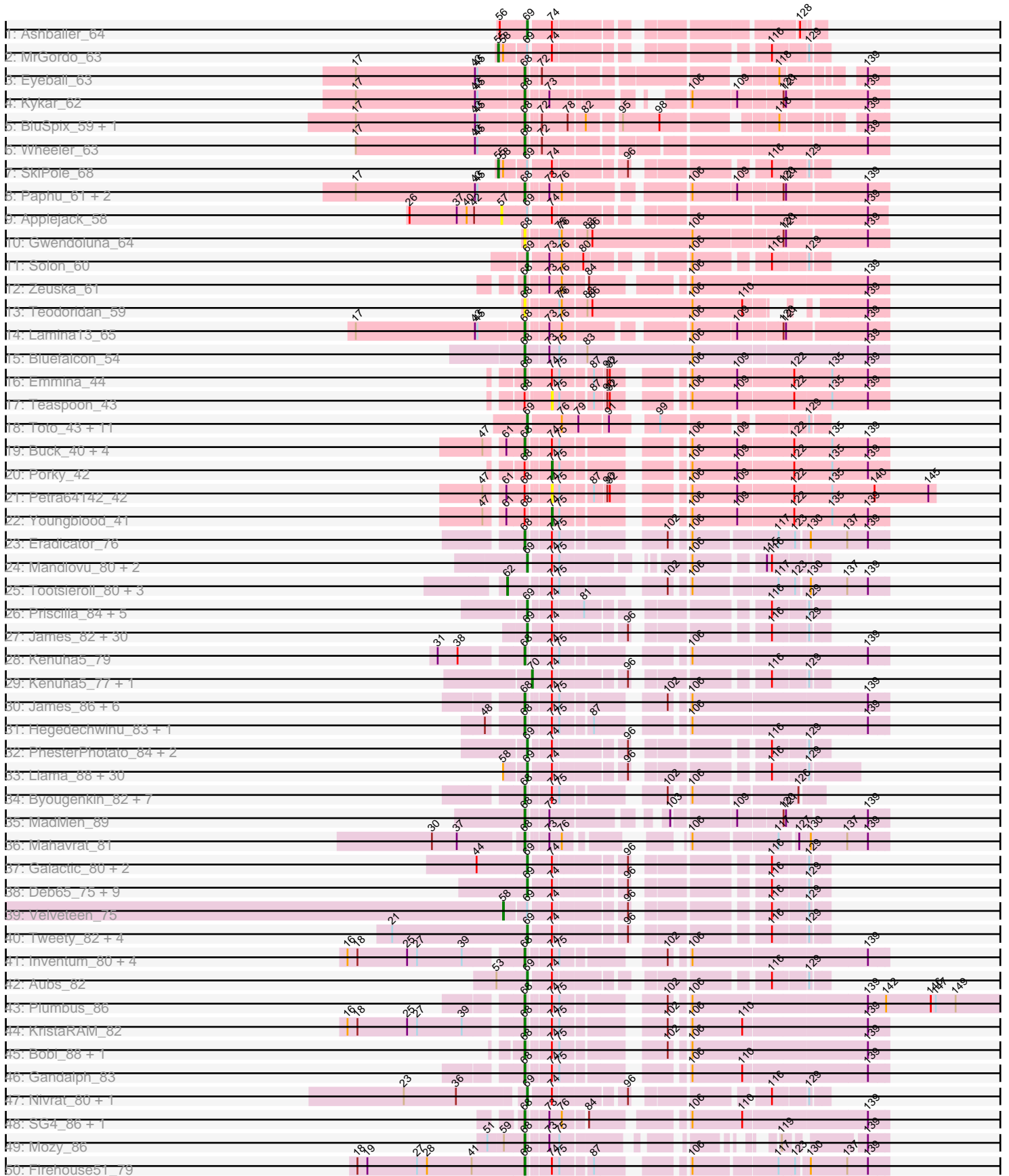
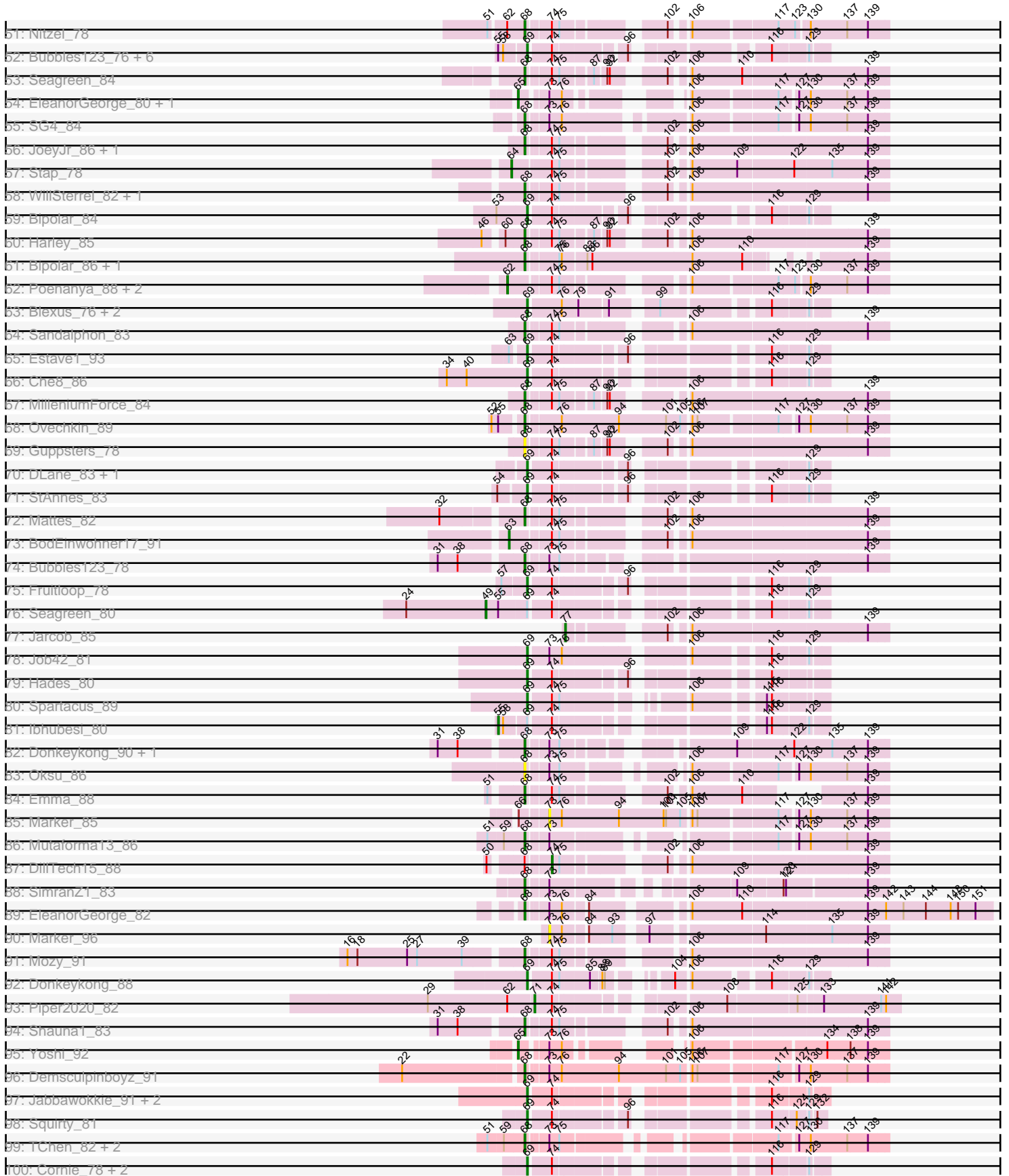


