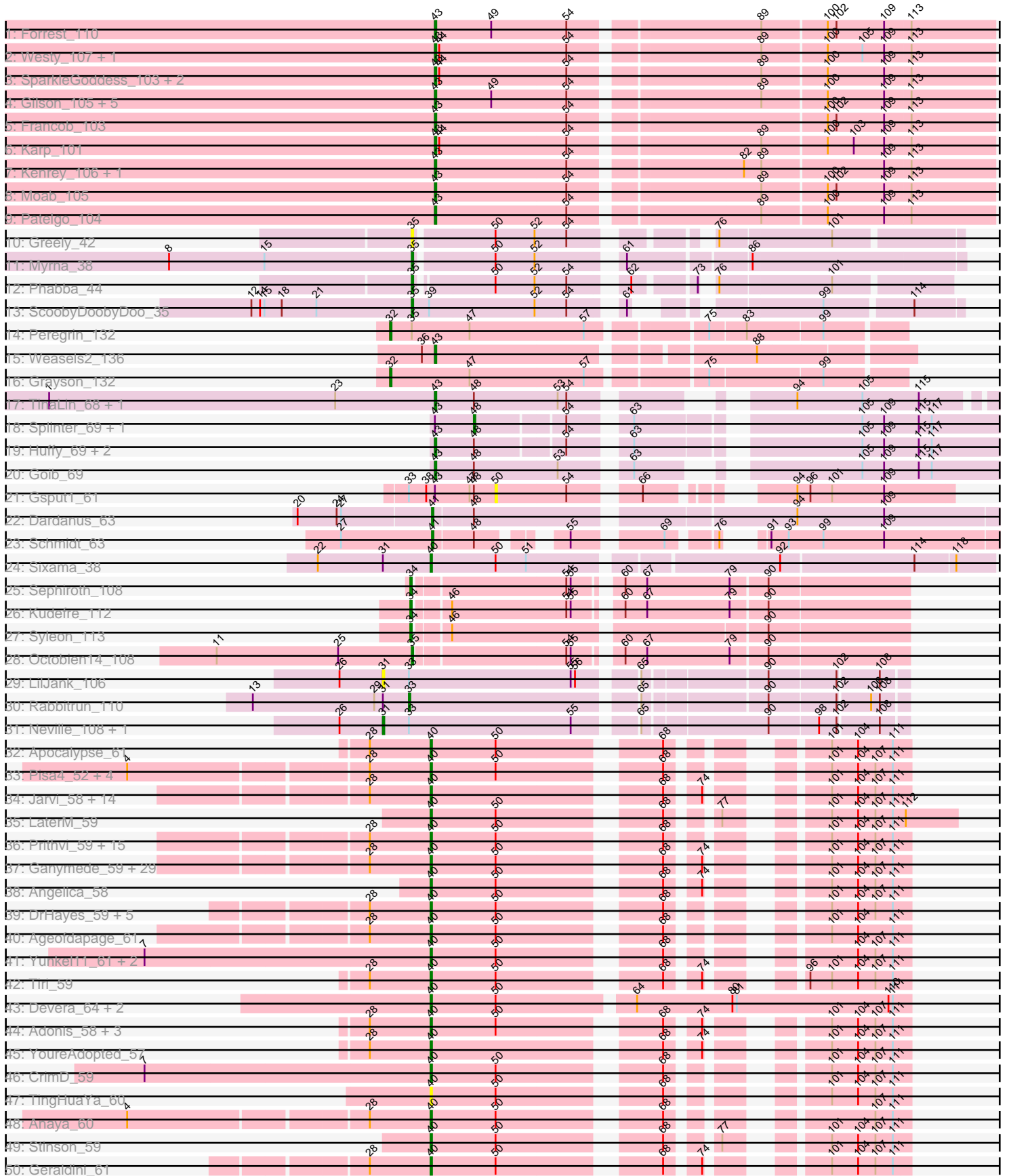
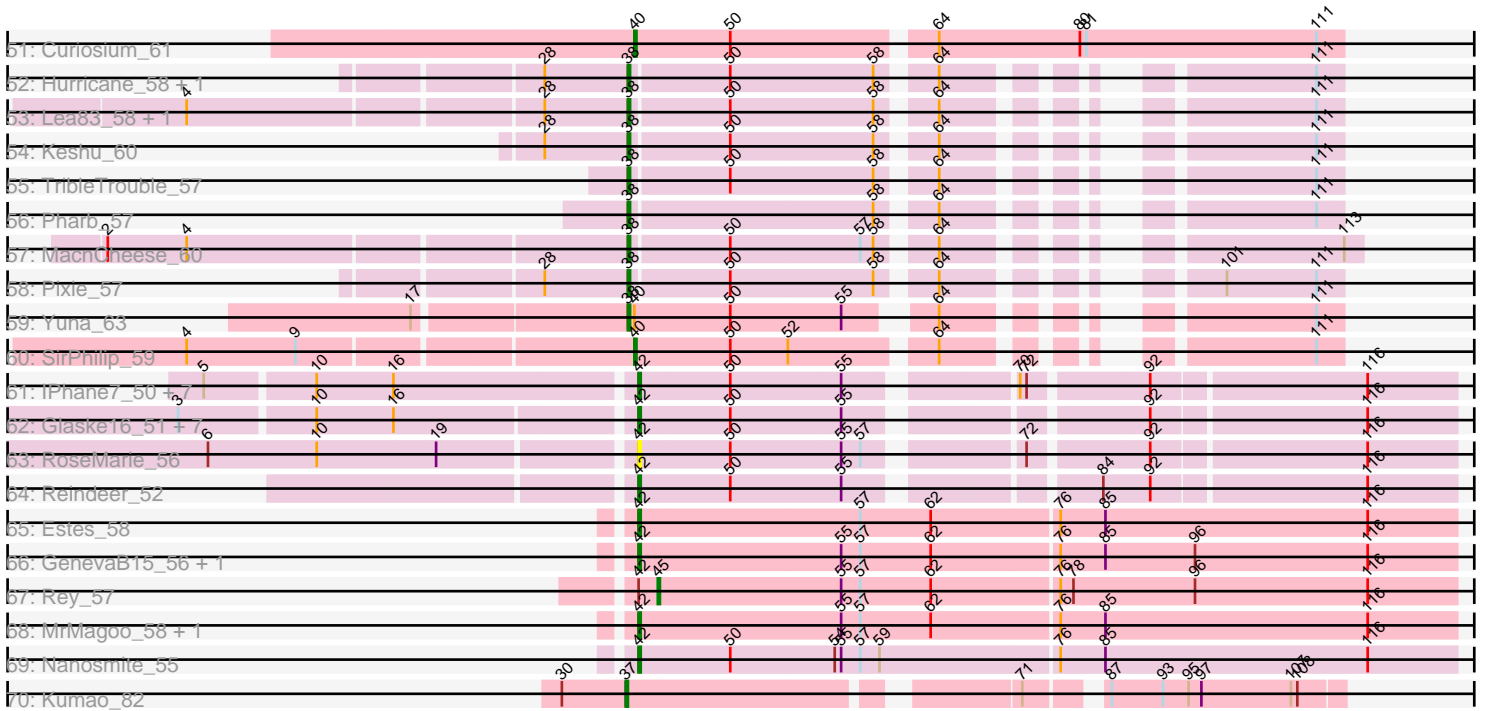


Pham 311277



Pham 311277



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 311277 Report

This analysis was run 06/27/26 on database version 652.

Pham number 311277 has 176 members, 12 are drafts.

Phages represented in each track:

- Track 1 : Forrest\_110
- Track 2 : Westy\_107, Belfort\_105
- Track 3 : SparkleGoddess\_103, Comrade\_102, Stigma\_102
- Track 4 : Gilson\_105, MeganTheeKilla\_103, DeluluLabubu\_104, Maupel\_105, Jada\_105, Emma1919\_106
- Track 5 : Francob\_103
- Track 6 : Karp\_101
- Track 7 : Kenrey\_106, Phredrick\_104
- Track 8 : Moab\_105
- Track 9 : Patelgo\_104
- Track 10 : Greely\_42
- Track 11 : Myrna\_38
- Track 12 : Phabba\_44
- Track 13 : ScoobyDoobyDoo\_35
- Track 14 : Peregrin\_132
- Track 15 : Weasels2\_136
- Track 16 : Grayson\_132
- Track 17 : TinaLin\_68, Banquo\_68
- Track 18 : Splinter\_69, Vendetta\_69
- Track 19 : Huffy\_69, DinoDaryn\_69, TZGordon\_70
- Track 20 : Goib\_69
- Track 21 : Gspu1\_61
- Track 22 : Dardanus\_63
- Track 23 : Schmidt\_63
- Track 24 : Sixama\_38
- Track 25 : Sephiroth\_108
- Track 26 : Kudefre\_112
- Track 27 : Syleon\_113
- Track 28 : Octobien14\_108
- Track 29 : LilJank\_106
- Track 30 : Rabbitrun\_110
- Track 31 : Neville\_108, Trax\_110
- Track 32 : Apocalypse\_61
- Track 33 : Pisa4\_52, Bella96\_59, DartGoblin\_60, Pisa1\_58, Murucutumbu\_59
- Track 34 : Jarvi\_58, Rosmarinus\_58, CREW\_58, Topper\_58, Dalmuri\_58, BGIlluvia\_58, Jeckyll\_58, Joy99\_58, Inky\_58, Lunahalos\_58, Capricorn\_58, Belladonna\_58, CallaLilly\_58, Spock\_58, Llorens\_58

