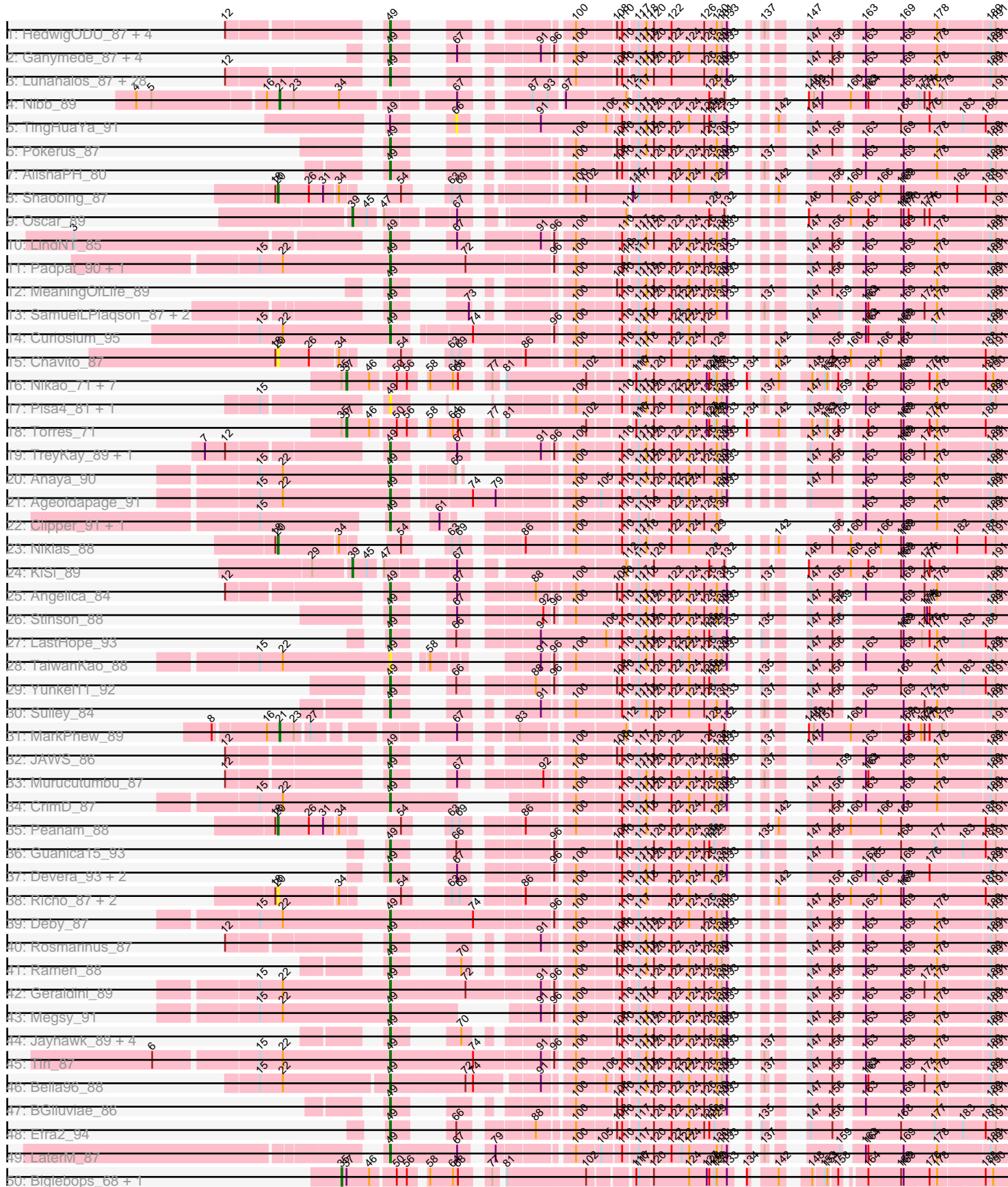


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Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. 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 296293 Report

This analysis was run 04/25/26 on database version 644.

Pham number 296293 has 167 members, 17 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, CallaLilly\_87, Spock\_87, Capricorn\_87, Llorens\_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, CREW\_86, Atiba\_88, BaghaKamala\_86, Joy99\_88, Boiii\_87, Belladonna\_87, Blizzard\_87, Inky\_87, Asayake\_87
- Track 4 : Nibb\_89
- Track 5 : TingHuaYa\_91
- Track 6 : Pokerus\_87
- Track 7 : AlishaPH\_80
- Track 8 : Shaobing\_87
- Track 9 : Oscar\_89
- Track 10 : LindNT\_85
- Track 11 : Padpat\_90, Emerson\_89
- Track 12 : MeaningOfLife\_89
- Track 13 : SamuelLPlaqson\_87, DrHayes\_87, Urkel\_87
- Track 14 : Curiosium\_95
- Track 15 : Chavito\_87
- Track 16 : Nikao\_71, SgtBeansprout\_69, Nutello\_68, Teejan\_70, Enkosi\_70, Amelie\_68, Trice\_68, Mdavu\_69
- Track 17 : Pisa4\_81, Pisa1\_87
- Track 18 : Torres\_71
- Track 19 : TreyKay\_89, Prithvi\_89
- Track 20 : Anaya\_90
- Track 21 : Ageofdapage\_91
- Track 22 : Clipper\_91, MackKat\_83
- Track 23 : Niklas\_88
- Track 24 : KiSi\_89
- Track 25 : Angelica\_84
- Track 26 : Stinson\_88
- Track 27 : LastHope\_93
- Track 28 : TaiwanKao\_88
- Track 29 : Yunkel11\_92
- Track 30 : Sulley\_84
- Track 31 : MarkPhew\_89

- Track 32 : JAWS\_86
- Track 33 : Murucutumbu\_87
- Track 34 : CrimD\_87
- Track 35 : Peanam\_88
- Track 36 : Guanica15\_93
- Track 37 : Devera\_93, Illumine\_91, Dole\_90
- Track 38 : Richo\_87, McMater\_87, Dartin\_87
- Track 39 : Deby\_87
- Track 40 : Rosmarinus\_87
- Track 41 : Ramen\_88
- Track 42 : Geraldini\_89
- Track 43 : Megsy\_91
- Track 44 : Jayhawk\_89, Rapunzel97\_89, BarrelRoll\_87, TruffulaTree\_89, Slimphazie\_89
- Track 45 : Tiri\_87
- Track 46 : Bella96\_88
- Track 47 : BGlluviae\_86
- Track 48 : Efra2\_94
- Track 49 : LaterM\_87
- Track 50 : Biglebops\_68, LilPharaoh\_69
- Track 51 : DartGoblin\_89
- Track 52 : Validus\_93
- Track 53 : Apocalypse\_89
- Track 54 : LeMond\_88
- Track 55 : TiniBug\_86
- Track 56 : Mynx\_88
- Track 57 : Adonis\_87
- Track 58 : Scarlett\_88
- Track 59 : Bern\_88
- Track 60 : Anma\_87
- Track 61 : CheetoDust\_87
- Track 62 : TribbleTrouble\_88
- Track 63 : Pharb\_86
- Track 64 : MacnCheese\_87
- Track 65 : Hurricane\_86, Keshu\_88
- Track 66 : Pixie\_85, TBond007\_82, ShedlockHolmes\_88, Lea83\_86
- Track 67 : Paola\_81, Guillsminger\_82
- Track 68 : InvictusManeo\_77, Agent47\_79
- Track 69 : Dadosky\_80, Psycho\_78, Neighly\_80, Larva\_79
- Track 70 : BananenDer11\_76, ViviJ\_85, DoubleChamp\_76, SoSeph\_79, LilDirt\_76, Collard\_77, Heftyboy\_79
- Track 71 : Thyatira\_82
- Track 72 : Feyre\_82
- Track 73 : AlleyCat\_80
- Track 74 : Omnicron\_84, Rando14\_81
- Track 75 : Edugator\_76
- Track 76 : Leston\_81
- Track 77 : Miryou\_83
- Track 78 : OkiRoe\_82
- Track 79 : Gengar\_81
- Track 80 : Waterfoul\_81
- Track 81 : Amohnition\_84, DARTH\_P\_84
- Track 82 : Yuna\_90

- Track 83 : Marshawn\_85
- Track 84 : Ellie\_85, Applecrisp\_84
- Track 85 : Lavahound\_86
- Track 86 : Hammy\_84
- Track 87 : Fefferhead\_87
- Track 88 : November\_83
- Track 89 : Ekdilam\_80
- Track 90 : Amgine\_86
- Track 91 : SirPhilip\_87

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

The start number called the most often in the published annotations is 49, it was called in 88 of the 150 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, Bern\_88, Blizzard\_87, Boiiii\_87, CREW\_86, CallaLilly\_87, Capricorn\_87, CaseJules\_89, CheetoDust\_87, Clipper\_91, CrimD\_87, Curiosium\_95, Dalmuri\_87, DartGoblin\_89, 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, MacKat\_83, MeaningOfLife\_89, Megsy\_91, Murucutumbu\_87, Mynx\_88, Padfoot\_87, Padpat\_90, Peel\_87, Piatt\_86, Pisa1\_87, Pisa4\_81, 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:

- Anma\_87, TingHuaYa\_91,

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

- Agent47\_79, AlleyCat\_80, Amelie\_68, Amgine\_86, Amohnition\_84, Applecrisp\_84, BananenDer11\_76, Biglebops\_68, Chavito\_87, Collard\_77, Dadosky\_80, DARTH\_P\_84, Dartin\_87, DoubleChamp\_76, 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, Larva\_79, Lavahound\_86, LeMond\_88, Lea83\_86, Leston\_81, LilDirt\_76, LilPharaoh\_69, MacnCheese\_87, MarkPhew\_89, Marshawn\_85, McMater\_87, Mdavu\_69, Miryou\_83, Neighly\_80, Nibb\_89, Nikao\_71, Niklas\_88, November\_83, Nutello\_68, OkiRoe\_82, Omnicron\_84, Oscar\_89, Paola\_81, Peanam\_88, Pharb\_86, Pixie\_85, Psycho\_78, Rando14\_81, Richo\_87, Scarlett\_88, SgtBeansprout\_69, Shaobing\_87, ShedlockHolmes\_88, SirPhilip\_87, SoSeph\_79, TBond007\_82, Teejan\_70, Thyatira\_82, Torres\_71, TribbleTrouble\_88, Trice\_68, Validus\_93, ViviJ\_85, Waterfoul\_81, Yuna\_90,

## Summary by start number:

### Start 18:

- Found in 8 of 167 ( 4.8% ) of genes in pham
- Manual Annotations of this start: 1 of 150
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Validus\_93 (K1),

### Start 20:

- Found in 8 of 167 ( 4.8% ) of genes in pham
- Manual Annotations of this start: 3 of 150
- Called 87.5% of time when present
- Phage (with cluster) where this start called: Chavito\_87 (K1), Dartin\_87 (K1), McMater\_87 (K1), Niklas\_88 (K1), Peanam\_88 (K1), Richo\_87 (K1), Shaobing\_87 (K1),

### Start 21:

- Found in 2 of 167 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 2 of 150
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MarkPhew\_89 (K1), Nibb\_89 (K1),

### Start 34:

- Found in 13 of 167 ( 7.8% ) of genes in pham
- Manual Annotations of this start: 4 of 150
- Called 38.5% of time when present
- Phage (with cluster) where this start called: Amgine\_86 (K6), Applecrisp\_84 (K6), Ellie\_85 (K6), Fefferhead\_87 (K6), Lavahound\_86 (K6),

### Start 35:

- Found in 17 of 167 ( 10.2% ) of genes in pham
- Manual Annotations of this start: 3 of 150
- Called 17.6% of time when present
- Phage (with cluster) where this start called: Biglebops\_68 (K1), Edugator\_76 (K5), LilPharaoh\_69 (K1),

### Start 36:

- Found in 17 of 167 ( 10.2% ) of genes in pham
- Manual Annotations of this start: 12 of 150
- Called 94.1% of time when present
- Phage (with cluster) where this start called: Agent47\_79 (K5), AlleyCat\_80 (K5), BananenDer11\_76 (K5), Collard\_77 (K5), Dadosky\_80 (K5), DoubleChamp\_76 (K5), Heftyboy\_79 (K5), InvictusManeo\_77 (K5), Larva\_79 (K5), LilDirt\_76 (K5), Neighly\_80 (K3), Omnicron\_84 (K5), Psycho\_78 (K5), Rando14\_81 (K5), SoSeph\_79 (K5), ViviJ\_85 (K5),

### Start 37:

- Found in 20 of 167 ( 12.0% ) of genes in pham
- Manual Annotations of this start: 16 of 150
- Called 90.0% of time when present
- Phage (with cluster) where this start called: Amelie\_68 (K1), Enkosi\_70 (K1), Feyre\_82 (K5), Gengar\_81 (K5), Guillsminger\_82 (K5), Leston\_81 (K5), Mdavu\_69 (K1), Miryou\_83 (K5), Nikao\_71 (K1), Nutello\_68 (K1), OkiRoe\_82 (K5), Paola\_81

