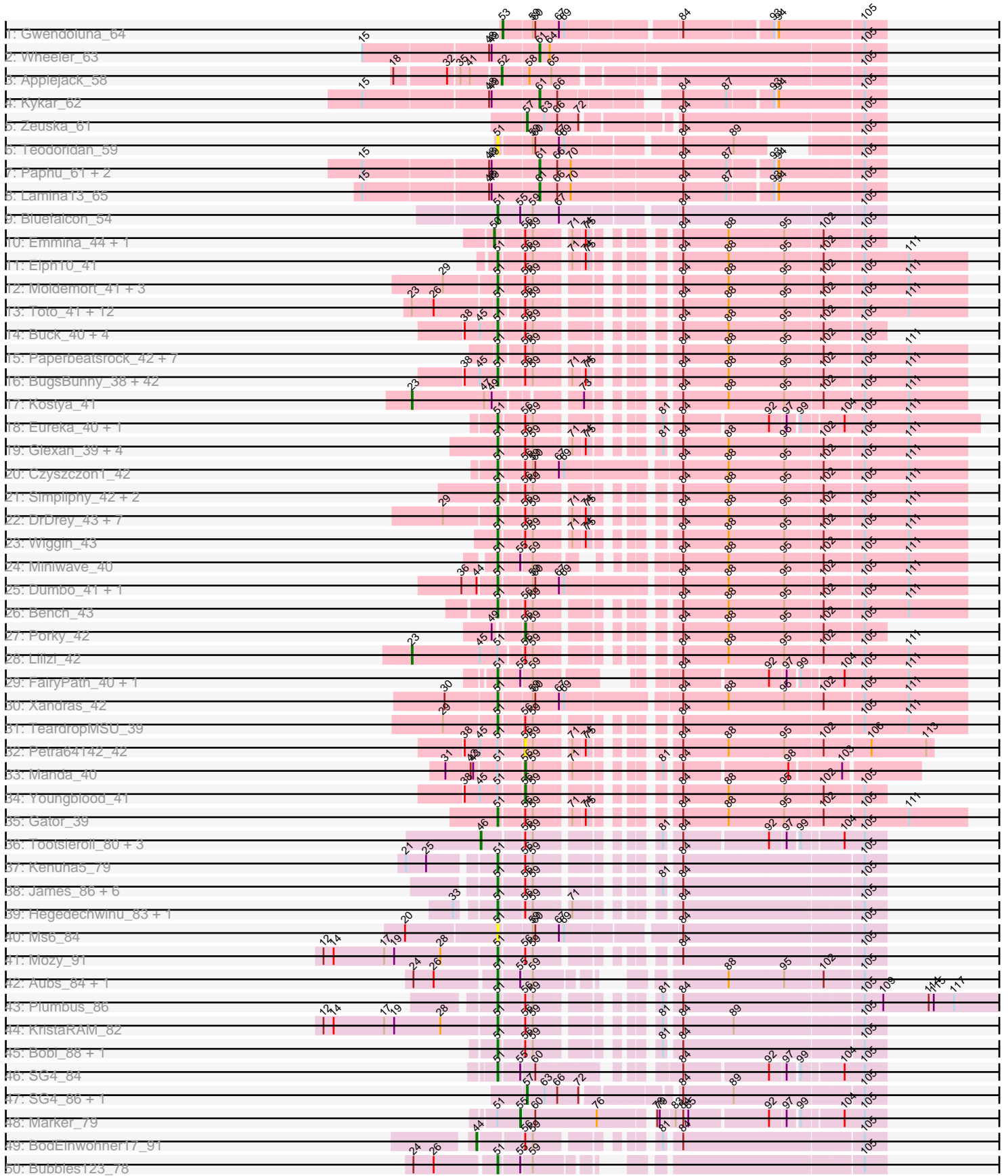
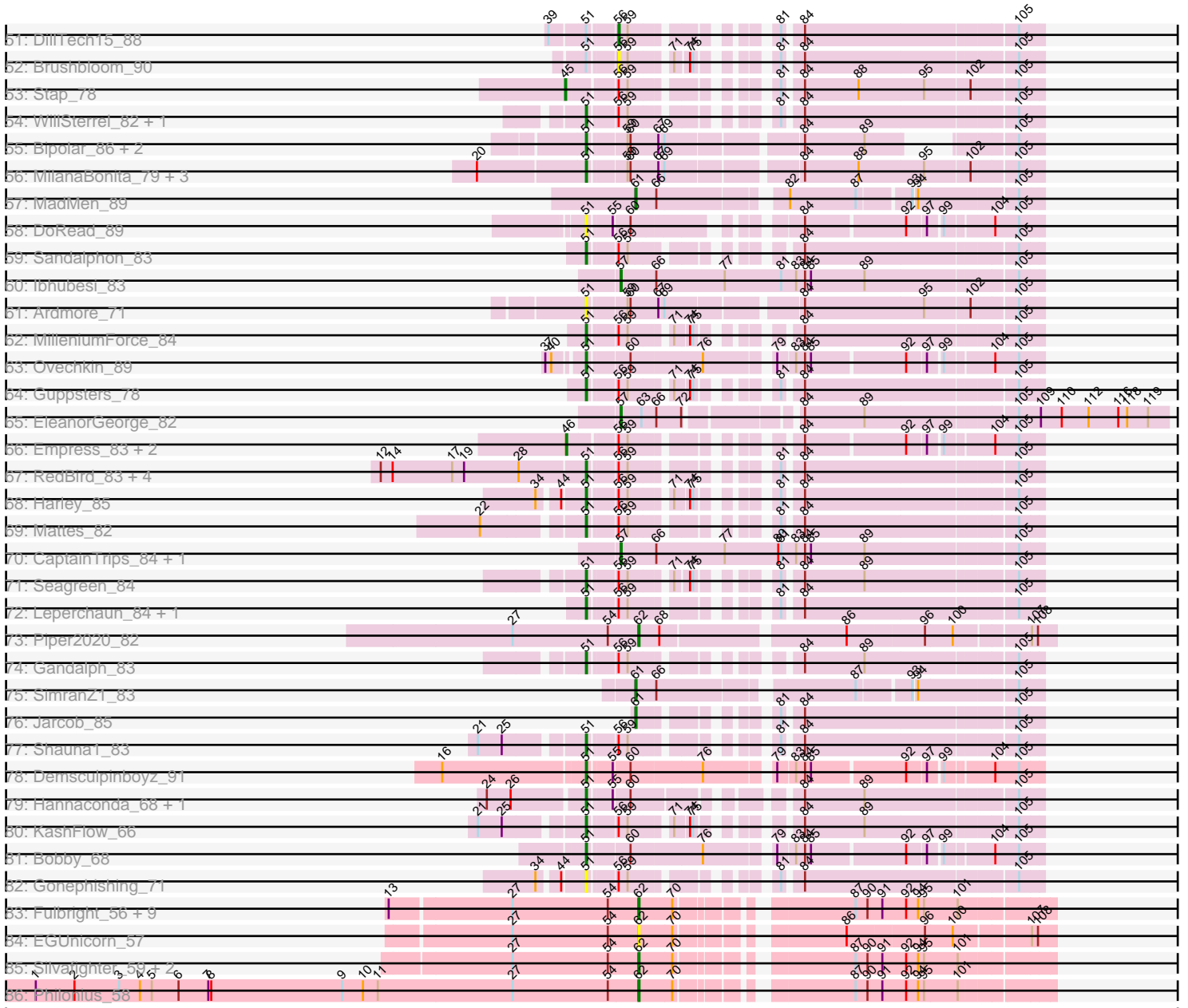


Pham 202677



Pham 202677



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 202677 Report

This analysis was run 01/18/25 on database version 583.

Pham number 202677 has 212 members, 14 are drafts.

Phages represented in each track:

- Track 1 : Gwendoluna\_64
- Track 2 : Wheeler\_63
- Track 3 : Applejack\_58
- Track 4 : Kykar\_62
- Track 5 : Zeuska\_61
- Track 6 : Teodoridan\_59
- Track 7 : Paphu\_61, Tasp14\_65, Parliament\_63
- Track 8 : Lamina13\_65
- Track 9 : Bluefalcon\_54
- Track 10 : Emmina\_44, Teaspoon\_45
- Track 11 : Elph10\_41
- Track 12 : Moldemort\_41, MadamMonkfish\_41, OrionPax\_42, AmericanBeauty\_42
- Track 13 : Toto\_41, ABCat\_40, BilboSwaggins\_41, IHOP\_40, Tuco\_43, Inca\_39, BaboJay\_40, CrystalP\_42, Myrale\_42, ShamWow\_42, StellaBean\_40, Phaja\_40, Marshmallow\_41
- Track 14 : Buck\_40, Rimmer\_40, Elite2014\_40, ChosenOne\_41, Lilpickle\_40
- Track 15 : Paperbeatsrock\_42, SophKB\_40, BadStone\_41, Tarkin\_42, NelitzaMV\_40, Dusk\_41, Pharsalus\_41, Henry\_42
- Track 16 : BugsBunny\_38, MPhalcon\_39, Cactus\_41, Argent26\_42, GooberAzure\_42, Asriel\_39, HufflyPuff\_39, Goldilocks\_41, StolenFromERC\_42, Misfit\_40, Gage\_42, Murphy\_41, Nala\_40, Stank\_43, xkcd\_41, MISSy\_39, Adnama\_43, Gemini\_43, Palpatine\_40, Lilac\_42, Nimrod\_40, Rakim\_41, Kimchi\_42, Barbarian\_39, Hoonter\_42, Phaux\_39, FireRed\_40, Thresher\_42, Maxxinista\_41, Murica\_39, Command613\_41, Terminus\_40, Sotrice96\_40, GoldenSpark\_42, PhatBacter\_40, Stark\_41, RiverMonster\_40, Bask21\_40, Policronamos\_41, Icee\_39, NoSleep\_41, TBrady12\_42, Cjw1\_41
- Track 17 : Kostya\_41
- Track 18 : Eureka\_40, Goku\_40
- Track 19 : Glexan\_39, Daikon\_41, Traaww1\_38, Balomoji\_40, Harella\_41
- Track 20 : Czyszczonek\_42
- Track 21 : Simpliphy\_42, Saints25\_42, Highbury\_42
- Track 22 : DrDrey\_43, Phrux\_41, HanKaySha\_42, JeTaime\_43, 244\_44, Hopey\_43, Filch\_43, Pumpkin\_44
- Track 23 : Wiggin\_43
- Track 24 : Miniwave\_40
- Track 25 : Dumbo\_41, Easy2Say\_42
- Track 26 : Bench\_43

- Track 27 : Porky\_42
- Track 28 : Lilizi\_42
- Track 29 : FairyPath\_40, Quallification\_41
- Track 30 : Xandras\_42
- Track 31 : TeardropMSU\_39
- Track 32 : Petra64142\_42
- Track 33 : Manda\_40
- Track 34 : Youngblood\_41
- Track 35 : Gator\_39
- Track 36 : Tootsieroll\_80, Polka14\_89, KingMidas\_84, Scottish\_83
- Track 37 : Kenuha5\_79
- Track 38 : James\_86, Flathead\_85, ShiLan\_85, OlympiaSaint\_85, Moonbeam\_83, Phanphagia\_84, Spoonbill\_81
- Track 39 : Hegedechwinu\_83, JalFarm20\_90
- Track 40 : Ms6\_84
- Track 41 : Mozy\_91
- Track 42 : Aubs\_84, Donkeykong\_90
- Track 43 : Plumbus\_86
- Track 44 : KristaRAM\_82
- Track 45 : Bobi\_88, DaWorst\_83
- Track 46 : SG4\_84
- Track 47 : SG4\_86, Whatsapiecost\_76
- Track 48 : Marker\_79
- Track 49 : BodEinwohner17\_91
- Track 50 : Bubbles123\_78
- Track 51 : DillTech15\_88
- Track 52 : Brushbloom\_90
- Track 53 : Stap\_78
- Track 54 : WillSterrel\_82, IrishSherpFalk\_83
- Track 55 : Bipolar\_86, Doug\_82, Ogoopogo\_89
- Track 56 : MilanaBonita\_79, Kumao\_61, Fruitloop\_85, Akhila\_80
- Track 57 : MadMen\_89
- Track 58 : DoRead\_89
- Track 59 : Sandalphon\_83
- Track 60 : lbhubesi\_83
- Track 61 : Ardmore\_71
- Track 62 : MilleniumForce\_84
- Track 63 : Ovechkin\_89
- Track 64 : Guppsters\_78
- Track 65 : EleanorGeorge\_82
- Track 66 : Empress\_83, Poenanya\_88, Doomphist\_88
- Track 67 : RedBird\_83, Ramsey\_86, Dorothy\_83, Sassafras\_83, Inventum\_80
- Track 68 : Harley\_85
- Track 69 : Mattes\_82
- Track 70 : CaptainTrips\_84, MinionDave\_80
- Track 71 : Seagreen\_84
- Track 72 : Leperchaun\_84, JoeyJr\_86
- Track 73 : Piper2020\_82
- Track 74 : Gandalph\_83
- Track 75 : SimranZ1\_83
- Track 76 : Jarcob\_85
- Track 77 : Shauna1\_83
- Track 78 : Demsculpinboyz\_91

- Track 79 : Hannaconda\_68, SuperGrey\_84
- Track 80 : KashFlow\_66
- Track 81 : Bobby\_68
- Track 82 : Gonephishing\_71
- Track 83 : Fulbright\_56, Carcharodon\_58, Phloss\_56, Magsby\_58, Parmesanjohn\_58, Smurph\_58, Xerxes\_58, Gex\_59, Pipsqueaks\_59, Schnauzer\_59
- Track 84 : EGUnicorn\_57
- Track 85 : Silvafighter\_59, Melville\_63, Duplicity\_56
- Track 86 : Philonius\_58