- Track 35 : LaterM\_59
- Track 36 : Prithvi\_59, MacKat\_53, Megsy\_60, LindNT\_57, Zabiza\_53, ActinUp\_58, Zavala\_60, Clipper\_61, JAWS\_58, TreyKay\_59, Veliki\_59, TaiwanKao\_60, Mynx\_59, HedwigODU\_58, Sulley\_58, Ramen\_59
- Track 37 : Ganymede\_59, Peel\_58, TruffulaTree\_58, Boiii\_58, Hyperbowlee\_58, Asayake\_58, Bern\_59, AlishaPH\_58, Padpat\_60, Atiba\_59, BEEST\_58, BaghaKamala\_57, Padfoot\_58, Slimphazie\_58, CheetoDust\_57, Blizzard\_58, Durfee\_58, Beezoo\_60, Rapunzel97\_59, Homura\_58, BarrelRoll\_58, Twitch\_58, Emerson\_59, QuincyRose\_57, ShiaSurprise\_59, Tachez\_58, Adephagia\_58, Piatt\_58, CaseJules\_60, Pokerus\_57
- Track 38 : Angelica\_58
- Track 39 : DrHayes\_59, TiniBug\_59, Anma\_60, Urkel\_59, LastHope\_61, SamuelLPlaqson\_59
- Track 40 : Ageofdapage\_61
- Track 41 : Yunkel11\_61, Efra2\_62, Guanica15\_61
- Track 42 : Tiri\_59
- Track 43 : Devera\_64, Illumine\_62, Dole\_62
- Track 44 : Adonis\_58, Deby\_58, MeaningOfLife\_59, Jayhawk\_59
- Track 45 : YoureAdopted\_57
- Track 46 : CrimD\_59
- Track 47 : TingHuaYa\_60
- Track 48 : Anaya\_60
- Track 49 : Stinson\_59
- Track 50 : Geraldini\_61
- Track 51 : Curiosium\_61
- Track 52 : Hurricane\_58, TBond007\_56
- Track 53 : Lea83\_58, ShedlockHolmes\_59
- Track 54 : Keshu\_60
- Track 55 : TribbleTrouble\_57
- Track 56 : Pharb\_57
- Track 57 : MacnCheese\_60
- Track 58 : Pixie\_57
- Track 59 : Yuna\_63
- Track 60 : SirPhilip\_59
- Track 61 : IPhone7\_50, PegLeg\_50, LilhomieP\_49, Bongo\_50, SlimJimmy\_49, TyDawg\_50, Skinny\_51, TpudiCK\_52
- Track 62 : Glaske16\_51, KleverKiS\_51, Diminimus\_51, FreakyGoo\_51, Auspice\_50, Dulcita\_51, Bricole\_50, Izel\_51
- Track 63 : RoseMarie\_56
- Track 64 : Reindeer\_52
- Track 65 : Estes\_58
- Track 66 : GenevaB15\_56, Aziz\_56
- Track 67 : Rey\_57
- Track 68 : MrMagoo\_58, GardenSalsa\_58
- Track 69 : Nanosmite\_55
- Track 70 : Kumao\_82

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

The start number called the most often in the published annotations is 40, it was called in 91 of the 164 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp\_58, Adephegia\_58, Adonis\_58, Ageofdapage\_61, AlishaPH\_58, Anaya\_60, Angelica\_58, Anma\_60, Apocalypse\_61, Asayake\_58, Atiba\_59, BEEEST\_58, BGIlluviae\_58, BaghaKamala\_57, BarrelRoll\_58, Beezoo\_60, Bella96\_59, Belladonna\_58, Bern\_59, Blizzard\_58, Boiii\_58, CREW\_58, CallaLilly\_58, Capricorn\_58, CaseJules\_60, CheetoDust\_57, Clipper\_61, CrimD\_59, Curiosium\_61, Dalmuri\_58, DartGoblin\_60, Deby\_58, Devera\_64, Dole\_62, DrHayes\_59, Durfee\_58, Efra2\_62, Emerson\_59, Ganymede\_59, Geraldini\_61, Guanica15\_61, HedwigODU\_58, Homura\_58, Hyperbowlee\_58, Illumine\_62, Inky\_58, JAWS\_58, Jarvi\_58, Jayhawk\_59, Jeckyll\_58, Joy99\_58, LastHope\_61, LaterM\_59, LindNT\_57, Llorens\_58, Lunahalos\_58, MacKat\_53, MeaningOfLife\_59, Megsy\_60, Murucutumbu\_59, Mynx\_59, Padfoot\_58, Padpat\_60, Peel\_58, Piatt\_58, Pisa1\_58, Pisa4\_52, Pokerus\_57, Prithvi\_59, QuincyRose\_57, Ramen\_59, Rapunzel97\_59, Rosmarinus\_58, SamuelLPlaqson\_59, ShiaSurprise\_59, SirPhilip\_59, Sixama\_38, Slimphazie\_58, Spock\_58, Stinson\_59, Sulley\_58, Tachez\_58, TaiwanKao\_60, TingHuaYa\_60, TiniBug\_59, Tiri\_59, Topper\_58, TreyKay\_59, TruffulaTree\_58, Twitch\_58, Urkel\_59, Veliki\_59, YoureAdopted\_57, Yunkel11\_61, Zabiza\_53, Zavala\_60,

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

- Yuna\_63,

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

- Auspice\_50, Aziz\_56, Banquo\_68, Belfort\_105, Bongo\_50, Bricole\_50, Comrade\_102, Dardanus\_63, DeluluLabubu\_104, Diminimus\_51, DinoDaryn\_69, Dulcita\_51, Emma1919\_106, Estes\_58, Forrest\_110, Francob\_103, FreakyGoo\_51, GardenSalsa\_58, GenevaB15\_56, Gilson\_105, Glaske16\_51, Goib\_69, Grayson\_132, Greely\_42, Gspu1\_61, Huffy\_69, Hurricane\_58, IPHane7\_50, Izel\_51, Jada\_105, Karp\_101, Kenrey\_106, Keshu\_60, KleverKiS\_51, Kudrefre\_112, Kumao\_82, Lea83\_58, LilJank\_106, LilhomieP\_49, MacnCheese\_60, Maupel\_105, MeganTheeKilla\_103, Moab\_105, MrMagoo\_58, Myrna\_38, Nanosmite\_55, Neville\_108, Octobien14\_108, Patelgo\_104, PegLeg\_50, Peregrin\_132, Phabba\_44, Pharb\_57, Phredrick\_104, Pixie\_57, Rabbitrun\_110, Reindeer\_52, Rey\_57, RoseMarie\_56, Schmidt\_63, ScoobyDoobyDoo\_35, Sephiroth\_108, ShedlockHolmes\_59, Skinny\_51, SlimJimmy\_49, SparkleGoddess\_103, Splinter\_69, Stigma\_102, Syleon\_113, TBond007\_56, TZGordon\_70, TinaLin\_68, TpudiCK\_52, Trax\_110, TripleTrouble\_57, TyDawg\_50, Vendetta\_69, Weasels2\_136, Westy\_107,

### Summary by start number:

Start 31:

- Found in 5 of 176 ( 2.8% ) of genes in pham
- Manual Annotations of this start: 2 of 164
- Called 60.0% of time when present
- Phage (with cluster) where this start called: LilJank\_106 (DU2), Neville\_108 (DU2), Trax\_110 (DU2),

Start 32:

- Found in 2 of 176 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 2 of 164

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Grayson\_132 (CB), Peregrin\_132 (CB),

#### Start 33:

- Found in 5 of 176 ( 2.8% ) of genes in pham
- Manual Annotations of this start: 1 of 164
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Rabbitrun\_110 (DU2),

#### Start 34:

- Found in 3 of 176 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 3 of 164
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kudrefre\_112 (DU1), Sephiroth\_108 (DU1), Syleon\_113 (DU1),

#### Start 35:

- Found in 6 of 176 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 4 of 164
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Greely\_42 (C2), Myrna\_38 (C2), Octobien14\_108 (DU1), Phabba\_44 (C2), ScoobyDoobyDoo\_35 (C2),

#### Start 37:

- Found in 1 of 176 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 164
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kumao\_82 (singleton),

#### Start 38:

- Found in 11 of 176 ( 6.2% ) of genes in pham
- Manual Annotations of this start: 10 of 164
- Called 90.9% of time when present
- Phage (with cluster) where this start called: Hurricane\_58 (K3), Keshu\_60 (K3), Lea83\_58 (K3), MacnCheese\_60 (K3), Pharb\_57 (K3), Pixie\_57 (K3), ShedlockHolmes\_59 (K3), TBond007\_56 (K3), TripleTrouble\_57 (K3), Yuna\_63 (K6),

#### Start 40:

- Found in 97 of 176 ( 55.1% ) of genes in pham
- Manual Annotations of this start: 91 of 164
- Called 99.0% of time when present
- Phage (with cluster) where this start called: ActinUp\_58 (K1), Adepagia\_58 (K1), Adonis\_58 (K1), Ageofdapage\_61 (K1), AlishaPH\_58 (K1), Anaya\_60 (K1), Angelica\_58 (K1), Anma\_60 (K1), Apocalypse\_61 (K1), Asayake\_58 (K1), Atiba\_59 (K1), BEEST\_58 (K1), BGlluvia\_58 (K1), BaghaKamala\_57 (K1), BarrelRoll\_58 (K1), Beezoo\_60 (K1), Bella96\_59 (K1), Belladonna\_58 (K1), Bern\_59 (K1), Blizzard\_58 (K1), Boiiii\_58 (K1), CREW\_58 (K1), CallaLilly\_58 (K1), Capricorn\_58 (K1), CaseJules\_60 (K1), CheetoDust\_57 (K1), Clipper\_61 (K1), CrimD\_59 (K1), Curiosium\_61 (K1), Dalmuri\_58 (K1), DartGoblin\_60 (K1), Deby\_58 (K1), Devera\_64 (K1), Dole\_62 (K1), DrHayes\_59 (K1), Durfee\_58 (K1), Efra2\_62 (K1), Emerson\_59 (K1), Ganymede\_59 (K1), Geraldini\_61 (K1), Guanica15\_61 (K1), HedwigODU\_58 (K1), Homura\_58 (K1), Hyperbowlee\_58 (K1), Illumine\_62 (K1), Inky\_58 (K1), JAWS\_58 (K1), Jarvi\_58 (K1), Jayhawk\_59 (K1), Jeckyll\_58 (K1), Joy99\_58 (K1),

