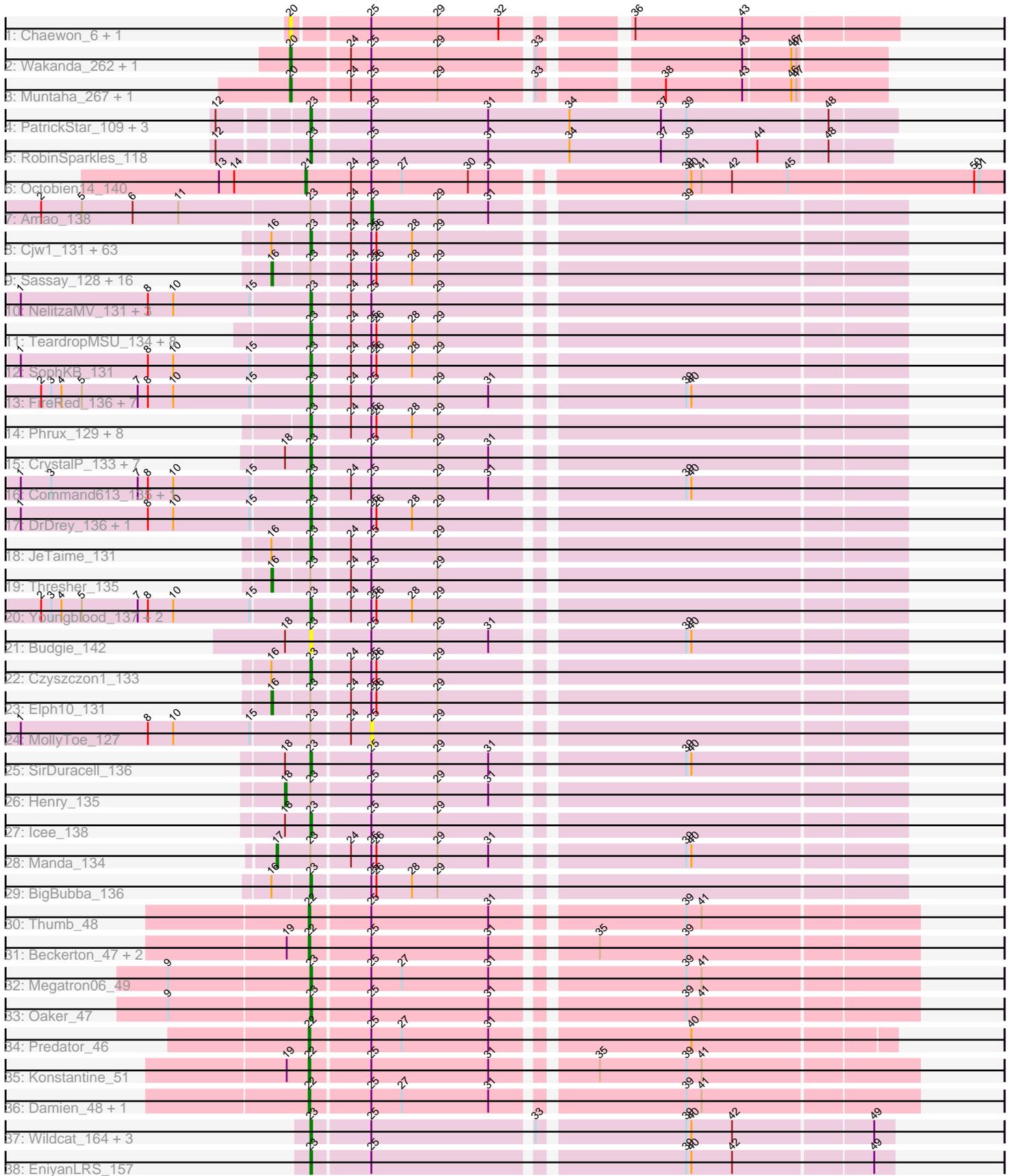


Pham 290895



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 290895 Report

This analysis was run 03/28/26 on database version 641.

Pham number 290895 has 166 members, 17 are drafts.

Phages represented in each track:

- Track 1 : Chaewon\_6, Chaewon\_255
- Track 2 : Wakanda\_262, Wakanda\_3
- Track 3 : Muntaha\_267, Muntaha\_4
- Track 4 : PatrickStar\_109, Orchid\_108, Kampe\_109, Gibbles\_111
- Track 5 : RobinSparkles\_118
- Track 6 : Octobien14\_140
- Track 7 : Amao\_138
- Track 8 : Cjw1\_131, Willez\_130, NoSleep\_133, Maxxinista\_135, StolenFromERC\_136, Stank\_137, IHOP\_137, FoghornLeghorn\_131, OrionPax\_129, Paperbeatsrock\_132, Sotrice96\_138, Nala\_135, ShereKhan\_133, NonchalantPear\_132, GooberAzure\_136, Eureka\_133, Lilac\_131, Contagion\_129, Marshmallow\_134, RiverMonster\_132, Misfit\_133, Phaja\_137, Wiggin\_136, Bench\_135, Adnama\_138, Mosby\_130, ChosenOne\_134, Lilpickle\_133, BaboJay\_132, Palpatine\_133, Pharsalus\_131, GoldenSpark\_138, Inca\_132, 244\_134, Miniwave\_127, Cookies\_134, Tarkin\_132, StellaBean\_131, Terminus\_136, Argent26\_138, TBrady12\_138, Toto\_131, ShamWow\_133, Kanye\_130, StormChicken\_135, Xandras\_134, ChotaBhai\_137, MPhalcon\_134, Moldemort\_136, Quallification\_134, HanKaySha\_133, Gemini\_139, Easy2Say\_135, Stark\_131, AmericanBeauty\_137, MadamMonkfish\_133, Buck\_134, Lilizi\_134, Greep\_137, Nimrod\_133, Hopey\_132, Emmina\_134, Elite2014\_133, Pumpkin\_133
- Track 9 : Sassay\_128, Cactus\_141, MISSy\_135, Tomaszewski\_127, Kimchi\_139, Bask21\_138, Dumbo\_134, Petra64142\_135, Rimmer\_130, Bogg\_134, Ukulele\_128, TeamEdward\_132, PaddyBaddy\_130, Goldilocks\_139, Porky\_135, Goku\_132, Bruin\_130
- Track 10 : NelitzaMV\_131, Rakim\_134, Mindy\_136, Brewer\_125
- Track 11 : TeardropMSU\_134, ABCat\_134, Dusk\_134, Harella\_139, Pat3\_133, BadStone\_134, Gator\_135, Tuco\_139, Glexan\_137
- Track 12 : SophKB\_131
- Track 13 : FireRed\_136, HufflyPuff\_135, YassJohnny\_129, Phaux\_135, Murica\_137, Holt\_139, Policronamos\_134, PhatBacter\_136
- Track 14 : Phrux\_129, DoctorDiddles\_131, Murphy\_132, Filch\_135, Highbury\_129, Saints25\_129, Hoonter\_136, Simpliphy\_132, Ptowny\_127
- Track 15 : CrystalP\_133, Daikon\_135, Asriel\_130, Balomoji\_133, Barbarian\_133, BilboSwaggins\_131, Flypotenuse\_128, Traaww1\_129
- Track 16 : Command613\_135, Kostya\_134
- Track 17 : DrDrey\_136, Myrale\_134
- Track 18 : JeTaime\_131

- Track 19 : Thresher\_135
- Track 20 : Youngblood\_137, Becksu\_131, xkcd\_137
- Track 21 : Budgie\_142
- Track 22 : Czyszczon1\_133
- Track 23 : Elph10\_131
- Track 24 : MollyToe\_127
- Track 25 : SirDuracell\_136
- Track 26 : Henry\_135
- Track 27 : Icee\_138
- Track 28 : Manda\_134
- Track 29 : BigBubba\_136
- Track 30 : Thumb\_48
- Track 31 : Beckerton\_47, Phreeze\_46, BobtimousPrime\_46
- Track 32 : Megatron06\_49
- Track 33 : Oaker\_47
- Track 34 : Predator\_46
- Track 35 : Konstantine\_51
- Track 36 : Damien\_48, Cborch11\_49
- Track 37 : Wildcat\_164, Azrael100\_156, MaryV\_150, Cosmo\_165
- Track 38 : EniyanLRS\_157

