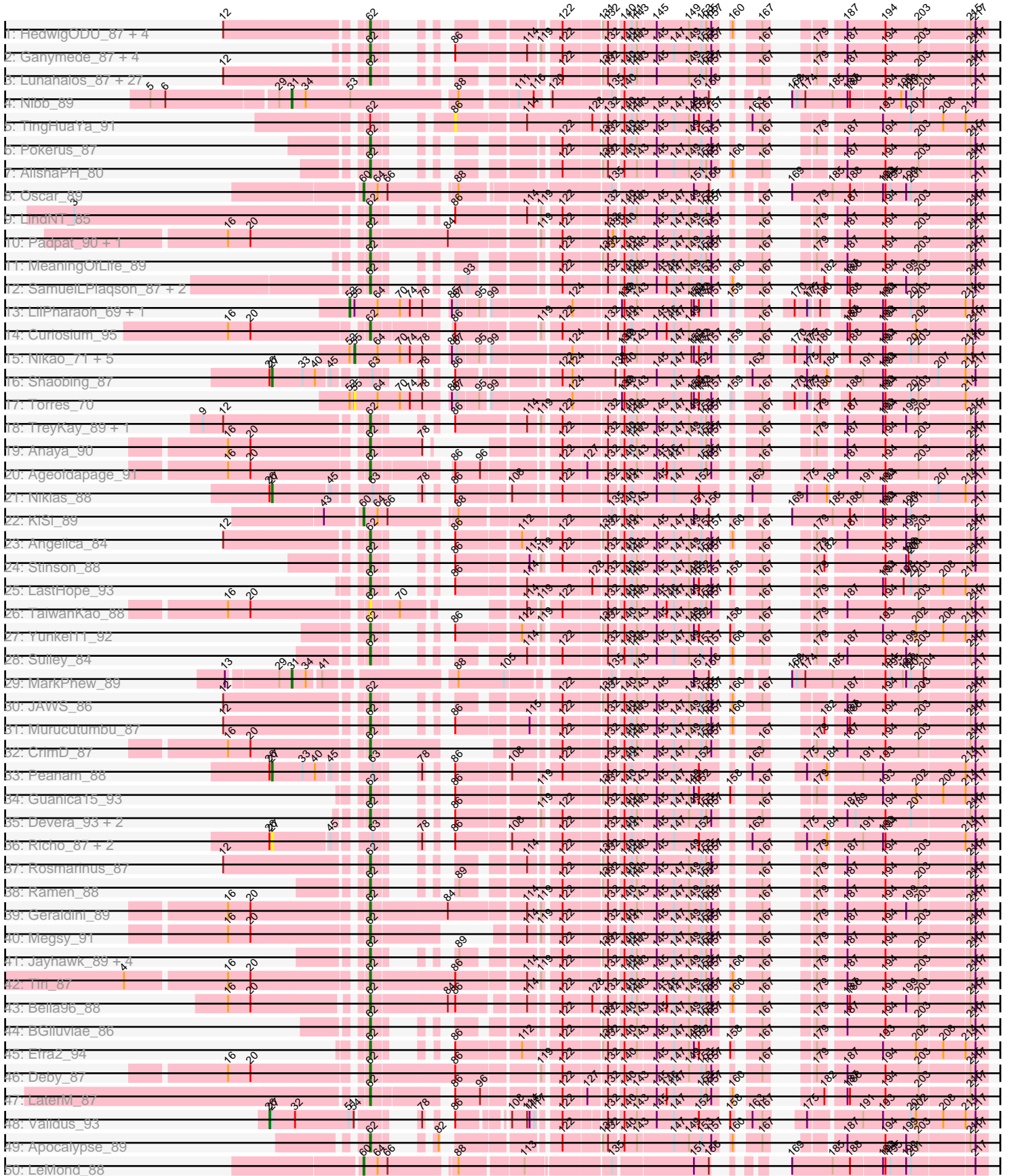


Pham 189527





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 189527 Report

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

Pham number 189527 has 160 members, 6 are drafts.

Phages represented in each track:

- Track 1 : HedwigODU\_87, Adephagia\_86, ActinUp\_88, Zabiza\_83, Veliki\_88
- Track 2 : Ganymede\_87, Beezoo\_90, QuincyRose\_85, YoureAdopted\_86, Zavala\_89
- Track 3 : Lunahalos\_87, ShiaSurprise\_88, BEEST\_87, Homura\_86, Spock\_87, Capricorn\_87, Tachez\_87, Twitch\_87, Piatt\_86, Durfee\_87, Peel\_87, Dalmuri\_87, Topper\_87, Hyperbowlee\_86, CaseJules\_89, Jarvi\_87, Jeckyll\_87, Padfoot\_87, Llorens\_87, CREW\_86, BaghaKamala\_86, Joy99\_88, Boiiii\_87, Belladonna\_87, Atiba\_88, Blizzard\_87, Inky\_87, Asayake\_87
- Track 4 : Nibb\_89
- Track 5 : TingHuaYa\_91
- Track 6 : Pokerus\_87
- Track 7 : AlishaPH\_80
- Track 8 : Oscar\_89
- Track 9 : LindNT\_85
- Track 10 : Padpat\_90, Emerson\_89
- Track 11 : MeaningOfLife\_89
- Track 12 : SamuelLPlaqson\_87, DrHayes\_87, Urkel\_87
- Track 13 : LilPharaoh\_69, Binglebops\_68
- Track 14 : Curiosium\_95
- Track 15 : Nikao\_71, SgtBeansprout\_69, Nutello\_68, Enkosi\_70, Amelie\_68, Mdavu\_69
- Track 16 : Shaobing\_87
- Track 17 : Torres\_70
- Track 18 : TreyKay\_89, Prithvi\_89
- Track 19 : Anaya\_90
- Track 20 : Ageofdapage\_91
- Track 21 : Niklas\_88
- Track 22 : KiSi\_89
- Track 23 : Angelica\_84
- Track 24 : Stinson\_88
- Track 25 : LastHope\_93
- Track 26 : TaiwanKao\_88
- Track 27 : Yunkel11\_92
- Track 28 : Sulley\_84
- Track 29 : MarkPhew\_89
- Track 30 : JAWS\_86
- Track 31 : Murucutumbu\_87

- Track 32 : CrimD\_87
- Track 33 : Peanam\_88
- Track 34 : Guanica15\_93
- Track 35 : Devera\_93, Illumine\_91, Dole\_90
- Track 36 : Richo\_87, McMater\_87, Dartin\_87
- Track 37 : Rosmarinus\_87
- Track 38 : Ramen\_88
- Track 39 : Geraldini\_89
- Track 40 : Megsy\_91
- Track 41 : Jayhawk\_89, Rapunzel97\_89, BarrelRoll\_87, TruffulaTree\_89, Slimphazie\_89
- Track 42 : Tiri\_87
- Track 43 : Bella96\_88
- Track 44 : BGlluviae\_86
- Track 45 : Efra2\_94
- Track 46 : Deby\_87
- Track 47 : LaterM\_87
- Track 48 : Validus\_93
- Track 49 : Apocalypse\_89
- Track 50 : LeMond\_88
- Track 51 : Mynx\_88
- Track 52 : Adonis\_87
- Track 53 : TiniBug\_86
- Track 54 : Scarlett\_88
- Track 55 : CheetoDust\_87
- Track 56 : TribbleTrouble\_88
- Track 57 : Pharb\_86
- Track 58 : MacnCheese\_87
- Track 59 : Hurricane\_86, Keshu\_88
- Track 60 : Pixie\_85, TBond007\_82, ShedlockHolmes\_88
- Track 61 : Kratio\_80
- Track 62 : Paola\_81, Guillsminger\_82
- Track 63 : InvictusManeo\_77, Agent47\_79
- Track 64 : Dadosky\_80, Psycho\_78, Larva\_79
- Track 65 : Thyatira\_82
- Track 66 : Feyre\_82
- Track 67 : AlleyCat\_80
- Track 68 : Omnicron\_84, Rando14\_81
- Track 69 : Edugator\_76
- Track 70 : Leston\_81
- Track 71 : Miryou\_83
- Track 72 : OkiRoe\_82
- Track 73 : Gengar\_81
- Track 74 : SoSeph\_79, Collard\_77, Heftyboy\_79
- Track 75 : Waterfoul\_81
- Track 76 : Amohnition\_84, DARTH\_P\_84
- Track 77 : Ximenita\_93
- Track 78 : TClif\_87
- Track 79 : Shadow1\_91
- Track 80 : Cain\_94, Bryler\_86, Phrank\_94, Tierra\_94
- Track 81 : Yuna\_90
- Track 82 : Ellie\_85
- Track 83 : Marshawn\_85

- Track 84 : PhelpsODU\_84, Unicorn\_94
- Track 85 : Hammy\_84
- Track 86 : Fefferhead\_87
- Track 87 : Sunflower1121\_91
- Track 88 : Ekdilam\_80
- Track 89 : Amgine\_86
- Track 90 : SirPhilip\_87
- Track 91 : Syra333\_90
- Track 92 : Krueger\_91

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

The start number called the most often in the published annotations is 62, it was called in 84 of the 154 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp\_88, Adephagia\_86, Adonis\_87, Ageofdapage\_91, AlishaPH\_80, Anaya\_90, Angelica\_84, Apocalypse\_89, Asayake\_87, Atiba\_88, BEEST\_87, BGlluviae\_86, BaghaKamala\_86, BarrelRoll\_87, Beezoo\_90, Bella96\_88, Belladonna\_87, Blizzard\_87, Boiiii\_87, CREW\_86, Capricorn\_87, CaseJules\_89, CheetoDust\_87, CrimD\_87, Curiosium\_95, Dalmuri\_87, Deby\_87, Devera\_93, Dole\_90, DrHayes\_87, Durfee\_87, Efra2\_94, Emerson\_89, Ganymede\_87, Geraldini\_89, Guanica15\_93, HedwigODU\_87, Homura\_86, Hyperbowlee\_86, Illumine\_91, Inky\_87, JAWS\_86, Jarvi\_87, Jayhawk\_89, Jeckyll\_87, Joy99\_88, LastHope\_93, LaterM\_87, LindNT\_85, Llorens\_87, Lunahalos\_87, MeaningOfLife\_89, Megsy\_91, Murucutumbu\_87, Mynx\_88, Padfoot\_87, Padpat\_90, Peel\_87, Piatt\_86, Pokerus\_87, Prithvi\_89, QuincyRose\_85, Ramen\_88, Rapunzel97\_89, Rosmarinus\_87, SamuelLPlaqson\_87, ShiaSurprise\_88, Slimphazie\_89, Spock\_87, Stinson\_88, Sulley\_84, Tachez\_87, TaiwanKao\_88, TiniBug\_86, Tiri\_87, Topper\_87, TreyKay\_89, TruffulaTree\_89, Twitch\_87, Urkel\_87, Veliki\_88, YoureAdopted\_86, Yunkel11\_92, Zabiza\_83, Zavala\_89,

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

- Syra333\_90, TingHuaYa\_91,

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

- Agent47\_79, AlleyCat\_80, Amelie\_68, Amgine\_86, Amohnition\_84, Biglebops\_68, Bryler\_86, Cain\_94, Collard\_77, Dadosky\_80, DarthP\_84, Dartin\_87, Edugator\_76, Ekdilam\_80, Ellie\_85, Enkosi\_70, Fefferhead\_87, Feyre\_82, Gengar\_81, Guillsminger\_82, Hammy\_84, Heftyboy\_79, Hurricane\_86, InvictusManeo\_77, Keshu\_88, KiSi\_89, Kratio\_80, Krueger\_91, Larva\_79, LeMond\_88, Leston\_81, LilPharaoh\_69, MacnCheese\_87, MarkPhew\_89, Marshawn\_85, McMater\_87, Mdavu\_69, Miryou\_83, Nibb\_89, Nikao\_71, Niklas\_88, Nutello\_68, OkiRoe\_82, Omnicron\_84, Oscar\_89, Paola\_81, Peanam\_88, Pharb\_86, PhelpsODU\_84, Phrank\_94, Pixie\_85, Psycho\_78, Rando14\_81, Richo\_87, Scarlett\_88, SgtBeansprout\_69, Shadow1\_91, Shaobing\_87, ShedlockHolmes\_88, SirPhilip\_87, SoSeph\_79, Sunflower1121\_91, TBond007\_82, TClif\_87, Thyatira\_82, Tierra\_94, Torres\_70, TribbleTrouble\_88, Unicorn\_94, Validus\_93, Waterfoul\_81, Ximenita\_93, Yuna\_90,

## Summary by start number:

### Start 7:

- Found in 3 of 160 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 1 of 154
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Shadow1\_91 (K6),

### Start 8:

- Found in 10 of 160 ( 6.2% ) of genes in pham
- Manual Annotations of this start: 9 of 154
- Called 90.0% of time when present
- Phage (with cluster) where this start called: Bryler\_86 (K6), Cain\_94 (K6), Krueger\_91 (K6), PhelpsODU\_84 (K6), Phrank\_94 (K6), Sunflower1121\_91 (K6), Tierra\_94 (K6), Unicorn\_94 (K6), Ximenita\_93 (K6),

### Start 14:

- Found in 1 of 160 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 154
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Syra333\_90 (K6),