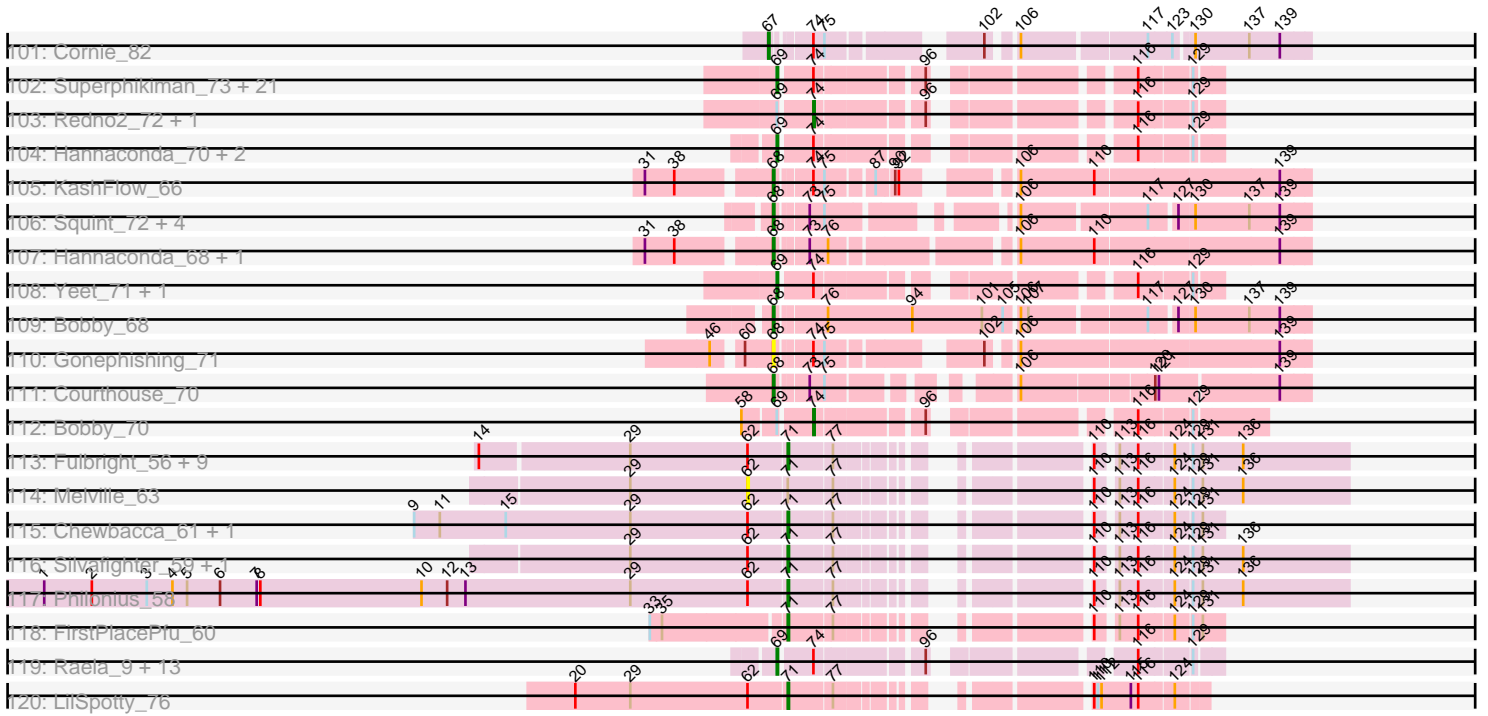
Pham 161517



# Pham 161517



Pham 161517



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 161517 Report

This analysis was run 04/28/24 on database version 559.

Pham number 161517 has 323 members, 26 are drafts.

Phages represented in each track:

- Track 1 : Ashballer\_64
- Track 2 : MrGordo\_63
- Track 3 : Eyeball\_63
- Track 4 : Kykar\_62
- Track 5 : BluSpix\_59, IgnatiusPatJac\_61
- Track 6 : Wheeler\_63
- Track 7 : SkiPole\_68
- Track 8 : Paphu\_61, Tasp14\_65, Parliament\_63
- Track 9 : Applejack\_58
- Track 10 : Gwendoluna\_64
- Track 11 : Solon\_60
- Track 12 : Zeuska\_61
- Track 13 : Teodoridan\_59
- Track 14 : Lamina13\_65
- Track 15 : Bluefalcon\_54
- Track 16 : Emmina\_44
- Track 17 : Teaspoon\_43
- Track 18 : Toto\_43, ABCat\_42, Inca\_41, BilboSwaggins\_43, IHOP\_42, Tuco\_45, Marshmallow\_43, CrystalP\_44, Myrale\_44, ShamWow\_44, Phaja\_42, StellaBean\_42
- Track 19 : Buck\_40, Elite2014\_40, Lilpickle\_40, ChosenOne\_41, Rimmer\_40
- Track 20 : Porky\_42
- Track 21 : Petra64142\_42
- Track 22 : Youngblood\_41
- Track 23 : Eradicator\_76
- Track 24 : Mandlovu\_80, Hlubikazi\_80, Strokeseat\_80
- Track 25 : Tootsieroll\_80, Polka14\_89, KingMidas\_84, Scottish\_83
- Track 26 : Priscilla\_84, Koella\_76, Spartacus\_87, NormanBulbieJr\_82, Wanda\_77, Klein\_73
- Track 27 : James\_82, Boomer\_85, Mozy\_88, LunaBlu\_84, Ms6\_82, DirtMcgirt\_80, Flathead\_81, SG4\_81, Burwell21\_76, Llij\_77, Clifton\_74, Lorde\_81, OlympiaSaint\_81, Enby\_82, Eish\_84, KristaRAM\_79, Rockne\_82, Harley\_80, UncleRicky\_80, Drago\_78, Latretium\_82, Philus\_84, Jarcob\_81, DRBy19\_85, Ogoopogo\_87, Rita\_88, Phatniss\_78, PMC\_78, Avani\_90, Marker\_93, Mova\_80
- Track 28 : Kenuha5\_79
- Track 29 : Kenuha5\_77, Gandalph\_79
- Track 30 : James\_86, Phanphagia\_84, ShiLan\_85, OlympiaSaint\_85, Flathead\_85, Moonbeam\_83, Spoonbill\_81

- Track 31 : Hegedechwinu\_83, JalFarm20\_90
- Track 32 : PhesterPhotato\_84, Omega\_79, LittleE\_77
- Track 33 : Llama\_88, Mandlovu\_76, Beelzebub\_12, Huphlepuuff\_10, Lilbit\_10, Cerasum\_75, Marvin\_8, OfUltron\_89, Pringar\_9, Duke13\_80, Modragons\_86, Sarma624\_80, Coco12\_78, LittleLaf\_9, Corazon\_9, Ochi17\_87, Guppsters\_76, PopTart\_73, Jinglebell\_86, BigPhil\_74, Zerg\_82, Minerva\_79, SassyB\_73, Pound\_77, VRedHorse\_86, Hlubikazi\_76, Strokeseat\_76, JoieB\_10, Clarkson\_10, BAKA\_82, Seabastian\_89
- Track 34 : Byougenkin\_82, Royals2015\_90, Quico\_91, PopTart\_77, Girafales\_91, SassyB\_77, Blexus\_80, Florinda\_94
- Track 35 : MadMen\_89
- Track 36 : Mahavrat\_81
- Track 37 : Galactic\_80, MadMen\_87, Kumao\_59
- Track 38 : Deb65\_75, Nimbo\_74, RitaG\_82, PHappiness\_82, Geralt\_75, OldBen\_79, MilleniumForce\_82, Leperchaun\_80, JoeyJr\_82, Daenerys\_81
- Track 39 : Velveteen\_75
- Track 40 : Tweety\_82, Taj\_88, DeadP\_82, Wee\_87, Donkeykong\_86
- Track 41 : Inventum\_80, RedBird\_83, Ramsey\_86, Dorothy\_83, Sassafras\_83
- Track 42 : Aubs\_82
- Track 43 : Plumbus\_86
- Track 44 : KristaRAM\_82
- Track 45 : Bobi\_88, DaWorst\_83
- Track 46 : Gandalph\_83
- Track 47 : Nivrat\_80, LilMoolah\_82
- Track 48 : SG4\_86, Whatsapiecost\_76
- Track 49 : Mozy\_86
- Track 50 : Firehouse51\_79
- Track 51 : Nitzel\_78
- Track 52 : Bubbles123\_76, Minnie\_77, Soul22\_82, IrishSherpFalk\_81, Pepe\_59, Sandalphon\_75, WillSterrel\_80
- Track 53 : Seagreen\_84
- Track 54 : EleanorGeorge\_80, Zizzle\_86
- Track 55 : SG4\_84
- Track 56 : JoeyJr\_86, Leperchaun\_84
- Track 57 : Stap\_78
- Track 58 : WillSterrel\_82, IrishSherpFalk\_83
- Track 59 : Bipolar\_84
- Track 60 : Harley\_85
- Track 61 : Bipolar\_86, Doug\_82
- Track 62 : Poenanya\_88, Empress\_83, Doomphist\_88
- Track 63 : Blexus\_76, Leozinho\_79, Pippy\_76
- Track 64 : Sandalphon\_83
- Track 65 : Estave1\_93
- Track 66 : Che8\_86
- Track 67 : MilleniumForce\_84
- Track 68 : Ovechkin\_89
- Track 69 : Guppsters\_78
- Track 70 : DLane\_83, XFactor\_77
- Track 71 : StAnnes\_83
- Track 72 : Mattes\_82
- Track 73 : BodEinwohner17\_91
- Track 74 : Bubbles123\_78
- Track 75 : Fruitloop\_78