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

The start number called the most often in the published annotations is 51, it was called in 147 of the 198 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 244\_44, ABCat\_40, Adnama\_43, Akhila\_80, AmericanBeauty\_42, Ardmore\_71, Argent26\_42, Asriel\_39, Aubs\_84, BaboJay\_40, BadStone\_41, Balomoji\_40, Barbarian\_39, Bask21\_40, Bench\_43, BilboSwaggins\_41, Bipolar\_86, Bluefalcon\_54, Bobby\_68, Bobi\_88, Bubbles123\_78, Buck\_40, BugsBunny\_38, Cactus\_41, ChosenOne\_41, Cjw1\_41, Command613\_41, CrystalP\_42, Czyszczonek\_42, DaWorst\_83, Daikon\_41, Demsculpinboyz\_91, DoRead\_89, Donkeykong\_90, Dorothy\_83, Doug\_82, DrDrey\_43, Dumbo\_41, Dusk\_41, Easy2Say\_42, Elite2014\_40, Elph10\_41, Eureka\_40, FairyPath\_40, Filch\_43, FireRed\_40, Flathead\_85, Fruitloop\_85, Gage\_42, Gandolph\_83, Gator\_39, Gemini\_43, Glexan\_39, Goku\_40, GoldenSpark\_42, Goldilocks\_41, Gonephishing\_71, GooberAzure\_42, Guppsters\_78, HanKaySha\_42, Hannaconda\_68, Harella\_41, Harley\_85, Hegedechwinu\_83, Henry\_42, Highbury\_42, Hoonter\_42, Hopey\_43, HuffyPuff\_39, IHOP\_40, Icee\_39, Inca\_39, Inventum\_80, IrishSherpFalk\_83, JalFarm20\_90, James\_86, JeTaime\_43, JoeyJr\_86, KashFlow\_66, Kenuha5\_79, Kimchi\_42, KristaRAM\_82, Kumao\_61, Leperchaun\_84, Lilac\_42, Lilpickle\_40, MISSy\_39, MPhalcon\_39, MadamMonkfish\_41, Marshmallow\_41, Mattes\_82, Maxxinista\_41, MilanaBonita\_79, MilleniumForce\_84, Miniwave\_40, Misfit\_40, Moldemort\_41, Moonbeam\_83, Mozy\_91, Ms6\_84, Murica\_39, Murphy\_41, Myrale\_42, Nala\_40, NelitzaMV\_40, Nimrod\_40, NoSleep\_41, Ogopogo\_89, OlympiaSaint\_85, OrionPax\_42, Ovechkin\_89, Palpatine\_40, Paperbeatsrock\_42, Phaja\_40, Phanphagia\_84, Pharsalus\_41, PhatBacter\_40, Phaux\_39, Phrux\_41, Plumbus\_86, Policronamos\_41, Pumpkin\_44, Quallification\_41, Rakim\_41, Ramsey\_86, RedBird\_83, Rimmer\_40, RiverMonster\_40, SG4\_84, Saints25\_42, Sandalphon\_83, Sassafras\_83, Seagreen\_84, ShamWow\_42, Shauna1\_83, ShiLan\_85, Simpliphy\_42, SophKB\_40, Sotrice96\_40, Spoonbill\_81, Stank\_43, Stark\_41, StellaBean\_40, StolenFromERC\_42, SuperGrey\_84, TBrady12\_42, Tarkin\_42, TeardropMSU\_39, Teodoridan\_59, Terminus\_40, Thresher\_42, Toto\_41, Traaww1\_38, Tuco\_43, Wiggin\_43, WillSterrel\_82, Xandras\_42, xkcd\_41,

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

- Brushbloom\_90, DillTech15\_88, Lilizi\_42, Manda\_40, Marker\_79, Petra64142\_42, Youngblood\_41,

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

- Applejack\_58, BodEinwohner17\_91, CaptainTrips\_84, Carcharodon\_58, Doomphist\_88, Duplicity\_56, EGUnicorn\_57, EleanorGeorge\_82, Emmina\_44, Empress\_83, Fulbright\_56, Gex\_59, Gwendoluna\_64, Ibhubesi\_83, Jarcob\_85, KingMidas\_84, Kostya\_41, Kykar\_62, Lamina13\_65, MadMen\_89, Magsby\_58, Melville\_63, MinionDave\_80, Paphu\_61, Parliament\_63, Parmesanjohn\_58, Philonius\_58, Phloss\_56, Piper2020\_82, Pipsqueaks\_59, Poenanya\_88, Polka14\_89, Porky\_42, SG4\_86, Schnauzer\_59, Scottish\_83, Silvafighter\_59, SimranZ1\_83, Smurph\_58, Stap\_78, Tasp14\_65, Teaspoon\_45, Tootsieroll\_80, Whatsapiecost\_76, Wheeler\_63, Xerxes\_58, Zeuska\_61,

### Summary by start number:

#### Start 23:

- Found in 15 of 212 ( 7.1% ) of genes in pham
- Manual Annotations of this start: 2 of 198
- Called 13.3% of time when present
- Phage (with cluster) where this start called: Kostya\_41 (E), Lilizi\_42 (E),

#### Start 44:

- Found in 5 of 212 ( 2.4% ) of genes in pham
- Manual Annotations of this start: 1 of 198
- Called 20.0% of time when present
- Phage (with cluster) where this start called: BodEinwohner17\_91 (F1),

#### Start 45:

- Found in 52 of 212 ( 24.5% ) of genes in pham
- Manual Annotations of this start: 1 of 198
- Called 1.9% of time when present
- Phage (with cluster) where this start called: Stap\_78 (F1),

#### Start 46:

- Found in 7 of 212 ( 3.3% ) of genes in pham
- Manual Annotations of this start: 7 of 198
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Doomphist\_88 (F1), Empress\_83 (F1), KingMidas\_84 (F1), Poenanya\_88 (F1), Polka14\_89 (F1), Scottish\_83 (F1), Tootsieroll\_80 (F1),

#### Start 50:

- Found in 2 of 212 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 2 of 198
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Emmina\_44 (E), Teaspoon\_45 (E),

#### Start 51:

- Found in 165 of 212 ( 77.8% ) of genes in pham
- Manual Annotations of this start: 147 of 198
- Called 95.8% of time when present
- Phage (with cluster) where this start called: 244\_44 (E), ABCat\_40 (E), Adnama\_43 (E), Akhila\_80 (F1), AmericanBeauty\_42 (E), Ardmore\_71 (F1), Argent26\_42 (E), Asriel\_39 (E), Aubs\_84 (F1), BaboJay\_40 (E), BadStone\_41 (E), Balomoji\_40 (E), Barbarian\_39 (E), Bask21\_40 (E), Bench\_43 (E), BilboSwaggins\_41 (E), Bipolar\_86 (F1), Bluefalcon\_54 (A5), Bobby\_68 (J), Bobi\_88 (F1), Bubbles123\_78 (F1), Buck\_40

(E), BugsBunny\_38 (E), Cactus\_41 (E), ChosenOne\_41 (E), Cjw1\_41 (E), Command613\_41 (E), CrystalP\_42 (E), Czyszczone1\_42 (E), DaWorst\_83 (F1), Daikon\_41 (E), Demsculpinboyz\_91 (F2), DoRead\_89 (F1), Donkeykong\_90 (F1), Dorothy\_83 (F1), Doug\_82 (F1), DrDrey\_43 (E), Dumbo\_41 (E), Dusk\_41 (E), Easy2Say\_42 (E), Elite2014\_40 (E), Elph10\_41 (E), Eureka\_40 (E), FairyPath\_40 (E), Filch\_43 (E), FireRed\_40 (E), Flathead\_85 (F1), Fruitloop\_85 (F1), Gage\_42 (E), Gandolph\_83 (F1), Gator\_39 (E), Gemini\_43 (E), Glexan\_39 (E), Goku\_40 (E), GoldenSpark\_42 (E), Goldilocks\_41 (E), Gonephishing\_71 (J), GooberAzure\_42 (E), Guppsters\_78 (F1), HanKaySha\_42 (E), Hannaconda\_68 (J), Harella\_41 (E), Harley\_85 (F1), Hegedechwinu\_83 (F1), Henry\_42 (E), Highbury\_42 (E), Hoonter\_42 (E), Hopey\_43 (E), HufflyPuff\_39 (E), IHOP\_40 (E), Icee\_39 (E), Inca\_39 (E), Inventum\_80 (F1), IrishSherpFalk\_83 (F1), JalFarm20\_90 (F1), James\_86 (F1), JeTaimie\_43 (E), JoeyJr\_86 (F1), KashFlow\_66 (J), Kenuha5\_79 (F1), Kimchi\_42 (E), KristaRAM\_82 (F1), Kumao\_61 (singleton), Leperchaun\_84 (F1), Lilac\_42 (E), Lilpickle\_40 (E), MISSy\_39 (E), MPhalcon\_39 (E), MadamMonkfish\_41 (E), Marshmallow\_41 (E), Mattes\_82 (F1), Maxxinista\_41 (E), MilanaBonita\_79 (F1), MilleniumForce\_84 (F1), Miniwave\_40 (E), Misfit\_40 (E), Moldemort\_41 (E), Moonbeam\_83 (F1), Mozy\_91 (F1), Ms6\_84 (F1), Murica\_39 (E), Murphy\_41 (E), Myrale\_42 (E), Nala\_40 (E), NelitzaMV\_40 (E), Nimrod\_40 (E), NoSleep\_41 (E), Ogopogo\_89 (F1), OlympiaSaint\_85 (F1), OrionPax\_42 (E), Ovechkin\_89 (F1), Palpatine\_40 (E), Paperbeatsrock\_42 (E), Phaja\_40 (E), Phanphagia\_84 (F1), Pharsalus\_41 (E), PhatBacter\_40 (E), Phaux\_39 (E), Phrux\_41 (E), Plumbus\_86 (F1), Policronamos\_41 (E), Pumpkin\_44 (E), Qualification\_41 (E), Rakim\_41 (E), Ramsey\_86 (F1), RedBird\_83 (F1), Rimmer\_40 (E), RiverMonster\_40 (E), SG4\_84 (F1), Saints25\_42 (E), Sandalphon\_83 (F1), Sassafras\_83 (F1), Seagreen\_84 (F1), ShamWow\_42 (E), Shauna1\_83 (F1), ShiLan\_85 (F1), Simpliphy\_42 (E), SophKB\_40 (E), Sotrice96\_40 (E), Spoonbill\_81 (F1), Stank\_43 (E), Stark\_41 (E), StellaBean\_40 (E), StolenFromERC\_42 (E), SuperGrey\_84 (F1), TBrady12\_42 (E), Tarkin\_42 (E), TeardropMSU\_39 (E), Teodoridan\_59 (A1), Terminus\_40 (E), Thresher\_42 (E), Toto\_41 (E), Traaww1\_38 (E), Tuco\_43 (E), Wiggin\_43 (E), WillSterrel\_82 (F1), Xandras\_42 (E), xkcd\_41 (E),

#### Start 52:

- Found in 1 of 212 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 198
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Applejack\_58 (A1),

#### Start 53:

- Found in 1 of 212 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 198
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gwendoluna\_64 (A1),

#### Start 55:

- Found in 13 of 212 ( 6.1% ) of genes in pham
- Manual Annotations of this start: 1 of 198
- Called 7.7% of time when present
- Phage (with cluster) where this start called: Marker\_79 (F1),

#### Start 56:

- Found in 149 of 212 ( 70.3% ) of genes in pham
- Manual Annotations of this start: 4 of 198

- Called 4.0% of time when present
- Phage (with cluster) where this start called: Brushbloom\_90 (F1), DillTech15\_88 (F1), Manda\_40 (E), Petra64142\_42 (E), Porky\_42 (E), Youngblood\_41 (E),

Start 57:

- Found in 7 of 212 ( 3.3% ) of genes in pham
- Manual Annotations of this start: 7 of 198
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CaptainTrips\_84 (F1), EleanorGeorge\_82 (F1), Ibhuesi\_83 (F1), MinionDave\_80 (F1), SG4\_86 (F1), Whatsapiecost\_76 (F1), Zeuska\_61 (A1),

Start 61:

- Found in 9 of 212 ( 4.2% ) of genes in pham
- Manual Annotations of this start: 9 of 198
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jacob\_85 (F1), Kykar\_62 (A1), Lamina13\_65 (A1), MadMen\_89 (F1), Paphu\_61 (A1), Parliament\_63 (A1), SimranZ1\_83 (F1), Tasp14\_65 (A1), Wheeler\_63 (A1),

Start 62:

- Found in 16 of 212 ( 7.5% ) of genes in pham
- Manual Annotations of this start: 15 of 198
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Carcharodon\_58 (N), Duplicity\_56 (N), EGUnicorn\_57 (N), Fulbright\_56 (N), Gex\_59 (N), Magsby\_58 (N), Melville\_63 (N), Parmesanjohn\_58 (N), Philonius\_58 (N), Phloss\_56 (N), Piper2020\_82 (F1), Pipsqueaks\_59 (N), Schnauzer\_59 (N), Silvafighter\_59 (N), Smurph\_58 (N), Xerxes\_58 (N),

### Summary by clusters:

There are 8 clusters represented in this pham: F1, singleton, E, J, F2, N, A1, A5,

Info for manual annotations of cluster A1:

- Start number 52 was manually annotated 1 time for cluster A1.
- Start number 53 was manually annotated 1 time for cluster A1.
- Start number 57 was manually annotated 1 time for cluster A1.
- Start number 61 was manually annotated 6 times for cluster A1.