### Start 26:

- Found in 7 of 160 ( 4.4% ) of genes in pham
- Manual Annotations of this start: 1 of 154
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Validus\_93 (K1),

### Start 27:

- Found in 8 of 160 ( 5.0% ) of genes in pham
- Manual Annotations of this start: 3 of 154
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Dartin\_87 (K1), McMater\_87 (K1), Niklas\_88 (K1), Peanam\_88 (K1), Richo\_87 (K1), Shaobing\_87 (K1),

### Start 31:

- Found in 2 of 160 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 2 of 154
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MarkPhew\_89 (K1), Nibb\_89 (K1),

### Start 46:

- Found in 6 of 160 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 1 of 154
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Edugator\_76 (K5),

### Start 47:

- Found in 13 of 160 ( 8.1% ) of genes in pham
- Manual Annotations of this start: 12 of 154
- Called 92.3% of time when present
- Phage (with cluster) where this start called: Agent47\_79 (K5), AlleyCat\_80 (K5), Collard\_77 (K5), Dadosky\_80 (K5), Heftyboy\_79 (K5), InvictusManeo\_77 (K5),

Kratio\_80 (K5), Larva\_79 (K5), Omnicron\_84 (K5), Psycho\_78 (K5), Rando14\_81 (K5), SoSeph\_79 (K5),

Start 49:

- Found in 9 of 160 ( 5.6% ) of genes in pham
- Manual Annotations of this start: 9 of 154
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Feyre\_82 (K5), Gengar\_81 (K5), Guillsminger\_82 (K5), Leston\_81 (K5), Miryou\_83 (K5), OkiRoe\_82 (K5), Paola\_81 (K5), Thyatira\_82 (K5), Waterfoul\_81 (K5),

Start 52:

- Found in 9 of 160 ( 5.6% ) of genes in pham
- Manual Annotations of this start: 2 of 154
- Called 22.2% of time when present
- Phage (with cluster) where this start called: Biglebops\_68 (K1), LilPharaoh\_69 (K1),

Start 53:

- Found in 4 of 160 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 3 of 154
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Amgine\_86 (K6), Ellie\_85 (K6), Fefferhead\_87 (K6),

Start 55:

- Found in 9 of 160 ( 5.6% ) of genes in pham
- Manual Annotations of this start: 6 of 154
- Called 77.8% of time when present
- Phage (with cluster) where this start called: Amelie\_68 (K1), Enkosi\_70 (K1), Mdavu\_69 (K1), Nikao\_71 (K1), Nutello\_68 (K1), SgtBeansprout\_69 (K1), Torres\_70 (K1),

Start 57:

- Found in 1 of 160 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 154
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Marshawn\_85 (K6),

Start 60:

- Found in 4 of 160 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 4 of 154
- Called 100.0% of time when present
- Phage (with cluster) where this start called: KiSi\_89 (K1), LeMond\_88 (K1), Oscar\_89 (K1), Scarlett\_88 (K1),

Start 62:

- Found in 87 of 160 ( 54.4% ) of genes in pham
- Manual Annotations of this start: 84 of 154
- Called 97.7% of time when present
- Phage (with cluster) where this start called: ActinUp\_88 (K1), Adephegia\_86 (K1), Adonis\_87 (K1), Ageofdapage\_91 (K1), AlishaPH\_80 (K1), Anaya\_90 (K1), Angelica\_84 (K1), Apocalypse\_89 (K1), Asayake\_87 (K1), Atiba\_88 (K1), BEEST\_87 (K1), BGIluviae\_86 (K1), BaghaKamala\_86 (K1), BarrelRoll\_87 (K1), Beezoo\_90

(K1), Bella96\_88 (K1), Belladonna\_87 (K1), Blizzard\_87 (K1), Boiiii\_87 (K1), CREW\_86 (K1), Capricorn\_87 (K1), CaseJules\_89 (K1), CheetoDust\_87 (K1), CrimD\_87 (K1), Curiosium\_95 (K1), Dalmuri\_87 (K1), Deby\_87 (K1), Devera\_93 (K1), Dole\_90 (K1), DrHayes\_87 (K1), Durfee\_87 (K1), Efra2\_94 (K1), Emerson\_89 (K1), Ganymede\_87 (K1), Geraldini\_89 (K1), Guanica15\_93 (K1), HedwigODU\_87 (K1), Homura\_86 (K1), Hyperbowlee\_86 (K1), Illumine\_91 (K1), Inky\_87 (K1), JAWS\_86 (K1), Jarvi\_87 (K1), Jayhawk\_89 (K1), Jeckyll\_87 (K1), Joy99\_88 (K1), LastHope\_93 (K1), LaterM\_87 (K1), LindNT\_85 (K1), Llorens\_87 (K1), Lunahalos\_87 (K1), MeaningOfLife\_89 (K1), Megsy\_91 (K1), Murucutumbu\_87 (K1), Mynx\_88 (K1), Padfoot\_87 (K1), Padpat\_90 (K1), Peel\_87 (K1), Piatt\_86 (K1), Pokerus\_87 (K1), Prithvi\_89 (K1), QuincyRose\_85 (K1), Ramen\_88 (K1), Rapunzel97\_89 (K1), Rosmarinus\_87 (K1), SamuelLPlaqson\_87 (K1), ShiaSurprise\_88 (K1), Slimphazie\_89 (K1), Spock\_87 (K1), Stinson\_88 (K1), Sulley\_84 (K1), Tachez\_87 (K1), TaiwanKao\_88 (K1), TiniBug\_86 (K1), Tiri\_87 (K1), Topper\_87 (K1), TreyKay\_89 (K1), TruffulaTree\_89 (K1), Twitch\_87 (K1), Urkel\_87 (K1), Veliki\_88 (K1), YoureAdopted\_86 (K1), Yunkel11\_92 (K1), Zabiza\_83 (K1), Zavala\_89 (K1),

#### Start 64:

- Found in 16 of 160 ( 10.0% ) of genes in pham
- Manual Annotations of this start: 4 of 154
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Amohnition\_84 (K6), DARTH\_P\_84 (K6), Ekdilam\_80 (K6), Hammy\_84 (K6),

#### Start 65:

- Found in 1 of 160 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 154
- Called 100.0% of time when present
- Phage (with cluster) where this start called: TClif\_87 (K6),

#### Start 81:

- Found in 8 of 160 ( 5.0% ) of genes in pham
- Manual Annotations of this start: 2 of 154
- Called 25.0% of time when present
- Phage (with cluster) where this start called: SirPhilip\_87 (K6), Yuna\_90 (K6),

#### Start 86:

- Found in 46 of 160 ( 28.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 2.2% of time when present
- Phage (with cluster) where this start called: TingHuaYa\_91 (K1),

#### Start 91:

- Found in 7 of 160 ( 4.4% ) of genes in pham
- Manual Annotations of this start: 6 of 154
- Called 85.7% of time when present
- Phage (with cluster) where this start called: Hurricane\_86 (K3), Keshu\_88 (K3), MacnCheese\_87 (K3), Pixie\_85 (K3), ShedlockHolmes\_88 (K3), TBond007\_82 (K3),

#### Start 92:

- Found in 2 of 160 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 2 of 154
- Called 100.0% of time when present



- Phage (with cluster) where this start called: Pharb\_86 (K3), TripleTrouble\_88 (K3),

### **Summary by clusters:**

There are 4 clusters represented in this pham: K3, K1, K6, K5,

Info for manual annotations of cluster K1:

- Start number 26 was manually annotated 1 time for cluster K1.
- Start number 27 was manually annotated 3 times for cluster K1.
- Start number 31 was manually annotated 2 times for cluster K1.
- Start number 52 was manually annotated 2 times for cluster K1.
- Start number 55 was manually annotated 6 times for cluster K1.
- Start number 60 was manually annotated 4 times for cluster K1.
- Start number 62 was manually annotated 84 times for cluster K1.

Info for manual annotations of cluster K3:

- Start number 91 was manually annotated 6 times for cluster K3.
- Start number 92 was manually annotated 2 times for cluster K3.

Info for manual annotations of cluster K5:

- Start number 46 was manually annotated 1 time for cluster K5.
- Start number 47 was manually annotated 12 times for cluster K5.
- Start number 49 was manually annotated 9 times for cluster K5.

Info for manual annotations of cluster K6:

- Start number 7 was manually annotated 1 time for cluster K6.
- Start number 8 was manually annotated 9 times for cluster K6.
- Start number 14 was manually annotated 1 time for cluster K6.
- Start number 53 was manually annotated 3 times for cluster K6.
- Start number 57 was manually annotated 1 time for cluster K6.
- Start number 64 was manually annotated 4 times for cluster K6.
- Start number 65 was manually annotated 1 time for cluster K6.
- Start number 81 was manually annotated 2 times for cluster K6.

### **Gene Information:**

Gene: ActinUp\_88 Start: 55559, Stop: 56098, Start Num: 62

Candidate Starts for ActinUp\_88:

(12, 55403), (Start: 62 @55559 has 84 MA's), (122, 55688), (131, 55730), (132, 55736), (140, 55751), (141, 55760), (143, 55766), (145, 55787), (149, 55826), (153, 55841), (155, 55847), (157, 55853), (160, 55865), (167, 55886), (187, 55937), (194, 55982), (203, 56021), (215, 56078), (217, 56084),

Gene: Adephagia\_86 Start: 55402, Stop: 55941, Start Num: 62

Candidate Starts for Adephagia\_86:

(12, 55246), (Start: 62 @55402 has 84 MA's), (122, 55531), (131, 55573), (132, 55579), (140, 55594), (141, 55603), (143, 55609), (145, 55630), (149, 55669), (153, 55684), (155, 55690), (157, 55696), (160, 55708), (167, 55729), (187, 55780), (194, 55825), (203, 55864), (215, 55921), (217, 55927),

Gene: Adonis\_87 Start: 55591, Stop: 56139, Start Num: 62

Candidate Starts for Adonis\_87:

(12, 55435), (Start: 62 @55591 has 84 MA's), (86, 55624), (114, 55699), (119, 55711), (122, 55729), (132, 55777), (140, 55792), (141, 55801), (143, 55807), (145, 55828), (147, 55849), (149, 55867), (153, 55882), (155, 55888), (157, 55894), (167, 55927), (178, 55948), (179, 55951), (187, 55978), (194, 56023), (203, 56062), (215, 56119), (217, 56125),

Gene: Agent47\_79 Start: 51751, Stop: 52398, Start Num: 47

Candidate Starts for Agent47\_79:

(Start: 47 @51751 has 12 MA's), (59, 51769), (67, 51805), (83, 51865), (86, 51880), (94, 51898), (140, 52045), (144, 52066), (153, 52138), (157, 52150), (160, 52162), (163, 52171), (174, 52198), (194, 52279), (201, 52309), (209, 52351), (216, 52381),

Gene: Ageofdapage\_91 Start: 56356, Stop: 56949, Start Num: 62

Candidate Starts for Ageofdapage\_91:

(16, 56203), (20, 56230), (Start: 62 @56356 has 84 MA's), (86, 56434), (96, 56461), (122, 56539), (127, 56566), (132, 56587), (140, 56602), (143, 56617), (145, 56638), (146, 56650), (147, 56659), (153, 56692), (155, 56698), (157, 56704), (167, 56737), (187, 56788), (194, 56833), (203, 56872), (215, 56929), (217, 56935),

Gene: AlishaPH\_80 Start: 52788, Stop: 53327, Start Num: 62

Candidate Starts for AlishaPH\_80:

(Start: 62 @52788 has 84 MA's), (122, 52917), (131, 52959), (132, 52965), (140, 52980), (143, 52995), (145, 53016), (147, 53037), (149, 53055), (153, 53070), (155, 53076), (157, 53082), (160, 53094), (167, 53115), (187, 53166), (194, 53211), (203, 53250), (215, 53307), (217, 53313),

Gene: AlleyCat\_80 Start: 52608, Stop: 53252, Start Num: 47

Candidate Starts for AlleyCat\_80:

(Start: 46 @52605 has 1 MA's), (Start: 47 @52608 has 12 MA's), (59, 52626), (83, 52722), (86, 52737), (94, 52755), (122, 52851), (142, 52914), (157, 53004), (174, 53052), (183, 53076), (186, 53079), (194, 53133), (198, 53154), (201, 53163), (216, 53235),

Gene: Amelie\_68 Start: 51228, Stop: 51872, Start Num: 55

Candidate Starts for Amelie\_68:

(Start: 52 @51222 has 2 MA's), (Start: 55 @51228 has 6 MA's), (Start: 64 @51255 has 4 MA's), (70, 51282), (74, 51294), (78, 51309), (85, 51333), (87, 51339), (95, 51363), (99, 51372), (124, 51462), (139, 51507), (140, 51510), (143, 51525), (147, 51567), (150, 51588), (151, 51591), (152, 51597), (153, 51600), (157, 51612), (159, 51621), (167, 51645), (170, 51666), (175, 51678), (177, 51681), (180, 51690), (188, 51711), (193, 51750), (194, 51753), (201, 51783), (203, 51792), (214, 51846), (216, 51855),

Gene: Amgine\_86 Start: 56691, Stop: 57377, Start Num: 53

Candidate Starts for Amgine\_86:

(44, 56667), (Start: 53 @56691 has 3 MA's), (80, 56763), (Start: 81 @56769 has 2 MA's), (106, 56838), (116, 56868), (124, 56904), (133, 56940), (147, 57009), (151, 57033), (157, 57054), (165, 57108), (185, 57201), (193, 57258), (194, 57261), (198, 57282), (199, 57285), (201, 57291), (203, 57300), (215, 57357), (217, 57363),

Gene: Amohnition\_84 Start: 55743, Stop: 56357, Start Num: 64

Candidate Starts for Amohnition\_84:

(Start: 64 @55743 has 4 MA's), (Start: 81 @55800 has 2 MA's), (97, 55848), (101, 55857), (121, 55917), (139, 55980), (143, 55998), (145, 56019), (147, 56040), (152, 56070), (156, 56082), (167, 56118), (172, 56148), (191, 56211), (194, 56238), (201, 56268), (205, 56286), (211, 56322), (214, 56331), (217, 56343),

Gene: Anaya\_90 Start: 56620, Stop: 57162, Start Num: 62

Candidate Starts for Anaya\_90:

(16, 56467), (20, 56494), (Start: 62 @56620 has 84 MA's), (78, 56680), (122, 56752), (132, 56800), (140, 56815), (141, 56824), (143, 56830), (145, 56851), (147, 56872), (149, 56890), (153, 56905), (155, 56911), (157, 56917), (167, 56950), (179, 56974), (187, 57001), (194, 57046), (203, 57085), (215, 57142), (217, 57148),

Gene: Angelica\_84 Start: 54828, Stop: 55379, Start Num: 62

Candidate Starts for Angelica\_84:

(12, 54672), (Start: 62 @54828 has 84 MA's), (86, 54861), (112, 54930), (122, 54969), (131, 55011), (132, 55017), (140, 55032), (141, 55041), (145, 55068), (147, 55089), (149, 55107), (153, 55122), (157, 55134), (160, 55146), (167, 55167), (179, 55191), (187, 55218), (194, 55263), (199, 55287), (203, 55302), (215, 55359), (217, 55365),

Gene: Apocalypse\_89 Start: 55750, Stop: 56301, Start Num: 62

Candidate Starts for Apocalypse\_89:

(Start: 62 @55750 has 84 MA's), (82, 55783), (122, 55891), (131, 55933), (132, 55939), (140, 55954), (143, 55969), (147, 56011), (149, 56029), (153, 56044), (157, 56056), (160, 56068), (167, 56089), (187, 56140), (194, 56185), (199, 56209), (203, 56224), (215, 56281), (217, 56287),

Gene: Asayake\_87 Start: 55717, Stop: 56256, Start Num: 62

Candidate Starts for Asayake\_87:

(12, 55561), (Start: 62 @55717 has 84 MA's), (122, 55846), (131, 55888), (132, 55894), (140, 55909), (141, 55918), (143, 55924), (145, 55945), (149, 55984), (153, 55999), (155, 56005), (157, 56011), (167, 56044), (179, 56068), (187, 56095), (194, 56140), (203, 56179), (215, 56236), (217, 56242),

Gene: Atiba\_88 Start: 55365, Stop: 55904, Start Num: 62

Candidate Starts for Atiba\_88:

(12, 55209), (Start: 62 @55365 has 84 MA's), (122, 55494), (131, 55536), (132, 55542), (140, 55557), (141, 55566), (143, 55572), (145, 55593), (149, 55632), (153, 55647), (155, 55653), (157, 55659), (167, 55692), (179, 55716), (187, 55743), (194, 55788), (203, 55827), (215, 55884), (217, 55890),

Gene: BEEST\_87 Start: 55717, Stop: 56256, Start Num: 62

Candidate Starts for BEEST\_87:

(12, 55561), (Start: 62 @55717 has 84 MA's), (122, 55846), (131, 55888), (132, 55894), (140, 55909), (141, 55918), (143, 55924), (145, 55945), (149, 55984), (153, 55999), (155, 56005), (157, 56011), (167, 56044), (179, 56068), (187, 56095), (194, 56140), (203, 56179), (215, 56236), (217, 56242),

Gene: BGlluviae\_86 Start: 55097, Stop: 55636, Start Num: 62

Candidate Starts for BGlluviae\_86:

(Start: 62 @55097 has 84 MA's), (122, 55226), (131, 55268), (132, 55274), (140, 55289), (143, 55304), (145, 55325), (147, 55346), (149, 55364), (153, 55379), (155, 55385), (157, 55391), (167, 55424), (179, 55448), (187, 55475), (194, 55520), (203, 55559), (215, 55616), (217, 55622),

Gene: BaghaKamala\_86 Start: 54945, Stop: 55484, Start Num: 62

Candidate Starts for BaghaKamala\_86:

(12, 54789), (Start: 62 @54945 has 84 MA's), (122, 55074), (131, 55116), (132, 55122), (140, 55137), (141, 55146), (143, 55152), (145, 55173), (149, 55212), (153, 55227), (155, 55233), (157, 55239), (167, 55272), (179, 55296), (187, 55323), (194, 55368), (203, 55407), (215, 55464), (217, 55470),

Gene: BarrelRoll\_87 Start: 55476, Stop: 56015, Start Num: 62

Candidate Starts for BarrelRoll\_87:

(Start: 62 @55476 has 84 MA's), (89, 55515), (122, 55605), (131, 55647), (132, 55653), (140, 55668), (141, 55677), (143, 55683), (145, 55704), (147, 55725), (149, 55743), (153, 55758), (155, 55764), (157, 55770), (167, 55803), (179, 55827), (187, 55854), (194, 55899), (203, 55938), (215, 55995), (217, 56001),

Gene: Beezoo\_90 Start: 56297, Stop: 56845, Start Num: 62

Candidate Starts for Beezoo\_90:

(Start: 62 @56297 has 84 MA's), (86, 56330), (114, 56405), (119, 56417), (122, 56435), (132, 56483), (140, 56498), (141, 56507), (143, 56513), (145, 56534), (147, 56555), (149, 56573), (153, 56588), (155, 56594), (157, 56600), (167, 56633), (179, 56657), (187, 56684), (194, 56729), (203, 56768), (215, 56825), (217, 56831),

Gene: Bella96\_88 Start: 55904, Stop: 56509, Start Num: 62

Candidate Starts for Bella96\_88:

(16, 55757), (20, 55784), (Start: 62 @55904 has 84 MA's), (84, 55991), (86, 56000), (114, 56069), (122, 56099), (128, 56132), (132, 56147), (140, 56162), (141, 56171), (143, 56177), (145, 56198), (146, 56210), (147, 56219), (149, 56237), (153, 56252), (155, 56258), (157, 56264), (160, 56276), (167, 56297), (179, 56321), (187, 56348), (188, 56351), (194, 56393), (199, 56417), (203, 56432), (215, 56489), (217, 56495),

Gene: Belladonna\_87 Start: 55520, Stop: 56059, Start Num: 62

Candidate Starts for Belladonna\_87:

(12, 55364), (Start: 62 @55520 has 84 MA's), (122, 55649), (131, 55691), (132, 55697), (140, 55712), (141, 55721), (143, 55727), (145, 55748), (149, 55787), (153, 55802), (155, 55808), (157, 55814), (167, 55847), (179, 55871), (187, 55898), (194, 55943), (203, 55982), (215, 56039), (217, 56045),

Gene: Biglebops\_68 Start: 51237, Stop: 51887, Start Num: 52

Candidate Starts for Biglebops\_68:

(Start: 52 @51237 has 2 MA's), (Start: 55 @51243 has 6 MA's), (Start: 64 @51270 has 4 MA's), (70, 51297), (74, 51309), (78, 51324), (85, 51348), (87, 51354), (95, 51378), (99, 51387), (124, 51477), (139, 51522), (140, 51525), (143, 51540), (147, 51582), (150, 51603), (151, 51606), (152, 51612), (153, 51615), (157, 51627), (159, 51636), (167, 51660), (170, 51681), (175, 51693), (177, 51696), (180, 51705), (188, 51726), (193, 51765), (194, 51768), (201, 51798), (203, 51807), (214, 51861), (216, 51870),

Gene: Blizzard\_87 Start: 55717, Stop: 56256, Start Num: 62

Candidate Starts for Blizzard\_87:

(12, 55561), (Start: 62 @55717 has 84 MA's), (122, 55846), (131, 55888), (132, 55894), (140, 55909), (141, 55918), (143, 55924), (145, 55945), (149, 55984), (153, 55999), (155, 56005), (157, 56011), (167, 56044), (179, 56068), (187, 56095), (194, 56140), (203, 56179), (215, 56236), (217, 56242),

Gene: Boiiii\_87 Start: 55719, Stop: 56258, Start Num: 62

Candidate Starts for Boiiii\_87:

(12, 55563), (Start: 62 @55719 has 84 MA's), (122, 55848), (131, 55890), (132, 55896), (140, 55911), (141, 55920), (143, 55926), (145, 55947), (149, 55986), (153, 56001), (155, 56007), (157, 56013), (167, 56046), (179, 56070), (187, 56097), (194, 56142), (203, 56181), (215, 56238), (217, 56244),

Gene: Bryler\_86 Start: 53452, Stop: 54183, Start Num: 8

Candidate Starts for Bryler\_86:

(Start: 8 @53452 has 9 MA's), (35, 53560), (68, 53599), (76, 53626), (79, 53635), (103, 53713), (115, 53746), (122, 53773), (133, 53818), (151, 53914), (171, 53977), (176, 53989), (187, 54019), (190, 54034), (194, 54064), (203, 54103), (215, 54160), (217, 54166),

Gene: CREW\_86 Start: 55520, Stop: 56059, Start Num: 62

Candidate Starts for CREW\_86:

(12, 55364), (Start: 62 @55520 has 84 MA's), (122, 55649), (131, 55691), (132, 55697), (140, 55712), (141, 55721), (143, 55727), (145, 55748), (149, 55787), (153, 55802), (155, 55808), (157, 55814), (167, 55847), (179, 55871), (187, 55898), (194, 55943), (203, 55982), (215, 56039), (217, 56045),

Gene: Cain\_94 Start: 56599, Stop: 57330, Start Num: 8

Candidate Starts for Cain\_94:

(Start: 8 @56599 has 9 MA's), (35, 56707), (68, 56746), (76, 56773), (79, 56782), (103, 56860), (115, 56893), (122, 56920), (133, 56965), (151, 57061), (171, 57124), (176, 57136), (187, 57166), (190, 57181), (194, 57211), (203, 57250), (215, 57307), (217, 57313),

Gene: Capricorn\_87 Start: 55520, Stop: 56059, Start Num: 62

Candidate Starts for Capricorn\_87:

(12, 55364), (Start: 62 @55520 has 84 MA's), (122, 55649), (131, 55691), (132, 55697), (140, 55712), (141, 55721), (143, 55727), (145, 55748), (149, 55787), (153, 55802), (155, 55808), (157, 55814), (167, 55847), (179, 55871), (187, 55898), (194, 55943), (203, 55982), (215, 56039), (217, 56045),

Gene: CaseJules\_89 Start: 55717, Stop: 56256, Start Num: 62

Candidate Starts for CaseJules\_89:

(12, 55561), (Start: 62 @55717 has 84 MA's), (122, 55846), (131, 55888), (132, 55894), (140, 55909), (141, 55918), (143, 55924), (145, 55945), (149, 55984), (153, 55999), (155, 56005), (157, 56011), (167, 56044), (179, 56068), (187, 56095), (194, 56140), (203, 56179), (215, 56236), (217, 56242),

Gene: CheetoDust\_87 Start: 54906, Stop: 55457, Start Num: 62

Candidate Starts for CheetoDust\_87:

(12, 54750), (Start: 62 @54906 has 84 MA's), (122, 55047), (131, 55089), (132, 55095), (140, 55110), (141, 55119), (143, 55125), (145, 55146), (147, 55167), (149, 55185), (153, 55200), (157, 55212), (160, 55224), (167, 55245), (179, 55269), (187, 55296), (194, 55341), (199, 55365), (203, 55380), (215, 55437), (217, 55443),

Gene: Collard\_77 Start: 51715, Stop: 52362, Start Num: 47

Candidate Starts for Collard\_77:

(Start: 47 @51715 has 12 MA's), (59, 51733), (67, 51769), (83, 51829), (86, 51844), (115, 51931), (140, 52009), (156, 52111), (157, 52114), (195, 52249), (201, 52273), (209, 52315), (216, 52345),

Gene: CrimD\_87 Start: 55556, Stop: 56107, Start Num: 62

Candidate Starts for CrimD\_87:

(16, 55403), (20, 55430), (Start: 62 @55556 has 84 MA's), (122, 55697), (132, 55745), (140, 55760), (141, 55769), (143, 55775), (145, 55796), (147, 55817), (149, 55835), (153, 55850), (155, 55856), (157, 55862), (167, 55895), (179, 55919), (187, 55946), (194, 55991), (203, 56030), (215, 56087), (217, 56093),

Gene: Curiosium\_95 Start: 56915, Stop: 57508, Start Num: 62

Candidate Starts for Curiosium\_95:

(16, 56762), (20, 56789), (Start: 62 @56915 has 84 MA's), (86, 56993), (119, 57080), (122, 57098), (132, 57146), (140, 57161), (141, 57170), (145, 57197), (146, 57209), (147, 57218), (149, 57236), (167, 57296), (187, 57347), (188, 57350), (193, 57389), (194, 57392), (202, 57428), (215, 57488), (217, 57494),

Gene: Dadosky\_80 Start: 52609, Stop: 53253, Start Num: 47

Candidate Starts for Dadosky\_80:

(Start: 46 @52606 has 1 MA's), (Start: 47 @52609 has 12 MA's), (59, 52627), (83, 52723), (86, 52738), (94, 52756), (122, 52852), (142, 52915), (157, 53005), (174, 53053), (183, 53077), (186, 53080), (194, 53134), (198, 53155), (201, 53164), (209, 53206), (216, 53236),

Gene: Dalmuri\_87 Start: 55520, Stop: 56059, Start Num: 62

Candidate Starts for Dalmuri\_87:

(12, 55364), (Start: 62 @55520 has 84 MA's), (122, 55649), (131, 55691), (132, 55697), (140, 55712), (141, 55721), (143, 55727), (145, 55748), (149, 55787), (153, 55802), (155, 55808), (157, 55814), (167, 55847), (179, 55871), (187, 55898), (194, 55943), (203, 55982), (215, 56039), (217, 56045),

Gene: DarthP\_84 Start: 55596, Stop: 56210, Start Num: 64

Candidate Starts for DarthP\_84:

(Start: 64 @55596 has 4 MA's), (Start: 81 @55653 has 2 MA's), (97, 55701), (101, 55710), (121, 55770), (139, 55833), (143, 55851), (145, 55872), (147, 55893), (152, 55923), (156, 55935), (167, 55971), (172, 56001), (191, 56064), (194, 56091), (201, 56121), (205, 56139), (211, 56175), (214, 56184), (217, 56196),

Gene: Dartin\_87 Start: 56409, Stop: 57068, Start Num: 27

Candidate Starts for Dartin\_87:

(Start: 26 @56406 has 1 MA's), (Start: 27 @56409 has 3 MA's), (45, 56475), (63, 56508), (78, 56529), (86, 56538), (108, 56595), (122, 56643), (132, 56691), (140, 56706), (141, 56715), (145, 56742), (147, 56763), (152, 56793), (163, 56829), (175, 56865), (184, 56886), (191, 56922), (193, 56946), (194, 56949), (214, 57042), (217, 57054),

Gene: Deby\_87 Start: 56043, Stop: 56654, Start Num: 62

Candidate Starts for Deby\_87:

(16, 55890), (20, 55917), (Start: 62 @56043 has 84 MA's), (86, 56139), (119, 56226), (122, 56244), (132, 56292), (140, 56307), (145, 56343), (147, 56364), (149, 56382), (153, 56397), (155, 56403), (157, 56409), (167, 56442), (179, 56466), (187, 56493), (194, 56538), (203, 56577), (215, 56634), (217, 56640),

Gene: Devera\_93 Start: 56388, Stop: 56936, Start Num: 62

Candidate Starts for Devera\_93:

(Start: 62 @56388 has 84 MA's), (86, 56421), (119, 56508), (122, 56526), (132, 56574), (140, 56589), (141, 56598), (143, 56604), (145, 56625), (147, 56646), (149, 56664), (153, 56679), (155, 56685), (157, 56691), (167, 56724), (187, 56775), (189, 56784), (194, 56820), (201, 56850), (215, 56916), (217, 56922),

Gene: Dole\_90 Start: 56391, Stop: 56939, Start Num: 62

Candidate Starts for Dole\_90:

(Start: 62 @56391 has 84 MA's), (86, 56424), (119, 56511), (122, 56529), (132, 56577), (140, 56592), (141, 56601), (143, 56607), (145, 56628), (147, 56649), (149, 56667), (153, 56682), (155, 56688), (157, 56694), (167, 56727), (187, 56778), (189, 56787), (194, 56823), (201, 56853), (215, 56919), (217, 56925),

Gene: DrHayes\_87 Start: 55782, Stop: 56321, Start Num: 62

Candidate Starts for DrHayes\_87:

(Start: 62 @55782 has 84 MA's), (93, 55830), (122, 55911), (132, 55959), (140, 55974), (141, 55983), (143, 55989), (145, 56010), (146, 56022), (147, 56031), (149, 56049), (153, 56064), (157, 56076), (160, 56088), (167, 56109), (182, 56142), (187, 56160), (188, 56163), (194, 56205), (199, 56229), (203, 56244), (215, 56301), (217, 56307),

Gene: Durfee\_87 Start: 55717, Stop: 56256, Start Num: 62

Candidate Starts for Durfee\_87:

(12, 55561), (Start: 62 @55717 has 84 MA's), (122, 55846), (131, 55888), (132, 55894), (140, 55909), (141, 55918), (143, 55924), (145, 55945), (149, 55984), (153, 55999), (155, 56005), (157, 56011), (167, 56044), (179, 56068), (187, 56095), (194, 56140), (203, 56179), (215, 56236), (217, 56242),

Gene: Edugator\_76 Start: 53777, Stop: 54424, Start Num: 46

Candidate Starts for Edugator\_76:

(Start: 46 @53777 has 1 MA's), (Start: 47 @53780 has 12 MA's), (59, 53798), (83, 53894), (86, 53909), (94, 53927), (122, 54023), (142, 54086), (157, 54176), (174, 54224), (183, 54248), (186, 54251), (194, 54305), (198, 54326), (201, 54335), (209, 54377), (216, 54407),

Gene: Efra2\_94 Start: 56866, Stop: 57423, Start Num: 62

Candidate Starts for Efra2\_94:

(Start: 62 @56866 has 84 MA's), (86, 56899), (112, 56971), (122, 57010), (131, 57052), (132, 57058), (140, 57073), (143, 57088), (145, 57109), (147, 57130), (149, 57148), (151, 57154), (152, 57160), (158, 57184), (167, 57208), (179, 57232), (193, 57301), (202, 57340), (208, 57370), (214, 57397), (217, 57409),

Gene: Ekdilam\_80 Start: 55444, Stop: 56052, Start Num: 64

Candidate Starts for Ekdilam\_80:

(Start: 64 @55444 has 4 MA's), (Start: 81 @55501 has 2 MA's), (109, 55567), (133, 55666), (143, 55693), (145, 55714), (150, 55756), (152, 55765), (167, 55813), (172, 55843), (204, 55978), (208, 55999), (212, 56020), (214, 56026), (217, 56038),

Gene: Ellie\_85 Start: 55858, Stop: 56547, Start Num: 53

Candidate Starts for Ellie\_85:

(44, 55834), (Start: 53 @55858 has 3 MA's), (80, 55933), (106, 56008), (116, 56038), (133, 56110), (147, 56179), (151, 56203), (165, 56278), (185, 56371), (194, 56431), (198, 56452), (199, 56455), (201, 56461), (203, 56470), (215, 56527), (217, 56533),

Gene: Emerson\_89 Start: 55720, Stop: 56331, Start Num: 62

Candidate Starts for Emerson\_89:

(16, 55567), (20, 55594), (Start: 62 @55720 has 84 MA's), (84, 55807), (119, 55903), (122, 55921), (132, 55969), (136, 55975), (140, 55984), (145, 56020), (147, 56041), (149, 56059), (153, 56074), (157, 56086), (167, 56119), (179, 56143), (187, 56170), (194, 56215), (203, 56254), (215, 56311), (217, 56317),

Gene: Enkosi\_70 Start: 53841, Stop: 54485, Start Num: 55

Candidate Starts for Enkosi\_70:

(Start: 52 @53835 has 2 MA's), (Start: 55 @53841 has 6 MA's), (Start: 64 @53868 has 4 MA's), (70, 53895), (74, 53907), (78, 53922), (85, 53946), (87, 53952), (95, 53976), (99, 53985), (124, 54075), (139, 54120), (140, 54123), (143, 54138), (147, 54180), (150, 54201), (151, 54204), (152, 54210), (153, 54213), (157, 54225), (159, 54234), (167, 54258), (170, 54279), (175, 54291), (177, 54294), (180, 54303), (188, 54324), (193, 54363), (194, 54366), (201, 54396), (203, 54405), (214, 54459), (216, 54468),

Gene: Fefferhead\_87 Start: 55655, Stop: 56341, Start Num: 53

Candidate Starts for Fefferhead\_87:

(44, 55631), (Start: 53 @55655 has 3 MA's), (80, 55727), (Start: 81 @55733 has 2 MA's), (106, 55802), (124, 55868), (133, 55904), (147, 55973), (151, 55997), (165, 56072), (185, 56165), (194, 56225), (198, 56246), (199, 56249), (201, 56255), (203, 56264), (215, 56321), (217, 56327),

Gene: Feyre\_82 Start: 55415, Stop: 56056, Start Num: 49

Candidate Starts for Feyre\_82:

(25, 55322), (38, 55373), (Start: 49 @55415 has 9 MA's), (56, 55430), (59, 55436), (67, 55472), (72, 55487), (83, 55532), (140, 55709), (174, 55856), (209, 56009), (217, 56042),

Gene: Ganymede\_87 Start: 55523, Stop: 56071, Start Num: 62

Candidate Starts for Ganymede\_87:

(Start: 62 @55523 has 84 MA's), (86, 55556), (114, 55631), (119, 55643), (122, 55661), (132, 55709), (140, 55724), (141, 55733), (143, 55739), (145, 55760), (147, 55781), (149, 55799), (153, 55814), (155, 55820), (157, 55826), (167, 55859), (179, 55883), (187, 55910), (194, 55955), (203, 55994), (215, 56051), (217, 56057),

Gene: Gengar\_81 Start: 54230, Stop: 54871, Start Num: 49

Candidate Starts for Gengar\_81:

(1, 53843), (2, 53900), (25, 54137), (38, 54188), (Start: 49 @54230 has 9 MA's), (56, 54245), (67, 54287), (72, 54302), (83, 54347), (141, 54533), (174, 54671), (201, 54782), (209, 54824), (217, 54857),

Gene: Geraldini\_89 Start: 55561, Stop: 56172, Start Num: 62

Candidate Starts for Geraldini\_89:

(16, 55408), (20, 55435), (Start: 62 @55561 has 84 MA's), (84, 55648), (114, 55732), (119, 55744), (122, 55762), (132, 55810), (140, 55825), (143, 55840), (145, 55861), (147, 55882), (149, 55900), (153, 55915), (155, 55921), (157, 55927), (167, 55960), (179, 55984), (187, 56011), (194, 56056), (199, 56080), (203, 56095), (215, 56152), (217, 56158),

Gene: Guanica15\_93 Start: 56558, Stop: 57112, Start Num: 62

Candidate Starts for Guanica15\_93:

(Start: 62 @56558 has 84 MA's), (86, 56591), (119, 56681), (131, 56741), (132, 56747), (140, 56762), (143, 56777), (145, 56798), (147, 56819), (149, 56837), (151, 56843), (152, 56849), (158, 56873), (167, 56897), (179, 56921), (193, 56990), (202, 57029), (208, 57059), (214, 57086), (217, 57098),

Gene: Guillsminger\_82 Start: 54078, Stop: 54719, Start Num: 49

Candidate Starts for Guillsminger\_82:

(Start: 49 @54078 has 9 MA's), (56, 54093), (67, 54135), (72, 54150), (83, 54195), (94, 54225), (115, 54294), (140, 54372), (141, 54381), (157, 54471), (160, 54483), (174, 54519), (209, 54672), (216, 54702), (217, 54705),

Gene: Hammy\_84 Start: 55586, Stop: 56200, Start Num: 64

Candidate Starts for Hammy\_84:

(Start: 64 @55586 has 4 MA's), (Start: 81 @55643 has 2 MA's), (97, 55691), (101, 55700), (121, 55760), (139, 55823), (143, 55841), (145, 55862), (147, 55883), (152, 55913), (167, 55961), (172, 55991), (191, 56054), (194, 56081), (201, 56111), (205, 56129), (211, 56165), (214, 56174), (217, 56186),

Gene: HedwigODU\_87 Start: 55559, Stop: 56098, Start Num: 62

Candidate Starts for HedwigODU\_87:

(12, 55403), (Start: 62 @55559 has 84 MA's), (122, 55688), (131, 55730), (132, 55736), (140, 55751), (141, 55760), (143, 55766), (145, 55787), (149, 55826), (153, 55841), (155, 55847), (157, 55853), (160, 55865), (167, 55886), (187, 55937), (194, 55982), (203, 56021), (215, 56078), (217, 56084),

Gene: Heftyboy\_79 Start: 53442, Stop: 54089, Start Num: 47

Candidate Starts for Heftyboy\_79:

(Start: 47 @53442 has 12 MA's), (59, 53460), (67, 53496), (83, 53556), (86, 53571), (115, 53658), (140, 53736), (156, 53838), (157, 53841), (195, 53976), (201, 54000), (209, 54042), (216, 54072),



Gene: Homura\_86 Start: 55520, Stop: 56059, Start Num: 62

Candidate Starts for Homura\_86:

(12, 55364), (Start: 62 @55520 has 84 MA's), (122, 55649), (131, 55691), (132, 55697), (140, 55712), (141, 55721), (143, 55727), (145, 55748), (149, 55787), (153, 55802), (155, 55808), (157, 55814), (167, 55847), (179, 55871), (187, 55898), (194, 55943), (203, 55982), (215, 56039), (217, 56045),

Gene: Hurricane\_86 Start: 54730, Stop: 55197, Start Num: 91

Candidate Starts for Hurricane\_86:

(Start: 91 @54730 has 6 MA's), (104, 54763), (110, 54778), (123, 54826), (149, 54952), (152, 54964), (181, 55012), (187, 55030), (214, 55168), (216, 55177), (217, 55180),

Gene: Hyperbowlee\_86 Start: 55717, Stop: 56256, Start Num: 62

Candidate Starts for Hyperbowlee\_86:

(12, 55561), (Start: 62 @55717 has 84 MA's), (122, 55846), (131, 55888), (132, 55894), (140, 55909), (141, 55918), (143, 55924), (145, 55945), (149, 55984), (153, 55999), (155, 56005), (157, 56011), (167, 56044), (179, 56068), (187, 56095), (194, 56140), (203, 56179), (215, 56236), (217, 56242),

Gene: Illumine\_91 Start: 56390, Stop: 56938, Start Num: 62

Candidate Starts for Illumine\_91:

(Start: 62 @56390 has 84 MA's), (86, 56423), (119, 56510), (122, 56528), (132, 56576), (140, 56591), (141, 56600), (143, 56606), (145, 56627), (147, 56648), (149, 56666), (153, 56681), (155, 56687), (157, 56693), (167, 56726), (187, 56777), (189, 56786), (194, 56822), (201, 56852), (215, 56918), (217, 56924),

Gene: Inky\_87 Start: 55520, Stop: 56059, Start Num: 62

Candidate Starts for Inky\_87:

(12, 55364), (Start: 62 @55520 has 84 MA's), (122, 55649), (131, 55691), (132, 55697), (140, 55712), (141, 55721), (143, 55727), (145, 55748), (149, 55787), (153, 55802), (155, 55808), (157, 55814), (167, 55847), (179, 55871), (187, 55898), (194, 55943), (203, 55982), (215, 56039), (217, 56045),

Gene: InvictusManeo\_77 Start: 51755, Stop: 52402, Start Num: 47

Candidate Starts for InvictusManeo\_77:

(Start: 47 @51755 has 12 MA's), (59, 51773), (67, 51809), (83, 51869), (86, 51884), (94, 51902), (140, 52049), (144, 52070), (153, 52142), (157, 52154), (160, 52166), (163, 52175), (174, 52202), (194, 52283), (201, 52313), (209, 52355), (216, 52385),

Gene: JAWS\_86 Start: 55506, Stop: 56045, Start Num: 62

Candidate Starts for JAWS\_86:

(12, 55350), (Start: 62 @55506 has 84 MA's), (122, 55635), (131, 55677), (132, 55683), (140, 55698), (143, 55713), (145, 55734), (149, 55773), (153, 55788), (155, 55794), (157, 55800), (160, 55812), (167, 55833), (187, 55884), (194, 55929), (203, 55968), (215, 56025), (217, 56031),

Gene: Jarvi\_87 Start: 55520, Stop: 56059, Start Num: 62

Candidate Starts for Jarvi\_87:

(12, 55364), (Start: 62 @55520 has 84 MA's), (122, 55649), (131, 55691), (132, 55697), (140, 55712), (141, 55721), (143, 55727), (145, 55748), (149, 55787), (153, 55802), (155, 55808), (157, 55814), (167, 55847), (179, 55871), (187, 55898), (194, 55943), (203, 55982), (215, 56039), (217, 56045),

Gene: Jayhawk\_89 Start: 55536, Stop: 56075, Start Num: 62

Candidate Starts for Jayhawk\_89:

(Start: 62 @55536 has 84 MA's), (89, 55575), (122, 55665), (131, 55707), (132, 55713), (140, 55728), (141, 55737), (143, 55743), (145, 55764), (147, 55785), (149, 55803), (153, 55818), (155, 55824),

(157, 55830), (167, 55863), (179, 55887), (187, 55914), (194, 55959), (203, 55998), (215, 56055), (217, 56061),

Gene: Jeckyll\_87 Start: 55520, Stop: 56059, Start Num: 62

Candidate Starts for Jeckyll\_87:

(12, 55364), (Start: 62 @55520 has 84 MA's), (122, 55649), (131, 55691), (132, 55697), (140, 55712), (141, 55721), (143, 55727), (145, 55748), (149, 55787), (153, 55802), (155, 55808), (157, 55814), (167, 55847), (179, 55871), (187, 55898), (194, 55943), (203, 55982), (215, 56039), (217, 56045),

Gene: Joy99\_88 Start: 55649, Stop: 56188, Start Num: 62

Candidate Starts for Joy99\_88:

(12, 55493), (Start: 62 @55649 has 84 MA's), (122, 55778), (131, 55820), (132, 55826), (140, 55841), (141, 55850), (143, 55856), (145, 55877), (149, 55916), (153, 55931), (155, 55937), (157, 55943), (167, 55976), (179, 56000), (187, 56027), (194, 56072), (203, 56111), (215, 56168), (217, 56174),

Gene: Keshu\_88 Start: 55022, Stop: 55489, Start Num: 91

Candidate Starts for Keshu\_88:

(Start: 91 @55022 has 6 MA's), (104, 55055), (110, 55070), (123, 55118), (149, 55244), (152, 55256), (181, 55304), (187, 55322), (214, 55460), (216, 55469), (217, 55472),

Gene: KiSi\_89 Start: 55752, Stop: 56375, Start Num: 60

Candidate Starts for KiSi\_89:

(43, 55710), (Start: 60 @55752 has 4 MA's), (Start: 64 @55767 has 4 MA's), (66, 55779), (88, 55851), (135, 56016), (140, 56025), (143, 56040), (151, 56106), (156, 56124), (169, 56151), (185, 56199), (188, 56220), (193, 56256), (194, 56259), (199, 56283), (201, 56289), (217, 56361),

Gene: Kratio\_80 Start: 52503, Stop: 53210, Start Num: 47

Candidate Starts for Kratio\_80:

(Start: 46 @52500 has 1 MA's), (Start: 47 @52503 has 12 MA's), (59, 52521), (83, 52617), (86, 52632), (94, 52650), (122, 52746), (142, 52809), (157, 52899), (183, 52971), (186, 52974), (194, 53028), (201, 53058), (209, 53100), (216, 53130),

Gene: Krueger\_91 Start: 55693, Stop: 56526, Start Num: 8

Candidate Starts for Krueger\_91:

(Start: 7 @55687 has 1 MA's), (Start: 8 @55693 has 9 MA's), (10, 55735), (15, 55747), (28, 55804), (35, 55843), (79, 55978), (90, 56020), (115, 56089), (122, 56116), (143, 56188), (151, 56257), (171, 56320), (176, 56332), (187, 56362), (190, 56377), (194, 56407), (198, 56428), (199, 56431), (203, 56446), (213, 56497), (215, 56503), (217, 56509),

Gene: Larva\_79 Start: 53481, Stop: 54125, Start Num: 47

Candidate Starts for Larva\_79:

(Start: 46 @53478 has 1 MA's), (Start: 47 @53481 has 12 MA's), (59, 53499), (83, 53595), (86, 53610), (94, 53628), (122, 53724), (142, 53787), (157, 53877), (174, 53925), (183, 53949), (186, 53952), (194, 54006), (198, 54027), (201, 54036), (209, 54078), (216, 54108),

Gene: LastHope\_93 Start: 56273, Stop: 56836, Start Num: 62

Candidate Starts for LastHope\_93:

(Start: 62 @56273 has 84 MA's), (86, 56306), (114, 56381), (128, 56456), (132, 56471), (140, 56486), (141, 56495), (143, 56501), (145, 56522), (147, 56543), (149, 56561), (151, 56567), (152, 56573), (157, 56588), (158, 56597), (167, 56621), (179, 56645), (193, 56714), (194, 56717), (198, 56738), (201, 56747), (203, 56756), (208, 56783), (214, 56810),

Gene: LaterM\_87 Start: 55885, Stop: 56478, Start Num: 62

Candidate Starts for LaterM\_87:

(Start: 62 @55885 has 84 MA's), (86, 55963), (96, 55990), (122, 56068), (127, 56095), (132, 56116), (140, 56131), (143, 56146), (145, 56167), (146, 56179), (147, 56188), (153, 56221), (155, 56227), (157, 56233), (160, 56245), (182, 56299), (187, 56317), (188, 56320), (194, 56362), (203, 56401), (215, 56458), (217, 56464),

Gene: LeMond\_88 Start: 55714, Stop: 56331, Start Num: 60

Candidate Starts for LeMond\_88:

(Start: 60 @55714 has 4 MA's), (Start: 64 @55729 has 4 MA's), (66, 55741), (88, 55813), (113, 55882), (135, 55972), (151, 56062), (156, 56080), (169, 56107), (185, 56155), (188, 56176), (193, 56212), (194, 56215), (195, 56221), (199, 56239), (201, 56245), (217, 56317),

Gene: Leston\_81 Start: 54195, Stop: 54836, Start Num: 49

Candidate Starts for Leston\_81:

(Start: 49 @54195 has 9 MA's), (56, 54210), (67, 54252), (72, 54267), (83, 54312), (94, 54342), (115, 54411), (140, 54489), (157, 54588), (160, 54600), (174, 54636), (209, 54789), (217, 54822),

Gene: LilPharaoh\_69 Start: 50950, Stop: 51600, Start Num: 52

Candidate Starts for LilPharaoh\_69:

(Start: 52 @50950 has 2 MA's), (Start: 55 @50956 has 6 MA's), (Start: 64 @50983 has 4 MA's), (70, 51010), (74, 51022), (78, 51037), (85, 51061), (87, 51067), (95, 51091), (99, 51100), (124, 51190), (139, 51235), (140, 51238), (143, 51253), (147, 51295), (150, 51316), (151, 51319), (152, 51325), (153, 51328), (157, 51340), (159, 51349), (167, 51373), (170, 51394), (175, 51406), (177, 51409), (180, 51418), (188, 51439), (193, 51478), (194, 51481), (201, 51511), (203, 51520), (214, 51574), (216, 51583),

Gene: LindNT\_85 Start: 55622, Stop: 56173, Start Num: 62

Candidate Starts for LindNT\_85:

(3, 55286), (Start: 62 @55622 has 84 MA's), (86, 55655), (114, 55733), (119, 55745), (122, 55763), (132, 55811), (140, 55826), (141, 55835), (143, 55841), (145, 55862), (147, 55883), (149, 55901), (153, 55916), (155, 55922), (157, 55928), (167, 55961), (179, 55985), (187, 56012), (194, 56057), (203, 56096), (215, 56153), (217, 56159),

Gene: Llorens\_87 Start: 55520, Stop: 56059, Start Num: 62

Candidate Starts for Llorens\_87:

(12, 55364), (Start: 62 @55520 has 84 MA's), (122, 55649), (131, 55691), (132, 55697), (140, 55712), (141, 55721), (143, 55727), (145, 55748), (149, 55787), (153, 55802), (155, 55808), (157, 55814), (167, 55847), (179, 55871), (187, 55898), (194, 55943), (203, 55982), (215, 56039), (217, 56045),

Gene: Lunahalos\_87 Start: 55520, Stop: 56059, Start Num: 62

Candidate Starts for Lunahalos\_87:

(12, 55364), (Start: 62 @55520 has 84 MA's), (122, 55649), (131, 55691), (132, 55697), (140, 55712), (141, 55721), (143, 55727), (145, 55748), (149, 55787), (153, 55802), (155, 55808), (157, 55814), (167, 55847), (179, 55871), (187, 55898), (194, 55943), (203, 55982), (215, 56039), (217, 56045),

Gene: MacnCheese\_87 Start: 55279, Stop: 55746, Start Num: 91

Candidate Starts for MacnCheese\_87:

(Start: 91 @55279 has 6 MA's), (110, 55330), (123, 55378), (129, 55408), (143, 55444), (145, 55465), (149, 55504), (152, 55516), (181, 55564), (195, 55630), (201, 55654), (214, 55720), (216, 55729),

Gene: MarkPhew\_89 Start: 55775, Stop: 56458, Start Num: 31

Candidate Starts for MarkPhew\_89:

(13, 55703), (29, 55760), (Start: 31 @55775 has 2 MA's), (34, 55790), (41, 55802), (88, 55940), (105, 55994), (135, 56099), (143, 56123), (151, 56189), (156, 56207), (169, 56234), (171, 56240), (174, 56249), (185, 56282), (194, 56342), (195, 56348), (197, 56363), (199, 56366), (201, 56372), (204, 56387), (217, 56444),

Gene: Marshawn\_85 Start: 55928, Stop: 56566, Start Num: 57

Candidate Starts for Marshawn\_85:

(11, 55766), (17, 55775), (19, 55781), (21, 55805), (24, 55820), (30, 55844), (36, 55868), (48, 55913), (Start: 57 @55928 has 1 MA's), (71, 55979), (72, 55982), (73, 55985), (96, 56054), (137, 56201), (141, 56222), (145, 56252), (147, 56273), (151, 56297), (163, 56339), (166, 56348), (167, 56351), (173, 56360), (187, 56402), (194, 56447), (198, 56468), (199, 56471), (203, 56486), (206, 56498), (217, 56552),