LastHope\_61 (K1), LaterM\_59 (K1), LindNT\_57 (K1), Llorens\_58 (K1), Lunahalos\_58 (K1), MacKat\_53 (K1), MeaningOfLife\_59 (K1), Megsy\_60 (K1), Murucutumbu\_59 (K1), Mynx\_59 (K1), Padfoot\_58 (K1), Padpat\_60 (K1), Peel\_58 (K1), Piatt\_58 (K1), Pisa1\_58 (K1), Pisa4\_52 (K1), Pokerus\_57 (K1), Prithvi\_59 (K1), QuincyRose\_57 (K1), Ramen\_59 (K1), Rapunzel97\_59 (K1), Rosmarinus\_58 (K1), SamuelLPlaqson\_59 (K1), ShiaSurprise\_59 (K1), SirPhilip\_59 (K6), Sixama\_38 (DS), Slimphazie\_58 (K1), Spock\_58 (K1), Stinson\_59 (K1), Sulley\_58 (K1), Tachez\_58 (K1), TaiwanKao\_60 (K1), TingHuaYa\_60 (K1), TiniBug\_59 (K1), Tiri\_59 (K1), Topper\_58 (K1), TreyKay\_59 (K1), TruffulaTree\_58 (K1), Twitch\_58 (K1), Urkel\_59 (K1), Veliki\_59 (K1), YoureAdopted\_57 (K1), Yunkel11\_61 (K1), Zabiza\_53 (K1), Zavala\_60 (K1),

#### Start 41:

- Found in 2 of 176 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 2 of 164
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dardanus\_63 (CU3), Schmidt\_63 (CU4),

#### Start 42:

- Found in 25 of 176 ( 14.2% ) of genes in pham
- Manual Annotations of this start: 21 of 164
- Called 96.0% of time when present
- Phage (with cluster) where this start called: Auspice\_50 (M1), Aziz\_56 (M2), Bongo\_50 (M1), Bricole\_50 (M1), Diminimus\_51 (M1), Dulcita\_51 (M1), Estes\_58 (M2), FreakyGoo\_51 (M1), GardenSalsa\_58 (M2), GenevaB15\_56 (M2), Glaske16\_51 (M1), IPhane7\_50 (M1), Izel\_51 (M1), KleverKiS\_51 (M1), LilhomieP\_49 (M1), MrMagoo\_58 (M2), Nanosmite\_55 (M3), PegLeg\_50 (M1), Reindeer\_52 (M1), RoseMarie\_56 (M1), Skinny\_51 (M1), SlimJimmy\_49 (M1), TpudiCK\_52 (M1), TyDawg\_50 (M1),

#### Start 43:

- Found in 28 of 176 ( 15.9% ) of genes in pham
- Manual Annotations of this start: 24 of 164
- Called 89.3% of time when present
- Phage (with cluster) where this start called: Banquo\_68 (CU1), Belfort\_105 (BK1), Comrade\_102 (BK1), DeluluLabubu\_104 (BK1), DinoDaryn\_69 (CU1), Emma1919\_106 (BK1), Forrest\_110 (BK1), Francob\_103 (BK1), Gilson\_105 (BK1), Goib\_69 (CU1), Huffy\_69 (CU1), Jada\_105 (BK1), Karp\_101 (BK1), Kenrey\_106 (BK1), Maupel\_105 (BK1), MeganTheeKilla\_103 (BK1), Moab\_105 (BK1), Patelgo\_104 (BK1), Phredrick\_104 (BK1), SparkleGoddess\_103 (BK1), Stigma\_102 (BK1), TzGordon\_70 (CU1), TinaLin\_68 (CU1), Weasels2\_136 (CB), Westy\_107 (BK1),

#### Start 45:

- Found in 1 of 176 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 164
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Rey\_57 (M2),

#### Start 48:

- Found in 11 of 176 ( 6.2% ) of genes in pham
- Manual Annotations of this start: 2 of 164
- Called 18.2% of time when present

- Phage (with cluster) where this start called: Splinter\_69 (CU1), Vendetta\_69 (CU1),

Start 50:

- Found in 112 of 176 ( 63.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 0.9% of time when present
- Phage (with cluster) where this start called: Gspu1\_61 (CU2),

### **Summary by clusters:**

There are 17 clusters represented in this pham: singleton, CU4, CU3, CU2, CU1, CB, DU1, K3, K1, M1, BK1, M3, M2, C2, DU2, DS, K6,

Info for manual annotations of cluster BK1:

- Start number 43 was manually annotated 17 times for cluster BK1.

Info for manual annotations of cluster C2:

- Start number 35 was manually annotated 3 times for cluster C2.

Info for manual annotations of cluster CB:

- Start number 32 was manually annotated 2 times for cluster CB.
- Start number 43 was manually annotated 1 time for cluster CB.

Info for manual annotations of cluster CU1:

- Start number 43 was manually annotated 6 times for cluster CU1.
- Start number 48 was manually annotated 2 times for cluster CU1.

Info for manual annotations of cluster CU3:

- Start number 41 was manually annotated 1 time for cluster CU3.

Info for manual annotations of cluster CU4:

- Start number 41 was manually annotated 1 time for cluster CU4.

Info for manual annotations of cluster DS:

- Start number 40 was manually annotated 1 time for cluster DS.

Info for manual annotations of cluster DU1:

- Start number 34 was manually annotated 3 times for cluster DU1.
- Start number 35 was manually annotated 1 time for cluster DU1.

Info for manual annotations of cluster DU2:

- Start number 31 was manually annotated 2 times for cluster DU2.
- Start number 33 was manually annotated 1 time for cluster DU2.

Info for manual annotations of cluster K1:

- Start number 40 was manually annotated 89 times for cluster K1.

Info for manual annotations of cluster K3:

- Start number 38 was manually annotated 9 times for cluster K3.

Info for manual annotations of cluster K6:

- Start number 38 was manually annotated 1 time for cluster K6.

- Start number 40 was manually annotated 1 time for cluster K6.

Info for manual annotations of cluster M1:

- Start number 42 was manually annotated 15 times for cluster M1.

Info for manual annotations of cluster M2:

- Start number 42 was manually annotated 5 times for cluster M2.
- Start number 45 was manually annotated 1 time for cluster M2.

Info for manual annotations of cluster M3:

- Start number 42 was manually annotated 1 time for cluster M3.

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

Gene: ActinUp\_58 Start: 40539, Stop: 40805, Start Num: 40

Candidate Starts for ActinUp\_58:

(28, 40497), (Start: 40 @40539 has 91 MA's), (50, 40584), (68, 40680), (101, 40752), (104, 40770), (107, 40782), (111, 40794),

Gene: Adephagia\_58 Start: 40540, Stop: 40806, Start Num: 40

Candidate Starts for Adephagia\_58:

(28, 40498), (Start: 40 @40540 has 91 MA's), (50, 40585), (68, 40681), (74, 40699), (101, 40753), (104, 40771), (107, 40783), (111, 40795),

Gene: Adonis\_58 Start: 40787, Stop: 41053, Start Num: 40

Candidate Starts for Adonis\_58:

(28, 40745), (Start: 40 @40787 has 91 MA's), (50, 40832), (68, 40928), (74, 40946), (101, 41000), (104, 41018), (107, 41030), (111, 41042),

Gene: Ageofdapage\_61 Start: 41528, Stop: 41794, Start Num: 40

Candidate Starts for Ageofdapage\_61:

(28, 41486), (Start: 40 @41528 has 91 MA's), (50, 41573), (68, 41669), (101, 41741), (104, 41759), (111, 41783),

Gene: AlishaPH\_58 Start: 40801, Stop: 41067, Start Num: 40

Candidate Starts for AlishaPH\_58:

(28, 40759), (Start: 40 @40801 has 91 MA's), (50, 40846), (68, 40942), (74, 40960), (101, 41014), (104, 41032), (107, 41044), (111, 41056),

Gene: Anaya\_60 Start: 41056, Stop: 41322, Start Num: 40

Candidate Starts for Anaya\_60:

(4, 40858), (28, 41014), (Start: 40 @41056 has 91 MA's), (50, 41101), (68, 41197), (107, 41299), (111, 41311),

Gene: Angelica\_58 Start: 40695, Stop: 40961, Start Num: 40

Candidate Starts for Angelica\_58:

(Start: 40 @40695 has 91 MA's), (50, 40740), (68, 40836), (74, 40854), (101, 40908), (104, 40926), (107, 40938), (111, 40950),

Gene: Anma\_60 Start: 41439, Stop: 41705, Start Num: 40

Candidate Starts for Anma\_60:

(28, 41397), (Start: 40 @41439 has 91 MA's), (50, 41484), (68, 41580), (101, 41652), (104, 41670), (107, 41682), (111, 41694),

Gene: Apocalypse\_61 Start: 41464, Stop: 41730, Start Num: 40

Candidate Starts for Apocalypse\_61:

(28, 41422), (Start: 40 @41464 has 91 MA's), (50, 41509), (68, 41605), (101, 41677), (104, 41695), (111, 41719),

Gene: Asayake\_58 Start: 40855, Stop: 41121, Start Num: 40

Candidate Starts for Asayake\_58:

(28, 40813), (Start: 40 @40855 has 91 MA's), (50, 40900), (68, 40996), (74, 41014), (101, 41068), (104, 41086), (107, 41098), (111, 41110),

Gene: Atiba\_59 Start: 40503, Stop: 40769, Start Num: 40

Candidate Starts for Atiba\_59:

(28, 40461), (Start: 40 @40503 has 91 MA's), (50, 40548), (68, 40644), (74, 40662), (101, 40716), (104, 40734), (107, 40746), (111, 40758),

Gene: Auspice\_50 Start: 37254, Stop: 37604, Start Num: 42

Candidate Starts for Auspice\_50:

(3, 37053), (10, 37113), (16, 37149), (Start: 42 @37254 has 21 MA's), (50, 37296), (55, 37347), (92, 37467), (116, 37563),

Gene: Aziz\_56 Start: 39168, Stop: 39545, Start Num: 42

Candidate Starts for Aziz\_56:

(Start: 42 @39168 has 21 MA's), (55, 39261), (57, 39270), (62, 39303), (76, 39360), (85, 39381), (96, 39423), (116, 39504),

