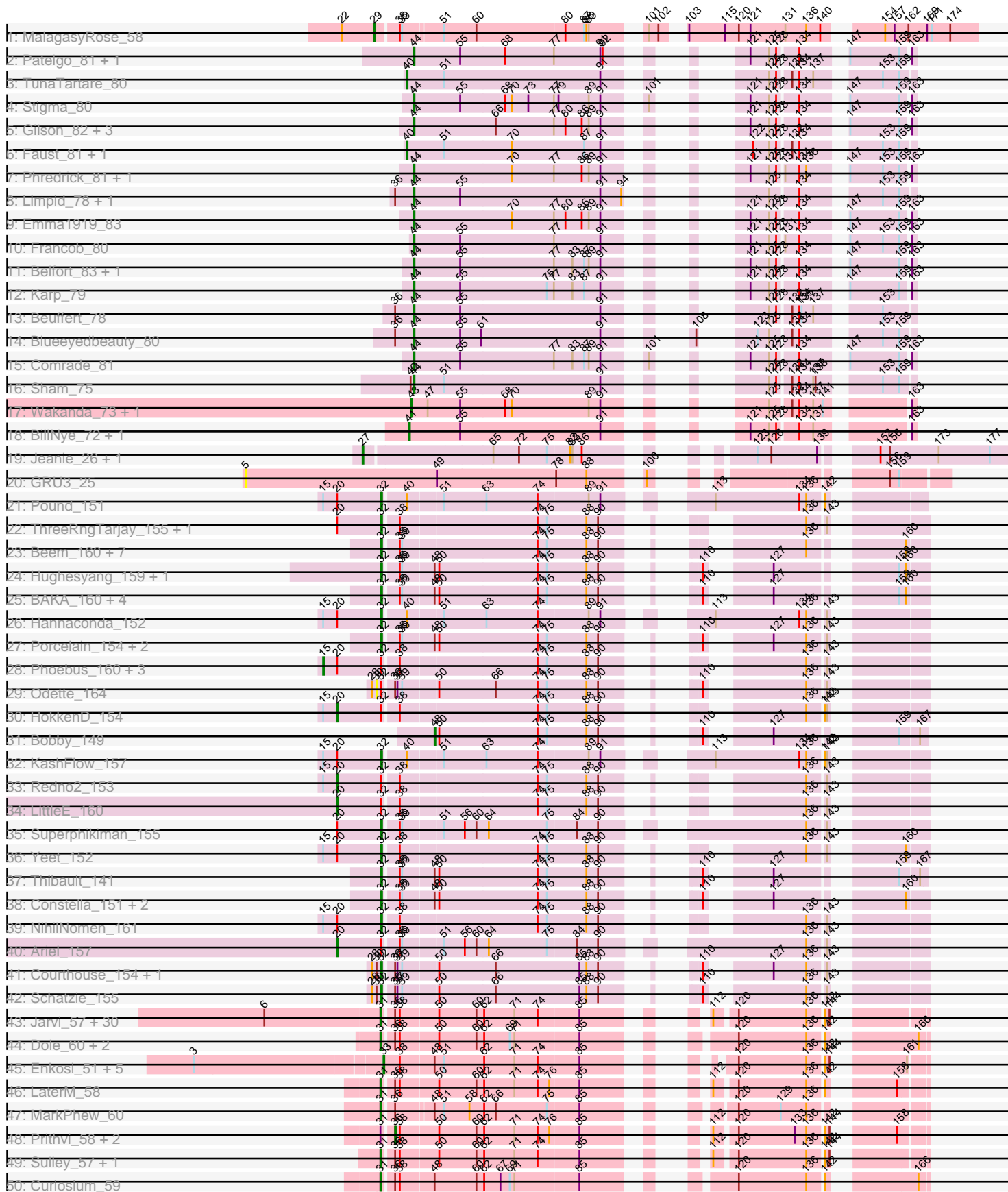
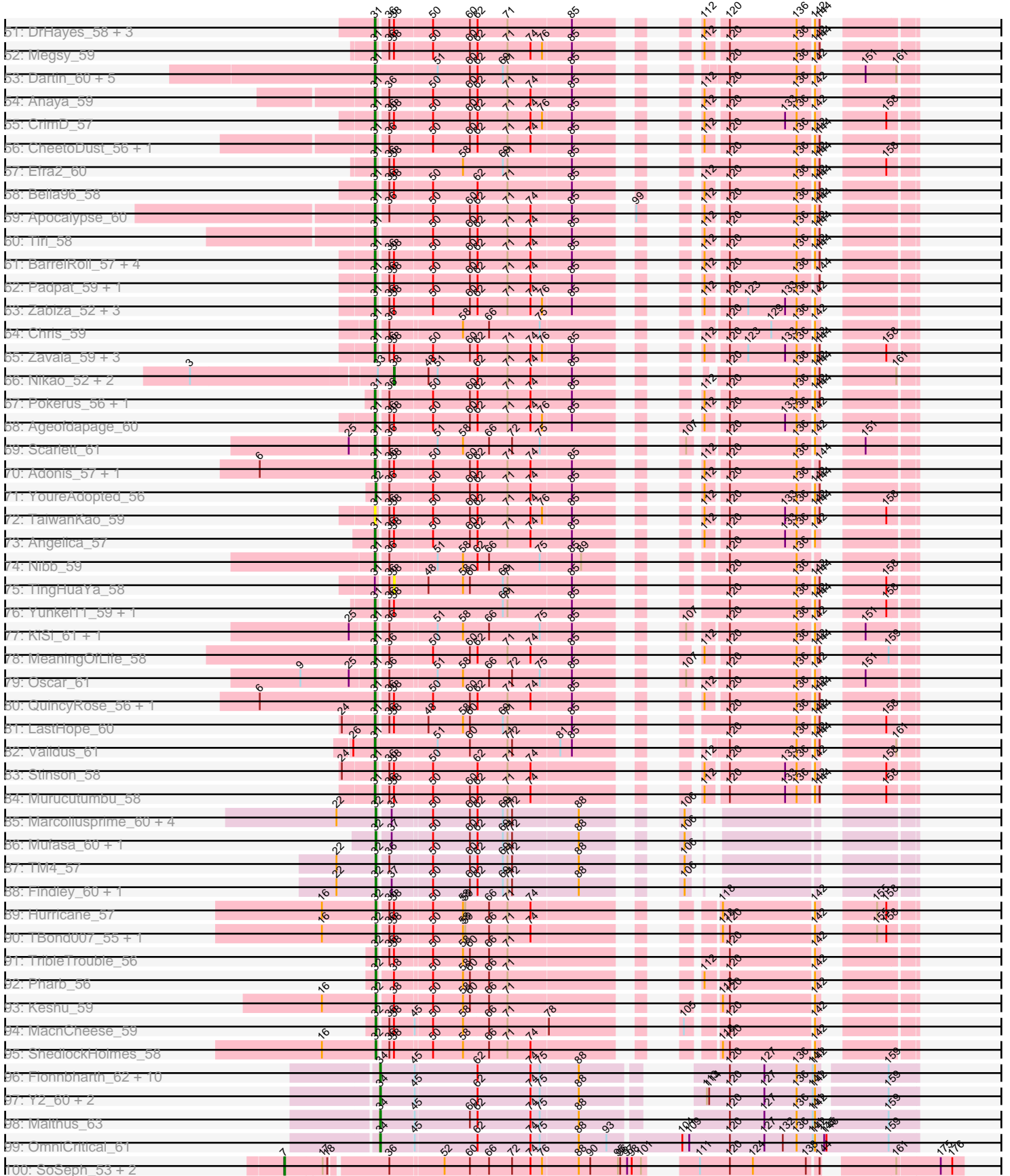


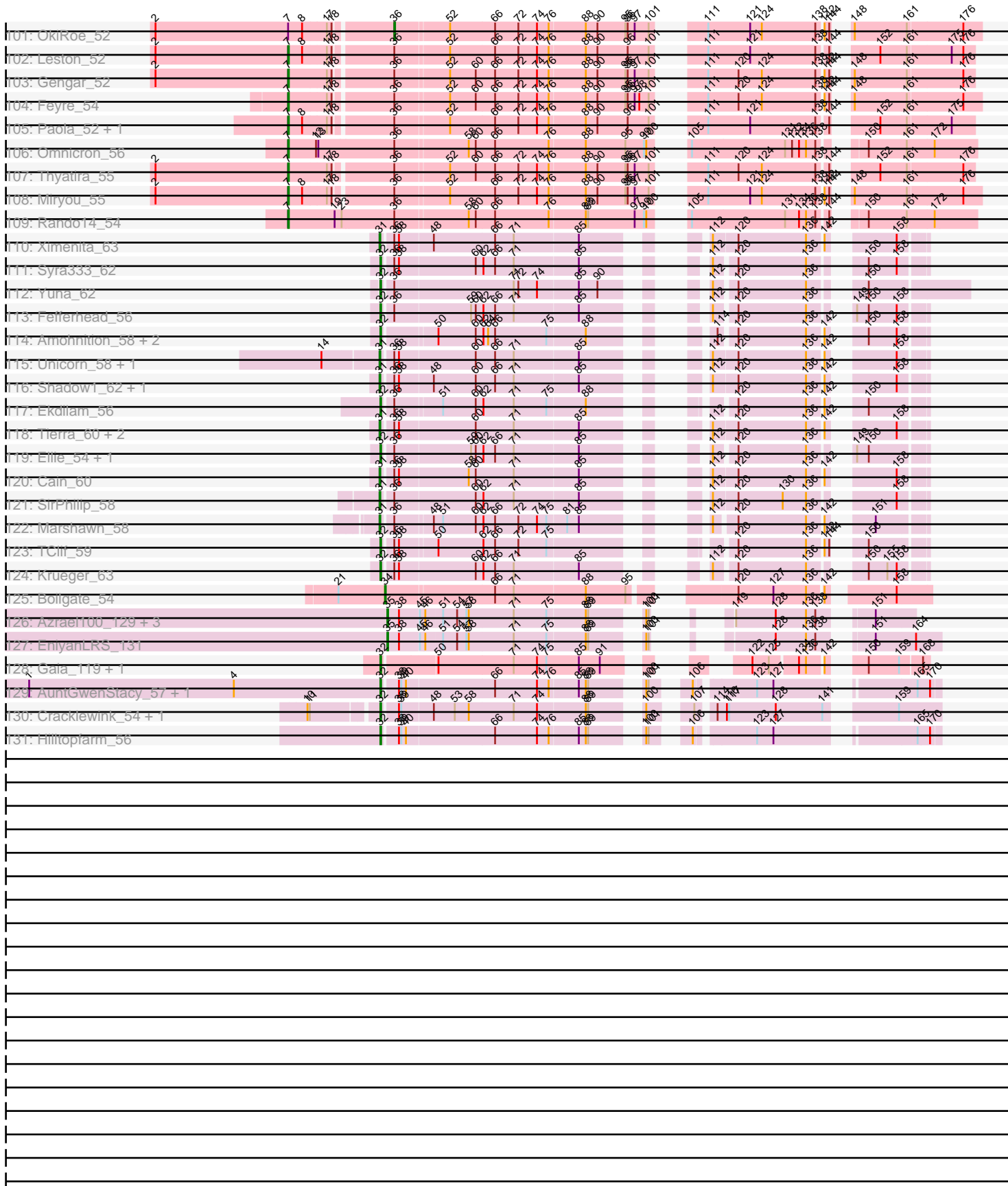
Pham 193695



Pham 193695



Pham 193695



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 193695 Report

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

Pham number 193695 has 265 members, 12 are drafts.

Phages represented in each track:

- Track 1 : MalagasyRose\_58
- Track 2 : Patelgo\_81, Moab\_81
- Track 3 : TunaTartare\_80
- Track 4 : Stigma\_80
- Track 5 : Gilson\_82, Forrest\_84, Jada\_82, MeganTheeKilla\_80
- Track 6 : Faust\_81, SeresaTree\_81
- Track 7 : Phredrick\_81, Kenrey\_83
- Track 8 : Limpid\_78, Annadreamy\_79
- Track 9 : Emma1919\_83
- Track 10 : Francob\_80
- Track 11 : Belfort\_83, SparkleGoddess\_81
- Track 12 : Karp\_79
- Track 13 : Beuffert\_78
- Track 14 : Blueeyedbeauty\_80
- Track 15 : Comrade\_81
- Track 16 : Sham\_75
- Track 17 : Wakanda\_73, Muntaha\_74
- Track 18 : BillNye\_72, Circinus\_73
- Track 19 : Jeanie\_26, McGonagall\_26
- Track 20 : GRU3\_25
- Track 21 : Pound\_151
- Track 22 : ThreeRngTarjay\_155, Gonephishing\_152
- Track 23 : Beem\_160, Dallas\_159, Minerva\_158, Wanda\_158, Ejimix\_151, Halley\_160, DmpstrDiver\_159, Zelink\_153
- Track 24 : Hughesyang\_159, Klein\_158
- Track 25 : BAKA\_160, Optimus\_151, Duke13\_157, Kalah2\_151, Bagrid\_163
- Track 26 : Hannaconda\_152
- Track 27 : Porcelain\_154, MiaZeal\_157, Lucky2013\_150
- Track 28 : Phoebus\_160, Dove\_146, Bombitas\_146, JuicyJay\_154
- Track 29 : Odette\_164
- Track 30 : HokkenD\_154
- Track 31 : Bobby\_149
- Track 32 : KashFlow\_157
- Track 33 : Redno2\_153
- Track 34 : LittleE\_160
- Track 35 : Superphikiman\_155
- Track 36 : Yeet\_152

- Track 37 : Thibault\_141
- Track 38 : Constella\_151, Omega\_164, EricMillard\_153
- Track 39 : NihilNomen\_161
- Track 40 : Ariel\_157
- Track 41 : Courthouse\_154, Squint\_151
- Track 42 : Schatzie\_155
- Track 43 : Jarvi\_57, Peel\_57, CREW\_57, Topper\_57, Boiiii\_57, Dalmuri\_57, Asayake\_57, Hyperbowlee\_57, BGIlluviae\_57, Jeckyll\_57, Homura\_57, AlishaPH\_57, Atiba\_58, BEEEST\_57, Rosmarinus\_57, Padfoot\_57, Joy99\_57, Inky\_57, Lunahalos\_57, Capricorn\_57, Blizzard\_57, Belladonna\_57, Adephagia\_57, Durfee\_57, Tachez\_57, Spock\_57, Twitch\_57, ShiaSurprise\_58, Piatt\_57, Llorens\_57, CaseJules\_59
- Track 44 : Dole\_60, Illumine\_60, Devera\_62
- Track 45 : Enkosi\_51, Nutello\_49, LilPharaoh\_49, Amelie\_49, Torres\_51, Binglebops\_49
- Track 46 : LaterM\_58
- Track 47 : MarkPhew\_60
- Track 48 : Prithvi\_58, LindNT\_56, TreyKay\_58
- Track 49 : Sulley\_57, Beezoo\_59
- Track 50 : Curiosium\_59
- Track 51 : DrHayes\_58, Urkel\_58, SamuelLPlaqson\_58, TiniBug\_58
- Track 52 : Megsy\_59
- Track 53 : Dartin\_60, Peanam\_60, Shaobing\_60, McMater\_60, Richo\_60, Niklas\_60
- Track 54 : Anaya\_59
- Track 55 : CrimD\_57
- Track 56 : CheetoDust\_56, BaghaKamala\_56
- Track 57 : Efra2\_60
- Track 58 : Bella96\_58
- Track 59 : Apocalypse\_60
- Track 60 : Tiri\_58
- Track 61 : BarrelRoll\_57, Slimphazie\_57, TruffulaTree\_57, Jayhawk\_58, Rapunzel97\_58
- Track 62 : Padpat\_59, Emerson\_58
- Track 63 : Zabiza\_52, ActinUp\_57, HedwigODU\_57, Ramen\_58
- Track 64 : Chris\_59
- Track 65 : Zavala\_59, JAWS\_57, Mynx\_58, Veliki\_58
- Track 66 : Nikao\_52, Mdavu\_50, SgtBeansprout\_49
- Track 67 : Pokerus\_56, Geraldini\_60
- Track 68 : Ageofdapage\_60
- Track 69 : Scarlett\_61
- Track 70 : Adonis\_57, Deby\_57
- Track 71 : YoureAdopted\_56
- Track 72 : TaiwanKao\_59
- Track 73 : Angelica\_57
- Track 74 : Nibb\_59
- Track 75 : TingHuaYa\_58
- Track 76 : Yunkel11\_59, Guanica15\_59
- Track 77 : KiSi\_61, LeMond\_61
- Track 78 : MeaningOfLife\_58
- Track 79 : Oscar\_61
- Track 80 : QuincyRose\_56, Ganymede\_58
- Track 81 : LastHope\_60
- Track 82 : Validus\_61

- Track 83 : Stinson\_58
- Track 84 : Murucutumbu\_58
- Track 85 : Marcoliusprime\_60, DismalFunk\_60, ZoeJ\_59, Milly\_60, DismalStressor\_60
- Track 86 : Mufasa\_60, BoostSeason\_60
- Track 87 : TM4\_57
- Track 88 : Findley\_60, Strobilo\_61
- Track 89 : Hurricane\_57
- Track 90 : TBond007\_55, Pixie\_56
- Track 91 : TribbleTrouble\_56
- Track 92 : Pharb\_56
- Track 93 : Keshu\_59
- Track 94 : MacnCheese\_59
- Track 95 : ShedlockHolmes\_58
- Track 96 : Fionnbharth\_62, Eponine\_64, Ruthiejr\_63, Cheetobro\_62, Taquito\_61, Juliette\_64, Slarp\_62, Mitti\_62, Wintermute\_62, SamScheppers\_60, Chancellor\_62
- Track 97 : Y2\_60, Y10\_60, JF1\_62
- Track 98 : Malthus\_63
- Track 99 : OmniCritical\_61
- Track 100 : SoSeph\_53, Heftyboy\_53, Waterfoul\_54
- Track 101 : OkiRoe\_52
- Track 102 : Leston\_52
- Track 103 : Gengar\_52
- Track 104 : Feyre\_54
- Track 105 : Paola\_52, Guillsminger\_53
- Track 106 : Omnicron\_56
- Track 107 : Thyatira\_55
- Track 108 : Miryou\_55
- Track 109 : Rando14\_54
- Track 110 : Ximenita\_63
- Track 111 : Syra333\_62
- Track 112 : Yuna\_62
- Track 113 : Fefferhead\_56
- Track 114 : Amohnition\_58, Hammy\_58, DARTH\_P\_58
- Track 115 : Unicorn\_58, PhelpsODU\_58
- Track 116 : Shadow1\_62, Sunflower1121\_63
- Track 117 : Ekdilam\_56
- Track 118 : Tierra\_60, Bryler\_60, Phrank\_60
- Track 119 : Ellie\_54, Amgine\_57
- Track 120 : Cain\_60
- Track 121 : SirPhilip\_58
- Track 122 : Marshawn\_58
- Track 123 : TClif\_59
- Track 124 : Krueger\_63
- Track 125 : Boilgate\_54
- Track 126 : Azrael100\_129, MaryV\_122, Cosmo\_137, Wildcat\_136
- Track 127 : EniyanLRS\_131
- Track 128 : Gaia\_119, Nebkiss\_120
- Track 129 : AuntGwenStacy\_57, Typha\_56
- Track 130 : Cracklewink\_54, Bipper\_54
- Track 131 : Hilltopfarm\_56