(K5), SgtBeansprout\_69 (K1), Teejan\_70 (K1), Thyatira\_82 (K5), Torres\_71 (K1), Trice\_68 (K1), Waterfoul\_81 (K5),

Start 38:

- Found in 1 of 167 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 150
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Marshawn\_85 (K6),

Start 39:

- Found in 4 of 167 ( 2.4% ) of genes in pham
- Manual Annotations of this start: 4 of 150
- 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 41:

- Found in 4 of 167 ( 2.4% ) of genes in pham
- Manual Annotations of this start: 4 of 150
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amohnition\_84 (K6), DARTH\_84 (K6), Ekdilam\_80 (K6), Hammy\_84 (K6),

Start 49:

- Found in 94 of 167 ( 56.3% ) of genes in pham
- Manual Annotations of this start: 88 of 150
- Called 97.9% 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), BGlluviae\_86 (K1), BaghaKamala\_86 (K1), BarrelRoll\_87 (K1), Beezoo\_90 (K1), Bella96\_88 (K1), Belladonna\_87 (K1), Bern\_88 (K1), Blizzard\_87 (K1), Boiii\_87 (K1), CREW\_86 (K1), CallaLilly\_87 (K1), Capricorn\_87 (K1), CaseJules\_89 (K1), CheetoDust\_87 (K1), Clipper\_91 (K1), CrimD\_87 (K1), Curiosium\_95 (K1), Dalmuri\_87 (K1), DartGoblin\_89 (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), MacKat\_83 (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), Pisa1\_87 (K1), Pisa4\_81 (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 58:

- Found in 17 of 167 ( 10.2% ) of genes in pham
- Manual Annotations of this start: 1 of 150

- Called 5.9% of time when present
- Phage (with cluster) where this start called: November\_83 (K6),

Start 60:

- Found in 1 of 167 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 150
- Called 100.0% of time when present
- Phage (with cluster) where this start called: SirPhilip\_87 (K6),

Start 62:

- Found in 2 of 167 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 150
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Yuna\_90 (K6),

Start 66:

- Found in 5 of 167 ( 3.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 20.0% of time when present
- Phage (with cluster) where this start called: TingHuaYa\_91 (K1),

Start 73:

- Found in 6 of 167 ( 3.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Anma\_87 (K1),

Start 78:

- Found in 7 of 167 ( 4.2% ) of genes in pham
- Manual Annotations of this start: 7 of 150
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hurricane\_86 (K3), Keshu\_88 (K3), Lea83\_86 (K3), MacnCheese\_87 (K3), Pixie\_85 (K3), ShedlockHolmes\_88 (K3), TBond007\_82 (K3),

Start 80:

- Found in 2 of 167 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 2 of 150
- 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 18 was manually annotated 1 time for cluster K1.
- Start number 20 was manually annotated 3 times for cluster K1.
- Start number 21 was manually annotated 2 times for cluster K1.
- Start number 35 was manually annotated 2 times for cluster K1.
- Start number 37 was manually annotated 7 times for cluster K1.
- Start number 39 was manually annotated 4 times for cluster K1.
- Start number 49 was manually annotated 88 times for cluster K1.

Info for manual annotations of cluster K3:

- Start number 78 was manually annotated 7 times for cluster K3.
- Start number 80 was manually annotated 2 times for cluster K3.

Info for manual annotations of cluster K5:

- Start number 35 was manually annotated 1 time for cluster K5.
- Start number 36 was manually annotated 12 times for cluster K5.
- Start number 37 was manually annotated 9 times for cluster K5.

Info for manual annotations of cluster K6:

- Start number 34 was manually annotated 4 times for cluster K6.
- Start number 38 was manually annotated 1 time for cluster K6.
- Start number 41 was manually annotated 4 times for cluster K6.
- Start number 58 was manually annotated 1 time for cluster K6.
- Start number 60 was manually annotated 1 time for cluster K6.
- Start number 62 was manually annotated 1 time for cluster K6.

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

Gene: ActinUp\_88 Start: 55559, Stop: 56098, Start Num: 49

Candidate Starts for ActinUp\_88:

(12, 55403), (Start: 49 @55559 has 88 MA's), (100, 55688), (108, 55730), (110, 55736), (117, 55751), (118, 55760), (120, 55766), (122, 55787), (126, 55826), (130, 55841), (131, 55847), (133, 55853), (137, 55865), (147, 55886), (163, 55937), (169, 55982), (178, 56021), (189, 56078), (191, 56084),

Gene: Adephagia\_86 Start: 55402, Stop: 55941, Start Num: 49

Candidate Starts for Adephagia\_86:

(12, 55246), (Start: 49 @55402 has 88 MA's), (100, 55531), (108, 55573), (110, 55579), (117, 55594), (118, 55603), (120, 55609), (122, 55630), (126, 55669), (130, 55684), (131, 55690), (133, 55696), (137, 55708), (147, 55729), (163, 55780), (169, 55825), (178, 55864), (189, 55921), (191, 55927),

Gene: Adonis\_87 Start: 55591, Stop: 56139, Start Num: 49

Candidate Starts for Adonis\_87:

(12, 55435), (Start: 49 @55591 has 88 MA's), (67, 55624), (91, 55699), (96, 55711), (100, 55729), (110, 55777), (117, 55792), (118, 55801), (120, 55807), (122, 55828), (124, 55849), (126, 55867), (130, 55882), (131, 55888), (133, 55894), (147, 55927), (155, 55948), (156, 55951), (163, 55978), (169, 56023), (178, 56062), (189, 56119), (191, 56125),

Gene: Agent47\_79 Start: 51751, Stop: 52398, Start Num: 36

Candidate Starts for Agent47\_79:

(Start: 36 @51751 has 12 MA's), (44, 51769), (52, 51805), (69, 51865), (75, 51880), (79, 51898), (117, 52045), (121, 52066), (130, 52138), (133, 52150), (138, 52162), (143, 52171), (152, 52198), (169, 52279), (176, 52309), (184, 52351), (190, 52381),

Gene: Ageofdapage\_91 Start: 56356, Stop: 56949, Start Num: 49

Candidate Starts for Ageofdapage\_91:

(15, 56203), (22, 56230), (Start: 49 @56356 has 88 MA's), (74, 56434), (79, 56461), (100, 56539), (105, 56566), (110, 56587), (117, 56602), (120, 56617), (122, 56638), (123, 56650), (124, 56659), (130, 56692), (131, 56698), (133, 56704), (147, 56737), (163, 56788), (169, 56833), (178, 56872), (189, 56929), (191, 56935),

Gene: AlishaPH\_80 Start: 52788, Stop: 53327, Start Num: 49

Candidate Starts for AlishaPH\_80:

(Start: 49 @52788 has 88 MA's), (100, 52917), (108, 52959), (110, 52965), (117, 52980), (120, 52995), (122, 53016), (124, 53037), (126, 53055), (130, 53070), (131, 53076), (133, 53082), (137, 53094), (147, 53115), (163, 53166), (169, 53211), (178, 53250), (189, 53307), (191, 53313),

Gene: AlleyCat\_80 Start: 52608, Stop: 53252, Start Num: 36

Candidate Starts for AlleyCat\_80:

(Start: 35 @52605 has 3 MA's), (Start: 36 @52608 has 12 MA's), (44, 52626), (69, 52722), (75, 52737), (79, 52755), (103, 52851), (119, 52914), (133, 53004), (152, 53052), (161, 53076), (162, 53079), (169, 53133), (173, 53154), (176, 53163), (190, 53235),

Gene: Amelie\_68 Start: 51228, Stop: 51872, Start Num: 37

Candidate Starts for Amelie\_68:

(Start: 35 @51222 has 3 MA's), (Start: 37 @51228 has 16 MA's), (46, 51255), (50, 51282), (56, 51294), (Start: 58 @51309 has 1 MA's), (64, 51333), (68, 51339), (77, 51363), (81, 51372), (102, 51462), (116, 51507), (117, 51510), (120, 51525), (124, 51567), (127, 51588), (128, 51591), (129, 51597), (130, 51600), (133, 51612), (134, 51621), (142, 51645), (148, 51666), (153, 51678), (154, 51681), (158, 51690), (164, 51711), (168, 51750), (169, 51753), (176, 51783), (178, 51792), (188, 51846), (190, 51855),

Gene: Amgine\_86 Start: 56691, Stop: 57377, Start Num: 34

Candidate Starts for Amgine\_86:

(30, 56667), (Start: 34 @56691 has 4 MA's), (59, 56763), (61, 56769), (85, 56838), (93, 56868), (102, 56904), (111, 56940), (124, 57009), (128, 57033), (133, 57054), (141, 57108), (160, 57201), (168, 57258), (169, 57261), (173, 57282), (174, 57285), (176, 57291), (178, 57300), (189, 57357), (191, 57363),

Gene: Amohnition\_84 Start: 55743, Stop: 56357, Start Num: 41

Candidate Starts for Amohnition\_84:

(Start: 41 @55743 has 4 MA's), (Start: 58 @55800 has 1 MA's), (76, 55848), (82, 55857), (99, 55917), (116, 55980), (120, 55998), (122, 56019), (124, 56040), (129, 56070), (132, 56082), (142, 56118), (150, 56148), (166, 56211), (169, 56238), (176, 56268), (180, 56286), (186, 56322), (188, 56331), (191, 56343),

Gene: Anaya\_90 Start: 56620, Stop: 57162, Start Num: 49

Candidate Starts for Anaya\_90:

(15, 56467), (22, 56494), (Start: 49 @56620 has 88 MA's), (65, 56680), (100, 56752), (110, 56800), (117, 56815), (118, 56824), (120, 56830), (122, 56851), (124, 56872), (126, 56890), (130, 56905), (131, 56911), (133, 56917), (147, 56950), (156, 56974), (163, 57001), (169, 57046), (178, 57085), (189, 57142), (191, 57148),

Gene: Angelica\_84 Start: 54828, Stop: 55379, Start Num: 49

Candidate Starts for Angelica\_84:

(12, 54672), (Start: 49 @54828 has 88 MA's), (67, 54861), (88, 54930), (100, 54969), (108, 55011), (110, 55017), (117, 55032), (118, 55041), (122, 55068), (124, 55089), (126, 55107), (130, 55122), (133, 55134), (137, 55146), (147, 55167), (156, 55191), (163, 55218), (169, 55263), (174, 55287), (178, 55302), (189, 55359), (191, 55365),

Gene: Anma\_87 Start: 55830, Stop: 56321, Start Num: 73

Candidate Starts for Anma\_87:

(Start: 49 @55782 has 88 MA's), (73, 55830), (100, 55911), (110, 55959), (117, 55974), (118, 55983), (120, 55989), (122, 56010), (123, 56022), (124, 56031), (126, 56049), (130, 56064), (133, 56076), (137, 56088), (147, 56109), (159, 56142), (163, 56160), (164, 56163), (169, 56205), (174, 56229), (178, 56244), (189, 56301), (191, 56307),

Gene: Apocalypse\_89 Start: 55750, Stop: 56301, Start Num: 49

Candidate Starts for Apocalypse\_89:

(Start: 49 @55750 has 88 MA's), (61, 55783), (100, 55891), (108, 55933), (110, 55939), (117, 55954), (120, 55969), (124, 56011), (126, 56029), (130, 56044), (133, 56056), (137, 56068), (147, 56089), (163, 56140), (169, 56185), (174, 56209), (178, 56224), (189, 56281), (191, 56287),

Gene: Applecrisp\_84 Start: 55868, Stop: 56557, Start Num: 34

Candidate Starts for Applecrisp\_84:

(30, 55844), (Start: 34 @55868 has 4 MA's), (59, 55943), (85, 56018), (93, 56048), (111, 56120), (124, 56189), (128, 56213), (141, 56288), (160, 56381), (169, 56441), (173, 56462), (174, 56465), (176, 56471), (178, 56480), (189, 56537), (191, 56543),

Gene: Asayake\_87 Start: 55717, Stop: 56256, Start Num: 49

Candidate Starts for Asayake\_87:

(12, 55561), (Start: 49 @55717 has 88 MA's), (100, 55846), (108, 55888), (110, 55894), (117, 55909), (118, 55918), (120, 55924), (122, 55945), (126, 55984), (130, 55999), (131, 56005), (133, 56011), (147, 56044), (156, 56068), (163, 56095), (169, 56140), (178, 56179), (189, 56236), (191, 56242),

Gene: Atiba\_88 Start: 55365, Stop: 55904, Start Num: 49

Candidate Starts for Atiba\_88:

(12, 55209), (Start: 49 @55365 has 88 MA's), (100, 55494), (108, 55536), (110, 55542), (117, 55557), (118, 55566), (120, 55572), (122, 55593), (126, 55632), (130, 55647), (131, 55653), (133, 55659), (147, 55692), (156, 55716), (163, 55743), (169, 55788), (178, 55827), (189, 55884), (191, 55890),

Gene: BEEST\_87 Start: 55717, Stop: 56256, Start Num: 49

Candidate Starts for BEEST\_87:

(12, 55561), (Start: 49 @55717 has 88 MA's), (100, 55846), (108, 55888), (110, 55894), (117, 55909), (118, 55918), (120, 55924), (122, 55945), (126, 55984), (130, 55999), (131, 56005), (133, 56011), (147, 56044), (156, 56068), (163, 56095), (169, 56140), (178, 56179), (189, 56236), (191, 56242),

Gene: BGlluviae\_86 Start: 55097, Stop: 55636, Start Num: 49

Candidate Starts for BGlluviae\_86:

(Start: 49 @55097 has 88 MA's), (100, 55226), (108, 55268), (110, 55274), (117, 55289), (120, 55304), (122, 55325), (124, 55346), (126, 55364), (130, 55379), (131, 55385), (133, 55391), (147, 55424), (156, 55448), (163, 55475), (169, 55520), (178, 55559), (189, 55616), (191, 55622),

Gene: BaghaKamala\_86 Start: 54945, Stop: 55484, Start Num: 49

Candidate Starts for BaghaKamala\_86:

(12, 54789), (Start: 49 @54945 has 88 MA's), (100, 55074), (108, 55116), (110, 55122), (117, 55137), (118, 55146), (120, 55152), (122, 55173), (126, 55212), (130, 55227), (131, 55233), (133, 55239), (147, 55272), (156, 55296), (163, 55323), (169, 55368), (178, 55407), (189, 55464), (191, 55470),

Gene: BananenDer11\_76 Start: 51715, Stop: 52362, Start Num: 36

Candidate Starts for BananenDer11\_76:

(Start: 36 @51715 has 12 MA's), (44, 51733), (52, 51769), (69, 51829), (75, 51844), (98, 51931), (117, 52009), (132, 52111), (133, 52114), (170, 52249), (176, 52273), (184, 52315), (190, 52345),

Gene: BarrelRoll\_87 Start: 55476, Stop: 56015, Start Num: 49

Candidate Starts for BarrelRoll\_87:

(Start: 49 @55476 has 88 MA's), (70, 55515), (100, 55605), (108, 55647), (110, 55653), (117, 55668), (118, 55677), (120, 55683), (122, 55704), (124, 55725), (126, 55743), (130, 55758), (131, 55764), (133, 55770), (147, 55803), (156, 55827), (163, 55854), (169, 55899), (178, 55938), (189, 55995), (191, 56001),

Gene: Beezoo\_90 Start: 56297, Stop: 56845, Start Num: 49

Candidate Starts for Beezoo\_90:

(Start: 49 @56297 has 88 MA's), (67, 56330), (91, 56405), (96, 56417), (100, 56435), (110, 56483), (117, 56498), (118, 56507), (120, 56513), (122, 56534), (124, 56555), (126, 56573), (130, 56588), (131, 56594), (133, 56600), (147, 56633), (156, 56657), (163, 56684), (169, 56729), (178, 56768), (189, 56825), (191, 56831),

Gene: Bella96\_88 Start: 55904, Stop: 56509, Start Num: 49

Candidate Starts for Bella96\_88:

(15, 55757), (22, 55784), (Start: 49 @55904 has 88 MA's), (72, 55991), (74, 56000), (91, 56069), (100, 56099), (106, 56132), (110, 56147), (117, 56162), (118, 56171), (120, 56177), (122, 56198), (123, 56210), (124, 56219), (126, 56237), (130, 56252), (131, 56258), (133, 56264), (137, 56276), (147, 56297), (156, 56321), (163, 56348), (164, 56351), (169, 56393), (174, 56417), (178, 56432), (189, 56489), (191, 56495),

Gene: Belladonna\_87 Start: 55520, Stop: 56059, Start Num: 49

Candidate Starts for Belladonna\_87:

(12, 55364), (Start: 49 @55520 has 88 MA's), (100, 55649), (108, 55691), (110, 55697), (117, 55712), (118, 55721), (120, 55727), (122, 55748), (126, 55787), (130, 55802), (131, 55808), (133, 55814), (147, 55847), (156, 55871), (163, 55898), (169, 55943), (178, 55982), (189, 56039), (191, 56045),

Gene: Bern\_88 Start: 54011, Stop: 54514, Start Num: 49

Candidate Starts for Bern\_88:

(15, 53894), (Start: 49 @54011 has 88 MA's), (100, 54104), (110, 54152), (117, 54167), (118, 54176), (120, 54182), (122, 54203), (123, 54215), (124, 54224), (126, 54242), (130, 54257), (131, 54263), (133, 54269), (137, 54281), (147, 54302), (163, 54353), (169, 54398), (174, 54422), (178, 54437), (189, 54494), (191, 54500),

Gene: Biglebops\_68 Start: 51237, Stop: 51887, Start Num: 35

Candidate Starts for Biglebops\_68:

(Start: 35 @51237 has 3 MA's), (Start: 37 @51243 has 16 MA's), (46, 51270), (50, 51297), (56, 51309), (Start: 58 @51324 has 1 MA's), (64, 51348), (68, 51354), (77, 51378), (81, 51387), (102, 51477), (116, 51522), (117, 51525), (120, 51540), (124, 51582), (127, 51603), (128, 51606), (129, 51612), (130, 51615), (133, 51627), (134, 51636), (142, 51660), (148, 51681), (153, 51693), (154, 51696), (158, 51705), (164, 51726), (168, 51765), (169, 51768), (176, 51798), (178, 51807), (188, 51861), (190, 51870),

Gene: Blizzard\_87 Start: 55717, Stop: 56256, Start Num: 49

Candidate Starts for Blizzard\_87:

(12, 55561), (Start: 49 @55717 has 88 MA's), (100, 55846), (108, 55888), (110, 55894), (117, 55909), (118, 55918), (120, 55924), (122, 55945), (126, 55984), (130, 55999), (131, 56005), (133, 56011), (147, 56044), (156, 56068), (163, 56095), (169, 56140), (178, 56179), (189, 56236), (191, 56242),

Gene: Boiiii\_87 Start: 55719, Stop: 56258, Start Num: 49

Candidate Starts for Boiiii\_87:

(12, 55563), (Start: 49 @55719 has 88 MA's), (100, 55848), (108, 55890), (110, 55896), (117, 55911), (118, 55920), (120, 55926), (122, 55947), (126, 55986), (130, 56001), (131, 56007), (133, 56013),

(147, 56046), (156, 56070), (163, 56097), (169, 56142), (178, 56181), (189, 56238), (191, 56244),

Gene: CREW\_86 Start: 55520, Stop: 56059, Start Num: 49

Candidate Starts for CREW\_86:

(12, 55364), (Start: 49 @55520 has 88 MA's), (100, 55649), (108, 55691), (110, 55697), (117, 55712), (118, 55721), (120, 55727), (122, 55748), (126, 55787), (130, 55802), (131, 55808), (133, 55814), (147, 55847), (156, 55871), (163, 55898), (169, 55943), (178, 55982), (189, 56039), (191, 56045),

Gene: CallaLilly\_87 Start: 55443, Stop: 55982, Start Num: 49

Candidate Starts for CallaLilly\_87:

(12, 55287), (Start: 49 @55443 has 88 MA's), (100, 55572), (108, 55614), (110, 55620), (117, 55635), (118, 55644), (120, 55650), (122, 55671), (126, 55710), (130, 55725), (131, 55731), (133, 55737), (147, 55770), (156, 55794), (163, 55821), (169, 55866), (178, 55905), (189, 55962), (191, 55968),

Gene: Capricorn\_87 Start: 55520, Stop: 56059, Start Num: 49

Candidate Starts for Capricorn\_87:

(12, 55364), (Start: 49 @55520 has 88 MA's), (100, 55649), (108, 55691), (110, 55697), (117, 55712), (118, 55721), (120, 55727), (122, 55748), (126, 55787), (130, 55802), (131, 55808), (133, 55814), (147, 55847), (156, 55871), (163, 55898), (169, 55943), (178, 55982), (189, 56039), (191, 56045),

Gene: CaseJules\_89 Start: 55717, Stop: 56256, Start Num: 49

Candidate Starts for CaseJules\_89:

(12, 55561), (Start: 49 @55717 has 88 MA's), (100, 55846), (108, 55888), (110, 55894), (117, 55909), (118, 55918), (120, 55924), (122, 55945), (126, 55984), (130, 55999), (131, 56005), (133, 56011), (147, 56044), (156, 56068), (163, 56095), (169, 56140), (178, 56179), (189, 56236), (191, 56242),

Gene: Chavito\_87 Start: 56767, Stop: 57426, Start Num: 20

Candidate Starts for Chavito\_87:

(Start: 18 @56764 has 1 MA's), (Start: 20 @56767 has 3 MA's), (26, 56803), (Start: 34 @56833 has 4 MA's), (54, 56866), (63, 56887), (69, 56896), (86, 56953), (100, 57001), (110, 57049), (117, 57064), (118, 57073), (122, 57100), (124, 57121), (129, 57151), (142, 57187), (156, 57223), (160, 57244), (166, 57280), (168, 57304), (188, 57400), (191, 57412),

Gene: CheetoDust\_87 Start: 54906, Stop: 55457, Start Num: 49

Candidate Starts for CheetoDust\_87:

(12, 54750), (Start: 49 @54906 has 88 MA's), (100, 55047), (108, 55089), (110, 55095), (117, 55110), (118, 55119), (120, 55125), (122, 55146), (124, 55167), (126, 55185), (130, 55200), (133, 55212), (137, 55224), (147, 55245), (156, 55269), (163, 55296), (169, 55341), (174, 55365), (178, 55380), (189, 55437), (191, 55443),

Gene: Clipper\_91 Start: 56263, Stop: 56739, Start Num: 49

Candidate Starts for Clipper\_91:

(15, 56143), (Start: 49 @56263 has 88 MA's), (61, 56296), (100, 56401), (110, 56449), (117, 56464), (119, 56476), (122, 56497), (124, 56518), (126, 56536), (130, 56551), (163, 56578), (169, 56623), (178, 56662), (189, 56719), (191, 56725),

Gene: Collard\_77 Start: 51715, Stop: 52362, Start Num: 36

Candidate Starts for Collard\_77:

(Start: 36 @51715 has 12 MA's), (44, 51733), (52, 51769), (69, 51829), (75, 51844), (98, 51931), (117, 52009), (132, 52111), (133, 52114), (170, 52249), (176, 52273), (184, 52315), (190, 52345),

Gene: CrimD\_87 Start: 55556, Stop: 56107, Start Num: 49

Candidate Starts for CrimD\_87:

(15, 55403), (22, 55430), (Start: 49 @55556 has 88 MA's), (100, 55697), (110, 55745), (117, 55760), (118, 55769), (120, 55775), (122, 55796), (124, 55817), (126, 55835), (130, 55850), (131, 55856), (133, 55862), (147, 55895), (156, 55919), (163, 55946), (169, 55991), (178, 56030), (189, 56087), (191, 56093),

Gene: Curiosium\_95 Start: 56915, Stop: 57508, Start Num: 49

Candidate Starts for Curiosium\_95:

(15, 56762), (22, 56789), (Start: 49 @56915 has 88 MA's), (74, 56993), (96, 57080), (100, 57098), (110, 57146), (117, 57161), (118, 57170), (122, 57197), (123, 57209), (124, 57218), (126, 57236), (147, 57296), (163, 57347), (164, 57350), (168, 57389), (169, 57392), (177, 57428), (189, 57488), (191, 57494),

Gene: Dadosky\_80 Start: 52609, Stop: 53253, Start Num: 36

Candidate Starts for Dadosky\_80:

(Start: 35 @52606 has 3 MA's), (Start: 36 @52609 has 12 MA's), (44, 52627), (69, 52723), (75, 52738), (79, 52756), (103, 52852), (119, 52915), (133, 53005), (152, 53053), (161, 53077), (162, 53080), (169, 53134), (173, 53155), (176, 53164), (184, 53206), (190, 53236),

Gene: Dalmuri\_87 Start: 55520, Stop: 56059, Start Num: 49

Candidate Starts for Dalmuri\_87:

(12, 55364), (Start: 49 @55520 has 88 MA's), (100, 55649), (108, 55691), (110, 55697), (117, 55712), (118, 55721), (120, 55727), (122, 55748), (126, 55787), (130, 55802), (131, 55808), (133, 55814), (147, 55847), (156, 55871), (163, 55898), (169, 55943), (178, 55982), (189, 56039), (191, 56045),

Gene: DartGoblin\_89 Start: 55630, Stop: 56169, Start Num: 49

Candidate Starts for DartGoblin\_89:

(10, 55477), (48, 55627), (Start: 49 @55630 has 88 MA's), (100, 55759), (110, 55807), (117, 55822), (118, 55831), (120, 55837), (122, 55858), (123, 55870), (124, 55879), (126, 55897), (130, 55912), (131, 55918), (133, 55924), (137, 55936), (147, 55957), (156, 55981), (163, 56008), (169, 56053), (174, 56077), (178, 56092), (189, 56149), (191, 56155),