Gene: BEEST\_58 Start: 40855, Stop: 41121, Start Num: 40

Candidate Starts for BEEST\_58:

(28, 40813), (Start: 40 @40855 has 91 MA's), (50, 40900), (68, 40996), (74, 41014), (101, 41068), (104, 41086), (107, 41098), (111, 41110),

Gene: BGlluviae\_58 Start: 40658, Stop: 40924, Start Num: 40

Candidate Starts for BGlluviae\_58:

(28, 40616), (Start: 40 @40658 has 91 MA's), (68, 40799), (74, 40817), (101, 40871), (104, 40889), (107, 40901), (111, 40913),

Gene: BaghaKamala\_57 Start: 39896, Stop: 40162, Start Num: 40

Candidate Starts for BaghaKamala\_57:

(28, 39854), (Start: 40 @39896 has 91 MA's), (50, 39941), (68, 40037), (74, 40055), (101, 40109), (104, 40127), (107, 40139), (111, 40151),

Gene: Banquo\_68 Start: 41213, Stop: 41536, Start Num: 43

Candidate Starts for Banquo\_68:

(1, 40946), (23, 41144), (Start: 43 @41213 has 24 MA's), (Start: 48 @41240 has 2 MA's), (53, 41297), (54, 41303), (94, 41408), (105, 41453), (115, 41492),

Gene: BarrelRoll\_58 Start: 40519, Stop: 40785, Start Num: 40

Candidate Starts for BarrelRoll\_58:

(28, 40477), (Start: 40 @40519 has 91 MA's), (50, 40564), (68, 40660), (74, 40678), (101, 40732), (104, 40750), (107, 40762), (111, 40774),

Gene: Beezoo\_60 Start: 41503, Stop: 41769, Start Num: 40

Candidate Starts for Beezoo\_60:

(28, 41461), (Start: 40 @41503 has 91 MA's), (50, 41548), (68, 41644), (74, 41662), (101, 41716), (104, 41734), (107, 41746), (111, 41758),

Gene: Belfort\_105 Start: 69661, Stop: 70026, Start Num: 43

Candidate Starts for Belfort\_105:

(Start: 43 @69661 has 24 MA's), (44, 69664), (54, 69751), (89, 69871), (100, 69913), (105, 69937), (109, 69952), (113, 69970),

Gene: Bella96\_59 Start: 41284, Stop: 41550, Start Num: 40

Candidate Starts for Bella96\_59:

(4, 41086), (28, 41242), (Start: 40 @41284 has 91 MA's), (50, 41329), (68, 41425), (101, 41497), (104, 41515), (107, 41527), (111, 41539),

Gene: Belladonna\_58 Start: 40658, Stop: 40924, Start Num: 40

Candidate Starts for Belladonna\_58:

(28, 40616), (Start: 40 @40658 has 91 MA's), (68, 40799), (74, 40817), (101, 40871), (104, 40889), (107, 40901), (111, 40913),

Gene: Bern\_59 Start: 39486, Stop: 39752, Start Num: 40

Candidate Starts for Bern\_59:

(28, 39444), (Start: 40 @39486 has 91 MA's), (50, 39531), (68, 39627), (74, 39645), (101, 39699), (104, 39717), (107, 39729), (111, 39741),

Gene: Blizzard\_58 Start: 40855, Stop: 41121, Start Num: 40

Candidate Starts for Blizzard\_58:

(28, 40813), (Start: 40 @40855 has 91 MA's), (50, 40900), (68, 40996), (74, 41014), (101, 41068), (104, 41086), (107, 41098), (111, 41110),

Gene: Boiiii\_58 Start: 40857, Stop: 41123, Start Num: 40

Candidate Starts for Boiiii\_58:

(28, 40815), (Start: 40 @40857 has 91 MA's), (50, 40902), (68, 40998), (74, 41016), (101, 41070), (104, 41088), (107, 41100), (111, 41112),

Gene: Bongo\_50 Start: 37258, Stop: 37608, Start Num: 42

Candidate Starts for Bongo\_50:

(5, 37066), (10, 37114), (16, 37150), (Start: 42 @37258 has 21 MA's), (50, 37300), (55, 37351), (70, 37417), (72, 37420), (92, 37471), (116, 37567),

Gene: Bricole\_50 Start: 37240, Stop: 37590, Start Num: 42

Candidate Starts for Bricole\_50:

(3, 37039), (10, 37099), (16, 37135), (Start: 42 @37240 has 21 MA's), (50, 37282), (55, 37333), (92, 37453), (116, 37549),

Gene: CREW\_58 Start: 40658, Stop: 40924, Start Num: 40

Candidate Starts for CREW\_58:

(28, 40616), (Start: 40 @40658 has 91 MA's), (68, 40799), (74, 40817), (101, 40871), (104, 40889), (107, 40901), (111, 40913),

Gene: CallaLilly\_58 Start: 40581, Stop: 40847, Start Num: 40

Candidate Starts for CallaLilly\_58:

(28, 40539), (Start: 40 @40581 has 91 MA's), (68, 40722), (74, 40740), (101, 40794), (104, 40812), (107, 40824), (111, 40836),

Gene: Capricorn\_58 Start: 40658, Stop: 40924, Start Num: 40

Candidate Starts for Capricorn\_58:

(28, 40616), (Start: 40 @40658 has 91 MA's), (68, 40799), (74, 40817), (101, 40871), (104, 40889), (107, 40901), (111, 40913),

Gene: CaseJules\_60 Start: 40855, Stop: 41121, Start Num: 40

Candidate Starts for CaseJules\_60:

(28, 40813), (Start: 40 @40855 has 91 MA's), (50, 40900), (68, 40996), (74, 41014), (101, 41068), (104, 41086), (107, 41098), (111, 41110),

Gene: CheetoDust\_57 Start: 39940, Stop: 40206, Start Num: 40

Candidate Starts for CheetoDust\_57:

(28, 39898), (Start: 40 @39940 has 91 MA's), (50, 39985), (68, 40081), (74, 40099), (101, 40153), (104, 40171), (107, 40183), (111, 40195),

Gene: Clipper\_61 Start: 41118, Stop: 41384, Start Num: 40

Candidate Starts for Clipper\_61:

(28, 41076), (Start: 40 @41118 has 91 MA's), (50, 41163), (68, 41259), (101, 41331), (104, 41349), (107, 41361), (111, 41373),

Gene: Comrade\_102 Start: 68978, Stop: 69343, Start Num: 43

Candidate Starts for Comrade\_102:

(Start: 43 @68978 has 24 MA's), (44, 68981), (54, 69068), (89, 69188), (100, 69230), (109, 69269), (113, 69287),

Gene: CrimD\_59 Start: 41076, Stop: 41342, Start Num: 40

Candidate Starts for CrimD\_59:

(7, 40881), (Start: 40 @41076 has 91 MA's), (50, 41121), (68, 41217), (101, 41289), (104, 41307), (107, 41319), (111, 41331),

Gene: Curiosium\_61 Start: 39723, Stop: 40043, Start Num: 40

Candidate Starts for Curiosium\_61:

(Start: 40 @39723 has 91 MA's), (50, 39768), (64, 39855), (80, 39921), (81, 39924), (111, 40032),

Gene: Dalmuri\_58 Start: 40658, Stop: 40924, Start Num: 40

Candidate Starts for Dalmuri\_58:

(28, 40616), (Start: 40 @40658 has 91 MA's), (68, 40799), (74, 40817), (101, 40871), (104, 40889), (107, 40901), (111, 40913),

Gene: Dardanus\_63 Start: 39624, Stop: 39992, Start Num: 41

Candidate Starts for Dardanus\_63:

(20, 39534), (24, 39561), (27, 39564), (Start: 41 @39624 has 2 MA's), (Start: 48 @39651 has 2 MA's), (94, 39855), (109, 39915),

Gene: DartGoblin\_60 Start: 41256, Stop: 41522, Start Num: 40

Candidate Starts for DartGoblin\_60:

(4, 41058), (28, 41214), (Start: 40 @41256 has 91 MA's), (50, 41301), (68, 41397), (101, 41469), (104, 41487), (107, 41499), (111, 41511),

Gene: Deby\_58 Start: 40717, Stop: 40983, Start Num: 40

Candidate Starts for Deby\_58:

(28, 40675), (Start: 40 @40717 has 91 MA's), (50, 40762), (68, 40858), (74, 40876), (101, 40930), (104, 40948), (107, 40960), (111, 40972),

Gene: DeluluLabubu\_104 Start: 67810, Stop: 68175, Start Num: 43

Candidate Starts for DeluluLabubu\_104:

(Start: 43 @67810 has 24 MA's), (49, 67849), (54, 67900), (89, 68020), (100, 68062), (109, 68101), (113, 68119),

Gene: Devera\_64 Start: 41616, Stop: 41936, Start Num: 40

Candidate Starts for Devera\_64:

(Start: 40 @41616 has 91 MA's), (50, 41661), (64, 41748), (80, 41814), (81, 41817), (110, 41922), (111, 41925),

Gene: Diminimus\_51 Start: 37253, Stop: 37603, Start Num: 42

Candidate Starts for Diminimus\_51:

(3, 37052), (10, 37112), (16, 37148), (Start: 42 @37253 has 21 MA's), (50, 37295), (55, 37346), (92, 37466), (116, 37562),

Gene: DinoDaryn\_69 Start: 41479, Stop: 41826, Start Num: 43

Candidate Starts for DinoDaryn\_69:

(Start: 43 @41479 has 24 MA's), (Start: 48 @41506 has 2 MA's), (54, 41563), (63, 41596), (105, 41731), (109, 41746), (115, 41770), (117, 41779),

Gene: Dole\_62 Start: 41619, Stop: 41939, Start Num: 40

Candidate Starts for Dole\_62:

(Start: 40 @41619 has 91 MA's), (50, 41664), (64, 41751), (80, 41817), (81, 41820), (110, 41925), (111, 41928),

Gene: DrHayes\_59 Start: 41439, Stop: 41705, Start Num: 40

Candidate Starts for DrHayes\_59:

(28, 41397), (Start: 40 @41439 has 91 MA's), (50, 41484), (68, 41580), (101, 41652), (104, 41670), (107, 41682), (111, 41694),

Gene: Dulcita\_51 Start: 37254, Stop: 37604, Start Num: 42

Candidate Starts for Dulcita\_51:

(3, 37053), (10, 37113), (16, 37149), (Start: 42 @37254 has 21 MA's), (50, 37296), (55, 37347), (92, 37467), (116, 37563),

Gene: Durfee\_58 Start: 40855, Stop: 41121, Start Num: 40

Candidate Starts for Durfee\_58:

(28, 40813), (Start: 40 @40855 has 91 MA's), (50, 40900), (68, 40996), (74, 41014), (101, 41068), (104, 41086), (107, 41098), (111, 41110),

Gene: Efra2\_62 Start: 40615, Stop: 40881, Start Num: 40

Candidate Starts for Efra2\_62:

(7, 40420), (Start: 40 @40615 has 91 MA's), (50, 40660), (68, 40756), (104, 40846), (107, 40858), (111, 40870),

Gene: Emerson\_59 Start: 40536, Stop: 40802, Start Num: 40

Candidate Starts for Emerson\_59:

(28, 40494), (Start: 40 @40536 has 91 MA's), (50, 40581), (68, 40677), (74, 40695), (101, 40749), (104, 40767), (107, 40779), (111, 40791),

Gene: Emma1919\_106 Start: 68431, Stop: 68796, Start Num: 43  
Candidate Starts for Emma1919\_106:  
(Start: 43 @68431 has 24 MA's), (49, 68470), (54, 68521), (89, 68641), (100, 68683), (109, 68722),  
(113, 68740),

Gene: Estes\_58 Start: 39425, Stop: 39802, Start Num: 42  
Candidate Starts for Estes\_58:  
(Start: 42 @39425 has 21 MA's), (57, 39527), (62, 39560), (76, 39617), (85, 39638), (116, 39761),

Gene: Forrest\_110 Start: 70740, Stop: 71105, Start Num: 43  
Candidate Starts for Forrest\_110:  
(Start: 43 @70740 has 24 MA's), (49, 70779), (54, 70830), (89, 70950), (100, 70992), (102, 70998),  
(109, 71031), (113, 71049),

Gene: Francob\_103 Start: 68601, Stop: 68966, Start Num: 43  
Candidate Starts for Francob\_103:  
(Start: 43 @68601 has 24 MA's), (54, 68691), (100, 68853), (102, 68859), (109, 68892), (113, 68910),

Gene: FreakyGoo\_51 Start: 37254, Stop: 37604, Start Num: 42  
Candidate Starts for FreakyGoo\_51:  
(3, 37053), (10, 37113), (16, 37149), (Start: 42 @37254 has 21 MA's), (50, 37296), (55, 37347), (92,  
37467), (116, 37563),

Gene: Ganymede\_59 Start: 40919, Stop: 41185, Start Num: 40  
Candidate Starts for Ganymede\_59:  
(28, 40877), (Start: 40 @40919 has 91 MA's), (50, 40964), (68, 41060), (74, 41078), (101, 41132),  
(104, 41150), (107, 41162), (111, 41174),

Gene: GardenSalsa\_58 Start: 39575, Stop: 39952, Start Num: 42  
Candidate Starts for GardenSalsa\_58:  
(Start: 42 @39575 has 21 MA's), (55, 39668), (57, 39677), (62, 39710), (76, 39767), (85, 39788), (116,  
39911),

Gene: GenevaB15\_56 Start: 39168, Stop: 39545, Start Num: 42  
Candidate Starts for GenevaB15\_56:  
(Start: 42 @39168 has 21 MA's), (55, 39261), (57, 39270), (62, 39303), (76, 39360), (85, 39381), (96,  
39423), (116, 39504),

Gene: Geraldini\_61 Start: 41585, Stop: 41851, Start Num: 40  
Candidate Starts for Geraldini\_61:  
(28, 41543), (Start: 40 @41585 has 91 MA's), (50, 41630), (68, 41726), (74, 41744), (101, 41798),  
(104, 41816), (107, 41828), (111, 41840),

Gene: Gilson\_105 Start: 68393, Stop: 68758, Start Num: 43  
Candidate Starts for Gilson\_105:  
(Start: 43 @68393 has 24 MA's), (49, 68432), (54, 68483), (89, 68603), (100, 68645), (109, 68684),  
(113, 68702),

Gene: Glaske16\_51 Start: 37253, Stop: 37603, Start Num: 42  
Candidate Starts for Glaske16\_51:  
(3, 37052), (10, 37112), (16, 37148), (Start: 42 @37253 has 21 MA's), (50, 37295), (55, 37346), (92,  
37466), (116, 37562),

Gene: Goib\_69 Start: 42589, Stop: 42924, Start Num: 43

Candidate Starts for Goib\_69:

(Start: 43 @42589 has 24 MA's), (Start: 48 @42616 has 2 MA's), (53, 42673), (63, 42712), (105, 42829), (109, 42844), (115, 42868), (117, 42877),

Gene: Grayson\_132 Start: 78512, Stop: 78844, Start Num: 32

Candidate Starts for Grayson\_132:

(Start: 32 @78512 has 2 MA's), (47, 78566), (57, 78644), (75, 78716), (99, 78791),

Gene: Greely\_42 Start: 16620, Stop: 16946, Start Num: 35

Candidate Starts for Greely\_42:

(Start: 35 @16620 has 4 MA's), (50, 16671), (52, 16698), (54, 16719), (76, 16788), (101, 16863),

Gene: Gspu1\_61 Start: 40315, Stop: 40578, Start Num: 50

Candidate Starts for Gspu1\_61:

(Start: 33 @40255 has 1 MA's), (Start: 38 @40267 has 10 MA's), (Start: 43 @40273 has 24 MA's), (47, 40297), (Start: 48 @40300 has 2 MA's), (50, 40315), (54, 40363), (66, 40402), (94, 40471), (96, 40480), (101, 40495), (109, 40531),

Gene: Guanica15\_61 Start: 40356, Stop: 40622, Start Num: 40

Candidate Starts for Guanica15\_61:

(7, 40161), (Start: 40 @40356 has 91 MA's), (50, 40401), (68, 40497), (104, 40587), (107, 40599), (111, 40611),

Gene: HedwigODU\_58 Start: 40539, Stop: 40805, Start Num: 40

Candidate Starts for HedwigODU\_58:

(28, 40497), (Start: 40 @40539 has 91 MA's), (50, 40584), (68, 40680), (101, 40752), (104, 40770), (107, 40782), (111, 40794),

Gene: Homura\_58 Start: 40658, Stop: 40924, Start Num: 40

Candidate Starts for Homura\_58:

(28, 40616), (Start: 40 @40658 has 91 MA's), (50, 40703), (68, 40799), (74, 40817), (101, 40871), (104, 40889), (107, 40901), (111, 40913),

Gene: Huff\_69 Start: 41479, Stop: 41826, Start Num: 43

Candidate Starts for Huff\_69:

(Start: 43 @41479 has 24 MA's), (Start: 48 @41506 has 2 MA's), (54, 41563), (63, 41596), (105, 41731), (109, 41746), (115, 41770), (117, 41779),

Gene: Hurricane\_58 Start: 40805, Stop: 41074, Start Num: 38

Candidate Starts for Hurricane\_58:

(28, 40766), (Start: 38 @40805 has 10 MA's), (50, 40850), (58, 40916), (64, 40937), (111, 41063),

Gene: Hyperbowlee\_58 Start: 40855, Stop: 41121, Start Num: 40

Candidate Starts for Hyperbowlee\_58:

(28, 40813), (Start: 40 @40855 has 91 MA's), (50, 40900), (68, 40996), (74, 41014), (101, 41068), (104, 41086), (107, 41098), (111, 41110),

Gene: IPhone7\_50 Start: 37258, Stop: 37608, Start Num: 42

Candidate Starts for IPhone7\_50:

(5, 37066), (10, 37114), (16, 37150), (Start: 42 @37258 has 21 MA's), (50, 37300), (55, 37351), (70, 37417), (72, 37420), (92, 37471), (116, 37567),

Gene: Illumine\_62 Start: 41618, Stop: 41938, Start Num: 40

Candidate Starts for Illumine\_62:

(Start: 40 @41618 has 91 MA's), (50, 41663), (64, 41750), (80, 41816), (81, 41819), (110, 41924), (111, 41927),

Gene: Inky\_58 Start: 40658, Stop: 40924, Start Num: 40

Candidate Starts for Inky\_58:

(28, 40616), (Start: 40 @40658 has 91 MA's), (68, 40799), (74, 40817), (101, 40871), (104, 40889), (107, 40901), (111, 40913),

Gene: Izel\_51 Start: 37253, Stop: 37603, Start Num: 42

Candidate Starts for Izel\_51:

(3, 37052), (10, 37112), (16, 37148), (Start: 42 @37253 has 21 MA's), (50, 37295), (55, 37346), (92, 37466), (116, 37562),

Gene: JAWS\_58 Start: 40525, Stop: 40791, Start Num: 40

Candidate Starts for JAWS\_58:

(28, 40483), (Start: 40 @40525 has 91 MA's), (50, 40570), (68, 40666), (101, 40738), (104, 40756), (107, 40768), (111, 40780),

Gene: Jada\_105 Start: 68906, Stop: 69271, Start Num: 43

Candidate Starts for Jada\_105:

(Start: 43 @68906 has 24 MA's), (49, 68945), (54, 68996), (89, 69116), (100, 69158), (109, 69197), (113, 69215),

Gene: Jarvi\_58 Start: 40658, Stop: 40924, Start Num: 40

Candidate Starts for Jarvi\_58:

(28, 40616), (Start: 40 @40658 has 91 MA's), (68, 40799), (74, 40817), (101, 40871), (104, 40889), (107, 40901), (111, 40913),

Gene: Jayhawk\_59 Start: 40534, Stop: 40800, Start Num: 40

Candidate Starts for Jayhawk\_59:

(28, 40492), (Start: 40 @40534 has 91 MA's), (50, 40579), (68, 40675), (74, 40693), (101, 40747), (104, 40765), (107, 40777), (111, 40789),

