start 23:

- Found in 19 of 125 ( 15.2% ) of genes in pham
- Manual Annotations of this start: 18 of 122
- Called 94.7% of time when present
- Phage (with cluster) where this start called: Boilgate\_43 (K8), Chancellor\_48 (K4), Cheetobro\_48 (K4), Eponine\_50 (K4), Fionnbharth\_48 (K4), JF1\_48 (K4), Juliette\_50 (K4), Malthus\_49 (K4), MissDaisy\_46 (K4), Mitti\_48 (K4), OmniCritical\_47 (K4), Patt\_45 (K4), Reptar3000\_46 (K4), Slarp\_48 (K4), Taquito\_48 (K4), Wintermute\_48 (K4), Y10\_47 (K4), Y2\_47 (K4),

Start 24:

- Found in 106 of 125 ( 84.8% ) of genes in pham
- Manual Annotations of this start: 51 of 122
- Called 49.1% of time when present
- Phage (with cluster) where this start called: Amelie\_39 (K1), Amgine\_44 (K6), Amohntion\_46 (K6), Angelica\_44 (K1), Asayake\_44 (K1), BEEEST\_44 (K1), Bella96\_45 (K1), Binglebops\_39 (K1), Bryler\_47 (K6), Cain\_47 (K6), CrimD\_44 (K1), DarthP\_46 (K6), Deby\_44 (K1), Dole\_47 (K1), DrHayes\_45 (K1), Ekdilam\_43 (K6), Ganymede\_45 (K1), Hurricane\_47 (K3), Illumine\_47 (K1), Keshu\_48 (K3), Krueger\_50 (K6), LaterM\_45 (K1), LilPharaoh\_39 (K1), LindNT\_44 (K1), Marshawn\_47 (K6), Mdavu\_40 (K1), MeaningOfLife\_45 (K1), Mynx\_45 (K1), Niklas\_46 (K1), Nutello\_39 (K1), Padfoot\_44 (K1), Padpat\_45 (K1), PhelpsODU\_46 (K6), Phrank\_47 (K6), Prithvi\_45 (K1), QuincyRose\_43 (K1), SamuelLPlaqson\_45 (K1), Shadow1\_49 (K6), Shaobing\_46 (K1), ShiaSurprise\_45 (K1), SirPhilip\_46 (K6), Stinson\_45 (K1), Sunflower1121\_50 (K6), Syra333\_49 (K6), TClif\_49 (K6), Tierra\_47 (K6), TiniBug\_45 (K1), Tiri\_45 (K1), TreyKay\_45 (K1), Urkel\_45 (K1), Yuna\_50 (K6), Zavala\_45 (K1),

**Summary by clusters:**

There are 6 clusters represented in this pham: AG, K3, K1, K6, K4, K8,

Info for manual annotations of cluster AG:

- Start number 22 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster K1:

- Start number 15 was manually annotated 2 times for cluster K1.
- Start number 17 was manually annotated 14 times for cluster K1.
- Start number 20 was manually annotated 7 times for cluster K1.
- Start number 21 was manually annotated 26 times for cluster K1.
- Start number 24 was manually annotated 33 times for cluster K1.

Info for manual annotations of cluster K3:

- Start number 24 was manually annotated 2 times for cluster K3.

Info for manual annotations of cluster K4:

- Start number 7 was manually annotated 1 time for cluster K4.
- Start number 23 was manually annotated 17 times for cluster K4.

Info for manual annotations of cluster K6:

- Start number 5 was manually annotated 1 time for cluster K6.
- Start number 21 was manually annotated 1 time for cluster K6.
- Start number 24 was manually annotated 16 times for cluster K6.

Info for manual annotations of cluster K8:

- Start number 23 was manually annotated 1 time for cluster K8.

### **Gene Information:**

Gene: ActinUp\_44 Start: 35120, Stop: 35401, Start Num: 17

Candidate Starts for ActinUp\_44:

(Start: 17 @35120 has 14 MA's), (Start: 20 @35141 has 7 MA's), (Start: 21 @35144 has 27 MA's), (Start: 24 @35162 has 51 MA's), (25, 35183), (27, 35204), (29, 35216), (30, 35249), (34, 35315), (35, 35330), (42, 35378),

Gene: Adephagia\_44 Start: 35138, Stop: 35398, Start Num: 20

Candidate Starts for Adephagia\_44:

(Start: 17 @35117 has 14 MA's), (Start: 20 @35138 has 7 MA's), (Start: 21 @35141 has 27 MA's), (Start: 24 @35159 has 51 MA's), (25, 35180), (27, 35201), (29, 35213), (30, 35246), (34, 35312), (35, 35327), (42, 35375),

Gene: Adonis\_44 Start: 35436, Stop: 35696, Start Num: 20

Candidate Starts for Adonis\_44:

(Start: 17 @35415 has 14 MA's), (Start: 20 @35436 has 7 MA's), (Start: 21 @35439 has 27 MA's), (Start: 24 @35457 has 51 MA's), (25, 35478), (27, 35499), (29, 35511), (30, 35544), (34, 35610), (35, 35625), (44, 35685),

Gene: Ageofdapage\_46 Start: 36088, Stop: 36369, Start Num: 17

Candidate Starts for Ageofdapage\_46:

(Start: 17 @36088 has 14 MA's), (Start: 21 @36112 has 27 MA's), (Start: 24 @36130 has 51 MA's), (25, 36151), (27, 36172), (29, 36184), (30, 36217), (34, 36283), (35, 36298),

Gene: Amelie\_39 Start: 34739, Stop: 34984, Start Num: 24

Candidate Starts for Amelie\_39:

(Start: 24 @34739 has 51 MA's), (28, 34790), (30, 34826), (35, 34907), (38, 34937), (39, 34943),

Gene: Amgine\_44 Start: 36236, Stop: 36478, Start Num: 24

Candidate Starts for Amgine\_44:

(Start: 24 @36236 has 51 MA's), (34, 36389),

Gene: Amohnition\_46 Start: 36255, Stop: 36491, Start Num: 24

Candidate Starts for Amohnition\_46:

(6, 36156), (Start: 24 @36255 has 51 MA's), (34, 36408), (38, 36453), (44, 36480),