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

The start number called the most often in the published annotations is 23, it was called in 119 of the 149 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 244\_134, ABCat\_134, Adnama\_138, AmericanBeauty\_137, Argent26\_138, Asriel\_130, Azrael100\_156, BaboJay\_132, BadStone\_134, Balomoji\_133, Barbarian\_133, Becksu\_131, Bench\_135, BigBubba\_136, BilboSwaggins\_131, Brewer\_125, Buck\_134, Budgie\_142, ChosenOne\_134, ChotaBhai\_137, Cjw1\_131, Command613\_135, Contagion\_129, Cookies\_134, Cosmo\_165, CrystalP\_133, Czyszczon1\_133, Daikon\_135, DoctorDiddles\_131, DrDrey\_136, Dusk\_134, Easy2Say\_135, Elite2014\_133, Emmina\_134, EniyanLRS\_157, Eureka\_133, Filch\_135, FireRed\_136, Flypotenuse\_128, FoghornLeghorn\_131, Gator\_135, Gemini\_139, Gibbles\_111, Glexan\_137, GoldenSpark\_138, GooberAzure\_136, Greep\_137, HanKaySha\_133, Harella\_139, Highbury\_129, Holt\_139, Hoonter\_136, Hopey\_132, HuffyPuff\_135, IHOP\_137, Icee\_138, Inca\_132, JeTaime\_131, Kampe\_109, Kanye\_130, Kostya\_134, Lilac\_131, Lilizi\_134, Lilpickle\_133, MPhalcon\_134, MadamMonkfish\_133, Marshmallow\_134, MaryV\_150, Maxxinista\_135, Megatron06\_49, Mindy\_136, Miniwave\_127, Misfit\_133, Moldemort\_136, Mosby\_130, Murica\_137, Murphy\_132, Myrale\_134, Nala\_135, NelitzaMV\_131, Nimrod\_133, NoSleep\_133, NonchalantPear\_132, Oaker\_47, Orchid\_108, OrionPax\_129, Palpatine\_133, Paperbeatsrock\_132, Pat3\_133, PatrickStar\_109, Phaja\_137, Pharsalus\_131, PhatBacter\_136, Phaux\_135, Phrux\_129, Policronamos\_134, Ptowny\_127, Pumpkin\_133, Quallification\_134, Rakim\_134, RiverMonster\_132, RobinSparkles\_118, Saints25\_129, ShamWow\_133, ShereKhan\_133, Simpliphy\_132, SirDuracell\_136, SophKB\_131, Sotrice96\_138, Stank\_137, Stark\_131, StellaBean\_131, StolenFromERC\_136, StormChicken\_135, TBrady12\_138, Tarkin\_132, TeardropMSU\_134, Terminus\_136, Toto\_131,

Traaww1\_129, Tuco\_139, Wiggin\_136, Wildcat\_164, Willez\_130, Xandras\_134, YassJohnny\_129, Youngblood\_137, xkcd\_137,

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

- Amao\_138, Bask21\_138, Bogg\_134, Bruin\_130, Cactus\_141, Dumbo\_134, Elph10\_131, Goku\_132, Goldilocks\_139, Henry\_135, Kimchi\_139, MISSy\_135, Manda\_134, MollyToe\_127, PaddyBaddy\_130, Petra64142\_135, Porky\_135, Rimmer\_130, Sassay\_128, TeamEdward\_132, Thresher\_135, Tomaszewski\_127, Ukulele\_128,

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

- Beckerton\_47, BobtimousPrime\_46, Cborch11\_49, Chaewon\_255, Chaewon\_6, Damien\_48, Konstantine\_51, Muntaha\_267, Muntaha\_4, Octobien14\_140, Phreeze\_46, Predator\_46, Thumb\_48, Wakanda\_262, Wakanda\_3,

### Summary by start number:

Start 16:

- Found in 86 of 166 ( 51.8% ) of genes in pham
- Manual Annotations of this start: 15 of 149
- Called 22.1% of time when present
- Phage (with cluster) where this start called: Bask21\_138 (E), Bogg\_134 (E), Bruin\_130 (E), Cactus\_141 (E), Dumbo\_134 (E), Elph10\_131 (E), Goku\_132 (E), Goldilocks\_139 (E), Kimchi\_139 (E), MISSy\_135 (E), PaddyBaddy\_130 (E), Petra64142\_135 (E), Porky\_135 (E), Rimmer\_130 (E), Sassay\_128 (E), TeamEdward\_132 (E), Thresher\_135 (E), Tomaszewski\_127 (E), Ukulele\_128 (E),

Start 17:

- Found in 1 of 166 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 149
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Manda\_134 (E),

Start 18:

- Found in 12 of 166 ( 7.2% ) of genes in pham
- Manual Annotations of this start: 1 of 149
- Called 8.3% of time when present
- Phage (with cluster) where this start called: Henry\_135 (E),

Start 20:

- Found in 6 of 166 ( 3.6% ) of genes in pham
- Manual Annotations of this start: 4 of 149
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chaewon\_255 (BK2), Chaewon\_6 (BK2), Muntaha\_267 (BK2), Muntaha\_4 (BK2), Wakanda\_262 (BK2), Wakanda\_3 (BK2),

Start 21:

- Found in 1 of 166 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 149
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Octobien14\_140 (DU1),

#### Start 22:

- Found in 8 of 166 ( 4.8% ) of genes in pham
- Manual Annotations of this start: 7 of 149
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beckerton\_47 (H1), BobtimousPrime\_46 (H1), Cborch11\_49 (H1), Damien\_48 (H1), Konstantine\_51 (H1), Phreeze\_46 (H1), Predator\_46 (H1), Thumb\_48 (H1),

#### Start 23:

- Found in 151 of 166 ( 91.0% ) of genes in pham
- Manual Annotations of this start: 119 of 149
- Called 84.8% of time when present
- Phage (with cluster) where this start called: 244\_134 (E), ABCat\_134 (E), Adnama\_138 (E), AmericanBeauty\_137 (E), Argent26\_138 (E), Asriel\_130 (E), Azrael100\_156 (V), BaboJay\_132 (E), BadStone\_134 (E), Balomoji\_133 (E), Barbarian\_133 (E), Becksu\_131 (E), Bench\_135 (E), BigBubba\_136 (E), BilboSwaggins\_131 (E), Brewer\_125 (E), Buck\_134 (E), Budgie\_142 (E), ChosenOne\_134 (E), ChotaBhai\_137 (E), Cjw1\_131 (E), Command613\_135 (E), Contagion\_129 (E), Cookies\_134 (E), Cosmo\_165 (V), CrystalP\_133 (E), Czystczon1\_133 (E), Daikon\_135 (E), DoctorDiddles\_131 (E), DrDrey\_136 (E), Dusk\_134 (E), Easy2Say\_135 (E), Elite2014\_133 (E), Emmina\_134 (E), EniyanLRS\_157 (V), Eureka\_133 (E), Filch\_135 (E), FireRed\_136 (E), Flypotenuse\_128 (E), FoghornLeghorn\_131 (E), Gator\_135 (E), Gemini\_139 (E), Gibbles\_111 (CX), Glexan\_137 (E), GoldenSpark\_138 (E), GooberAzure\_136 (E), Greep\_137 (E), HanKaySha\_133 (E), Harella\_139 (E), Highbury\_129 (E), Holt\_139 (E), Hoonter\_136 (E), Hopey\_132 (E), HufflyPuff\_135 (E), IHOP\_137 (E), Icee\_138 (E), Inca\_132 (E), JeTaime\_131 (E), Kampe\_109 (CX), Kanye\_130 (E), Kostya\_134 (E), Lilac\_131 (E), Lilizi\_134 (E), Lilpickle\_133 (E), MPhalcon\_134 (E), MadamMonkfish\_133 (E), Marshmallow\_134 (E), MaryV\_150 (V), Maxxinista\_135 (E), Megatron06\_49 (H1), Mindy\_136 (E), Miniwave\_127 (E), Misfit\_133 (E), Moldemort\_136 (E), Mosby\_130 (E), Murica\_137 (E), Murphy\_132 (E), Myrale\_134 (E), Nala\_135 (E), NelitzaMV\_131 (E), Nimrod\_133 (E), NoSleep\_133 (E), NonchalantPear\_132 (E), Oaker\_47 (H1), Orchid\_108 (CX), OrionPax\_129 (E), Palpatine\_133 (E), Paperbeatsrock\_132 (E), Pat3\_133 (E), PatrickStar\_109 (CX), Phaja\_137 (E), Pharsalus\_131 (E), PhatBacter\_136 (E), Phaux\_135 (E), Phrux\_129 (E), Policronamos\_134 (E), Ptowny\_127 (E), Pumpkin\_133 (E), Quallification\_134 (E), Rakim\_134 (E), RiverMonster\_132 (E), RobinSparkles\_118 (CX), Saints25\_129 (E), ShamWow\_133 (E), ShereKhan\_133 (E), Simpliphy\_132 (E), SirDuracell\_136 (E), SophKB\_131 (E), Sotrice96\_138 (E), Stank\_137 (E), Stark\_131 (E), StellaBean\_131 (E), StolenFromERC\_136 (E), StormChicken\_135 (E), TBrady12\_138 (E), Tarkin\_132 (E), TeardropMSU\_134 (E), Terminus\_136 (E), Toto\_131 (E), Traaww1\_129 (E), Tuco\_139 (E), Wiggins\_136 (E), Wildcat\_164 (V), Willez\_130 (E), Xandras\_134 (E), YassJohnny\_129 (E), Youngblood\_137 (E), xkcd\_137 (E),

#### Start 25:

- Found in 166 of 166 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 1 of 149
- Called 1.2% of time when present
- Phage (with cluster) where this start called: Amao\_138 (E), MollyToe\_127 (E),

#### Summary by clusters:

There are 6 clusters represented in this pham: E, H1, CX, BK2, V, DU1,

Info for manual annotations of cluster BK2:

- Start number 20 was manually annotated 4 times for cluster BK2.

Info for manual annotations of cluster CX:

- Start number 23 was manually annotated 5 times for cluster CX.

Info for manual annotations of cluster DU1:

- Start number 21 was manually annotated 1 time for cluster DU1.

Info for manual annotations of cluster E:

- Start number 16 was manually annotated 15 times for cluster E.
- Start number 17 was manually annotated 1 time for cluster E.
- Start number 18 was manually annotated 1 time for cluster E.
- Start number 23 was manually annotated 107 times for cluster E.
- Start number 25 was manually annotated 1 time for cluster E.

Info for manual annotations of cluster H1:

- Start number 22 was manually annotated 7 times for cluster H1.
- Start number 23 was manually annotated 2 times for cluster H1.