- Track 76 : Seagreen\_80
- Track 77 : Jarcob\_85
- Track 78 : Job42\_81
- Track 79 : Hades\_80
- Track 80 : Spartacus\_89
- Track 81 : lbhubesi\_80
- Track 82 : Donkeykong\_90, Aubs\_84
- Track 83 : Oksu\_86
- Track 84 : Emma\_88
- Track 85 : Marker\_85
- Track 86 : Mutaforma13\_86
- Track 87 : DillTech15\_88
- Track 88 : SimranZ1\_83
- Track 89 : EleanorGeorge\_82
- Track 90 : Marker\_96
- Track 91 : Mozy\_91
- Track 92 : Donkeykong\_88
- Track 93 : Piper2020\_82
- Track 94 : Shauna1\_83
- Track 95 : Yoshi\_92
- Track 96 : Demsculpinboyz\_91
- Track 97 : Jabbawokkie\_91, Blarby\_91, Zapner\_90
- Track 98 : Squirty\_81
- Track 99 : TChen\_82, ShroomBoi\_82, LunaStella\_73
- Track 100 : Cornie\_78, CaptainTrips\_81, MinionDave\_77
- Track 101 : Cornie\_82
- Track 102 : Superphikiman\_73, Bagrid\_74, Kalah2\_70, EricMillard\_74, Ejimix\_75, DmpstrDiver\_75, Squint\_76, Ariel\_75, Beem\_75, JuicyJay\_74, NihilNomen\_76, Halley\_77, Phoebus\_78, Zelink\_73, Odette\_74, HokkenD\_68, ThreeRngTarjay\_73, Dallas\_74, Porcelain\_75, MiaZeal\_76, Schatzie\_70, Hughesyang\_74
- Track 103 : Redno2\_72, Lucky2013\_73
- Track 104 : Hannaconda\_70, Phalconet\_78, Kingsley\_85
- Track 105 : KashFlow\_66
- Track 106 : Squint\_72, Phoebus\_74, Porcelain\_71, Ariel\_71, MiaZeal\_72
- Track 107 : Hannaconda\_68, SuperGrey\_84
- Track 108 : Yeet\_71, Courthouse\_72
- Track 109 : Bobby\_68
- Track 110 : Gonephishing\_71
- Track 111 : Courthouse\_70
- Track 112 : Bobby\_70
- Track 113 : Fulbright\_56, Carcharodon\_58, Parmesanjohn\_58, Gex\_59, Magsby\_58, Smurph\_58, Xerxes\_58, Schnauzer\_59, Phloss\_56, Pipsqueaks\_59
- Track 114 : Melville\_63
- Track 115 : Chewbacca\_61, ZenTime222\_56
- Track 116 : Silvafighter\_59, Duplicity\_56
- Track 117 : Philonius\_58
- Track 118 : FirstPlacePfu\_60
- Track 119 : Raela\_9, Batiatus\_81, Poise\_9, DotProduct\_76, Tesla\_9, Ardmore\_67, Hamulus\_80, Phanphagia\_80, Akhila\_78, MilanaBonita\_77, Filuzino\_82, Manda\_43, Shauna1\_81, Blackbeetle\_9
- Track 120 : LilSpotty\_76

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

The start number called the most often in the published annotations is 69, it was called in 165 of the 297 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ABCat\_42, Akhila\_78, Ardmore\_67, Ariel\_75, Ashballer\_64, Aubs\_82, Avani\_90, BAKA\_82, Bagrid\_74, Batiatus\_81, Beelzebub\_12, Beem\_75, BigPhil\_74, BilboSwaggins\_43, Bipolar\_84, Blackbeetle\_9, Blarby\_91, Blexus\_76, Boomer\_85, Bubbles123\_76, Burwell21\_76, CaptainTrips\_81, Cerasum\_75, Che8\_86, Clarkson\_10, Clifton\_74, Coco12\_78, Corazon\_9, Cornie\_78, Courthouse\_72, CrystalP\_44, DLane\_83, DRBy19\_85, Daenerys\_81, Dallas\_74, DeadP\_82, Deb65\_75, DirtMcgirt\_80, DmpstrDiver\_75, Donkeykong\_86, Donkeykong\_88, DotProduct\_76, Drago\_78, Duke13\_80, Eish\_84, Ejimix\_75, Enby\_82, EricMillard\_74, Estave1\_93, Filuzino\_82, Flathead\_81, Fruitloop\_78, Galactic\_80, Geralt\_75, Guppsters\_76, Hades\_80, Halley\_77, Hamulus\_80, Hannaconda\_70, Harley\_80, Hlubikazi\_76, Hlubikazi\_80, HokkenD\_68, Hughesyang\_74, Huphlepuuff\_10, IHOP\_42, Inca\_41, IrishSherpFalk\_81, Jabbawokkie\_91, James\_82, Jarcob\_81, Jinglebell\_86, Job42\_81, JoeyJr\_82, JoieB\_10, JuicyJay\_74, Kalah2\_70, Kingsley\_85, Klein\_73, Koella\_76, KristaRAM\_79, Kumao\_59, Latretium\_82, Leozinho\_79, Leperchaun\_80, LilMoolah\_82, Lilbit\_10, LittleE\_77, LittleLaf\_9, Llama\_88, Llij\_77, Lorde\_81, LunaBlu\_84, MadMen\_87, Manda\_43, Mandlovu\_76, Mandlovu\_80, Marker\_93, Marshmallow\_43, Marvin\_8, MiaZeal\_76, MilanaBonita\_77, MilleniumForce\_82, Minerva\_79, MinionDave\_77, Minnie\_77, Modragons\_86, Mova\_80, Mozy\_88, Ms6\_82, Myrale\_44, NihilNomen\_76, Nimbo\_74, Nivrat\_80, NormanBulbieJr\_82, Ochi17\_87, Odette\_74, OfUltron\_89, Ogopogo\_87, OldBen\_79, OlympiaSaint\_81, Omega\_79, PHappiness\_82, PMC\_78, Pepe\_59, Phaja\_42, Phalconet\_78, Phanphagia\_80, Phatniss\_78, PhesterPotato\_84, Philus\_84, Phoebus\_78, Pippy\_76, Poise\_9, PopTart\_73, Porcelain\_75, Pound\_77, Pringar\_9, Priscilla\_84, Raela\_9, RitaG\_82, Rita\_88, Rockne\_82, SG4\_81, Sandalphon\_75, Sarma624\_80, SassyB\_73, Schatzie\_70, Sebastian\_89, ShamWow\_44, Shauna1\_81, Solon\_60, Soul22\_82, Spartacus\_87, Spartacus\_89, Squint\_76, Squirty\_81, StAnnes\_83, StellaBean\_42, Strokeseat\_76, Strokeseat\_80, Superphikiman\_73, Taj\_88, Tesla\_9, ThreeRngTarjay\_73, Toto\_43, Tuco\_45, Tweety\_82, UncleRicky\_80, VRedHorse\_86, Wanda\_77, Wee\_87, WillSterrel\_80, XFactor\_77, Yeet\_71, Zapner\_90, Zelink\_73, Zerg\_82,

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

- Applejack\_58, Bobby\_70, lbhubesi\_80, Lucky2013\_73, MrGordo\_63, Redno2\_72, Seagreen\_80, SkiPole\_68, Velveteen\_75,

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

- Ariel\_71, Aubs\_84, Bipolar\_86, Blexus\_80, BluSpix\_59, Bluefalcon\_54, Bobby\_68, Bobi\_88, BodEinwohner17\_91, Bubbles123\_78, Buck\_40, Byougenkin\_82, Carcharodon\_58, Chewbacca\_61, ChosenOne\_41, Cornie\_82, Courthouse\_70, DaWorst\_83, Demsculpinboyz\_91, DillTech15\_88, Donkeykong\_90, Doomphist\_88, Dorothy\_83, Doug\_82, Duplicity\_56, EleanorGeorge\_80, EleanorGeorge\_82, Elite2014\_40, Emma\_88, Emmina\_44, Empress\_83, Eradicator\_76, Eyeball\_63, Firehouse51\_79, FirstPlacePfu\_60, Flathead\_85, Florinda\_94, Fulbright\_56, Gandolph\_79, Gandolph\_83, Gex\_59, Girafales\_91, Gonephishing\_71, Guppsters\_78, Gwendoluna\_64, Hannaconda\_68, Harley\_85, Hegedechwinu\_83, IgnatiusPatJac\_61, Inventum\_80, IrishSherpFalk\_83, JalFarm20\_90, James\_86,