Info for manual annotations of cluster A5:

- Start number 51 was manually annotated 1 time for cluster A5.

Info for manual annotations of cluster E:

- Start number 23 was manually annotated 2 times for cluster E.
- Start number 50 was manually annotated 2 times for cluster E.
- Start number 51 was manually annotated 97 times for cluster E.
- Start number 56 was manually annotated 3 times for cluster E.

Info for manual annotations of cluster F1:

- Start number 44 was manually annotated 1 time for cluster F1.
- Start number 45 was manually annotated 1 time for cluster F1.
- Start number 46 was manually annotated 7 times for cluster F1.



- Start number 51 was manually annotated 44 times for cluster F1.
- Start number 55 was manually annotated 1 time for cluster F1.
- Start number 56 was manually annotated 1 time for cluster F1.
- Start number 57 was manually annotated 6 times for cluster F1.
- Start number 61 was manually annotated 3 times for cluster F1.
- Start number 62 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster F2:

- Start number 51 was manually annotated 1 time for cluster F2.

Info for manual annotations of cluster J:

- Start number 51 was manually annotated 3 times for cluster J.

Info for manual annotations of cluster N:

- Start number 62 was manually annotated 14 times for cluster N.

### **Gene Information:**

Gene: 244\_44 Start: 35171, Stop: 34707, Start Num: 51

Candidate Starts for 244\_44:

(29, 35231), (Start: 51 @35171 has 147 MA's), (Start: 56 @35147 has 4 MA's), (59, 35138), (71, 35105), (74, 35093), (75, 35090), (84, 35027), (88, 34973), (95, 34910), (102, 34868), (105, 34826), (111, 34775),

Gene: ABCat\_40 Start: 35339, Stop: 34872, Start Num: 51

Candidate Starts for ABCat\_40:

(Start: 23 @35432 has 2 MA's), (26, 35408), (Start: 51 @35339 has 147 MA's), (Start: 56 @35315 has 4 MA's), (59, 35306), (84, 35192), (88, 35138), (95, 35075), (102, 35033), (105, 34991), (111, 34940),

Gene: Adnama\_43 Start: 35176, Stop: 34712, Start Num: 51

Candidate Starts for Adnama\_43:

(38, 35215), (Start: 45 @35197 has 1 MA's), (Start: 51 @35176 has 147 MA's), (Start: 56 @35152 has 4 MA's), (59, 35143), (71, 35110), (74, 35098), (75, 35095), (84, 35032), (88, 34978), (95, 34915), (102, 34873), (105, 34831), (111, 34780),

Gene: Akhila\_80 Start: 48623, Stop: 49036, Start Num: 51

Candidate Starts for Akhila\_80:

(20, 48518), (Start: 51 @48623 has 147 MA's), (59, 48656), (60, 48659), (67, 48686), (69, 48692), (84, 48812), (88, 48866), (95, 48929), (102, 48971), (105, 49013),

Gene: AmericanBeauty\_42 Start: 34659, Stop: 34192, Start Num: 51

Candidate Starts for AmericanBeauty\_42:

(29, 34719), (Start: 51 @34659 has 147 MA's), (Start: 56 @34635 has 4 MA's), (59, 34626), (84, 34512), (88, 34458), (95, 34395), (102, 34353), (105, 34311), (111, 34260),

Gene: Applejack\_58 Start: 39182, Stop: 38778, Start Num: 52

Candidate Starts for Applejack\_58:

(18, 39293), (32, 39236), (35, 39224), (41, 39215), (Start: 52 @39182 has 1 MA's), (58, 39152), (65, 39128), (105, 38801),

Gene: Ardmore\_71 Start: 44747, Stop: 45160, Start Num: 51

Candidate Starts for Ardmore\_71:

(Start: 51 @44747 has 147 MA's), (59, 44780), (60, 44783), (67, 44810), (69, 44816), (84, 44936), (95, 45053), (102, 45095), (105, 45137),

Gene: Argent26\_42 Start: 34659, Stop: 34195, Start Num: 51

Candidate Starts for Argent26\_42:

(38, 34698), (Start: 45 @34680 has 1 MA's), (Start: 51 @34659 has 147 MA's), (Start: 56 @34635 has 4 MA's), (59, 34626), (71, 34593), (74, 34581), (75, 34578), (84, 34515), (88, 34461), (95, 34398), (102, 34356), (105, 34314), (111, 34263),

Gene: Asriel\_39 Start: 33513, Stop: 33049, Start Num: 51

Candidate Starts for Asriel\_39:

(38, 33552), (Start: 45 @33534 has 1 MA's), (Start: 51 @33513 has 147 MA's), (Start: 56 @33489 has 4 MA's), (59, 33480), (71, 33447), (74, 33435), (75, 33432), (84, 33369), (88, 33315), (95, 33252), (102, 33210), (105, 33168), (111, 33117),

Gene: Aubs\_84 Start: 50517, Stop: 50876, Start Num: 51

Candidate Starts for Aubs\_84:

(24, 50424), (26, 50448), (Start: 51 @50517 has 147 MA's), (Start: 55 @50538 has 1 MA's), (59, 50550), (88, 50706), (95, 50769), (102, 50811), (105, 50853),

Gene: BaboJay\_40 Start: 34740, Stop: 34270, Start Num: 51

Candidate Starts for BaboJay\_40:

(Start: 23 @34833 has 2 MA's), (26, 34809), (Start: 51 @34740 has 147 MA's), (Start: 56 @34713 has 4 MA's), (59, 34704), (84, 34590), (88, 34536), (95, 34473), (102, 34431), (105, 34389), (111, 34338),

Gene: BadStone\_41 Start: 35477, Stop: 35010, Start Num: 51

Candidate Starts for BadStone\_41:

(Start: 51 @35477 has 147 MA's), (Start: 56 @35453 has 4 MA's), (59, 35444), (84, 35330), (88, 35276), (95, 35213), (102, 35171), (105, 35129), (111, 35078),

Gene: Balomoji\_40 Start: 35070, Stop: 34606, Start Num: 51

Candidate Starts for Balomoji\_40:

(Start: 51 @35070 has 147 MA's), (Start: 56 @35046 has 4 MA's), (59, 35037), (71, 35004), (74, 34992), (75, 34989), (81, 34941), (84, 34926), (88, 34872), (95, 34809), (102, 34767), (105, 34725), (111, 34674),

Gene: Barbarian\_39 Start: 33513, Stop: 33049, Start Num: 51

Candidate Starts for Barbarian\_39:

(38, 33552), (Start: 45 @33534 has 1 MA's), (Start: 51 @33513 has 147 MA's), (Start: 56 @33489 has 4 MA's), (59, 33480), (71, 33447), (74, 33435), (75, 33432), (84, 33369), (88, 33315), (95, 33252), (102, 33210), (105, 33168), (111, 33117),

Gene: Bask21\_40 Start: 33847, Stop: 33383, Start Num: 51

Candidate Starts for Bask21\_40:

(38, 33886), (Start: 45 @33868 has 1 MA's), (Start: 51 @33847 has 147 MA's), (Start: 56 @33823 has 4 MA's), (59, 33814), (71, 33781), (74, 33769), (75, 33766), (84, 33703), (88, 33649), (95, 33586), (102, 33544), (105, 33502), (111, 33451),

Gene: Bench\_43 Start: 34755, Stop: 34288, Start Num: 51

Candidate Starts for Bench\_43:

(Start: 51 @34755 has 147 MA's), (Start: 56 @34731 has 4 MA's), (59, 34722), (84, 34608), (88, 34554), (95, 34491), (102, 34449), (105, 34407), (111, 34356),

Gene: BilboSwaggins\_41 Start: 35347, Stop: 34880, Start Num: 51

Candidate Starts for BilboSwaggins\_41:

(Start: 23 @35440 has 2 MA's), (26, 35416), (Start: 51 @35347 has 147 MA's), (Start: 56 @35323 has 4 MA's), (59, 35314), (84, 35200), (88, 35146), (95, 35083), (102, 35041), (105, 34999), (111, 34948),

Gene: Bipolar\_86 Start: 51239, Stop: 51601, Start Num: 51

Candidate Starts for Bipolar\_86:

(Start: 51 @51239 has 147 MA's), (59, 51272), (60, 51275), (67, 51302), (69, 51308), (84, 51428), (89, 51488), (105, 51578),

Gene: Bluefalcon\_54 Start: 39442, Stop: 39023, Start Num: 51

Candidate Starts for Bluefalcon\_54:

(Start: 51 @39442 has 147 MA's), (Start: 55 @39415 has 1 MA's), (59, 39403), (67, 39373), (84, 39247), (105, 39046),

Gene: Bobby\_68 Start: 49135, Stop: 48737, Start Num: 51

Candidate Starts for Bobby\_68:

(Start: 51 @49135 has 147 MA's), (60, 49099), (76, 49030), (79, 48973), (83, 48958), (84, 48949), (85, 48943), (92, 48856), (97, 48838), (99, 48826), (104, 48784), (105, 48760),

Gene: Bobi\_88 Start: 51408, Stop: 51779, Start Num: 51

Candidate Starts for Bobi\_88:

(Start: 51 @51408 has 147 MA's), (Start: 56 @51432 has 4 MA's), (59, 51441), (81, 51540), (84, 51555), (105, 51756),

Gene: BodEinwohner17\_91 Start: 52011, Stop: 52400, Start Num: 44

Candidate Starts for BodEinwohner17\_91:

(Start: 44 @52011 has 1 MA's), (Start: 56 @52053 has 4 MA's), (59, 52062), (81, 52161), (84, 52176), (105, 52377),

Gene: Brushbloom\_90 Start: 50532, Stop: 50876, Start Num: 56

Candidate Starts for Brushbloom\_90:

(Start: 51 @50508 has 147 MA's), (Start: 56 @50532 has 4 MA's), (59, 50541), (71, 50574), (74, 50586), (75, 50589), (81, 50637), (84, 50652), (105, 50853),

Gene: Bubbles123\_78 Start: 49394, Stop: 49753, Start Num: 51

Candidate Starts for Bubbles123\_78:

(24, 49301), (26, 49325), (Start: 51 @49394 has 147 MA's), (Start: 55 @49415 has 1 MA's), (59, 49427), (105, 49730),

Gene: Buck\_40 Start: 34705, Stop: 34334, Start Num: 51

Candidate Starts for Buck\_40:

(38, 34744), (Start: 45 @34726 has 1 MA's), (Start: 51 @34705 has 147 MA's), (Start: 56 @34681 has 4 MA's), (59, 34672), (84, 34558), (88, 34504), (95, 34441), (102, 34399), (105, 34357),

Gene: BugsBunny\_38 Start: 34241, Stop: 33777, Start Num: 51

Candidate Starts for BugsBunny\_38:

(38, 34280), (Start: 45 @34262 has 1 MA's), (Start: 51 @34241 has 147 MA's), (Start: 56 @34217 has 4 MA's), (59, 34208), (71, 34175), (74, 34163), (75, 34160), (84, 34097), (88, 34043), (95, 33980), (102, 33938), (105, 33896), (111, 33845),

Gene: Cactus\_41 Start: 33880, Stop: 33416, Start Num: 51

Candidate Starts for Cactus\_41:

(38, 33919), (Start: 45 @33901 has 1 MA's), (Start: 51 @33880 has 147 MA's), (Start: 56 @33856 has 4 MA's), (59, 33847), (71, 33814), (74, 33802), (75, 33799), (84, 33736), (88, 33682), (95, 33619), (102, 33577), (105, 33535), (111, 33484),

Gene: CaptainTrips\_84 Start: 49276, Stop: 49686, Start Num: 57

Candidate Starts for CaptainTrips\_84:

(Start: 57 @49276 has 7 MA's), (66, 49312), (77, 49381), (80, 49435), (81, 49438), (83, 49453), (84, 49462), (85, 49468), (89, 49522), (105, 49663),

Gene: Carcharodon\_58 Start: 37518, Stop: 37880, Start Num: 62

Candidate Starts for Carcharodon\_58:

(13, 37275), (27, 37392), (54, 37488), (Start: 62 @37518 has 15 MA's), (70, 37551), (87, 37692), (90, 37704), (91, 37719), (92, 37743), (94, 37755), (95, 37761), (101, 37794),

Gene: ChosenOne\_41 Start: 33974, Stop: 33603, Start Num: 51

Candidate Starts for ChosenOne\_41:

(38, 34013), (Start: 45 @33995 has 1 MA's), (Start: 51 @33974 has 147 MA's), (Start: 56 @33950 has 4 MA's), (59, 33941), (84, 33827), (88, 33773), (95, 33710), (102, 33668), (105, 33626),

Gene: Cjw1\_41 Start: 35651, Stop: 35187, Start Num: 51

Candidate Starts for Cjw1\_41:

(38, 35690), (Start: 45 @35672 has 1 MA's), (Start: 51 @35651 has 147 MA's), (Start: 56 @35627 has 4 MA's), (59, 35618), (71, 35585), (74, 35573), (75, 35570), (84, 35507), (88, 35453), (95, 35390), (102, 35348), (105, 35306), (111, 35255),

Gene: Command613\_41 Start: 34919, Stop: 34455, Start Num: 51

Candidate Starts for Command613\_41:

(38, 34958), (Start: 45 @34940 has 1 MA's), (Start: 51 @34919 has 147 MA's), (Start: 56 @34895 has 4 MA's), (59, 34886), (71, 34853), (74, 34841), (75, 34838), (84, 34775), (88, 34721), (95, 34658), (102, 34616), (105, 34574), (111, 34523),