Info for manual annotations of cluster V:

- Start number 23 was manually annotated 5 times for cluster V.

### **Gene Information:**

Gene: 244\_134 Start: 70917, Stop: 70588, Start Num: 23

Candidate Starts for 244\_134:

(Start: 16 @70935 has 15 MA's), (Start: 23 @70917 has 119 MA's), (24, 70896), (Start: 25 @70884 has 1 MA's), (26, 70881), (28, 70860), (29, 70845),

Gene: ABCat\_134 Start: 72465, Stop: 72136, Start Num: 23

Candidate Starts for ABCat\_134:

(Start: 23 @72465 has 119 MA's), (24, 72444), (Start: 25 @72432 has 1 MA's), (26, 72429), (28, 72408), (29, 72393),

Gene: Adnama\_138 Start: 71581, Stop: 71252, Start Num: 23

Candidate Starts for Adnama\_138:

(Start: 16 @71599 has 15 MA's), (Start: 23 @71581 has 119 MA's), (24, 71560), (Start: 25 @71548 has 1 MA's), (26, 71545), (28, 71524), (29, 71509),

Gene: Amao\_138 Start: 72256, Stop: 71960, Start Num: 25

Candidate Starts for Amao\_138:

(2, 72445), (5, 72421), (6, 72391), (11, 72364), (Start: 23 @72289 has 119 MA's), (24, 72268), (Start: 25 @72256 has 1 MA's), (29, 72217), (31, 72187), (39, 72085),

Gene: AmericanBeauty\_137 Start: 71623, Stop: 71294, Start Num: 23

Candidate Starts for AmericanBeauty\_137:

(Start: 16 @71641 has 15 MA's), (Start: 23 @71623 has 119 MA's), (24, 71602), (Start: 25 @71590 has 1 MA's), (26, 71587), (28, 71566), (29, 71551),

Gene: Argent26\_138 Start: 71505, Stop: 71176, Start Num: 23

Candidate Starts for Argent26\_138:

(Start: 16 @71523 has 15 MA's), (Start: 23 @71505 has 119 MA's), (24, 71484), (Start: 25 @71472 has 1 MA's), (26, 71469), (28, 71448), (29, 71433),

Gene: Asriel\_130 Start: 69770, Stop: 69441, Start Num: 23

Candidate Starts for Asriel\_130:

(Start: 18 @69785 has 1 MA's), (Start: 23 @69770 has 119 MA's), (Start: 25 @69737 has 1 MA's), (29, 69698), (31, 69668),

Gene: Azrael100\_156 Start: 73905, Stop: 73585, Start Num: 23

Candidate Starts for Azrael100\_156:

(Start: 23 @73905 has 119 MA's), (Start: 25 @73872 has 1 MA's), (33, 73782), (39, 73701), (40, 73698), (42, 73674), (49, 73596),

Gene: BaboJay\_132 Start: 72084, Stop: 71755, Start Num: 23

Candidate Starts for BaboJay\_132:

(Start: 16 @72102 has 15 MA's), (Start: 23 @72084 has 119 MA's), (24, 72063), (Start: 25 @72051 has 1 MA's), (26, 72048), (28, 72027), (29, 72012),

Gene: BadStone\_134 Start: 72013, Stop: 71684, Start Num: 23

Candidate Starts for BadStone\_134:

(Start: 23 @72013 has 119 MA's), (24, 71992), (Start: 25 @71980 has 1 MA's), (26, 71977), (28, 71956), (29, 71941),

Gene: Balomoji\_133 Start: 71559, Stop: 71230, Start Num: 23

Candidate Starts for Balomoji\_133:

(Start: 18 @71574 has 1 MA's), (Start: 23 @71559 has 119 MA's), (Start: 25 @71526 has 1 MA's), (29, 71487), (31, 71457),

Gene: Barbarian\_133 Start: 69770, Stop: 69441, Start Num: 23

Candidate Starts for Barbarian\_133:

(Start: 18 @69785 has 1 MA's), (Start: 23 @69770 has 119 MA's), (Start: 25 @69737 has 1 MA's), (29, 69698), (31, 69668),

Gene: Bask21\_138 Start: 70954, Stop: 70607, Start Num: 16

Candidate Starts for Bask21\_138:

(Start: 16 @70954 has 15 MA's), (Start: 23 @70936 has 119 MA's), (24, 70915), (Start: 25 @70903 has 1 MA's), (26, 70900), (28, 70879), (29, 70864),

Gene: Beckerton\_47 Start: 40622, Stop: 40957, Start Num: 22

Candidate Starts for Beckerton\_47:

(19, 40610), (Start: 22 @40622 has 7 MA's), (Start: 25 @40655 has 1 MA's), (31, 40724), (35, 40775), (39, 40826),

Gene: Becksu\_131 Start: 71737, Stop: 71408, Start Num: 23

Candidate Starts for Becksu\_131:

(2, 71893), (3, 71887), (4, 71881), (5, 71869), (7, 71836), (8, 71830), (10, 71815), (15, 71770), (Start: 23 @71737 has 119 MA's), (24, 71716), (Start: 25 @71704 has 1 MA's), (26, 71701), (28, 71680), (29, 71665),

Gene: Bench\_135 Start: 71810, Stop: 71481, Start Num: 23

Candidate Starts for Bench\_135:

(Start: 16 @71828 has 15 MA's), (Start: 23 @71810 has 119 MA's), (24, 71789), (Start: 25 @71777 has 1 MA's), (26, 71774), (28, 71753), (29, 71738),

Gene: BigBubba\_136 Start: 71015, Stop: 70686, Start Num: 23

Candidate Starts for BigBubba\_136:

(Start: 16 @71033 has 15 MA's), (Start: 23 @71015 has 119 MA's), (Start: 25 @70982 has 1 MA's), (26, 70979), (28, 70958), (29, 70943),

Gene: BilboSwaggins\_131 Start: 72050, Stop: 71721, Start Num: 23

Candidate Starts for BilboSwaggins\_131:

(Start: 18 @72065 has 1 MA's), (Start: 23 @72050 has 119 MA's), (Start: 25 @72017 has 1 MA's), (29, 71978), (31, 71948),

Gene: BobtimousPrime\_46 Start: 40584, Stop: 40919, Start Num: 22

Candidate Starts for BobtimousPrime\_46:

(19, 40572), (Start: 22 @40584 has 7 MA's), (Start: 25 @40617 has 1 MA's), (31, 40686), (35, 40737), (39, 40788),

Gene: Bogg\_134 Start: 71566, Stop: 71219, Start Num: 16

Candidate Starts for Bogg\_134:

(Start: 16 @71566 has 15 MA's), (Start: 23 @71548 has 119 MA's), (24, 71527), (Start: 25 @71515 has 1 MA's), (26, 71512), (28, 71491), (29, 71476),

Gene: Brewer\_125 Start: 69738, Stop: 69409, Start Num: 23

Candidate Starts for Brewer\_125:

(1, 69906), (8, 69831), (10, 69816), (15, 69771), (Start: 23 @69738 has 119 MA's), (24, 69717), (Start: 25 @69705 has 1 MA's), (29, 69666),

Gene: Bruin\_130 Start: 70212, Stop: 69865, Start Num: 16

Candidate Starts for Bruin\_130:

(Start: 16 @70212 has 15 MA's), (Start: 23 @70194 has 119 MA's), (24, 70173), (Start: 25 @70161 has 1 MA's), (26, 70158), (28, 70137), (29, 70122),

Gene: Buck\_134 Start: 72463, Stop: 72134, Start Num: 23

Candidate Starts for Buck\_134:

(Start: 16 @72481 has 15 MA's), (Start: 23 @72463 has 119 MA's), (24, 72442), (Start: 25 @72430 has 1 MA's), (26, 72427), (28, 72406), (29, 72391),

Gene: Budgie\_142 Start: 72650, Stop: 72321, Start Num: 23

Candidate Starts for Budgie\_142:

(Start: 18 @72665 has 1 MA's), (Start: 23 @72650 has 119 MA's), (Start: 25 @72617 has 1 MA's), (29, 72578), (31, 72548), (39, 72446), (40, 72443),

Gene: Cactus\_141 Start: 71625, Stop: 71278, Start Num: 16

Candidate Starts for Cactus\_141:

(Start: 16 @71625 has 15 MA's), (Start: 23 @71607 has 119 MA's), (24, 71586), (Start: 25 @71574 has 1 MA's), (26, 71571), (28, 71550), (29, 71535),

Gene: Cborch11\_49 Start: 40138, Stop: 40473, Start Num: 22

Candidate Starts for Cborch11\_49:

(Start: 22 @40138 has 7 MA's), (Start: 25 @40171 has 1 MA's), (27, 40189), (31, 40240), (39, 40342), (41, 40351),

Gene: Chaewon\_6 Start: 1449, Stop: 1772, Start Num: 20

Candidate Starts for Chaewon\_6:

(Start: 20 @1449 has 4 MA's), (Start: 25 @1491 has 1 MA's), (29, 1530), (32, 1566), (36, 1623), (43, 1686),

Gene: Chaewon\_255 Start: 127176, Stop: 127499, Start Num: 20

Candidate Starts for Chaewon\_255:

(Start: 20 @127176 has 4 MA's), (Start: 25 @127218 has 1 MA's), (29, 127257), (32, 127293), (36, 127350), (43, 127413),

Gene: ChosenOne\_134 Start: 70987, Stop: 70658, Start Num: 23

Candidate Starts for ChosenOne\_134:

(Start: 16 @71005 has 15 MA's), (Start: 23 @70987 has 119 MA's), (24, 70966), (Start: 25 @70954 has 1 MA's), (26, 70951), (28, 70930), (29, 70915),

Gene: ChotaBhai\_137 Start: 71772, Stop: 71443, Start Num: 23

Candidate Starts for ChotaBhai\_137:

(Start: 16 @71790 has 15 MA's), (Start: 23 @71772 has 119 MA's), (24, 71751), (Start: 25 @71739 has 1 MA's), (26, 71736), (28, 71715), (29, 71700),

Gene: Cjw1\_131 Start: 72188, Stop: 71859, Start Num: 23

Candidate Starts for Cjw1\_131:

(Start: 16 @72206 has 15 MA's), (Start: 23 @72188 has 119 MA's), (24, 72167), (Start: 25 @72155 has 1 MA's), (26, 72152), (28, 72131), (29, 72116),

Gene: Command613\_135 Start: 71551, Stop: 71222, Start Num: 23

Candidate Starts for Command613\_135:

(1, 71719), (3, 71701), (7, 71650), (8, 71644), (10, 71629), (15, 71584), (Start: 23 @71551 has 119 MA's), (24, 71530), (Start: 25 @71518 has 1 MA's), (29, 71479), (31, 71449), (39, 71347), (40, 71344),

Gene: Contagion\_129 Start: 70556, Stop: 70227, Start Num: 23

Candidate Starts for Contagion\_129:

(Start: 16 @70574 has 15 MA's), (Start: 23 @70556 has 119 MA's), (24, 70535), (Start: 25 @70523 has 1 MA's), (26, 70520), (28, 70499), (29, 70484),

Gene: Cookies\_134 Start: 72098, Stop: 71769, Start Num: 23

Candidate Starts for Cookies\_134:

(Start: 16 @72116 has 15 MA's), (Start: 23 @72098 has 119 MA's), (24, 72077), (Start: 25 @72065 has 1 MA's), (26, 72062), (28, 72041), (29, 72026),

Gene: Cosmo\_165 Start: 74069, Stop: 73749, Start Num: 23

Candidate Starts for Cosmo\_165:

(Start: 23 @74069 has 119 MA's), (Start: 25 @74036 has 1 MA's), (33, 73946), (39, 73865), (40, 73862), (42, 73838), (49, 73760),

Gene: CrystalP\_133 Start: 72050, Stop: 71721, Start Num: 23

Candidate Starts for CrystalP\_133:

(Start: 18 @72065 has 1 MA's), (Start: 23 @72050 has 119 MA's), (Start: 25 @72017 has 1 MA's), (29, 71978), (31, 71948),

Gene: Czyszczonek1\_133 Start: 71002, Stop: 70673, Start Num: 23

Candidate Starts for Czyszczonek1\_133:

(Start: 16 @71020 has 15 MA's), (Start: 23 @71002 has 119 MA's), (24, 70981), (Start: 25 @70969 has 1 MA's), (26, 70966), (29, 70930),

Gene: Daikon\_135 Start: 70855, Stop: 70526, Start Num: 23

Candidate Starts for Daikon\_135:

(Start: 18 @70870 has 1 MA's), (Start: 23 @70855 has 119 MA's), (Start: 25 @70822 has 1 MA's), (29, 70783), (31, 70753),

Gene: Damien\_48 Start: 40101, Stop: 40436, Start Num: 22

Candidate Starts for Damien\_48:

(Start: 22 @40101 has 7 MA's), (Start: 25 @40134 has 1 MA's), (27, 40152), (31, 40203), (39, 40305), (41, 40314),

Gene: DoctorDiddles\_131 Start: 70509, Stop: 70180, Start Num: 23

Candidate Starts for DoctorDiddles\_131:

(Start: 23 @70509 has 119 MA's), (24, 70488), (Start: 25 @70476 has 1 MA's), (26, 70473), (28, 70452), (29, 70437),

Gene: DrDrey\_136 Start: 73246, Stop: 72917, Start Num: 23

Candidate Starts for DrDrey\_136:

(1, 73414), (8, 73339), (10, 73324), (15, 73279), (Start: 23 @73246 has 119 MA's), (Start: 25 @73213 has 1 MA's), (26, 73210), (28, 73189), (29, 73174),

Gene: Dumbo\_134 Start: 71215, Stop: 70868, Start Num: 16

Candidate Starts for Dumbo\_134:

(Start: 16 @71215 has 15 MA's), (Start: 23 @71197 has 119 MA's), (24, 71176), (Start: 25 @71164 has 1 MA's), (26, 71161), (28, 71140), (29, 71125),

Gene: Dusk\_134 Start: 71673, Stop: 71344, Start Num: 23

Candidate Starts for Dusk\_134:

(Start: 23 @71673 has 119 MA's), (24, 71652), (Start: 25 @71640 has 1 MA's), (26, 71637), (28, 71616), (29, 71601),

Gene: Easy2Say\_135 Start: 71971, Stop: 71642, Start Num: 23

Candidate Starts for Easy2Say\_135:

(Start: 16 @71989 has 15 MA's), (Start: 23 @71971 has 119 MA's), (24, 71950), (Start: 25 @71938 has 1 MA's), (26, 71935), (28, 71914), (29, 71899),

Gene: Elite2014\_133 Start: 70986, Stop: 70657, Start Num: 23

Candidate Starts for Elite2014\_133:

(Start: 16 @71004 has 15 MA's), (Start: 23 @70986 has 119 MA's), (24, 70965), (Start: 25 @70953 has 1 MA's), (26, 70950), (28, 70929), (29, 70914),

Gene: Elph10\_131 Start: 70322, Stop: 69975, Start Num: 16

Candidate Starts for Elph10\_131:

(Start: 16 @70322 has 15 MA's), (Start: 23 @70304 has 119 MA's), (24, 70283), (Start: 25 @70271 has 1 MA's), (26, 70268), (29, 70232),

Gene: Emmina\_134 Start: 70923, Stop: 70594, Start Num: 23

Candidate Starts for Emmina\_134:

(Start: 16 @70941 has 15 MA's), (Start: 23 @70923 has 119 MA's), (24, 70902), (Start: 25 @70890 has 1 MA's), (26, 70887), (28, 70866), (29, 70851),

Gene: EniyanLRS\_157 Start: 74396, Stop: 74076, Start Num: 23  
Candidate Starts for EniyanLRS\_157:  
(Start: 23 @74396 has 119 MA's), (Start: 25 @74363 has 1 MA's), (39, 74192), (40, 74189), (42, 74165), (49, 74087),

Gene: Eureka\_133 Start: 71851, Stop: 71522, Start Num: 23  
Candidate Starts for Eureka\_133:  
(Start: 16 @71869 has 15 MA's), (Start: 23 @71851 has 119 MA's), (24, 71830), (Start: 25 @71818 has 1 MA's), (26, 71815), (28, 71794), (29, 71779),

Gene: Filch\_135 Start: 71126, Stop: 70797, Start Num: 23  
Candidate Starts for Filch\_135:  
(Start: 23 @71126 has 119 MA's), (24, 71105), (Start: 25 @71093 has 1 MA's), (26, 71090), (28, 71069), (29, 71054),

Gene: FireRed\_136 Start: 71634, Stop: 71305, Start Num: 23  
Candidate Starts for FireRed\_136:  
(2, 71790), (3, 71784), (4, 71778), (5, 71766), (7, 71733), (8, 71727), (10, 71712), (15, 71667), (Start: 23 @71634 has 119 MA's), (24, 71613), (Start: 25 @71601 has 1 MA's), (29, 71562), (31, 71532), (39, 71430), (40, 71427),

Gene: Flypotenuse\_128 Start: 70424, Stop: 70095, Start Num: 23  
Candidate Starts for Flypotenuse\_128:  
(Start: 18 @70439 has 1 MA's), (Start: 23 @70424 has 119 MA's), (Start: 25 @70391 has 1 MA's), (29, 70352), (31, 70322),

Gene: FoghornLeghorn\_131 Start: 70074, Stop: 69745, Start Num: 23  
Candidate Starts for FoghornLeghorn\_131:  
(Start: 16 @70092 has 15 MA's), (Start: 23 @70074 has 119 MA's), (24, 70053), (Start: 25 @70041 has 1 MA's), (26, 70038), (28, 70017), (29, 70002),

Gene: Gator\_135 Start: 71964, Stop: 71635, Start Num: 23  
Candidate Starts for Gator\_135:  
(Start: 23 @71964 has 119 MA's), (24, 71943), (Start: 25 @71931 has 1 MA's), (26, 71928), (28, 71907), (29, 71892),

Gene: Gemini\_139 Start: 72022, Stop: 71693, Start Num: 23  
Candidate Starts for Gemini\_139:  
(Start: 16 @72040 has 15 MA's), (Start: 23 @72022 has 119 MA's), (24, 72001), (Start: 25 @71989 has 1 MA's), (26, 71986), (28, 71965), (29, 71950),

Gene: Gibbles\_111 Start: 76317, Stop: 75979, Start Num: 23  
Candidate Starts for Gibbles\_111:  
(12, 76365), (Start: 23 @76317 has 119 MA's), (Start: 25 @76284 has 1 MA's), (31, 76215), (34, 76167), (37, 76113), (39, 76098), (48, 76017),