Gene: Jeckyll\_58 Start: 40658, Stop: 40924, Start Num: 40

Candidate Starts for Jeckyll\_58:

(28, 40616), (Start: 40 @40658 has 91 MA's), (68, 40799), (74, 40817), (101, 40871), (104, 40889), (107, 40901), (111, 40913),

Gene: Joy99\_58 Start: 40587, Stop: 40853, Start Num: 40

Candidate Starts for Joy99\_58:

(28, 40545), (Start: 40 @40587 has 91 MA's), (68, 40728), (74, 40746), (101, 40800), (104, 40818), (107, 40830), (111, 40842),

Gene: Karp\_101 Start: 68949, Stop: 69314, Start Num: 43

Candidate Starts for Karp\_101:

(Start: 43 @68949 has 24 MA's), (44, 68952), (54, 69039), (89, 69159), (100, 69201), (103, 69219), (109, 69240), (113, 69258),

Gene: Kenrey\_106 Start: 68621, Stop: 68986, Start Num: 43

Candidate Starts for Kenrey\_106:

(Start: 43 @68621 has 24 MA's), (54, 68711), (82, 68819), (89, 68831), (109, 68912), (113, 68930),

Gene: Keshu\_60 Start: 40903, Stop: 41172, Start Num: 38

Candidate Starts for Keshu\_60:

(28, 40864), (Start: 38 @40903 has 10 MA's), (50, 40948), (58, 41014), (64, 41035), (111, 41161),

Gene: KleverKiS\_51 Start: 37234, Stop: 37584, Start Num: 42

Candidate Starts for KleverKiS\_51:

(3, 37033), (10, 37093), (16, 37129), (Start: 42 @37234 has 21 MA's), (50, 37276), (55, 37327), (92, 37447), (116, 37543),

Gene: Kudrefre\_112 Start: 61740, Stop: 62057, Start Num: 34

Candidate Starts for Kudrefre\_112:

(Start: 34 @61740 has 3 MA's), (46, 61761), (54, 61839), (55, 61842), (60, 61866), (67, 61881), (79, 61938), (90, 61962),

Gene: Kumao\_82 Start: 53900, Stop: 54196, Start Num: 37

Candidate Starts for Kumao\_82:

(30, 53870), (Start: 37 @53900 has 1 MA's), (71, 54062), (87, 54089), (93, 54113), (95, 54125), (97, 54131), (107, 54173), (108, 54176),

Gene: LastHope\_61 Start: 39701, Stop: 39967, Start Num: 40

Candidate Starts for LastHope\_61:

(28, 39659), (Start: 40 @39701 has 91 MA's), (50, 39746), (68, 39842), (101, 39914), (104, 39932), (107, 39944), (111, 39956),

Gene: LaterM\_59 Start: 41420, Stop: 41719, Start Num: 40

Candidate Starts for LaterM\_59:

(Start: 40 @41420 has 91 MA's), (50, 41465), (68, 41561), (77, 41585), (101, 41633), (104, 41651), (107, 41663), (111, 41675), (112, 41684),

Gene: Lea83\_58 Start: 40858, Stop: 41127, Start Num: 38

Candidate Starts for Lea83\_58:

(4, 40663), (28, 40819), (Start: 38 @40858 has 10 MA's), (50, 40903), (58, 40969), (64, 40990), (111, 41116),

Gene: LilJank\_106 Start: 63800, Stop: 64132, Start Num: 31

Candidate Starts for LilJank\_106:

(26, 63770), (Start: 31 @63800 has 2 MA's), (Start: 33 @63818 has 1 MA's), (55, 63929), (56, 63932), (65, 63965), (90, 64043), (102, 64088), (108, 64115),

Gene: LilhomieP\_49 Start: 37258, Stop: 37608, Start Num: 42

Candidate Starts for LilhomieP\_49:

(5, 37066), (10, 37114), (16, 37150), (Start: 42 @37258 has 21 MA's), (50, 37300), (55, 37351), (70, 37417), (72, 37420), (92, 37471), (116, 37567),

Gene: LindNT\_57 Start: 40742, Stop: 41008, Start Num: 40

Candidate Starts for LindNT\_57:

(28, 40700), (Start: 40 @40742 has 91 MA's), (50, 40787), (68, 40883), (101, 40955), (104, 40973), (107, 40985), (111, 40997),

Gene: Llorens\_58 Start: 40658, Stop: 40924, Start Num: 40

Candidate Starts for Llorens\_58:

(28, 40616), (Start: 40 @40658 has 91 MA's), (68, 40799), (74, 40817), (101, 40871), (104, 40889), (107, 40901), (111, 40913),

Gene: Lunahalos\_58 Start: 40658, Stop: 40924, Start Num: 40

Candidate Starts for Lunahalos\_58:

(28, 40616), (Start: 40 @40658 has 91 MA's), (68, 40799), (74, 40817), (101, 40871), (104, 40889), (107, 40901), (111, 40913),

Gene: MacKat\_53 Start: 36002, Stop: 36268, Start Num: 40

Candidate Starts for MacKat\_53:

(28, 35960), (Start: 40 @36002 has 91 MA's), (50, 36047), (68, 36143), (101, 36215), (104, 36233), (107, 36245), (111, 36257),

Gene: MacnCheese\_60 Start: 41385, Stop: 41663, Start Num: 38

Candidate Starts for MacnCheese\_60:

(2, 41154), (4, 41190), (Start: 38 @41385 has 10 MA's), (50, 41430), (57, 41490), (58, 41496), (64, 41517), (113, 41655),

Gene: Maupel\_105 Start: 68393, Stop: 68758, Start Num: 43

Candidate Starts for Maupel\_105:

(Start: 43 @68393 has 24 MA's), (49, 68432), (54, 68483), (89, 68603), (100, 68645), (109, 68684), (113, 68702),

Gene: MeaningOfLife\_59 Start: 41413, Stop: 41679, Start Num: 40

Candidate Starts for MeaningOfLife\_59:

(28, 41371), (Start: 40 @41413 has 91 MA's), (50, 41458), (68, 41554), (74, 41572), (101, 41626), (104, 41644), (107, 41656), (111, 41668),

Gene: MeganTheeKilla\_103 Start: 67750, Stop: 68115, Start Num: 43

Candidate Starts for MeganTheeKilla\_103:

(Start: 43 @67750 has 24 MA's), (49, 67789), (54, 67840), (89, 67960), (100, 68002), (109, 68041), (113, 68059),

Gene: Megsy\_60 Start: 40807, Stop: 41073, Start Num: 40

Candidate Starts for Megsy\_60:

(28, 40765), (Start: 40 @40807 has 91 MA's), (50, 40852), (68, 40948), (101, 41020), (104, 41038), (107, 41050), (111, 41062),

Gene: Moab\_105 Start: 70915, Stop: 71280, Start Num: 43

Candidate Starts for Moab\_105:

(Start: 43 @70915 has 24 MA's), (54, 71005), (89, 71125), (100, 71167), (102, 71173), (109, 71206), (113, 71224),

Gene: MrMagoo\_58 Start: 39575, Stop: 39952, Start Num: 42

Candidate Starts for MrMagoo\_58:

(Start: 42 @39575 has 21 MA's), (55, 39668), (57, 39677), (62, 39710), (76, 39767), (85, 39788), (116, 39911),

Gene: Murucutumbu\_59 Start: 41513, Stop: 41779, Start Num: 40

Candidate Starts for Murucutumbu\_59:

(4, 41315), (28, 41471), (Start: 40 @41513 has 91 MA's), (50, 41558), (68, 41654), (101, 41726), (104, 41744), (107, 41756), (111, 41768),

Gene: Mynx\_59 Start: 40855, Stop: 41121, Start Num: 40  
Candidate Starts for Mynx\_59:  
(28, 40813), (Start: 40 @40855 has 91 MA's), (50, 40900), (68, 40996), (101, 41068), (104, 41086),  
(107, 41098), (111, 41110),

Gene: Myrna\_38 Start: 17055, Stop: 17402, Start Num: 35  
Candidate Starts for Myrna\_38:  
(8, 16887), (15, 16953), (Start: 35 @17055 has 4 MA's), (50, 17106), (52, 17133), (61, 17181), (86,  
17259),

Gene: Nanosmite\_55 Start: 38885, Stop: 39262, Start Num: 42  
Candidate Starts for Nanosmite\_55:  
(Start: 42 @38885 has 21 MA's), (50, 38927), (54, 38975), (55, 38978), (57, 38987), (59, 38996), (76,  
39077), (85, 39098), (116, 39221),

Gene: Neville\_108 Start: 62420, Stop: 62755, Start Num: 31  
Candidate Starts for Neville\_108:  
(26, 62390), (Start: 31 @62420 has 2 MA's), (Start: 33 @62438 has 1 MA's), (55, 62549), (65, 62585),  
(90, 62666), (98, 62699), (102, 62711), (108, 62738),

Gene: Octobien14\_108 Start: 60532, Stop: 60849, Start Num: 35  
Candidate Starts for Octobien14\_108:  
(11, 60397), (25, 60481), (Start: 35 @60532 has 4 MA's), (54, 60631), (55, 60634), (60, 60658), (67,  
60673), (79, 60730), (90, 60754),

Gene: Padfoot\_58 Start: 40855, Stop: 41121, Start Num: 40  
Candidate Starts for Padfoot\_58:  
(28, 40813), (Start: 40 @40855 has 91 MA's), (50, 40900), (68, 40996), (74, 41014), (101, 41068),  
(104, 41086), (107, 41098), (111, 41110),

Gene: Padpat\_60 Start: 40536, Stop: 40802, Start Num: 40  
Candidate Starts for Padpat\_60:  
(28, 40494), (Start: 40 @40536 has 91 MA's), (50, 40581), (68, 40677), (74, 40695), (101, 40749),  
(104, 40767), (107, 40779), (111, 40791),

Gene: Patelgo\_104 Start: 70001, Stop: 70366, Start Num: 43  
Candidate Starts for Patelgo\_104:  
(Start: 43 @70001 has 24 MA's), (54, 70091), (89, 70211), (100, 70253), (109, 70292), (113, 70310),