Jarcob\_85, JoeyJr\_86, KashFlow\_66, Kenuha5\_77, Kenuha5\_79, KingMidas\_84, KristaRAM\_82, Kykar\_62, Lamina13\_65, Leperchaun\_84, LilSpotty\_76, LilPickle\_40, LunaStella\_73, MadMen\_89, Magsby\_58, Mahavrat\_81, Marker\_85, Marker\_96, Mattes\_82, Melville\_63, MiaZeal\_72, MilleniumForce\_84, Moonbeam\_83, Mozy\_86, Mozy\_91, Mutaforma13\_86, Nitzel\_78, Oksu\_86, OlympiaSaint\_85, Ovechkin\_89, Paphu\_61, Parliament\_63, Parmesanjohn\_58, Petra64142\_42, Phanphagia\_84, Philonius\_58, Phloss\_56, Phoebus\_74, Piper2020\_82, Pipsqueaks\_59, Plumbus\_86, Poenanya\_88, Polka14\_89, PopTart\_77, Porcelain\_71, Porky\_42, Quico\_91, Ramsey\_86, RedBird\_83, Rimmer\_40, Royals2015\_90, SG4\_84, SG4\_86, Sandalphon\_83, Sassafras\_83, SassyB\_77, Schnauzer\_59, Scottish\_83, Seagreen\_84, Shauna1\_83, ShiLan\_85, ShroomBoi\_82, Silvafighter\_59, SimranZ1\_83, Smurph\_58, Spoonbill\_81, Squint\_72, Stap\_78, SuperGrey\_84, TChen\_82, Tasp14\_65, Teaspoon\_43, Teodoridan\_59, Tootsieroll\_80, Whatsapiecost\_76, Wheeler\_63, WillSterrel\_82, Xerxes\_58, Yoshi\_92, Youngblood\_41, ZenTime222\_56, Zeuska\_61, Zizzle\_86,

### Summary by start number:

#### Start 49:

- Found in 1 of 323 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 297
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Seagreen\_80 (F1),

#### Start 55:

- Found in 12 of 323 ( 3.7% ) of genes in pham
- Manual Annotations of this start: 3 of 297
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Ibhubesi\_80 (F1), MrGordo\_63 (A1), SkiPole\_68 (A1),

#### Start 57:

- Found in 2 of 323 ( 0.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Applejack\_58 (A1),

#### Start 58:

- Found in 43 of 323 ( 13.3% ) of genes in pham
- Manual Annotations of this start: 1 of 297
- Called 2.3% of time when present
- Phage (with cluster) where this start called: Velveteen\_75 (F1),

#### Start 62:

- Found in 26 of 323 ( 8.0% ) of genes in pham
- Manual Annotations of this start: 7 of 297
- Called 30.8% of time when present
- Phage (with cluster) where this start called: Doomphist\_88 (F1), Empress\_83 (F1), KingMidas\_84 (F1), Melville\_63 (N), Poenanya\_88 (F1), Polka14\_89 (F1), Scottish\_83 (F1), Tootsieroll\_80 (F1),

#### Start 63:

- Found in 2 of 323 ( 0.6% ) of genes in pham



- Manual Annotations of this start: 1 of 297
- Called 50.0% of time when present
- Phage (with cluster) where this start called: BodEinwohner17\_91 (F1),

#### Start 64:

- Found in 1 of 323 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 297
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Stap\_78 (F1),

#### Start 65:

- Found in 3 of 323 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 3 of 297
- Called 100.0% of time when present
- Phage (with cluster) where this start called: EleanorGeorge\_80 (F1), Yoshi\_92 (F2), Zizzle\_86 (F1),

#### Start 67:

- Found in 1 of 323 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 297
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cornie\_82 (F5),

#### Start 68:

- Found in 99 of 323 ( 30.7% ) of genes in pham
- Manual Annotations of this start: 87 of 297
- Called 94.9% of time when present
- Phage (with cluster) where this start called: Ariel\_71 (J), Aubs\_84 (F1), Bipolar\_86 (F1), Blexus\_80 (F1), BluSpix\_59 (A1), Bluefalcon\_54 (A5), Bobby\_68 (J), Bobi\_88 (F1), Bubbles123\_78 (F1), Buck\_40 (E), Byougenkin\_82 (F1), ChosenOne\_41 (E), Courthouse\_70 (J), DaWorst\_83 (F1), Demsculpinboyz\_91 (F2), Donkeykong\_90 (F1), Dorothy\_83 (F1), Doug\_82 (F1), EleanorGeorge\_82 (F1), Elite2014\_40 (E), Emma\_88 (F1), Emmina\_44 (E), Eradicator\_76 (F1), Eyeball\_63 (A1), Firehouse51\_79 (F1), Flathead\_85 (F1), Florinda\_94 (F1), Gandolph\_83 (F1), Girafales\_91 (F1), Gonephishing\_71 (J), Guppsters\_78 (F1), Gwendoluna\_64 (A1), Hannaconda\_68 (J), Harley\_85 (F1), Hegedechwinu\_83 (F1), IgnatiusPatJac\_61 (A1), Inventum\_80 (F1), IrishSherpFalk\_83 (F1), JalFarm20\_90 (F1), James\_86 (F1), JoeyJr\_86 (F1), KashFlow\_66 (J), Kenuha5\_79 (F1), KristaRAM\_82 (F1), Kykar\_62 (A1), Lamina13\_65 (A1), Leperchaun\_84 (F1), Lilpickle\_40 (E), LunaStella\_73 (F4), MadMen\_89 (F1), Mahavrat\_81 (F1), Mattes\_82 (F1), MiaZeal\_72 (J), MilleniumForce\_84 (F1), Moonbeam\_83 (F1), Mozy\_86 (F1), Mozy\_91 (F1), Mutaforma13\_86 (F1), Nitzel\_78 (F1), Oksu\_86 (F1), OlympiaSaint\_85 (F1), Ovechkin\_89 (F1), Paphu\_61 (A1), Parliament\_63 (A1), Phanphagia\_84 (F1), Phoebus\_74 (J), Plumbus\_86 (F1), PopTart\_77 (F1), Porcelain\_71 (J), Quico\_91 (F1), Ramsey\_86 (F1), RedBird\_83 (F1), Rimmer\_40 (E), Royals2015\_90 (F1), SG4\_84 (F1), SG4\_86 (F1), Sandalphon\_83 (F1), Sassafras\_83 (F1), SassyB\_77 (F1), Seagreen\_84 (F1), Shauna1\_83 (F1), ShiLan\_85 (F1), ShroomBoi\_82 (F1), SimranZ1\_83 (F1), Spoonbill\_81 (F1), Squint\_72 (J), SuperGrey\_84 (F1), TChen\_82 (F4), Tasp14\_65 (A1), Teodoridan\_59 (A1), Whatsapiecost\_76 (F1), Wheeler\_63 (A1), WillSterrel\_82 (F1), Zeuska\_61 (A1),

#### Start 69:

- Found in 187 of 323 ( 57.9% ) of genes in pham

- Manual Annotations of this start: 165 of 297
- Called 95.2% of time when present
- Phage (with cluster) where this start called: ABCat\_42 (E), Akhila\_78 (F1), Ardmore\_67 (F1), Ariel\_75 (J), Ashballer\_64 (A1), Aubs\_82 (F1), Avani\_90 (F2), BAKA\_82 (J), Bagrid\_74 (J), Batiatus\_81 (F1), Beelzebub\_12 (S), Beem\_75 (J), BigPhil\_74 (F1), BilboSwaggins\_43 (E), Bipolar\_84 (F1), Blackbeetle\_9 (S), Blarby\_91 (F), Blexus\_76 (F1), Boomer\_85 (F1), Bubbles123\_76 (F1), Burwell21\_76 (F1), CaptainTrips\_81 (F1), Cerasum\_75 (F1), Che8\_86 (F1), Clarkson\_10 (S), Clifton\_74 (F1), Coco12\_78 (F1), Corazon\_9 (S), Cornie\_78 (F5), Courthouse\_72 (J), CrystalP\_44 (E), DLane\_83 (F1), DRBy19\_85 (F1), Daenerys\_81 (F1), Dallas\_74 (J), DeadP\_82 (F1), Deb65\_75 (F1), DirtMcGirt\_80 (F1), DmpstrDiver\_75 (J), Donkeykong\_86 (F1), Donkeykong\_88 (F1), DotProduct\_76 (F1), Drago\_78 (F1), Duke13\_80 (J), Eish\_84 (F1), Ejimix\_75 (J), Enby\_82 (F1), EricMillard\_74 (J), Estave1\_93 (F1), Filuzino\_82 (F1), Flathead\_81 (F1), Fruitloop\_78 (F1), Galactic\_80 (F1), Geralt\_75 (F1), Guppsters\_76 (F1), Hades\_80 (F1), Halley\_77 (J), Hamulus\_80 (F1), Hannaconda\_70 (J), Harley\_80 (F1), Hlubikazi\_76 (F1), Hlubikazi\_80 (F1), HokkenD\_68 (J), Hughesyang\_74 (J), Huphlepuuff\_10 (S), IHOP\_42 (E), Inca\_41 (E), IrishSherpFalk\_81 (F1), Jabbawokkie\_91 (F2), James\_82 (F1), Jarcob\_81 (F1), Jinglebell\_86 (F1), Job42\_81 (F1), JoeyJr\_82 (F1), JoieB\_10 (S), JuicyJay\_74 (J), Kalah2\_70 (J), Kingsley\_85 (F1), Klein\_73 (J), Koella\_76 (F1), KristaRAM\_79 (F1), Kumao\_59 (singleton), Latretium\_82 (F1), Leozinho\_79 (F1), Leperchaun\_80 (F1), LilMoolah\_82 (F1), Lilbit\_10 (S), LittleE\_77 (J), LittleLaf\_9 (S), Llama\_88 (F1), Llij\_77 (F1), Lorde\_81 (F1), LunaBlu\_84 (F1), MadMen\_87 (F1), Manda\_43 (E), Mandlovu\_76 (F1), Mandlovu\_80 (F1), Marker\_93 (F1), Marshmallow\_43 (E), Marvin\_8 (S), MiaZeal\_76 (J), MilanaBonita\_77 (F1), MilleniumForce\_82 (F1), Minerva\_79 (J), MinionDave\_77 (F1), Minnie\_77 (F1), Modragons\_86 (F1), Mova\_80 (F1), Mozy\_88 (F1), Ms6\_82 (F1), Myrale\_44 (E), NihilNomen\_76 (J), Nimbo\_74 (F1), Nivrat\_80 (F1), NormanBulbieJr\_82 (F1), Ochi17\_87 (F1), Odette\_74 (J), OfUltron\_89 (F1), Ogotopogo\_87 (F1), OldBen\_79 (F1), OlympiaSaint\_81 (F1), Omega\_79 (J), PHappiness\_82 (F1), PMC\_78 (F1), Pepe\_59 (A1), Phaja\_42 (E), Phalconet\_78 (F1), Phanphagia\_80 (F1), Phatniss\_78 (F1), PhesterPhotato\_84 (F1), Philus\_84 (F1), Phoebus\_78 (J), Pippy\_76 (F1), Poise\_9 (S), PopTart\_73 (F1), Porcelain\_75 (J), Pound\_77 (J), Pringar\_9 (S), Priscilla\_84 (F1), Raela\_9 (S), RitaG\_82 (F1), Rita\_88 (F1), Rockne\_82 (F1), SG4\_81 (F1), Sandalphon\_75 (F1), Sarma624\_80 (F1), SassyB\_73 (F1), Schatzie\_70 (J), Sebastian\_89 (F1), ShamWow\_44 (E), Shauna1\_81 (F1), Solon\_60 (A1), Soul22\_82 (F2), Spartacus\_87 (F1), Spartacus\_89 (F1), Squint\_76 (J), Squirty\_81 (F3), StAnnes\_83 (F1), StellaBean\_42 (E), Strokeseat\_76 (F1), Strokeseat\_80 (F1), Superphikiman\_73 (J), Taj\_88 (F1), Tesla\_9 (S), ThreeRngTarjay\_73 (J), Toto\_43 (E), Tuco\_45 (E), Tweety\_82 (F1), UncleRicky\_80 (F1), VRedHorse\_86 (F1), Wanda\_77 (J), Wee\_87 (F1), WillSterrel\_80 (F1), XFactor\_77 (F1), Yeet\_71 (J), Zapner\_90 (F2), Zelink\_73 (J), Zerg\_82 (F1),