Gene: McMater\_87 Start: 56409, Stop: 57068, Start Num: 27

Candidate Starts for McMater\_87:

(Start: 26 @56406 has 1 MA's), (Start: 27 @56409 has 3 MA's), (45, 56475), (63, 56508), (78, 56529), (86, 56538), (108, 56595), (122, 56643), (132, 56691), (140, 56706), (141, 56715), (145, 56742), (147, 56763), (152, 56793), (163, 56829), (175, 56865), (184, 56886), (191, 56922), (193, 56946), (194, 56949), (214, 57042), (217, 57054),

Gene: Mdavu\_69 Start: 51232, Stop: 51876, Start Num: 55

Candidate Starts for Mdavu\_69:

(Start: 52 @51226 has 2 MA's), (Start: 55 @51232 has 6 MA's), (Start: 64 @51259 has 4 MA's), (70, 51286), (74, 51298), (78, 51313), (85, 51337), (87, 51343), (95, 51367), (99, 51376), (124, 51466), (139, 51511), (140, 51514), (143, 51529), (147, 51571), (150, 51592), (151, 51595), (152, 51601), (153, 51604), (157, 51616), (159, 51625), (167, 51649), (170, 51670), (175, 51682), (177, 51685), (180, 51694), (188, 51715), (193, 51754), (194, 51757), (201, 51787), (203, 51796), (214, 51850), (216, 51859),

Gene: MeaningOfLife\_89 Start: 56205, Stop: 56744, Start Num: 62

Candidate Starts for MeaningOfLife\_89:

(Start: 62 @56205 has 84 MA's), (122, 56334), (131, 56376), (132, 56382), (140, 56397), (141, 56406), (143, 56412), (145, 56433), (147, 56454), (149, 56472), (153, 56487), (155, 56493), (157, 56499), (167, 56532), (179, 56556), (187, 56583), (194, 56628), (203, 56667), (215, 56724), (217, 56730),

Gene: Megsy\_91 Start: 55851, Stop: 56402, Start Num: 62

Candidate Starts for Megsy\_91:

(16, 55698), (20, 55725), (Start: 62 @55851 has 84 MA's), (114, 55962), (119, 55974), (122, 55992), (132, 56040), (140, 56055), (141, 56064), (145, 56091), (147, 56112), (149, 56130), (153, 56145), (155, 56151), (157, 56157), (167, 56190), (179, 56214), (187, 56241), (194, 56286), (203, 56325), (215, 56382), (217, 56388),

Gene: Miryou\_83 Start: 56053, Stop: 56694, Start Num: 49

Candidate Starts for Miryou\_83:

(Start: 49 @56053 has 9 MA's), (56, 56068), (59, 56074), (67, 56110), (72, 56125), (83, 56170), (94, 56200), (114, 56266), (115, 56269), (141, 56356), (174, 56494), (201, 56605), (209, 56647), (217, 56680),

Gene: Murucutumbu\_87 Start: 56412, Stop: 56960, Start Num: 62

Candidate Starts for Murucutumbu\_87:

(12, 56256), (Start: 62 @56412 has 84 MA's), (86, 56445), (115, 56523), (122, 56550), (132, 56598), (140, 56613), (141, 56622), (143, 56628), (145, 56649), (147, 56670), (149, 56688), (153, 56703),

(155, 56709), (157, 56715), (160, 56727), (182, 56781), (187, 56799), (188, 56802), (194, 56844), (203, 56883), (215, 56940), (217, 56946),

Gene: Mynx\_88 Start: 55828, Stop: 56367, Start Num: 62

Candidate Starts for Mynx\_88:

(12, 55672), (Start: 62 @55828 has 84 MA's), (122, 55957), (131, 55999), (132, 56005), (140, 56020), (141, 56029), (143, 56035), (145, 56056), (147, 56077), (149, 56095), (153, 56110), (157, 56122), (160, 56134), (167, 56155), (179, 56179), (187, 56206), (194, 56251), (203, 56290), (215, 56347), (217, 56353),

Gene: Nibb\_89 Start: 55433, Stop: 56137, Start Num: 31

Candidate Starts for Nibb\_89:

(5, 55271), (6, 55289), (29, 55418), (Start: 31 @55433 has 2 MA's), (34, 55448), (Start: 53 @55502 has 3 MA's), (88, 55622), (111, 55682), (116, 55700), (120, 55712), (135, 55778), (140, 55787), (151, 55868), (156, 55886), (169, 55913), (171, 55919), (174, 55928), (185, 55961), (187, 55979), (188, 55982), (194, 56021), (196, 56039), (199, 56045), (201, 56051), (204, 56066), (217, 56123),

Gene: Nikao\_71 Start: 53841, Stop: 54485, Start Num: 55

Candidate Starts for Nikao\_71:

(Start: 52 @53835 has 2 MA's), (Start: 55 @53841 has 6 MA's), (Start: 64 @53868 has 4 MA's), (70, 53895), (74, 53907), (78, 53922), (85, 53946), (87, 53952), (95, 53976), (99, 53985), (124, 54075), (139, 54120), (140, 54123), (143, 54138), (147, 54180), (150, 54201), (151, 54204), (152, 54210), (153, 54213), (157, 54225), (159, 54234), (167, 54258), (170, 54279), (175, 54291), (177, 54294), (180, 54303), (188, 54324), (193, 54363), (194, 54366), (201, 54396), (203, 54405), (214, 54459), (216, 54468),

Gene: Niklas\_88 Start: 56449, Stop: 57108, Start Num: 27

Candidate Starts for Niklas\_88:

(Start: 26 @56446 has 1 MA's), (Start: 27 @56449 has 3 MA's), (45, 56515), (63, 56548), (78, 56569), (86, 56578), (108, 56635), (122, 56683), (132, 56731), (140, 56746), (141, 56755), (145, 56782), (147, 56803), (152, 56833), (163, 56869), (175, 56905), (184, 56926), (191, 56962), (193, 56986), (194, 56989), (207, 57049), (214, 57082), (217, 57094),

Gene: Nutello\_68 Start: 51228, Stop: 51872, Start Num: 55

Candidate Starts for Nutello\_68:

(Start: 52 @51222 has 2 MA's), (Start: 55 @51228 has 6 MA's), (Start: 64 @51255 has 4 MA's), (70, 51282), (74, 51294), (78, 51309), (85, 51333), (87, 51339), (95, 51363), (99, 51372), (124, 51462), (139, 51507), (140, 51510), (143, 51525), (147, 51567), (150, 51588), (151, 51591), (152, 51597), (153, 51600), (157, 51612), (159, 51621), (167, 51645), (170, 51666), (175, 51678), (177, 51681), (180, 51690), (188, 51711), (193, 51750), (194, 51753), (201, 51783), (203, 51792), (214, 51846), (216, 51855),

Gene: OkiRoe\_82 Start: 55193, Stop: 55834, Start Num: 49

Candidate Starts for OkiRoe\_82:

(1, 54806), (2, 54863), (25, 55100), (38, 55151), (Start: 49 @55193 has 9 MA's), (56, 55208), (67, 55250), (72, 55265), (83, 55310), (141, 55496), (148, 55553), (174, 55634), (193, 55712), (209, 55787), (216, 55817), (217, 55820),

Gene: Omnicron\_84 Start: 56077, Stop: 56712, Start Num: 47

Candidate Starts for Omnicron\_84:

(Start: 47 @56077 has 12 MA's), (59, 56098), (83, 56185), (86, 56200), (94, 56218), (148, 56431), (157, 56464), (216, 56695),

Gene: Oscar\_89 Start: 55635, Stop: 56255, Start Num: 60

Candidate Starts for Oscar\_89:

(Start: 60 @55635 has 4 MA's), (Start: 64 @55650 has 4 MA's), (66, 55662), (88, 55734), (135, 55896), (151, 55986), (156, 56004), (169, 56031), (185, 56079), (188, 56100), (193, 56136), (194, 56139), (195, 56145), (199, 56163), (201, 56169), (217, 56241),

Gene: Padfoot\_87 Start: 55717, Stop: 56256, Start Num: 62

Candidate Starts for Padfoot\_87:

(12, 55561), (Start: 62 @55717 has 84 MA's), (122, 55846), (131, 55888), (132, 55894), (140, 55909), (141, 55918), (143, 55924), (145, 55945), (149, 55984), (153, 55999), (155, 56005), (157, 56011), (167, 56044), (179, 56068), (187, 56095), (194, 56140), (203, 56179), (215, 56236), (217, 56242),

Gene: Padpat\_90 Start: 55720, Stop: 56331, Start Num: 62

Candidate Starts for Padpat\_90:

(16, 55567), (20, 55594), (Start: 62 @55720 has 84 MA's), (84, 55807), (119, 55903), (122, 55921), (132, 55969), (136, 55975), (140, 55984), (145, 56020), (147, 56041), (149, 56059), (153, 56074), (157, 56086), (167, 56119), (179, 56143), (187, 56170), (194, 56215), (203, 56254), (215, 56311), (217, 56317),

Gene: Paola\_81 Start: 54078, Stop: 54719, Start Num: 49

Candidate Starts for Paola\_81:

(Start: 49 @54078 has 9 MA's), (56, 54093), (67, 54135), (72, 54150), (83, 54195), (94, 54225), (115, 54294), (140, 54372), (141, 54381), (157, 54471), (160, 54483), (174, 54519), (209, 54672), (216, 54702), (217, 54705),

Gene: Peanam\_88 Start: 56428, Stop: 57087, Start Num: 27

Candidate Starts for Peanam\_88:

(Start: 26 @56425 has 1 MA's), (Start: 27 @56428 has 3 MA's), (33, 56464), (40, 56479), (45, 56494), (63, 56527), (78, 56548), (86, 56557), (108, 56614), (122, 56662), (132, 56710), (140, 56725), (141, 56734), (145, 56761), (147, 56782), (152, 56812), (163, 56848), (175, 56884), (184, 56905), (191, 56941), (193, 56965), (214, 57061), (217, 57073),

Gene: Peel\_87 Start: 55522, Stop: 56061, Start Num: 62

Candidate Starts for Peel\_87:

(12, 55366), (Start: 62 @55522 has 84 MA's), (122, 55651), (131, 55693), (132, 55699), (140, 55714), (141, 55723), (143, 55729), (145, 55750), (149, 55789), (153, 55804), (155, 55810), (157, 55816), (167, 55849), (179, 55873), (187, 55900), (194, 55945), (203, 55984), (215, 56041), (217, 56047),

Gene: Pharb\_86 Start: 54652, Stop: 55125, Start Num: 92

Candidate Starts for Pharb\_86:

(Start: 92 @54652 has 2 MA's), (102, 54682), (110, 54703), (126, 54775), (129, 54784), (134, 54793), (140, 54805), (141, 54814), (143, 54820), (145, 54841), (149, 54880), (152, 54892), (157, 54907), (163, 54916), (167, 54928), (181, 54940), (187, 54958), (193, 54997), (203, 55039), (214, 55096), (216, 55105), (217, 55108),

Gene: PhelpsODU\_84 Start: 52304, Stop: 53098, Start Num: 8

Candidate Starts for PhelpsODU\_84:

(Start: 8 @52304 has 9 MA's), (10, 52346), (35, 52454), (39, 52457), (61, 52484), (71, 52526), (77, 52547), (87, 52583), (90, 52592), (100, 52625), (115, 52664), (141, 52757), (143, 52763), (145, 52784), (151, 52829), (154, 52841), (171, 52892), (187, 52934), (190, 52949), (194, 52979), (203, 53018), (215, 53075), (217, 53081),

Gene: Phrank\_94 Start: 56586, Stop: 57317, Start Num: 8

Candidate Starts for Phrank\_94:

(Start: 8 @56586 has 9 MA's), (35, 56694), (68, 56733), (76, 56760), (79, 56769), (103, 56847), (115, 56880), (122, 56907), (133, 56952), (151, 57048), (171, 57111), (176, 57123), (187, 57153), (190, 57168), (194, 57198), (203, 57237), (215, 57294), (217, 57300),

Gene: Piatt\_86 Start: 55717, Stop: 56256, Start Num: 62

Candidate Starts for Piatt\_86:

(12, 55561), (Start: 62 @55717 has 84 MA's), (122, 55846), (131, 55888), (132, 55894), (140, 55909), (141, 55918), (143, 55924), (145, 55945), (149, 55984), (153, 55999), (155, 56005), (157, 56011), (167, 56044), (179, 56068), (187, 56095), (194, 56140), (203, 56179), (215, 56236), (217, 56242),

Gene: Pixie\_85 Start: 54434, Stop: 54901, Start Num: 91

Candidate Starts for Pixie\_85:

(Start: 91 @54434 has 6 MA's), (104, 54467), (110, 54482), (123, 54530), (149, 54656), (152, 54668), (162, 54686), (181, 54716), (187, 54734), (214, 54872), (216, 54881), (217, 54884),

Gene: Pokerus\_87 Start: 55526, Stop: 56065, Start Num: 62

Candidate Starts for Pokerus\_87:

(Start: 62 @55526 has 84 MA's), (122, 55655), (131, 55697), (132, 55703), (140, 55718), (141, 55727), (143, 55733), (145, 55754), (149, 55793), (153, 55808), (157, 55820), (167, 55853), (179, 55877), (187, 55904), (194, 55949), (203, 55988), (215, 56045), (217, 56051),

Gene: Prithvi\_89 Start: 55920, Stop: 56471, Start Num: 62

Candidate Starts for Prithvi\_89:

(9, 55740), (12, 55764), (Start: 62 @55920 has 84 MA's), (86, 55953), (114, 56031), (119, 56043), (122, 56061), (132, 56109), (140, 56124), (141, 56133), (143, 56139), (145, 56160), (147, 56181), (149, 56199), (153, 56214), (155, 56220), (157, 56226), (167, 56259), (179, 56283), (187, 56310), (193, 56352), (194, 56355), (199, 56379), (203, 56394), (215, 56451), (217, 56457),

Gene: Psycho\_78 Start: 52606, Stop: 53250, Start Num: 47

Candidate Starts for Psycho\_78:

(Start: 46 @52603 has 1 MA's), (Start: 47 @52606 has 12 MA's), (59, 52624), (83, 52720), (86, 52735), (94, 52753), (122, 52849), (142, 52912), (157, 53002), (174, 53050), (183, 53074), (186, 53077), (194, 53131), (198, 53152), (201, 53161), (209, 53203), (216, 53233),

Gene: QuincyRose\_85 Start: 55523, Stop: 56071, Start Num: 62

Candidate Starts for QuincyRose\_85:

(Start: 62 @55523 has 84 MA's), (86, 55556), (114, 55631), (119, 55643), (122, 55661), (132, 55709), (140, 55724), (141, 55733), (143, 55739), (145, 55760), (147, 55781), (149, 55799), (153, 55814), (155, 55820), (157, 55826), (167, 55859), (179, 55883), (187, 55910), (194, 55955), (203, 55994), (215, 56051), (217, 56057),

Gene: Ramen\_88 Start: 55275, Stop: 55814, Start Num: 62

Candidate Starts for Ramen\_88:

(Start: 62 @55275 has 84 MA's), (89, 55314), (122, 55404), (131, 55446), (132, 55452), (140, 55467), (141, 55476), (143, 55482), (145, 55503), (147, 55524), (149, 55542), (153, 55557), (155, 55563), (167, 55602), (179, 55626), (187, 55653), (194, 55698), (203, 55737), (215, 55794), (217, 55800),

Gene: Rando14\_81 Start: 54488, Stop: 55123, Start Num: 47

Candidate Starts for Rando14\_81:

(Start: 47 @54488 has 12 MA's), (59, 54509), (83, 54596), (86, 54611), (94, 54629), (148, 54842), (157, 54875), (216, 55106),

Gene: Rapunzel97\_89 Start: 55491, Stop: 56030, Start Num: 62

Candidate Starts for Rapunzel97\_89:

(Start: 62 @55491 has 84 MA's), (89, 55530), (122, 55620), (131, 55662), (132, 55668), (140, 55683), (141, 55692), (143, 55698), (145, 55719), (147, 55740), (149, 55758), (153, 55773), (155, 55779), (157, 55785), (167, 55818), (179, 55842), (187, 55869), (194, 55914), (203, 55953), (215, 56010), (217, 56016),

Gene: Richo\_87 Start: 56409, Stop: 57068, Start Num: 27

Candidate Starts for Richo\_87:

(Start: 26 @56406 has 1 MA's), (Start: 27 @56409 has 3 MA's), (45, 56475), (63, 56508), (78, 56529), (86, 56538), (108, 56595), (122, 56643), (132, 56691), (140, 56706), (141, 56715), (145, 56742), (147, 56763), (152, 56793), (163, 56829), (175, 56865), (184, 56886), (191, 56922), (193, 56946), (194, 56949), (214, 57042), (217, 57054),

Gene: Rosmarinus\_87 Start: 55508, Stop: 56047, Start Num: 62

Candidate Starts for Rosmarinus\_87:

(12, 55352), (Start: 62 @55508 has 84 MA's), (114, 55607), (122, 55637), (131, 55679), (132, 55685), (140, 55700), (141, 55709), (143, 55715), (145, 55736), (149, 55775), (153, 55790), (155, 55796), (157, 55802), (167, 55835), (179, 55859), (187, 55886), (194, 55931), (203, 55970), (215, 56027), (217, 56033),

Gene: SamuelLPlaqson\_87 Start: 55782, Stop: 56321, Start Num: 62

Candidate Starts for SamuelLPlaqson\_87:

(Start: 62 @55782 has 84 MA's), (93, 55830), (122, 55911), (132, 55959), (140, 55974), (141, 55983), (143, 55989), (145, 56010), (146, 56022), (147, 56031), (149, 56049), (153, 56064), (157, 56076), (160, 56088), (167, 56109), (182, 56142), (187, 56160), (188, 56163), (194, 56205), (199, 56229), (203, 56244), (215, 56301), (217, 56307),

Gene: Scarlett\_88 Start: 55509, Stop: 56123, Start Num: 60

Candidate Starts for Scarlett\_88:

(23, 55389), (50, 55494), (Start: 60 @55509 has 4 MA's), (66, 55536), (88, 55608), (113, 55674), (135, 55764), (139, 55770), (151, 55854), (156, 55872), (169, 55899), (185, 55947), (188, 55968), (193, 56004), (194, 56007), (199, 56031), (201, 56037), (217, 56109),

Gene: SgtBeansprout\_69 Start: 51228, Stop: 51872, Start Num: 55

Candidate Starts for SgtBeansprout\_69:

(Start: 52 @51222 has 2 MA's), (Start: 55 @51228 has 6 MA's), (Start: 64 @51255 has 4 MA's), (70, 51282), (74, 51294), (78, 51309), (85, 51333), (87, 51339), (95, 51363), (99, 51372), (124, 51462), (139, 51507), (140, 51510), (143, 51525), (147, 51567), (150, 51588), (151, 51591), (152, 51597), (153, 51600), (157, 51612), (159, 51621), (167, 51645), (170, 51666), (175, 51678), (177, 51681), (180, 51690), (188, 51711), (193, 51750), (194, 51753), (201, 51783), (203, 51792), (214, 51846), (216, 51855),

Gene: Shadow1\_91 Start: 55827, Stop: 56666, Start Num: 7

Candidate Starts for Shadow1\_91:

(Start: 7 @55827 has 1 MA's), (Start: 8 @55833 has 9 MA's), (10, 55875), (35, 55983), (79, 56118), (90, 56160), (115, 56229), (122, 56256), (143, 56328), (151, 56397), (171, 56460), (176, 56472), (187, 56502), (190, 56517), (194, 56547), (198, 56568), (199, 56571), (203, 56586), (213, 56637), (215, 56643), (217, 56649),

Gene: Shaobing\_87 Start: 56496, Stop: 57149, Start Num: 27

Candidate Starts for Shaobing\_87:



(Start: 26 @56493 has 1 MA's), (Start: 27 @56496 has 3 MA's), (33, 56532), (40, 56547), (45, 56562), (63, 56595), (78, 56616), (86, 56625), (122, 56721), (124, 56733), (138, 56781), (140, 56787), (145, 56823), (147, 56844), (152, 56874), (163, 56910), (175, 56946), (184, 56967), (191, 57003), (193, 57027), (194, 57030), (207, 57090), (214, 57123), (217, 57135),

Gene: ShedlockHolmes\_88 Start: 54857, Stop: 55324, Start Num: 91

Candidate Starts for ShedlockHolmes\_88:

(Start: 91 @54857 has 6 MA's), (104, 54890), (110, 54905), (123, 54953), (149, 55079), (152, 55091), (162, 55109), (181, 55139), (187, 55157), (214, 55295), (216, 55304), (217, 55307),

Gene: ShiaSurprise\_88 Start: 55717, Stop: 56256, Start Num: 62

Candidate Starts for ShiaSurprise\_88:

(12, 55561), (Start: 62 @55717 has 84 MA's), (122, 55846), (131, 55888), (132, 55894), (140, 55909), (141, 55918), (143, 55924), (145, 55945), (149, 55984), (153, 55999), (155, 56005), (157, 56011), (167, 56044), (179, 56068), (187, 56095), (194, 56140), (203, 56179), (215, 56236), (217, 56242),

Gene: SirPhilip\_87 Start: 55717, Stop: 56277, Start Num: 81

Candidate Starts for SirPhilip\_87:

(Start: 81 @55717 has 2 MA's), (135, 55894), (140, 55903), (151, 55984), (156, 56002), (163, 56026), (168, 56053), (193, 56155), (194, 56158), (210, 56239), (214, 56251), (217, 56263),

Gene: Slimphazie\_89 Start: 55947, Stop: 56486, Start Num: 62

Candidate Starts for Slimphazie\_89:

(Start: 62 @55947 has 84 MA's), (89, 55986), (122, 56076), (131, 56118), (132, 56124), (140, 56139), (141, 56148), (143, 56154), (145, 56175), (147, 56196), (149, 56214), (153, 56229), (155, 56235), (157, 56241), (167, 56274), (179, 56298), (187, 56325), (194, 56370), (203, 56409), (215, 56466), (217, 56472),

Gene: SoSeph\_79 Start: 53442, Stop: 54089, Start Num: 47

Candidate Starts for SoSeph\_79:

(Start: 47 @53442 has 12 MA's), (59, 53460), (67, 53496), (83, 53556), (86, 53571), (115, 53658), (140, 53736), (156, 53838), (157, 53841), (195, 53976), (201, 54000), (209, 54042), (216, 54072),

Gene: Spock\_87 Start: 55521, Stop: 56060, Start Num: 62

Candidate Starts for Spock\_87:

(12, 55365), (Start: 62 @55521 has 84 MA's), (122, 55650), (131, 55692), (132, 55698), (140, 55713), (141, 55722), (143, 55728), (145, 55749), (149, 55788), (153, 55803), (155, 55809), (157, 55815), (167, 55848), (179, 55872), (187, 55899), (194, 55944), (203, 55983), (215, 56040), (217, 56046),

Gene: Stinson\_88 Start: 55691, Stop: 56239, Start Num: 62

Candidate Starts for Stinson\_88:

(Start: 62 @55691 has 84 MA's), (86, 55724), (115, 55802), (119, 55811), (122, 55829), (132, 55877), (140, 55892), (141, 55901), (143, 55907), (145, 55928), (147, 55949), (149, 55967), (153, 55982), (155, 55988), (157, 55994), (167, 56027), (179, 56051), (182, 56060), (194, 56123), (199, 56147), (200, 56150), (201, 56153), (215, 56219), (217, 56225),

Gene: Sulley\_84 Start: 55116, Stop: 55655, Start Num: 62

Candidate Starts for Sulley\_84:

(Start: 62 @55116 has 84 MA's), (114, 55215), (122, 55245), (132, 55293), (140, 55308), (141, 55317), (143, 55323), (145, 55344), (147, 55365), (149, 55383), (153, 55398), (157, 55410), (160, 55422), (167, 55443), (179, 55467), (187, 55494), (194, 55539), (199, 55563), (203, 55578), (215, 55635), (217, 55641),

Gene: Sunflower1121\_91 Start: 55592, Stop: 56425, Start Num: 8

Candidate Starts for Sunflower1121\_91:

(Start: 7 @55586 has 1 MA's), (Start: 8 @55592 has 9 MA's), (10, 55634), (35, 55742), (79, 55877), (90, 55919), (115, 55988), (122, 56015), (143, 56087), (151, 56156), (171, 56219), (176, 56231), (187, 56261), (190, 56276), (194, 56306), (198, 56327), (199, 56330), (203, 56345), (213, 56396), (215, 56402), (217, 56408),

Gene: Syra333\_90 Start: 55739, Stop: 56482, Start Num: 14

Candidate Starts for Syra333\_90:

(Start: 14 @55739 has 1 MA's), (18, 55745), (28, 55787), (58, 55856), (Start: 62 @55868 has 84 MA's), (69, 55895), (87, 55961), (90, 55970), (100, 56003), (107, 56018), (115, 56042), (141, 56141), (143, 56147), (145, 56168), (151, 56213), (171, 56276), (176, 56288), (187, 56318), (190, 56333), (194, 56363), (198, 56384), (199, 56387), (203, 56402), (213, 56453), (215, 56459), (217, 56465),

Gene: TBond007\_82 Start: 54432, Stop: 54899, Start Num: 91

Candidate Starts for TBond007\_82:

(Start: 91 @54432 has 6 MA's), (104, 54465), (110, 54480), (123, 54528), (149, 54654), (152, 54666), (162, 54684), (181, 54714), (187, 54732), (214, 54870), (216, 54879), (217, 54882),

Gene: TClif\_87 Start: 55031, Stop: 55636, Start Num: 65

Candidate Starts for TClif\_87:

(37, 54941), (Start: 65 @55031 has 1 MA's), (75, 55070), (Start: 91 @55124 has 6 MA's), (98, 55145), (107, 55172), (114, 55193), (125, 55241), (128, 55256), (140, 55274), (141, 55283), (151, 55358), (155, 55373), (157, 55379), (163, 55400), (167, 55412), (187, 55475), (194, 55520), (203, 55559), (213, 55610), (217, 55622),