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

The start number called the most often in the published annotations is 31, it was called in 102 of the 253 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp\_57, Adephagia\_57, Adonis\_57, Ageofdapage\_60, AlishaPH\_57, Anaya\_59, Angelica\_57, Apocalypse\_60, Asayake\_57, Atiba\_58, BEEST\_57, BGIlluviae\_57, BaghaKamala\_56, BarrelRoll\_57, Beezoo\_59, Bella96\_58, Belladonna\_57, Blizzard\_57, Boiiii\_57, Bryler\_60, CREW\_57, Cain\_60, Capricorn\_57, CaseJules\_59, CheetoDust\_56, Chris\_59, CrimD\_57, Curiosium\_59, Dalmuri\_57, Dartin\_60, Deby\_57, Devera\_62, Dole\_60, DrHayes\_58, Durfee\_57, Efra2\_60, Emerson\_58, Ganymede\_58, Geraldini\_60, Guanica15\_59, HedwigODU\_57, Homura\_57, Hyperbowlee\_57, Illumine\_60, Inky\_57, JAWS\_57, Jarvi\_57, Jayhawk\_58, Jeckyll\_57, Joy99\_57, KiSi\_61, LastHope\_60, LaterM\_58, LeMond\_61, Llorens\_57, Lunahalos\_57, MarkPhew\_60, Marshawn\_58, McMater\_60, MeaningOfLife\_58, Megsy\_59, Murucutumbu\_58, Mynx\_58, Nibb\_59, Niklas\_60, Oscar\_61, Padfoot\_57, Padpat\_59, Peanam\_60, Peel\_57, PhelpsODU\_58, Phrank\_60, Piatt\_57, Pokerus\_56, QuincyRose\_56, Ramen\_58, Rapunzel97\_58, Richo\_60, Rosmarinus\_57, SamuelLPlagson\_58, Scarlett\_61, Shadow1\_62, Shaobing\_60, ShiaSurprise\_58, SirPhilip\_58, Slimphazie\_57, Spock\_57, Stinson\_58, Sulley\_57, Sunflower1121\_63, Tachez\_57, TaiwanKao\_59, Tierra\_60, TiniBug\_58, Tiri\_58, Topper\_57, TruffulaTree\_57, Twitch\_57, Unicorn\_58, Urkel\_58, Validus\_61, Veliki\_58, Ximenita\_63, Yunkel11\_59, Zabiza\_52, Zavala\_59,

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

- LindNT\_56, Prithvi\_58, TingHuaYa\_58, TreyKay\_58,

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

- Amelie\_49, Amgine\_57, Amohnition\_58, Annadreamy\_79, Ariel\_157, AuntGwenStacy\_57, Azrael100\_129, BAKA\_160, Bagrid\_163, Beem\_160, Belfort\_83, Beuffert\_78, Binglebops\_49, BillNye\_72, Bipper\_54, Blueeyedbeauty\_80, Bobby\_149, Boilgate\_54, Bombitas\_146, BoostSeason\_60, Chancellor\_62, Cheetobro\_62, Circinus\_73, Comrade\_81, Constella\_151, Cosmo\_137, Courthouse\_154, Cracklewink\_54, Dallas\_159, DarthP\_58, DismalFunk\_60, DismalStressor\_60, DmpstrDiver\_159, Dove\_146, Duke13\_157, Ejimix\_151, Ekdilam\_56, Ellie\_54, Emma1919\_83, EniyanLRS\_131, Enkosi\_51, Eponine\_64, EricMillard\_153, Faust\_81, Fefferhead\_56, Feyre\_54, Findley\_60, Fionnbharth\_62, Forrest\_84, Francob\_80, GRU3\_25, Gaia\_119, Gengar\_52, Gilson\_82, Gonephishing\_152, Guillsminger\_53, Halley\_160, Hammy\_58, Hannaconda\_152, Heftyboy\_53, Hilltopfarm\_56, HokkenD\_154, Hughesyang\_159, Hurricane\_57, JF1\_62, Jada\_82, Jeanie\_26, JuicyJay\_154, Juliette\_64, Kalah2\_151, Karp\_79, KashFlow\_157, Kenrey\_83, Keshu\_59, Klein\_158, Krueger\_63, Leston\_52, LilPharaoh\_49, Limpid\_78, LittleE\_160, Lucky2013\_150, MacnCheese\_59, MalagasyRose\_58, Malthus\_63, Marcoliusprime\_60, MaryV\_122, McGonagall\_26, Mdavu\_50, MeganTheeKilla\_80, MiaZeal\_157, Milly\_60, Minerva\_158, Miryou\_55, Mitti\_62, Moab\_81, Mufasa\_60, Muntaha\_74, Nebkiss\_120, NihilNomen\_161, Nikao\_52, Nutello\_49, Odette\_164, OkiRoe\_52, Omega\_164, OmniCritical\_61, Omnicron\_56, Optimus\_151, Paola\_52, Patelgo\_81, Pharb\_56, Phoebus\_160, Phredrick\_81, Pixie\_56, Porcelain\_154, Pound\_151, Rando14\_54, Redno2\_153, Ruthiejr\_63, SamScheppers\_60, Schatzie\_155, SeresaTree\_81, SgtBeansprout\_49, Sham\_75, ShedlockHolmes\_58, Slarp\_62, SoSeph\_53, SparkleGoddess\_81,

Squint\_151, Stigma\_80, Strobilo\_61, Superphikiman\_155, Syra333\_62, TBond007\_55, TClif\_59, TM4\_57, Taquito\_61, Thibault\_141, ThreeRngTarjay\_155, Thyatira\_55, Torres\_51, TribbleTrouble\_56, TunaTartare\_80, Typha\_56, Wakanda\_73, Wanda\_158, Waterfoul\_54, Wildcat\_136, Wintermute\_62, Y10\_60, Y2\_60, Yeet\_152, YoureAdopted\_56, Yuna\_62, Zelink\_153, ZoeJ\_59,

### Summary by start number:

#### Start 5:

- Found in 1 of 265 ( 0.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GRU3\_25 (CW2),

#### Start 7:

- Found in 13 of 265 ( 4.9% ) of genes in pham
- Manual Annotations of this start: 12 of 253
- Called 92.3% of time when present
- Phage (with cluster) where this start called: Feyre\_54 (K5), Gengar\_52 (K5), Guillsminger\_53 (K5), Heftyboy\_53 (K5), Leston\_52 (K5), Miryou\_55 (K5), Omnicron\_56 (K5), Paola\_52 (K5), Rando14\_54 (K5), SoSeph\_53 (K5), Thyatira\_55 (K5), Waterfoul\_54 (K5),

#### Start 15:

- Found in 11 of 265 ( 4.2% ) of genes in pham
- Manual Annotations of this start: 4 of 253
- Called 36.4% of time when present
- Phage (with cluster) where this start called: Bombitas\_146 (J), Dove\_146 (J), JuicyJay\_154 (J), Phoebus\_160 (J),

#### Start 20:

- Found in 16 of 265 ( 6.0% ) of genes in pham
- Manual Annotations of this start: 4 of 253
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Ariel\_157 (J), HokkenD\_154 (J), LittleE\_160 (J), Redno2\_153 (J),

#### Start 27:

- Found in 2 of 265 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 2 of 253
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jeanie\_26 (CW1), McGonagall\_26 (CW1),

#### Start 29:

- Found in 1 of 265 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 253
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MalagasyRose\_58 (AG),

#### Start 30:

- Found in 4 of 265 ( 1.5% ) of genes in pham
- No Manual Annotations of this start.



- Called 25.0% of time when present
- Phage (with cluster) where this start called: Odette\_164 (J),

#### Start 31:

- Found in 110 of 265 ( 41.5% ) of genes in pham
- Manual Annotations of this start: 102 of 253
- Called 96.4% of time when present
- Phage (with cluster) where this start called: ActinUp\_57 (K1), Adephagia\_57 (K1), Adonis\_57 (K1), Ageofdapage\_60 (K1), AlishaPH\_57 (K1), Anaya\_59 (K1), Angelica\_57 (K1), Apocalypse\_60 (K1), Asayake\_57 (K1), Atiba\_58 (K1), BEEST\_57 (K1), BGIlluviae\_57 (K1), BaghaKamala\_56 (K1), BarrelRoll\_57 (K1), Beezoo\_59 (K1), Bella96\_58 (K1), Belladonna\_57 (K1), Blizzard\_57 (K1), Boiiii\_57 (K1), Bryler\_60 (K6), CREW\_57 (K1), Cain\_60 (K6), Capricorn\_57 (K1), CaseJules\_59 (K1), CheetoDust\_56 (K1), Chris\_59 (K1), CrimD\_57 (K1), Curiosium\_59 (K1), Dalmuri\_57 (K1), Dartin\_60 (K1), Deby\_57 (K1), Devera\_62 (K1), Dole\_60 (K1), DrHayes\_58 (K1), Durfee\_57 (K1), Efra2\_60 (K1), Emerson\_58 (K1), Ganymede\_58 (K1), Geraldini\_60 (K1), Guanica15\_59 (K1), HedwigODU\_57 (K1), Homura\_57 (K1), Hyperbowlee\_57 (K1), Illumine\_60 (K1), Inky\_57 (K1), JAWS\_57 (K1), Jarvi\_57 (K1), Jayhawk\_58 (K1), Jeckyll\_57 (K1), Joy99\_57 (K1), KiSi\_61 (K1), LastHope\_60 (K1), LaterM\_58 (K1), LeMond\_61 (K1), Llorens\_57 (K1), Lunahalos\_57 (K1), MarkPhew\_60 (K1), Marshawn\_58 (K6), McMater\_60 (K1), MeaningOfLife\_58 (K1), Megsy\_59 (K1), Murucutumbu\_58 (K1), Mynx\_58 (K1), Nibb\_59 (K1), Niklas\_60 (K1), Oscar\_61 (K1), Padfoot\_57 (K1), Padpat\_59 (K1), Peanam\_60 (K1), Peel\_57 (K1), PhelpsODU\_58 (K6), Phrank\_60 (K6), Piatt\_57 (K1), Pokerus\_56 (K1), QuincyRose\_56 (K1), Ramen\_58 (K1), Rapunzel97\_58 (K1), Richo\_60 (K1), Rosmarinus\_57 (K1), SamuelLPlaqson\_58 (K1), Scarlett\_61 (K1), Shadow1\_62 (K6), Shaobing\_60 (K1), ShiaSurprise\_58 (K1), SirPhilip\_58 (K6), Slimphazie\_57 (K1), Spock\_57 (K1), Stinson\_58 (K1), Sulley\_57 (K1), Sunflower1121\_63 (K6), Tachez\_57 (K1), TaiwanKao\_59 (K1), Tierra\_60 (K6), TiniBug\_58 (K1), Tiri\_58 (K1), Topper\_57 (K1), TruffulaTree\_57 (K1), Twitch\_57 (K1), Unicorn\_58 (K6), Urkel\_58 (K1), Validus\_61 (K1), Veliki\_58 (K1), Ximenita\_63 (K6), Yunkel11\_59 (K1), Zabiza\_52 (K1), Zavala\_59 (K1),

#### Start 32:

- Found in 79 of 265 ( 29.8% ) of genes in pham
- Manual Annotations of this start: 67 of 253
- Called 88.6% of time when present
- Phage (with cluster) where this start called: Amgine\_57 (K6), Amohnition\_58 (K6), AuntGwenStacy\_57 (Y), BAKA\_160 (J), Bagrid\_163 (J), Beem\_160 (J), Bipper\_54 (Y), BoostSeason\_60 (K2), Constella\_151 (J), Courthouse\_154 (J), Cracklewink\_54 (Y), Dallas\_159 (J), DarthP\_58 (K6), DismalFunk\_60 (K2), DismalStressor\_60 (K2), DmpstrDiver\_159 (J), Duke13\_157 (J), Ejimix\_151 (J), Ekdilam\_56 (K6), Ellie\_54 (K6), EricMillard\_153 (J), Fefferhead\_56 (K6), Findley\_60 (K2), Gaia\_119 (X), Gonephishing\_152 (J), Halley\_160 (J), Hammy\_58 (K6), Hannaconda\_152 (J), Hilltopfarm\_56 (Y), Hughesyang\_159 (J), Hurricane\_57 (K3), Kalah2\_151 (J), KashFlow\_157 (J), Keshu\_59 (K3), Klein\_158 (J), Krueger\_63 (K6), Lucky2013\_150 (J), MacnCheese\_59 (K3), Marcoliusprime\_60 (K2), MiaZeal\_157 (J), Milly\_60 (K2), Minerva\_158 (J), Mufasa\_60 (K2), Nebkiss\_120 (X), NihilNomen\_161 (J), Omega\_164 (J), Optimus\_151 (J), Pharb\_56 (K3), Pixie\_56 (K3), Porcelain\_154 (J), Pound\_151 (J), Schatzie\_155 (J), ShedlockHolmes\_58 (K3), Squint\_151 (J), Strobilo\_61 (K2), Superphikiman\_155 (J), Syra333\_62 (K6), TBond007\_55 (K3), TClif\_59 (K6), TM4\_57 (K2), Thibault\_141 (J), ThreeRngTarjay\_155 (J), TripleTrouble\_56 (K3), Typha\_56 (Y), Wanda\_158 (J), Yeet\_152 (J),

YoureAdopted\_56 (K1), Yuna\_62 (K6), Zelink\_153 (J), ZoeJ\_59 (K2),

Start 33:

- Found in 9 of 265 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 5 of 253
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Amelie\_49 (K1), Binglebops\_49 (K1), Enkosi\_51 (K1), LilPharaoh\_49 (K1), Nutello\_49 (K1), Torres\_51 (K1),

Start 34:

- Found in 17 of 265 ( 6.4% ) of genes in pham
- Manual Annotations of this start: 17 of 253
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Boilgate\_54 (K8), Chancellor\_62 (K4), Cheetobro\_62 (K4), Eponine\_64 (K4), Fionnbharth\_62 (K4), JF1\_62 (K4), Juliette\_64 (K4), Malthus\_63 (K4), Mitti\_62 (K4), OmniCritical\_61 (K4), Ruthiejr\_63 (K4), SamScheppers\_60 (K4), Slarp\_62 (K4), Taquito\_61 (K4), Wintermute\_62 (K4), Y10\_60 (K4), Y2\_60 (K4),

Start 35:

- Found in 5 of 265 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 5 of 253
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Azrael100\_129 (V), Cosmo\_137 (V), EniyanLRS\_131 (V), MaryV\_122 (V), Wildcat\_136 (V),

Start 36:

- Found in 139 of 265 ( 52.5% ) of genes in pham
- Manual Annotations of this start: 4 of 253
- Called 2.9% of time when present
- Phage (with cluster) where this start called: LindNT\_56 (K1), OkiRoe\_52 (K5), Prithvi\_58 (K1), TreyKay\_58 (K1),

Start 38:

- Found in 152 of 265 ( 57.4% ) of genes in pham
- Manual Annotations of this start: 3 of 253
- Called 2.6% of time when present
- Phage (with cluster) where this start called: Mdavu\_50 (K1), Nikao\_52 (K1), SgtBeansprout\_49 (K1), TingHuaYa\_58 (K1),

Start 40:

- Found in 9 of 265 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 2 of 253
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Faust\_81 (BK1), SeresaTree\_81 (BK1), TunaTartare\_80 (BK1),

Start 41:

- Found in 2 of 265 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 2 of 253
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BillNye\_72 (BK2), Circinus\_73 (BK2),

Start 43:

- Found in 2 of 265 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 2 of 253
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Muntaha\_74 (BK2), Wakanda\_73 (BK2),

Start 44:

- Found in 20 of 265 ( 7.5% ) of genes in pham
- Manual Annotations of this start: 20 of 253
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Annadreamy\_79 (BK1), Belfort\_83 (BK1), Beuffert\_78 (BK1), Blueeyedbeauty\_80 (BK1), Comrade\_81 (BK1), Emma1919\_83 (BK1), Forrest\_84 (BK1), Francob\_80 (BK1), Gilson\_82 (BK1), Jada\_82 (BK1), Karp\_79 (BK1), Kenrey\_83 (BK1), Limpid\_78 (BK1), MeganTheeKilla\_80 (BK1), Moab\_81 (BK1), Patelgo\_81 (BK1), Phredrick\_81 (BK1), Sham\_75 (BK1), SparkleGoddess\_81 (BK1), Stigma\_80 (BK1),

Start 48:

- Found in 34 of 265 ( 12.8% ) of genes in pham
- Manual Annotations of this start: 1 of 253
- Called 2.9% of time when present
- Phage (with cluster) where this start called: Bobby\_149 (J),

**Summary by clusters:**

There are 16 clusters represented in this pham: V, CW2, BK2, AG, CW1, J, K3, K2, K1, BK1, K5, K4, Y, X, K8, K6,

Info for manual annotations of cluster AG:

- Start number 29 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster BK1:

- Start number 40 was manually annotated 2 times for cluster BK1.
- Start number 44 was manually annotated 20 times for cluster BK1.

Info for manual annotations of cluster BK2:

- Start number 41 was manually annotated 2 times for cluster BK2.
- Start number 43 was manually annotated 2 times for cluster BK2.

Info for manual annotations of cluster CW1:

- Start number 27 was manually annotated 2 times for cluster CW1.

Info for manual annotations of cluster J:

- Start number 15 was manually annotated 4 times for cluster J.
- Start number 20 was manually annotated 4 times for cluster J.
- Start number 32 was manually annotated 31 times for cluster J.
- Start number 48 was manually annotated 1 time for cluster J.

Info for manual annotations of cluster K1:

- Start number 31 was manually annotated 91 times for cluster K1.
- Start number 32 was manually annotated 1 time for cluster K1.
- Start number 33 was manually annotated 5 times for cluster K1.

- Start number 36 was manually annotated 3 times for cluster K1.
- Start number 38 was manually annotated 3 times for cluster K1.

Info for manual annotations of cluster K2:

- Start number 32 was manually annotated 10 times for cluster K2.

Info for manual annotations of cluster K3:

- Start number 32 was manually annotated 8 times for cluster K3.

Info for manual annotations of cluster K4:

- Start number 34 was manually annotated 16 times for cluster K4.

Info for manual annotations of cluster K5:

- Start number 7 was manually annotated 12 times for cluster K5.
- Start number 36 was manually annotated 1 time for cluster K5.

Info for manual annotations of cluster K6:

- Start number 31 was manually annotated 11 times for cluster K6.
- Start number 32 was manually annotated 11 times for cluster K6.

Info for manual annotations of cluster K8:

- Start number 34 was manually annotated 1 time for cluster K8.

Info for manual annotations of cluster V:

- Start number 35 was manually annotated 5 times for cluster V.

Info for manual annotations of cluster X:

- Start number 32 was manually annotated 2 times for cluster X.

Info for manual annotations of cluster Y:

- Start number 32 was manually annotated 4 times for cluster Y.