Gene: CrystalP\_42 Start: 35347, Stop: 34880, Start Num: 51

Candidate Starts for CrystalP\_42:

(Start: 23 @35440 has 2 MA's), (26, 35416), (Start: 51 @35347 has 147 MA's), (Start: 56 @35323 has 4 MA's), (59, 35314), (84, 35200), (88, 35146), (95, 35083), (102, 35041), (105, 34999), (111, 34948),

Gene: Czyszczone1\_42 Start: 34681, Stop: 34172, Start Num: 51

Candidate Starts for Czyszczone1\_42:

(Start: 51 @34681 has 147 MA's), (Start: 56 @34657 has 4 MA's), (59, 34648), (60, 34645), (67, 34618), (69, 34612), (84, 34492), (88, 34438), (95, 34375), (102, 34333), (105, 34291), (111, 34240),

Gene: DaWorst\_83 Start: 48921, Stop: 49292, Start Num: 51

Candidate Starts for DaWorst\_83:

(Start: 51 @48921 has 147 MA's), (Start: 56 @48945 has 4 MA's), (59, 48954), (81, 49053), (84, 49068), (105, 49269),

Gene: Daikon\_41 Start: 35091, Stop: 34627, Start Num: 51

Candidate Starts for Daikon\_41:

(Start: 51 @35091 has 147 MA's), (Start: 56 @35067 has 4 MA's), (59, 35058), (71, 35025), (74, 35013), (75, 35010), (81, 34962), (84, 34947), (88, 34893), (95, 34830), (102, 34788), (105, 34746), (111, 34695),

Gene: Demsculpinboyz\_91 Start: 47365, Stop: 47763, Start Num: 51

Candidate Starts for Demsculpinboyz\_91:

(16, 47227), (Start: 51 @47365 has 147 MA's), (Start: 55 @47386 has 1 MA's), (60, 47401), (76, 47470), (79, 47527), (83, 47542), (84, 47551), (85, 47557), (92, 47644), (97, 47662), (99, 47674), (104, 47716), (105, 47740),

Gene: DillTech15\_88 Start: 49164, Stop: 49511, Start Num: 56

Candidate Starts for DillTech15\_88:

(39, 49107), (Start: 51 @49140 has 147 MA's), (Start: 56 @49164 has 4 MA's), (59, 49173), (81, 49272), (84, 49287), (105, 49488),

Gene: DoRead\_89 Start: 48009, Stop: 48383, Start Num: 51

Candidate Starts for DoRead\_89:

(Start: 51 @48009 has 147 MA's), (Start: 55 @48030 has 1 MA's), (60, 48045), (84, 48171), (92, 48264), (97, 48282), (99, 48294), (104, 48336), (105, 48360),

Gene: Donkeykong\_90 Start: 52122, Stop: 52481, Start Num: 51

Candidate Starts for Donkeykong\_90:

(24, 52029), (26, 52053), (Start: 51 @52122 has 147 MA's), (Start: 55 @52143 has 1 MA's), (59, 52155), (88, 52311), (95, 52374), (102, 52416), (105, 52458),

Gene: Doomphist\_88 Start: 50710, Stop: 51087, Start Num: 46

Candidate Starts for Doomphist\_88:

(Start: 46 @50710 has 7 MA's), (Start: 56 @50752 has 4 MA's), (59, 50761), (84, 50875), (92, 50968), (97, 50986), (99, 50998), (104, 51040), (105, 51064),

Gene: Dorothy\_83 Start: 51040, Stop: 51411, Start Num: 51

Candidate Starts for Dorothy\_83:

(12, 50839), (14, 50851), (17, 50911), (19, 50923), (28, 50977), (Start: 51 @51040 has 147 MA's), (Start: 56 @51064 has 4 MA's), (59, 51073), (81, 51172), (84, 51187), (105, 51388),

Gene: Doug\_82 Start: 50547, Stop: 50909, Start Num: 51

Candidate Starts for Doug\_82:

(Start: 51 @50547 has 147 MA's), (59, 50580), (60, 50583), (67, 50610), (69, 50616), (84, 50736), (89, 50796), (105, 50886),

Gene: DrDrey\_43 Start: 35973, Stop: 35509, Start Num: 51

Candidate Starts for DrDrey\_43:

(29, 36033), (Start: 51 @35973 has 147 MA's), (Start: 56 @35949 has 4 MA's), (59, 35940), (71, 35907), (74, 35895), (75, 35892), (84, 35829), (88, 35775), (95, 35712), (102, 35670), (105, 35628), (111, 35577),

Gene: Dumbo\_41 Start: 34403, Stop: 33894, Start Num: 51

Candidate Starts for Dumbo\_41:

(36, 34442), (Start: 44 @34424 has 1 MA's), (Start: 51 @34403 has 147 MA's), (59, 34370), (60, 34367), (67, 34340), (69, 34334), (84, 34214), (88, 34160), (95, 34097), (102, 34055), (105, 34013), (111, 33962),

Gene: Duplicity\_56 Start: 36775, Stop: 37137, Start Num: 62

Candidate Starts for Duplicity\_56:

(27, 36649), (54, 36745), (Start: 62 @36775 has 15 MA's), (70, 36808), (87, 36949), (90, 36961), (91, 36976), (92, 37000), (94, 37012), (95, 37018), (101, 37051),

Gene: Dusk\_41 Start: 35137, Stop: 34670, Start Num: 51

Candidate Starts for Dusk\_41:

(Start: 51 @35137 has 147 MA's), (Start: 56 @35113 has 4 MA's), (59, 35104), (84, 34990), (88, 34936), (95, 34873), (102, 34831), (105, 34789), (111, 34738),

Gene: EGUunicorn\_57 Start: 36355, Stop: 36714, Start Num: 62

Candidate Starts for EGUunicorn\_57:

(27, 36229), (54, 36325), (Start: 62 @36355 has 15 MA's), (70, 36388), (86, 36520), (96, 36595), (100, 36622), (107, 36691), (108, 36697),

Gene: Easy2Say\_42 Start: 35947, Stop: 35438, Start Num: 51

Candidate Starts for Easy2Say\_42:

(36, 35986), (Start: 44 @35968 has 1 MA's), (Start: 51 @35947 has 147 MA's), (59, 35914), (60, 35911), (67, 35884), (69, 35878), (84, 35758), (88, 35704), (95, 35641), (102, 35599), (105, 35557), (111, 35506),

Gene: EleanorGeorge\_82 Start: 49312, Stop: 49815, Start Num: 57

Candidate Starts for EleanorGeorge\_82:

(Start: 57 @49312 has 7 MA's), (63, 49333), (66, 49348), (72, 49372), (84, 49465), (89, 49525), (105, 49666), (109, 49687), (110, 49708), (112, 49735), (116, 49765), (118, 49774), (119, 49795),

Gene: Elite2014\_40 Start: 33973, Stop: 33602, Start Num: 51

Candidate Starts for Elite2014\_40:

(38, 34012), (Start: 45 @33994 has 1 MA's), (Start: 51 @33973 has 147 MA's), (Start: 56 @33949 has 4 MA's), (59, 33940), (84, 33826), (88, 33772), (95, 33709), (102, 33667), (105, 33625),

Gene: Elph10\_41 Start: 34122, Stop: 33658, Start Num: 51

Candidate Starts for Elph10\_41:

(Start: 51 @34122 has 147 MA's), (Start: 56 @34098 has 4 MA's), (59, 34089), (71, 34056), (74, 34044), (75, 34041), (84, 33978), (88, 33924), (95, 33861), (102, 33819), (105, 33777), (111, 33726),

Gene: Emmina\_44 Start: 34912, Stop: 34541, Start Num: 50

Candidate Starts for Emmina\_44:

(Start: 50 @34912 has 2 MA's), (Start: 56 @34885 has 4 MA's), (59, 34876), (71, 34843), (74, 34831), (75, 34828), (84, 34765), (88, 34711), (95, 34648), (102, 34606), (105, 34564),

Gene: Empress\_83 Start: 49521, Stop: 49898, Start Num: 46

Candidate Starts for Empress\_83:

(Start: 46 @49521 has 7 MA's), (Start: 56 @49563 has 4 MA's), (59, 49572), (84, 49686), (92, 49779), (97, 49797), (99, 49809), (104, 49851), (105, 49875),

Gene: Eureka\_40 Start: 34965, Stop: 34495, Start Num: 51

Candidate Starts for Eureka\_40:

(Start: 51 @34965 has 147 MA's), (Start: 56 @34941 has 4 MA's), (59, 34932), (81, 34833), (84, 34818), (92, 34725), (97, 34707), (99, 34695), (104, 34653), (105, 34629), (111, 34578),

Gene: FairyPath\_40 Start: 34849, Stop: 34400, Start Num: 51

Candidate Starts for FairyPath\_40:

(Start: 51 @34849 has 147 MA's), (Start: 55 @34828 has 1 MA's), (59, 34816), (84, 34708), (92, 34615), (97, 34597), (99, 34585), (104, 34543), (105, 34519), (111, 34468),

Gene: Filch\_43 Start: 34650, Stop: 34186, Start Num: 51

Candidate Starts for Filch\_43:

(29, 34710), (Start: 51 @34650 has 147 MA's), (Start: 56 @34626 has 4 MA's), (59, 34617), (71, 34584), (74, 34572), (75, 34569), (84, 34506), (88, 34452), (95, 34389), (102, 34347), (105, 34305), (111, 34254),

Gene: FireRed\_40 Start: 34680, Stop: 34216, Start Num: 51

Candidate Starts for FireRed\_40:

(38, 34719), (Start: 45 @34701 has 1 MA's), (Start: 51 @34680 has 147 MA's), (Start: 56 @34656 has 4 MA's), (59, 34647), (71, 34614), (74, 34602), (75, 34599), (84, 34536), (88, 34482), (95, 34419), (102, 34377), (105, 34335), (111, 34284),

Gene: Flathead\_85 Start: 49803, Stop: 50174, Start Num: 51

Candidate Starts for Flathead\_85:

(Start: 51 @49803 has 147 MA's), (Start: 56 @49827 has 4 MA's), (59, 49836), (81, 49935), (84, 49950), (105, 50151),

Gene: Fruitloop\_85 Start: 51126, Stop: 51539, Start Num: 51

Candidate Starts for Fruitloop\_85:

(20, 51021), (Start: 51 @51126 has 147 MA's), (59, 51159), (60, 51162), (67, 51189), (69, 51195), (84, 51315), (88, 51369), (95, 51432), (102, 51474), (105, 51516),

Gene: Fulbright\_56 Start: 36212, Stop: 36574, Start Num: 62

Candidate Starts for Fulbright\_56:

(13, 35969), (27, 36086), (54, 36182), (Start: 62 @36212 has 15 MA's), (70, 36245), (87, 36386), (90, 36398), (91, 36413), (92, 36437), (94, 36449), (95, 36455), (101, 36488),

Gene: Gage\_42 Start: 34659, Stop: 34195, Start Num: 51

Candidate Starts for Gage\_42:

(38, 34698), (Start: 45 @34680 has 1 MA's), (Start: 51 @34659 has 147 MA's), (Start: 56 @34635 has 4 MA's), (59, 34626), (71, 34593), (74, 34581), (75, 34578), (84, 34515), (88, 34461), (95, 34398), (102, 34356), (105, 34314), (111, 34263),

Gene: Gandolph\_83 Start: 47074, Stop: 47445, Start Num: 51

Candidate Starts for Gandolph\_83:

(Start: 51 @47074 has 147 MA's), (Start: 56 @47098 has 4 MA's), (59, 47107), (84, 47221), (89, 47281), (105, 47422),

Gene: Gator\_39 Start: 34961, Stop: 34497, Start Num: 51

Candidate Starts for Gator\_39:

(Start: 51 @34961 has 147 MA's), (Start: 56 @34937 has 4 MA's), (59, 34928), (71, 34895), (74, 34883), (75, 34880), (84, 34817), (88, 34763), (95, 34700), (102, 34658), (105, 34616), (111, 34565),

Gene: Gemini\_43 Start: 35176, Stop: 34712, Start Num: 51

Candidate Starts for Gemini\_43:

(38, 35215), (Start: 45 @35197 has 1 MA's), (Start: 51 @35176 has 147 MA's), (Start: 56 @35152 has 4 MA's), (59, 35143), (71, 35110), (74, 35098), (75, 35095), (84, 35032), (88, 34978), (95, 34915), (102, 34873), (105, 34831), (111, 34780),

Gene: Gex\_59 Start: 37534, Stop: 37896, Start Num: 62

Candidate Starts for Gex\_59:

(13, 37291), (27, 37408), (54, 37504), (Start: 62 @37534 has 15 MA's), (70, 37567), (87, 37708), (90, 37720), (91, 37735), (92, 37759), (94, 37771), (95, 37777), (101, 37810),

Gene: Glexan\_39 Start: 34949, Stop: 34485, Start Num: 51

Candidate Starts for Glexan\_39:

(Start: 51 @34949 has 147 MA's), (Start: 56 @34925 has 4 MA's), (59, 34916), (71, 34883), (74, 34871), (75, 34868), (81, 34820), (84, 34805), (88, 34751), (95, 34688), (102, 34646), (105, 34604), (111, 34553),

Gene: Goku\_40 Start: 34694, Stop: 34224, Start Num: 51

Candidate Starts for Goku\_40:

(Start: 51 @34694 has 147 MA's), (Start: 56 @34670 has 4 MA's), (59, 34661), (81, 34562), (84, 34547), (92, 34454), (97, 34436), (99, 34424), (104, 34382), (105, 34358), (111, 34307),