Gene: Tachez\_87 Start: 55365, Stop: 55904, Start Num: 62

Candidate Starts for Tachez\_87:

(12, 55209), (Start: 62 @55365 has 84 MA's), (122, 55494), (131, 55536), (132, 55542), (140, 55557), (141, 55566), (143, 55572), (145, 55593), (149, 55632), (153, 55647), (155, 55653), (157, 55659), (167, 55692), (179, 55716), (187, 55743), (194, 55788), (203, 55827), (215, 55884), (217, 55890),

Gene: TaiwanKao\_88 Start: 55563, Stop: 56111, Start Num: 62

Candidate Starts for TaiwanKao\_88:

(16, 55410), (20, 55437), (Start: 62 @55563 has 84 MA's), (70, 55596), (114, 55671), (119, 55683), (122, 55701), (132, 55749), (140, 55764), (141, 55773), (143, 55779), (145, 55800), (146, 55812), (147, 55821), (149, 55839), (153, 55854), (155, 55860), (157, 55866), (167, 55899), (179, 55923), (187, 55950), (194, 55995), (203, 56034), (215, 56091), (217, 56097),

Gene: Thyatira\_82 Start: 55790, Stop: 56431, Start Num: 49

Candidate Starts for Thyatira\_82:

(Start: 49 @55790 has 9 MA's), (56, 55805), (59, 55811), (67, 55847), (72, 55862), (83, 55907), (140, 56084), (141, 56093), (148, 56150), (174, 56231), (193, 56309), (209, 56384), (211, 56396), (217, 56417),

Gene: Tierra\_94 Start: 57212, Stop: 57943, Start Num: 8

Candidate Starts for Tierra\_94:

(Start: 8 @57212 has 9 MA's), (35, 57320), (68, 57359), (76, 57386), (79, 57395), (103, 57473), (115, 57506), (122, 57533), (133, 57578), (151, 57674), (171, 57737), (176, 57749), (187, 57779), (190, 57794), (194, 57824), (203, 57863), (215, 57920), (217, 57926),

Gene: TingHuaYa\_91 Start: 56631, Stop: 57164, Start Num: 86

Candidate Starts for TingHuaYa\_91:

(Start: 62 @56598 has 84 MA's), (86, 56631), (114, 56706), (128, 56781), (132, 56796), (140, 56811), (141, 56820), (143, 56826), (145, 56847), (147, 56868), (149, 56886), (151, 56892), (152, 56898), (157, 56913), (163, 56934), (167, 56946), (193, 57042), (201, 57075), (208, 57111), (214, 57138),

Gene: TiniBug\_86 Start: 55892, Stop: 56437, Start Num: 62

Candidate Starts for TiniBug\_86:

(42, 55856), (Start: 62 @55892 has 84 MA's), (93, 55940), (119, 56006), (122, 56027), (128, 56060), (132, 56075), (140, 56090), (141, 56099), (143, 56105), (145, 56126), (146, 56138), (147, 56147), (149, 56165), (153, 56180), (157, 56192), (160, 56204), (167, 56225), (179, 56249), (187, 56276), (188, 56279), (194, 56321), (199, 56345), (203, 56360), (215, 56417), (217, 56423),

Gene: Tiri\_87 Start: 55187, Stop: 55798, Start Num: 62

Candidate Starts for Tiri\_87:

(4, 54917), (16, 55034), (20, 55061), (Start: 62 @55187 has 84 MA's), (86, 55283), (114, 55358), (119, 55370), (122, 55388), (132, 55436), (140, 55451), (141, 55460), (143, 55466), (145, 55487), (147, 55508), (149, 55526), (153, 55541), (155, 55547), (157, 55553), (160, 55565), (167, 55586), (179, 55610), (187, 55637), (194, 55682), (203, 55721), (215, 55778), (217, 55784),

Gene: Topper\_87 Start: 55520, Stop: 56059, Start Num: 62

Candidate Starts for Topper\_87:

(12, 55364), (Start: 62 @55520 has 84 MA's), (122, 55649), (131, 55691), (132, 55697), (140, 55712), (141, 55721), (143, 55727), (145, 55748), (149, 55787), (153, 55802), (155, 55808), (157, 55814), (167, 55847), (179, 55871), (187, 55898), (194, 55943), (203, 55982), (215, 56039), (217, 56045),

Gene: Torres\_70 Start: 53842, Stop: 54486, Start Num: 55

Candidate Starts for Torres\_70:

(Start: 52 @53836 has 2 MA's), (Start: 55 @53842 has 6 MA's), (Start: 64 @53869 has 4 MA's), (70, 53896), (74, 53908), (78, 53923), (85, 53947), (87, 53953), (95, 53977), (99, 53986), (124, 54076), (139, 54121), (140, 54124), (143, 54139), (147, 54181), (150, 54202), (151, 54205), (152, 54211), (153, 54214), (157, 54226), (159, 54235), (167, 54259), (170, 54280), (175, 54292), (177, 54295), (180, 54304), (188, 54325), (193, 54364), (194, 54367), (201, 54397), (203, 54406), (214, 54460),

Gene: TreyKay\_89 Start: 55920, Stop: 56471, Start Num: 62

Candidate Starts for TreyKay\_89:

(9, 55740), (12, 55764), (Start: 62 @55920 has 84 MA's), (86, 55953), (114, 56031), (119, 56043), (122, 56061), (132, 56109), (140, 56124), (141, 56133), (143, 56139), (145, 56160), (147, 56181), (149, 56199), (153, 56214), (155, 56220), (157, 56226), (167, 56259), (179, 56283), (187, 56310), (193, 56352), (194, 56355), (199, 56379), (203, 56394), (215, 56451), (217, 56457),

Gene: TribbleTrouble\_88 Start: 56688, Stop: 57158, Start Num: 92

Candidate Starts for TribbleTrouble\_88:

(Start: 92 @56688 has 2 MA's), (110, 56739), (111, 56742), (118, 56766), (119, 56769), (126, 56811), (129, 56820), (130, 56823), (134, 56829), (143, 56856), (145, 56877), (149, 56916), (152, 56928), (181, 56976), (192, 57021), (195, 57042), (214, 57132), (216, 57141),

Gene: TruffulaTree\_89 Start: 55913, Stop: 56452, Start Num: 62

Candidate Starts for TruffulaTree\_89:

(Start: 62 @55913 has 84 MA's), (89, 55952), (122, 56042), (131, 56084), (132, 56090), (140, 56105), (141, 56114), (143, 56120), (145, 56141), (147, 56162), (149, 56180), (153, 56195), (155, 56201), (157, 56207), (167, 56240), (179, 56264), (187, 56291), (194, 56336), (203, 56375), (215, 56432), (217, 56438),

Gene: Twitch\_87 Start: 55522, Stop: 56061, Start Num: 62

Candidate Starts for Twitch\_87:

(12, 55366), (Start: 62 @55522 has 84 MA's), (122, 55651), (131, 55693), (132, 55699), (140, 55714), (141, 55723), (143, 55729), (145, 55750), (149, 55789), (153, 55804), (155, 55810), (157, 55816), (167, 55849), (179, 55873), (187, 55900), (194, 55945), (203, 55984), (215, 56041), (217, 56047),

Gene: Unicorn\_94 Start: 56932, Stop: 57726, Start Num: 8

Candidate Starts for Unicorn\_94:

(Start: 8 @56932 has 9 MA's), (10, 56974), (35, 57082), (39, 57085), (61, 57112), (71, 57154), (77, 57175), (87, 57211), (90, 57220), (100, 57253), (115, 57292), (141, 57385), (143, 57391), (145, 57412), (151, 57457), (154, 57469), (171, 57520), (187, 57562), (190, 57577), (194, 57607), (203, 57646), (215, 57703), (217, 57709),

Gene: Urkel\_87 Start: 55782, Stop: 56321, Start Num: 62

Candidate Starts for Urkel\_87:

(Start: 62 @55782 has 84 MA's), (93, 55830), (122, 55911), (132, 55959), (140, 55974), (141, 55983), (143, 55989), (145, 56010), (146, 56022), (147, 56031), (149, 56049), (153, 56064), (157, 56076), (160, 56088), (167, 56109), (182, 56142), (187, 56160), (188, 56163), (194, 56205), (199, 56229), (203, 56244), (215, 56301), (217, 56307),

Gene: Validus\_93 Start: 57272, Stop: 57934, Start Num: 26

Candidate Starts for Validus\_93:

(Start: 26 @57272 has 1 MA's), (Start: 27 @57275 has 3 MA's), (32, 57302), (51, 57365), (54, 57371), (78, 57410), (86, 57419), (108, 57464), (114, 57482), (115, 57485), (117, 57491), (122, 57512), (132, 57557), (140, 57572), (143, 57587), (145, 57608), (147, 57629), (152, 57659), (158, 57683), (163, 57695), (167, 57707), (175, 57731), (191, 57788), (193, 57812), (201, 57845), (202, 57851), (208, 57881), (214, 57908), (217, 57920),

Gene: Veliki\_88 Start: 55491, Stop: 56030, Start Num: 62

Candidate Starts for Veliki\_88:

(12, 55335), (Start: 62 @55491 has 84 MA's), (122, 55620), (131, 55662), (132, 55668), (140, 55683), (141, 55692), (143, 55698), (145, 55719), (149, 55758), (153, 55773), (155, 55779), (157, 55785), (160, 55797), (167, 55818), (187, 55869), (194, 55914), (203, 55953), (215, 56010), (217, 56016),

Gene: Waterfoul\_81 Start: 53860, Stop: 54501, Start Num: 49

Candidate Starts for Waterfoul\_81:

(Start: 49 @53860 has 9 MA's), (56, 53875), (59, 53881), (67, 53917), (72, 53932), (83, 53977), (140, 54154), (174, 54301), (194, 54382), (201, 54412), (209, 54454), (216, 54484), (217, 54487),

Gene: Ximenita\_93 Start: 56440, Stop: 57225, Start Num: 8

Candidate Starts for Ximenita\_93:

(Start: 8 @56440 has 9 MA's), (22, 56521), (Start: 27 @56536 has 3 MA's), (28, 56539), (69, 56647), (87, 56713), (90, 56722), (100, 56755), (107, 56770), (115, 56794), (125, 56839), (141, 56887), (143, 56893), (145, 56914), (151, 56959), (171, 57022), (176, 57034), (187, 57064), (190, 57079), (194, 57109), (198, 57130), (199, 57133), (203, 57148), (215, 57205), (217, 57211),

Gene: YoureAdopted\_86 Start: 55308, Stop: 55856, Start Num: 62

Candidate Starts for YoureAdopted\_86:

(Start: 62 @55308 has 84 MA's), (86, 55341), (114, 55416), (119, 55428), (122, 55446), (132, 55494), (140, 55509), (141, 55518), (143, 55524), (145, 55545), (147, 55566), (149, 55584), (153, 55599), (155, 55605), (157, 55611), (167, 55644), (179, 55668), (187, 55695), (194, 55740), (203, 55779), (215, 55836), (217, 55842),

Gene: Yuna\_90 Start: 57455, Stop: 58021, Start Num: 81

Candidate Starts for Yuna\_90:

(Start: 81 @57455 has 2 MA's), (87, 57473), (124, 57587), (133, 57623), (143, 57650), (147, 57692), (151, 57716), (157, 57737), (161, 57752), (164, 57761), (172, 57800), (174, 57806), (185, 57839), (194, 57902), (198, 57923), (199, 57926), (201, 57932), (203, 57941), (208, 57968), (210, 57983), (214, 57995), (217, 58007),

Gene: Yunkel11\_92 Start: 56143, Stop: 56694, Start Num: 62

Candidate Starts for Yunkel11\_92:

(Start: 62 @56143 has 84 MA's), (86, 56176), (112, 56245), (119, 56263), (131, 56323), (132, 56329), (140, 56344), (143, 56359), (145, 56380), (147, 56401), (149, 56419), (151, 56425), (152, 56431), (158, 56455), (167, 56479), (179, 56503), (193, 56572), (202, 56611), (208, 56641), (214, 56668), (217, 56680),

Gene: Zabiza\_83 Start: 51864, Stop: 52403, Start Num: 62

Candidate Starts for Zabiza\_83:

(12, 51708), (Start: 62 @51864 has 84 MA's), (122, 51993), (131, 52035), (132, 52041), (140, 52056), (141, 52065), (143, 52071), (145, 52092), (149, 52131), (153, 52146), (155, 52152), (157, 52158), (160, 52170), (167, 52191), (187, 52242), (194, 52287), (203, 52326), (215, 52383), (217, 52389),

Gene: Zavala\_89 Start: 55773, Stop: 56321, Start Num: 62

Candidate Starts for Zavala\_89:

(Start: 62 @55773 has 84 MA's), (86, 55806), (114, 55881), (119, 55893), (122, 55911), (132, 55959), (140, 55974), (141, 55983), (143, 55989), (145, 56010), (147, 56031), (149, 56049), (153, 56064), (155, 56070), (157, 56076), (167, 56109), (179, 56133), (187, 56160), (194, 56205), (203, 56244), (215, 56301), (217, 56307),