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

Gene: ActinUp\_57 Start: 39985, Stop: 40539, Start Num: 31

Candidate Starts for ActinUp\_57:

(Start: 31 @39985 has 102 MA's), (Start: 36 @39997 has 4 MA's), (Start: 38 @40003 has 3 MA's), (50, 40051), (60, 40099), (62, 40108), (71, 40147), (74, 40177), (76, 40192), (85, 40228), (112, 40315), (120, 40339), (123, 40363), (133, 40411), (136, 40426), (142, 40444),

Gene: Adephagia\_57 Start: 39986, Stop: 40540, Start Num: 31

Candidate Starts for Adephagia\_57:

(6, 39839), (Start: 31 @39986 has 102 MA's), (Start: 36 @39998 has 4 MA's), (Start: 38 @40004 has 3 MA's), (50, 40052), (60, 40100), (62, 40109), (71, 40148), (74, 40178), (85, 40229), (112, 40316), (120, 40340), (136, 40427), (142, 40445), (144, 40451),

Gene: Adonis\_57 Start: 40233, Stop: 40787, Start Num: 31

Candidate Starts for Adonis\_57:

(6, 40083), (Start: 31 @40233 has 102 MA's), (Start: 36 @40245 has 4 MA's), (Start: 38 @40251 has 3 MA's), (50, 40299), (60, 40347), (62, 40356), (71, 40395), (74, 40425), (85, 40476), (112, 40563), (120, 40587), (136, 40674), (144, 40698),

Gene: Ageofdapage\_60 Start: 40974, Stop: 41528, Start Num: 31

Candidate Starts for Ageofdapage\_60:

(Start: 31 @40974 has 102 MA's), (Start: 36 @40986 has 4 MA's), (Start: 38 @40992 has 3 MA's), (50, 41040), (60, 41088), (62, 41097), (71, 41136), (74, 41166), (76, 41181), (85, 41217), (112, 41304), (120, 41328), (133, 41400), (136, 41415), (142, 41433),

Gene: AlishaPH\_57 Start: 40247, Stop: 40801, Start Num: 31

Candidate Starts for AlishaPH\_57:

(6, 40100), (Start: 31 @40247 has 102 MA's), (Start: 36 @40259 has 4 MA's), (Start: 38 @40265 has 3 MA's), (50, 40313), (60, 40361), (62, 40370), (71, 40409), (74, 40439), (85, 40490), (112, 40577), (120, 40601), (136, 40688), (142, 40706), (144, 40712),

Gene: Amelie\_49 Start: 38047, Stop: 38598, Start Num: 33

Candidate Starts for Amelie\_49:

(3, 37813), (Start: 33 @38047 has 5 MA's), (Start: 38 @38068 has 3 MA's), (Start: 48 @38110 has 1 MA's), (51, 38122), (62, 38173), (71, 38212), (74, 38242), (85, 38293), (120, 38398), (136, 38485), (142, 38503), (144, 38509), (161, 38578),

Gene: Amgine\_57 Start: 41112, Stop: 41666, Start Num: 32

Candidate Starts for Amgine\_57:

(Start: 32 @41112 has 67 MA's), (Start: 36 @41124 has 4 MA's), (59, 41220), (60, 41226), (62, 41235), (66, 41250), (71, 41274), (85, 41355), (112, 41442), (120, 41466), (136, 41553), (149, 41583), (150, 41598),

Gene: Amohnition\_58 Start: 40704, Stop: 41258, Start Num: 32

Candidate Starts for Amohnition\_58:

(Start: 32 @40704 has 67 MA's), (50, 40767), (60, 40815), (62, 40824), (64, 40830), (66, 40839), (75, 40905), (88, 40953), (114, 41040), (120, 41058), (136, 41145), (142, 41163), (150, 41190), (158, 41226),

Gene: Anaya\_59 Start: 40502, Stop: 41056, Start Num: 31

Candidate Starts for Anaya\_59:

(Start: 31 @40502 has 102 MA's), (Start: 36 @40514 has 4 MA's), (50, 40568), (60, 40616), (62, 40625), (71, 40664), (74, 40694), (85, 40745), (112, 40832), (120, 40856), (136, 40943), (142, 40961),

Gene: Angelica\_57 Start: 40141, Stop: 40695, Start Num: 31

Candidate Starts for Angelica\_57:

(Start: 31 @40141 has 102 MA's), (Start: 36 @40153 has 4 MA's), (Start: 38 @40159 has 3 MA's), (50, 40207), (60, 40255), (62, 40264), (71, 40303), (74, 40333), (85, 40384), (112, 40471), (120, 40495), (133, 40567), (136, 40582), (142, 40600),

Gene: Annadreamy\_79 Start: 59408, Stop: 59899, Start Num: 44

Candidate Starts for Annadreamy\_79:

(Start: 36 @59384 has 4 MA's), (Start: 44 @59408 has 20 MA's), (55, 59468), (91, 59648), (94, 59675), (125, 59744), (134, 59777), (153, 59861), (159, 59882),

Gene: Apocalypse\_60 Start: 40910, Stop: 41464, Start Num: 31

Candidate Starts for Apocalypse\_60:

(Start: 31 @40910 has 102 MA's), (Start: 36 @40922 has 4 MA's), (50, 40976), (60, 41024), (62, 41033), (71, 41072), (74, 41102), (85, 41153), (99, 41210), (112, 41240), (120, 41264), (136, 41351), (142, 41369), (144, 41375),

Gene: Ariel\_157 Start: 81050, Stop: 81694, Start Num: 20

Candidate Starts for Ariel\_157:

(Start: 20 @81050 has 4 MA's), (Start: 32 @81107 has 67 MA's), (Start: 38 @81125 has 3 MA's), (39, 81128), (51, 81176), (56, 81203), (60, 81218), (64, 81233), (75, 81308), (84, 81344), (90, 81371), (136, 81575), (143, 81596),

Gene: Asayake\_57 Start: 40301, Stop: 40855, Start Num: 31

Candidate Starts for Asayake\_57:

(6, 40154), (Start: 31 @40301 has 102 MA's), (Start: 36 @40313 has 4 MA's), (Start: 38 @40319 has 3 MA's), (50, 40367), (60, 40415), (62, 40424), (71, 40463), (74, 40493), (85, 40544), (112, 40631), (120, 40655), (136, 40742), (142, 40760), (144, 40766),

Gene: Atiba\_58 Start: 39949, Stop: 40503, Start Num: 31

Candidate Starts for Atiba\_58:

(6, 39802), (Start: 31 @39949 has 102 MA's), (Start: 36 @39961 has 4 MA's), (Start: 38 @39967 has 3 MA's), (50, 40015), (60, 40063), (62, 40072), (71, 40111), (74, 40141), (85, 40192), (112, 40279), (120, 40303), (136, 40390), (142, 40408), (144, 40414),

Gene: AuntGwenStacy\_57 Start: 42274, Stop: 42870, Start Num: 32

Candidate Starts for AuntGwenStacy\_57:

(1, 41821), (4, 42085), (Start: 32 @42274 has 67 MA's), (Start: 38 @42292 has 3 MA's), (39, 42295), (Start: 40 @42301 has 2 MA's), (66, 42412), (74, 42466), (76, 42481), (85, 42517), (88, 42526), (89, 42529), (100, 42577), (101, 42580), (106, 42610), (123, 42676), (127, 42697), (165, 42844), (170, 42859),

Gene: Azrael100\_129 Start: 64551, Stop: 65066, Start Num: 35

Candidate Starts for Azrael100\_129:

(Start: 35 @64551 has 5 MA's), (Start: 38 @64566 has 3 MA's), (45, 64590), (46, 64596), (51, 64617), (54, 64635), (57, 64647), (58, 64650), (71, 64707), (75, 64749), (88, 64797), (89, 64800), (100, 64848), (101, 64851), (119, 64869), (128, 64920), (136, 64959), (138, 64971), (151, 65016),

Gene: BAKA\_160 Start: 84987, Stop: 85523, Start Num: 32

Candidate Starts for BAKA\_160:

(Start: 32 @84987 has 67 MA's), (Start: 38 @85005 has 3 MA's), (39, 85008), (Start: 48 @85047 has 1 MA's), (50, 85050), (74, 85176), (75, 85188), (88, 85239), (90, 85254), (110, 85305), (127, 85362), (159, 85488), (160, 85497),

Gene: BEEST\_57 Start: 40301, Stop: 40855, Start Num: 31

Candidate Starts for BEEST\_57:

(6, 40154), (Start: 31 @40301 has 102 MA's), (Start: 36 @40313 has 4 MA's), (Start: 38 @40319 has 3 MA's), (50, 40367), (60, 40415), (62, 40424), (71, 40463), (74, 40493), (85, 40544), (112, 40631), (120, 40655), (136, 40742), (142, 40760), (144, 40766),

Gene: BGlluviae\_57 Start: 40104, Stop: 40658, Start Num: 31

Candidate Starts for BGlluviae\_57:

(6, 39957), (Start: 31 @40104 has 102 MA's), (Start: 36 @40116 has 4 MA's), (Start: 38 @40122 has 3 MA's), (50, 40170), (60, 40218), (62, 40227), (71, 40266), (74, 40296), (85, 40347), (112, 40434), (120, 40458), (136, 40545), (142, 40563), (144, 40569),

Gene: BaghaKamala\_56 Start: 39342, Stop: 39896, Start Num: 31

Candidate Starts for BaghaKamala\_56:

(Start: 31 @39342 has 102 MA's), (Start: 36 @39354 has 4 MA's), (50, 39408), (60, 39456), (62, 39465), (71, 39504), (74, 39534), (85, 39585), (112, 39672), (120, 39696), (136, 39783), (142, 39801),

(144, 39807),

Gene: Bagrid\_163 Start: 86216, Stop: 86752, Start Num: 32

Candidate Starts for Bagrid\_163:

(Start: 32 @86216 has 67 MA's), (Start: 38 @86234 has 3 MA's), (39, 86237), (Start: 48 @86276 has 1 MA's), (50, 86279), (74, 86405), (75, 86417), (88, 86468), (90, 86483), (110, 86534), (127, 86591), (159, 86717), (160, 86726),

Gene: BarrelRoll\_57 Start: 39965, Stop: 40519, Start Num: 31

Candidate Starts for BarrelRoll\_57:

(Start: 31 @39965 has 102 MA's), (Start: 36 @39977 has 4 MA's), (Start: 38 @39983 has 3 MA's), (50, 40031), (60, 40079), (62, 40088), (71, 40127), (74, 40157), (85, 40208), (112, 40295), (120, 40319), (136, 40406), (142, 40424), (144, 40430),

Gene: Beem\_160 Start: 86179, Stop: 86715, Start Num: 32

Candidate Starts for Beem\_160:

(Start: 32 @86179 has 67 MA's), (Start: 38 @86197 has 3 MA's), (39, 86200), (74, 86368), (75, 86380), (88, 86431), (90, 86446), (136, 86596), (160, 86689),

Gene: Beezoo\_59 Start: 40949, Stop: 41503, Start Num: 31

Candidate Starts for Beezoo\_59:

(Start: 31 @40949 has 102 MA's), (Start: 36 @40961 has 4 MA's), (Start: 38 @40967 has 3 MA's), (50, 41015), (60, 41063), (62, 41072), (71, 41111), (74, 41141), (85, 41192), (112, 41279), (120, 41303), (136, 41390), (142, 41408), (144, 41414),

Gene: Belfort\_83 Start: 61237, Stop: 61725, Start Num: 44

Candidate Starts for Belfort\_83:

(Start: 44 @61237 has 20 MA's), (55, 61297), (77, 61417), (83, 61441), (87, 61456), (89, 61462), (91, 61477), (121, 61549), (125, 61573), (128, 61582), (134, 61606), (147, 61648), (159, 61711), (163, 61720),

Gene: Bella96\_58 Start: 40730, Stop: 41284, Start Num: 31

Candidate Starts for Bella96\_58:

(Start: 31 @40730 has 102 MA's), (Start: 36 @40742 has 4 MA's), (Start: 38 @40748 has 3 MA's), (50, 40796), (62, 40853), (71, 40892), (85, 40973), (112, 41060), (120, 41084), (136, 41171), (142, 41189), (144, 41195),

Gene: Belladonna\_57 Start: 40104, Stop: 40658, Start Num: 31

Candidate Starts for Belladonna\_57:

(6, 39957), (Start: 31 @40104 has 102 MA's), (Start: 36 @40116 has 4 MA's), (Start: 38 @40122 has 3 MA's), (50, 40170), (60, 40218), (62, 40227), (71, 40266), (74, 40296), (85, 40347), (112, 40434), (120, 40458), (136, 40545), (142, 40563), (144, 40569),

Gene: Beuffert\_78 Start: 59970, Stop: 60461, Start Num: 44

Candidate Starts for Beuffert\_78:

(Start: 36 @59946 has 4 MA's), (Start: 44 @59970 has 20 MA's), (55, 60030), (91, 60210), (125, 60306), (128, 60315), (132, 60330), (134, 60339), (135, 60342), (137, 60357), (153, 60423),

Gene: Biglebops\_49 Start: 38047, Stop: 38598, Start Num: 33

Candidate Starts for Biglebops\_49:

(3, 37813), (Start: 33 @38047 has 5 MA's), (Start: 38 @38068 has 3 MA's), (Start: 48 @38110 has 1 MA's), (51, 38122), (62, 38173), (71, 38212), (74, 38242), (85, 38293), (120, 38398), (136, 38485), (142, 38503), (144, 38509), (161, 38578),

Gene: BillNye\_72 Start: 61063, Stop: 61557, Start Num: 41

Candidate Starts for BillNye\_72:

(Start: 41 @61063 has 2 MA's), (55, 61129), (91, 61309), (121, 61381), (125, 61405), (128, 61414), (134, 61438), (137, 61456), (163, 61552),

Gene: Bipper\_54 Start: 40859, Stop: 41473, Start Num: 32

Candidate Starts for Bipper\_54:

(10, 40778), (11, 40781), (Start: 32 @40859 has 67 MA's), (Start: 38 @40877 has 3 MA's), (39, 40880), (Start: 48 @40919 has 1 MA's), (53, 40946), (58, 40964), (71, 41021), (74, 41051), (88, 41111), (89, 41114), (100, 41162), (107, 41198), (114, 41216), (116, 41228), (117, 41231), (128, 41291), (141, 41351), (159, 41420),

Gene: Blizzard\_57 Start: 40301, Stop: 40855, Start Num: 31

Candidate Starts for Blizzard\_57:

(6, 40154), (Start: 31 @40301 has 102 MA's), (Start: 36 @40313 has 4 MA's), (Start: 38 @40319 has 3 MA's), (50, 40367), (60, 40415), (62, 40424), (71, 40463), (74, 40493), (85, 40544), (112, 40631), (120, 40655), (136, 40742), (142, 40760), (144, 40766),

Gene: Blueeyedbeauty\_80 Start: 59360, Stop: 59851, Start Num: 44

Candidate Starts for Blueeyedbeauty\_80:

(Start: 36 @59336 has 4 MA's), (Start: 44 @59360 has 20 MA's), (55, 59420), (61, 59447), (91, 59600), (108, 59651), (123, 59681), (125, 59696), (132, 59720), (134, 59729), (153, 59813), (159, 59834),

Gene: Bobby\_149 Start: 86590, Stop: 87060, Start Num: 48

Candidate Starts for Bobby\_149:

(Start: 48 @86590 has 1 MA's), (50, 86593), (74, 86719), (75, 86731), (88, 86782), (90, 86797), (110, 86848), (127, 86905), (159, 87031), (167, 87052),

Gene: Boiiii\_57 Start: 40303, Stop: 40857, Start Num: 31

Candidate Starts for Boiiii\_57:

(6, 40156), (Start: 31 @40303 has 102 MA's), (Start: 36 @40315 has 4 MA's), (Start: 38 @40321 has 3 MA's), (50, 40369), (60, 40417), (62, 40426), (71, 40465), (74, 40495), (85, 40546), (112, 40633), (120, 40657), (136, 40744), (142, 40762), (144, 40768),

Gene: Boilgate\_54 Start: 39890, Stop: 40492, Start Num: 34

Candidate Starts for Boilgate\_54:

(21, 39833), (Start: 34 @39890 has 17 MA's), (66, 40025), (71, 40049), (88, 40139), (95, 40190), (120, 40277), (127, 40322), (136, 40364), (142, 40382), (158, 40451),

Gene: Bombitas\_146 Start: 82178, Stop: 82789, Start Num: 15

Candidate Starts for Bombitas\_146:

(Start: 15 @82178 has 4 MA's), (Start: 20 @82196 has 4 MA's), (Start: 32 @82253 has 67 MA's), (Start: 38 @82271 has 3 MA's), (74, 82442), (75, 82454), (88, 82505), (90, 82520), (136, 82670), (143, 82691),

Gene: BoostSeason\_60 Start: 41609, Stop: 42142, Start Num: 32

Candidate Starts for BoostSeason\_60:

(Start: 32 @41609 has 67 MA's), (37, 41624), (50, 41672), (60, 41720), (62, 41729), (69, 41762), (71, 41768), (72, 41774), (88, 41858), (106, 41924),

Gene: Bryler\_60 Start: 39479, Stop: 40042, Start Num: 31



Candidate Starts for Bryler\_60:

(Start: 31 @39479 has 102 MA's), (Start: 36 @39491 has 4 MA's), (Start: 38 @39497 has 3 MA's), (60, 39593), (71, 39641), (85, 39722), (112, 39812), (120, 39842), (136, 39929), (142, 39947), (158, 40010),

Gene: CREW\_57 Start: 40104, Stop: 40658, Start Num: 31

Candidate Starts for CREW\_57:

(6, 39957), (Start: 31 @40104 has 102 MA's), (Start: 36 @40116 has 4 MA's), (Start: 38 @40122 has 3 MA's), (50, 40170), (60, 40218), (62, 40227), (71, 40266), (74, 40296), (85, 40347), (112, 40434), (120, 40458), (136, 40545), (142, 40563), (144, 40569),

Gene: Cain\_60 Start: 39467, Stop: 40030, Start Num: 31

Candidate Starts for Cain\_60:

(Start: 31 @39467 has 102 MA's), (Start: 36 @39479 has 4 MA's), (Start: 38 @39485 has 3 MA's), (58, 39572), (60, 39581), (71, 39629), (85, 39710), (112, 39800), (120, 39830), (136, 39917), (142, 39935), (158, 39998),

Gene: Capricorn\_57 Start: 40104, Stop: 40658, Start Num: 31

Candidate Starts for Capricorn\_57:

(6, 39957), (Start: 31 @40104 has 102 MA's), (Start: 36 @40116 has 4 MA's), (Start: 38 @40122 has 3 MA's), (50, 40170), (60, 40218), (62, 40227), (71, 40266), (74, 40296), (85, 40347), (112, 40434), (120, 40458), (136, 40545), (142, 40563), (144, 40569),

Gene: CaseJules\_59 Start: 40301, Stop: 40855, Start Num: 31

Candidate Starts for CaseJules\_59:

(6, 40154), (Start: 31 @40301 has 102 MA's), (Start: 36 @40313 has 4 MA's), (Start: 38 @40319 has 3 MA's), (50, 40367), (60, 40415), (62, 40424), (71, 40463), (74, 40493), (85, 40544), (112, 40631), (120, 40655), (136, 40742), (142, 40760), (144, 40766),

Gene: Chancellor\_62 Start: 40161, Stop: 40757, Start Num: 34

Candidate Starts for Chancellor\_62:

(Start: 34 @40161 has 17 MA's), (45, 40203), (62, 40281), (74, 40350), (75, 40362), (88, 40410), (120, 40530), (127, 40575), (136, 40617), (141, 40638), (142, 40641), (159, 40722),