Gene: DarthP\_84 Start: 55596, Stop: 56210, Start Num: 41

Candidate Starts for DarthP\_84:

(Start: 41 @55596 has 4 MA's), (Start: 58 @55653 has 1 MA's), (76, 55701), (82, 55710), (99, 55770), (116, 55833), (120, 55851), (122, 55872), (124, 55893), (129, 55923), (132, 55935), (142, 55971), (150, 56001), (166, 56064), (169, 56091), (176, 56121), (180, 56139), (186, 56175), (188, 56184), (191, 56196),

Gene: Dartin\_87 Start: 56409, Stop: 57068, Start Num: 20

Candidate Starts for Dartin\_87:

(Start: 18 @56406 has 1 MA's), (Start: 20 @56409 has 3 MA's), (Start: 34 @56475 has 4 MA's), (54, 56508), (63, 56529), (69, 56538), (86, 56595), (100, 56643), (110, 56691), (117, 56706), (118, 56715), (122, 56742), (124, 56763), (129, 56793), (142, 56829), (156, 56865), (160, 56886), (166, 56922), (168, 56946), (169, 56949), (188, 57042), (191, 57054),

Gene: Deby\_87 Start: 56043, Stop: 56654, Start Num: 49

Candidate Starts for Deby\_87:

(15, 55890), (22, 55917), (Start: 49 @56043 has 88 MA's), (74, 56139), (96, 56226), (100, 56244), (110, 56292), (117, 56307), (122, 56343), (124, 56364), (126, 56382), (130, 56397), (131, 56403), (133, 56409), (147, 56442), (156, 56466), (163, 56493), (169, 56538), (178, 56577), (189, 56634), (191, 56640),

Gene: Devera\_93 Start: 56388, Stop: 56936, Start Num: 49

Candidate Starts for Devera\_93:

(Start: 49 @56388 has 88 MA's), (67, 56421), (96, 56508), (100, 56526), (110, 56574), (117, 56589), (118, 56598), (120, 56604), (122, 56625), (124, 56646), (126, 56664), (130, 56679), (131, 56685), (133, 56691), (147, 56724), (163, 56775), (165, 56784), (169, 56820), (176, 56850), (189, 56916), (191, 56922),

Gene: Dole\_90 Start: 56391, Stop: 56939, Start Num: 49

Candidate Starts for Dole\_90:

(Start: 49 @56391 has 88 MA's), (67, 56424), (96, 56511), (100, 56529), (110, 56577), (117, 56592), (118, 56601), (120, 56607), (122, 56628), (124, 56649), (126, 56667), (130, 56682), (131, 56688), (133, 56694), (147, 56727), (163, 56778), (165, 56787), (169, 56823), (176, 56853), (189, 56919), (191, 56925),

Gene: DoubleChamp\_76 Start: 51715, Stop: 52362, Start Num: 36

Candidate Starts for DoubleChamp\_76:

(Start: 36 @51715 has 12 MA's), (44, 51733), (52, 51769), (69, 51829), (75, 51844), (98, 51931), (117, 52009), (132, 52111), (133, 52114), (170, 52249), (176, 52273), (184, 52315), (190, 52345),

Gene: DrHayes\_87 Start: 55782, Stop: 56321, Start Num: 49

Candidate Starts for DrHayes\_87:

(Start: 49 @55782 has 88 MA's), (73, 55830), (100, 55911), (110, 55959), (117, 55974), (118, 55983), (120, 55989), (122, 56010), (123, 56022), (124, 56031), (126, 56049), (130, 56064), (133, 56076), (137, 56088), (147, 56109), (159, 56142), (163, 56160), (164, 56163), (169, 56205), (174, 56229), (178, 56244), (189, 56301), (191, 56307),

Gene: Durfee\_87 Start: 55717, Stop: 56256, Start Num: 49

Candidate Starts for Durfee\_87:

(12, 55561), (Start: 49 @55717 has 88 MA's), (100, 55846), (108, 55888), (110, 55894), (117, 55909), (118, 55918), (120, 55924), (122, 55945), (126, 55984), (130, 55999), (131, 56005), (133, 56011), (147, 56044), (156, 56068), (163, 56095), (169, 56140), (178, 56179), (189, 56236), (191, 56242),

Gene: Edugator\_76 Start: 53777, Stop: 54424, Start Num: 35

Candidate Starts for Edugator\_76:

(Start: 35 @53777 has 3 MA's), (Start: 36 @53780 has 12 MA's), (44, 53798), (69, 53894), (75, 53909), (79, 53927), (103, 54023), (119, 54086), (133, 54176), (152, 54224), (161, 54248), (162, 54251), (169, 54305), (173, 54326), (176, 54335), (184, 54377), (190, 54407),

Gene: Efra2\_94 Start: 56866, Stop: 57423, Start Num: 49

Candidate Starts for Efra2\_94:

(Start: 49 @56866 has 88 MA's), (66, 56899), (88, 56971), (100, 57010), (108, 57052), (110, 57058), (117, 57073), (120, 57088), (122, 57109), (124, 57130), (126, 57148), (128, 57154), (129, 57160), (135, 57184), (147, 57208), (156, 57232), (168, 57301), (177, 57340), (183, 57370), (188, 57397), (191, 57409),

Gene: Ekdilam\_80 Start: 55444, Stop: 56052, Start Num: 41

Candidate Starts for Ekdilam\_80:

(Start: 41 @55444 has 4 MA's), (Start: 58 @55501 has 1 MA's), (84, 55567), (111, 55666), (120, 55693), (122, 55714), (127, 55756), (129, 55765), (142, 55813), (150, 55843), (179, 55978), (183, 55999), (187, 56020), (188, 56026), (191, 56038),

Gene: Ellie\_85 Start: 55858, Stop: 56547, Start Num: 34

Candidate Starts for Ellie\_85:

(30, 55834), (Start: 34 @55858 has 4 MA's), (59, 55933), (85, 56008), (93, 56038), (111, 56110), (124, 56179), (128, 56203), (141, 56278), (160, 56371), (169, 56431), (173, 56452), (174, 56455), (176, 56461), (178, 56470), (189, 56527), (191, 56533),

Gene: Emerson\_89 Start: 55720, Stop: 56331, Start Num: 49

Candidate Starts for Emerson\_89:

(15, 55567), (22, 55594), (Start: 49 @55720 has 88 MA's), (72, 55807), (96, 55903), (100, 55921), (110, 55969), (113, 55975), (117, 55984), (122, 56020), (124, 56041), (126, 56059), (130, 56074), (133, 56086), (147, 56119), (156, 56143), (163, 56170), (169, 56215), (178, 56254), (189, 56311), (191, 56317),

Gene: Enkosi\_70 Start: 53841, Stop: 54485, Start Num: 37

Candidate Starts for Enkosi\_70:

(Start: 35 @53835 has 3 MA's), (Start: 37 @53841 has 16 MA's), (46, 53868), (50, 53895), (56, 53907), (Start: 58 @53922 has 1 MA's), (64, 53946), (68, 53952), (77, 53976), (81, 53985), (102, 54075), (116, 54120), (117, 54123), (120, 54138), (124, 54180), (127, 54201), (128, 54204), (129, 54210), (130, 54213), (133, 54225), (134, 54234), (142, 54258), (148, 54279), (153, 54291), (154, 54294), (158, 54303), (164, 54324), (168, 54363), (169, 54366), (176, 54396), (178, 54405), (188, 54459), (190, 54468),

Gene: Fefferhead\_87 Start: 55655, Stop: 56341, Start Num: 34

Candidate Starts for Fefferhead\_87:

(30, 55631), (Start: 34 @55655 has 4 MA's), (59, 55727), (61, 55733), (85, 55802), (102, 55868), (111, 55904), (124, 55973), (128, 55997), (141, 56072), (160, 56165), (169, 56225), (173, 56246), (174, 56249), (176, 56255), (178, 56264), (189, 56321), (191, 56327),

Gene: Feyre\_82 Start: 55415, Stop: 56056, Start Num: 37

Candidate Starts for Feyre\_82:

(17, 55322), (28, 55373), (Start: 37 @55415 has 16 MA's), (42, 55430), (44, 55436), (52, 55472), (57, 55487), (69, 55532), (117, 55709), (152, 55856), (184, 56009), (191, 56042),

Gene: Ganymede\_87 Start: 55523, Stop: 56071, Start Num: 49

Candidate Starts for Ganymede\_87:

(Start: 49 @55523 has 88 MA's), (67, 55556), (91, 55631), (96, 55643), (100, 55661), (110, 55709), (117, 55724), (118, 55733), (120, 55739), (122, 55760), (124, 55781), (126, 55799), (130, 55814), (131, 55820), (133, 55826), (147, 55859), (156, 55883), (163, 55910), (169, 55955), (178, 55994), (189, 56051), (191, 56057),

Gene: Gengar\_81 Start: 54230, Stop: 54871, Start Num: 37

Candidate Starts for Gengar\_81:

(1, 53843), (2, 53900), (17, 54137), (28, 54188), (Start: 37 @54230 has 16 MA's), (42, 54245), (52, 54287), (57, 54302), (69, 54347), (118, 54533), (152, 54671), (176, 54782), (184, 54824), (191, 54857),

Gene: Geraldini\_89 Start: 55561, Stop: 56172, Start Num: 49

Candidate Starts for Geraldini\_89:

(15, 55408), (22, 55435), (Start: 49 @55561 has 88 MA's), (72, 55648), (91, 55732), (96, 55744), (100, 55762), (110, 55810), (117, 55825), (120, 55840), (122, 55861), (124, 55882), (126, 55900), (130, 55915), (131, 55921), (133, 55927), (147, 55960), (156, 55984), (163, 56011), (169, 56056), (174, 56080), (178, 56095), (189, 56152), (191, 56158),

Gene: Guanica15\_93 Start: 56558, Stop: 57112, Start Num: 49

Candidate Starts for Guanica15\_93:

(Start: 49 @56558 has 88 MA's), (66, 56591), (96, 56681), (108, 56741), (110, 56747), (117, 56762), (120, 56777), (122, 56798), (124, 56819), (126, 56837), (128, 56843), (129, 56849), (135, 56873), (147, 56897), (156, 56921), (168, 56990), (177, 57029), (183, 57059), (188, 57086), (191, 57098),

Gene: Guillsminger\_82 Start: 54078, Stop: 54719, Start Num: 37

Candidate Starts for Guillsminger\_82:

(Start: 37 @54078 has 16 MA's), (42, 54093), (52, 54135), (57, 54150), (69, 54195), (79, 54225), (98, 54294), (117, 54372), (118, 54381), (133, 54471), (138, 54483), (152, 54519), (184, 54672), (190, 54702), (191, 54705),

Gene: Hammy\_84 Start: 55586, Stop: 56200, Start Num: 41

Candidate Starts for Hammy\_84:

(Start: 41 @55586 has 4 MA's), (Start: 58 @55643 has 1 MA's), (76, 55691), (82, 55700), (99, 55760), (116, 55823), (120, 55841), (122, 55862), (124, 55883), (129, 55913), (142, 55961), (150, 55991), (166, 56054), (169, 56081), (176, 56111), (180, 56129), (186, 56165), (188, 56174), (191, 56186),

Gene: HedwigODU\_87 Start: 55559, Stop: 56098, Start Num: 49

Candidate Starts for HedwigODU\_87:

(12, 55403), (Start: 49 @55559 has 88 MA's), (100, 55688), (108, 55730), (110, 55736), (117, 55751), (118, 55760), (120, 55766), (122, 55787), (126, 55826), (130, 55841), (131, 55847), (133, 55853), (137, 55865), (147, 55886), (163, 55937), (169, 55982), (178, 56021), (189, 56078), (191, 56084),

Gene: Heftyboy\_79 Start: 53442, Stop: 54089, Start Num: 36

Candidate Starts for Heftyboy\_79:

(Start: 36 @53442 has 12 MA's), (44, 53460), (52, 53496), (69, 53556), (75, 53571), (98, 53658), (117, 53736), (132, 53838), (133, 53841), (170, 53976), (176, 54000), (184, 54042), (190, 54072),

Gene: Homura\_86 Start: 55520, Stop: 56059, Start Num: 49

Candidate Starts for Homura\_86:

(12, 55364), (Start: 49 @55520 has 88 MA's), (100, 55649), (108, 55691), (110, 55697), (117, 55712), (118, 55721), (120, 55727), (122, 55748), (126, 55787), (130, 55802), (131, 55808), (133, 55814), (147, 55847), (156, 55871), (163, 55898), (169, 55943), (178, 55982), (189, 56039), (191, 56045),

Gene: Hurricane\_86 Start: 54730, Stop: 55197, Start Num: 78

Candidate Starts for Hurricane\_86:

(Start: 78 @54730 has 7 MA's), (89, 54763), (95, 54778), (104, 54826), (126, 54952), (129, 54964), (157, 55012), (163, 55030), (188, 55168), (190, 55177), (191, 55180),