#### Start 70:

- Found in 2 of 323 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 2 of 297
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gandalph\_79 (F1), Kenuha5\_77 (F1),

#### Start 71:

- Found in 19 of 323 ( 5.9% ) of genes in pham
- Manual Annotations of this start: 18 of 297
- Called 94.7% of time when present

- Phage (with cluster) where this start called: Carcharodon\_58 (N), Chewbacca\_61 (N), Duplicity\_56 (N), FirstPlacePfu\_60 (P1), Fulbright\_56 (N), Gex\_59 (N), LilSpotty\_76 (singleton), Magsby\_58 (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), ZenTime222\_56 (T),

#### Start 73:

- Found in 39 of 323 ( 12.1% ) of genes in pham
- No Manual Annotations of this start.
- Called 5.1% of time when present
- Phage (with cluster) where this start called: Marker\_85 (F1), Marker\_96 (F1),

#### Start 74:

- Found in 240 of 323 ( 74.3% ) of genes in pham
- Manual Annotations of this start: 6 of 297
- Called 3.3% of time when present
- Phage (with cluster) where this start called: Bobby\_70 (J), DillTech15\_88 (F1), Lucky2013\_73 (J), Petra64142\_42 (E), Porky\_42 (E), Redno2\_72 (J), Teaspoon\_43 (E), Youngblood\_41 (E),

#### Start 77:

- Found in 19 of 323 ( 5.9% ) of genes in pham
- Manual Annotations of this start: 1 of 297
- Called 5.3% of time when present
- Phage (with cluster) where this start called: Jarcob\_85 (F1),

### Summary by clusters:

There are 15 clusters represented in this pham: F1, F2, P1, E, F5, F, J, singleton, N, A1, S, F3, A5, T, F4,

#### Info for manual annotations of cluster A1:

- Start number 55 was manually annotated 2 times for cluster A1.
- Start number 68 was manually annotated 9 times for cluster A1.
- Start number 69 was manually annotated 3 times for cluster A1.

#### Info for manual annotations of cluster A5:

- Start number 68 was manually annotated 1 time for cluster A5.

#### Info for manual annotations of cluster E:

- Start number 68 was manually annotated 6 times for cluster E.
- Start number 69 was manually annotated 11 times for cluster E.
- Start number 74 was manually annotated 2 times for cluster E.

#### Info for manual annotations of cluster F1:

- Start number 49 was manually annotated 1 time for cluster F1.
- Start number 55 was manually annotated 1 time for cluster F1.
- Start number 58 was manually annotated 1 time for cluster F1.
- Start number 62 was manually annotated 7 times for cluster F1.
- Start number 63 was manually annotated 1 time for cluster F1.
- Start number 64 was manually annotated 1 time for cluster F1.
- Start number 65 was manually annotated 2 times for cluster F1.

- Start number 68 was manually annotated 60 times for cluster F1.
- Start number 69 was manually annotated 101 times for cluster F1.
- Start number 70 was manually annotated 2 times for cluster F1.
- Start number 71 was manually annotated 1 time for cluster F1.
- Start number 74 was manually annotated 1 time for cluster F1.
- Start number 77 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster F2:

- Start number 65 was manually annotated 1 time for cluster F2.
- Start number 68 was manually annotated 1 time for cluster F2.
- Start number 69 was manually annotated 4 times for cluster F2.

Info for manual annotations of cluster F3:

- Start number 69 was manually annotated 1 time for cluster F3.

Info for manual annotations of cluster F4:

- Start number 68 was manually annotated 1 time for cluster F4.

Info for manual annotations of cluster F5:

- Start number 67 was manually annotated 1 time for cluster F5.
- Start number 69 was manually annotated 1 time for cluster F5.

Info for manual annotations of cluster J:

- Start number 68 was manually annotated 9 times for cluster J.
- Start number 69 was manually annotated 31 times for cluster J.
- Start number 74 was manually annotated 3 times for cluster J.

Info for manual annotations of cluster N:

- Start number 71 was manually annotated 14 times for cluster N.

Info for manual annotations of cluster P1:

- Start number 71 was manually annotated 1 time for cluster P1.

Info for manual annotations of cluster S:

- Start number 69 was manually annotated 12 times for cluster S.

Info for manual annotations of cluster T:

- Start number 71 was manually annotated 1 time for cluster T.

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

Gene: ABCat\_42 Start: 36113, Stop: 35817, Start Num: 69

Candidate Starts for ABCat\_42:

(Start: 69 @36113 has 165 MA's), (76, 36077), (79, 36059), (91, 36026), (99, 35984), (129, 35837),

Gene: Akhila\_78 Start: 48008, Stop: 48292, Start Num: 69

Candidate Starts for Akhila\_78:

(Start: 69 @48008 has 165 MA's), (Start: 74 @48032 has 6 MA's), (96, 48107), (116, 48236), (129, 48272),

Gene: Applejack\_58 Start: 39182, Stop: 38778, Start Num: 57

Candidate Starts for Applejack\_58:

(26, 39293), (37, 39236), (40, 39224), (42, 39215), (57, 39182), (Start: 69 @39152 has 165 MA's), (Start: 74 @39128 has 6 MA's), (139, 38801),

Gene: Ardmore\_67 Start: 43684, Stop: 43968, Start Num: 69

Candidate Starts for Ardmore\_67:

(Start: 69 @43684 has 165 MA's), (Start: 74 @43708 has 6 MA's), (96, 43783), (116, 43912), (129, 43948),

Gene: Ariel\_75 Start: 47349, Stop: 47065, Start Num: 69

Candidate Starts for Ariel\_75:

(Start: 69 @47349 has 165 MA's), (Start: 74 @47325 has 6 MA's), (96, 47250), (116, 47121), (129, 47085),

Gene: Ariel\_71 Start: 45936, Stop: 45583, Start Num: 68

Candidate Starts for Ariel\_71:

(Start: 68 @45936 has 87 MA's), (73, 45915), (75, 45903), (106, 45795), (117, 45702), (127, 45684), (130, 45672), (137, 45630), (139, 45606),

Gene: Ashballer\_64 Start: 41640, Stop: 41353, Start Num: 69

Candidate Starts for Ashballer\_64:

(56, 41670), (Start: 69 @41640 has 165 MA's), (Start: 74 @41616 has 6 MA's), (128, 41376),