Gene: CheetoDust\_56 Start: 39386, Stop: 39940, Start Num: 31

Candidate Starts for CheetoDust\_56:

(Start: 31 @39386 has 102 MA's), (Start: 36 @39398 has 4 MA's), (50, 39452), (60, 39500), (62, 39509), (71, 39548), (74, 39578), (85, 39629), (112, 39716), (120, 39740), (136, 39827), (142, 39845), (144, 39851),

Gene: Cheetobro\_62 Start: 40158, Stop: 40754, Start Num: 34

Candidate Starts for Cheetobro\_62:

(Start: 34 @40158 has 17 MA's), (45, 40200), (62, 40278), (74, 40347), (75, 40359), (88, 40407), (120, 40527), (127, 40572), (136, 40614), (141, 40635), (142, 40638), (159, 40719),

Gene: Chris\_59 Start: 40680, Stop: 41237, Start Num: 31

Candidate Starts for Chris\_59:

(Start: 31 @40680 has 102 MA's), (Start: 36 @40692 has 4 MA's), (58, 40782), (66, 40815), (75, 40881), (120, 41037), (129, 41091), (136, 41124), (142, 41142),

Gene: Circinus\_73 Start: 61050, Stop: 61544, Start Num: 41

Candidate Starts for Circinus\_73:

(Start: 41 @61050 has 2 MA's), (55, 61116), (91, 61296), (121, 61368), (125, 61392), (128, 61401), (134, 61425), (137, 61443), (163, 61539),

Gene: Comrade\_81 Start: 60853, Stop: 61341, Start Num: 44

Candidate Starts for Comrade\_81:

(Start: 44 @60853 has 20 MA's), (55, 60913), (77, 61033), (83, 61057), (87, 61072), (89, 61078), (91, 61093), (101, 61129), (121, 61165), (125, 61189), (128, 61198), (134, 61222), (147, 61264), (159, 61327), (163, 61336),

Gene: Constella\_151 Start: 83218, Stop: 83754, Start Num: 32

Candidate Starts for Constella\_151:

(Start: 32 @83218 has 67 MA's), (Start: 38 @83236 has 3 MA's), (39, 83239), (Start: 48 @83278 has 1 MA's), (50, 83281), (74, 83407), (75, 83419), (88, 83470), (90, 83485), (110, 83536), (127, 83593), (160, 83728),

Gene: Cosmo\_137 Start: 64981, Stop: 65496, Start Num: 35

Candidate Starts for Cosmo\_137:

(Start: 35 @64981 has 5 MA's), (Start: 38 @64996 has 3 MA's), (45, 65020), (46, 65026), (51, 65047), (54, 65065), (57, 65077), (58, 65080), (71, 65137), (75, 65179), (88, 65227), (89, 65230), (100, 65278), (101, 65281), (119, 65299), (128, 65350), (136, 65389), (138, 65401), (151, 65446),

Gene: Courthouse\_154 Start: 81602, Stop: 82138, Start Num: 32

Candidate Starts for Courthouse\_154:

(28, 81590), (30, 81596), (Start: 32 @81602 has 67 MA's), (Start: 36 @81614 has 4 MA's), (37, 81617), (39, 81623), (50, 81665), (66, 81737), (85, 81845), (88, 81854), (90, 81869), (110, 81920), (127, 81977), (136, 82019), (143, 82040),

Gene: Cracklewink\_54 Start: 40852, Stop: 41466, Start Num: 32

Candidate Starts for Cracklewink\_54:

(10, 40771), (11, 40774), (Start: 32 @40852 has 67 MA's), (Start: 38 @40870 has 3 MA's), (39, 40873), (Start: 48 @40912 has 1 MA's), (53, 40939), (58, 40957), (71, 41014), (74, 41044), (88, 41104), (89, 41107), (100, 41155), (107, 41191), (114, 41209), (116, 41221), (117, 41224), (128, 41284), (141, 41344), (159, 41413),

Gene: CrimD\_57 Start: 40220, Stop: 40774, Start Num: 31

Candidate Starts for CrimD\_57:

(Start: 31 @40220 has 102 MA's), (Start: 36 @40232 has 4 MA's), (Start: 38 @40238 has 3 MA's), (50, 40286), (60, 40334), (62, 40343), (71, 40382), (74, 40412), (76, 40427), (85, 40463), (112, 40550), (120, 40574), (133, 40646), (136, 40661), (142, 40679), (158, 40742),

Gene: Curiosium\_59 Start: 38846, Stop: 39418, Start Num: 31

Candidate Starts for Curiosium\_59:

(Start: 31 @38846 has 102 MA's), (Start: 36 @38858 has 4 MA's), (Start: 38 @38864 has 3 MA's), (Start: 48 @38906 has 1 MA's), (60, 38960), (62, 38969), (67, 38990), (69, 39002), (71, 39008), (85, 39089), (120, 39212), (136, 39299), (142, 39317), (166, 39407),

Gene: Dallas\_159 Start: 85402, Stop: 85938, Start Num: 32

Candidate Starts for Dallas\_159:

(Start: 32 @85402 has 67 MA's), (Start: 38 @85420 has 3 MA's), (39, 85423), (74, 85591), (75, 85603), (88, 85654), (90, 85669), (136, 85819), (160, 85912),

Gene: Dalmuri\_57 Start: 40104, Stop: 40658, Start Num: 31

Candidate Starts for Dalmuri\_57:

(6, 39957), (Start: 31 @40104 has 102 MA's), (Start: 36 @40116 has 4 MA's), (Start: 38 @40122 has 3 MA's), (50, 40170), (60, 40218), (62, 40227), (71, 40266), (74, 40296), (85, 40347), (112, 40434), (120, 40458), (136, 40545), (142, 40563), (144, 40569),

Gene: DARTH\_P\_58 Start: 40588, Stop: 41142, Start Num: 32

Candidate Starts for DARTH\_P\_58:

(Start: 32 @40588 has 67 MA's), (50, 40651), (60, 40699), (62, 40708), (64, 40714), (66, 40723), (75, 40789), (88, 40837), (114, 40924), (120, 40942), (136, 41029), (142, 41047), (150, 41074), (158, 41110),

Gene: DARTIN\_60 Start: 40625, Stop: 41188, Start Num: 31

Candidate Starts for DARTIN\_60:

(Start: 31 @40625 has 102 MA's), (51, 40700), (60, 40742), (62, 40751), (69, 40784), (71, 40790), (85, 40871), (120, 40988), (136, 41075), (142, 41093), (151, 41129), (161, 41168),

Gene: DEBY\_57 Start: 40163, Stop: 40717, Start Num: 31

Candidate Starts for DEBY\_57:

(6, 40013), (Start: 31 @40163 has 102 MA's), (Start: 36 @40175 has 4 MA's), (Start: 38 @40181 has 3 MA's), (50, 40229), (60, 40277), (62, 40286), (71, 40325), (74, 40355), (85, 40406), (112, 40493), (120, 40517), (136, 40604), (144, 40628),

Gene: DEVERA\_62 Start: 40742, Stop: 41314, Start Num: 31

Candidate Starts for DEVERA\_62:

(Start: 31 @40742 has 102 MA's), (Start: 36 @40754 has 4 MA's), (Start: 38 @40760 has 3 MA's), (50, 40808), (60, 40856), (62, 40865), (69, 40898), (71, 40904), (85, 40985), (120, 41108), (136, 41195), (142, 41213), (166, 41303),

Gene: DISMAL\_FUNK\_60 Start: 42031, Stop: 42564, Start Num: 32

Candidate Starts for DISMAL\_FUNK\_60:

(22, 41980), (Start: 32 @42031 has 67 MA's), (37, 42046), (50, 42094), (60, 42142), (62, 42151), (69, 42184), (71, 42190), (72, 42196), (88, 42280), (106, 42346),

Gene: DISMAL\_STRESSOR\_60 Start: 42031, Stop: 42564, Start Num: 32

Candidate Starts for DISMAL\_STRESSOR\_60:

(22, 41980), (Start: 32 @42031 has 67 MA's), (37, 42046), (50, 42094), (60, 42142), (62, 42151), (69, 42184), (71, 42190), (72, 42196), (88, 42280), (106, 42346),

Gene: DMPSTR\_DIVER\_159 Start: 84129, Stop: 84665, Start Num: 32

Candidate Starts for DMPSTR\_DIVER\_159:

(Start: 32 @84129 has 67 MA's), (Start: 38 @84147 has 3 MA's), (39, 84150), (74, 84318), (75, 84330), (88, 84381), (90, 84396), (136, 84546), (160, 84639),

Gene: DOLE\_60 Start: 40745, Stop: 41317, Start Num: 31

Candidate Starts for DOLE\_60:

(Start: 31 @40745 has 102 MA's), (Start: 36 @40757 has 4 MA's), (Start: 38 @40763 has 3 MA's), (50, 40811), (60, 40859), (62, 40868), (69, 40901), (71, 40907), (85, 40988), (120, 41111), (136, 41198), (142, 41216), (166, 41306),

Gene: DOVE\_146 Start: 80534, Stop: 81145, Start Num: 15

Candidate Starts for DOVE\_146:

(Start: 15 @80534 has 4 MA's), (Start: 20 @80552 has 4 MA's), (Start: 32 @80609 has 67 MA's), (Start: 38 @80627 has 3 MA's), (74, 80798), (75, 80810), (88, 80861), (90, 80876), (136, 81026), (143, 81047),

Gene: DrHayes\_58 Start: 40885, Stop: 41439, Start Num: 31

Candidate Starts for DrHayes\_58:

(Start: 31 @40885 has 102 MA's), (Start: 36 @40897 has 4 MA's), (Start: 38 @40903 has 3 MA's), (50, 40951), (60, 40999), (62, 41008), (71, 41047), (85, 41128), (112, 41215), (120, 41239), (136, 41326), (142, 41344), (144, 41350),

Gene: Duke13\_157 Start: 83483, Stop: 84019, Start Num: 32

Candidate Starts for Duke13\_157:

(Start: 32 @83483 has 67 MA's), (Start: 38 @83501 has 3 MA's), (39, 83504), (Start: 48 @83543 has 1 MA's), (50, 83546), (74, 83672), (75, 83684), (88, 83735), (90, 83750), (110, 83801), (127, 83858), (159, 83984), (160, 83993),

Gene: Durfee\_57 Start: 40301, Stop: 40855, Start Num: 31

Candidate Starts for Durfee\_57:

(6, 40154), (Start: 31 @40301 has 102 MA's), (Start: 36 @40313 has 4 MA's), (Start: 38 @40319 has 3 MA's), (50, 40367), (60, 40415), (62, 40424), (71, 40463), (74, 40493), (85, 40544), (112, 40631), (120, 40655), (136, 40742), (142, 40760), (144, 40766),

Gene: Efra2\_60 Start: 39747, Stop: 40313, Start Num: 31

Candidate Starts for Efra2\_60:

(Start: 31 @39747 has 102 MA's), (Start: 36 @39759 has 4 MA's), (Start: 38 @39765 has 3 MA's), (58, 39852), (69, 39903), (71, 39909), (85, 39990), (120, 40113), (136, 40200), (142, 40218), (144, 40224), (158, 40281),

Gene: Ejimix\_151 Start: 84390, Stop: 84926, Start Num: 32

Candidate Starts for Ejimix\_151:

(Start: 32 @84390 has 67 MA's), (Start: 38 @84408 has 3 MA's), (39, 84411), (74, 84579), (75, 84591), (88, 84642), (90, 84657), (136, 84807), (160, 84900),

Gene: Ekdilam\_56 Start: 40591, Stop: 41142, Start Num: 32

Candidate Starts for Ekdilam\_56:

(Start: 32 @40591 has 67 MA's), (Start: 36 @40603 has 4 MA's), (51, 40660), (60, 40702), (62, 40711), (71, 40750), (75, 40792), (88, 40840), (120, 40942), (136, 41029), (142, 41047), (150, 41074),

Gene: Ellie\_54 Start: 39941, Stop: 40495, Start Num: 32

Candidate Starts for Ellie\_54:

(Start: 32 @39941 has 67 MA's), (Start: 36 @39953 has 4 MA's), (59, 40049), (60, 40055), (62, 40064), (66, 40079), (71, 40103), (85, 40184), (112, 40271), (120, 40295), (136, 40382), (149, 40412), (150, 40427),

Gene: Emerson\_58 Start: 39982, Stop: 40536, Start Num: 31

Candidate Starts for Emerson\_58:

(Start: 31 @39982 has 102 MA's), (Start: 36 @39994 has 4 MA's), (Start: 38 @40000 has 3 MA's), (50, 40048), (60, 40096), (62, 40105), (71, 40144), (74, 40174), (85, 40225), (112, 40312), (120, 40336), (136, 40423), (144, 40447),

Gene: Emma1919\_83 Start: 59575, Stop: 60063, Start Num: 44

Candidate Starts for Emma1919\_83:

(Start: 44 @59575 has 20 MA's), (70, 59701), (77, 59755), (80, 59770), (86, 59791), (89, 59800), (91, 59815), (121, 59887), (125, 59911), (128, 59920), (134, 59944), (147, 59986), (159, 60049), (163, 60058),

Gene: EniyanLRS\_131 Start: 65177, Stop: 65725, Start Num: 35

Candidate Starts for EniyanLRS\_131:

(Start: 35 @65177 has 5 MA's), (Start: 38 @65192 has 3 MA's), (45, 65216), (46, 65222), (51, 65243), (54, 65261), (57, 65273), (58, 65276), (71, 65333), (75, 65375), (88, 65423), (89, 65426), (100, 65474), (101, 65477), (128, 65546), (136, 65585), (138, 65597), (151, 65642), (164, 65693),

Gene: Enkosi\_51 Start: 40660, Stop: 41211, Start Num: 33

Candidate Starts for Enkosi\_51:

(3, 40426), (Start: 33 @40660 has 5 MA's), (Start: 38 @40681 has 3 MA's), (Start: 48 @40723 has 1 MA's), (51, 40735), (62, 40786), (71, 40825), (74, 40855), (85, 40906), (120, 41011), (136, 41098), (142, 41116), (144, 41122), (161, 41191),

Gene: Eponine\_64 Start: 41004, Stop: 41600, Start Num: 34

Candidate Starts for Eponine\_64:

(Start: 34 @41004 has 17 MA's), (45, 41046), (62, 41124), (74, 41193), (75, 41205), (88, 41253), (120, 41373), (127, 41418), (136, 41460), (141, 41481), (142, 41484), (159, 41565),

Gene: EricMillard\_153 Start: 84826, Stop: 85362, Start Num: 32

Candidate Starts for EricMillard\_153:

(Start: 32 @84826 has 67 MA's), (Start: 38 @84844 has 3 MA's), (39, 84847), (Start: 48 @84886 has 1 MA's), (50, 84889), (74, 85015), (75, 85027), (88, 85078), (90, 85093), (110, 85144), (127, 85201), (160, 85336),

Gene: Faust\_81 Start: 60777, Stop: 61277, Start Num: 40

Candidate Starts for Faust\_81:

(Start: 40 @60777 has 2 MA's), (51, 60825), (70, 60912), (87, 61005), (91, 61026), (122, 61101), (125, 61122), (128, 61131), (132, 61146), (134, 61155), (153, 61239), (159, 61260),

Gene: Fefferhead\_56 Start: 39888, Stop: 40442, Start Num: 32

Candidate Starts for Fefferhead\_56:

(Start: 32 @39888 has 67 MA's), (Start: 36 @39900 has 4 MA's), (59, 39996), (60, 40002), (62, 40011), (66, 40026), (71, 40050), (85, 40131), (112, 40218), (120, 40242), (136, 40329), (149, 40359), (150, 40374), (158, 40410),

Gene: Feyre\_54 Start: 40604, Stop: 41392, Start Num: 7

Candidate Starts for Feyre\_54:

(Start: 7 @40604 has 12 MA's), (17, 40652), (18, 40658), (Start: 36 @40727 has 4 MA's), (52, 40793), (60, 40826), (66, 40850), (72, 40880), (74, 40904), (76, 40919), (88, 40964), (90, 40979), (95, 41015), (96, 41018), (97, 41027), (98, 41033), (101, 41045), (111, 41078), (120, 41117), (124, 41147), (138, 41216), (142, 41222), (144, 41228), (148, 41234), (161, 41300), (176, 41369),

Gene: Findley\_60 Start: 42024, Stop: 42557, Start Num: 32

Candidate Starts for Findley\_60:

(22, 41973), (Start: 32 @42024 has 67 MA's), (37, 42039), (50, 42087), (60, 42135), (62, 42144), (69, 42177), (71, 42183), (72, 42189), (88, 42273), (106, 42339),

Gene: Fionnbharth\_62 Start: 40402, Stop: 40998, Start Num: 34

Candidate Starts for Fionnbharth\_62:

(Start: 34 @40402 has 17 MA's), (45, 40444), (62, 40522), (74, 40591), (75, 40603), (88, 40651), (120, 40771), (127, 40816), (136, 40858), (141, 40879), (142, 40882), (159, 40963),

Gene: Forrest\_84 Start: 60868, Stop: 61356, Start Num: 44

Candidate Starts for Forrest\_84:

(Start: 44 @60868 has 20 MA's), (66, 60973), (77, 61048), (80, 61063), (86, 61084), (89, 61093), (91, 61108), (121, 61180), (125, 61204), (128, 61213), (134, 61237), (147, 61279), (159, 61342), (163, 61351),

Gene: Francob\_80 Start: 59594, Stop: 60082, Start Num: 44

Candidate Starts for Francob\_80:

(Start: 44 @59594 has 20 MA's), (55, 59654), (77, 59774), (91, 59834), (121, 59906), (125, 59930), (128, 59939), (131, 59945), (134, 59963), (147, 60005), (153, 60047), (159, 60068), (163, 60077),

Gene: GRU3\_25 Start: 16472, Stop: 17227, Start Num: 5

Candidate Starts for GRU3\_25:

(5, 16472), (49, 16718), (78, 16865), (88, 16904), (100, 16955), (156, 17159), (159, 17171),

Gene: Gaia\_119 Start: 67024, Stop: 67569, Start Num: 32

Candidate Starts for Gaia\_119:

(Start: 32 @67024 has 67 MA's), (50, 67087), (71, 67183), (74, 67213), (75, 67225), (85, 67267), (91, 67294), (122, 67387), (125, 67408), (134, 67441), (136, 67450), (142, 67468), (150, 67495), (159, 67534), (168, 67561),

Gene: Ganymede\_58 Start: 40365, Stop: 40919, Start Num: 31

Candidate Starts for Ganymede\_58:

(6, 40215), (Start: 31 @40365 has 102 MA's), (Start: 36 @40377 has 4 MA's), (Start: 38 @40383 has 3 MA's), (50, 40431), (60, 40479), (62, 40488), (71, 40527), (74, 40557), (85, 40608), (112, 40695), (120, 40719), (136, 40806), (142, 40824), (144, 40830),

Gene: Gengar\_52 Start: 39018, Stop: 39797, Start Num: 7

Candidate Starts for Gengar\_52:

(2, 38847), (Start: 7 @39018 has 12 MA's), (17, 39066), (18, 39072), (Start: 36 @39141 has 4 MA's), (52, 39207), (60, 39240), (66, 39264), (72, 39294), (74, 39318), (76, 39333), (88, 39378), (90, 39393), (95, 39429), (96, 39432), (97, 39441), (101, 39459), (111, 39492), (120, 39531), (124, 39561), (138, 39630), (142, 39636), (144, 39642), (148, 39648), (161, 39714), (176, 39783),