Gene: Hyperbowlee\_86 Start: 55717, Stop: 56256, Start Num: 49

Candidate Starts for Hyperbowlee\_86:

(12, 55561), (Start: 49 @55717 has 88 MA's), (100, 55846), (108, 55888), (110, 55894), (117, 55909), (118, 55918), (120, 55924), (122, 55945), (126, 55984), (130, 55999), (131, 56005), (133, 56011), (147, 56044), (156, 56068), (163, 56095), (169, 56140), (178, 56179), (189, 56236), (191, 56242),

Gene: Illumine\_91 Start: 56390, Stop: 56938, Start Num: 49

Candidate Starts for Illumine\_91:

(Start: 49 @56390 has 88 MA's), (67, 56423), (96, 56510), (100, 56528), (110, 56576), (117, 56591), (118, 56600), (120, 56606), (122, 56627), (124, 56648), (126, 56666), (130, 56681), (131, 56687), (133, 56693), (147, 56726), (163, 56777), (165, 56786), (169, 56822), (176, 56852), (189, 56918), (191, 56924),

Gene: Inky\_87 Start: 55520, Stop: 56059, Start Num: 49

Candidate Starts for Inky\_87:

(12, 55364), (Start: 49 @55520 has 88 MA's), (100, 55649), (108, 55691), (110, 55697), (117, 55712), (118, 55721), (120, 55727), (122, 55748), (126, 55787), (130, 55802), (131, 55808), (133, 55814), (147, 55847), (156, 55871), (163, 55898), (169, 55943), (178, 55982), (189, 56039), (191, 56045),

Gene: InvictusManeo\_77 Start: 51755, Stop: 52402, Start Num: 36

Candidate Starts for InvictusManeo\_77:

(Start: 36 @51755 has 12 MA's), (44, 51773), (52, 51809), (69, 51869), (75, 51884), (79, 51902), (117, 52049), (121, 52070), (130, 52142), (133, 52154), (138, 52166), (143, 52175), (152, 52202), (169, 52283), (176, 52313), (184, 52355), (190, 52385),

Gene: JAWS\_86 Start: 55506, Stop: 56045, Start Num: 49

Candidate Starts for JAWS\_86:

(12, 55350), (Start: 49 @55506 has 88 MA's), (100, 55635), (108, 55677), (110, 55683), (117, 55698), (120, 55713), (122, 55734), (126, 55773), (130, 55788), (131, 55794), (133, 55800), (137, 55812), (147, 55833), (163, 55884), (169, 55929), (178, 55968), (189, 56025), (191, 56031),

Gene: Jarvi\_87 Start: 55520, Stop: 56059, Start Num: 49

Candidate Starts for Jarvi\_87:

(12, 55364), (Start: 49 @55520 has 88 MA's), (100, 55649), (108, 55691), (110, 55697), (117, 55712), (118, 55721), (120, 55727), (122, 55748), (126, 55787), (130, 55802), (131, 55808), (133, 55814), (147, 55847), (156, 55871), (163, 55898), (169, 55943), (178, 55982), (189, 56039), (191, 56045),

Gene: Jayhawk\_89 Start: 55536, Stop: 56075, Start Num: 49

Candidate Starts for Jayhawk\_89:

(Start: 49 @55536 has 88 MA's), (70, 55575), (100, 55665), (108, 55707), (110, 55713), (117, 55728), (118, 55737), (120, 55743), (122, 55764), (124, 55785), (126, 55803), (130, 55818), (131, 55824), (133, 55830), (147, 55863), (156, 55887), (163, 55914), (169, 55959), (178, 55998), (189, 56055), (191, 56061),

Gene: Jeckyll\_87 Start: 55520, Stop: 56059, Start Num: 49

Candidate Starts for Jeckyll\_87:

(12, 55364), (Start: 49 @55520 has 88 MA's), (100, 55649), (108, 55691), (110, 55697), (117, 55712), (118, 55721), (120, 55727), (122, 55748), (126, 55787), (130, 55802), (131, 55808), (133, 55814), (147, 55847), (156, 55871), (163, 55898), (169, 55943), (178, 55982), (189, 56039), (191, 56045),

Gene: Joy99\_88 Start: 55649, Stop: 56188, Start Num: 49

Candidate Starts for Joy99\_88:

(12, 55493), (Start: 49 @55649 has 88 MA's), (100, 55778), (108, 55820), (110, 55826), (117, 55841), (118, 55850), (120, 55856), (122, 55877), (126, 55916), (130, 55931), (131, 55937), (133, 55943), (147, 55976), (156, 56000), (163, 56027), (169, 56072), (178, 56111), (189, 56168), (191, 56174),

Gene: Keshu\_88 Start: 55022, Stop: 55489, Start Num: 78

Candidate Starts for Keshu\_88:

(Start: 78 @55022 has 7 MA's), (89, 55055), (95, 55070), (104, 55118), (126, 55244), (129, 55256), (157, 55304), (163, 55322), (188, 55460), (190, 55469), (191, 55472),

Gene: KiSi\_89 Start: 55752, Stop: 56375, Start Num: 39

Candidate Starts for KiSi\_89:

(29, 55710), (Start: 39 @55752 has 4 MA's), (45, 55767), (47, 55779), (67, 55851), (112, 56016), (117, 56025), (120, 56040), (128, 56106), (132, 56124), (146, 56151), (160, 56199), (164, 56220), (168, 56256), (169, 56259), (174, 56283), (176, 56289), (191, 56361),

Gene: Larva\_79 Start: 53481, Stop: 54125, Start Num: 36

Candidate Starts for Larva\_79:

(Start: 35 @53478 has 3 MA's), (Start: 36 @53481 has 12 MA's), (44, 53499), (69, 53595), (75, 53610), (79, 53628), (103, 53724), (119, 53787), (133, 53877), (152, 53925), (161, 53949), (162, 53952), (169, 54006), (173, 54027), (176, 54036), (184, 54078), (190, 54108),

Gene: LastHope\_93 Start: 56273, Stop: 56836, Start Num: 49

Candidate Starts for LastHope\_93:

(Start: 49 @56273 has 88 MA's), (66, 56306), (91, 56381), (106, 56456), (110, 56471), (117, 56486), (118, 56495), (120, 56501), (122, 56522), (124, 56543), (126, 56561), (128, 56567), (129, 56573), (133, 56588), (135, 56597), (147, 56621), (156, 56645), (168, 56714), (169, 56717), (173, 56738), (176, 56747), (178, 56756), (183, 56783), (188, 56810),

Gene: LaterM\_87 Start: 55885, Stop: 56478, Start Num: 49

Candidate Starts for LaterM\_87:

(Start: 49 @55885 has 88 MA's), (67, 55963), (79, 55990), (100, 56068), (105, 56095), (110, 56116), (117, 56131), (120, 56146), (122, 56167), (123, 56179), (124, 56188), (130, 56221), (131, 56227), (133, 56233), (137, 56245), (159, 56299), (163, 56317), (164, 56320), (169, 56362), (178, 56401), (189, 56458), (191, 56464),

Gene: Lavahound\_86 Start: 56824, Stop: 57510, Start Num: 34

Candidate Starts for Lavahound\_86:

(30, 56800), (Start: 34 @56824 has 4 MA's), (59, 56896), (61, 56902), (85, 56971), (93, 57001), (102, 57037), (111, 57073), (124, 57142), (128, 57166), (133, 57187), (141, 57241), (160, 57334), (169, 57394), (173, 57415), (174, 57418), (176, 57424), (178, 57433), (189, 57490), (191, 57496),

Gene: LeMond\_88 Start: 55714, Stop: 56331, Start Num: 39

Candidate Starts for LeMond\_88:

(Start: 39 @55714 has 4 MA's), (45, 55729), (47, 55741), (67, 55813), (90, 55882), (112, 55972), (128, 56062), (132, 56080), (146, 56107), (160, 56155), (164, 56176), (168, 56212), (169, 56215), (170, 56221), (174, 56239), (176, 56245), (191, 56317),

Gene: Lea83\_86 Start: 54851, Stop: 55318, Start Num: 78

Candidate Starts for Lea83\_86:

(Start: 78 @54851 has 7 MA's), (89, 54884), (95, 54899), (104, 54947), (126, 55073), (129, 55085), (134, 55103), (157, 55133), (163, 55151), (188, 55289), (190, 55298), (191, 55301),

Gene: Leston\_81 Start: 54195, Stop: 54836, Start Num: 37

Candidate Starts for Leston\_81:

(Start: 37 @54195 has 16 MA's), (42, 54210), (52, 54252), (57, 54267), (69, 54312), (79, 54342), (98, 54411), (117, 54489), (133, 54588), (138, 54600), (152, 54636), (184, 54789), (191, 54822),

Gene: LilDirt\_76 Start: 51516, Stop: 52163, Start Num: 36

Candidate Starts for LilDirt\_76:

(Start: 36 @51516 has 12 MA's), (44, 51534), (52, 51570), (69, 51630), (75, 51645), (98, 51732), (117, 51810), (132, 51912), (133, 51915), (170, 52050), (176, 52074), (184, 52116), (190, 52146),

Gene: LilPharaoh\_69 Start: 50950, Stop: 51600, Start Num: 35

Candidate Starts for LilPharaoh\_69:

(Start: 35 @50950 has 3 MA's), (Start: 37 @50956 has 16 MA's), (46, 50983), (50, 51010), (56, 51022), (Start: 58 @51037 has 1 MA's), (64, 51061), (68, 51067), (77, 51091), (81, 51100), (102, 51190), (116, 51235), (117, 51238), (120, 51253), (124, 51295), (127, 51316), (128, 51319), (129, 51325), (130, 51328), (133, 51340), (134, 51349), (142, 51373), (148, 51394), (153, 51406), (154, 51409), (158, 51418), (164, 51439), (168, 51478), (169, 51481), (176, 51511), (178, 51520), (188, 51574), (190,

51583),

Gene: LindNT\_85 Start: 55622, Stop: 56173, Start Num: 49

Candidate Starts for LindNT\_85:

(3, 55286), (Start: 49 @55622 has 88 MA's), (67, 55655), (91, 55733), (96, 55745), (100, 55763), (110, 55811), (117, 55826), (118, 55835), (120, 55841), (122, 55862), (124, 55883), (126, 55901), (130, 55916), (131, 55922), (133, 55928), (147, 55961), (156, 55985), (163, 56012), (169, 56057), (178, 56096), (189, 56153), (191, 56159),

Gene: Llorens\_87 Start: 55520, Stop: 56059, Start Num: 49

Candidate Starts for Llorens\_87:

(12, 55364), (Start: 49 @55520 has 88 MA's), (100, 55649), (108, 55691), (110, 55697), (117, 55712), (118, 55721), (120, 55727), (122, 55748), (126, 55787), (130, 55802), (131, 55808), (133, 55814), (147, 55847), (156, 55871), (163, 55898), (169, 55943), (178, 55982), (189, 56039), (191, 56045),

Gene: Lunahalos\_87 Start: 55520, Stop: 56059, Start Num: 49

Candidate Starts for Lunahalos\_87:

(12, 55364), (Start: 49 @55520 has 88 MA's), (100, 55649), (108, 55691), (110, 55697), (117, 55712), (118, 55721), (120, 55727), (122, 55748), (126, 55787), (130, 55802), (131, 55808), (133, 55814), (147, 55847), (156, 55871), (163, 55898), (169, 55943), (178, 55982), (189, 56039), (191, 56045),

Gene: MacKat\_83 Start: 51147, Stop: 51623, Start Num: 49

Candidate Starts for MacKat\_83:

(15, 51027), (Start: 49 @51147 has 88 MA's), (61, 51180), (100, 51285), (110, 51333), (117, 51348), (119, 51360), (122, 51381), (124, 51402), (126, 51420), (130, 51435), (163, 51462), (169, 51507), (178, 51546), (189, 51603), (191, 51609),

Gene: MacnCheese\_87 Start: 55279, Stop: 55746, Start Num: 78

Candidate Starts for MacnCheese\_87:

(Start: 78 @55279 has 7 MA's), (95, 55330), (104, 55378), (109, 55408), (120, 55444), (122, 55465), (126, 55504), (129, 55516), (157, 55564), (170, 55630), (176, 55654), (188, 55720), (190, 55729),

Gene: MarkPhew\_89 Start: 55775, Stop: 56458, Start Num: 21

Candidate Starts for MarkPhew\_89:

(8, 55703), (16, 55760), (Start: 21 @55775 has 2 MA's), (23, 55790), (27, 55802), (67, 55940), (83, 55994), (112, 56099), (120, 56123), (128, 56189), (132, 56207), (146, 56234), (149, 56240), (151, 56249), (160, 56282), (169, 56342), (170, 56348), (172, 56363), (174, 56366), (176, 56372), (179, 56387), (191, 56444),

Gene: Marshawn\_85 Start: 55928, Stop: 56566, Start Num: 38

Candidate Starts for Marshawn\_85:

(8, 55766), (9, 55775), (11, 55781), (13, 55805), (14, 55820), (19, 55844), (24, 55868), (32, 55913), (Start: 38 @55928 has 1 MA's), (51, 55979), (53, 55982), (55, 55985), (76, 56054), (114, 56201), (118, 56222), (122, 56252), (124, 56273), (128, 56297), (142, 56339), (145, 56348), (147, 56351), (150, 56360), (163, 56402), (169, 56447), (173, 56468), (174, 56471), (178, 56486), (181, 56498), (191, 56552),

Gene: McMater\_87 Start: 56409, Stop: 57068, Start Num: 20

Candidate Starts for McMater\_87:

(Start: 18 @56406 has 1 MA's), (Start: 20 @56409 has 3 MA's), (Start: 34 @56475 has 4 MA's), (54, 56508), (63, 56529), (69, 56538), (86, 56595), (100, 56643), (110, 56691), (117, 56706), (118, 56715), (122, 56742), (124, 56763), (129, 56793), (142, 56829), (156, 56865), (160, 56886), (166, 56922), (168, 56946), (169, 56949), (188, 57042), (191, 57054),

Gene: Mdavu\_69 Start: 51232, Stop: 51876, Start Num: 37

Candidate Starts for Mdavu\_69:

(Start: 35 @51226 has 3 MA's), (Start: 37 @51232 has 16 MA's), (46, 51259), (50, 51286), (56, 51298), (Start: 58 @51313 has 1 MA's), (64, 51337), (68, 51343), (77, 51367), (81, 51376), (102, 51466), (116, 51511), (117, 51514), (120, 51529), (124, 51571), (127, 51592), (128, 51595), (129, 51601), (130, 51604), (133, 51616), (134, 51625), (142, 51649), (148, 51670), (153, 51682), (154, 51685), (158, 51694), (164, 51715), (168, 51754), (169, 51757), (176, 51787), (178, 51796), (188, 51850), (190, 51859),

Gene: MeaningOfLife\_89 Start: 56205, Stop: 56744, Start Num: 49

Candidate Starts for MeaningOfLife\_89:

(Start: 49 @56205 has 88 MA's), (100, 56334), (108, 56376), (110, 56382), (117, 56397), (118, 56406), (120, 56412), (122, 56433), (124, 56454), (126, 56472), (130, 56487), (131, 56493), (133, 56499), (147, 56532), (156, 56556), (163, 56583), (169, 56628), (178, 56667), (189, 56724), (191, 56730),

Gene: Megsy\_91 Start: 55851, Stop: 56402, Start Num: 49

Candidate Starts for Megsy\_91:

(15, 55698), (22, 55725), (Start: 49 @55851 has 88 MA's), (91, 55962), (96, 55974), (100, 55992), (110, 56040), (117, 56055), (118, 56064), (122, 56091), (124, 56112), (126, 56130), (130, 56145), (131, 56151), (133, 56157), (147, 56190), (156, 56214), (163, 56241), (169, 56286), (178, 56325), (189, 56382), (191, 56388),

Gene: Miryou\_83 Start: 56053, Stop: 56694, Start Num: 37

Candidate Starts for Miryou\_83:

(Start: 37 @56053 has 16 MA's), (42, 56068), (44, 56074), (52, 56110), (57, 56125), (69, 56170), (79, 56200), (97, 56266), (98, 56269), (118, 56356), (152, 56494), (176, 56605), (184, 56647), (191, 56680),

Gene: Murucutumbu\_87 Start: 56412, Stop: 56960, Start Num: 49

Candidate Starts for Murucutumbu\_87:

(12, 56256), (Start: 49 @56412 has 88 MA's), (67, 56445), (92, 56523), (100, 56550), (110, 56598), (117, 56613), (118, 56622), (120, 56628), (122, 56649), (124, 56670), (126, 56688), (130, 56703), (131, 56709), (133, 56715), (137, 56727), (159, 56781), (163, 56799), (164, 56802), (169, 56844), (178, 56883), (189, 56940), (191, 56946),

Gene: Mynx\_88 Start: 55828, Stop: 56367, Start Num: 49

Candidate Starts for Mynx\_88:

(12, 55672), (Start: 49 @55828 has 88 MA's), (100, 55957), (108, 55999), (110, 56005), (117, 56020), (118, 56029), (120, 56035), (122, 56056), (124, 56077), (126, 56095), (130, 56110), (133, 56122), (137, 56134), (147, 56155), (156, 56179), (163, 56206), (169, 56251), (178, 56290), (189, 56347), (191, 56353),

Gene: Neighly\_80 Start: 53480, Stop: 54124, Start Num: 36

Candidate Starts for Neighly\_80:

(Start: 35 @53477 has 3 MA's), (Start: 36 @53480 has 12 MA's), (44, 53498), (69, 53594), (75, 53609), (79, 53627), (103, 53723), (119, 53786), (133, 53876), (152, 53924), (161, 53948), (162, 53951), (169, 54005), (173, 54026), (176, 54035), (184, 54077), (190, 54107),

Gene: Nibb\_89 Start: 55433, Stop: 56137, Start Num: 21

Candidate Starts for Nibb\_89:

(4, 55271), (5, 55289), (16, 55418), (Start: 21 @55433 has 2 MA's), (23, 55448), (Start: 34 @55502 has 4 MA's), (67, 55622), (87, 55682), (93, 55700), (97, 55712), (112, 55778), (117, 55787), (128,

55868), (132, 55886), (146, 55913), (149, 55919), (151, 55928), (160, 55961), (163, 55979), (164, 55982), (169, 56021), (171, 56039), (174, 56045), (176, 56051), (179, 56066), (191, 56123),

Gene: Nikao\_71 Start: 53841, Stop: 54485, Start Num: 37

Candidate Starts for Nikao\_71:

(Start: 35 @53835 has 3 MA's), (Start: 37 @53841 has 16 MA's), (46, 53868), (50, 53895), (56, 53907), (Start: 58 @53922 has 1 MA's), (64, 53946), (68, 53952), (77, 53976), (81, 53985), (102, 54075), (116, 54120), (117, 54123), (120, 54138), (124, 54180), (127, 54201), (128, 54204), (129, 54210), (130, 54213), (133, 54225), (134, 54234), (142, 54258), (148, 54279), (153, 54291), (154, 54294), (158, 54303), (164, 54324), (168, 54363), (169, 54366), (176, 54396), (178, 54405), (188, 54459), (190, 54468),

Gene: Niklas\_88 Start: 56449, Stop: 57108, Start Num: 20

Candidate Starts for Niklas\_88:

(Start: 18 @56446 has 1 MA's), (Start: 20 @56449 has 3 MA's), (Start: 34 @56515 has 4 MA's), (54, 56548), (63, 56569), (69, 56578), (86, 56635), (100, 56683), (110, 56731), (117, 56746), (118, 56755), (122, 56782), (124, 56803), (129, 56833), (142, 56869), (156, 56905), (160, 56926), (166, 56962), (168, 56986), (169, 56989), (182, 57049), (188, 57082), (191, 57094),

Gene: November\_83 Start: 55714, Stop: 56274, Start Num: 58

Candidate Starts for November\_83:

(Start: 58 @55714 has 1 MA's), (Start: 62 @55732 has 1 MA's), (73, 55756), (76, 55765), (82, 55774), (99, 55834), (111, 55888), (120, 55915), (124, 55957), (129, 55987), (142, 56035), (150, 56065), (166, 56128), (169, 56155), (176, 56185), (180, 56203), (185, 56236), (188, 56248), (191, 56260),

Gene: Nutello\_68 Start: 51228, Stop: 51872, Start Num: 37

Candidate Starts for Nutello\_68:

(Start: 35 @51222 has 3 MA's), (Start: 37 @51228 has 16 MA's), (46, 51255), (50, 51282), (56, 51294), (Start: 58 @51309 has 1 MA's), (64, 51333), (68, 51339), (77, 51363), (81, 51372), (102, 51462), (116, 51507), (117, 51510), (120, 51525), (124, 51567), (127, 51588), (128, 51591), (129, 51597), (130, 51600), (133, 51612), (134, 51621), (142, 51645), (148, 51666), (153, 51678), (154, 51681), (158, 51690), (164, 51711), (168, 51750), (169, 51753), (176, 51783), (178, 51792), (188, 51846), (190, 51855),

Gene: OkiRoe\_82 Start: 55193, Stop: 55834, Start Num: 37

Candidate Starts for OkiRoe\_82:

(1, 54806), (2, 54863), (17, 55100), (28, 55151), (Start: 37 @55193 has 16 MA's), (42, 55208), (52, 55250), (57, 55265), (69, 55310), (118, 55496), (125, 55553), (152, 55634), (168, 55712), (184, 55787), (190, 55817), (191, 55820),

Gene: Omnicron\_84 Start: 56077, Stop: 56712, Start Num: 36

Candidate Starts for Omnicron\_84:

(Start: 36 @56077 has 12 MA's), (44, 56098), (69, 56185), (75, 56200), (79, 56218), (125, 56431), (133, 56464), (190, 56695),

Gene: Oscar\_89 Start: 55635, Stop: 56255, Start Num: 39

Candidate Starts for Oscar\_89:

(Start: 39 @55635 has 4 MA's), (45, 55650), (47, 55662), (67, 55734), (112, 55896), (128, 55986), (132, 56004), (146, 56031), (160, 56079), (164, 56100), (168, 56136), (169, 56139), (170, 56145), (174, 56163), (176, 56169), (191, 56241),

Gene: Padfoot\_87 Start: 55717, Stop: 56256, Start Num: 49

Candidate Starts for Padfoot\_87:

(12, 55561), (Start: 49 @55717 has 88 MA's), (100, 55846), (108, 55888), (110, 55894), (117, 55909), (118, 55918), (120, 55924), (122, 55945), (126, 55984), (130, 55999), (131, 56005), (133, 56011), (147, 56044), (156, 56068), (163, 56095), (169, 56140), (178, 56179), (189, 56236), (191, 56242),

Gene: Padpat\_90 Start: 55720, Stop: 56331, Start Num: 49

Candidate Starts for Padpat\_90:

(15, 55567), (22, 55594), (Start: 49 @55720 has 88 MA's), (72, 55807), (96, 55903), (100, 55921), (110, 55969), (113, 55975), (117, 55984), (122, 56020), (124, 56041), (126, 56059), (130, 56074), (133, 56086), (147, 56119), (156, 56143), (163, 56170), (169, 56215), (178, 56254), (189, 56311), (191, 56317),

Gene: Paola\_81 Start: 54078, Stop: 54719, Start Num: 37

Candidate Starts for Paola\_81:

(Start: 37 @54078 has 16 MA's), (42, 54093), (52, 54135), (57, 54150), (69, 54195), (79, 54225), (98, 54294), (117, 54372), (118, 54381), (133, 54471), (138, 54483), (152, 54519), (184, 54672), (190, 54702), (191, 54705),

Gene: Peanam\_88 Start: 56428, Stop: 57087, Start Num: 20

Candidate Starts for Peanam\_88:

(Start: 18 @56425 has 1 MA's), (Start: 20 @56428 has 3 MA's), (26, 56464), (31, 56479), (Start: 34 @56494 has 4 MA's), (54, 56527), (63, 56548), (69, 56557), (86, 56614), (100, 56662), (110, 56710), (117, 56725), (118, 56734), (122, 56761), (124, 56782), (129, 56812), (142, 56848), (156, 56884), (160, 56905), (166, 56941), (168, 56965), (188, 57061), (191, 57073),

Gene: Peel\_87 Start: 55522, Stop: 56061, Start Num: 49

Candidate Starts for Peel\_87:

(12, 55366), (Start: 49 @55522 has 88 MA's), (100, 55651), (108, 55693), (110, 55699), (117, 55714), (118, 55723), (120, 55729), (122, 55750), (126, 55789), (130, 55804), (131, 55810), (133, 55816), (147, 55849), (156, 55873), (163, 55900), (169, 55945), (178, 55984), (189, 56041), (191, 56047),

Gene: Pharb\_86 Start: 54652, Stop: 55125, Start Num: 80

Candidate Starts for Pharb\_86:

(Start: 80 @54652 has 2 MA's), (87, 54682), (95, 54703), (107, 54775), (109, 54784), (114, 54793), (117, 54805), (118, 54814), (120, 54820), (122, 54841), (126, 54880), (129, 54892), (133, 54907), (135, 54916), (147, 54928), (157, 54940), (163, 54958), (168, 54997), (178, 55039), (188, 55096), (190, 55105), (191, 55108),

Gene: Piatt\_86 Start: 55717, Stop: 56256, Start Num: 49

Candidate Starts for Piatt\_86:

(12, 55561), (Start: 49 @55717 has 88 MA's), (100, 55846), (108, 55888), (110, 55894), (117, 55909), (118, 55918), (120, 55924), (122, 55945), (126, 55984), (130, 55999), (131, 56005), (133, 56011), (147, 56044), (156, 56068), (163, 56095), (169, 56140), (178, 56179), (189, 56236), (191, 56242),

Gene: Pisa1\_87 Start: 55884, Stop: 56387, Start Num: 49

Candidate Starts for Pisa1\_87:

(15, 55767), (Start: 49 @55884 has 88 MA's), (100, 55977), (110, 56025), (117, 56040), (118, 56049), (120, 56055), (122, 56076), (123, 56088), (124, 56097), (126, 56115), (130, 56130), (131, 56136), (133, 56142), (137, 56154), (147, 56175), (159, 56208), (163, 56226), (169, 56271), (178, 56310), (189, 56367), (191, 56373),

Gene: Pisa4\_81 Start: 51253, Stop: 51756, Start Num: 49

Candidate Starts for Pisa4\_81:

(15, 51136), (Start: 49 @51253 has 88 MA's), (100, 51346), (110, 51394), (117, 51409), (118, 51418), (120, 51424), (122, 51445), (123, 51457), (124, 51466), (126, 51484), (130, 51499), (131, 51505), (133, 51511), (137, 51523), (147, 51544), (159, 51577), (163, 51595), (169, 51640), (178, 51679), (189, 51736), (191, 51742),

Gene: Pixie\_85 Start: 54434, Stop: 54901, Start Num: 78

Candidate Starts for Pixie\_85:

(Start: 78 @54434 has 7 MA's), (89, 54467), (95, 54482), (104, 54530), (126, 54656), (129, 54668), (134, 54686), (157, 54716), (163, 54734), (188, 54872), (190, 54881), (191, 54884),

Gene: Pokerus\_87 Start: 55526, Stop: 56065, Start Num: 49

Candidate Starts for Pokerus\_87:

(Start: 49 @55526 has 88 MA's), (100, 55655), (108, 55697), (110, 55703), (117, 55718), (118, 55727), (120, 55733), (122, 55754), (126, 55793), (130, 55808), (133, 55820), (147, 55853), (156, 55877), (163, 55904), (169, 55949), (178, 55988), (189, 56045), (191, 56051),

Gene: Prithvi\_89 Start: 55920, Stop: 56471, Start Num: 49

Candidate Starts for Prithvi\_89:

(7, 55740), (12, 55764), (Start: 49 @55920 has 88 MA's), (67, 55953), (91, 56031), (96, 56043), (100, 56061), (110, 56109), (117, 56124), (118, 56133), (120, 56139), (122, 56160), (124, 56181), (126, 56199), (130, 56214), (131, 56220), (133, 56226), (147, 56259), (156, 56283), (163, 56310), (168, 56352), (169, 56355), (174, 56379), (178, 56394), (189, 56451), (191, 56457),

Gene: Psycho\_78 Start: 52606, Stop: 53250, Start Num: 36

Candidate Starts for Psycho\_78:

(Start: 35 @52603 has 3 MA's), (Start: 36 @52606 has 12 MA's), (44, 52624), (69, 52720), (75, 52735), (79, 52753), (103, 52849), (119, 52912), (133, 53002), (152, 53050), (161, 53074), (162, 53077), (169, 53131), (173, 53152), (176, 53161), (184, 53203), (190, 53233),

Gene: QuincyRose\_85 Start: 55523, Stop: 56071, Start Num: 49

Candidate Starts for QuincyRose\_85:

(Start: 49 @55523 has 88 MA's), (67, 55556), (91, 55631), (96, 55643), (100, 55661), (110, 55709), (117, 55724), (118, 55733), (120, 55739), (122, 55760), (124, 55781), (126, 55799), (130, 55814), (131, 55820), (133, 55826), (147, 55859), (156, 55883), (163, 55910), (169, 55955), (178, 55994), (189, 56051), (191, 56057),

Gene: Ramen\_88 Start: 55275, Stop: 55814, Start Num: 49

Candidate Starts for Ramen\_88:

(Start: 49 @55275 has 88 MA's), (70, 55314), (100, 55404), (108, 55446), (110, 55452), (117, 55467), (118, 55476), (120, 55482), (122, 55503), (124, 55524), (126, 55542), (130, 55557), (131, 55563), (147, 55602), (156, 55626), (163, 55653), (169, 55698), (178, 55737), (189, 55794), (191, 55800),

Gene: Rando14\_81 Start: 54488, Stop: 55123, Start Num: 36

Candidate Starts for Rando14\_81:

(Start: 36 @54488 has 12 MA's), (44, 54509), (69, 54596), (75, 54611), (79, 54629), (125, 54842), (133, 54875), (190, 55106),

Gene: Rapunzel97\_89 Start: 55491, Stop: 56030, Start Num: 49

Candidate Starts for Rapunzel97\_89:

(Start: 49 @55491 has 88 MA's), (70, 55530), (100, 55620), (108, 55662), (110, 55668), (117, 55683), (118, 55692), (120, 55698), (122, 55719), (124, 55740), (126, 55758), (130, 55773), (131, 55779), (133, 55785), (147, 55818), (156, 55842), (163, 55869), (169, 55914), (178, 55953), (189, 56010), (191, 56016),

Gene: Richo\_87 Start: 56409, Stop: 57068, Start Num: 20

Candidate Starts for Richo\_87:

(Start: 18 @56406 has 1 MA's), (Start: 20 @56409 has 3 MA's), (Start: 34 @56475 has 4 MA's), (54, 56508), (63, 56529), (69, 56538), (86, 56595), (100, 56643), (110, 56691), (117, 56706), (118, 56715), (122, 56742), (124, 56763), (129, 56793), (142, 56829), (156, 56865), (160, 56886), (166, 56922), (168, 56946), (169, 56949), (188, 57042), (191, 57054),

Gene: Rosmarinus\_87 Start: 55508, Stop: 56047, Start Num: 49

Candidate Starts for Rosmarinus\_87:

(12, 55352), (Start: 49 @55508 has 88 MA's), (91, 55607), (100, 55637), (108, 55679), (110, 55685), (117, 55700), (118, 55709), (120, 55715), (122, 55736), (126, 55775), (130, 55790), (131, 55796), (133, 55802), (147, 55835), (156, 55859), (163, 55886), (169, 55931), (178, 55970), (189, 56027), (191, 56033),

Gene: SamuelLPlaqson\_87 Start: 55782, Stop: 56321, Start Num: 49

Candidate Starts for SamuelLPlaqson\_87:

(Start: 49 @55782 has 88 MA's), (73, 55830), (100, 55911), (110, 55959), (117, 55974), (118, 55983), (120, 55989), (122, 56010), (123, 56022), (124, 56031), (126, 56049), (130, 56064), (133, 56076), (137, 56088), (147, 56109), (159, 56142), (163, 56160), (164, 56163), (169, 56205), (174, 56229), (178, 56244), (189, 56301), (191, 56307),

Gene: Scarlett\_88 Start: 55509, Stop: 56123, Start Num: 39

Candidate Starts for Scarlett\_88:

(13, 55389), (32, 55494), (Start: 39 @55509 has 4 MA's), (47, 55536), (67, 55608), (90, 55674), (112, 55764), (116, 55770), (128, 55854), (132, 55872), (146, 55899), (160, 55947), (164, 55968), (168, 56004), (169, 56007), (174, 56031), (176, 56037), (191, 56109),

Gene: SgtBeansprout\_69 Start: 51228, Stop: 51872, Start Num: 37

Candidate Starts for SgtBeansprout\_69:

(Start: 35 @51222 has 3 MA's), (Start: 37 @51228 has 16 MA's), (46, 51255), (50, 51282), (56, 51294), (Start: 58 @51309 has 1 MA's), (64, 51333), (68, 51339), (77, 51363), (81, 51372), (102, 51462), (116, 51507), (117, 51510), (120, 51525), (124, 51567), (127, 51588), (128, 51591), (129, 51597), (130, 51600), (133, 51612), (134, 51621), (142, 51645), (148, 51666), (153, 51678), (154, 51681), (158, 51690), (164, 51711), (168, 51750), (169, 51753), (176, 51783), (178, 51792), (188, 51846), (190, 51855),

Gene: Shaobing\_87 Start: 56496, Stop: 57149, Start Num: 20

Candidate Starts for Shaobing\_87:

(Start: 18 @56493 has 1 MA's), (Start: 20 @56496 has 3 MA's), (26, 56532), (31, 56547), (Start: 34 @56562 has 4 MA's), (54, 56595), (63, 56616), (69, 56625), (100, 56721), (102, 56733), (115, 56781), (117, 56787), (122, 56823), (124, 56844), (129, 56874), (142, 56910), (156, 56946), (160, 56967), (166, 57003), (168, 57027), (169, 57030), (182, 57090), (188, 57123), (191, 57135),

Gene: ShedlockHolmes\_88 Start: 54857, Stop: 55324, Start Num: 78

Candidate Starts for ShedlockHolmes\_88:

(Start: 78 @54857 has 7 MA's), (89, 54890), (95, 54905), (104, 54953), (126, 55079), (129, 55091), (134, 55109), (157, 55139), (163, 55157), (188, 55295), (190, 55304), (191, 55307),

Gene: ShiaSurprise\_88 Start: 55717, Stop: 56256, Start Num: 49

Candidate Starts for ShiaSurprise\_88:

(12, 55561), (Start: 49 @55717 has 88 MA's), (100, 55846), (108, 55888), (110, 55894), (117, 55909), (118, 55918), (120, 55924), (122, 55945), (126, 55984), (130, 55999), (131, 56005), (133, 56011),

(147, 56044), (156, 56068), (163, 56095), (169, 56140), (178, 56179), (189, 56236), (191, 56242),

Gene: SirPhilip\_87 Start: 55717, Stop: 56277, Start Num: 60

Candidate Starts for SirPhilip\_87:

(Start: 60 @55717 has 1 MA's), (112, 55894), (117, 55903), (128, 55984), (132, 56002), (139, 56026), (144, 56053), (168, 56155), (169, 56158), (185, 56239), (188, 56251), (191, 56263),

Gene: Slimphazie\_89 Start: 55947, Stop: 56486, Start Num: 49

Candidate Starts for Slimphazie\_89:

(Start: 49 @55947 has 88 MA's), (70, 55986), (100, 56076), (108, 56118), (110, 56124), (117, 56139), (118, 56148), (120, 56154), (122, 56175), (124, 56196), (126, 56214), (130, 56229), (131, 56235), (133, 56241), (147, 56274), (156, 56298), (163, 56325), (169, 56370), (178, 56409), (189, 56466), (191, 56472),

Gene: SoSeph\_79 Start: 53442, Stop: 54089, Start Num: 36

Candidate Starts for SoSeph\_79:

(Start: 36 @53442 has 12 MA's), (44, 53460), (52, 53496), (69, 53556), (75, 53571), (98, 53658), (117, 53736), (132, 53838), (133, 53841), (170, 53976), (176, 54000), (184, 54042), (190, 54072),

Gene: Spock\_87 Start: 55521, Stop: 56060, Start Num: 49

Candidate Starts for Spock\_87:

(12, 55365), (Start: 49 @55521 has 88 MA's), (100, 55650), (108, 55692), (110, 55698), (117, 55713), (118, 55722), (120, 55728), (122, 55749), (126, 55788), (130, 55803), (131, 55809), (133, 55815), (147, 55848), (156, 55872), (163, 55899), (169, 55944), (178, 55983), (189, 56040), (191, 56046),

Gene: Stinson\_88 Start: 55691, Stop: 56239, Start Num: 49

Candidate Starts for Stinson\_88:

(Start: 49 @55691 has 88 MA's), (67, 55724), (92, 55802), (96, 55811), (100, 55829), (110, 55877), (117, 55892), (118, 55901), (120, 55907), (122, 55928), (124, 55949), (126, 55967), (130, 55982), (131, 55988), (133, 55994), (147, 56027), (156, 56051), (159, 56060), (169, 56123), (174, 56147), (175, 56150), (176, 56153), (189, 56219), (191, 56225),

Gene: Sulley\_84 Start: 55116, Stop: 55655, Start Num: 49

Candidate Starts for Sulley\_84:

(Start: 49 @55116 has 88 MA's), (91, 55215), (100, 55245), (110, 55293), (117, 55308), (118, 55317), (120, 55323), (122, 55344), (124, 55365), (126, 55383), (130, 55398), (133, 55410), (137, 55422), (147, 55443), (156, 55467), (163, 55494), (169, 55539), (174, 55563), (178, 55578), (189, 55635), (191, 55641),

Gene: TBond007\_82 Start: 54432, Stop: 54899, Start Num: 78

Candidate Starts for TBond007\_82:

(Start: 78 @54432 has 7 MA's), (89, 54465), (95, 54480), (104, 54528), (126, 54654), (129, 54666), (134, 54684), (157, 54714), (163, 54732), (188, 54870), (190, 54879), (191, 54882),

Gene: Tachez\_87 Start: 55365, Stop: 55904, Start Num: 49

Candidate Starts for Tachez\_87:

(12, 55209), (Start: 49 @55365 has 88 MA's), (100, 55494), (108, 55536), (110, 55542), (117, 55557), (118, 55566), (120, 55572), (122, 55593), (126, 55632), (130, 55647), (131, 55653), (133, 55659), (147, 55692), (156, 55716), (163, 55743), (169, 55788), (178, 55827), (189, 55884), (191, 55890),