Gene: Glexan\_137 Start: 72114, Stop: 71785, Start Num: 23  
Candidate Starts for Glexan\_137:  
(Start: 23 @72114 has 119 MA's), (24, 72093), (Start: 25 @72081 has 1 MA's), (26, 72078), (28, 72057), (29, 72042),

Gene: Goku\_132 Start: 72178, Stop: 71831, Start Num: 16  
Candidate Starts for Goku\_132:

(Start: 16 @72178 has 15 MA's), (Start: 23 @72160 has 119 MA's), (24, 72139), (Start: 25 @72127 has 1 MA's), (26, 72124), (28, 72103), (29, 72088),

Gene: GoldenSpark\_138 Start: 71505, Stop: 71176, Start Num: 23

Candidate Starts for GoldenSpark\_138:

(Start: 16 @71523 has 15 MA's), (Start: 23 @71505 has 119 MA's), (24, 71484), (Start: 25 @71472 has 1 MA's), (26, 71469), (28, 71448), (29, 71433),

Gene: Goldilocks\_139 Start: 72119, Stop: 71772, Start Num: 16

Candidate Starts for Goldilocks\_139:

(Start: 16 @72119 has 15 MA's), (Start: 23 @72101 has 119 MA's), (24, 72080), (Start: 25 @72068 has 1 MA's), (26, 72065), (28, 72044), (29, 72029),

Gene: GooberAzure\_136 Start: 71505, Stop: 71176, Start Num: 23

Candidate Starts for GooberAzure\_136:

(Start: 16 @71523 has 15 MA's), (Start: 23 @71505 has 119 MA's), (24, 71484), (Start: 25 @71472 has 1 MA's), (26, 71469), (28, 71448), (29, 71433),

Gene: Greep\_137 Start: 72326, Stop: 71997, Start Num: 23

Candidate Starts for Greep\_137:

(Start: 16 @72344 has 15 MA's), (Start: 23 @72326 has 119 MA's), (24, 72305), (Start: 25 @72293 has 1 MA's), (26, 72290), (28, 72269), (29, 72254),

Gene: HanKaySha\_133 Start: 71459, Stop: 71130, Start Num: 23

Candidate Starts for HanKaySha\_133:

(Start: 16 @71477 has 15 MA's), (Start: 23 @71459 has 119 MA's), (24, 71438), (Start: 25 @71426 has 1 MA's), (26, 71423), (28, 71402), (29, 71387),

Gene: Harella\_139 Start: 72630, Stop: 72301, Start Num: 23

Candidate Starts for Harella\_139:

(Start: 23 @72630 has 119 MA's), (24, 72609), (Start: 25 @72597 has 1 MA's), (26, 72594), (28, 72573), (29, 72558),

Gene: Henry\_135 Start: 71930, Stop: 71586, Start Num: 18

Candidate Starts for Henry\_135:

(Start: 18 @71930 has 1 MA's), (Start: 23 @71915 has 119 MA's), (Start: 25 @71882 has 1 MA's), (29, 71843), (31, 71813),

Gene: Highbury\_129 Start: 69399, Stop: 69070, Start Num: 23

Candidate Starts for Highbury\_129:

(Start: 23 @69399 has 119 MA's), (24, 69378), (Start: 25 @69366 has 1 MA's), (26, 69363), (28, 69342), (29, 69327),

Gene: Holt\_139 Start: 72058, Stop: 71729, Start Num: 23

Candidate Starts for Holt\_139:

(2, 72214), (3, 72208), (4, 72202), (5, 72190), (7, 72157), (8, 72151), (10, 72136), (15, 72091), (Start: 23 @72058 has 119 MA's), (24, 72037), (Start: 25 @72025 has 1 MA's), (29, 71986), (31, 71956), (39, 71854), (40, 71851),

Gene: Hoonter\_136 Start: 71546, Stop: 71217, Start Num: 23

Candidate Starts for Hoonter\_136:

(Start: 23 @71546 has 119 MA's), (24, 71525), (Start: 25 @71513 has 1 MA's), (26, 71510), (28, 71489), (29, 71474),

Gene: Hopey\_132 Start: 71553, Stop: 71224, Start Num: 23

Candidate Starts for Hopey\_132:

(Start: 16 @71571 has 15 MA's), (Start: 23 @71553 has 119 MA's), (24, 71532), (Start: 25 @71520 has 1 MA's), (26, 71517), (28, 71496), (29, 71481),

Gene: HufflyPuff\_135 Start: 71860, Stop: 71531, Start Num: 23

Candidate Starts for HufflyPuff\_135:

(2, 72016), (3, 72010), (4, 72004), (5, 71992), (7, 71959), (8, 71953), (10, 71938), (15, 71893), (Start: 23 @71860 has 119 MA's), (24, 71839), (Start: 25 @71827 has 1 MA's), (29, 71788), (31, 71758), (39, 71656), (40, 71653),

Gene: IHOP\_137 Start: 71489, Stop: 71160, Start Num: 23

Candidate Starts for IHOP\_137:

(Start: 16 @71507 has 15 MA's), (Start: 23 @71489 has 119 MA's), (24, 71468), (Start: 25 @71456 has 1 MA's), (26, 71453), (28, 71432), (29, 71417),

Gene: Icee\_138 Start: 71365, Stop: 71036, Start Num: 23

Candidate Starts for Icee\_138:

(Start: 18 @71380 has 1 MA's), (Start: 23 @71365 has 119 MA's), (Start: 25 @71332 has 1 MA's), (29, 71293),

Gene: Inca\_132 Start: 69509, Stop: 69180, Start Num: 23

Candidate Starts for Inca\_132:

(Start: 16 @69527 has 15 MA's), (Start: 23 @69509 has 119 MA's), (24, 69488), (Start: 25 @69476 has 1 MA's), (26, 69473), (28, 69452), (29, 69437),

Gene: JeTaime\_131 Start: 71025, Stop: 70696, Start Num: 23

Candidate Starts for JeTaime\_131:

(Start: 16 @71043 has 15 MA's), (Start: 23 @71025 has 119 MA's), (24, 71004), (Start: 25 @70992 has 1 MA's), (29, 70953),

Gene: Kampe\_109 Start: 75739, Stop: 75401, Start Num: 23

Candidate Starts for Kampe\_109:

(12, 75787), (Start: 23 @75739 has 119 MA's), (Start: 25 @75706 has 1 MA's), (31, 75637), (34, 75589), (37, 75535), (39, 75520), (48, 75439),

Gene: Kanye\_130 Start: 71520, Stop: 71191, Start Num: 23

Candidate Starts for Kanye\_130:

(Start: 16 @71538 has 15 MA's), (Start: 23 @71520 has 119 MA's), (24, 71499), (Start: 25 @71487 has 1 MA's), (26, 71484), (28, 71463), (29, 71448),

Gene: Kimchi\_139 Start: 72244, Stop: 71897, Start Num: 16

Candidate Starts for Kimchi\_139:

(Start: 16 @72244 has 15 MA's), (Start: 23 @72226 has 119 MA's), (24, 72205), (Start: 25 @72193 has 1 MA's), (26, 72190), (28, 72169), (29, 72154),

Gene: Konstantine\_51 Start: 40932, Stop: 41267, Start Num: 22

Candidate Starts for Konstantine\_51:

(19, 40920), (Start: 22 @40932 has 7 MA's), (Start: 25 @40965 has 1 MA's), (31, 41034), (35, 41085), (39, 41136), (41, 41145),

Gene: Kostya\_134 Start: 71590, Stop: 71261, Start Num: 23

Candidate Starts for Kostya\_134:

(1, 71758), (3, 71740), (7, 71689), (8, 71683), (10, 71668), (15, 71623), (Start: 23 @71590 has 119 MA's), (24, 71569), (Start: 25 @71557 has 1 MA's), (29, 71518), (31, 71488), (39, 71386), (40, 71383),

Gene: Lilac\_131 Start: 72003, Stop: 71674, Start Num: 23

Candidate Starts for Lilac\_131:

(Start: 16 @72021 has 15 MA's), (Start: 23 @72003 has 119 MA's), (24, 71982), (Start: 25 @71970 has 1 MA's), (26, 71967), (28, 71946), (29, 71931),

Gene: Lilizi\_134 Start: 71733, Stop: 71404, Start Num: 23

Candidate Starts for Lilizi\_134:

(Start: 16 @71751 has 15 MA's), (Start: 23 @71733 has 119 MA's), (24, 71712), (Start: 25 @71700 has 1 MA's), (26, 71697), (28, 71676), (29, 71661),

Gene: Lilpickle\_133 Start: 70986, Stop: 70657, Start Num: 23

Candidate Starts for Lilpickle\_133:

(Start: 16 @71004 has 15 MA's), (Start: 23 @70986 has 119 MA's), (24, 70965), (Start: 25 @70953 has 1 MA's), (26, 70950), (28, 70929), (29, 70914),

Gene: MISSy\_135 Start: 71918, Stop: 71571, Start Num: 16

Candidate Starts for MISSy\_135:

(Start: 16 @71918 has 15 MA's), (Start: 23 @71900 has 119 MA's), (24, 71879), (Start: 25 @71867 has 1 MA's), (26, 71864), (28, 71843), (29, 71828),

Gene: MPhalcon\_134 Start: 71318, Stop: 70989, Start Num: 23

Candidate Starts for MPhalcon\_134:

(Start: 16 @71336 has 15 MA's), (Start: 23 @71318 has 119 MA's), (24, 71297), (Start: 25 @71285 has 1 MA's), (26, 71282), (28, 71261), (29, 71246),