Gene: Geraldini\_60 Start: 41031, Stop: 41585, Start Num: 31

Candidate Starts for Geraldini\_60:

(Start: 31 @41031 has 102 MA's), (Start: 36 @41043 has 4 MA's), (50, 41097), (60, 41145), (62, 41154), (71, 41193), (74, 41223), (85, 41274), (112, 41361), (120, 41385), (136, 41472), (142, 41490), (144, 41496),

Gene: Gilson\_82 Start: 59537, Stop: 60025, Start Num: 44

Candidate Starts for Gilson\_82:

(Start: 44 @59537 has 20 MA's), (66, 59642), (77, 59717), (80, 59732), (86, 59753), (89, 59762), (91, 59777), (121, 59849), (125, 59873), (128, 59882), (134, 59906), (147, 59948), (159, 60011), (163, 60020),

Gene: Gonephishing\_152 Start: 83062, Stop: 83598, Start Num: 32

Candidate Starts for Gonephishing\_152:

(Start: 20 @83005 has 4 MA's), (Start: 32 @83062 has 67 MA's), (Start: 38 @83080 has 3 MA's), (74, 83251), (75, 83263), (88, 83314), (90, 83329), (136, 83479), (143, 83500),

Gene: Guanica15\_59 Start: 39488, Stop: 40054, Start Num: 31

Candidate Starts for Guanica15\_59:

(Start: 31 @39488 has 102 MA's), (Start: 36 @39500 has 4 MA's), (Start: 38 @39506 has 3 MA's), (69, 39644), (71, 39650), (85, 39731), (120, 39854), (136, 39941), (142, 39959), (144, 39965), (158,

40022),

Gene: Guillsminger\_53 Start: 38989, Stop: 39768, Start Num: 7

Candidate Starts for Guillsminger\_53:

(Start: 7 @38989 has 12 MA's), (8, 39007), (17, 39037), (18, 39043), (Start: 36 @39112 has 4 MA's), (52, 39178), (66, 39235), (72, 39265), (74, 39289), (76, 39304), (88, 39349), (90, 39364), (96, 39403), (101, 39430), (111, 39463), (121, 39517), (138, 39601), (144, 39613), (152, 39652), (161, 39685), (175, 39739),

Gene: Halley\_160 Start: 84706, Stop: 85242, Start Num: 32

Candidate Starts for Halley\_160:

(Start: 32 @84706 has 67 MA's), (Start: 38 @84724 has 3 MA's), (39, 84727), (74, 84895), (75, 84907), (88, 84958), (90, 84973), (136, 85123), (160, 85216),

Gene: Hammy\_58 Start: 40576, Stop: 41130, Start Num: 32

Candidate Starts for Hammy\_58:

(Start: 32 @40576 has 67 MA's), (50, 40639), (60, 40687), (62, 40696), (64, 40702), (66, 40711), (75, 40777), (88, 40825), (114, 40912), (120, 40930), (136, 41017), (142, 41035), (150, 41062), (158, 41098),

Gene: Hannaconda\_152 Start: 85066, Stop: 85653, Start Num: 32

Candidate Starts for Hannaconda\_152:

(Start: 15 @84991 has 4 MA's), (Start: 20 @85009 has 4 MA's), (Start: 32 @85066 has 67 MA's), (Start: 40 @85093 has 2 MA's), (51, 85135), (63, 85189), (74, 85255), (89, 85318), (91, 85333), (113, 85417), (134, 85525), (136, 85534), (143, 85555),

Gene: HedwigODU\_57 Start: 39985, Stop: 40539, Start Num: 31

Candidate Starts for HedwigODU\_57:

(Start: 31 @39985 has 102 MA's), (Start: 36 @39997 has 4 MA's), (Start: 38 @40003 has 3 MA's), (50, 40051), (60, 40099), (62, 40108), (71, 40147), (74, 40177), (76, 40192), (85, 40228), (112, 40315), (120, 40339), (123, 40363), (133, 40411), (136, 40426), (142, 40444),

Gene: Heftyboy\_53 Start: 39361, Stop: 40140, Start Num: 7

Candidate Starts for Heftyboy\_53:

(Start: 7 @39361 has 12 MA's), (17, 39409), (18, 39415), (Start: 36 @39484 has 4 MA's), (52, 39550), (60, 39583), (66, 39607), (72, 39637), (74, 39661), (76, 39676), (88, 39721), (90, 39736), (95, 39772), (96, 39775), (97, 39784), (98, 39790), (101, 39802), (111, 39835), (120, 39874), (124, 39904), (138, 39973), (144, 39985), (161, 40057), (175, 40111), (176, 40126),

Gene: Hilltopfarm\_56 Start: 41966, Stop: 42562, Start Num: 32

Candidate Starts for Hilltopfarm\_56:

(Start: 32 @41966 has 67 MA's), (Start: 38 @41984 has 3 MA's), (39, 41987), (Start: 40 @41993 has 2 MA's), (66, 42104), (74, 42158), (76, 42173), (85, 42209), (88, 42218), (89, 42221), (100, 42269), (101, 42272), (106, 42302), (123, 42368), (127, 42389), (165, 42536), (170, 42551),

Gene: HokkenD\_154 Start: 86274, Stop: 86867, Start Num: 20

Candidate Starts for HokkenD\_154:

(Start: 15 @86256 has 4 MA's), (Start: 20 @86274 has 4 MA's), (Start: 32 @86331 has 67 MA's), (Start: 38 @86349 has 3 MA's), (74, 86520), (75, 86532), (88, 86583), (90, 86598), (136, 86748), (142, 86766), (143, 86769),

Gene: Homura\_57 Start: 40104, Stop: 40658, Start Num: 31

Candidate Starts for Homura\_57:

(6, 39957), (Start: 31 @40104 has 102 MA's), (Start: 36 @40116 has 4 MA's), (Start: 38 @40122 has 3 MA's), (50, 40170), (60, 40218), (62, 40227), (71, 40266), (74, 40296), (85, 40347), (112, 40434), (120, 40458), (136, 40545), (142, 40563), (144, 40569),

Gene: Hughesyang\_159 Start: 85284, Stop: 85820, Start Num: 32

Candidate Starts for Hughesyang\_159:

(Start: 32 @85284 has 67 MA's), (Start: 38 @85302 has 3 MA's), (39, 85305), (Start: 48 @85344 has 1 MA's), (50, 85347), (74, 85473), (75, 85485), (88, 85536), (90, 85551), (110, 85602), (127, 85659), (159, 85785), (160, 85794),

Gene: Hurricane\_57 Start: 40251, Stop: 40808, Start Num: 32

Candidate Starts for Hurricane\_57:

(16, 40182), (Start: 32 @40251 has 67 MA's), (Start: 36 @40263 has 4 MA's), (Start: 38 @40269 has 3 MA's), (50, 40314), (58, 40353), (59, 40356), (66, 40386), (71, 40410), (74, 40440), (118, 40599), (142, 40713), (155, 40764), (158, 40776),

Gene: Hyperbowlee\_57 Start: 40301, Stop: 40855, Start Num: 31

Candidate Starts for Hyperbowlee\_57:

(6, 40154), (Start: 31 @40301 has 102 MA's), (Start: 36 @40313 has 4 MA's), (Start: 38 @40319 has 3 MA's), (50, 40367), (60, 40415), (62, 40424), (71, 40463), (74, 40493), (85, 40544), (112, 40631), (120, 40655), (136, 40742), (142, 40760), (144, 40766),

Gene: Illumine\_60 Start: 40744, Stop: 41316, Start Num: 31

Candidate Starts for Illumine\_60:

(Start: 31 @40744 has 102 MA's), (Start: 36 @40756 has 4 MA's), (Start: 38 @40762 has 3 MA's), (50, 40810), (60, 40858), (62, 40867), (69, 40900), (71, 40906), (85, 40987), (120, 41110), (136, 41197), (142, 41215), (166, 41305),

Gene: Inky\_57 Start: 40104, Stop: 40658, Start Num: 31

Candidate Starts for Inky\_57:

(6, 39957), (Start: 31 @40104 has 102 MA's), (Start: 36 @40116 has 4 MA's), (Start: 38 @40122 has 3 MA's), (50, 40170), (60, 40218), (62, 40227), (71, 40266), (74, 40296), (85, 40347), (112, 40434), (120, 40458), (136, 40545), (142, 40563), (144, 40569),

Gene: JAWS\_57 Start: 39971, Stop: 40525, Start Num: 31

Candidate Starts for JAWS\_57:

(Start: 31 @39971 has 102 MA's), (Start: 36 @39983 has 4 MA's), (Start: 38 @39989 has 3 MA's), (50, 40037), (60, 40085), (62, 40094), (71, 40133), (74, 40163), (76, 40178), (85, 40214), (112, 40301), (120, 40325), (123, 40349), (133, 40397), (136, 40412), (142, 40430), (144, 40436), (158, 40493),

Gene: JF1\_62 Start: 40319, Stop: 40915, Start Num: 34

Candidate Starts for JF1\_62:

(Start: 34 @40319 has 17 MA's), (45, 40361), (62, 40439), (74, 40508), (75, 40520), (88, 40568), (113, 40658), (114, 40661), (120, 40688), (127, 40733), (136, 40775), (141, 40796), (142, 40799), (159, 40880),

Gene: Jada\_82 Start: 60050, Stop: 60538, Start Num: 44

Candidate Starts for Jada\_82:

(Start: 44 @60050 has 20 MA's), (66, 60155), (77, 60230), (80, 60245), (86, 60266), (89, 60275), (91, 60290), (121, 60362), (125, 60386), (128, 60395), (134, 60419), (147, 60461), (159, 60524), (163, 60533),



Gene: Jarvi\_57 Start: 40104, Stop: 40658, Start Num: 31

Candidate Starts for Jarvi\_57:

(6, 39957), (Start: 31 @40104 has 102 MA's), (Start: 36 @40116 has 4 MA's), (Start: 38 @40122 has 3 MA's), (50, 40170), (60, 40218), (62, 40227), (71, 40266), (74, 40296), (85, 40347), (112, 40434), (120, 40458), (136, 40545), (142, 40563), (144, 40569),

Gene: Jayhawk\_58 Start: 39980, Stop: 40534, Start Num: 31

Candidate Starts for Jayhawk\_58:

(Start: 31 @39980 has 102 MA's), (Start: 36 @39992 has 4 MA's), (Start: 38 @39998 has 3 MA's), (50, 40046), (60, 40094), (62, 40103), (71, 40142), (74, 40172), (85, 40223), (112, 40310), (120, 40334), (136, 40421), (142, 40439), (144, 40445),

Gene: Jeanie\_26 Start: 15627, Stop: 16337, Start Num: 27

Candidate Starts for Jeanie\_26:

(Start: 27 @15627 has 2 MA's), (65, 15783), (72, 15816), (75, 15852), (82, 15879), (83, 15882), (86, 15894), (123, 16020), (126, 16038), (139, 16095), (152, 16143), (156, 16155), (173, 16218), (177, 16284),

Gene: Jeckyll\_57 Start: 40104, Stop: 40658, Start Num: 31

Candidate Starts for Jeckyll\_57:

(6, 39957), (Start: 31 @40104 has 102 MA's), (Start: 36 @40116 has 4 MA's), (Start: 38 @40122 has 3 MA's), (50, 40170), (60, 40218), (62, 40227), (71, 40266), (74, 40296), (85, 40347), (112, 40434), (120, 40458), (136, 40545), (142, 40563), (144, 40569),

Gene: Joy99\_57 Start: 40033, Stop: 40587, Start Num: 31

Candidate Starts for Joy99\_57:

(6, 39886), (Start: 31 @40033 has 102 MA's), (Start: 36 @40045 has 4 MA's), (Start: 38 @40051 has 3 MA's), (50, 40099), (60, 40147), (62, 40156), (71, 40195), (74, 40225), (85, 40276), (112, 40363), (120, 40387), (136, 40474), (142, 40492), (144, 40498),

Gene: JuicyJay\_154 Start: 85903, Stop: 86514, Start Num: 15

Candidate Starts for JuicyJay\_154:

(Start: 15 @85903 has 4 MA's), (Start: 20 @85921 has 4 MA's), (Start: 32 @85978 has 67 MA's), (Start: 38 @85996 has 3 MA's), (74, 86167), (75, 86179), (88, 86230), (90, 86245), (136, 86395), (143, 86416),

Gene: Juliette\_64 Start: 40466, Stop: 41062, Start Num: 34

Candidate Starts for Juliette\_64:

(Start: 34 @40466 has 17 MA's), (45, 40508), (62, 40586), (74, 40655), (75, 40667), (88, 40715), (120, 40835), (127, 40880), (136, 40922), (141, 40943), (142, 40946), (159, 41027),

Gene: Kalah2\_151 Start: 84414, Stop: 84950, Start Num: 32

Candidate Starts for Kalah2\_151:

(Start: 32 @84414 has 67 MA's), (Start: 38 @84432 has 3 MA's), (39, 84435), (Start: 48 @84474 has 1 MA's), (50, 84477), (74, 84603), (75, 84615), (88, 84666), (90, 84681), (110, 84732), (127, 84789), (159, 84915), (160, 84924),

Gene: Karp\_79 Start: 60446, Stop: 60934, Start Num: 44

Candidate Starts for Karp\_79:

(Start: 44 @60446 has 20 MA's), (55, 60506), (75, 60617), (77, 60626), (83, 60650), (87, 60665), (91, 60686), (121, 60758), (125, 60782), (128, 60791), (134, 60815), (147, 60857), (159, 60920), (163, 60929),

Gene: KashFlow\_157 Start: 84879, Stop: 85466, Start Num: 32

Candidate Starts for KashFlow\_157:

(Start: 15 @84804 has 4 MA's), (Start: 20 @84822 has 4 MA's), (Start: 32 @84879 has 67 MA's), (Start: 40 @84906 has 2 MA's), (51, 84948), (63, 85002), (74, 85068), (89, 85131), (91, 85146), (113, 85230), (134, 85338), (136, 85347), (142, 85365), (143, 85368),

Gene: Kenrey\_83 Start: 59731, Stop: 60219, Start Num: 44

Candidate Starts for Kenrey\_83:

(Start: 44 @59731 has 20 MA's), (70, 59857), (77, 59911), (86, 59947), (89, 59956), (91, 59971), (121, 60043), (125, 60067), (128, 60076), (131, 60082), (134, 60100), (136, 60109), (147, 60142), (153, 60184), (159, 60205), (163, 60214),

Gene: Keshu\_59 Start: 40349, Stop: 40906, Start Num: 32

Candidate Starts for Keshu\_59:

(16, 40280), (Start: 32 @40349 has 67 MA's), (Start: 38 @40367 has 3 MA's), (50, 40412), (58, 40451), (60, 40460), (66, 40484), (71, 40508), (118, 40697), (120, 40706), (142, 40811),

Gene: KiSi\_61 Start: 40705, Stop: 41262, Start Num: 31

Candidate Starts for KiSi\_61:

(25, 40675), (Start: 31 @40705 has 102 MA's), (Start: 36 @40717 has 4 MA's), (51, 40774), (58, 40807), (66, 40840), (75, 40906), (85, 40945), (107, 41023), (120, 41062), (136, 41149), (142, 41167), (151, 41203),

Gene: Klein\_158 Start: 82774, Stop: 83310, Start Num: 32

Candidate Starts for Klein\_158:

(Start: 32 @82774 has 67 MA's), (Start: 38 @82792 has 3 MA's), (39, 82795), (Start: 48 @82834 has 1 MA's), (50, 82837), (74, 82963), (75, 82975), (88, 83026), (90, 83041), (110, 83092), (127, 83149), (159, 83275), (160, 83284),

Gene: Krueger\_63 Start: 40459, Stop: 41013, Start Num: 32

Candidate Starts for Krueger\_63:

(Start: 32 @40459 has 67 MA's), (Start: 36 @40471 has 4 MA's), (Start: 38 @40477 has 3 MA's), (60, 40573), (62, 40582), (66, 40597), (71, 40621), (85, 40702), (112, 40789), (120, 40813), (136, 40900), (150, 40945), (155, 40969), (158, 40981),

Gene: LastHope\_60 Start: 39135, Stop: 39701, Start Num: 31

Candidate Starts for LastHope\_60:

(24, 39096), (Start: 31 @39135 has 102 MA's), (Start: 36 @39147 has 4 MA's), (Start: 38 @39153 has 3 MA's), (Start: 48 @39195 has 1 MA's), (58, 39240), (60, 39249), (69, 39291), (71, 39297), (85, 39378), (120, 39501), (136, 39588), (142, 39606), (144, 39612), (158, 39669),

Gene: LaterM\_58 Start: 40866, Stop: 41420, Start Num: 31

Candidate Starts for LaterM\_58:

(Start: 31 @40866 has 102 MA's), (Start: 36 @40878 has 4 MA's), (Start: 38 @40884 has 3 MA's), (50, 40932), (60, 40980), (62, 40989), (71, 41028), (74, 41058), (76, 41073), (85, 41109), (112, 41196), (120, 41220), (136, 41307), (142, 41325), (158, 41388),

Gene: LeMond\_61 Start: 40686, Stop: 41243, Start Num: 31

Candidate Starts for LeMond\_61:

(25, 40656), (Start: 31 @40686 has 102 MA's), (Start: 36 @40698 has 4 MA's), (51, 40755), (58, 40788), (66, 40821), (75, 40887), (85, 40926), (107, 41004), (120, 41043), (136, 41130), (142, 41148), (151, 41184),

Gene: Leston\_52 Start: 39118, Stop: 39897, Start Num: 7

Candidate Starts for Leston\_52:

(2, 38947), (Start: 7 @39118 has 12 MA's), (8, 39136), (17, 39166), (18, 39172), (Start: 36 @39241 has 4 MA's), (52, 39307), (66, 39364), (72, 39394), (74, 39418), (76, 39433), (88, 39478), (90, 39493), (96, 39532), (101, 39559), (111, 39592), (121, 39646), (138, 39730), (144, 39742), (152, 39781), (161, 39814), (175, 39868), (176, 39883),

Gene: LilPharaoh\_49 Start: 37775, Stop: 38326, Start Num: 33

Candidate Starts for LilPharaoh\_49:

(3, 37541), (Start: 33 @37775 has 5 MA's), (Start: 38 @37796 has 3 MA's), (Start: 48 @37838 has 1 MA's), (51, 37850), (62, 37901), (71, 37940), (74, 37970), (85, 38021), (120, 38126), (136, 38213), (142, 38231), (144, 38237), (161, 38306),

Gene: Limpid\_78 Start: 59407, Stop: 59898, Start Num: 44

Candidate Starts for Limpid\_78:

(Start: 36 @59383 has 4 MA's), (Start: 44 @59407 has 20 MA's), (55, 59467), (91, 59647), (94, 59674), (125, 59743), (134, 59776), (153, 59860), (159, 59881),

Gene: LindNT\_56 Start: 40200, Stop: 40742, Start Num: 36

Candidate Starts for LindNT\_56:

(Start: 31 @40188 has 102 MA's), (Start: 36 @40200 has 4 MA's), (Start: 38 @40206 has 3 MA's), (50, 40254), (60, 40302), (62, 40311), (71, 40350), (74, 40380), (76, 40395), (85, 40431), (112, 40518), (120, 40542), (133, 40614), (136, 40629), (142, 40647), (144, 40653), (158, 40710),