Gene: TaiwanKao\_88 Start: 55563, Stop: 56111, Start Num: 49

Candidate Starts for TaiwanKao\_88:

(15, 55410), (22, 55437), (Start: 49 @55563 has 88 MA's), (Start: 58 @55596 has 1 MA's), (91, 55671), (96, 55683), (100, 55701), (110, 55749), (117, 55764), (118, 55773), (120, 55779), (122, 55800), (123, 55812), (124, 55821), (126, 55839), (130, 55854), (131, 55860), (133, 55866), (147, 55899), (156, 55923), (163, 55950), (169, 55995), (178, 56034), (189, 56091), (191, 56097),

Gene: Teejan\_70 Start: 53841, Stop: 54485, Start Num: 37

Candidate Starts for Teejan\_70:

(Start: 35 @53835 has 3 MA's), (Start: 37 @53841 has 16 MA's), (46, 53868), (50, 53895), (56, 53907), (Start: 58 @53922 has 1 MA's), (64, 53946), (68, 53952), (77, 53976), (81, 53985), (102, 54075), (116, 54120), (117, 54123), (120, 54138), (124, 54180), (127, 54201), (128, 54204), (129, 54210), (130, 54213), (133, 54225), (134, 54234), (142, 54258), (148, 54279), (153, 54291), (154, 54294), (158, 54303), (164, 54324), (168, 54363), (169, 54366), (176, 54396), (178, 54405), (188, 54459), (190, 54468),

Gene: Thyatira\_82 Start: 55790, Stop: 56431, Start Num: 37

Candidate Starts for Thyatira\_82:

(Start: 37 @55790 has 16 MA's), (42, 55805), (44, 55811), (52, 55847), (57, 55862), (69, 55907), (117, 56084), (118, 56093), (125, 56150), (152, 56231), (168, 56309), (184, 56384), (186, 56396), (191, 56417),

Gene: TingHuaYa\_91 Start: 56631, Stop: 57164, Start Num: 66

Candidate Starts for TingHuaYa\_91:

(Start: 49 @56598 has 88 MA's), (66, 56631), (91, 56706), (106, 56781), (110, 56796), (117, 56811), (118, 56820), (120, 56826), (122, 56847), (124, 56868), (126, 56886), (128, 56892), (129, 56898), (133, 56913), (142, 56934), (147, 56946), (168, 57042), (176, 57075), (183, 57111), (188, 57138),

Gene: TiniBug\_86 Start: 55892, Stop: 56437, Start Num: 49

Candidate Starts for TiniBug\_86:

(33, 55856), (Start: 49 @55892 has 88 MA's), (73, 55940), (96, 56006), (100, 56027), (106, 56060), (110, 56075), (117, 56090), (118, 56099), (120, 56105), (122, 56126), (123, 56138), (124, 56147), (126, 56165), (130, 56180), (133, 56192), (137, 56204), (147, 56225), (156, 56249), (163, 56276), (164, 56279), (169, 56321), (174, 56345), (178, 56360), (189, 56417), (191, 56423),

Gene: Tiri\_87 Start: 55187, Stop: 55798, Start Num: 49

Candidate Starts for Tiri\_87:

(6, 54917), (15, 55034), (22, 55061), (Start: 49 @55187 has 88 MA's), (74, 55283), (91, 55358), (96, 55370), (100, 55388), (110, 55436), (117, 55451), (118, 55460), (120, 55466), (122, 55487), (124, 55508), (126, 55526), (130, 55541), (131, 55547), (133, 55553), (137, 55565), (147, 55586), (156, 55610), (163, 55637), (169, 55682), (178, 55721), (189, 55778), (191, 55784),

Gene: Topper\_87 Start: 55520, Stop: 56059, Start Num: 49

Candidate Starts for Topper\_87:

(12, 55364), (Start: 49 @55520 has 88 MA's), (100, 55649), (108, 55691), (110, 55697), (117, 55712), (118, 55721), (120, 55727), (122, 55748), (126, 55787), (130, 55802), (131, 55808), (133, 55814), (147, 55847), (156, 55871), (163, 55898), (169, 55943), (178, 55982), (189, 56039), (191, 56045),

Gene: Torres\_71 Start: 53842, Stop: 54486, Start Num: 37

Candidate Starts for Torres\_71:

(Start: 35 @53836 has 3 MA's), (Start: 37 @53842 has 16 MA's), (46, 53869), (50, 53896), (56, 53908), (Start: 58 @53923 has 1 MA's), (64, 53947), (68, 53953), (77, 53977), (81, 53986), (102, 54076), (116, 54121), (117, 54124), (120, 54139), (124, 54181), (127, 54202), (128, 54205), (129, 54211), (130, 54214), (133, 54226), (134, 54235), (142, 54259), (148, 54280), (153, 54292), (154, 54295), (158, 54304), (164, 54325), (168, 54364), (169, 54367), (176, 54397), (178, 54406), (188, 54460),

Gene: TreyKay\_89 Start: 55920, Stop: 56471, Start Num: 49

Candidate Starts for TreyKay\_89:

(7, 55740), (12, 55764), (Start: 49 @55920 has 88 MA's), (67, 55953), (91, 56031), (96, 56043), (100, 56061), (110, 56109), (117, 56124), (118, 56133), (120, 56139), (122, 56160), (124, 56181), (126, 56199), (130, 56214), (131, 56220), (133, 56226), (147, 56259), (156, 56283), (163, 56310), (168, 56352), (169, 56355), (174, 56379), (178, 56394), (189, 56451), (191, 56457),

Gene: TribelTrouble\_88 Start: 56688, Stop: 57158, Start Num: 80

Candidate Starts for TribelTrouble\_88:

(Start: 80 @56688 has 2 MA's), (95, 56739), (96, 56742), (100, 56766), (101, 56769), (107, 56811), (109, 56820), (111, 56823), (114, 56829), (120, 56856), (122, 56877), (126, 56916), (129, 56928), (157, 56976), (167, 57021), (170, 57042), (188, 57132), (190, 57141),

Gene: Trice\_68 Start: 51229, Stop: 51873, Start Num: 37

Candidate Starts for Trice\_68:

(Start: 35 @51223 has 3 MA's), (Start: 37 @51229 has 16 MA's), (46, 51256), (50, 51283), (56, 51295), (Start: 58 @51310 has 1 MA's), (64, 51334), (68, 51340), (77, 51364), (81, 51373), (102, 51463), (116, 51508), (117, 51511), (120, 51526), (124, 51568), (127, 51589), (128, 51592), (129, 51598), (130, 51601), (133, 51613), (134, 51622), (142, 51646), (148, 51667), (153, 51679), (154, 51682), (158, 51691), (164, 51712), (168, 51751), (169, 51754), (176, 51784), (178, 51793), (188, 51847), (190, 51856),

Gene: TruffulaTree\_89 Start: 55913, Stop: 56452, Start Num: 49

Candidate Starts for TruffulaTree\_89:

(Start: 49 @55913 has 88 MA's), (70, 55952), (100, 56042), (108, 56084), (110, 56090), (117, 56105), (118, 56114), (120, 56120), (122, 56141), (124, 56162), (126, 56180), (130, 56195), (131, 56201), (133, 56207), (147, 56240), (156, 56264), (163, 56291), (169, 56336), (178, 56375), (189, 56432), (191, 56438),

Gene: Twitch\_87 Start: 55522, Stop: 56061, Start Num: 49

Candidate Starts for Twitch\_87:

(12, 55366), (Start: 49 @55522 has 88 MA's), (100, 55651), (108, 55693), (110, 55699), (117, 55714), (118, 55723), (120, 55729), (122, 55750), (126, 55789), (130, 55804), (131, 55810), (133, 55816), (147, 55849), (156, 55873), (163, 55900), (169, 55945), (178, 55984), (189, 56041), (191, 56047),

Gene: Urkel\_87 Start: 55782, Stop: 56321, Start Num: 49

Candidate Starts for Urkel\_87:

(Start: 49 @55782 has 88 MA's), (73, 55830), (100, 55911), (110, 55959), (117, 55974), (118, 55983), (120, 55989), (122, 56010), (123, 56022), (124, 56031), (126, 56049), (130, 56064), (133, 56076), (137, 56088), (147, 56109), (159, 56142), (163, 56160), (164, 56163), (169, 56205), (174, 56229), (178, 56244), (189, 56301), (191, 56307),

Gene: Validus\_93 Start: 57272, Stop: 57934, Start Num: 18

Candidate Starts for Validus\_93:

(Start: 18 @57272 has 1 MA's), (Start: 20 @57275 has 3 MA's), (25, 57302), (40, 57365), (43, 57371), (63, 57410), (69, 57419), (86, 57464), (91, 57482), (92, 57485), (94, 57491), (100, 57512), (110, 57557), (117, 57572), (120, 57587), (122, 57608), (124, 57629), (129, 57659), (135, 57683), (142, 57695), (147, 57707), (156, 57731), (166, 57788), (168, 57812), (176, 57845), (177, 57851), (183, 57881), (188, 57908), (191, 57920),

Gene: Veliki\_88 Start: 55491, Stop: 56030, Start Num: 49

Candidate Starts for Veliki\_88:

(12, 55335), (Start: 49 @55491 has 88 MA's), (100, 55620), (108, 55662), (110, 55668), (117, 55683), (118, 55692), (120, 55698), (122, 55719), (126, 55758), (130, 55773), (131, 55779), (133, 55785), (137, 55797), (147, 55818), (163, 55869), (169, 55914), (178, 55953), (189, 56010), (191, 56016),

Gene: ViviJ\_85 Start: 53804, Stop: 54451, Start Num: 36

Candidate Starts for ViviJ\_85:

(Start: 36 @53804 has 12 MA's), (44, 53822), (52, 53858), (69, 53918), (75, 53933), (98, 54020), (117, 54098), (132, 54200), (133, 54203), (170, 54338), (176, 54362), (184, 54404), (190, 54434),

Gene: Waterfoul\_81 Start: 53860, Stop: 54501, Start Num: 37

Candidate Starts for Waterfoul\_81:

(Start: 37 @53860 has 16 MA's), (42, 53875), (44, 53881), (52, 53917), (57, 53932), (69, 53977), (117, 54154), (152, 54301), (169, 54382), (176, 54412), (184, 54454), (190, 54484), (191, 54487),

Gene: YoureAdopted\_86 Start: 55308, Stop: 55856, Start Num: 49

Candidate Starts for YoureAdopted\_86:

(Start: 49 @55308 has 88 MA's), (67, 55341), (91, 55416), (96, 55428), (100, 55446), (110, 55494), (117, 55509), (118, 55518), (120, 55524), (122, 55545), (124, 55566), (126, 55584), (130, 55599), (131, 55605), (133, 55611), (147, 55644), (156, 55668), (163, 55695), (169, 55740), (178, 55779), (189, 55836), (191, 55842),

Gene: Yuna\_90 Start: 57455, Stop: 58021, Start Num: 62

Candidate Starts for Yuna\_90:

(Start: 62 @57455 has 1 MA's), (71, 57473), (102, 57587), (111, 57623), (120, 57650), (124, 57692), (128, 57716), (133, 57737), (136, 57752), (140, 57761), (150, 57800), (152, 57806), (160, 57839), (169, 57902), (173, 57923), (174, 57926), (176, 57932), (178, 57941), (183, 57968), (185, 57983), (188, 57995), (191, 58007),

Gene: Yunkel11\_92 Start: 56143, Stop: 56694, Start Num: 49

Candidate Starts for Yunkel11\_92:

(Start: 49 @56143 has 88 MA's), (66, 56176), (88, 56245), (96, 56263), (108, 56323), (110, 56329), (117, 56344), (120, 56359), (122, 56380), (124, 56401), (126, 56419), (128, 56425), (129, 56431), (135, 56455), (147, 56479), (156, 56503), (168, 56572), (177, 56611), (183, 56641), (188, 56668), (191, 56680),

Gene: Zabiza\_83 Start: 51864, Stop: 52403, Start Num: 49

Candidate Starts for Zabiza\_83:

(12, 51708), (Start: 49 @51864 has 88 MA's), (100, 51993), (108, 52035), (110, 52041), (117, 52056), (118, 52065), (120, 52071), (122, 52092), (126, 52131), (130, 52146), (131, 52152), (133, 52158), (137, 52170), (147, 52191), (163, 52242), (169, 52287), (178, 52326), (189, 52383), (191, 52389),

Gene: Zavala\_89 Start: 55773, Stop: 56321, Start Num: 49

Candidate Starts for Zavala\_89:

(Start: 49 @55773 has 88 MA's), (67, 55806), (91, 55881), (96, 55893), (100, 55911), (110, 55959), (117, 55974), (118, 55983), (120, 55989), (122, 56010), (124, 56031), (126, 56049), (130, 56064), (131, 56070), (133, 56076), (147, 56109), (156, 56133), (163, 56160), (169, 56205), (178, 56244), (189, 56301), (191, 56307),