Gene: GoldenSpark\_42 Start: 34659, Stop: 34195, Start Num: 51

Candidate Starts for GoldenSpark\_42:

(38, 34698), (Start: 45 @34680 has 1 MA's), (Start: 51 @34659 has 147 MA's), (Start: 56 @34635 has 4 MA's), (59, 34626), (71, 34593), (74, 34581), (75, 34578), (84, 34515), (88, 34461), (95, 34398), (102, 34356), (105, 34314), (111, 34263),

Gene: Goldilocks\_41 Start: 34161, Stop: 33697, Start Num: 51

Candidate Starts for Goldilocks\_41:

(38, 34200), (Start: 45 @34182 has 1 MA's), (Start: 51 @34161 has 147 MA's), (Start: 56 @34137 has 4 MA's), (59, 34128), (71, 34095), (74, 34083), (75, 34080), (84, 34017), (88, 33963), (95, 33900), (102, 33858), (105, 33816), (111, 33765),

Gene: Gonephishing\_71 Start: 47256, Stop: 46885, Start Num: 51

Candidate Starts for Gonephishing\_71:

(34, 47295), (Start: 44 @47277 has 1 MA's), (Start: 51 @47256 has 147 MA's), (Start: 56 @47232 has 4 MA's), (59, 47223), (81, 47124), (84, 47109), (105, 46908),

Gene: GooberAzure\_42 Start: 34659, Stop: 34195, Start Num: 51

Candidate Starts for GooberAzure\_42:

(38, 34698), (Start: 45 @34680 has 1 MA's), (Start: 51 @34659 has 147 MA's), (Start: 56 @34635 has 4 MA's), (59, 34626), (71, 34593), (74, 34581), (75, 34578), (84, 34515), (88, 34461), (95, 34398), (102, 34356), (105, 34314), (111, 34263),

Gene: Guppsters\_78 Start: 47339, Stop: 47707, Start Num: 51

Candidate Starts for Guppsters\_78:

(Start: 51 @47339 has 147 MA's), (Start: 56 @47363 has 4 MA's), (59, 47372), (71, 47405), (74, 47417), (75, 47420), (81, 47468), (84, 47483), (105, 47684),

Gene: Gwendoluna\_64 Start: 42781, Stop: 42374, Start Num: 53

Candidate Starts for Gwendoluna\_64:

(Start: 53 @42781 has 1 MA's), (59, 42748), (60, 42745), (67, 42718), (69, 42712), (84, 42592), (93, 42493), (94, 42490), (105, 42397),

Gene: HanKaySha\_42 Start: 34633, Stop: 34169, Start Num: 51

Candidate Starts for HanKaySha\_42:

(29, 34693), (Start: 51 @34633 has 147 MA's), (Start: 56 @34609 has 4 MA's), (59, 34600), (71, 34567), (74, 34555), (75, 34552), (84, 34489), (88, 34435), (95, 34372), (102, 34330), (105, 34288), (111, 34237),

Gene: Hannaconda\_68 Start: 45250, Stop: 44864, Start Num: 51

Candidate Starts for Hannaconda\_68:

(24, 45343), (26, 45319), (Start: 51 @45250 has 147 MA's), (Start: 55 @45229 has 1 MA's), (60, 45214), (84, 45088), (89, 45028), (105, 44887),



Gene: Harella\_41 Start: 35465, Stop: 35001, Start Num: 51

Candidate Starts for Harella\_41:

(Start: 51 @35465 has 147 MA's), (Start: 56 @35441 has 4 MA's), (59, 35432), (71, 35399), (74, 35387), (75, 35384), (81, 35336), (84, 35321), (88, 35267), (95, 35204), (102, 35162), (105, 35120), (111, 35069),

Gene: Harley\_85 Start: 49675, Stop: 50043, Start Num: 51

Candidate Starts for Harley\_85:

(34, 49636), (Start: 44 @49654 has 1 MA's), (Start: 51 @49675 has 147 MA's), (Start: 56 @49699 has 4 MA's), (59, 49708), (71, 49741), (74, 49753), (75, 49756), (81, 49804), (84, 49819), (105, 50020),

Gene: Hegedechwinu\_83 Start: 48330, Stop: 48701, Start Num: 51

Candidate Starts for Hegedechwinu\_83:

(33, 48294), (Start: 51 @48330 has 147 MA's), (Start: 56 @48354 has 4 MA's), (59, 48363), (71, 48396), (84, 48477), (105, 48678),

Gene: Henry\_42 Start: 35356, Stop: 34889, Start Num: 51

Candidate Starts for Henry\_42:

(Start: 51 @35356 has 147 MA's), (Start: 56 @35332 has 4 MA's), (59, 35323), (84, 35209), (88, 35155), (95, 35092), (102, 35050), (105, 35008), (111, 34957),

Gene: Highbury\_42 Start: 34424, Stop: 33957, Start Num: 51

Candidate Starts for Highbury\_42:

(Start: 51 @34424 has 147 MA's), (Start: 56 @34400 has 4 MA's), (59, 34391), (84, 34277), (88, 34223), (95, 34160), (102, 34118), (105, 34076), (111, 34025),

Gene: Hoonter\_42 Start: 34659, Stop: 34195, Start Num: 51

Candidate Starts for Hoonter\_42:

(38, 34698), (Start: 45 @34680 has 1 MA's), (Start: 51 @34659 has 147 MA's), (Start: 56 @34635 has 4 MA's), (59, 34626), (71, 34593), (74, 34581), (75, 34578), (84, 34515), (88, 34461), (95, 34398), (102, 34356), (105, 34314), (111, 34263),

Gene: Hokey\_43 Start: 35168, Stop: 34704, Start Num: 51

Candidate Starts for Hokey\_43:

(29, 35228), (Start: 51 @35168 has 147 MA's), (Start: 56 @35144 has 4 MA's), (59, 35135), (71, 35102), (74, 35090), (75, 35087), (84, 35024), (88, 34970), (95, 34907), (102, 34865), (105, 34823), (111, 34772),

Gene: HufflyPuff\_39 Start: 34636, Stop: 34172, Start Num: 51

Candidate Starts for HufflyPuff\_39:

(38, 34675), (Start: 45 @34657 has 1 MA's), (Start: 51 @34636 has 147 MA's), (Start: 56 @34612 has 4 MA's), (59, 34603), (71, 34570), (74, 34558), (75, 34555), (84, 34492), (88, 34438), (95, 34375), (102, 34333), (105, 34291), (111, 34240),

Gene: IHOP\_40 Start: 34911, Stop: 34444, Start Num: 51

Candidate Starts for IHOP\_40:

(Start: 23 @35004 has 2 MA's), (26, 34980), (Start: 51 @34911 has 147 MA's), (Start: 56 @34887 has 4 MA's), (59, 34878), (84, 34764), (88, 34710), (95, 34647), (102, 34605), (105, 34563), (111, 34512),

Gene: Ibhubesi\_83 Start: 48014, Stop: 48424, Start Num: 57

Candidate Starts for Ibhubesi\_83:

(Start: 57 @48014 has 7 MA's), (66, 48050), (77, 48119), (81, 48176), (83, 48191), (84, 48200), (85, 48206), (89, 48260), (105, 48401),

Gene: Icee\_39 Start: 34327, Stop: 33863, Start Num: 51

Candidate Starts for Icee\_39:

(38, 34366), (Start: 45 @34348 has 1 MA's), (Start: 51 @34327 has 147 MA's), (Start: 56 @34303 has 4 MA's), (59, 34294), (71, 34261), (74, 34249), (75, 34246), (84, 34183), (88, 34129), (95, 34066), (102, 34024), (105, 33982), (111, 33931),

Gene: Inca\_39 Start: 33436, Stop: 32969, Start Num: 51

Candidate Starts for Inca\_39:

(Start: 23 @33529 has 2 MA's), (26, 33505), (Start: 51 @33436 has 147 MA's), (Start: 56 @33412 has 4 MA's), (59, 33403), (84, 33289), (88, 33235), (95, 33172), (102, 33130), (105, 33088), (111, 33037),

Gene: Inventum\_80 Start: 49225, Stop: 49596, Start Num: 51

Candidate Starts for Inventum\_80:

(12, 49024), (14, 49036), (17, 49096), (19, 49108), (28, 49162), (Start: 51 @49225 has 147 MA's), (Start: 56 @49249 has 4 MA's), (59, 49258), (81, 49357), (84, 49372), (105, 49573),

Gene: IrishSherpFalk\_83 Start: 50030, Stop: 50401, Start Num: 51

Candidate Starts for IrishSherpFalk\_83:

(Start: 51 @50030 has 147 MA's), (Start: 56 @50054 has 4 MA's), (59, 50063), (81, 50162), (84, 50177), (105, 50378),

Gene: JalFarm20\_90 Start: 50347, Stop: 50718, Start Num: 51

Candidate Starts for JalFarm20\_90:

(33, 50311), (Start: 51 @50347 has 147 MA's), (Start: 56 @50371 has 4 MA's), (59, 50380), (71, 50413), (84, 50494), (105, 50695),

Gene: James\_86 Start: 51529, Stop: 51900, Start Num: 51

Candidate Starts for James\_86:

(Start: 51 @51529 has 147 MA's), (Start: 56 @51553 has 4 MA's), (59, 51562), (81, 51661), (84, 51676), (105, 51877),

Gene: Jarcob\_85 Start: 51167, Stop: 51499, Start Num: 61

Candidate Starts for Jarcob\_85:

(Start: 61 @51167 has 9 MA's), (81, 51260), (84, 51275), (105, 51476),

Gene: JeTaime\_43 Start: 35692, Stop: 35228, Start Num: 51

Candidate Starts for JeTaime\_43:

(29, 35752), (Start: 51 @35692 has 147 MA's), (Start: 56 @35668 has 4 MA's), (59, 35659), (71, 35626), (74, 35614), (75, 35611), (84, 35548), (88, 35494), (95, 35431), (102, 35389), (105, 35347), (111, 35296),

Gene: JoeyJr\_86 Start: 51134, Stop: 51505, Start Num: 51

Candidate Starts for JoeyJr\_86:

(Start: 51 @51134 has 147 MA's), (Start: 56 @51158 has 4 MA's), (59, 51167), (81, 51266), (84, 51281), (105, 51482),

Gene: KashFlow\_66 Start: 45121, Stop: 44753, Start Num: 51

Candidate Starts for KashFlow\_66:

(21, 45214), (25, 45190), (Start: 51 @45121 has 147 MA's), (Start: 56 @45097 has 4 MA's), (59, 45088), (71, 45055), (74, 45043), (75, 45040), (84, 44977), (89, 44917), (105, 44776),

Gene: Kenuha5\_79 Start: 50155, Stop: 50526, Start Num: 51

Candidate Starts for Kenuha5\_79:

(21, 50062), (25, 50086), (Start: 51 @50155 has 147 MA's), (Start: 56 @50179 has 4 MA's), (59, 50188), (84, 50302), (105, 50503),

Gene: Kimchi\_42 Start: 34662, Stop: 34198, Start Num: 51

Candidate Starts for Kimchi\_42:

(38, 34701), (Start: 45 @34683 has 1 MA's), (Start: 51 @34662 has 147 MA's), (Start: 56 @34638 has 4 MA's), (59, 34629), (71, 34596), (74, 34584), (75, 34581), (84, 34518), (88, 34464), (95, 34401), (102, 34359), (105, 34317), (111, 34266),

Gene: KingMidas\_84 Start: 49936, Stop: 50313, Start Num: 46

Candidate Starts for KingMidas\_84:

(Start: 46 @49936 has 7 MA's), (Start: 56 @49978 has 4 MA's), (59, 49987), (81, 50086), (84, 50101), (92, 50194), (97, 50212), (99, 50224), (104, 50266), (105, 50290),

Gene: Kostya\_41 Start: 34766, Stop: 34206, Start Num: 23

Candidate Starts for Kostya\_41:

(Start: 23 @34766 has 2 MA's), (47, 34682), (49, 34673), (73, 34592), (84, 34526), (88, 34472), (95, 34409), (102, 34367), (105, 34325), (111, 34274),

Gene: KristaRAM\_82 Start: 48874, Stop: 49245, Start Num: 51

Candidate Starts for KristaRAM\_82:

(12, 48673), (14, 48685), (17, 48745), (19, 48757), (28, 48811), (Start: 51 @48874 has 147 MA's), (Start: 56 @48898 has 4 MA's), (59, 48907), (81, 49006), (84, 49021), (89, 49081), (105, 49222),

Gene: Kumao\_61 Start: 43622, Stop: 44035, Start Num: 51

Candidate Starts for Kumao\_61:

(20, 43517), (Start: 51 @43622 has 147 MA's), (59, 43655), (60, 43658), (67, 43685), (69, 43691), (84, 43811), (88, 43865), (95, 43928), (102, 43970), (105, 44012),

Gene: Kykar\_62 Start: 41465, Stop: 41115, Start Num: 61

Candidate Starts for Kykar\_62:

(15, 41666), (48, 41522), (49, 41519), (Start: 61 @41465 has 9 MA's), (66, 41444), (84, 41333), (87, 41282), (93, 41234), (94, 41231), (105, 41138),

Gene: Lamina13\_65 Start: 42283, Stop: 41903, Start Num: 61

Candidate Starts for Lamina13\_65:

(15, 42484), (48, 42340), (49, 42337), (Start: 61 @42283 has 9 MA's), (66, 42262), (70, 42247), (84, 42121), (87, 42070), (93, 42022), (94, 42019), (105, 41926),

Gene: Leperchaun\_84 Start: 50368, Stop: 50739, Start Num: 51

Candidate Starts for Leperchaun\_84:

(Start: 51 @50368 has 147 MA's), (Start: 56 @50392 has 4 MA's), (59, 50401), (81, 50500), (84, 50515), (105, 50716),

Gene: Lilac\_42 Start: 34149, Stop: 33685, Start Num: 51

Candidate Starts for Lilac\_42:

(38, 34188), (Start: 45 @34170 has 1 MA's), (Start: 51 @34149 has 147 MA's), (Start: 56 @34125 has 4 MA's), (59, 34116), (71, 34083), (74, 34071), (75, 34068), (84, 34005), (88, 33951), (95, 33888), (102, 33846), (105, 33804), (111, 33753),

Gene: Lilizi\_42 Start: 34462, Stop: 33893, Start Num: 23

Candidate Starts for Lilizi\_42:

(Start: 23 @34462 has 2 MA's), (Start: 45 @34381 has 1 MA's), (Start: 51 @34360 has 147 MA's), (Start: 56 @34336 has 4 MA's), (59, 34327), (84, 34213), (88, 34159), (95, 34096), (102, 34054), (105, 34012), (111, 33961),

Gene: Lilpickle\_40 Start: 33973, Stop: 33602, Start Num: 51

Candidate Starts for Lilpickle\_40:

(38, 34012), (Start: 45 @33994 has 1 MA's), (Start: 51 @33973 has 147 MA's), (Start: 56 @33949 has 4 MA's), (59, 33940), (84, 33826), (88, 33772), (95, 33709), (102, 33667), (105, 33625),

Gene: MISSy\_39 Start: 34165, Stop: 33701, Start Num: 51

Candidate Starts for MISSy\_39:

(38, 34204), (Start: 45 @34186 has 1 MA's), (Start: 51 @34165 has 147 MA's), (Start: 56 @34141 has 4 MA's), (59, 34132), (71, 34099), (74, 34087), (75, 34084), (84, 34021), (88, 33967), (95, 33904), (102, 33862), (105, 33820), (111, 33769),

Gene: MPhalcon\_39 Start: 34158, Stop: 33694, Start Num: 51

Candidate Starts for MPhalcon\_39:

(38, 34197), (Start: 45 @34179 has 1 MA's), (Start: 51 @34158 has 147 MA's), (Start: 56 @34134 has 4 MA's), (59, 34125), (71, 34092), (74, 34080), (75, 34077), (84, 34014), (88, 33960), (95, 33897), (102, 33855), (105, 33813), (111, 33762),

Gene: MadMen\_89 Start: 50218, Stop: 50580, Start Num: 61

Candidate Starts for MadMen\_89:

(Start: 61 @50218 has 9 MA's), (66, 50239), (82, 50347), (87, 50413), (93, 50461), (94, 50464), (105, 50557),

Gene: MadamMonkfish\_41 Start: 34185, Stop: 33718, Start Num: 51

Candidate Starts for MadamMonkfish\_41:

(29, 34245), (Start: 51 @34185 has 147 MA's), (Start: 56 @34161 has 4 MA's), (59, 34152), (84, 34038), (88, 33984), (95, 33921), (102, 33879), (105, 33837), (111, 33786),

Gene: Magsby\_58 Start: 37535, Stop: 37897, Start Num: 62

Candidate Starts for Magsby\_58:

(13, 37292), (27, 37409), (54, 37505), (Start: 62 @37535 has 15 MA's), (70, 37568), (87, 37709), (90, 37721), (91, 37736), (92, 37760), (94, 37772), (95, 37778), (101, 37811),

Gene: Manda\_40 Start: 34836, Stop: 34465, Start Num: 56

Candidate Starts for Manda\_40:

(31, 34917), (42, 34887), (43, 34884), (Start: 51 @34860 has 147 MA's), (Start: 56 @34836 has 4 MA's), (59, 34827), (71, 34794), (81, 34728), (84, 34713), (98, 34599), (103, 34548),

Gene: Marker\_79 Start: 47302, Stop: 47679, Start Num: 55

Candidate Starts for Marker\_79:

(Start: 51 @47275 has 147 MA's), (Start: 55 @47302 has 1 MA's), (60, 47317), (76, 47386), (78, 47440), (79, 47443), (83, 47458), (84, 47467), (85, 47473), (92, 47560), (97, 47578), (99, 47590), (104, 47632), (105, 47656),

Gene: Marshmallow\_41 Start: 35345, Stop: 34878, Start Num: 51

Candidate Starts for Marshmallow\_41:

(Start: 23 @35438 has 2 MA's), (26, 35414), (Start: 51 @35345 has 147 MA's), (Start: 56 @35321 has 4 MA's), (59, 35312), (84, 35198), (88, 35144), (95, 35081), (102, 35039), (105, 34997), (111, 34946),

Gene: Mattes\_82 Start: 50261, Stop: 50632, Start Num: 51

Candidate Starts for Mattes\_82:

(22, 50174), (Start: 51 @50261 has 147 MA's), (Start: 56 @50285 has 4 MA's), (59, 50294), (81, 50393), (84, 50408), (105, 50609),

Gene: Maxxinista\_41 Start: 34119, Stop: 33655, Start Num: 51

Candidate Starts for Maxxinista\_41:

(38, 34158), (Start: 45 @34140 has 1 MA's), (Start: 51 @34119 has 147 MA's), (Start: 56 @34095 has 4 MA's), (59, 34086), (71, 34053), (74, 34041), (75, 34038), (84, 33975), (88, 33921), (95, 33858), (102, 33816), (105, 33774), (111, 33723),

Gene: Melville\_63 Start: 37089, Stop: 37451, Start Num: 62

Candidate Starts for Melville\_63:

(27, 36963), (54, 37059), (Start: 62 @37089 has 15 MA's), (70, 37122), (87, 37263), (90, 37275), (91, 37290), (92, 37314), (94, 37326), (95, 37332), (101, 37365),

Gene: MilanaBonita\_79 Start: 48623, Stop: 49036, Start Num: 51

Candidate Starts for MilanaBonita\_79:

(20, 48518), (Start: 51 @48623 has 147 MA's), (59, 48656), (60, 48659), (67, 48686), (69, 48692), (84, 48812), (88, 48866), (95, 48929), (102, 48971), (105, 49013),

Gene: MilleniumForce\_84 Start: 50365, Stop: 50733, Start Num: 51

Candidate Starts for MilleniumForce\_84:

(Start: 51 @50365 has 147 MA's), (Start: 56 @50389 has 4 MA's), (59, 50398), (71, 50431), (74, 50443), (75, 50446), (84, 50509), (105, 50710),

Gene: MinionDave\_80 Start: 49276, Stop: 49686, Start Num: 57

Candidate Starts for MinionDave\_80:

(Start: 57 @49276 has 7 MA's), (66, 49312), (77, 49381), (80, 49435), (81, 49438), (83, 49453), (84, 49462), (85, 49468), (89, 49522), (105, 49663),

Gene: Miniwave\_40 Start: 34863, Stop: 34402, Start Num: 51

Candidate Starts for Miniwave\_40:

(Start: 51 @34863 has 147 MA's), (Start: 55 @34842 has 1 MA's), (59, 34830), (84, 34722), (88, 34668), (95, 34605), (102, 34563), (105, 34521), (111, 34470),

Gene: Misfit\_40 Start: 34739, Stop: 34275, Start Num: 51

Candidate Starts for Misfit\_40:

(38, 34778), (Start: 45 @34760 has 1 MA's), (Start: 51 @34739 has 147 MA's), (Start: 56 @34715 has 4 MA's), (59, 34706), (71, 34673), (74, 34661), (75, 34658), (84, 34595), (88, 34541), (95, 34478), (102, 34436), (105, 34394), (111, 34343),

Gene: Moldemort\_41 Start: 34414, Stop: 33947, Start Num: 51

Candidate Starts for Moldemort\_41:

(29, 34474), (Start: 51 @34414 has 147 MA's), (Start: 56 @34390 has 4 MA's), (59, 34381), (84, 34267), (88, 34213), (95, 34150), (102, 34108), (105, 34066), (111, 34015),

Gene: Moonbeam\_83 Start: 49609, Stop: 49980, Start Num: 51

Candidate Starts for Moonbeam\_83:

(Start: 51 @49609 has 147 MA's), (Start: 56 @49633 has 4 MA's), (59, 49642), (81, 49741), (84, 49756), (105, 49957),

Gene: Mozy\_91 Start: 49284, Stop: 49655, Start Num: 51

Candidate Starts for Mozy\_91:

(12, 49083), (14, 49095), (17, 49155), (19, 49167), (28, 49221), (Start: 51 @49284 has 147 MA's), (Start: 56 @49308 has 4 MA's), (59, 49317), (84, 49431), (105, 49632),

Gene: Ms6\_84 Start: 46316, Stop: 46729, Start Num: 51

Candidate Starts for Ms6\_84:

(20, 46211), (Start: 51 @46316 has 147 MA's), (59, 46349), (60, 46352), (67, 46379), (69, 46385), (84, 46505), (105, 46706),

Gene: Murica\_39 Start: 34636, Stop: 34172, Start Num: 51

Candidate Starts for Murica\_39:

(38, 34675), (Start: 45 @34657 has 1 MA's), (Start: 51 @34636 has 147 MA's), (Start: 56 @34612 has 4 MA's), (59, 34603), (71, 34570), (74, 34558), (75, 34555), (84, 34492), (88, 34438), (95, 34375), (102, 34333), (105, 34291), (111, 34240),

Gene: Murphy\_41 Start: 34631, Stop: 34167, Start Num: 51

Candidate Starts for Murphy\_41:

(38, 34670), (Start: 45 @34652 has 1 MA's), (Start: 51 @34631 has 147 MA's), (Start: 56 @34607 has 4 MA's), (59, 34598), (71, 34565), (74, 34553), (75, 34550), (84, 34487), (88, 34433), (95, 34370), (102, 34328), (105, 34286), (111, 34235),

Gene: Myrale\_42 Start: 35210, Stop: 34743, Start Num: 51

Candidate Starts for Myrale\_42:

(Start: 23 @35303 has 2 MA's), (26, 35279), (Start: 51 @35210 has 147 MA's), (Start: 56 @35186 has 4 MA's), (59, 35177), (84, 35063), (88, 35009), (95, 34946), (102, 34904), (105, 34862), (111, 34811),

Gene: Nala\_40 Start: 34670, Stop: 34206, Start Num: 51

Candidate Starts for Nala\_40:

(38, 34709), (Start: 45 @34691 has 1 MA's), (Start: 51 @34670 has 147 MA's), (Start: 56 @34646 has 4 MA's), (59, 34637), (71, 34604), (74, 34592), (75, 34589), (84, 34526), (88, 34472), (95, 34409), (102, 34367), (105, 34325), (111, 34274),

Gene: NelitzaMV\_40 Start: 34723, Stop: 34256, Start Num: 51

Candidate Starts for NelitzaMV\_40:

(Start: 51 @34723 has 147 MA's), (Start: 56 @34699 has 4 MA's), (59, 34690), (84, 34576), (88, 34522), (95, 34459), (102, 34417), (105, 34375), (111, 34324),

Gene: Nimrod\_40 Start: 34894, Stop: 34430, Start Num: 51

Candidate Starts for Nimrod\_40:

(38, 34933), (Start: 45 @34915 has 1 MA's), (Start: 51 @34894 has 147 MA's), (Start: 56 @34870 has 4 MA's), (59, 34861), (71, 34828), (74, 34816), (75, 34813), (84, 34750), (88, 34696), (95, 34633), (102, 34591), (105, 34549), (111, 34498),

Gene: NoSleep\_41 Start: 34391, Stop: 33927, Start Num: 51

Candidate Starts for NoSleep\_41:

(38, 34430), (Start: 45 @34412 has 1 MA's), (Start: 51 @34391 has 147 MA's), (Start: 56 @34367 has 4 MA's), (59, 34358), (71, 34325), (74, 34313), (75, 34310), (84, 34247), (88, 34193), (95, 34130), (102, 34088), (105, 34046), (111, 33995),

Gene: Ogopogo\_89 Start: 49435, Stop: 49848, Start Num: 51

Candidate Starts for Ogopogo\_89:

(Start: 51 @49435 has 147 MA's), (59, 49468), (60, 49471), (67, 49498), (69, 49504), (84, 49624), (89, 49684), (105, 49825),

Gene: OlympiaSaint\_85 Start: 50471, Stop: 50842, Start Num: 51

Candidate Starts for OlympiaSaint\_85:

(Start: 51 @50471 has 147 MA's), (Start: 56 @50495 has 4 MA's), (59, 50504), (81, 50603), (84, 50618), (105, 50819),

Gene: OrionPax\_42 Start: 34639, Stop: 34172, Start Num: 51

Candidate Starts for OrionPax\_42:

(29, 34699), (Start: 51 @34639 has 147 MA's), (Start: 56 @34615 has 4 MA's), (59, 34606), (84, 34492), (88, 34438), (95, 34375), (102, 34333), (105, 34291), (111, 34240),

Gene: Ovechkin\_89 Start: 50892, Stop: 51290, Start Num: 51

Candidate Starts for Ovechkin\_89:

(37, 50862), (40, 50868), (Start: 51 @50892 has 147 MA's), (60, 50928), (76, 50997), (79, 51054), (83, 51069), (84, 51078), (85, 51084), (92, 51171), (97, 51189), (99, 51201), (104, 51243), (105, 51267),

Gene: Palpatine\_40 Start: 34666, Stop: 34202, Start Num: 51

Candidate Starts for Palpatine\_40:

(38, 34705), (Start: 45 @34687 has 1 MA's), (Start: 51 @34666 has 147 MA's), (Start: 56 @34642 has 4 MA's), (59, 34633), (71, 34600), (74, 34588), (75, 34585), (84, 34522), (88, 34468), (95, 34405), (102, 34363), (105, 34321), (111, 34270),