Gene: LittleE\_160 Start: 84645, Stop: 85238, Start Num: 20

Candidate Starts for LittleE\_160:

(Start: 20 @84645 has 4 MA's), (Start: 32 @84702 has 67 MA's), (Start: 38 @84720 has 3 MA's), (74, 84891), (75, 84903), (88, 84954), (90, 84969), (136, 85119), (143, 85140),

Gene: Llorens\_57 Start: 40104, Stop: 40658, Start Num: 31

Candidate Starts for Llorens\_57:

(6, 39957), (Start: 31 @40104 has 102 MA's), (Start: 36 @40116 has 4 MA's), (Start: 38 @40122 has 3 MA's), (50, 40170), (60, 40218), (62, 40227), (71, 40266), (74, 40296), (85, 40347), (112, 40434), (120, 40458), (136, 40545), (142, 40563), (144, 40569),

Gene: Lucky2013\_150 Start: 79771, Stop: 80307, Start Num: 32

Candidate Starts for Lucky2013\_150:

(Start: 32 @79771 has 67 MA's), (Start: 38 @79789 has 3 MA's), (39, 79792), (Start: 48 @79831 has 1 MA's), (50, 79834), (74, 79960), (75, 79972), (88, 80023), (90, 80038), (110, 80089), (127, 80146), (136, 80188), (143, 80209),

Gene: Lunahalos\_57 Start: 40104, Stop: 40658, Start Num: 31

Candidate Starts for Lunahalos\_57:

(6, 39957), (Start: 31 @40104 has 102 MA's), (Start: 36 @40116 has 4 MA's), (Start: 38 @40122 has 3 MA's), (50, 40170), (60, 40218), (62, 40227), (71, 40266), (74, 40296), (85, 40347), (112, 40434), (120, 40458), (136, 40545), (142, 40563), (144, 40569),

Gene: MacnCheese\_59 Start: 40831, Stop: 41388, Start Num: 32

Candidate Starts for MacnCheese\_59:

(Start: 32 @40831 has 67 MA's), (Start: 36 @40843 has 4 MA's), (Start: 38 @40849 has 3 MA's), (45, 40873), (50, 40894), (58, 40933), (66, 40966), (71, 40990), (78, 41041), (105, 41146), (120, 41188), (142, 41293),

Gene: MalagasyRose\_58 Start: 39058, Stop: 39738, Start Num: 29

Candidate Starts for MalagasyRose\_58:

(22, 39016), (Start: 29 @39058 has 1 MA's), (Start: 38 @39085 has 3 MA's), (39, 39088), (51, 39136), (60, 39178), (80, 39289), (87, 39313), (88, 39316), (89, 39319), (101, 39370), (102, 39382), (103, 39397), (115, 39442), (120, 39460), (121, 39475), (131, 39520), (136, 39547), (140, 39565), (154, 39619), (157, 39631), (162, 39649), (169, 39673), (171, 39679), (174, 39703),

Gene: Malthus\_63 Start: 40154, Stop: 40750, Start Num: 34

Candidate Starts for Malthus\_63:

(Start: 34 @40154 has 17 MA's), (45, 40196), (60, 40265), (62, 40274), (74, 40343), (75, 40355), (88, 40403), (120, 40523), (127, 40568), (136, 40610), (141, 40631), (142, 40634), (159, 40715),

Gene: Marcoliusprime\_60 Start: 42031, Stop: 42564, Start Num: 32

Candidate Starts for Marcoliusprime\_60:

(22, 41980), (Start: 32 @42031 has 67 MA's), (37, 42046), (50, 42094), (60, 42142), (62, 42151), (69, 42184), (71, 42190), (72, 42196), (88, 42280), (106, 42346),

Gene: MarkPhew\_60 Start: 40383, Stop: 40940, Start Num: 31

Candidate Starts for MarkPhew\_60:

(Start: 31 @40383 has 102 MA's), (Start: 36 @40395 has 4 MA's), (Start: 48 @40440 has 1 MA's), (51, 40452), (58, 40485), (62, 40503), (66, 40518), (75, 40584), (85, 40623), (120, 40740), (129, 40794), (136, 40827),

Gene: Marshawn\_58 Start: 40229, Stop: 40783, Start Num: 31

Candidate Starts for Marshawn\_58:

(Start: 31 @40229 has 102 MA's), (Start: 36 @40241 has 4 MA's), (Start: 48 @40286 has 1 MA's), (51, 40298), (60, 40340), (62, 40349), (66, 40364), (72, 40394), (74, 40418), (75, 40430), (81, 40454), (85, 40469), (112, 40559), (120, 40583), (136, 40670), (142, 40688), (151, 40724),

Gene: MaryV\_122 Start: 63041, Stop: 63556, Start Num: 35

Candidate Starts for MaryV\_122:

(Start: 35 @63041 has 5 MA's), (Start: 38 @63056 has 3 MA's), (45, 63080), (46, 63086), (51, 63107), (54, 63125), (57, 63137), (58, 63140), (71, 63197), (75, 63239), (88, 63287), (89, 63290), (100, 63338), (101, 63341), (119, 63359), (128, 63410), (136, 63449), (138, 63461), (151, 63506),

Gene: McGonagall\_26 Start: 15628, Stop: 16338, Start Num: 27

Candidate Starts for McGonagall\_26:

(Start: 27 @15628 has 2 MA's), (65, 15784), (72, 15817), (75, 15853), (82, 15880), (83, 15883), (86, 15895), (123, 16021), (126, 16039), (139, 16096), (152, 16144), (156, 16156), (173, 16219), (177, 16285),

Gene: McMater\_60 Start: 40625, Stop: 41188, Start Num: 31

Candidate Starts for McMater\_60:

(Start: 31 @40625 has 102 MA's), (51, 40700), (60, 40742), (62, 40751), (69, 40784), (71, 40790), (85, 40871), (120, 40988), (136, 41075), (142, 41093), (151, 41129), (161, 41168),

Gene: Mdavu\_50 Start: 38057, Stop: 38587, Start Num: 38

Candidate Starts for Mdavu\_50:

(3, 37802), (Start: 33 @38036 has 5 MA's), (Start: 38 @38057 has 3 MA's), (Start: 48 @38099 has 1 MA's), (51, 38111), (62, 38162), (71, 38201), (74, 38231), (85, 38282), (120, 38387), (136, 38474), (142, 38492), (144, 38498), (161, 38567),

Gene: MeaningOfLife\_58 Start: 40859, Stop: 41413, Start Num: 31

Candidate Starts for MeaningOfLife\_58:

(Start: 31 @40859 has 102 MA's), (Start: 36 @40871 has 4 MA's), (50, 40925), (60, 40973), (62, 40982), (71, 41021), (74, 41051), (85, 41102), (112, 41189), (120, 41213), (136, 41300), (142, 41318), (144, 41324), (159, 41384),

Gene: MeganTheeKilla\_80 Start: 58898, Stop: 59386, Start Num: 44

Candidate Starts for MeganTheeKilla\_80:

(Start: 44 @58898 has 20 MA's), (66, 59003), (77, 59078), (80, 59093), (86, 59114), (89, 59123), (91, 59138), (121, 59210), (125, 59234), (128, 59243), (134, 59267), (147, 59309), (159, 59372), (163, 59381),

Gene: Megsy\_59 Start: 40253, Stop: 40807, Start Num: 31

Candidate Starts for Megsy\_59:

(Start: 31 @40253 has 102 MA's), (Start: 36 @40265 has 4 MA's), (Start: 38 @40271 has 3 MA's), (50, 40319), (60, 40367), (62, 40376), (71, 40415), (74, 40445), (76, 40460), (85, 40496), (112, 40583), (120, 40607), (136, 40694), (142, 40712), (144, 40718),

Gene: MiaZeal\_157 Start: 80918, Stop: 81454, Start Num: 32

Candidate Starts for MiaZeal\_157:

(Start: 32 @80918 has 67 MA's), (Start: 38 @80936 has 3 MA's), (39, 80939), (Start: 48 @80978 has 1 MA's), (50, 80981), (74, 81107), (75, 81119), (88, 81170), (90, 81185), (110, 81236), (127, 81293), (136, 81335), (143, 81356),

Gene: Milly\_60 Start: 42004, Stop: 42537, Start Num: 32

Candidate Starts for Milly\_60:

(22, 41953), (Start: 32 @42004 has 67 MA's), (37, 42019), (50, 42067), (60, 42115), (62, 42124), (69, 42157), (71, 42163), (72, 42169), (88, 42253), (106, 42319),

Gene: Minerva\_158 Start: 84013, Stop: 84549, Start Num: 32

Candidate Starts for Minerva\_158:

(Start: 32 @84013 has 67 MA's), (Start: 38 @84031 has 3 MA's), (39, 84034), (74, 84202), (75, 84214), (88, 84265), (90, 84280), (136, 84430), (160, 84523),

Gene: Miryou\_55 Start: 41320, Stop: 42108, Start Num: 7

Candidate Starts for Miryou\_55:

(2, 41149), (Start: 7 @41320 has 12 MA's), (8, 41338), (17, 41368), (18, 41374), (Start: 36 @41443 has 4 MA's), (52, 41509), (66, 41566), (72, 41596), (74, 41620), (76, 41635), (88, 41680), (90, 41695), (95, 41731), (96, 41734), (97, 41743), (101, 41761), (111, 41794), (121, 41848), (124, 41863), (138, 41932), (142, 41938), (144, 41944), (148, 41950), (161, 42016), (176, 42085),

Gene: Mitti\_62 Start: 40333, Stop: 40929, Start Num: 34

Candidate Starts for Mitti\_62:

(Start: 34 @40333 has 17 MA's), (45, 40375), (62, 40453), (74, 40522), (75, 40534), (88, 40582), (120, 40702), (127, 40747), (136, 40789), (141, 40810), (142, 40813), (159, 40894),

Gene: Moab\_81 Start: 60787, Stop: 61275, Start Num: 44

Candidate Starts for Moab\_81:

(Start: 44 @60787 has 20 MA's), (55, 60847), (68, 60904), (77, 60967), (91, 61027), (92, 61030), (121, 61099), (125, 61123), (128, 61132), (134, 61156), (147, 61198), (159, 61261), (163, 61270),

Gene: Mufasa\_60 Start: 41594, Stop: 42127, Start Num: 32

Candidate Starts for Mufasa\_60:

(Start: 32 @41594 has 67 MA's), (37, 41609), (50, 41657), (60, 41705), (62, 41714), (69, 41747), (71, 41753), (72, 41759), (88, 41843), (106, 41909),

Gene: Muntaha\_74 Start: 59541, Stop: 60032, Start Num: 43

Candidate Starts for Muntaha\_74:

(Start: 43 @59541 has 2 MA's), (47, 59562), (55, 59604), (68, 59661), (70, 59670), (89, 59769), (91, 59784), (125, 59880), (132, 59904), (134, 59913), (137, 59931), (141, 59943), (163, 60027),

Gene: Murucutumbu\_58 Start: 40959, Stop: 41513, Start Num: 31

Candidate Starts for Murucutumbu\_58:

(Start: 31 @40959 has 102 MA's), (Start: 36 @40971 has 4 MA's), (Start: 38 @40977 has 3 MA's), (50, 41025), (60, 41073), (62, 41082), (71, 41121), (74, 41151), (112, 41289), (120, 41313), (133, 41385), (136, 41400), (142, 41418), (144, 41424), (158, 41481),

Gene: Mynx\_58 Start: 40301, Stop: 40855, Start Num: 31

Candidate Starts for Mynx\_58:

(Start: 31 @40301 has 102 MA's), (Start: 36 @40313 has 4 MA's), (Start: 38 @40319 has 3 MA's), (50, 40367), (60, 40415), (62, 40424), (71, 40463), (74, 40493), (76, 40508), (85, 40544), (112, 40631), (120, 40655), (123, 40679), (133, 40727), (136, 40742), (142, 40760), (144, 40766), (158, 40823),

Gene: Nebkiss\_120 Start: 65950, Stop: 66495, Start Num: 32

Candidate Starts for Nebkiss\_120:

(Start: 32 @65950 has 67 MA's), (50, 66013), (71, 66109), (74, 66139), (75, 66151), (85, 66193), (91, 66220), (122, 66313), (125, 66334), (134, 66367), (136, 66376), (142, 66394), (150, 66421), (159, 66460), (168, 66487),

Gene: Nibb\_59 Start: 40078, Stop: 40635, Start Num: 31

Candidate Starts for Nibb\_59:

(Start: 31 @40078 has 102 MA's), (Start: 36 @40090 has 4 MA's), (51, 40147), (58, 40180), (62, 40198), (66, 40213), (75, 40279), (85, 40318), (89, 40330), (120, 40435), (136, 40522),

Gene: NihilNomen\_161 Start: 84104, Stop: 84640, Start Num: 32

Candidate Starts for NihilNomen\_161:

(Start: 15 @84029 has 4 MA's), (Start: 20 @84047 has 4 MA's), (Start: 32 @84104 has 67 MA's), (Start: 38 @84122 has 3 MA's), (74, 84293), (75, 84305), (88, 84356), (90, 84371), (136, 84521), (143, 84542),

Gene: Nikao\_52 Start: 40681, Stop: 41211, Start Num: 38

Candidate Starts for Nikao\_52:

(3, 40426), (Start: 33 @40660 has 5 MA's), (Start: 38 @40681 has 3 MA's), (Start: 48 @40723 has 1 MA's), (51, 40735), (62, 40786), (71, 40825), (74, 40855), (85, 40906), (120, 41011), (136, 41098), (142, 41116), (144, 41122), (161, 41191),

Gene: Niklas\_60 Start: 40686, Stop: 41249, Start Num: 31

Candidate Starts for Niklas\_60:

(Start: 31 @40686 has 102 MA's), (51, 40761), (60, 40803), (62, 40812), (69, 40845), (71, 40851), (85, 40932), (120, 41049), (136, 41136), (142, 41154), (151, 41190), (161, 41229),

Gene: Nutello\_49 Start: 38047, Stop: 38598, Start Num: 33

Candidate Starts for Nutello\_49:

(3, 37813), (Start: 33 @38047 has 5 MA's), (Start: 38 @38068 has 3 MA's), (Start: 48 @38110 has 1 MA's), (51, 38122), (62, 38173), (71, 38212), (74, 38242), (85, 38293), (120, 38398), (136, 38485),

(142, 38503), (144, 38509), (161, 38578),

Gene: Odette\_164 Start: 87031, Stop: 87573, Start Num: 30

Candidate Starts for Odette\_164:

(28, 87025), (30, 87031), (Start: 32 @87037 has 67 MA's), (Start: 36 @87049 has 4 MA's), (37, 87052), (39, 87058), (50, 87100), (66, 87172), (74, 87226), (75, 87238), (88, 87289), (90, 87304), (110, 87355), (136, 87454), (143, 87475),

Gene: OkiRoe\_52 Start: 39114, Stop: 39779, Start Num: 36

Candidate Starts for OkiRoe\_52:

(2, 38820), (Start: 7 @38991 has 12 MA's), (8, 39009), (17, 39039), (18, 39045), (Start: 36 @39114 has 4 MA's), (52, 39180), (66, 39237), (72, 39267), (74, 39291), (76, 39306), (88, 39351), (90, 39366), (95, 39402), (96, 39405), (97, 39414), (101, 39432), (111, 39465), (121, 39519), (124, 39534), (138, 39603), (142, 39609), (144, 39615), (148, 39621), (161, 39687), (176, 39756),

Gene: Omega\_164 Start: 85807, Stop: 86343, Start Num: 32

Candidate Starts for Omega\_164:

(Start: 32 @85807 has 67 MA's), (Start: 38 @85825 has 3 MA's), (39, 85828), (Start: 48 @85867 has 1 MA's), (50, 85870), (74, 85996), (75, 86008), (88, 86059), (90, 86074), (110, 86125), (127, 86182), (160, 86317),

Gene: OmniCritical\_61 Start: 40142, Stop: 40819, Start Num: 34

Candidate Starts for OmniCritical\_61:

(Start: 34 @40142 has 17 MA's), (45, 40184), (62, 40262), (74, 40331), (75, 40343), (88, 40391), (93, 40427), (104, 40517), (109, 40526), (120, 40577), (127, 40622), (132, 40646), (136, 40664), (141, 40685), (142, 40688), (145, 40700), (146, 40703), (159, 40784),

Gene: Omnicron\_56 Start: 39478, Stop: 40266, Start Num: 7

Candidate Starts for Omnicron\_56:

(Start: 7 @39478 has 12 MA's), (12, 39514), (13, 39517), (Start: 36 @39613 has 4 MA's), (58, 39703), (60, 39712), (66, 39736), (76, 39805), (88, 39850), (95, 39901), (99, 39925), (100, 39928), (105, 39943), (131, 40060), (132, 40069), (134, 40078), (136, 40087), (138, 40099), (150, 40132), (161, 40180), (172, 40213),

Gene: Optimus\_151 Start: 83303, Stop: 83839, Start Num: 32

Candidate Starts for Optimus\_151:

(Start: 32 @83303 has 67 MA's), (Start: 38 @83321 has 3 MA's), (39, 83324), (Start: 48 @83363 has 1 MA's), (50, 83366), (74, 83492), (75, 83504), (88, 83555), (90, 83570), (110, 83621), (127, 83678), (159, 83804), (160, 83813),

Gene: Oscar\_61 Start: 40591, Stop: 41148, Start Num: 31

Candidate Starts for Oscar\_61:

(9, 40498), (25, 40561), (Start: 31 @40591 has 102 MA's), (Start: 36 @40603 has 4 MA's), (51, 40660), (58, 40693), (66, 40726), (72, 40756), (75, 40792), (85, 40831), (107, 40909), (120, 40948), (136, 41035), (142, 41053), (151, 41089),

Gene: Padfoot\_57 Start: 40301, Stop: 40855, Start Num: 31

Candidate Starts for Padfoot\_57:

(6, 40154), (Start: 31 @40301 has 102 MA's), (Start: 36 @40313 has 4 MA's), (Start: 38 @40319 has 3 MA's), (50, 40367), (60, 40415), (62, 40424), (71, 40463), (74, 40493), (85, 40544), (112, 40631), (120, 40655), (136, 40742), (142, 40760), (144, 40766),

Gene: Padpat\_59 Start: 39982, Stop: 40536, Start Num: 31

Candidate Starts for Padpat\_59:

(Start: 31 @39982 has 102 MA's), (Start: 36 @39994 has 4 MA's), (Start: 38 @40000 has 3 MA's), (50, 40048), (60, 40096), (62, 40105), (71, 40144), (74, 40174), (85, 40225), (112, 40312), (120, 40336), (136, 40423), (144, 40447),

Gene: Paola\_52 Start: 38989, Stop: 39768, Start Num: 7

Candidate Starts for Paola\_52:

(Start: 7 @38989 has 12 MA's), (8, 39007), (17, 39037), (18, 39043), (Start: 36 @39112 has 4 MA's), (52, 39178), (66, 39235), (72, 39265), (74, 39289), (76, 39304), (88, 39349), (90, 39364), (96, 39403), (101, 39430), (111, 39463), (121, 39517), (138, 39601), (144, 39613), (152, 39652), (161, 39685), (175, 39739),