Gene: Peel\_58 Start: 40660, Stop: 40926, Start Num: 40  
Candidate Starts for Peel\_58:  
(28, 40618), (Start: 40 @40660 has 91 MA's), (50, 40705), (68, 40801), (74, 40819), (101, 40873),  
(104, 40891), (107, 40903), (111, 40915),

Gene: PegLeg\_50 Start: 37257, Stop: 37607, Start Num: 42  
Candidate Starts for PegLeg\_50:  
(5, 37065), (10, 37113), (16, 37149), (Start: 42 @37257 has 21 MA's), (50, 37299), (55, 37350), (70,  
37416), (72, 37419), (92, 37470), (116, 37566),

Gene: Peregrin\_132 Start: 78720, Stop: 79052, Start Num: 32  
Candidate Starts for Peregrin\_132:  
(Start: 32 @78720 has 2 MA's), (Start: 35 @78735 has 4 MA's), (47, 78774), (57, 78852), (75, 78924),  
(83, 78948), (99, 78999),

Gene: Phabba\_44 Start: 16811, Stop: 17128, Start Num: 35

Candidate Starts for Phabba\_44:

(Start: 35 @16811 has 4 MA's), (50, 16859), (52, 16886), (54, 16907), (62, 16937), (73, 16973), (76, 16976), (101, 17051),

Gene: Pharb\_57 Start: 40007, Stop: 40276, Start Num: 38

Candidate Starts for Pharb\_57:

(Start: 38 @40007 has 10 MA's), (58, 40118), (64, 40139), (111, 40265),

Gene: Phredrick\_104 Start: 67726, Stop: 68091, Start Num: 43

Candidate Starts for Phredrick\_104:

(Start: 43 @67726 has 24 MA's), (54, 67816), (82, 67924), (89, 67936), (109, 68017), (113, 68035),

Gene: Piatt\_58 Start: 40855, Stop: 41121, Start Num: 40

Candidate Starts for Piatt\_58:

(28, 40813), (Start: 40 @40855 has 91 MA's), (50, 40900), (68, 40996), (74, 41014), (101, 41068), (104, 41086), (107, 41098), (111, 41110),

Gene: Pisa1\_58 Start: 41518, Stop: 41784, Start Num: 40

Candidate Starts for Pisa1\_58:

(4, 41320), (28, 41476), (Start: 40 @41518 has 91 MA's), (50, 41563), (68, 41659), (101, 41731), (104, 41749), (107, 41761), (111, 41773),

Gene: Pisa4\_52 Start: 36887, Stop: 37153, Start Num: 40

Candidate Starts for Pisa4\_52:

(4, 36689), (28, 36845), (Start: 40 @36887 has 91 MA's), (50, 36932), (68, 37028), (101, 37100), (104, 37118), (107, 37130), (111, 37142),

Gene: Pixie\_57 Start: 40343, Stop: 40612, Start Num: 38

Candidate Starts for Pixie\_57:

(28, 40304), (Start: 38 @40343 has 10 MA's), (50, 40388), (58, 40454), (64, 40475), (101, 40559), (111, 40601),

Gene: Pokerus\_57 Start: 40585, Stop: 40851, Start Num: 40

Candidate Starts for Pokerus\_57:

(28, 40543), (Start: 40 @40585 has 91 MA's), (50, 40630), (68, 40726), (74, 40744), (101, 40798), (104, 40816), (107, 40828), (111, 40840),

Gene: Prithvi\_59 Start: 40742, Stop: 41008, Start Num: 40

Candidate Starts for Prithvi\_59:

(28, 40700), (Start: 40 @40742 has 91 MA's), (50, 40787), (68, 40883), (101, 40955), (104, 40973), (107, 40985), (111, 40997),

Gene: QuincyRose\_57 Start: 40919, Stop: 41185, Start Num: 40

Candidate Starts for QuincyRose\_57:

(28, 40877), (Start: 40 @40919 has 91 MA's), (50, 40964), (68, 41060), (74, 41078), (101, 41132), (104, 41150), (107, 41162), (111, 41174),

Gene: Rabbitrun\_110 Start: 63382, Stop: 63696, Start Num: 33

Candidate Starts for Rabbitrun\_110:

(13, 63274), (29, 63358), (Start: 31 @63364 has 2 MA's), (Start: 33 @63382 has 1 MA's), (65, 63529), (90, 63607), (102, 63652), (106, 63673), (108, 63679),

Gene: Ramen\_59 Start: 40541, Stop: 40807, Start Num: 40

Candidate Starts for Ramen\_59:

(28, 40499), (Start: 40 @40541 has 91 MA's), (50, 40586), (68, 40682), (101, 40754), (104, 40772), (107, 40784), (111, 40796),

Gene: Rapunzel97\_59 Start: 40534, Stop: 40800, Start Num: 40

Candidate Starts for Rapunzel97\_59:

(28, 40492), (Start: 40 @40534 has 91 MA's), (50, 40579), (68, 40675), (74, 40693), (101, 40747), (104, 40765), (107, 40777), (111, 40789),

Gene: Reindeer\_52 Start: 38460, Stop: 38810, Start Num: 42

Candidate Starts for Reindeer\_52:

(Start: 42 @38460 has 21 MA's), (50, 38502), (55, 38553), (84, 38652), (92, 38673), (116, 38769),

Gene: Rey\_57 Start: 39459, Stop: 39827, Start Num: 45

Candidate Starts for Rey\_57:

(Start: 42 @39450 has 21 MA's), (Start: 45 @39459 has 1 MA's), (55, 39543), (57, 39552), (62, 39585), (76, 39642), (78, 39648), (96, 39705), (116, 39786),

Gene: RoseMarie\_56 Start: 40904, Stop: 41254, Start Num: 42

Candidate Starts for RoseMarie\_56:

(6, 40715), (10, 40766), (19, 40820), (Start: 42 @40904 has 21 MA's), (50, 40946), (55, 40997), (57, 41006), (72, 41066), (92, 41117), (116, 41213),

Gene: Rosmarinus\_58 Start: 40646, Stop: 40912, Start Num: 40

Candidate Starts for Rosmarinus\_58:

(28, 40604), (Start: 40 @40646 has 91 MA's), (68, 40787), (74, 40805), (101, 40859), (104, 40877), (107, 40889), (111, 40901),

Gene: SamuelLPlaqson\_59 Start: 41439, Stop: 41705, Start Num: 40

Candidate Starts for SamuelLPlaqson\_59:

(28, 41397), (Start: 40 @41439 has 91 MA's), (50, 41484), (68, 41580), (101, 41652), (104, 41670), (107, 41682), (111, 41694),

Gene: Schmidt\_63 Start: 39059, Stop: 39370, Start Num: 41

Candidate Starts for Schmidt\_63:

(27, 38996), (Start: 41 @39059 has 2 MA's), (Start: 48 @39086 has 2 MA's), (55, 39128), (69, 39179), (76, 39206), (91, 39215), (93, 39227), (99, 39251), (109, 39293),

Gene: ScoobyDoobyDoo\_35 Start: 13310, Stop: 13627, Start Num: 35

Candidate Starts for ScoobyDoobyDoo\_35:

(12, 13199), (14, 13205), (15, 13208), (18, 13220), (21, 13244), (Start: 35 @13310 has 4 MA's), (39, 13322), (52, 13394), (54, 13415), (61, 13442), (99, 13538), (114, 13595),

Gene: Sephiroth\_108 Start: 61495, Stop: 61812, Start Num: 34

Candidate Starts for Sephiroth\_108:

(Start: 34 @61495 has 3 MA's), (54, 61594), (55, 61597), (60, 61621), (67, 61636), (79, 61693), (90, 61717),

Gene: ShedlockHolmes\_59 Start: 40862, Stop: 41131, Start Num: 38

Candidate Starts for ShedlockHolmes\_59:

(4, 40667), (28, 40823), (Start: 38 @40862 has 10 MA's), (50, 40907), (58, 40973), (64, 40994), (111, 41120),

Gene: ShiaSurprise\_59 Start: 40855, Stop: 41121, Start Num: 40

Candidate Starts for ShiaSurprise\_59:

(28, 40813), (Start: 40 @40855 has 91 MA's), (50, 40900), (68, 40996), (74, 41014), (101, 41068), (104, 41086), (107, 41098), (111, 41110),

Gene: SirPhilip\_59 Start: 41271, Stop: 41540, Start Num: 40

Candidate Starts for SirPhilip\_59:

(4, 41073), (9, 41124), (Start: 40 @41271 has 91 MA's), (50, 41316), (52, 41343), (64, 41403), (111, 41529),

Gene: Sixama\_38 Start: 12651, Stop: 12286, Start Num: 40

Candidate Starts for Sixama\_38:

(22, 12729), (Start: 31 @12684 has 2 MA's), (Start: 40 @12651 has 91 MA's), (50, 12606), (51, 12585), (92, 12429), (114, 12339), (118, 12312),

Gene: Skinny\_51 Start: 37687, Stop: 38037, Start Num: 42

Candidate Starts for Skinny\_51:

(5, 37495), (10, 37543), (16, 37579), (Start: 42 @37687 has 21 MA's), (50, 37729), (55, 37780), (70, 37846), (72, 37849), (92, 37900), (116, 37996),

Gene: SlimJimmy\_49 Start: 37241, Stop: 37591, Start Num: 42

Candidate Starts for SlimJimmy\_49:

(5, 37049), (10, 37097), (16, 37133), (Start: 42 @37241 has 21 MA's), (50, 37283), (55, 37334), (70, 37400), (72, 37403), (92, 37454), (116, 37550),

Gene: Slimphazie\_58 Start: 40534, Stop: 40800, Start Num: 40

Candidate Starts for Slimphazie\_58:

(28, 40492), (Start: 40 @40534 has 91 MA's), (50, 40579), (68, 40675), (74, 40693), (101, 40747), (104, 40765), (107, 40777), (111, 40789),

Gene: SparkleGoddess\_103 Start: 69278, Stop: 69643, Start Num: 43

Candidate Starts for SparkleGoddess\_103:

(Start: 43 @69278 has 24 MA's), (44, 69281), (54, 69368), (89, 69488), (100, 69530), (109, 69569), (113, 69587),

Gene: Splinter\_69 Start: 42588, Stop: 42908, Start Num: 48

Candidate Starts for Splinter\_69:

(Start: 43 @42561 has 24 MA's), (Start: 48 @42588 has 2 MA's), (54, 42645), (63, 42678), (105, 42813), (109, 42828), (115, 42852), (117, 42861),

Gene: Spock\_58 Start: 40659, Stop: 40925, Start Num: 40

Candidate Starts for Spock\_58:

(28, 40617), (Start: 40 @40659 has 91 MA's), (68, 40800), (74, 40818), (101, 40872), (104, 40890), (107, 40902), (111, 40914),

Gene: Stigma\_102 Start: 69286, Stop: 69651, Start Num: 43

Candidate Starts for Stigma\_102:

(Start: 43 @69286 has 24 MA's), (44, 69289), (54, 69376), (89, 69496), (100, 69538), (109, 69577), (113, 69595),

Gene: Stinson\_59 Start: 41036, Stop: 41302, Start Num: 40  
Candidate Starts for Stinson\_59:  
(Start: 40 @41036 has 91 MA's), (50, 41081), (68, 41177), (77, 41201), (101, 41249), (104, 41267),  
(107, 41279), (111, 41291),

Gene: Sulley\_58 Start: 40710, Stop: 40976, Start Num: 40  
Candidate Starts for Sulley\_58:  
(28, 40668), (Start: 40 @40710 has 91 MA's), (50, 40755), (68, 40851), (101, 40923), (104, 40941),  
(107, 40953), (111, 40965),

Gene: Syleon\_113 Start: 62277, Stop: 62594, Start Num: 34  
Candidate Starts for Syleon\_113:  
(Start: 34 @62277 has 3 MA's), (46, 62298), (90, 62499),

Gene: TBond007\_56 Start: 40342, Stop: 40611, Start Num: 38  
Candidate Starts for TBond007\_56:  
(28, 40303), (Start: 38 @40342 has 10 MA's), (50, 40387), (58, 40453), (64, 40474), (111, 40600),

Gene: TZGordon\_70 Start: 41449, Stop: 41796, Start Num: 43  
Candidate Starts for TZGordon\_70:  
(Start: 43 @41449 has 24 MA's), (Start: 48 @41476 has 2 MA's), (54, 41533), (63, 41566), (105,  
41701), (109, 41716), (115, 41740), (117, 41749),

Gene: Tachez\_58 Start: 40503, Stop: 40769, Start Num: 40  
Candidate Starts for Tachez\_58:  
(28, 40461), (Start: 40 @40503 has 91 MA's), (50, 40548), (68, 40644), (74, 40662), (101, 40716),  
(104, 40734), (107, 40746), (111, 40758),

Gene: TaiwanKao\_60 Start: 40804, Stop: 41070, Start Num: 40  
Candidate Starts for TaiwanKao\_60:  
(28, 40762), (Start: 40 @40804 has 91 MA's), (50, 40849), (68, 40945), (101, 41017), (104, 41035),  
(107, 41047), (111, 41059),

Gene: TinaLin\_68 Start: 41133, Stop: 41456, Start Num: 43  
Candidate Starts for TinaLin\_68:  
(1, 40866), (23, 41064), (Start: 43 @41133 has 24 MA's), (Start: 48 @41160 has 2 MA's), (53, 41217),  
(54, 41223), (94, 41328), (105, 41373), (115, 41412),

Gene: TingHuaYa\_60 Start: 39863, Stop: 40129, Start Num: 40  
Candidate Starts for TingHuaYa\_60:  
(Start: 40 @39863 has 91 MA's), (50, 39908), (68, 40004), (101, 40076), (104, 40094), (107, 40106),  
(111, 40118),

Gene: TiniBug\_59 Start: 41435, Stop: 41701, Start Num: 40  
Candidate Starts for TiniBug\_59:  
(28, 41393), (Start: 40 @41435 has 91 MA's), (50, 41480), (68, 41576), (101, 41648), (104, 41666),  
(107, 41678), (111, 41690),

Gene: Tiri\_59 Start: 40824, Stop: 41090, Start Num: 40  
Candidate Starts for Tiri\_59:  
(28, 40782), (Start: 40 @40824 has 91 MA's), (50, 40869), (68, 40965), (74, 40983), (96, 41022), (101,  
41037), (104, 41055), (107, 41067), (111, 41079),

Gene: Topper\_58 Start: 40658, Stop: 40924, Start Num: 40  
Candidate Starts for Topper\_58:  
(28, 40616), (Start: 40 @40658 has 91 MA's), (68, 40799), (74, 40817), (101, 40871), (104, 40889),  
(107, 40901), (111, 40913),

Gene: TpudiCK\_52 Start: 37257, Stop: 37607, Start Num: 42  
Candidate Starts for TpudiCK\_52:  
(5, 37065), (10, 37113), (16, 37149), (Start: 42 @37257 has 21 MA's), (50, 37299), (55, 37350), (70,  
37416), (72, 37419), (92, 37470), (116, 37566),

Gene: Trax\_110 Start: 63415, Stop: 63750, Start Num: 31  
Candidate Starts for Trax\_110:  
(26, 63385), (Start: 31 @63415 has 2 MA's), (Start: 33 @63433 has 1 MA's), (55, 63544), (65, 63580),  
(90, 63661), (98, 63694), (102, 63706), (108, 63733),

Gene: TreyKay\_59 Start: 40742, Stop: 41008, Start Num: 40  
Candidate Starts for TreyKay\_59:  
(28, 40700), (Start: 40 @40742 has 91 MA's), (50, 40787), (68, 40883), (101, 40955), (104, 40973),  
(107, 40985), (111, 40997),

Gene: TribbleTrouble\_57 Start: 40818, Stop: 41087, Start Num: 38  
Candidate Starts for TribbleTrouble\_57:  
(Start: 38 @40818 has 10 MA's), (50, 40863), (58, 40929), (64, 40950), (111, 41076),

Gene: TruffulaTree\_58 Start: 40530, Stop: 40796, Start Num: 40  
Candidate Starts for TruffulaTree\_58:  
(28, 40488), (Start: 40 @40530 has 91 MA's), (50, 40575), (68, 40671), (74, 40689), (101, 40743),  
(104, 40761), (107, 40773), (111, 40785),

Gene: Twitch\_58 Start: 40660, Stop: 40926, Start Num: 40  
Candidate Starts for Twitch\_58:  
(28, 40618), (Start: 40 @40660 has 91 MA's), (50, 40705), (68, 40801), (74, 40819), (101, 40873),  
(104, 40891), (107, 40903), (111, 40915),

Gene: TyDawg\_50 Start: 37258, Stop: 37608, Start Num: 42  
Candidate Starts for TyDawg\_50:  
(5, 37066), (10, 37114), (16, 37150), (Start: 42 @37258 has 21 MA's), (50, 37300), (55, 37351), (70,  
37417), (72, 37420), (92, 37471), (116, 37567),

Gene: Urkel\_59 Start: 41439, Stop: 41705, Start Num: 40  
Candidate Starts for Urkel\_59:  
(28, 41397), (Start: 40 @41439 has 91 MA's), (50, 41484), (68, 41580), (101, 41652), (104, 41670),  
(107, 41682), (111, 41694),

Gene: Veliki\_59 Start: 40516, Stop: 40782, Start Num: 40  
Candidate Starts for Veliki\_59:  
(28, 40474), (Start: 40 @40516 has 91 MA's), (50, 40561), (68, 40657), (101, 40729), (104, 40747),  
(107, 40759), (111, 40771),

Gene: Vendetta\_69 Start: 42588, Stop: 42908, Start Num: 48  
Candidate Starts for Vendetta\_69:  
(Start: 43 @42561 has 24 MA's), (Start: 48 @42588 has 2 MA's), (54, 42645), (63, 42678), (105,  
42813), (109, 42828), (115, 42852), (117, 42861),

Gene: Weasels2\_136 Start: 80031, Stop: 80330, Start Num: 43

Candidate Starts for Weasels2\_136:

(36, 80022), (Start: 43 @80031 has 24 MA's), (88, 80229),

Gene: Westy\_107 Start: 70313, Stop: 70678, Start Num: 43

Candidate Starts for Westy\_107:

(Start: 43 @70313 has 24 MA's), (44, 70316), (54, 70403), (89, 70523), (100, 70565), (105, 70589), (109, 70604), (113, 70622),

Gene: YoureAdopted\_57 Start: 40659, Stop: 40925, Start Num: 40

Candidate Starts for YoureAdopted\_57:

(28, 40617), (Start: 40 @40659 has 91 MA's), (68, 40800), (74, 40818), (101, 40872), (104, 40890), (107, 40902), (111, 40914),

Gene: Yuna\_63 Start: 41860, Stop: 42126, Start Num: 38

Candidate Starts for Yuna\_63:

(17, 41767), (Start: 38 @41860 has 10 MA's), (Start: 40 @41863 has 91 MA's), (50, 41908), (55, 41959), (64, 41989), (111, 42115),

Gene: Yunkel11\_61 Start: 40355, Stop: 40621, Start Num: 40

Candidate Starts for Yunkel11\_61:

(7, 40160), (Start: 40 @40355 has 91 MA's), (50, 40400), (68, 40496), (104, 40586), (107, 40598), (111, 40610),

Gene: Zabiza\_53 Start: 36844, Stop: 37110, Start Num: 40

Candidate Starts for Zabiza\_53:

(28, 36802), (Start: 40 @36844 has 91 MA's), (50, 36889), (68, 36985), (101, 37057), (104, 37075), (107, 37087), (111, 37099),

Gene: Zavala\_60 Start: 40815, Stop: 41081, Start Num: 40

Candidate Starts for Zavala\_60:

(28, 40773), (Start: 40 @40815 has 91 MA's), (50, 40860), (68, 40956), (101, 41028), (104, 41046), (107, 41058), (111, 41070),