Gene: Paperbeatsrock\_42 Start: 35652, Stop: 35185, Start Num: 51

Candidate Starts for Paperbeatsrock\_42:

(Start: 51 @35652 has 147 MA's), (Start: 56 @35628 has 4 MA's), (59, 35619), (84, 35505), (88, 35451), (95, 35388), (102, 35346), (105, 35304), (111, 35253),

Gene: Paphu\_61 Start: 41641, Stop: 41261, Start Num: 61

Candidate Starts for Paphu\_61:

(15, 41842), (48, 41698), (49, 41695), (Start: 61 @41641 has 9 MA's), (66, 41620), (70, 41605), (84, 41479), (87, 41428), (93, 41380), (94, 41377), (105, 41284),

Gene: Parliament\_63 Start: 43433, Stop: 43053, Start Num: 61

Candidate Starts for Parliament\_63:

(15, 43634), (48, 43490), (49, 43487), (Start: 61 @43433 has 9 MA's), (66, 43412), (70, 43397), (84, 43271), (87, 43220), (93, 43172), (94, 43169), (105, 43076),

Gene: Parmesanjohn\_58 Start: 37538, Stop: 37900, Start Num: 62

Candidate Starts for Parmesanjohn\_58:

(13, 37295), (27, 37412), (54, 37508), (Start: 62 @37538 has 15 MA's), (70, 37571), (87, 37712), (90, 37724), (91, 37739), (92, 37763), (94, 37775), (95, 37781), (101, 37814),

Gene: Petra64142\_42 Start: 35106, Stop: 34705, Start Num: 56

Candidate Starts for Petra64142\_42:

(38, 35169), (Start: 45 @35151 has 1 MA's), (Start: 51 @35130 has 147 MA's), (Start: 56 @35106 has 4 MA's), (59, 35097), (71, 35064), (74, 35052), (75, 35049), (84, 34986), (88, 34932), (95, 34869), (102, 34827), (106, 34776), (113, 34713),

Gene: Phaja\_40 Start: 34910, Stop: 34443, Start Num: 51

Candidate Starts for Phaja\_40:

(Start: 23 @35003 has 2 MA's), (26, 34979), (Start: 51 @34910 has 147 MA's), (Start: 56 @34886 has 4 MA's), (59, 34877), (84, 34763), (88, 34709), (95, 34646), (102, 34604), (105, 34562), (111, 34511),

Gene: Phanphagia\_84 Start: 50468, Stop: 50839, Start Num: 51

Candidate Starts for Phanphagia\_84:

(Start: 51 @50468 has 147 MA's), (Start: 56 @50492 has 4 MA's), (59, 50501), (81, 50600), (84, 50615), (105, 50816),

Gene: Pharsalus\_41 Start: 35452, Stop: 34985, Start Num: 51

Candidate Starts for Pharsalus\_41:

(Start: 51 @35452 has 147 MA's), (Start: 56 @35428 has 4 MA's), (59, 35419), (84, 35305), (88, 35251), (95, 35188), (102, 35146), (105, 35104), (111, 35053),

Gene: PhatBacter\_40 Start: 34680, Stop: 34216, Start Num: 51

Candidate Starts for PhatBacter\_40:

(38, 34719), (Start: 45 @34701 has 1 MA's), (Start: 51 @34680 has 147 MA's), (Start: 56 @34656 has 4 MA's), (59, 34647), (71, 34614), (74, 34602), (75, 34599), (84, 34536), (88, 34482), (95, 34419), (102, 34377), (105, 34335), (111, 34284),

Gene: Phaux\_39 Start: 34678, Stop: 34214, Start Num: 51

Candidate Starts for Phaux\_39:

(38, 34717), (Start: 45 @34699 has 1 MA's), (Start: 51 @34678 has 147 MA's), (Start: 56 @34654 has 4 MA's), (59, 34645), (71, 34612), (74, 34600), (75, 34597), (84, 34534), (88, 34480), (95, 34417), (102, 34375), (105, 34333), (111, 34282),

Gene: Philonius\_58 Start: 37703, Stop: 38065, Start Num: 62

Candidate Starts for Philonius\_58:

(1, 37097), (2, 37136), (3, 37181), (4, 37202), (5, 37214), (6, 37241), (7, 37271), (8, 37274), (9, 37406), (10, 37427), (11, 37442), (27, 37577), (54, 37673), (Start: 62 @37703 has 15 MA's), (70, 37736), (87, 37877), (90, 37889), (91, 37904), (92, 37928), (94, 37940), (95, 37946), (101, 37979),

Gene: Phloss\_56 Start: 36945, Stop: 37307, Start Num: 62

Candidate Starts for Phloss\_56:

(13, 36702), (27, 36819), (54, 36915), (Start: 62 @36945 has 15 MA's), (70, 36978), (87, 37119), (90, 37131), (91, 37146), (92, 37170), (94, 37182), (95, 37188), (101, 37221),

Gene: Phrux\_41 Start: 34632, Stop: 34168, Start Num: 51

Candidate Starts for Phrux\_41:

(29, 34692), (Start: 51 @34632 has 147 MA's), (Start: 56 @34608 has 4 MA's), (59, 34599), (71, 34566), (74, 34554), (75, 34551), (84, 34488), (88, 34434), (95, 34371), (102, 34329), (105, 34287), (111, 34236),

Gene: Piper2020\_82 Start: 50625, Stop: 51008, Start Num: 62

Candidate Starts for Piper2020\_82:

(27, 50499), (54, 50595), (Start: 62 @50625 has 15 MA's), (68, 50646), (86, 50814), (96, 50889), (100, 50916), (107, 50985), (108, 50991),

Gene: Pipsqueaks\_59 Start: 37516, Stop: 37878, Start Num: 62

Candidate Starts for Pipsqueaks\_59:

(13, 37273), (27, 37390), (54, 37486), (Start: 62 @37516 has 15 MA's), (70, 37549), (87, 37690), (90, 37702), (91, 37717), (92, 37741), (94, 37753), (95, 37759), (101, 37792),

Gene: Plumbus\_86 Start: 47486, Stop: 48037, Start Num: 51



Candidate Starts for Plumbus\_86:

(Start: 51 @47486 has 147 MA's), (Start: 56 @47510 has 4 MA's), (59, 47519), (81, 47618), (84, 47633), (105, 47834), (109, 47855), (114, 47909), (115, 47915), (117, 47939),

Gene: Poenanya\_88 Start: 50710, Stop: 51087, Start Num: 46

Candidate Starts for Poenanya\_88:

(Start: 46 @50710 has 7 MA's), (Start: 56 @50752 has 4 MA's), (59, 50761), (84, 50875), (92, 50968), (97, 50986), (99, 50998), (104, 51040), (105, 51064),

Gene: Policronamos\_41 Start: 34678, Stop: 34214, Start Num: 51

Candidate Starts for Policronamos\_41:

(38, 34717), (Start: 45 @34699 has 1 MA's), (Start: 51 @34678 has 147 MA's), (Start: 56 @34654 has 4 MA's), (59, 34645), (71, 34612), (74, 34600), (75, 34597), (84, 34534), (88, 34480), (95, 34417), (102, 34375), (105, 34333), (111, 34282),

Gene: Polka14\_89 Start: 51500, Stop: 51877, Start Num: 46

Candidate Starts for Polka14\_89:

(Start: 46 @51500 has 7 MA's), (Start: 56 @51542 has 4 MA's), (59, 51551), (81, 51650), (84, 51665), (92, 51758), (97, 51776), (99, 51788), (104, 51830), (105, 51854),

Gene: Porky\_42 Start: 34896, Stop: 34549, Start Num: 56

Candidate Starts for Porky\_42:

(49, 34920), (Start: 56 @34896 has 4 MA's), (59, 34887), (84, 34773), (88, 34719), (95, 34656), (102, 34614), (105, 34572),

Gene: Pumpkin\_44 Start: 35558, Stop: 35094, Start Num: 51

Candidate Starts for Pumpkin\_44:

(29, 35618), (Start: 51 @35558 has 147 MA's), (Start: 56 @35534 has 4 MA's), (59, 35525), (71, 35492), (74, 35480), (75, 35477), (84, 35414), (88, 35360), (95, 35297), (102, 35255), (105, 35213), (111, 35162),

Gene: Quallification\_41 Start: 34860, Stop: 34411, Start Num: 51

Candidate Starts for Quallification\_41:

(Start: 51 @34860 has 147 MA's), (Start: 55 @34839 has 1 MA's), (59, 34827), (84, 34719), (92, 34626), (97, 34608), (99, 34596), (104, 34554), (105, 34530), (111, 34479),

Gene: Rakim\_41 Start: 34775, Stop: 34311, Start Num: 51

Candidate Starts for Rakim\_41:

(38, 34814), (Start: 45 @34796 has 1 MA's), (Start: 51 @34775 has 147 MA's), (Start: 56 @34751 has 4 MA's), (59, 34742), (71, 34709), (74, 34697), (75, 34694), (84, 34631), (88, 34577), (95, 34514), (102, 34472), (105, 34430), (111, 34379),

Gene: Ramsey\_86 Start: 51149, Stop: 51520, Start Num: 51

Candidate Starts for Ramsey\_86:

(12, 50948), (14, 50960), (17, 51020), (19, 51032), (28, 51086), (Start: 51 @51149 has 147 MA's), (Start: 56 @51173 has 4 MA's), (59, 51182), (81, 51281), (84, 51296), (105, 51497),

Gene: RedBird\_83 Start: 50910, Stop: 51281, Start Num: 51

Candidate Starts for RedBird\_83:

(12, 50709), (14, 50721), (17, 50781), (19, 50793), (28, 50847), (Start: 51 @50910 has 147 MA's), (Start: 56 @50934 has 4 MA's), (59, 50943), (81, 51042), (84, 51057), (105, 51258),

Gene: Rimmer\_40 Start: 34315, Stop: 33944, Start Num: 51

Candidate Starts for Rimmer\_40:

(38, 34354), (Start: 45 @34336 has 1 MA's), (Start: 51 @34315 has 147 MA's), (Start: 56 @34291 has 4 MA's), (59, 34282), (84, 34168), (88, 34114), (95, 34051), (102, 34009), (105, 33967),

Gene: RiverMonster\_40 Start: 34407, Stop: 33943, Start Num: 51

Candidate Starts for RiverMonster\_40:

(38, 34446), (Start: 45 @34428 has 1 MA's), (Start: 51 @34407 has 147 MA's), (Start: 56 @34383 has 4 MA's), (59, 34374), (71, 34341), (74, 34329), (75, 34326), (84, 34263), (88, 34209), (95, 34146), (102, 34104), (105, 34062), (111, 34011),

Gene: SG4\_84 Start: 50324, Stop: 50698, Start Num: 51

Candidate Starts for SG4\_84:

(Start: 51 @50324 has 147 MA's), (Start: 55 @50345 has 1 MA's), (60, 50360), (84, 50486), (92, 50579), (97, 50597), (99, 50609), (104, 50651), (105, 50675),

Gene: SG4\_86 Start: 50874, Stop: 51251, Start Num: 57

Candidate Starts for SG4\_86:

(Start: 57 @50874 has 7 MA's), (63, 50895), (66, 50910), (72, 50934), (84, 51027), (89, 51087), (105, 51228),

Gene: Saints25\_42 Start: 34424, Stop: 33957, Start Num: 51

Candidate Starts for Saints25\_42:

(Start: 51 @34424 has 147 MA's), (Start: 56 @34400 has 4 MA's), (59, 34391), (84, 34277), (88, 34223), (95, 34160), (102, 34118), (105, 34076), (111, 34025),

Gene: Sandalphon\_83 Start: 50748, Stop: 51119, Start Num: 51

Candidate Starts for Sandalphon\_83:

(Start: 51 @50748 has 147 MA's), (Start: 56 @50772 has 4 MA's), (59, 50781), (84, 50895), (105, 51096),

Gene: Sassafras\_83 Start: 49224, Stop: 49595, Start Num: 51

Candidate Starts for Sassafras\_83:

(12, 49023), (14, 49035), (17, 49095), (19, 49107), (28, 49161), (Start: 51 @49224 has 147 MA's), (Start: 56 @49248 has 4 MA's), (59, 49257), (81, 49356), (84, 49371), (105, 49572),

Gene: Schnauzer\_59 Start: 37538, Stop: 37900, Start Num: 62

Candidate Starts for Schnauzer\_59:

(13, 37295), (27, 37412), (54, 37508), (Start: 62 @37538 has 15 MA's), (70, 37571), (87, 37712), (90, 37724), (91, 37739), (92, 37763), (94, 37775), (95, 37781), (101, 37814),

Gene: Scottish\_83 Start: 49191, Stop: 49568, Start Num: 46

Candidate Starts for Scottish\_83:

(Start: 46 @49191 has 7 MA's), (Start: 56 @49233 has 4 MA's), (59, 49242), (81, 49341), (84, 49356), (92, 49449), (97, 49467), (99, 49479), (104, 49521), (105, 49545),

Gene: Seagreen\_84 Start: 50260, Stop: 50628, Start Num: 51

Candidate Starts for Seagreen\_84:

(Start: 51 @50260 has 147 MA's), (Start: 56 @50284 has 4 MA's), (59, 50293), (71, 50326), (74, 50338), (75, 50341), (81, 50389), (84, 50404), (89, 50464), (105, 50605),

Gene: ShamWow\_42 Start: 35347, Stop: 34880, Start Num: 51

Candidate Starts for ShamWow\_42:

(Start: 23 @35440 has 2 MA's), (26, 35416), (Start: 51 @35347 has 147 MA's), (Start: 56 @35323 has 4 MA's), (59, 35314), (84, 35200), (88, 35146), (95, 35083), (102, 35041), (105, 34999), (111, 34948),

Gene: Shauna1\_83 Start: 50441, Stop: 50812, Start Num: 51

Candidate Starts for Shauna1\_83:

(21, 50348), (25, 50372), (Start: 51 @50441 has 147 MA's), (Start: 56 @50465 has 4 MA's), (59, 50474), (81, 50573), (84, 50588), (105, 50789),

Gene: ShiLan\_85 Start: 51984, Stop: 52355, Start Num: 51

Candidate Starts for ShiLan\_85:

(Start: 51 @51984 has 147 MA's), (Start: 56 @52008 has 4 MA's), (59, 52017), (81, 52116), (84, 52131), (105, 52332),

Gene: Silvafighter\_59 Start: 37081, Stop: 37443, Start Num: 62

Candidate Starts for Silvafighter\_59:

(27, 36955), (54, 37051), (Start: 62 @37081 has 15 MA's), (70, 37114), (87, 37255), (90, 37267), (91, 37282), (92, 37306), (94, 37318), (95, 37324), (101, 37357),

Gene: Simpliphy\_42 Start: 34499, Stop: 34032, Start Num: 51

Candidate Starts for Simpliphy\_42:

(Start: 51 @34499 has 147 MA's), (Start: 56 @34475 has 4 MA's), (59, 34466), (84, 34352), (88, 34298), (95, 34235), (102, 34193), (105, 34151), (111, 34100),

Gene: SimranZ1\_83 Start: 48924, Stop: 49286, Start Num: 61

Candidate Starts for SimranZ1\_83:

(Start: 61 @48924 has 9 MA's), (66, 48945), (87, 49119), (93, 49167), (94, 49170), (105, 49263),

Gene: Smurph\_58 Start: 37538, Stop: 37900, Start Num: 62

Candidate Starts for Smurph\_58:

(13, 37295), (27, 37412), (54, 37508), (Start: 62 @37538 has 15 MA's), (70, 37571), (87, 37712), (90, 37724), (91, 37739), (92, 37763), (94, 37775), (95, 37781), (101, 37814),

Gene: SophKB\_40 Start: 34671, Stop: 34204, Start Num: 51

Candidate Starts for SophKB\_40:

(Start: 51 @34671 has 147 MA's), (Start: 56 @34647 has 4 MA's), (59, 34638), (84, 34524), (88, 34470), (95, 34407), (102, 34365), (105, 34323), (111, 34272),

Gene: Sotrice96\_40 Start: 34623, Stop: 34159, Start Num: 51

Candidate Starts for Sotrice96\_40:

(38, 34662), (Start: 45 @34644 has 1 MA's), (Start: 51 @34623 has 147 MA's), (Start: 56 @34599 has 4 MA's), (59, 34590), (71, 34557), (74, 34545), (75, 34542), (84, 34479), (88, 34425), (95, 34362), (102, 34320), (105, 34278), (111, 34227),

Gene: Spoonbill\_81 Start: 47897, Stop: 48268, Start Num: 51

Candidate Starts for Spoonbill\_81:

(Start: 51 @47897 has 147 MA's), (Start: 56 @47921 has 4 MA's), (59, 47930), (81, 48029), (84, 48044), (105, 48245),

Gene: Stank\_43 Start: 35175, Stop: 34711, Start Num: 51

Candidate Starts for Stank\_43:

(38, 35214), (Start: 45 @35196 has 1 MA's), (Start: 51 @35175 has 147 MA's), (Start: 56 @35151 has 4 MA's), (59, 35142), (71, 35109), (74, 35097), (75, 35094), (84, 35031), (88, 34977), (95, 34914), (102, 34872), (105, 34830), (111, 34779),

Gene: Stap\_78 Start: 46857, Stop: 47246, Start Num: 45

Candidate Starts for Stap\_78:

(Start: 45 @46857 has 1 MA's), (Start: 56 @46899 has 4 MA's), (59, 46908), (81, 47007), (84, 47022), (88, 47076), (95, 47139), (102, 47181), (105, 47223),

Gene: Stark\_41 Start: 34410, Stop: 33946, Start Num: 51

Candidate Starts for Stark\_41:

(38, 34449), (Start: 45 @34431 has 1 MA's), (Start: 51 @34410 has 147 MA's), (Start: 56 @34386 has 4 MA's), (59, 34377), (71, 34344), (74, 34332), (75, 34329), (84, 34266), (88, 34212), (95, 34149), (102, 34107), (105, 34065), (111, 34014),

Gene: StellaBean\_40 Start: 34671, Stop: 34204, Start Num: 51

Candidate Starts for StellaBean\_40:

(Start: 23 @34764 has 2 MA's), (26, 34740), (Start: 51 @34671 has 147 MA's), (Start: 56 @34647 has 4 MA's), (59, 34638), (84, 34524), (88, 34470), (95, 34407), (102, 34365), (105, 34323), (111, 34272),

Gene: StolenFromERC\_42 Start: 34659, Stop: 34195, Start Num: 51

Candidate Starts for StolenFromERC\_42:

(38, 34698), (Start: 45 @34680 has 1 MA's), (Start: 51 @34659 has 147 MA's), (Start: 56 @34635 has 4 MA's), (59, 34626), (71, 34593), (74, 34581), (75, 34578), (84, 34515), (88, 34461), (95, 34398), (102, 34356), (105, 34314), (111, 34263),

Gene: SuperGrey\_84 Start: 51807, Stop: 52193, Start Num: 51

Candidate Starts for SuperGrey\_84:

(24, 51714), (26, 51738), (Start: 51 @51807 has 147 MA's), (Start: 55 @51828 has 1 MA's), (60, 51843), (84, 51969), (89, 52029), (105, 52170),

Gene: TBrady12\_42 Start: 34659, Stop: 34195, Start Num: 51

Candidate Starts for TBrady12\_42:

(38, 34698), (Start: 45 @34680 has 1 MA's), (Start: 51 @34659 has 147 MA's), (Start: 56 @34635 has 4 MA's), (59, 34626), (71, 34593), (74, 34581), (75, 34578), (84, 34515), (88, 34461), (95, 34398), (102, 34356), (105, 34314), (111, 34263),

Gene: Tarkin\_42 Start: 35661, Stop: 35194, Start Num: 51

Candidate Starts for Tarkin\_42:

(Start: 51 @35661 has 147 MA's), (Start: 56 @35637 has 4 MA's), (59, 35628), (84, 35514), (88, 35460), (95, 35397), (102, 35355), (105, 35313), (111, 35262),

Gene: Tasp14\_65 Start: 42922, Stop: 42542, Start Num: 61

Candidate Starts for Tasp14\_65:

(15, 43123), (48, 42979), (49, 42976), (Start: 61 @42922 has 9 MA's), (66, 42901), (70, 42886), (84, 42760), (87, 42709), (93, 42661), (94, 42658), (105, 42565),

Gene: TeardropMSU\_39 Start: 34571, Stop: 34104, Start Num: 51

Candidate Starts for TeardropMSU\_39:

(29, 34631), (Start: 51 @34571 has 147 MA's), (Start: 56 @34547 has 4 MA's), (59, 34538), (84, 34424), (105, 34223), (111, 34172),

Gene: Teaspoon\_45 Start: 35627, Stop: 35256, Start Num: 50

Candidate Starts for Teaspoon\_45:

(Start: 50 @35627 has 2 MA's), (Start: 56 @35600 has 4 MA's), (59, 35591), (71, 35558), (74, 35546), (75, 35543), (84, 35480), (88, 35426), (95, 35363), (102, 35321), (105, 35279),

Gene: Teodoridan\_59 Start: 40032, Stop: 39670, Start Num: 51

Candidate Starts for Teodoridan\_59:

(Start: 51 @40032 has 147 MA's), (59, 39999), (60, 39996), (67, 39969), (69, 39963), (84, 39843), (89, 39783), (105, 39693),

Gene: Terminus\_40 Start: 34739, Stop: 34275, Start Num: 51

Candidate Starts for Terminus\_40:

(38, 34778), (Start: 45 @34760 has 1 MA's), (Start: 51 @34739 has 147 MA's), (Start: 56 @34715 has 4 MA's), (59, 34706), (71, 34673), (74, 34661), (75, 34658), (84, 34595), (88, 34541), (95, 34478), (102, 34436), (105, 34394), (111, 34343),

Gene: Thresher\_42 Start: 35645, Stop: 35181, Start Num: 51

Candidate Starts for Thresher\_42:

(38, 35684), (Start: 45 @35666 has 1 MA's), (Start: 51 @35645 has 147 MA's), (Start: 56 @35621 has 4 MA's), (59, 35612), (71, 35579), (74, 35567), (75, 35564), (84, 35501), (88, 35447), (95, 35384), (102, 35342), (105, 35300), (111, 35249),

Gene: Tootsieroll\_80 Start: 50185, Stop: 50562, Start Num: 46

Candidate Starts for Tootsieroll\_80:

(Start: 46 @50185 has 7 MA's), (Start: 56 @50227 has 4 MA's), (59, 50236), (81, 50335), (84, 50350), (92, 50443), (97, 50461), (99, 50473), (104, 50515), (105, 50539),

Gene: Toto\_41 Start: 35347, Stop: 34880, Start Num: 51

Candidate Starts for Toto\_41:

(Start: 23 @35440 has 2 MA's), (26, 35416), (Start: 51 @35347 has 147 MA's), (Start: 56 @35323 has 4 MA's), (59, 35314), (84, 35200), (88, 35146), (95, 35083), (102, 35041), (105, 34999), (111, 34948),

Gene: Traaww1\_38 Start: 34290, Stop: 33826, Start Num: 51

Candidate Starts for Traaww1\_38:

(Start: 51 @34290 has 147 MA's), (Start: 56 @34266 has 4 MA's), (59, 34257), (71, 34224), (74, 34212), (75, 34209), (81, 34161), (84, 34146), (88, 34092), (95, 34029), (102, 33987), (105, 33945), (111, 33894),

Gene: Tuco\_43 Start: 35855, Stop: 35388, Start Num: 51

Candidate Starts for Tuco\_43:

(Start: 23 @35948 has 2 MA's), (26, 35924), (Start: 51 @35855 has 147 MA's), (Start: 56 @35831 has 4 MA's), (59, 35822), (84, 35708), (88, 35654), (95, 35591), (102, 35549), (105, 35507), (111, 35456),

Gene: Whatsapiecost\_76 Start: 44789, Stop: 45166, Start Num: 57

Candidate Starts for Whatsapiecost\_76:

(Start: 57 @44789 has 7 MA's), (63, 44810), (66, 44825), (72, 44849), (84, 44942), (89, 45002), (105, 45143),

Gene: Wheeler\_63 Start: 41547, Stop: 41161, Start Num: 61

Candidate Starts for Wheeler\_63:

(15, 41748), (48, 41604), (49, 41601), (Start: 61 @41547 has 9 MA's), (64, 41535), (105, 41184),

Gene: Wiggin\_43 Start: 35173, Stop: 34709, Start Num: 51

Candidate Starts for Wiggin\_43:

(Start: 51 @35173 has 147 MA's), (Start: 56 @35149 has 4 MA's), (59, 35140), (71, 35107), (74, 35095), (75, 35092), (84, 35029), (88, 34975), (95, 34912), (102, 34870), (105, 34828), (111, 34777),

Gene: WillSterrel\_82 Start: 50063, Stop: 50434, Start Num: 51

Candidate Starts for WillSterrel\_82:

(Start: 51 @50063 has 147 MA's), (Start: 56 @50087 has 4 MA's), (59, 50096), (81, 50195), (84, 50210), (105, 50411),

Gene: Xandras\_42 Start: 34687, Stop: 34178, Start Num: 51

Candidate Starts for Xandras\_42:

(30, 34747), (Start: 51 @34687 has 147 MA's), (59, 34654), (60, 34651), (67, 34624), (69, 34618), (84, 34498), (88, 34444), (95, 34381), (102, 34339), (105, 34297), (111, 34246),

Gene: Xerxes\_58 Start: 37535, Stop: 37897, Start Num: 62

Candidate Starts for Xerxes\_58:

(13, 37292), (27, 37409), (54, 37505), (Start: 62 @37535 has 15 MA's), (70, 37568), (87, 37709), (90, 37721), (91, 37736), (92, 37760), (94, 37772), (95, 37778), (101, 37811),

Gene: Youngblood\_41 Start: 34902, Stop: 34555, Start Num: 56

Candidate Starts for Youngblood\_41:

(38, 34965), (Start: 45 @34947 has 1 MA's), (Start: 51 @34926 has 147 MA's), (Start: 56 @34902 has 4 MA's), (59, 34893), (84, 34779), (88, 34725), (95, 34662), (102, 34620), (105, 34578),

Gene: Zeuska\_61 Start: 42220, Stop: 41843, Start Num: 57

Candidate Starts for Zeuska\_61:

(Start: 57 @42220 has 7 MA's), (63, 42199), (66, 42184), (72, 42160), (84, 42067), (105, 41866),

Gene: xkcd\_41 Start: 34821, Stop: 34357, Start Num: 51

Candidate Starts for xkcd\_41:

(38, 34860), (Start: 45 @34842 has 1 MA's), (Start: 51 @34821 has 147 MA's), (Start: 56 @34797 has 4 MA's), (59, 34788), (71, 34755), (74, 34743), (75, 34740), (84, 34677), (88, 34623), (95, 34560), (102, 34518), (105, 34476), (111, 34425),