Gene: Patelgo\_81 Start: 60950, Stop: 61438, Start Num: 44

Candidate Starts for Patelgo\_81:

(Start: 44 @60950 has 20 MA's), (55, 61010), (68, 61067), (77, 61130), (91, 61190), (92, 61193), (121, 61262), (125, 61286), (128, 61295), (134, 61319), (147, 61361), (159, 61424), (163, 61433),

Gene: Peanam\_60 Start: 40644, Stop: 41207, Start Num: 31

Candidate Starts for Peanam\_60:

(Start: 31 @40644 has 102 MA's), (51, 40719), (60, 40761), (62, 40770), (69, 40803), (71, 40809), (85, 40890), (120, 41007), (136, 41094), (142, 41112), (151, 41148), (161, 41187),

Gene: Peel\_57 Start: 40106, Stop: 40660, Start Num: 31

Candidate Starts for Peel\_57:

(6, 39959), (Start: 31 @40106 has 102 MA's), (Start: 36 @40118 has 4 MA's), (Start: 38 @40124 has 3 MA's), (50, 40172), (60, 40220), (62, 40229), (71, 40268), (74, 40298), (85, 40349), (112, 40436), (120, 40460), (136, 40547), (142, 40565), (144, 40571),

Gene: Pharb\_56 Start: 39453, Stop: 40010, Start Num: 32

Candidate Starts for Pharb\_56:

(Start: 32 @39453 has 67 MA's), (Start: 38 @39471 has 3 MA's), (50, 39516), (58, 39555), (60, 39564), (66, 39588), (71, 39612), (112, 39783), (120, 39810), (142, 39915),

Gene: PhelpsODU\_58 Start: 39396, Stop: 39959, Start Num: 31

Candidate Starts for PhelpsODU\_58:

(14, 39327), (Start: 31 @39396 has 102 MA's), (Start: 36 @39408 has 4 MA's), (Start: 38 @39414 has 3 MA's), (60, 39510), (66, 39534), (71, 39558), (85, 39639), (112, 39729), (120, 39759), (136, 39846), (142, 39864), (158, 39927),

Gene: Phoebus\_160 Start: 87716, Stop: 88327, Start Num: 15

Candidate Starts for Phoebus\_160:

(Start: 15 @87716 has 4 MA's), (Start: 20 @87734 has 4 MA's), (Start: 32 @87791 has 67 MA's), (Start: 38 @87809 has 3 MA's), (74, 87980), (75, 87992), (88, 88043), (90, 88058), (136, 88208), (143, 88229),

Gene: Phrank\_60 Start: 39457, Stop: 40020, Start Num: 31

Candidate Starts for Phrank\_60:

(Start: 31 @39457 has 102 MA's), (Start: 36 @39469 has 4 MA's), (Start: 38 @39475 has 3 MA's), (60, 39571), (71, 39619), (85, 39700), (112, 39790), (120, 39820), (136, 39907), (142, 39925), (158, 39988),

Gene: Phredrick\_81 Start: 58811, Stop: 59299, Start Num: 44

Candidate Starts for Phredrick\_81:



(Start: 44 @58811 has 20 MA's), (70, 58937), (77, 58991), (86, 59027), (89, 59036), (91, 59051), (121, 59123), (125, 59147), (128, 59156), (131, 59162), (134, 59180), (136, 59189), (147, 59222), (153, 59264), (159, 59285), (163, 59294),

Gene: Piatt\_57 Start: 40301, Stop: 40855, Start Num: 31

Candidate Starts for Piatt\_57:

(6, 40154), (Start: 31 @40301 has 102 MA's), (Start: 36 @40313 has 4 MA's), (Start: 38 @40319 has 3 MA's), (50, 40367), (60, 40415), (62, 40424), (71, 40463), (74, 40493), (85, 40544), (112, 40631), (120, 40655), (136, 40742), (142, 40760), (144, 40766),

Gene: Pixie\_56 Start: 39789, Stop: 40346, Start Num: 32

Candidate Starts for Pixie\_56:

(16, 39720), (Start: 32 @39789 has 67 MA's), (Start: 36 @39801 has 4 MA's), (Start: 38 @39807 has 3 MA's), (50, 39852), (58, 39891), (59, 39894), (66, 39924), (71, 39948), (74, 39978), (118, 40137), (120, 40146), (142, 40251), (155, 40302), (158, 40314),

Gene: Pokerus\_56 Start: 40031, Stop: 40585, Start Num: 31

Candidate Starts for Pokerus\_56:

(Start: 31 @40031 has 102 MA's), (Start: 36 @40043 has 4 MA's), (50, 40097), (60, 40145), (62, 40154), (71, 40193), (74, 40223), (85, 40274), (112, 40361), (120, 40385), (136, 40472), (142, 40490), (144, 40496),

Gene: Porcelain\_154 Start: 80717, Stop: 81253, Start Num: 32

Candidate Starts for Porcelain\_154:

(Start: 32 @80717 has 67 MA's), (Start: 38 @80735 has 3 MA's), (39, 80738), (Start: 48 @80777 has 1 MA's), (50, 80780), (74, 80906), (75, 80918), (88, 80969), (90, 80984), (110, 81035), (127, 81092), (136, 81134), (143, 81155),

Gene: Pound\_151 Start: 82794, Stop: 83378, Start Num: 32

Candidate Starts for Pound\_151:

(Start: 15 @82719 has 4 MA's), (Start: 20 @82737 has 4 MA's), (Start: 32 @82794 has 67 MA's), (Start: 40 @82821 has 2 MA's), (51, 82863), (63, 82917), (74, 82983), (89, 83046), (91, 83061), (113, 83145), (134, 83253), (136, 83262), (142, 83280),

Gene: Prithvi\_58 Start: 40200, Stop: 40742, Start Num: 36

Candidate Starts for Prithvi\_58:

(Start: 31 @40188 has 102 MA's), (Start: 36 @40200 has 4 MA's), (Start: 38 @40206 has 3 MA's), (50, 40254), (60, 40302), (62, 40311), (71, 40350), (74, 40380), (76, 40395), (85, 40431), (112, 40518), (120, 40542), (133, 40614), (136, 40629), (142, 40647), (144, 40653), (158, 40710),

Gene: QuincyRose\_56 Start: 40365, Stop: 40919, Start Num: 31

Candidate Starts for QuincyRose\_56:

(6, 40215), (Start: 31 @40365 has 102 MA's), (Start: 36 @40377 has 4 MA's), (Start: 38 @40383 has 3 MA's), (50, 40431), (60, 40479), (62, 40488), (71, 40527), (74, 40557), (85, 40608), (112, 40695), (120, 40719), (136, 40806), (142, 40824), (144, 40830),

Gene: Ramen\_58 Start: 39987, Stop: 40541, Start Num: 31

Candidate Starts for Ramen\_58:

(Start: 31 @39987 has 102 MA's), (Start: 36 @39999 has 4 MA's), (Start: 38 @40005 has 3 MA's), (50, 40053), (60, 40101), (62, 40110), (71, 40149), (74, 40179), (76, 40194), (85, 40230), (112, 40317), (120, 40341), (123, 40365), (133, 40413), (136, 40428), (142, 40446),

Gene: Rando14\_54 Start: 37175, Stop: 37963, Start Num: 7

Candidate Starts for Rando14\_54:

(Start: 7 @37175 has 12 MA's), (19, 37235), (23, 37244), (Start: 36 @37310 has 4 MA's), (58, 37400), (60, 37409), (66, 37433), (76, 37502), (88, 37547), (89, 37550), (97, 37610), (99, 37622), (100, 37625), (105, 37640), (131, 37757), (134, 37775), (136, 37784), (138, 37796), (144, 37808), (150, 37829), (161, 37877), (172, 37910),

Gene: Rapunzel97\_58 Start: 39980, Stop: 40534, Start Num: 31

Candidate Starts for Rapunzel97\_58:

(Start: 31 @39980 has 102 MA's), (Start: 36 @39992 has 4 MA's), (Start: 38 @39998 has 3 MA's), (50, 40046), (60, 40094), (62, 40103), (71, 40142), (74, 40172), (85, 40223), (112, 40310), (120, 40334), (136, 40421), (142, 40439), (144, 40445),

Gene: Redno2\_153 Start: 81847, Stop: 82440, Start Num: 20

Candidate Starts for Redno2\_153:

(Start: 15 @81829 has 4 MA's), (Start: 20 @81847 has 4 MA's), (Start: 32 @81904 has 67 MA's), (Start: 38 @81922 has 3 MA's), (74, 82093), (75, 82105), (88, 82156), (90, 82171), (136, 82321), (143, 82342),

Gene: Richo\_60 Start: 40625, Stop: 41188, Start Num: 31

Candidate Starts for Richo\_60:

(Start: 31 @40625 has 102 MA's), (51, 40700), (60, 40742), (62, 40751), (69, 40784), (71, 40790), (85, 40871), (120, 40988), (136, 41075), (142, 41093), (151, 41129), (161, 41168),

Gene: Rosmarinus\_57 Start: 40092, Stop: 40646, Start Num: 31

Candidate Starts for Rosmarinus\_57:

(6, 39945), (Start: 31 @40092 has 102 MA's), (Start: 36 @40104 has 4 MA's), (Start: 38 @40110 has 3 MA's), (50, 40158), (60, 40206), (62, 40215), (71, 40254), (74, 40284), (85, 40335), (112, 40422), (120, 40446), (136, 40533), (142, 40551), (144, 40557),

Gene: Ruthiejr\_63 Start: 40204, Stop: 40800, Start Num: 34

Candidate Starts for Ruthiejr\_63:

(Start: 34 @40204 has 17 MA's), (45, 40246), (62, 40324), (74, 40393), (75, 40405), (88, 40453), (120, 40573), (127, 40618), (136, 40660), (141, 40681), (142, 40684), (159, 40765),

Gene: SamScheppers\_60 Start: 40633, Stop: 41229, Start Num: 34

Candidate Starts for SamScheppers\_60:

(Start: 34 @40633 has 17 MA's), (45, 40675), (62, 40753), (74, 40822), (75, 40834), (88, 40882), (120, 41002), (127, 41047), (136, 41089), (141, 41110), (142, 41113), (159, 41194),

Gene: SamuelLPlaqson\_58 Start: 40885, Stop: 41439, Start Num: 31

Candidate Starts for SamuelLPlaqson\_58:

(Start: 31 @40885 has 102 MA's), (Start: 36 @40897 has 4 MA's), (Start: 38 @40903 has 3 MA's), (50, 40951), (60, 40999), (62, 41008), (71, 41047), (85, 41128), (112, 41215), (120, 41239), (136, 41326), (142, 41344), (144, 41350),

Gene: Scarlett\_61 Start: 40586, Stop: 41143, Start Num: 31

Candidate Starts for Scarlett\_61:

(25, 40556), (Start: 31 @40586 has 102 MA's), (Start: 36 @40598 has 4 MA's), (51, 40655), (58, 40688), (66, 40721), (72, 40751), (75, 40787), (107, 40904), (120, 40943), (136, 41030), (142, 41048), (151, 41084),

Gene: Schatzie\_155 Start: 85091, Stop: 85627, Start Num: 32

Candidate Starts for Schatzie\_155:

(28, 85079), (30, 85085), (Start: 32 @85091 has 67 MA's), (Start: 36 @85103 has 4 MA's), (37, 85106), (39, 85112), (50, 85154), (66, 85226), (85, 85334), (88, 85343), (90, 85358), (110, 85409), (136, 85508), (143, 85529),

Gene: SeresaTree\_81 Start: 60167, Stop: 60667, Start Num: 40

Candidate Starts for SeresaTree\_81:

(Start: 40 @60167 has 2 MA's), (51, 60215), (70, 60302), (87, 60395), (91, 60416), (122, 60491), (125, 60512), (128, 60521), (132, 60536), (134, 60545), (153, 60629), (159, 60650),

Gene: SgtBeansprout\_49 Start: 38068, Stop: 38598, Start Num: 38

Candidate Starts for SgtBeansprout\_49:

(3, 37813), (Start: 33 @38047 has 5 MA's), (Start: 38 @38068 has 3 MA's), (Start: 48 @38110 has 1 MA's), (51, 38122), (62, 38173), (71, 38212), (74, 38242), (85, 38293), (120, 38398), (136, 38485), (142, 38503), (144, 38509), (161, 38578),

Gene: Shadow1\_62 Start: 40304, Stop: 40867, Start Num: 31

Candidate Starts for Shadow1\_62:

(Start: 31 @40304 has 102 MA's), (Start: 36 @40316 has 4 MA's), (Start: 38 @40322 has 3 MA's), (Start: 48 @40364 has 1 MA's), (60, 40418), (66, 40442), (71, 40466), (85, 40547), (112, 40637), (120, 40667), (136, 40754), (142, 40772), (158, 40835),

Gene: Sham\_75 Start: 59928, Stop: 60419, Start Num: 44

Candidate Starts for Sham\_75:

(42, 59925), (Start: 44 @59928 has 20 MA's), (51, 59967), (91, 60168), (125, 60264), (128, 60273), (132, 60288), (134, 60297), (137, 60315), (138, 60318), (153, 60381), (159, 60402),

Gene: Shaobing\_60 Start: 40662, Stop: 41225, Start Num: 31

Candidate Starts for Shaobing\_60:

(Start: 31 @40662 has 102 MA's), (51, 40737), (60, 40779), (62, 40788), (69, 40821), (71, 40827), (85, 40908), (120, 41025), (136, 41112), (142, 41130), (151, 41166), (161, 41205),

Gene: ShedlockHolmes\_58 Start: 40308, Stop: 40865, Start Num: 32

Candidate Starts for ShedlockHolmes\_58:

(16, 40239), (Start: 32 @40308 has 67 MA's), (Start: 36 @40320 has 4 MA's), (Start: 38 @40326 has 3 MA's), (50, 40371), (58, 40410), (66, 40443), (71, 40467), (74, 40497), (118, 40656), (120, 40665), (142, 40770),

Gene: ShiaSurprise\_58 Start: 40301, Stop: 40855, Start Num: 31

Candidate Starts for ShiaSurprise\_58:

(6, 40154), (Start: 31 @40301 has 102 MA's), (Start: 36 @40313 has 4 MA's), (Start: 38 @40319 has 3 MA's), (50, 40367), (60, 40415), (62, 40424), (71, 40463), (74, 40493), (85, 40544), (112, 40631), (120, 40655), (136, 40742), (142, 40760), (144, 40766),

Gene: SirPhilip\_58 Start: 40708, Stop: 41271, Start Num: 31

Candidate Starts for SirPhilip\_58:

(Start: 31 @40708 has 102 MA's), (Start: 36 @40720 has 4 MA's), (60, 40822), (62, 40831), (71, 40870), (85, 40951), (112, 41041), (120, 41071), (130, 41128), (136, 41158), (158, 41239),

Gene: Slarp\_62 Start: 40161, Stop: 40757, Start Num: 34

Candidate Starts for Slarp\_62:

(Start: 34 @40161 has 17 MA's), (45, 40203), (62, 40281), (74, 40350), (75, 40362), (88, 40410), (120, 40530), (127, 40575), (136, 40617), (141, 40638), (142, 40641), (159, 40722),

Gene: Slimphazie\_57 Start: 39980, Stop: 40534, Start Num: 31

Candidate Starts for Slimphazie\_57:

(Start: 31 @39980 has 102 MA's), (Start: 36 @39992 has 4 MA's), (Start: 38 @39998 has 3 MA's), (50, 40046), (60, 40094), (62, 40103), (71, 40142), (74, 40172), (85, 40223), (112, 40310), (120, 40334), (136, 40421), (142, 40439), (144, 40445),

Gene: SoSeph\_53 Start: 39361, Stop: 40140, Start Num: 7

Candidate Starts for SoSeph\_53:

(Start: 7 @39361 has 12 MA's), (17, 39409), (18, 39415), (Start: 36 @39484 has 4 MA's), (52, 39550), (60, 39583), (66, 39607), (72, 39637), (74, 39661), (76, 39676), (88, 39721), (90, 39736), (95, 39772), (96, 39775), (97, 39784), (98, 39790), (101, 39802), (111, 39835), (120, 39874), (124, 39904), (138, 39973), (144, 39985), (161, 40057), (175, 40111), (176, 40126),

Gene: SparkleGoddess\_81 Start: 60854, Stop: 61342, Start Num: 44

Candidate Starts for SparkleGoddess\_81:

(Start: 44 @60854 has 20 MA's), (55, 60914), (77, 61034), (83, 61058), (87, 61073), (89, 61079), (91, 61094), (121, 61166), (125, 61190), (128, 61199), (134, 61223), (147, 61265), (159, 61328), (163, 61337),

Gene: Spock\_57 Start: 40105, Stop: 40659, Start Num: 31

Candidate Starts for Spock\_57:

(6, 39958), (Start: 31 @40105 has 102 MA's), (Start: 36 @40117 has 4 MA's), (Start: 38 @40123 has 3 MA's), (50, 40171), (60, 40219), (62, 40228), (71, 40267), (74, 40297), (85, 40348), (112, 40435), (120, 40459), (136, 40546), (142, 40564), (144, 40570),

Gene: Squint\_151 Start: 81411, Stop: 81947, Start Num: 32

Candidate Starts for Squint\_151:

(28, 81399), (30, 81405), (Start: 32 @81411 has 67 MA's), (Start: 36 @81423 has 4 MA's), (37, 81426), (39, 81432), (50, 81474), (66, 81546), (85, 81654), (88, 81663), (90, 81678), (110, 81729), (127, 81786), (136, 81828), (143, 81849),

Gene: Stigma\_80 Start: 60862, Stop: 61350, Start Num: 44

Candidate Starts for Stigma\_80:

(Start: 44 @60862 has 20 MA's), (55, 60922), (68, 60979), (70, 60988), (73, 61009), (77, 61042), (79, 61048), (89, 61087), (91, 61102), (101, 61138), (121, 61174), (125, 61198), (128, 61207), (134, 61231), (147, 61273), (159, 61336), (163, 61345),

Gene: Stinson\_58 Start: 40482, Stop: 41036, Start Num: 31

Candidate Starts for Stinson\_58:

(24, 40443), (Start: 31 @40482 has 102 MA's), (Start: 36 @40494 has 4 MA's), (Start: 38 @40500 has 3 MA's), (50, 40548), (62, 40605), (71, 40644), (74, 40674), (112, 40812), (120, 40836), (133, 40908), (136, 40923), (142, 40941), (158, 41004),

Gene: Strobilo\_61 Start: 42006, Stop: 42539, Start Num: 32

Candidate Starts for Strobilo\_61:

(22, 41955), (Start: 32 @42006 has 67 MA's), (37, 42021), (50, 42069), (60, 42117), (62, 42126), (69, 42159), (71, 42165), (72, 42171), (88, 42255), (106, 42321),

Gene: Sulley\_57 Start: 40156, Stop: 40710, Start Num: 31

Candidate Starts for Sulley\_57:

(Start: 31 @40156 has 102 MA's), (Start: 36 @40168 has 4 MA's), (Start: 38 @40174 has 3 MA's), (50, 40222), (60, 40270), (62, 40279), (71, 40318), (74, 40348), (85, 40399), (112, 40486), (120, 40510), (136, 40597), (142, 40615), (144, 40621),

Gene: Sunflower1121\_63 Start: 40450, Stop: 41013, Start Num: 31

Candidate Starts for Sunflower1121\_63:

(Start: 31 @40450 has 102 MA's), (Start: 36 @40462 has 4 MA's), (Start: 38 @40468 has 3 MA's), (Start: 48 @40510 has 1 MA's), (60, 40564), (66, 40588), (71, 40612), (85, 40693), (112, 40783), (120, 40813), (136, 40900), (142, 40918), (158, 40981),

Gene: Superphikiman\_155 Start: 81247, Stop: 81834, Start Num: 32

Candidate Starts for Superphikiman\_155:

(Start: 20 @81190 has 4 MA's), (Start: 32 @81247 has 67 MA's), (Start: 38 @81265 has 3 MA's), (39, 81268), (51, 81316), (56, 81343), (60, 81358), (64, 81373), (75, 81448), (84, 81484), (90, 81511), (136, 81715), (143, 81736),

Gene: Syra333\_62 Start: 40471, Stop: 41025, Start Num: 32

Candidate Starts for Syra333\_62:

(Start: 32 @40471 has 67 MA's), (Start: 36 @40483 has 4 MA's), (Start: 38 @40489 has 3 MA's), (60, 40585), (62, 40594), (66, 40609), (71, 40633), (85, 40714), (112, 40801), (120, 40825), (136, 40912), (150, 40957), (158, 40993),

Gene: TBond007\_55 Start: 39788, Stop: 40345, Start Num: 32

Candidate Starts for TBond007\_55:

(16, 39719), (Start: 32 @39788 has 67 MA's), (Start: 36 @39800 has 4 MA's), (Start: 38 @39806 has 3 MA's), (50, 39851), (58, 39890), (59, 39893), (66, 39923), (71, 39947), (74, 39977), (118, 40136), (120, 40145), (142, 40250), (155, 40301), (158, 40313),

Gene: TClif\_59 Start: 40127, Stop: 40678, Start Num: 32

Candidate Starts for TClif\_59:

(Start: 32 @40127 has 67 MA's), (Start: 36 @40139 has 4 MA's), (Start: 38 @40145 has 3 MA's), (50, 40190), (62, 40247), (66, 40262), (72, 40292), (75, 40328), (120, 40478), (136, 40565), (142, 40583), (144, 40589), (150, 40610),

Gene: TM4\_57 Start: 36361, Stop: 36894, Start Num: 32

Candidate Starts for TM4\_57:

(22, 36310), (Start: 32 @36361 has 67 MA's), (Start: 36 @36373 has 4 MA's), (50, 36424), (60, 36472), (62, 36481), (69, 36514), (71, 36520), (72, 36526), (88, 36610), (106, 36676),

Gene: Tachez\_57 Start: 39949, Stop: 40503, Start Num: 31

Candidate Starts for Tachez\_57:

(6, 39802), (Start: 31 @39949 has 102 MA's), (Start: 36 @39961 has 4 MA's), (Start: 38 @39967 has 3 MA's), (50, 40015), (60, 40063), (62, 40072), (71, 40111), (74, 40141), (85, 40192), (112, 40279), (120, 40303), (136, 40390), (142, 40408), (144, 40414),

Gene: TaiwanKao\_59 Start: 40250, Stop: 40804, Start Num: 31

Candidate Starts for TaiwanKao\_59:

(Start: 31 @40250 has 102 MA's), (Start: 36 @40262 has 4 MA's), (Start: 38 @40268 has 3 MA's), (50, 40316), (60, 40364), (62, 40373), (71, 40412), (74, 40442), (76, 40457), (85, 40493), (112, 40580), (120, 40604), (133, 40676), (136, 40691), (142, 40709), (144, 40715), (158, 40772),

Gene: Taquito\_61 Start: 40396, Stop: 40992, Start Num: 34

Candidate Starts for Taquito\_61:

(Start: 34 @40396 has 17 MA's), (45, 40438), (62, 40516), (74, 40585), (75, 40597), (88, 40645), (120, 40765), (127, 40810), (136, 40852), (141, 40873), (142, 40876), (159, 40957),

Gene: Thibault\_141 Start: 81109, Stop: 81639, Start Num: 32

Candidate Starts for Thibault\_141:

(Start: 32 @81109 has 67 MA's), (Start: 38 @81127 has 3 MA's), (39, 81130), (Start: 48 @81169 has 1 MA's), (50, 81172), (74, 81298), (75, 81310), (88, 81361), (90, 81376), (110, 81427), (127, 81484), (159, 81610), (167, 81631),

Gene: ThreeRngTarjay\_155 Start: 85312, Stop: 85848, Start Num: 32

Candidate Starts for ThreeRngTarjay\_155:

(Start: 20 @85255 has 4 MA's), (Start: 32 @85312 has 67 MA's), (Start: 38 @85330 has 3 MA's), (74, 85501), (75, 85513), (88, 85564), (90, 85579), (136, 85729), (143, 85750),

Gene: Thyatira\_55 Start: 41325, Stop: 42104, Start Num: 7

Candidate Starts for Thyatira\_55:

(2, 41154), (Start: 7 @41325 has 12 MA's), (17, 41373), (18, 41379), (Start: 36 @41448 has 4 MA's), (52, 41514), (60, 41547), (66, 41571), (72, 41601), (74, 41625), (76, 41640), (88, 41685), (90, 41700), (95, 41736), (96, 41739), (97, 41748), (101, 41766), (111, 41799), (120, 41838), (124, 41868), (138, 41937), (144, 41949), (152, 41988), (161, 42021), (176, 42090),

Gene: Tierra\_60 Start: 40268, Stop: 40831, Start Num: 31

Candidate Starts for Tierra\_60:

(Start: 31 @40268 has 102 MA's), (Start: 36 @40280 has 4 MA's), (Start: 38 @40286 has 3 MA's), (60, 40382), (71, 40430), (85, 40511), (112, 40601), (120, 40631), (136, 40718), (142, 40736), (158, 40799),

Gene: TingHuaYa\_58 Start: 39013, Stop: 39561, Start Num: 38

Candidate Starts for TingHuaYa\_58:

(Start: 31 @38995 has 102 MA's), (Start: 36 @39007 has 4 MA's), (Start: 38 @39013 has 3 MA's), (Start: 48 @39055 has 1 MA's), (58, 39100), (60, 39109), (69, 39151), (71, 39157), (85, 39238), (120, 39361), (136, 39448), (142, 39466), (144, 39472), (158, 39529),

Gene: TiniBug\_58 Start: 40881, Stop: 41435, Start Num: 31

Candidate Starts for TiniBug\_58:

(Start: 31 @40881 has 102 MA's), (Start: 36 @40893 has 4 MA's), (Start: 38 @40899 has 3 MA's), (50, 40947), (60, 40995), (62, 41004), (71, 41043), (85, 41124), (112, 41211), (120, 41235), (136, 41322), (142, 41340), (144, 41346),

Gene: Tiri\_58 Start: 40270, Stop: 40824, Start Num: 31

Candidate Starts for Tiri\_58:

(Start: 31 @40270 has 102 MA's), (50, 40336), (60, 40384), (62, 40393), (71, 40432), (74, 40462), (85, 40513), (112, 40600), (120, 40624), (136, 40711), (142, 40729), (144, 40735),

Gene: Topper\_57 Start: 40104, Stop: 40658, Start Num: 31

Candidate Starts for Topper\_57:

(6, 39957), (Start: 31 @40104 has 102 MA's), (Start: 36 @40116 has 4 MA's), (Start: 38 @40122 has 3 MA's), (50, 40170), (60, 40218), (62, 40227), (71, 40266), (74, 40296), (85, 40347), (112, 40434), (120, 40458), (136, 40545), (142, 40563), (144, 40569),

Gene: Torres\_51 Start: 40661, Stop: 41212, Start Num: 33

Candidate Starts for Torres\_51:

(3, 40427), (Start: 33 @40661 has 5 MA's), (Start: 38 @40682 has 3 MA's), (Start: 48 @40724 has 1 MA's), (51, 40736), (62, 40787), (71, 40826), (74, 40856), (85, 40907), (120, 41012), (136, 41099), (142, 41117), (144, 41123), (161, 41192),

Gene: TreyKay\_58 Start: 40200, Stop: 40742, Start Num: 36

Candidate Starts for TreyKay\_58:

(Start: 31 @40188 has 102 MA's), (Start: 36 @40200 has 4 MA's), (Start: 38 @40206 has 3 MA's), (50, 40254), (60, 40302), (62, 40311), (71, 40350), (74, 40380), (76, 40395), (85, 40431), (112, 40518), (120, 40542), (133, 40614), (136, 40629), (142, 40647), (144, 40653), (158, 40710),

Gene: TribbleTrouble\_56 Start: 40264, Stop: 40821, Start Num: 32

Candidate Starts for TribbleTrouble\_56:

(Start: 32 @40264 has 67 MA's), (Start: 36 @40276 has 4 MA's), (Start: 38 @40282 has 3 MA's), (50, 40327), (58, 40366), (60, 40375), (66, 40399), (71, 40423), (120, 40621), (142, 40726),

Gene: TruffulaTree\_57 Start: 39976, Stop: 40530, Start Num: 31

Candidate Starts for TruffulaTree\_57:

(Start: 31 @39976 has 102 MA's), (Start: 36 @39988 has 4 MA's), (Start: 38 @39994 has 3 MA's), (50, 40042), (60, 40090), (62, 40099), (71, 40138), (74, 40168), (85, 40219), (112, 40306), (120, 40330), (136, 40417), (142, 40435), (144, 40441),

Gene: TunaTartare\_80 Start: 61330, Stop: 61827, Start Num: 40

Candidate Starts for TunaTartare\_80:

(Start: 40 @61330 has 2 MA's), (51, 61375), (91, 61576), (125, 61672), (128, 61681), (132, 61696), (134, 61705), (137, 61723), (153, 61789), (159, 61810),

Gene: Twitch\_57 Start: 40106, Stop: 40660, Start Num: 31

Candidate Starts for Twitch\_57:

(6, 39959), (Start: 31 @40106 has 102 MA's), (Start: 36 @40118 has 4 MA's), (Start: 38 @40124 has 3 MA's), (50, 40172), (60, 40220), (62, 40229), (71, 40268), (74, 40298), (85, 40349), (112, 40436), (120, 40460), (136, 40547), (142, 40565), (144, 40571),

Gene: Typha\_56 Start: 42274, Stop: 42870, Start Num: 32

Candidate Starts for Typha\_56:

(1, 41821), (4, 42085), (Start: 32 @42274 has 67 MA's), (Start: 38 @42292 has 3 MA's), (39, 42295), (Start: 40 @42301 has 2 MA's), (66, 42412), (74, 42466), (76, 42481), (85, 42517), (88, 42526), (89, 42529), (100, 42577), (101, 42580), (106, 42610), (123, 42676), (127, 42697), (165, 42844), (170, 42859),

Gene: Unicorn\_58 Start: 39396, Stop: 39959, Start Num: 31

Candidate Starts for Unicorn\_58:

(14, 39327), (Start: 31 @39396 has 102 MA's), (Start: 36 @39408 has 4 MA's), (Start: 38 @39414 has 3 MA's), (60, 39510), (66, 39534), (71, 39558), (85, 39639), (112, 39729), (120, 39759), (136, 39846), (142, 39864), (158, 39927),

Gene: Urkel\_58 Start: 40885, Stop: 41439, Start Num: 31

Candidate Starts for Urkel\_58:

(Start: 31 @40885 has 102 MA's), (Start: 36 @40897 has 4 MA's), (Start: 38 @40903 has 3 MA's), (50, 40951), (60, 40999), (62, 41008), (71, 41047), (85, 41128), (112, 41215), (120, 41239), (136, 41326), (142, 41344), (144, 41350),

Gene: Validus\_61 Start: 40705, Stop: 41262, Start Num: 31

Candidate Starts for Validus\_61:

(26, 40678), (Start: 31 @40705 has 102 MA's), (51, 40780), (60, 40822), (71, 40870), (72, 40876), (81, 40936), (85, 40951), (120, 41062), (136, 41149), (142, 41167), (144, 41173), (161, 41242),

Gene: Veliki\_58 Start: 39962, Stop: 40516, Start Num: 31

Candidate Starts for Veliki\_58:

(Start: 31 @39962 has 102 MA's), (Start: 36 @39974 has 4 MA's), (Start: 38 @39980 has 3 MA's), (50, 40028), (60, 40076), (62, 40085), (71, 40124), (74, 40154), (76, 40169), (85, 40205), (112, 40292), (120, 40316), (123, 40340), (133, 40388), (136, 40403), (142, 40421), (144, 40427), (158, 40484),

Gene: Wakanda\_73 Start: 59478, Stop: 59969, Start Num: 43

Candidate Starts for Wakanda\_73:

(Start: 43 @59478 has 2 MA's), (47, 59499), (55, 59541), (68, 59598), (70, 59607), (89, 59706), (91, 59721), (125, 59817), (132, 59841), (134, 59850), (137, 59868), (141, 59880), (163, 59964),

Gene: Wanda\_158 Start: 82485, Stop: 83021, Start Num: 32

Candidate Starts for Wanda\_158:

(Start: 32 @82485 has 67 MA's), (Start: 38 @82503 has 3 MA's), (39, 82506), (74, 82674), (75, 82686), (88, 82737), (90, 82752), (136, 82902), (160, 82995),

Gene: Waterfoul\_54 Start: 39423, Stop: 40202, Start Num: 7

Candidate Starts for Waterfoul\_54:

(Start: 7 @39423 has 12 MA's), (17, 39471), (18, 39477), (Start: 36 @39546 has 4 MA's), (52, 39612), (60, 39645), (66, 39669), (72, 39699), (74, 39723), (76, 39738), (88, 39783), (90, 39798), (95, 39834), (96, 39837), (97, 39846), (98, 39852), (101, 39864), (111, 39897), (120, 39936), (124, 39966), (138, 40035), (144, 40047), (161, 40119), (175, 40173), (176, 40188),

Gene: Wildcat\_136 Start: 64934, Stop: 65449, Start Num: 35

Candidate Starts for Wildcat\_136:

(Start: 35 @64934 has 5 MA's), (Start: 38 @64949 has 3 MA's), (45, 64973), (46, 64979), (51, 65000), (54, 65018), (57, 65030), (58, 65033), (71, 65090), (75, 65132), (88, 65180), (89, 65183), (100, 65231), (101, 65234), (119, 65252), (128, 65303), (136, 65342), (138, 65354), (151, 65399),

Gene: Wintermute\_62 Start: 40391, Stop: 40987, Start Num: 34

Candidate Starts for Wintermute\_62:

(Start: 34 @40391 has 17 MA's), (45, 40433), (62, 40511), (74, 40580), (75, 40592), (88, 40640), (120, 40760), (127, 40805), (136, 40847), (141, 40868), (142, 40871), (159, 40952),

Gene: Ximenita\_63 Start: 40468, Stop: 41031, Start Num: 31

Candidate Starts for Ximenita\_63:

(Start: 31 @40468 has 102 MA's), (Start: 36 @40480 has 4 MA's), (Start: 38 @40486 has 3 MA's), (Start: 48 @40528 has 1 MA's), (66, 40606), (71, 40630), (85, 40711), (112, 40801), (120, 40831), (136, 40918), (142, 40936), (158, 40999),

Gene: Y10\_60 Start: 40319, Stop: 40915, Start Num: 34

Candidate Starts for Y10\_60:

(Start: 34 @40319 has 17 MA's), (45, 40361), (62, 40439), (74, 40508), (75, 40520), (88, 40568), (113, 40658), (114, 40661), (120, 40688), (127, 40733), (136, 40775), (141, 40796), (142, 40799), (159, 40880),

Gene: Y2\_60 Start: 40319, Stop: 40915, Start Num: 34

Candidate Starts for Y2\_60:

(Start: 34 @40319 has 17 MA's), (45, 40361), (62, 40439), (74, 40508), (75, 40520), (88, 40568), (113, 40658), (114, 40661), (120, 40688), (127, 40733), (136, 40775), (141, 40796), (142, 40799), (159, 40880),

Gene: Yeet\_152 Start: 83848, Stop: 84384, Start Num: 32



Candidate Starts for Yeet\_152:

(Start: 15 @83773 has 4 MA's), (Start: 20 @83791 has 4 MA's), (Start: 32 @83848 has 67 MA's), (Start: 38 @83866 has 3 MA's), (74, 84037), (75, 84049), (88, 84100), (90, 84115), (136, 84265), (143, 84286), (160, 84358),

Gene: YoureAdopted\_56 Start: 40105, Stop: 40659, Start Num: 32

Candidate Starts for YoureAdopted\_56:

(Start: 32 @40105 has 67 MA's), (Start: 36 @40117 has 4 MA's), (50, 40171), (60, 40219), (62, 40228), (71, 40267), (74, 40297), (85, 40348), (112, 40435), (120, 40459), (136, 40546), (142, 40564), (144, 40570),

Gene: Yuna\_62 Start: 41255, Stop: 41863, Start Num: 32

Candidate Starts for Yuna\_62:

(Start: 32 @41255 has 67 MA's), (Start: 36 @41267 has 4 MA's), (71, 41417), (72, 41423), (74, 41447), (85, 41498), (90, 41522), (112, 41585), (120, 41609), (136, 41696), (150, 41741),

Gene: Yunkel11\_59 Start: 39487, Stop: 40053, Start Num: 31

Candidate Starts for Yunkel11\_59:

(Start: 31 @39487 has 102 MA's), (Start: 36 @39499 has 4 MA's), (Start: 38 @39505 has 3 MA's), (69, 39643), (71, 39649), (85, 39730), (120, 39853), (136, 39940), (142, 39958), (144, 39964), (158, 40021),

Gene: Zabiza\_52 Start: 36290, Stop: 36844, Start Num: 31

Candidate Starts for Zabiza\_52:

(Start: 31 @36290 has 102 MA's), (Start: 36 @36302 has 4 MA's), (Start: 38 @36308 has 3 MA's), (50, 36356), (60, 36404), (62, 36413), (71, 36452), (74, 36482), (76, 36497), (85, 36533), (112, 36620), (120, 36644), (123, 36668), (133, 36716), (136, 36731), (142, 36749),

Gene: Zavala\_59 Start: 40261, Stop: 40815, Start Num: 31

Candidate Starts for Zavala\_59:

(Start: 31 @40261 has 102 MA's), (Start: 36 @40273 has 4 MA's), (Start: 38 @40279 has 3 MA's), (50, 40327), (60, 40375), (62, 40384), (71, 40423), (74, 40453), (76, 40468), (85, 40504), (112, 40591), (120, 40615), (123, 40639), (133, 40687), (136, 40702), (142, 40720), (144, 40726), (158, 40783),

Gene: Zelink\_153 Start: 84208, Stop: 84744, Start Num: 32

Candidate Starts for Zelink\_153:

(Start: 32 @84208 has 67 MA's), (Start: 38 @84226 has 3 MA's), (39, 84229), (74, 84397), (75, 84409), (88, 84460), (90, 84475), (136, 84625), (160, 84718),

Gene: ZoeJ\_59 Start: 41402, Stop: 41935, Start Num: 32

Candidate Starts for ZoeJ\_59:

(22, 41351), (Start: 32 @41402 has 67 MA's), (37, 41417), (50, 41465), (60, 41513), (62, 41522), (69, 41555), (71, 41561), (72, 41567), (88, 41651), (106, 41717),