Gene: Aubs\_82 Start: 49731, Stop: 50015, Start Num: 69

Candidate Starts for Aubs\_82:

(53, 49695), (Start: 69 @49731 has 165 MA's), (Start: 74 @49755 has 6 MA's), (116, 49959), (129, 49995),

Gene: Aubs\_84 Start: 50517, Stop: 50876, Start Num: 68

Candidate Starts for Aubs\_84:

(31, 50424), (38, 50448), (Start: 68 @50517 has 87 MA's), (73, 50538), (75, 50550), (109, 50706), (122, 50769), (135, 50811), (139, 50853),

Gene: Avani\_90 Start: 47333, Stop: 47617, Start Num: 69

Candidate Starts for Avani\_90:

(Start: 69 @47333 has 165 MA's), (Start: 74 @47357 has 6 MA's), (96, 47432), (116, 47561), (129, 47597),

Gene: BAKA\_82 Start: 52624, Stop: 52340, Start Num: 69

Candidate Starts for BAKA\_82:

(Start: 58 @52648 has 1 MA's), (Start: 69 @52624 has 165 MA's), (Start: 74 @52600 has 6 MA's), (96, 52525), (116, 52396), (129, 52360),

Gene: Bagrid\_74 Start: 50766, Stop: 50482, Start Num: 69

Candidate Starts for Bagrid\_74:

(Start: 69 @50766 has 165 MA's), (Start: 74 @50742 has 6 MA's), (96, 50667), (116, 50538), (129, 50502),

Gene: Batiatus\_81 Start: 49093, Stop: 49377, Start Num: 69

Candidate Starts for Batiatus\_81:

(Start: 69 @49093 has 165 MA's), (Start: 74 @49117 has 6 MA's), (96, 49192), (116, 49321), (129, 49357),

Gene: Beelzebub\_12 Start: 3476, Stop: 3760, Start Num: 69

Candidate Starts for Beelzebub\_12:

(Start: 58 @3452 has 1 MA's), (Start: 69 @3476 has 165 MA's), (Start: 74 @3500 has 6 MA's), (96, 3575), (116, 3704), (129, 3740),

Gene: Beem\_75 Start: 51626, Stop: 51342, Start Num: 69

Candidate Starts for Beem\_75:

(Start: 69 @51626 has 165 MA's), (Start: 74 @51602 has 6 MA's), (96, 51527), (116, 51398), (129, 51362),

Gene: BigPhil\_74 Start: 44927, Stop: 45211, Start Num: 69

Candidate Starts for BigPhil\_74:

(Start: 58 @44903 has 1 MA's), (Start: 69 @44927 has 165 MA's), (Start: 74 @44951 has 6 MA's), (96, 45026), (116, 45155), (129, 45191),

Gene: BilboSwaggins\_43 Start: 36121, Stop: 35825, Start Num: 69

Candidate Starts for BilboSwaggins\_43:

(Start: 69 @36121 has 165 MA's), (76, 36085), (79, 36067), (91, 36034), (99, 35992), (129, 35845),

Gene: Bipolar\_84 Start: 50621, Stop: 50905, Start Num: 69

Candidate Starts for Bipolar\_84:

(53, 50585), (Start: 69 @50621 has 165 MA's), (Start: 74 @50645 has 6 MA's), (96, 50720), (116, 50849), (129, 50885),

Gene: Bipolar\_86 Start: 51239, Stop: 51601, Start Num: 68

Candidate Starts for Bipolar\_86:

(Start: 68 @51239 has 87 MA's), (75, 51272), (76, 51275), (83, 51302), (86, 51308), (106, 51428), (110, 51488), (139, 51578),

Gene: Blackbeetle\_9 Start: 2787, Stop: 3071, Start Num: 69

Candidate Starts for Blackbeetle\_9:

(Start: 69 @2787 has 165 MA's), (Start: 74 @2811 has 6 MA's), (96, 2886), (116, 3015), (129, 3051),

Gene: Blarby\_91 Start: 47885, Stop: 48169, Start Num: 69

Candidate Starts for Blarby\_91:

(Start: 69 @47885 has 165 MA's), (Start: 74 @47909 has 6 MA's), (116, 48113), (129, 48149),

Gene: Blexus\_76 Start: 48851, Stop: 49147, Start Num: 69

Candidate Starts for Blexus\_76:

(Start: 69 @48851 has 165 MA's), (76, 48887), (79, 48905), (91, 48938), (99, 48980), (116, 49091), (129, 49127),

Gene: Blexus\_80 Start: 49926, Stop: 50210, Start Num: 68

Candidate Starts for Blexus\_80:

(Start: 68 @49926 has 87 MA's), (Start: 74 @49950 has 6 MA's), (75, 49959), (102, 50058), (106, 50073), (126, 50187),

Gene: BluSpix\_59 Start: 36720, Stop: 36373, Start Num: 68

Candidate Starts for BluSpix\_59:

(17, 36921), (43, 36777), (45, 36774), (Start: 68 @36720 has 87 MA's), (72, 36708), (78, 36678), (82, 36660), (95, 36627), (98, 36585), (118, 36471), (139, 36396),

Gene: Bluefalcon\_54 Start: 39442, Stop: 39023, Start Num: 68

Candidate Starts for Bluefalcon\_54:

(Start: 68 @39442 has 87 MA's), (73, 39415), (75, 39403), (83, 39373), (106, 39247), (139, 39046),

Gene: Bobby\_68 Start: 49135, Stop: 48737, Start Num: 68

Candidate Starts for Bobby\_68:

(Start: 68 @49135 has 87 MA's), (76, 49099), (94, 49030), (101, 48973), (105, 48958), (106, 48949), (107, 48943), (117, 48856), (127, 48838), (130, 48826), (137, 48784), (139, 48760),

Gene: Bobby\_70 Start: 49641, Stop: 49345, Start Num: 74

Candidate Starts for Bobby\_70:

(Start: 58 @49689 has 1 MA's), (Start: 69 @49665 has 165 MA's), (Start: 74 @49641 has 6 MA's), (96, 49566), (116, 49437), (129, 49401),

Gene: Bobi\_88 Start: 51408, Stop: 51779, Start Num: 68

Candidate Starts for Bobi\_88:

(Start: 68 @51408 has 87 MA's), (Start: 74 @51432 has 6 MA's), (75, 51441), (102, 51540), (106, 51555), (139, 51756),

Gene: BodEinwohner17\_91 Start: 52011, Stop: 52400, Start Num: 63

Candidate Starts for BodEinwohner17\_91:

(Start: 63 @52011 has 1 MA's), (Start: 74 @52053 has 6 MA's), (75, 52062), (102, 52161), (106, 52176), (139, 52377),

Gene: Boomer\_85 Start: 49678, Stop: 49962, Start Num: 69

Candidate Starts for Boomer\_85:

(Start: 69 @49678 has 165 MA's), (Start: 74 @49702 has 6 MA's), (96, 49777), (116, 49906), (129, 49942),

Gene: Bubbles123\_76 Start: 48608, Stop: 48892, Start Num: 69

Candidate Starts for Bubbles123\_76:

(Start: 55 @48578 has 3 MA's), (Start: 58 @48584 has 1 MA's), (Start: 69 @48608 has 165 MA's), (Start: 74 @48632 has 6 MA's), (96, 48707), (116, 48836), (129, 48872),

Gene: Bubbles123\_78 Start: 49394, Stop: 49753, Start Num: 68

Candidate Starts for Bubbles123\_78:

(31, 49301), (38, 49325), (Start: 68 @49394 has 87 MA's), (73, 49415), (75, 49427), (139, 49730),

Gene: Buck\_40 Start: 34705, Stop: 34334, Start Num: 68

Candidate Starts for Buck\_40:

(47, 34744), (61, 34726), (Start: 68 @34705 has 87 MA's), (Start: 74 @34681 has 6 MA's), (75, 34672), (106, 34558), (109, 34504), (122, 34441), (135, 34399), (139, 34357),

Gene: Burwell21\_76 Start: 48586, Stop: 48870, Start Num: 69

Candidate Starts for Burwell21\_76:

(Start: 69 @48586 has 165 MA's), (Start: 74 @48610 has 6 MA's), (96, 48685), (116, 48814), (129, 48850),

Gene: Byougenkin\_82 Start: 47350, Stop: 47634, Start Num: 68

Candidate Starts for Byougenkin\_82:

(Start: 68 @47350 has 87 MA's), (Start: 74 @47374 has 6 MA's), (75, 47383), (102, 47482), (106, 47497), (126, 47611),

Gene: CaptainTrips\_81 Start: 48491, Stop: 48775, Start Num: 69

Candidate Starts for CaptainTrips\_81:

(Start: 69 @48491 has 165 MA's), (Start: 74 @48515 has 6 MA's), (116, 48719), (129, 48755),

Gene: Carcharodon\_58 Start: 37518, Stop: 37880, Start Num: 71

Candidate Starts for Carcharodon\_58:

(14, 37275), (29, 37392), (Start: 62 @37488 has 7 MA's), (Start: 71 @37518 has 18 MA's), (Start: 77 @37551 has 1 MA's), (110, 37692), (113, 37704), (116, 37719), (124, 37743), (129, 37755), (131, 37761), (136, 37794),

Gene: Cerasum\_75 Start: 44945, Stop: 45229, Start Num: 69

Candidate Starts for Cerasum\_75:

(Start: 58 @44921 has 1 MA's), (Start: 69 @44945 has 165 MA's), (Start: 74 @44969 has 6 MA's), (96, 45044), (116, 45173), (129, 45209),

Gene: Che8\_86 Start: 49874, Stop: 50158, Start Num: 69

Candidate Starts for Che8\_86:

(34, 49778), (40, 49802), (Start: 69 @49874 has 165 MA's), (Start: 74 @49898 has 6 MA's), (116, 50102), (129, 50138),

Gene: Chewbacca\_61 Start: 37859, Stop: 38119, Start Num: 71

Candidate Starts for Chewbacca\_61:

(9, 37556), (11, 37577), (15, 37631), (29, 37733), (Start: 62 @37829 has 7 MA's), (Start: 71 @37859 has 18 MA's), (Start: 77 @37892 has 1 MA's), (110, 38033), (113, 38045), (116, 38060), (124, 38084), (129, 38096), (131, 38102),

Gene: ChosenOne\_41 Start: 33974, Stop: 33603, Start Num: 68

Candidate Starts for ChosenOne\_41:

(47, 34013), (61, 33995), (Start: 68 @33974 has 87 MA's), (Start: 74 @33950 has 6 MA's), (75, 33941), (106, 33827), (109, 33773), (122, 33710), (135, 33668), (139, 33626),

Gene: Clarkson\_10 Start: 3252, Stop: 3536, Start Num: 69

Candidate Starts for Clarkson\_10:

(Start: 58 @3228 has 1 MA's), (Start: 69 @3252 has 165 MA's), (Start: 74 @3276 has 6 MA's), (96, 3351), (116, 3480), (129, 3516),

Gene: Clifton\_74 Start: 47402, Stop: 47686, Start Num: 69

Candidate Starts for Clifton\_74:

(Start: 69 @47402 has 165 MA's), (Start: 74 @47426 has 6 MA's), (96, 47501), (116, 47630), (129, 47666),

Gene: Coco12\_78 Start: 49002, Stop: 49286, Start Num: 69

Candidate Starts for Coco12\_78:

(Start: 58 @48978 has 1 MA's), (Start: 69 @49002 has 165 MA's), (Start: 74 @49026 has 6 MA's), (96, 49101), (116, 49230), (129, 49266),

Gene: Corazon\_9 Start: 3205, Stop: 3489, Start Num: 69

Candidate Starts for Corazon\_9:

(Start: 58 @3181 has 1 MA's), (Start: 69 @3205 has 165 MA's), (Start: 74 @3229 has 6 MA's), (96, 3304), (116, 3433), (129, 3469),

Gene: Cornie\_78 Start: 47540, Stop: 47824, Start Num: 69

Candidate Starts for Cornie\_78:

(Start: 69 @47540 has 165 MA's), (Start: 74 @47564 has 6 MA's), (116, 47768), (129, 47804),



Gene: Cornie\_82 Start: 48423, Stop: 48782, Start Num: 67

Candidate Starts for Cornie\_82:

(Start: 67 @48423 has 1 MA's), (Start: 74 @48447 has 6 MA's), (75, 48456), (102, 48555), (106, 48570), (117, 48663), (123, 48681), (130, 48693), (137, 48735), (139, 48759),

Gene: Courthouse\_72 Start: 46987, Stop: 46703, Start Num: 69

Candidate Starts for Courthouse\_72:

(Start: 69 @46987 has 165 MA's), (Start: 74 @46963 has 6 MA's), (116, 46759), (129, 46723),

Gene: Courthouse\_70 Start: 46345, Stop: 45986, Start Num: 68

Candidate Starts for Courthouse\_70:

(Start: 68 @46345 has 87 MA's), (73, 46324), (75, 46312), (106, 46204), (120, 46105), (121, 46102), (139, 46009),

Gene: CrystalP\_44 Start: 36121, Stop: 35825, Start Num: 69

Candidate Starts for CrystalP\_44:

(Start: 69 @36121 has 165 MA's), (76, 36085), (79, 36067), (91, 36034), (99, 35992), (129, 35845),

Gene: DLane\_83 Start: 50315, Stop: 50599, Start Num: 69

Candidate Starts for DLane\_83:

(Start: 69 @50315 has 165 MA's), (Start: 74 @50339 has 6 MA's), (96, 50414), (129, 50579),

Gene: DRBy19\_85 Start: 51131, Stop: 51415, Start Num: 69

Candidate Starts for DRBy19\_85:

(Start: 69 @51131 has 165 MA's), (Start: 74 @51155 has 6 MA's), (96, 51230), (116, 51359), (129, 51395),

Gene: DaWorst\_83 Start: 48921, Stop: 49292, Start Num: 68

Candidate Starts for DaWorst\_83:

(Start: 68 @48921 has 87 MA's), (Start: 74 @48945 has 6 MA's), (75, 48954), (102, 49053), (106, 49068), (139, 49269),

Gene: Daenerys\_81 Start: 50626, Stop: 50910, Start Num: 69

Candidate Starts for Daenerys\_81:

(Start: 69 @50626 has 165 MA's), (Start: 74 @50650 has 6 MA's), (96, 50725), (116, 50854), (129, 50890),

Gene: Dallas\_74 Start: 50547, Stop: 50263, Start Num: 69

Candidate Starts for Dallas\_74:

(Start: 69 @50547 has 165 MA's), (Start: 74 @50523 has 6 MA's), (96, 50448), (116, 50319), (129, 50283),

Gene: DeadP\_82 Start: 48110, Stop: 48394, Start Num: 69

Candidate Starts for DeadP\_82:

(21, 47948), (Start: 69 @48110 has 165 MA's), (Start: 74 @48134 has 6 MA's), (96, 48209), (116, 48338), (129, 48374),

Gene: Deb65\_75 Start: 48348, Stop: 48632, Start Num: 69

Candidate Starts for Deb65\_75:

(Start: 69 @48348 has 165 MA's), (Start: 74 @48372 has 6 MA's), (96, 48447), (116, 48576), (129, 48612),

Gene: Demsculpinboyz\_91 Start: 47365, Stop: 47763, Start Num: 68  
Candidate Starts for Demsculpinboyz\_91:  
(22, 47227), (Start: 68 @47365 has 87 MA's), (73, 47386), (76, 47401), (94, 47470), (101, 47527),  
(105, 47542), (106, 47551), (107, 47557), (117, 47644), (127, 47662), (130, 47674), (137, 47716),  
(139, 47740),

Gene: DillTech15\_88 Start: 49164, Stop: 49511, Start Num: 74  
Candidate Starts for DillTech15\_88:  
(50, 49107), (Start: 68 @49140 has 87 MA's), (Start: 74 @49164 has 6 MA's), (75, 49173), (102,  
49272), (106, 49287), (139, 49488),

Gene: DirtMcgirt\_80 Start: 46288, Stop: 46572, Start Num: 69  
Candidate Starts for DirtMcgirt\_80:  
(Start: 69 @46288 has 165 MA's), (Start: 74 @46312 has 6 MA's), (96, 46387), (116, 46516), (129,  
46552),

Gene: DmpstrDiver\_75 Start: 50974, Stop: 50690, Start Num: 69  
Candidate Starts for DmpstrDiver\_75:  
(Start: 69 @50974 has 165 MA's), (Start: 74 @50950 has 6 MA's), (96, 50875), (116, 50746), (129,  
50710),

Gene: Donkeykong\_90 Start: 52122, Stop: 52481, Start Num: 68  
Candidate Starts for Donkeykong\_90:  
(31, 52029), (38, 52053), (Start: 68 @52122 has 87 MA's), (73, 52143), (75, 52155), (109, 52311),  
(122, 52374), (135, 52416), (139, 52458),

Gene: Donkeykong\_86 Start: 50724, Stop: 51008, Start Num: 69  
Candidate Starts for Donkeykong\_86:  
(21, 50562), (Start: 69 @50724 has 165 MA's), (Start: 74 @50748 has 6 MA's), (96, 50823), (116,  
50952), (129, 50988),

Gene: Donkeykong\_88 Start: 51342, Stop: 51620, Start Num: 69  
Candidate Starts for Donkeykong\_88:  
(Start: 69 @51342 has 165 MA's), (Start: 74 @51366 has 6 MA's), (75, 51375), (85, 51408), (88,  
51420), (89, 51423), (104, 51471), (106, 51486), (116, 51564), (129, 51600),