Gene: Anaya\_46 Start: 35748, Stop: 36008, Start Num: 20

Candidate Starts for Anaya\_46:

(Start: 17 @35727 has 14 MA's), (Start: 20 @35748 has 7 MA's), (Start: 21 @35751 has 27 MA's),  
(Start: 24 @35769 has 51 MA's), (25, 35790), (27, 35811), (29, 35823), (30, 35856), (34, 35922), (35,  
35937), (44, 35997),

Gene: Angelica\_44 Start: 35389, Stop: 35628, Start Num: 24

Candidate Starts for Angelica\_44:

(Start: 17 @35347 has 14 MA's), (Start: 20 @35368 has 7 MA's), (Start: 21 @35371 has 27 MA's),  
(Start: 24 @35389 has 51 MA's), (27, 35431), (29, 35443), (30, 35476), (34, 35542), (35, 35557), (42,  
35605),

Gene: Apocalypse\_47 Start: 36132, Stop: 36413, Start Num: 17

Candidate Starts for Apocalypse\_47:

(Start: 17 @36132 has 14 MA's), (Start: 21 @36156 has 27 MA's), (Start: 24 @36174 has 51 MA's),  
(27, 36216), (29, 36228), (30, 36261), (34, 36327), (35, 36342), (42, 36390),

Gene: Asayake\_44 Start: 35474, Stop: 35713, Start Num: 24

Candidate Starts for Asayake\_44:

(Start: 17 @35432 has 14 MA's), (Start: 20 @35453 has 7 MA's), (Start: 21 @35456 has 27 MA's),  
(Start: 24 @35474 has 51 MA's), (25, 35495), (27, 35516), (29, 35528), (30, 35561), (34, 35627), (35,  
35642), (42, 35690),

Gene: Atiba\_44 Start: 35080, Stop: 35361, Start Num: 17

Candidate Starts for Atiba\_44:

(Start: 17 @35080 has 14 MA's), (Start: 20 @35101 has 7 MA's), (Start: 21 @35104 has 27 MA's),  
(Start: 24 @35122 has 51 MA's), (25, 35143), (27, 35164), (29, 35176), (30, 35209), (34, 35275), (35,  
35290), (42, 35338),

Gene: BEEST\_44 Start: 35474, Stop: 35713, Start Num: 24

Candidate Starts for BEEST\_44:

(Start: 17 @35432 has 14 MA's), (Start: 20 @35453 has 7 MA's), (Start: 21 @35456 has 27 MA's),  
(Start: 24 @35474 has 51 MA's), (25, 35495), (27, 35516), (29, 35528), (30, 35561), (34, 35627), (35,  
35642), (42, 35690),

Gene: BGlluviae\_44 Start: 35259, Stop: 35516, Start Num: 21

Candidate Starts for BGlluviae\_44:

(Start: 17 @35235 has 14 MA's), (Start: 20 @35256 has 7 MA's), (Start: 21 @35259 has 27 MA's),  
(Start: 24 @35277 has 51 MA's), (25, 35298), (27, 35319), (29, 35331), (30, 35364), (34, 35430), (35,  
35445), (42, 35493),

Gene: BaghaKamala\_43 Start: 34579, Stop: 34836, Start Num: 21

Candidate Starts for BaghaKamala\_43:

(Start: 17 @34555 has 14 MA's), (Start: 21 @34579 has 27 MA's), (Start: 24 @34597 has 51 MA's),  
(27, 34639), (29, 34651), (30, 34684), (34, 34750), (35, 34765), (42, 34813),

Gene: BarrelRoll\_44 Start: 35124, Stop: 35384, Start Num: 20

Candidate Starts for BarrelRoll\_44:

(Start: 17 @35103 has 14 MA's), (Start: 20 @35124 has 7 MA's), (Start: 21 @35127 has 27 MA's),  
(Start: 24 @35145 has 51 MA's), (25, 35166), (27, 35187), (29, 35199), (30, 35232), (34, 35298), (35,  
35313), (42, 35361),

Gene: Beezoo\_46 Start: 36078, Stop: 36359, Start Num: 17

Candidate Starts for Beezoo\_46:

(Start: 17 @36078 has 14 MA's), (Start: 21 @36102 has 27 MA's), (Start: 24 @36120 has 51 MA's), (25, 36141), (27, 36162), (29, 36174), (30, 36207), (34, 36273), (35, 36288), (42, 36336),

Gene: Bella96\_45 Start: 36011, Stop: 36250, Start Num: 24

Candidate Starts for Bella96\_45:

(1, 35810), (2, 35816), (3, 35831), (Start: 7 @35915 has 1 MA's), (9, 35939), (Start: 24 @36011 has 51 MA's), (27, 36053), (29, 36065), (30, 36098), (34, 36164),

Gene: Belladonna\_44 Start: 35259, Stop: 35516, Start Num: 21

Candidate Starts for Belladonna\_44:

(Start: 17 @35235 has 14 MA's), (Start: 20 @35256 has 7 MA's), (Start: 21 @35259 has 27 MA's), (Start: 24 @35277 has 51 MA's), (25, 35298), (27, 35319), (29, 35331), (30, 35364), (34, 35430), (35, 35445), (42, 35493),

Gene: Biglebops\_39 Start: 34739, Stop: 34984, Start Num: 24

Candidate Starts for Biglebops\_39:

(Start: 24 @34739 has 51 MA's), (28, 34790), (30, 34826), (35, 34907), (38, 34937), (39, 34943),

Gene: Blizzard\_44 Start: 35432, Stop: 35713, Start Num: 17

Candidate Starts for Blizzard\_44:

(Start: 17 @35432 has 14 MA's), (Start: 20 @35453 has 7 MA's), (Start: 21 @35456 has 27 MA's), (Start: 24 @35474 has 51 MA's), (25, 35495), (27, 35516), (29, 35528), (30, 35561), (34, 35627), (35, 35642), (42, 35690),

Gene: Boiiii\_44 Start: 35458, Stop: 35715, Start Num: 21

Candidate Starts for Boiiii\_44:

(Start: 17 @35434 has 14 MA's), (Start: 20 @35455 has 7 MA's), (Start: 21 @35458 has 27 MA's), (Start: 24 @35476 has 51 MA's), (25, 35497), (27, 35518), (29, 35530), (30, 35563), (34, 35629), (35, 35644), (42, 35692),

Gene: Boilgate\_43 Start: 36328, Stop: 36564, Start Num: 23

Candidate Starts for Boilgate\_43:

(Start: 23 @36328 has 18 MA's), (41, 36550),

Gene: Bryler\_47 Start: 35116, Stop: 35352, Start Num: 24

Candidate Starts for Bryler\_47:

(Start: 24 @35116 has 51 MA's), (28, 35167), (29, 35170), (32, 35236),

Gene: CREW\_44 Start: 35259, Stop: 35516, Start Num: 21

Candidate Starts for CREW\_44:

(Start: 17 @35235 has 14 MA's), (Start: 20 @35256 has 7 MA's), (Start: 21 @35259 has 27 MA's), (Start: 24 @35277 has 51 MA's), (25, 35298), (27, 35319), (29, 35331), (30, 35364), (34, 35430), (35, 35445), (42, 35493),

Gene: Cain\_47 Start: 35104, Stop: 35340, Start Num: 24

Candidate Starts for Cain\_47:

(Start: 24 @35104 has 51 MA's), (28, 35155), (29, 35158), (32, 35224),

Gene: Capricorn\_44 Start: 35259, Stop: 35516, Start Num: 21

Candidate Starts for Capricorn\_44:

(Start: 17 @35235 has 14 MA's), (Start: 20 @35256 has 7 MA's), (Start: 21 @35259 has 27 MA's), (Start: 24 @35277 has 51 MA's), (25, 35298), (27, 35319), (29, 35331), (30, 35364), (34, 35430), (35, 35445), (42, 35493),



Gene: CaseJules\_45 Start: 35432, Stop: 35713, Start Num: 17

Candidate Starts for CaseJules\_45:

(Start: 17 @35432 has 14 MA's), (Start: 20 @35453 has 7 MA's), (Start: 21 @35456 has 27 MA's),  
(Start: 24 @35474 has 51 MA's), (25, 35495), (27, 35516), (29, 35528), (30, 35561), (34, 35627), (35,  
35642), (42, 35690),

Gene: Chancellor\_48 Start: 36169, Stop: 36417, Start Num: 23

Candidate Starts for Chancellor\_48:

(Start: 7 @36073 has 1 MA's), (Start: 23 @36169 has 18 MA's), (35, 36340), (36, 36343),

Gene: Cheetobro\_48 Start: 36166, Stop: 36414, Start Num: 23

Candidate Starts for Cheetobro\_48:

(Start: 7 @36070 has 1 MA's), (Start: 23 @36166 has 18 MA's), (35, 36337), (36, 36340),

Gene: CrimD\_44 Start: 35400, Stop: 35639, Start Num: 24

Candidate Starts for CrimD\_44:

(1, 35199), (2, 35205), (3, 35220), (Start: 7 @35304 has 1 MA's), (9, 35328), (16, 35352), (Start: 24  
@35400 has 51 MA's), (27, 35442), (29, 35454), (30, 35487), (34, 35553), (35, 35568), (42, 35616),

Gene: Dalmuri\_44 Start: 35259, Stop: 35516, Start Num: 21

Candidate Starts for Dalmuri\_44:

(Start: 17 @35235 has 14 MA's), (Start: 20 @35256 has 7 MA's), (Start: 21 @35259 has 27 MA's),  
(Start: 24 @35277 has 51 MA's), (25, 35298), (27, 35319), (29, 35331), (30, 35364), (34, 35430), (35,  
35445), (42, 35493),

Gene: DarthP\_46 Start: 36145, Stop: 36378, Start Num: 24

Candidate Starts for DarthP\_46:

(Start: 24 @36145 has 51 MA's), (29, 36199), (35, 36313), (38, 36343),

Gene: Deby\_44 Start: 35405, Stop: 35644, Start Num: 24

Candidate Starts for Deby\_44:

(Start: 17 @35363 has 14 MA's), (Start: 20 @35384 has 7 MA's), (Start: 21 @35387 has 27 MA's),  
(Start: 24 @35405 has 51 MA's), (27, 35447), (29, 35459), (30, 35492), (34, 35558), (35, 35573), (42,  
35621),

Gene: Devera\_48 Start: 35896, Stop: 36177, Start Num: 17

Candidate Starts for Devera\_48:

(Start: 17 @35896 has 14 MA's), (Start: 21 @35920 has 27 MA's), (Start: 24 @35938 has 51 MA's),  
(25, 35959), (27, 35980), (29, 35992), (30, 36025), (34, 36091), (35, 36106),

Gene: Dole\_47 Start: 35940, Stop: 36179, Start Num: 24

Candidate Starts for Dole\_47:

(Start: 17 @35898 has 14 MA's), (Start: 21 @35922 has 27 MA's), (Start: 24 @35940 has 51 MA's),  
(25, 35961), (27, 35982), (29, 35994), (30, 36027), (34, 36093), (35, 36108),

Gene: DrHayes\_45 Start: 36056, Stop: 36295, Start Num: 24

Candidate Starts for DrHayes\_45:

(1, 35855), (2, 35861), (3, 35876), (Start: 7 @35960 has 1 MA's), (9, 35984), (Start: 24 @36056 has  
51 MA's), (27, 36098), (29, 36110), (30, 36143), (34, 36209),

Gene: Durfee\_44 Start: 35432, Stop: 35713, Start Num: 17

Candidate Starts for Durfee\_44:

(Start: 17 @35432 has 14 MA's), (Start: 20 @35453 has 7 MA's), (Start: 21 @35456 has 27 MA's),  
(Start: 24 @35474 has 51 MA's), (25, 35495), (27, 35516), (29, 35528), (30, 35561), (34, 35627), (35,  
35642), (42, 35690),

Gene: Ekdilam\_43 Start: 35707, Stop: 35940, Start Num: 24

Candidate Starts for Ekdilam\_43:

(4, 35590), (6, 35608), (Start: 24 @35707 has 51 MA's),

Gene: Emerson\_45 Start: 35135, Stop: 35392, Start Num: 21

Candidate Starts for Emerson\_45:

(Start: 17 @35111 has 14 MA's), (Start: 20 @35132 has 7 MA's), (Start: 21 @35135 has 27 MA's),  
(Start: 24 @35153 has 51 MA's), (25, 35174), (27, 35195), (29, 35207), (30, 35240), (34, 35306), (35,  
35321), (42, 35369),

Gene: Eponine\_50 Start: 36922, Stop: 37167, Start Num: 23

Candidate Starts for Eponine\_50:

(Start: 7 @36826 has 1 MA's), (Start: 23 @36922 has 18 MA's), (36, 37096),

Gene: Fionnbharth\_48 Start: 36320, Stop: 36565, Start Num: 23

Candidate Starts for Fionnbharth\_48:

(Start: 23 @36320 has 18 MA's), (36, 36494), (43, 36554),

Gene: Ganymede\_45 Start: 35592, Stop: 35831, Start Num: 24

Candidate Starts for Ganymede\_45:

(1, 35391), (2, 35397), (3, 35412), (Start: 7 @35496 has 1 MA's), (9, 35520), (16, 35544), (Start: 24  
@35592 has 51 MA's), (27, 35634), (29, 35646), (30, 35679), (34, 35745), (35, 35760), (42, 35808),

Gene: Geraldini\_46 Start: 36191, Stop: 36448, Start Num: 21

Candidate Starts for Geraldini\_46:

(Start: 17 @36167 has 14 MA's), (Start: 21 @36191 has 27 MA's), (Start: 24 @36209 has 51 MA's),  
(27, 36251), (29, 36263), (30, 36296), (34, 36362), (35, 36377), (42, 36425),

Gene: HedwigODU\_44 Start: 35144, Stop: 35401, Start Num: 21

Candidate Starts for HedwigODU\_44:

(Start: 17 @35120 has 14 MA's), (Start: 20 @35141 has 7 MA's), (Start: 21 @35144 has 27 MA's),  
(Start: 24 @35162 has 51 MA's), (25, 35183), (27, 35204), (29, 35216), (30, 35249), (34, 35315), (35,  
35330), (42, 35378),

Gene: Homura\_44 Start: 35259, Stop: 35516, Start Num: 21

Candidate Starts for Homura\_44:

(Start: 17 @35235 has 14 MA's), (Start: 20 @35256 has 7 MA's), (Start: 21 @35259 has 27 MA's),  
(Start: 24 @35277 has 51 MA's), (25, 35298), (27, 35319), (29, 35331), (30, 35364), (34, 35430), (35,  
35445), (42, 35493),

Gene: Hurricane\_47 Start: 35860, Stop: 36099, Start Num: 24

Candidate Starts for Hurricane\_47:

(Start: 24 @35860 has 51 MA's), (32, 35980), (38, 36058), (44, 36085),

Gene: Hyperbowlee\_44 Start: 35432, Stop: 35713, Start Num: 17

Candidate Starts for Hyperbowlee\_44:

(Start: 17 @35432 has 14 MA's), (Start: 20 @35453 has 7 MA's), (Start: 21 @35456 has 27 MA's),  
(Start: 24 @35474 has 51 MA's), (25, 35495), (27, 35516), (29, 35528), (30, 35561), (34, 35627), (35,  
35642), (42, 35690),

Gene: Illumine\_47 Start: 35940, Stop: 36179, Start Num: 24

Candidate Starts for Illumine\_47:

(Start: 17 @35898 has 14 MA's), (Start: 21 @35922 has 27 MA's), (Start: 24 @35940 has 51 MA's), (25, 35961), (27, 35982), (29, 35994), (30, 36027), (34, 36093), (35, 36108),

Gene: Inky\_44 Start: 35259, Stop: 35516, Start Num: 21

Candidate Starts for Inky\_44:

(Start: 17 @35235 has 14 MA's), (Start: 20 @35256 has 7 MA's), (Start: 21 @35259 has 27 MA's), (Start: 24 @35277 has 51 MA's), (25, 35298), (27, 35319), (29, 35331), (30, 35364), (34, 35430), (35, 35445), (42, 35493),

Gene: JAWS\_44 Start: 35130, Stop: 35390, Start Num: 20

Candidate Starts for JAWS\_44:

(Start: 17 @35109 has 14 MA's), (Start: 20 @35130 has 7 MA's), (Start: 21 @35133 has 27 MA's), (Start: 24 @35151 has 51 MA's), (25, 35172), (27, 35193), (29, 35205), (30, 35238), (34, 35304), (35, 35319), (42, 35367),

Gene: JF1\_48 Start: 36237, Stop: 36485, Start Num: 23

Candidate Starts for JF1\_48:

(Start: 23 @36237 has 18 MA's), (35, 36408), (36, 36411),

Gene: Jarvi\_44 Start: 35259, Stop: 35516, Start Num: 21

Candidate Starts for Jarvi\_44:

(Start: 17 @35235 has 14 MA's), (Start: 20 @35256 has 7 MA's), (Start: 21 @35259 has 27 MA's), (Start: 24 @35277 has 51 MA's), (25, 35298), (27, 35319), (29, 35331), (30, 35364), (34, 35430), (35, 35445), (42, 35493),

Gene: Jeckyll\_44 Start: 35259, Stop: 35516, Start Num: 21

Candidate Starts for Jeckyll\_44:

(Start: 17 @35235 has 14 MA's), (Start: 20 @35256 has 7 MA's), (Start: 21 @35259 has 27 MA's), (Start: 24 @35277 has 51 MA's), (25, 35298), (27, 35319), (29, 35331), (30, 35364), (34, 35430), (35, 35445), (42, 35493),

Gene: Joy99\_44 Start: 35164, Stop: 35445, Start Num: 17

Candidate Starts for Joy99\_44:

(Start: 17 @35164 has 14 MA's), (Start: 20 @35185 has 7 MA's), (Start: 21 @35188 has 27 MA's), (Start: 24 @35206 has 51 MA's), (25, 35227), (27, 35248), (29, 35260), (30, 35293), (34, 35359), (35, 35374), (42, 35422),