Gene: MadamMonkfish\_133 Start: 70994, Stop: 70665, Start Num: 23

Candidate Starts for MadamMonkfish\_133:

(Start: 16 @71012 has 15 MA's), (Start: 23 @70994 has 119 MA's), (24, 70973), (Start: 25 @70961 has 1 MA's), (26, 70958), (28, 70937), (29, 70922),

Gene: Manda\_134 Start: 71452, Stop: 71105, Start Num: 17

Candidate Starts for Manda\_134:

(Start: 17 @71452 has 1 MA's), (Start: 23 @71434 has 119 MA's), (24, 71413), (Start: 25 @71401 has 1 MA's), (26, 71398), (29, 71362), (31, 71332), (39, 71230), (40, 71227),

Gene: Marshmallow\_134 Start: 72179, Stop: 71850, Start Num: 23

Candidate Starts for Marshmallow\_134:

(Start: 16 @72197 has 15 MA's), (Start: 23 @72179 has 119 MA's), (24, 72158), (Start: 25 @72146 has 1 MA's), (26, 72143), (28, 72122), (29, 72107),

Gene: MaryV\_150 Start: 72246, Stop: 71926, Start Num: 23

Candidate Starts for MaryV\_150:

(Start: 23 @72246 has 119 MA's), (Start: 25 @72213 has 1 MA's), (33, 72123), (39, 72042), (40, 72039), (42, 72015), (49, 71937),

Gene: Maxxinista\_135 Start: 70947, Stop: 70618, Start Num: 23

Candidate Starts for Maxxinista\_135:

(Start: 16 @70965 has 15 MA's), (Start: 23 @70947 has 119 MA's), (24, 70926), (Start: 25 @70914 has 1 MA's), (26, 70911), (28, 70890), (29, 70875),

Gene: Megatron06\_49 Start: 40677, Stop: 41012, Start Num: 23

Candidate Starts for Megatron06\_49:

(9, 40596), (Start: 23 @40677 has 119 MA's), (Start: 25 @40710 has 1 MA's), (27, 40728), (31, 40779), (39, 40881), (41, 40890),

Gene: Mindy\_136 Start: 71343, Stop: 71014, Start Num: 23

Candidate Starts for Mindy\_136:

(1, 71511), (8, 71436), (10, 71421), (15, 71376), (Start: 23 @71343 has 119 MA's), (24, 71322), (Start: 25 @71310 has 1 MA's), (29, 71271),

Gene: Miniwave\_127 Start: 71043, Stop: 70714, Start Num: 23

Candidate Starts for Miniwave\_127:

(Start: 16 @71061 has 15 MA's), (Start: 23 @71043 has 119 MA's), (24, 71022), (Start: 25 @71010 has 1 MA's), (26, 71007), (28, 70986), (29, 70971),

Gene: Misfit\_133 Start: 72192, Stop: 71863, Start Num: 23

Candidate Starts for Misfit\_133:

(Start: 16 @72210 has 15 MA's), (Start: 23 @72192 has 119 MA's), (24, 72171), (Start: 25 @72159 has 1 MA's), (26, 72156), (28, 72135), (29, 72120),

Gene: Moldemort\_136 Start: 71613, Stop: 71284, Start Num: 23

Candidate Starts for Moldemort\_136:

(Start: 16 @71631 has 15 MA's), (Start: 23 @71613 has 119 MA's), (24, 71592), (Start: 25 @71580 has 1 MA's), (26, 71577), (28, 71556), (29, 71541),

Gene: MollyToe\_127 Start: 68938, Stop: 68642, Start Num: 25

Candidate Starts for MollyToe\_127:

(1, 69139), (8, 69064), (10, 69049), (15, 69004), (Start: 23 @68971 has 119 MA's), (24, 68950), (Start: 25 @68938 has 1 MA's), (29, 68899),

Gene: Mosby\_130 Start: 70556, Stop: 70227, Start Num: 23

Candidate Starts for Mosby\_130:

(Start: 16 @70574 has 15 MA's), (Start: 23 @70556 has 119 MA's), (24, 70535), (Start: 25 @70523 has 1 MA's), (26, 70520), (28, 70499), (29, 70484),

Gene: Muntaha\_267 Start: 126982, Stop: 127302, Start Num: 20

Candidate Starts for Muntaha\_267:

(Start: 20 @126982 has 4 MA's), (24, 127015), (Start: 25 @127027 has 1 MA's), (29, 127066), (33, 127117), (38, 127177), (43, 127222), (46, 127249), (47, 127252),

Gene: Muntaha\_4 Start: 1305, Stop: 1625, Start Num: 20

Candidate Starts for Muntaha\_4:

(Start: 20 @1305 has 4 MA's), (24, 1338), (Start: 25 @1350 has 1 MA's), (29, 1389), (33, 1440), (38, 1500), (43, 1545), (46, 1572), (47, 1575),

Gene: Murica\_137 Start: 72894, Stop: 72565, Start Num: 23

Candidate Starts for Murica\_137:

(2, 73050), (3, 73044), (4, 73038), (5, 73026), (7, 72993), (8, 72987), (10, 72972), (15, 72927), (Start: 23 @72894 has 119 MA's), (24, 72873), (Start: 25 @72861 has 1 MA's), (29, 72822), (31, 72792), (39, 72690), (40, 72687),

Gene: Murphy\_132 Start: 71321, Stop: 70992, Start Num: 23

Candidate Starts for Murphy\_132:

(Start: 23 @71321 has 119 MA's), (24, 71300), (Start: 25 @71288 has 1 MA's), (26, 71285), (28, 71264), (29, 71249),

Gene: Myrale\_134 Start: 72286, Stop: 71957, Start Num: 23

Candidate Starts for Myrale\_134:

(1, 72454), (8, 72379), (10, 72364), (15, 72319), (Start: 23 @72286 has 119 MA's), (Start: 25 @72253 has 1 MA's), (26, 72250), (28, 72229), (29, 72214),

Gene: Nala\_135 Start: 71607, Stop: 71278, Start Num: 23

Candidate Starts for Nala\_135:

(Start: 16 @71625 has 15 MA's), (Start: 23 @71607 has 119 MA's), (24, 71586), (Start: 25 @71574 has 1 MA's), (26, 71571), (28, 71550), (29, 71535),

Gene: NelitzaMV\_131 Start: 69650, Stop: 69321, Start Num: 23

Candidate Starts for NelitzaMV\_131:

(1, 69818), (8, 69743), (10, 69728), (15, 69683), (Start: 23 @69650 has 119 MA's), (24, 69629), (Start: 25 @69617 has 1 MA's), (29, 69578),

Gene: Nimrod\_133 Start: 72106, Stop: 71777, Start Num: 23

Candidate Starts for Nimrod\_133:

(Start: 16 @72124 has 15 MA's), (Start: 23 @72106 has 119 MA's), (24, 72085), (Start: 25 @72073 has 1 MA's), (26, 72070), (28, 72049), (29, 72034),

Gene: NoSleep\_133 Start: 70872, Stop: 70543, Start Num: 23

Candidate Starts for NoSleep\_133:

(Start: 16 @70890 has 15 MA's), (Start: 23 @70872 has 119 MA's), (24, 70851), (Start: 25 @70839 has 1 MA's), (26, 70836), (28, 70815), (29, 70800),

Gene: NonchalantPear\_132 Start: 70598, Stop: 70269, Start Num: 23

Candidate Starts for NonchalantPear\_132:

(Start: 16 @70616 has 15 MA's), (Start: 23 @70598 has 119 MA's), (24, 70577), (Start: 25 @70565 has 1 MA's), (26, 70562), (28, 70541), (29, 70526),

Gene: Oaker\_47 Start: 40392, Stop: 40727, Start Num: 23

Candidate Starts for Oaker\_47:

(9, 40311), (Start: 23 @40392 has 119 MA's), (Start: 25 @40425 has 1 MA's), (31, 40494), (39, 40596), (41, 40605),

Gene: Octobien14\_140 Start: 72798, Stop: 72403, Start Num: 21

Candidate Starts for Octobien14\_140:

(13, 72849), (14, 72840), (Start: 21 @72798 has 1 MA's), (24, 72771), (Start: 25 @72759 has 1 MA's), (27, 72741), (30, 72702), (31, 72690), (39, 72588), (40, 72585), (41, 72579), (42, 72561), (45, 72528), (50, 72420), (51, 72417),

Gene: Orchid\_108 Start: 75740, Stop: 75402, Start Num: 23

Candidate Starts for Orchid\_108:

(12, 75788), (Start: 23 @75740 has 119 MA's), (Start: 25 @75707 has 1 MA's), (31, 75638), (34, 75590), (37, 75536), (39, 75521), (48, 75440),

Gene: OrionPax\_129 Start: 70552, Stop: 70223, Start Num: 23

Candidate Starts for OrionPax\_129:

(Start: 16 @70570 has 15 MA's), (Start: 23 @70552 has 119 MA's), (24, 70531), (Start: 25 @70519 has 1 MA's), (26, 70516), (28, 70495), (29, 70480),

Gene: PaddyBaddy\_130 Start: 70607, Stop: 70260, Start Num: 16

Candidate Starts for PaddyBaddy\_130:

(Start: 16 @70607 has 15 MA's), (Start: 23 @70589 has 119 MA's), (24, 70568), (Start: 25 @70556 has 1 MA's), (26, 70553), (28, 70532), (29, 70517),