Gene: Juliette\_50 Start: 36393, Stop: 36641, Start Num: 23

Candidate Starts for Juliette\_50:

(Start: 7 @36297 has 1 MA's), (13, 36339), (Start: 23 @36393 has 18 MA's), (35, 36564), (36, 36567),

Gene: Keshu\_48 Start: 35918, Stop: 36157, Start Num: 24

Candidate Starts for Keshu\_48:

(Start: 24 @35918 has 51 MA's), (32, 36038), (38, 36116), (44, 36143),

Gene: Krueger\_50 Start: 36110, Stop: 36346, Start Num: 24

Candidate Starts for Krueger\_50:

(Start: 24 @36110 has 51 MA's), (28, 36161), (32, 36230), (34, 36263), (35, 36278), (37, 36290),

Gene: LaterM\_45 Start: 36054, Stop: 36293, Start Num: 24

Candidate Starts for LaterM\_45:

(Start: 17 @36012 has 14 MA's), (Start: 21 @36036 has 27 MA's), (Start: 24 @36054 has 51 MA's), (25, 36075), (27, 36096), (29, 36108), (30, 36141), (34, 36207), (35, 36222),

Gene: LilPharaoh\_39 Start: 34467, Stop: 34712, Start Num: 24

Candidate Starts for LilPharaoh\_39:

(Start: 24 @34467 has 51 MA's), (28, 34518), (30, 34554), (35, 34635), (38, 34665), (39, 34671),

Gene: LindNT\_44 Start: 35343, Stop: 35582, Start Num: 24

Candidate Starts for LindNT\_44:

(1, 35142), (2, 35148), (3, 35163), (Start: 7 @35247 has 1 MA's), (9, 35271), (Start: 24 @35343 has 51 MA's), (25, 35364), (27, 35385), (29, 35397), (30, 35430), (34, 35496), (35, 35511),

Gene: Llorens\_44 Start: 35259, Stop: 35516, Start Num: 21

Candidate Starts for Llorens\_44:

(Start: 17 @35235 has 14 MA's), (Start: 20 @35256 has 7 MA's), (Start: 21 @35259 has 27 MA's), (Start: 24 @35277 has 51 MA's), (25, 35298), (27, 35319), (29, 35331), (30, 35364), (34, 35430), (35, 35445), (42, 35493),

Gene: Lunahalos\_44 Start: 35259, Stop: 35516, Start Num: 21

Candidate Starts for Lunahalos\_44:

(Start: 17 @35235 has 14 MA's), (Start: 20 @35256 has 7 MA's), (Start: 21 @35259 has 27 MA's), (Start: 24 @35277 has 51 MA's), (25, 35298), (27, 35319), (29, 35331), (30, 35364), (34, 35430), (35, 35445), (42, 35493),

Gene: MalagasyRose\_45 Start: 33899, Stop: 34168, Start Num: 22

Candidate Starts for MalagasyRose\_45:

(Start: 22 @33899 has 1 MA's), (Start: 24 @33908 has 51 MA's), (26, 33947), (29, 33962), (31, 34004), (33, 34040), (38, 34106),

Gene: Malthus\_49 Start: 36081, Stop: 36329, Start Num: 23

Candidate Starts for Malthus\_49:

(Start: 7 @35985 has 1 MA's), (13, 36027), (Start: 23 @36081 has 18 MA's), (35, 36252), (36, 36255),

Gene: Marshawn\_47 Start: 36184, Stop: 36432, Start Num: 24

Candidate Starts for Marshawn\_47:

(Start: 24 @36184 has 51 MA's), (25, 36205), (29, 36238), (35, 36352), (38, 36382), (41, 36406),

Gene: Mdavu\_40 Start: 34728, Stop: 34973, Start Num: 24

Candidate Starts for Mdavu\_40:

(Start: 24 @34728 has 51 MA's), (28, 34779), (30, 34815), (35, 34896), (38, 34926), (39, 34932),

Gene: MeaningOfLife\_45 Start: 36086, Stop: 36325, Start Num: 24

Candidate Starts for MeaningOfLife\_45:

(1, 35885), (2, 35891), (3, 35906), (Start: 7 @35990 has 1 MA's), (9, 36014), (16, 36038), (Start: 24 @36086 has 51 MA's), (27, 36128), (29, 36140), (30, 36173), (34, 36239), (35, 36254), (42, 36302),

Gene: MissDaisy\_46 Start: 35556, Stop: 35804, Start Num: 23

Candidate Starts for MissDaisy\_46:

(11, 35493), (18, 35529), (19, 35535), (Start: 23 @35556 has 18 MA's), (35, 35727), (36, 35730),

Gene: Mitti\_48 Start: 36257, Stop: 36505, Start Num: 23

Candidate Starts for Mitti\_48:

(Start: 7 @36161 has 1 MA's), (Start: 23 @36257 has 18 MA's), (35, 36428), (36, 36431),

Gene: Murucutumbu\_45 Start: 36105, Stop: 36386, Start Num: 17

Candidate Starts for Murucutumbu\_45:

(Start: 17 @36105 has 14 MA's), (Start: 21 @36129 has 27 MA's), (Start: 24 @36147 has 51 MA's), (25, 36168), (27, 36189), (29, 36201), (30, 36234), (34, 36300), (35, 36315),

Gene: Mynx\_45 Start: 35478, Stop: 35717, Start Num: 24

Candidate Starts for Mynx\_45:

(Start: 17 @35436 has 14 MA's), (Start: 20 @35457 has 7 MA's), (Start: 21 @35460 has 27 MA's), (Start: 24 @35478 has 51 MA's), (25, 35499), (27, 35520), (29, 35532), (30, 35565), (34, 35631), (35, 35646), (42, 35694),

Gene: Niklas\_46 Start: 35918, Stop: 36166, Start Num: 24

Candidate Starts for Niklas\_46:

(Start: 24 @35918 has 51 MA's), (29, 35972), (35, 36086), (38, 36116), (40, 36134),

Gene: Nutello\_39 Start: 34739, Stop: 34984, Start Num: 24

Candidate Starts for Nutello\_39:

(Start: 24 @34739 has 51 MA's), (28, 34790), (30, 34826), (35, 34907), (38, 34937), (39, 34943),

Gene: OmniCritical\_47 Start: 36066, Stop: 36314, Start Num: 23

Candidate Starts for OmniCritical\_47:

(Start: 7 @35970 has 1 MA's), (13, 36012), (Start: 23 @36066 has 18 MA's), (35, 36237), (36, 36240),

Gene: Padfoot\_44 Start: 35474, Stop: 35713, Start Num: 24

Candidate Starts for Padfoot\_44:

(Start: 17 @35432 has 14 MA's), (Start: 20 @35453 has 7 MA's), (Start: 21 @35456 has 27 MA's), (Start: 24 @35474 has 51 MA's), (25, 35495), (27, 35516), (29, 35528), (30, 35561), (34, 35627), (35, 35642), (42, 35690),

Gene: Padpat\_45 Start: 35153, Stop: 35392, Start Num: 24

Candidate Starts for Padpat\_45:

(Start: 17 @35111 has 14 MA's), (Start: 20 @35132 has 7 MA's), (Start: 21 @35135 has 27 MA's), (Start: 24 @35153 has 51 MA's), (25, 35174), (27, 35195), (29, 35207), (30, 35240), (34, 35306), (35, 35321), (42, 35369),

Gene: Patt\_45 Start: 35280, Stop: 35528, Start Num: 23

Candidate Starts for Patt\_45:

(11, 35217), (18, 35253), (19, 35259), (Start: 23 @35280 has 18 MA's), (35, 35451), (36, 35454),

Gene: Peanam\_46 Start: 35828, Stop: 36124, Start Num: 15

Candidate Starts for Peanam\_46:

(8, 35798), (Start: 15 @35828 has 2 MA's), (Start: 24 @35876 has 51 MA's), (29, 35930), (35, 36044), (38, 36074), (40, 36092),

Gene: Peel\_44 Start: 35261, Stop: 35518, Start Num: 21

Candidate Starts for Peel\_44:

(Start: 17 @35237 has 14 MA's), (Start: 20 @35258 has 7 MA's), (Start: 21 @35261 has 27 MA's), (Start: 24 @35279 has 51 MA's), (25, 35300), (27, 35321), (29, 35333), (30, 35366), (34, 35432), (35, 35447), (42, 35495),

Gene: PhelpsODU\_46 Start: 35137, Stop: 35373, Start Num: 24

Candidate Starts for PhelpsODU\_46:

(Start: 5 @35029 has 1 MA's), (Start: 24 @35137 has 51 MA's), (28, 35188), (29, 35191), (32, 35257), (34, 35290),

Gene: Phrank\_47 Start: 35094, Stop: 35330, Start Num: 24

Candidate Starts for Phrank\_47:

(16, 35046), (Start: 24 @35094 has 51 MA's), (28, 35145), (29, 35148), (32, 35214),

Gene: Piatt\_44 Start: 35432, Stop: 35713, Start Num: 17

Candidate Starts for Piatt\_44:

(Start: 17 @35432 has 14 MA's), (Start: 20 @35453 has 7 MA's), (Start: 21 @35456 has 27 MA's), (Start: 24 @35474 has 51 MA's), (25, 35495), (27, 35516), (29, 35528), (30, 35561), (34, 35627), (35, 35642), (42, 35690),

Gene: Pokerus\_43 Start: 35182, Stop: 35439, Start Num: 21

Candidate Starts for Pokerus\_43:

(Start: 17 @35158 has 14 MA's), (Start: 21 @35182 has 27 MA's), (Start: 24 @35200 has 51 MA's), (27, 35242), (29, 35254), (30, 35287), (34, 35353), (35, 35368), (42, 35416),

Gene: Prithvi\_45 Start: 35343, Stop: 35582, Start Num: 24

Candidate Starts for Prithvi\_45:

(1, 35142), (2, 35148), (3, 35163), (Start: 7 @35247 has 1 MA's), (9, 35271), (Start: 24 @35343 has 51 MA's), (25, 35364), (27, 35385), (29, 35397), (30, 35430), (34, 35496), (35, 35511),

Gene: QuincyRose\_43 Start: 35592, Stop: 35831, Start Num: 24

Candidate Starts for QuincyRose\_43:

(1, 35391), (2, 35397), (3, 35412), (Start: 7 @35496 has 1 MA's), (9, 35520), (16, 35544), (Start: 24 @35592 has 51 MA's), (27, 35634), (29, 35646), (30, 35679), (34, 35745), (35, 35760), (42, 35808),

Gene: Ramen\_44 Start: 35122, Stop: 35403, Start Num: 17

Candidate Starts for Ramen\_44:

(Start: 17 @35122 has 14 MA's), (Start: 20 @35143 has 7 MA's), (Start: 21 @35146 has 27 MA's), (Start: 24 @35164 has 51 MA's), (25, 35185), (27, 35206), (29, 35218), (30, 35251), (34, 35317), (35, 35332), (42, 35380),

Gene: Rapunzel97\_44 Start: 35142, Stop: 35399, Start Num: 21

Candidate Starts for Rapunzel97\_44:

(Start: 17 @35118 has 14 MA's), (Start: 20 @35139 has 7 MA's), (Start: 21 @35142 has 27 MA's), (Start: 24 @35160 has 51 MA's), (25, 35181), (27, 35202), (29, 35214), (30, 35247), (34, 35313), (35, 35328), (42, 35376),

Gene: Reptar3000\_46 Start: 35271, Stop: 35519, Start Num: 23

Candidate Starts for Reptar3000\_46:

(Start: 7 @35175 has 1 MA's), (13, 35217), (Start: 23 @35271 has 18 MA's), (35, 35442), (36, 35445),

Gene: Rosmarinus\_44 Start: 35247, Stop: 35504, Start Num: 21

Candidate Starts for Rosmarinus\_44:

(Start: 17 @35223 has 14 MA's), (Start: 20 @35244 has 7 MA's), (Start: 21 @35247 has 27 MA's), (Start: 24 @35265 has 51 MA's), (25, 35286), (27, 35307), (29, 35319), (30, 35352), (34, 35418), (35, 35433), (42, 35481),