Gene: Palpatine\_133 Start: 72112, Stop: 71783, Start Num: 23

Candidate Starts for Palpatine\_133:

(Start: 16 @72130 has 15 MA's), (Start: 23 @72112 has 119 MA's), (24, 72091), (Start: 25 @72079 has 1 MA's), (26, 72076), (28, 72055), (29, 72040),

Gene: Paperbeatsrock\_132 Start: 71721, Stop: 71392, Start Num: 23

Candidate Starts for Paperbeatsrock\_132:

(Start: 16 @71739 has 15 MA's), (Start: 23 @71721 has 119 MA's), (24, 71700), (Start: 25 @71688 has 1 MA's), (26, 71685), (28, 71664), (29, 71649),

Gene: Pat3\_133 Start: 71258, Stop: 70929, Start Num: 23

Candidate Starts for Pat3\_133:

(Start: 23 @71258 has 119 MA's), (24, 71237), (Start: 25 @71225 has 1 MA's), (26, 71222), (28, 71201), (29, 71186),

Gene: PatrickStar\_109 Start: 75819, Stop: 75481, Start Num: 23

Candidate Starts for PatrickStar\_109:

(12, 75867), (Start: 23 @75819 has 119 MA's), (Start: 25 @75786 has 1 MA's), (31, 75717), (34, 75669), (37, 75615), (39, 75600), (48, 75519),

Gene: Petra64142\_135 Start: 71754, Stop: 71407, Start Num: 16

Candidate Starts for Petra64142\_135:

(Start: 16 @71754 has 15 MA's), (Start: 23 @71736 has 119 MA's), (24, 71715), (Start: 25 @71703 has 1 MA's), (26, 71700), (28, 71679), (29, 71664),

Gene: Phaja\_137 Start: 71494, Stop: 71165, Start Num: 23

Candidate Starts for Phaja\_137:

(Start: 16 @71512 has 15 MA's), (Start: 23 @71494 has 119 MA's), (24, 71473), (Start: 25 @71461 has 1 MA's), (26, 71458), (28, 71437), (29, 71422),

Gene: Pharsalus\_131 Start: 71861, Stop: 71532, Start Num: 23

Candidate Starts for Pharsalus\_131:

(Start: 16 @71879 has 15 MA's), (Start: 23 @71861 has 119 MA's), (24, 71840), (Start: 25 @71828 has 1 MA's), (26, 71825), (28, 71804), (29, 71789),

Gene: PhatBacter\_136 Start: 71634, Stop: 71305, Start Num: 23

Candidate Starts for PhatBacter\_136:

(2, 71790), (3, 71784), (4, 71778), (5, 71766), (7, 71733), (8, 71727), (10, 71712), (15, 71667), (Start: 23 @71634 has 119 MA's), (24, 71613), (Start: 25 @71601 has 1 MA's), (29, 71562), (31, 71532), (39, 71430), (40, 71427),

Gene: Phaux\_135 Start: 72260, Stop: 71931, Start Num: 23

Candidate Starts for Phaux\_135:

(2, 72416), (3, 72410), (4, 72404), (5, 72392), (7, 72359), (8, 72353), (10, 72338), (15, 72293), (Start: 23 @72260 has 119 MA's), (24, 72239), (Start: 25 @72227 has 1 MA's), (29, 72188), (31, 72158), (39,

72056), (40, 72053),

Gene: Phreeze\_46 Start: 39698, Stop: 40033, Start Num: 22

Candidate Starts for Phreeze\_46:

(19, 39686), (Start: 22 @39698 has 7 MA's), (Start: 25 @39731 has 1 MA's), (31, 39800), (35, 39851), (39, 39902),

Gene: Phrux\_129 Start: 70339, Stop: 70010, Start Num: 23

Candidate Starts for Phrux\_129:

(Start: 23 @70339 has 119 MA's), (24, 70318), (Start: 25 @70306 has 1 MA's), (26, 70303), (28, 70282), (29, 70267),

Gene: Policronamos\_134 Start: 71964, Stop: 71635, Start Num: 23

Candidate Starts for Policronamos\_134:

(2, 72120), (3, 72114), (4, 72108), (5, 72096), (7, 72063), (8, 72057), (10, 72042), (15, 71997), (Start: 23 @71964 has 119 MA's), (24, 71943), (Start: 25 @71931 has 1 MA's), (29, 71892), (31, 71862), (39, 71760), (40, 71757),

Gene: Porky\_135 Start: 71958, Stop: 71611, Start Num: 16

Candidate Starts for Porky\_135:

(Start: 16 @71958 has 15 MA's), (Start: 23 @71940 has 119 MA's), (24, 71919), (Start: 25 @71907 has 1 MA's), (26, 71904), (28, 71883), (29, 71868),

Gene: Predator\_46 Start: 37954, Stop: 38274, Start Num: 22

Candidate Starts for Predator\_46:

(Start: 22 @37954 has 7 MA's), (Start: 25 @37987 has 1 MA's), (27, 38005), (31, 38056), (40, 38161),

Gene: Ptowny\_127 Start: 69309, Stop: 68980, Start Num: 23

Candidate Starts for Ptowny\_127:

(Start: 23 @69309 has 119 MA's), (24, 69288), (Start: 25 @69276 has 1 MA's), (26, 69273), (28, 69252), (29, 69237),

Gene: Pumpkin\_133 Start: 70615, Stop: 70286, Start Num: 23

Candidate Starts for Pumpkin\_133:

(Start: 16 @70633 has 15 MA's), (Start: 23 @70615 has 119 MA's), (24, 70594), (Start: 25 @70582 has 1 MA's), (26, 70579), (28, 70558), (29, 70543),

Gene: Quallification\_134 Start: 72199, Stop: 71870, Start Num: 23

Candidate Starts for Quallification\_134:

(Start: 16 @72217 has 15 MA's), (Start: 23 @72199 has 119 MA's), (24, 72178), (Start: 25 @72166 has 1 MA's), (26, 72163), (28, 72142), (29, 72127),

Gene: Rakim\_134 Start: 71173, Stop: 70844, Start Num: 23

Candidate Starts for Rakim\_134:

(1, 71341), (8, 71266), (10, 71251), (15, 71206), (Start: 23 @71173 has 119 MA's), (24, 71152), (Start: 25 @71140 has 1 MA's), (29, 71101),

Gene: Rimmer\_130 Start: 71092, Stop: 70745, Start Num: 16

Candidate Starts for Rimmer\_130:

(Start: 16 @71092 has 15 MA's), (Start: 23 @71074 has 119 MA's), (24, 71053), (Start: 25 @71041 has 1 MA's), (26, 71038), (28, 71017), (29, 71002),

Gene: RiverMonster\_132 Start: 71234, Stop: 70905, Start Num: 23

Candidate Starts for RiverMonster\_132:

(Start: 16 @71252 has 15 MA's), (Start: 23 @71234 has 119 MA's), (24, 71213), (Start: 25 @71201 has 1 MA's), (26, 71198), (28, 71177), (29, 71162),

Gene: RobinSparkles\_118 Start: 76904, Stop: 76569, Start Num: 23

Candidate Starts for RobinSparkles\_118:

(12, 76952), (Start: 23 @76904 has 119 MA's), (Start: 25 @76871 has 1 MA's), (31, 76802), (34, 76754), (37, 76700), (39, 76685), (44, 76643), (48, 76604),

Gene: Saints25\_129 Start: 69399, Stop: 69070, Start Num: 23

Candidate Starts for Saints25\_129:

(Start: 23 @69399 has 119 MA's), (24, 69378), (Start: 25 @69366 has 1 MA's), (26, 69363), (28, 69342), (29, 69327),

Gene: Sassay\_128 Start: 69536, Stop: 69189, Start Num: 16

Candidate Starts for Sassay\_128:

(Start: 16 @69536 has 15 MA's), (Start: 23 @69518 has 119 MA's), (24, 69497), (Start: 25 @69485 has 1 MA's), (26, 69482), (28, 69461), (29, 69446),

Gene: ShamWow\_133 Start: 72051, Stop: 71722, Start Num: 23

Candidate Starts for ShamWow\_133:

(Start: 16 @72069 has 15 MA's), (Start: 23 @72051 has 119 MA's), (24, 72030), (Start: 25 @72018 has 1 MA's), (26, 72015), (28, 71994), (29, 71979),

Gene: ShereKhan\_133 Start: 72445, Stop: 72116, Start Num: 23

Candidate Starts for ShereKhan\_133:

(Start: 16 @72463 has 15 MA's), (Start: 23 @72445 has 119 MA's), (24, 72424), (Start: 25 @72412 has 1 MA's), (26, 72409), (28, 72388), (29, 72373),

Gene: Simpliphy\_132 Start: 70805, Stop: 70476, Start Num: 23

Candidate Starts for Simpliphy\_132:

(Start: 23 @70805 has 119 MA's), (24, 70784), (Start: 25 @70772 has 1 MA's), (26, 70769), (28, 70748), (29, 70733),

Gene: SirDuracell\_136 Start: 71666, Stop: 71337, Start Num: 23

Candidate Starts for SirDuracell\_136:

(Start: 18 @71681 has 1 MA's), (Start: 23 @71666 has 119 MA's), (Start: 25 @71633 has 1 MA's), (29, 71594), (31, 71564), (39, 71462), (40, 71459),

Gene: SophKB\_131 Start: 71150, Stop: 70821, Start Num: 23

Candidate Starts for SophKB\_131:

(1, 71318), (8, 71243), (10, 71228), (15, 71183), (Start: 23 @71150 has 119 MA's), (24, 71129), (Start: 25 @71117 has 1 MA's), (26, 71114), (28, 71093), (29, 71078),

Gene: Sotrice96\_138 Start: 72351, Stop: 72022, Start Num: 23

Candidate Starts for Sotrice96\_138:

(Start: 16 @72369 has 15 MA's), (Start: 23 @72351 has 119 MA's), (24, 72330), (Start: 25 @72318 has 1 MA's), (26, 72315), (28, 72294), (29, 72279),

Gene: Stank\_137 Start: 72298, Stop: 71969, Start Num: 23

Candidate Starts for Stank\_137:

(Start: 16 @72316 has 15 MA's), (Start: 23 @72298 has 119 MA's), (24, 72277), (Start: 25 @72265 has 1 MA's), (26, 72262), (28, 72241), (29, 72226),

Gene: Stark\_131 Start: 71053, Stop: 70724, Start Num: 23

Candidate Starts for Stark\_131:

(Start: 16 @71071 has 15 MA's), (Start: 23 @71053 has 119 MA's), (24, 71032), (Start: 25 @71020 has 1 MA's), (26, 71017), (28, 70996), (29, 70981),

Gene: StellaBean\_131 Start: 71803, Stop: 71474, Start Num: 23

Candidate Starts for StellaBean\_131:

(Start: 16 @71821 has 15 MA's), (Start: 23 @71803 has 119 MA's), (24, 71782), (Start: 25 @71770 has 1 MA's), (26, 71767), (28, 71746), (29, 71731),

Gene: StolenFromERC\_136 Start: 71643, Stop: 71314, Start Num: 23

Candidate Starts for StolenFromERC\_136:

(Start: 16 @71661 has 15 MA's), (Start: 23 @71643 has 119 MA's), (24, 71622), (Start: 25 @71610 has 1 MA's), (26, 71607), (28, 71586), (29, 71571),

Gene: StormChicken\_135 Start: 72268, Stop: 71939, Start Num: 23

Candidate Starts for StormChicken\_135:

(Start: 16 @72286 has 15 MA's), (Start: 23 @72268 has 119 MA's), (24, 72247), (Start: 25 @72235 has 1 MA's), (26, 72232), (28, 72211), (29, 72196),

Gene: TBrady12\_138 Start: 71735, Stop: 71406, Start Num: 23

Candidate Starts for TBrady12\_138:

(Start: 16 @71753 has 15 MA's), (Start: 23 @71735 has 119 MA's), (24, 71714), (Start: 25 @71702 has 1 MA's), (26, 71699), (28, 71678), (29, 71663),

Gene: Tarkin\_132 Start: 72310, Stop: 71981, Start Num: 23

Candidate Starts for Tarkin\_132:

(Start: 16 @72328 has 15 MA's), (Start: 23 @72310 has 119 MA's), (24, 72289), (Start: 25 @72277 has 1 MA's), (26, 72274), (28, 72253), (29, 72238),

Gene: TeamEdward\_132 Start: 71904, Stop: 71557, Start Num: 16

Candidate Starts for TeamEdward\_132:

(Start: 16 @71904 has 15 MA's), (Start: 23 @71886 has 119 MA's), (24, 71865), (Start: 25 @71853 has 1 MA's), (26, 71850), (28, 71829), (29, 71814),

Gene: TeardropMSU\_134 Start: 71219, Stop: 70890, Start Num: 23

Candidate Starts for TeardropMSU\_134:

(Start: 23 @71219 has 119 MA's), (24, 71198), (Start: 25 @71186 has 1 MA's), (26, 71183), (28, 71162), (29, 71147),

Gene: Terminus\_136 Start: 72192, Stop: 71863, Start Num: 23

Candidate Starts for Terminus\_136:

(Start: 16 @72210 has 15 MA's), (Start: 23 @72192 has 119 MA's), (24, 72171), (Start: 25 @72159 has 1 MA's), (26, 72156), (28, 72135), (29, 72120),

Gene: Thresher\_135 Start: 72137, Stop: 71790, Start Num: 16

Candidate Starts for Thresher\_135:

(Start: 16 @72137 has 15 MA's), (Start: 23 @72119 has 119 MA's), (24, 72098), (Start: 25 @72086 has 1 MA's), (29, 72047),

Gene: Thumb\_48 Start: 40133, Stop: 40468, Start Num: 22

Candidate Starts for Thumb\_48:

(Start: 22 @40133 has 7 MA's), (Start: 25 @40166 has 1 MA's), (31, 40235), (39, 40337), (41, 40346),

Gene: Tomaszewski\_127 Start: 70748, Stop: 70401, Start Num: 16

Candidate Starts for Tomaszewski\_127:

(Start: 16 @70748 has 15 MA's), (Start: 23 @70730 has 119 MA's), (24, 70709), (Start: 25 @70697 has 1 MA's), (26, 70694), (28, 70673), (29, 70658),

Gene: Toto\_131 Start: 72051, Stop: 71722, Start Num: 23

Candidate Starts for Toto\_131:

(Start: 16 @72069 has 15 MA's), (Start: 23 @72051 has 119 MA's), (24, 72030), (Start: 25 @72018 has 1 MA's), (26, 72015), (28, 71994), (29, 71979),

Gene: Traaww1\_129 Start: 70599, Stop: 70270, Start Num: 23

Candidate Starts for Traaww1\_129:

(Start: 18 @70614 has 1 MA's), (Start: 23 @70599 has 119 MA's), (Start: 25 @70566 has 1 MA's), (29, 70527), (31, 70497),

Gene: Tuco\_139 Start: 73278, Stop: 72949, Start Num: 23

Candidate Starts for Tuco\_139:

(Start: 23 @73278 has 119 MA's), (24, 73257), (Start: 25 @73245 has 1 MA's), (26, 73242), (28, 73221), (29, 73206),

Gene: Ukulele\_128 Start: 70632, Stop: 70285, Start Num: 16

Candidate Starts for Ukulele\_128:

(Start: 16 @70632 has 15 MA's), (Start: 23 @70614 has 119 MA's), (24, 70593), (Start: 25 @70581 has 1 MA's), (26, 70578), (28, 70557), (29, 70542),

Gene: Wakanda\_262 Start: 126045, Stop: 126365, Start Num: 20

Candidate Starts for Wakanda\_262:

(Start: 20 @126045 has 4 MA's), (24, 126078), (Start: 25 @126090 has 1 MA's), (29, 126129), (33, 126180), (43, 126285), (46, 126312), (47, 126315),

Gene: Wakanda\_3 Start: 1204, Stop: 1524, Start Num: 20

Candidate Starts for Wakanda\_3:

(Start: 20 @1204 has 4 MA's), (24, 1237), (Start: 25 @1249 has 1 MA's), (29, 1288), (33, 1339), (43, 1444), (46, 1471), (47, 1474),

Gene: Wiggin\_136 Start: 71276, Stop: 70947, Start Num: 23

Candidate Starts for Wiggin\_136:

(Start: 16 @71294 has 15 MA's), (Start: 23 @71276 has 119 MA's), (24, 71255), (Start: 25 @71243 has 1 MA's), (26, 71240), (28, 71219), (29, 71204),

Gene: Wildcat\_164 Start: 74139, Stop: 73819, Start Num: 23

Candidate Starts for Wildcat\_164:

(Start: 23 @74139 has 119 MA's), (Start: 25 @74106 has 1 MA's), (33, 74016), (39, 73935), (40, 73932), (42, 73908), (49, 73830),

Gene: Willez\_130 Start: 70373, Stop: 70044, Start Num: 23

Candidate Starts for Willez\_130:

(Start: 16 @70391 has 15 MA's), (Start: 23 @70373 has 119 MA's), (24, 70352), (Start: 25 @70340 has 1 MA's), (26, 70337), (28, 70316), (29, 70301),

Gene: Xandras\_134 Start: 71552, Stop: 71223, Start Num: 23

Candidate Starts for Xandras\_134:

(Start: 16 @71570 has 15 MA's), (Start: 23 @71552 has 119 MA's), (24, 71531), (Start: 25 @71519 has 1 MA's), (26, 71516), (28, 71495), (29, 71480),

Gene: YassJohnny\_129 Start: 69538, Stop: 69209, Start Num: 23

Candidate Starts for YassJohnny\_129:

(2, 69694), (3, 69688), (4, 69682), (5, 69670), (7, 69637), (8, 69631), (10, 69616), (15, 69571), (Start: 23 @69538 has 119 MA's), (24, 69517), (Start: 25 @69505 has 1 MA's), (29, 69466), (31, 69436), (39, 69334), (40, 69331),

Gene: Youngblood\_137 Start: 71689, Stop: 71360, Start Num: 23

Candidate Starts for Youngblood\_137:

(2, 71845), (3, 71839), (4, 71833), (5, 71821), (7, 71788), (8, 71782), (10, 71767), (15, 71722), (Start: 23 @71689 has 119 MA's), (24, 71668), (Start: 25 @71656 has 1 MA's), (26, 71653), (28, 71632), (29, 71617),

Gene: xkcd\_137 Start: 72326, Stop: 71997, Start Num: 23

Candidate Starts for xkcd\_137:

(2, 72482), (3, 72476), (4, 72470), (5, 72458), (7, 72425), (8, 72419), (10, 72404), (15, 72359), (Start: 23 @72326 has 119 MA's), (24, 72305), (Start: 25 @72293 has 1 MA's), (26, 72290), (28, 72269), (29, 72254),