Gene: Ruthiejr\_49 Start: 36035, Stop: 36379, Start Num: 7

Candidate Starts for Ruthiejr\_49:

(Start: 7 @36035 has 1 MA's), (13, 36077), (Start: 23 @36131 has 18 MA's), (35, 36302), (36, 36305),

Gene: SamuelLPlaqson\_45 Start: 36056, Stop: 36295, Start Num: 24

Candidate Starts for SamuelLPlaqson\_45:

(1, 35855), (2, 35861), (3, 35876), (Start: 7 @35960 has 1 MA's), (9, 35984), (Start: 24 @36056 has 51 MA's), (27, 36098), (29, 36110), (30, 36143), (34, 36209),

Gene: Shadow1\_49 Start: 36255, Stop: 36491, Start Num: 24

Candidate Starts for Shadow1\_49:

(Start: 24 @36255 has 51 MA's), (28, 36306), (32, 36375), (37, 36435),

Gene: Shaobing\_46 Start: 35893, Stop: 36141, Start Num: 24

Candidate Starts for Shaobing\_46:

(Start: 24 @35893 has 51 MA's), (29, 35947), (35, 36061), (38, 36091), (40, 36109),

Gene: ShiaSurprise\_45 Start: 35474, Stop: 35713, Start Num: 24

Candidate Starts for ShiaSurprise\_45:

(Start: 17 @35432 has 14 MA's), (Start: 20 @35453 has 7 MA's), (Start: 21 @35456 has 27 MA's), (Start: 24 @35474 has 51 MA's), (25, 35495), (27, 35516), (29, 35528), (30, 35561), (34, 35627), (35, 35642), (42, 35690),

Gene: SirPhilip\_46 Start: 36474, Stop: 36710, Start Num: 24

Candidate Starts for SirPhilip\_46:

(10, 36405), (16, 36426), (Start: 24 @36474 has 51 MA's), (28, 36525), (29, 36528), (34, 36627), (38, 36672),

Gene: Slarp\_48 Start: 36169, Stop: 36417, Start Num: 23

Candidate Starts for Slarp\_48:

(Start: 7 @36073 has 1 MA's), (Start: 23 @36169 has 18 MA's), (35, 36340), (36, 36343),

Gene: Slimphazie\_44 Start: 35142, Stop: 35399, Start Num: 21

Candidate Starts for Slimphazie\_44:

(Start: 17 @35118 has 14 MA's), (Start: 20 @35139 has 7 MA's), (Start: 21 @35142 has 27 MA's), (Start: 24 @35160 has 51 MA's), (25, 35181), (27, 35202), (29, 35214), (30, 35247), (34, 35313), (35, 35328), (42, 35376),

Gene: Spock\_44 Start: 35260, Stop: 35517, Start Num: 21

Candidate Starts for Spock\_44:

(Start: 17 @35236 has 14 MA's), (Start: 20 @35257 has 7 MA's), (Start: 21 @35260 has 27 MA's), (Start: 24 @35278 has 51 MA's), (25, 35299), (27, 35320), (29, 35332), (30, 35365), (34, 35431), (35, 35446), (42, 35494),

Gene: Stinson\_45 Start: 35667, Stop: 35906, Start Num: 24

Candidate Starts for Stinson\_45:

(Start: 17 @35625 has 14 MA's), (Start: 21 @35649 has 27 MA's), (Start: 24 @35667 has 51 MA's), (25, 35688), (27, 35709), (29, 35721), (30, 35754), (34, 35820), (35, 35835),

Gene: Sulley\_44 Start: 35383, Stop: 35643, Start Num: 20

Candidate Starts for Sulley\_44:

(Start: 17 @35362 has 14 MA's), (Start: 20 @35383 has 7 MA's), (Start: 21 @35386 has 27 MA's), (Start: 24 @35404 has 51 MA's), (27, 35446), (29, 35458), (30, 35491), (34, 35557), (35, 35572), (42, 35620),

Gene: Sunflower1121\_50 Start: 36356, Stop: 36592, Start Num: 24  
Candidate Starts for Sunflower1121\_50:  
(Start: 24 @36356 has 51 MA's), (28, 36407), (32, 36476), (35, 36524), (37, 36536),

Gene: Syra333\_49 Start: 36023, Stop: 36259, Start Num: 24  
Candidate Starts for Syra333\_49:  
(Start: 24 @36023 has 51 MA's), (28, 36074), (32, 36143), (37, 36203),

Gene: TClif\_49 Start: 36322, Stop: 36570, Start Num: 24  
Candidate Starts for TClif\_49:  
(Start: 24 @36322 has 51 MA's), (30, 36409), (34, 36475), (35, 36490), (38, 36520),

Gene: Tachez\_44 Start: 35101, Stop: 35361, Start Num: 20  
Candidate Starts for Tachez\_44:  
(Start: 17 @35080 has 14 MA's), (Start: 20 @35101 has 7 MA's), (Start: 21 @35104 has 27 MA's),  
(Start: 24 @35122 has 51 MA's), (25, 35143), (27, 35164), (29, 35176), (30, 35209), (34, 35275), (35,  
35290), (42, 35338),

Gene: Taquito\_48 Start: 36416, Stop: 36664, Start Num: 23  
Candidate Starts for Taquito\_48:  
(Start: 7 @36320 has 1 MA's), (Start: 23 @36416 has 18 MA's), (35, 36587), (36, 36590),

Gene: Tierra\_47 Start: 35905, Stop: 36141, Start Num: 24  
Candidate Starts for Tierra\_47:  
(Start: 24 @35905 has 51 MA's), (28, 35956), (29, 35959), (32, 36025),

Gene: TiniBug\_45 Start: 36052, Stop: 36291, Start Num: 24  
Candidate Starts for TiniBug\_45:  
(1, 35851), (2, 35857), (3, 35872), (Start: 7 @35956 has 1 MA's), (9, 35980), (Start: 24 @36052 has  
51 MA's), (27, 36094), (29, 36106), (34, 36205), (35, 36220),

Gene: Tiri\_45 Start: 35452, Stop: 35691, Start Num: 24  
Candidate Starts for Tiri\_45:  
(1, 35251), (2, 35257), (3, 35272), (Start: 7 @35356 has 1 MA's), (9, 35380), (16, 35404), (Start: 24  
@35452 has 51 MA's), (27, 35494), (29, 35506), (30, 35539), (34, 35605), (35, 35620), (42, 35668),

Gene: Topper\_44 Start: 35259, Stop: 35516, Start Num: 21  
Candidate Starts for Topper\_44:  
(Start: 17 @35235 has 14 MA's), (Start: 20 @35256 has 7 MA's), (Start: 21 @35259 has 27 MA's),  
(Start: 24 @35277 has 51 MA's), (25, 35298), (27, 35319), (29, 35331), (30, 35364), (34, 35430), (35,  
35445), (42, 35493),

Gene: TreyKay\_45 Start: 35343, Stop: 35582, Start Num: 24  
Candidate Starts for TreyKay\_45:  
(1, 35142), (2, 35148), (3, 35163), (Start: 7 @35247 has 1 MA's), (9, 35271), (Start: 24 @35343 has  
51 MA's), (25, 35364), (27, 35385), (29, 35397), (30, 35430), (34, 35496), (35, 35511),

Gene: TruffulaTree\_44 Start: 35138, Stop: 35395, Start Num: 21  
Candidate Starts for TruffulaTree\_44:  
(Start: 17 @35114 has 14 MA's), (Start: 20 @35135 has 7 MA's), (Start: 21 @35138 has 27 MA's),  
(Start: 24 @35156 has 51 MA's), (25, 35177), (27, 35198), (29, 35210), (30, 35243), (34, 35309), (35,  
35324), (42, 35372),



Gene: Twitch\_44 Start: 35261, Stop: 35518, Start Num: 21

Candidate Starts for Twitch\_44:

(Start: 17 @35237 has 14 MA's), (Start: 20 @35258 has 7 MA's), (Start: 21 @35261 has 27 MA's), (Start: 24 @35279 has 51 MA's), (25, 35300), (27, 35321), (29, 35333), (30, 35366), (34, 35432), (35, 35447), (42, 35495),

Gene: Unicorn\_46 Start: 35029, Stop: 35373, Start Num: 5

Candidate Starts for Unicorn\_46:

(Start: 5 @35029 has 1 MA's), (Start: 24 @35137 has 51 MA's), (28, 35188), (29, 35191), (32, 35257), (34, 35290),

Gene: Urkel\_45 Start: 36056, Stop: 36295, Start Num: 24

Candidate Starts for Urkel\_45:

(1, 35855), (2, 35861), (3, 35876), (Start: 7 @35960 has 1 MA's), (9, 35984), (Start: 24 @36056 has 51 MA's), (27, 36098), (29, 36110), (30, 36143), (34, 36209),

Gene: Validus\_48 Start: 35897, Stop: 36190, Start Num: 15

Candidate Starts for Validus\_48:

(Start: 15 @35897 has 2 MA's), (Start: 24 @35945 has 51 MA's), (28, 35996), (29, 35999), (35, 36113), (38, 36143), (41, 36167),

Gene: Veliki\_44 Start: 35178, Stop: 35435, Start Num: 21

Candidate Starts for Veliki\_44:

(Start: 17 @35154 has 14 MA's), (Start: 20 @35175 has 7 MA's), (Start: 21 @35178 has 27 MA's), (Start: 24 @35196 has 51 MA's), (25, 35217), (27, 35238), (29, 35250), (30, 35283), (34, 35349), (35, 35364), (42, 35412),

Gene: Wintermute\_48 Start: 36318, Stop: 36566, Start Num: 23

Candidate Starts for Wintermute\_48:

(Start: 7 @36222 has 1 MA's), (12, 36258), (Start: 23 @36318 has 18 MA's), (35, 36489), (36, 36492),

Gene: Ximenita\_50 Start: 36194, Stop: 36445, Start Num: 21

Candidate Starts for Ximenita\_50:

(14, 36161), (Start: 20 @36191 has 7 MA's), (Start: 21 @36194 has 27 MA's), (Start: 24 @36209 has 51 MA's), (29, 36263), (32, 36329), (35, 36377), (37, 36389),

Gene: Y10\_47 Start: 36237, Stop: 36485, Start Num: 23

Candidate Starts for Y10\_47:

(Start: 23 @36237 has 18 MA's), (35, 36408), (36, 36411),

Gene: Y2\_47 Start: 36237, Stop: 36485, Start Num: 23

Candidate Starts for Y2\_47:

(Start: 23 @36237 has 18 MA's), (35, 36408), (36, 36411),

Gene: YoureAdopted\_43 Start: 35343, Stop: 35600, Start Num: 21

Candidate Starts for YoureAdopted\_43:

(Start: 17 @35319 has 14 MA's), (Start: 20 @35340 has 7 MA's), (Start: 21 @35343 has 27 MA's), (Start: 24 @35361 has 51 MA's), (25, 35382), (27, 35403), (29, 35415), (30, 35448), (34, 35514), (35, 35529), (42, 35577),

Gene: Yuna\_50 Start: 36971, Stop: 37204, Start Num: 24

Candidate Starts for Yuna\_50:

(Start: 24 @36971 has 51 MA's), (32, 37091), (35, 37139), (37, 37151),

Gene: Zabiza\_40 Start: 31425, Stop: 31706, Start Num: 17

Candidate Starts for Zabiza\_40:

(Start: 17 @31425 has 14 MA's), (Start: 20 @31446 has 7 MA's), (Start: 21 @31449 has 27 MA's),  
(Start: 24 @31467 has 51 MA's), (25, 31488), (27, 31509), (29, 31521), (30, 31554), (34, 31620), (35,  
31635), (42, 31683),

Gene: Zavala\_45 Start: 35438, Stop: 35677, Start Num: 24

Candidate Starts for Zavala\_45:

(Start: 20 @35417 has 7 MA's), (Start: 21 @35420 has 27 MA's), (Start: 24 @35438 has 51 MA's),  
(25, 35459), (27, 35480), (29, 35492), (30, 35525), (34, 35591), (35, 35606), (42, 35654),