Gene: Doomphist\_88 Start: 50710, Stop: 51087, Start Num: 62  
Candidate Starts for Doomphist\_88:  
(Start: 62 @50710 has 7 MA's), (Start: 74 @50752 has 6 MA's), (75, 50761), (106, 50875), (117,  
50968), (123, 50986), (130, 50998), (137, 51040), (139, 51064),

Gene: Dorothy\_83 Start: 51040, Stop: 51411, Start Num: 68  
Candidate Starts for Dorothy\_83:  
(16, 50839), (18, 50851), (25, 50911), (27, 50923), (39, 50977), (Start: 68 @51040 has 87 MA's),  
(Start: 74 @51064 has 6 MA's), (75, 51073), (102, 51172), (106, 51187), (139, 51388),

Gene: DotProduct\_76 Start: 47105, Stop: 47389, Start Num: 69  
Candidate Starts for DotProduct\_76:  
(Start: 69 @47105 has 165 MA's), (Start: 74 @47129 has 6 MA's), (96, 47204), (116, 47333), (129,  
47369),

Gene: Doug\_82 Start: 50547, Stop: 50909, Start Num: 68  
Candidate Starts for Doug\_82:

(Start: 68 @50547 has 87 MA's), (75, 50580), (76, 50583), (83, 50610), (86, 50616), (106, 50736), (110, 50796), (139, 50886),

Gene: Drago\_78 Start: 46291, Stop: 46575, Start Num: 69

Candidate Starts for Drago\_78:

(Start: 69 @46291 has 165 MA's), (Start: 74 @46315 has 6 MA's), (96, 46390), (116, 46519), (129, 46555),

Gene: Duke13\_80 Start: 51836, Stop: 51552, Start Num: 69

Candidate Starts for Duke13\_80:

(Start: 58 @51860 has 1 MA's), (Start: 69 @51836 has 165 MA's), (Start: 74 @51812 has 6 MA's), (96, 51737), (116, 51608), (129, 51572),

Gene: Duplicity\_56 Start: 36775, Stop: 37137, Start Num: 71

Candidate Starts for Duplicity\_56:

(29, 36649), (Start: 62 @36745 has 7 MA's), (Start: 71 @36775 has 18 MA's), (Start: 77 @36808 has 1 MA's), (110, 36949), (113, 36961), (116, 36976), (124, 37000), (129, 37012), (131, 37018), (136, 37051),

Gene: Eish\_84 Start: 49994, Stop: 50278, Start Num: 69

Candidate Starts for Eish\_84:

(Start: 69 @49994 has 165 MA's), (Start: 74 @50018 has 6 MA's), (96, 50093), (116, 50222), (129, 50258),

Gene: Ejimix\_75 Start: 52415, Stop: 52131, Start Num: 69

Candidate Starts for Ejimix\_75:

(Start: 69 @52415 has 165 MA's), (Start: 74 @52391 has 6 MA's), (96, 52316), (116, 52187), (129, 52151),

Gene: EleanorGeorge\_80 Start: 48792, Stop: 49136, Start Num: 65

Candidate Starts for EleanorGeorge\_80:

(Start: 65 @48792 has 3 MA's), (73, 48819), (76, 48834), (106, 48924), (117, 49017), (127, 49035), (130, 49047), (137, 49089), (139, 49113),

Gene: EleanorGeorge\_82 Start: 49312, Stop: 49815, Start Num: 68

Candidate Starts for EleanorGeorge\_82:

(Start: 68 @49312 has 87 MA's), (73, 49333), (76, 49348), (84, 49372), (106, 49465), (110, 49525), (139, 49666), (142, 49687), (143, 49708), (144, 49735), (148, 49765), (150, 49774), (151, 49795),

Gene: Elite2014\_40 Start: 33973, Stop: 33602, Start Num: 68

Candidate Starts for Elite2014\_40:

(47, 34012), (61, 33994), (Start: 68 @33973 has 87 MA's), (Start: 74 @33949 has 6 MA's), (75, 33940), (106, 33826), (109, 33772), (122, 33709), (135, 33667), (139, 33625),

Gene: Emma\_88 Start: 49160, Stop: 49480, Start Num: 68

Candidate Starts for Emma\_88:

(51, 49127), (Start: 68 @49160 has 87 MA's), (Start: 74 @49184 has 6 MA's), (75, 49193), (102, 49292), (106, 49307), (110, 49367), (139, 49457),

Gene: Emmina\_44 Start: 34912, Stop: 34541, Start Num: 68

Candidate Starts for Emmina\_44:

(Start: 68 @34912 has 87 MA's), (Start: 74 @34885 has 6 MA's), (75, 34876), (87, 34843), (90, 34831), (92, 34828), (106, 34765), (109, 34711), (122, 34648), (135, 34606), (139, 34564),

Gene: Empress\_83 Start: 49521, Stop: 49898, Start Num: 62

Candidate Starts for Empress\_83:

(Start: 62 @49521 has 7 MA's), (Start: 74 @49563 has 6 MA's), (75, 49572), (106, 49686), (117, 49779), (123, 49797), (130, 49809), (137, 49851), (139, 49875),

Gene: Enby\_82 Start: 46567, Stop: 46851, Start Num: 69

Candidate Starts for Enby\_82:

(Start: 69 @46567 has 165 MA's), (Start: 74 @46591 has 6 MA's), (96, 46666), (116, 46795), (129, 46831),

Gene: Eradicator\_76 Start: 47953, Stop: 48312, Start Num: 68

Candidate Starts for Eradicator\_76:

(Start: 68 @47953 has 87 MA's), (Start: 74 @47977 has 6 MA's), (75, 47986), (102, 48085), (106, 48100), (117, 48193), (123, 48211), (130, 48223), (137, 48265), (139, 48289),

Gene: EricMillard\_74 Start: 51619, Stop: 51335, Start Num: 69

Candidate Starts for EricMillard\_74:

(Start: 69 @51619 has 165 MA's), (Start: 74 @51595 has 6 MA's), (96, 51520), (116, 51391), (129, 51355),

Gene: Estave1\_93 Start: 53691, Stop: 53975, Start Num: 69

Candidate Starts for Estave1\_93:

(Start: 63 @53676 has 1 MA's), (Start: 69 @53691 has 165 MA's), (Start: 74 @53715 has 6 MA's), (96, 53790), (116, 53919), (129, 53955),

Gene: Eyeball\_63 Start: 41903, Stop: 41556, Start Num: 68

Candidate Starts for Eyeball\_63:

(17, 42104), (43, 41960), (45, 41957), (Start: 68 @41903 has 87 MA's), (72, 41891), (118, 41654), (139, 41579),

Gene: Filuzino\_82 Start: 50908, Stop: 51192, Start Num: 69

Candidate Starts for Filuzino\_82:

(Start: 69 @50908 has 165 MA's), (Start: 74 @50932 has 6 MA's), (96, 51007), (116, 51136), (129, 51172),

Gene: Firehouse51\_79 Start: 50692, Stop: 51051, Start Num: 68

Candidate Starts for Firehouse51\_79:

(18, 50491), (19, 50503), (27, 50563), (28, 50575), (41, 50629), (Start: 68 @50692 has 87 MA's), (Start: 74 @50716 has 6 MA's), (75, 50725), (87, 50758), (106, 50839), (117, 50932), (123, 50950), (130, 50962), (137, 51004), (139, 51028),

Gene: FirstPlacePfu\_60 Start: 37764, Stop: 38024, Start Num: 71

Candidate Starts for FirstPlacePfu\_60:

(33, 37662), (35, 37671), (Start: 71 @37764 has 18 MA's), (Start: 77 @37797 has 1 MA's), (110, 37938), (113, 37950), (116, 37965), (124, 37989), (129, 38001), (131, 38007),

Gene: Flathead\_81 Start: 48740, Stop: 49024, Start Num: 69

Candidate Starts for Flathead\_81:

(Start: 69 @48740 has 165 MA's), (Start: 74 @48764 has 6 MA's), (96, 48839), (116, 48968), (129, 49004),

Gene: Flathead\_85 Start: 49803, Stop: 50174, Start Num: 68

Candidate Starts for Flathead\_85:

(Start: 68 @49803 has 87 MA's), (Start: 74 @49827 has 6 MA's), (75, 49836), (102, 49935), (106, 49950), (139, 50151),

Gene: Florinda\_94 Start: 51591, Stop: 51875, Start Num: 68

Candidate Starts for Florinda\_94:

(Start: 68 @51591 has 87 MA's), (Start: 74 @51615 has 6 MA's), (75, 51624), (102, 51723), (106, 51738), (126, 51852),

Gene: Fruitloop\_78 Start: 48745, Stop: 49029, Start Num: 69

Candidate Starts for Fruitloop\_78:

(57, 48718), (Start: 69 @48745 has 165 MA's), (Start: 74 @48769 has 6 MA's), (96, 48844), (116, 48973), (129, 49009),

Gene: Fulbright\_56 Start: 36212, Stop: 36574, Start Num: 71

Candidate Starts for Fulbright\_56:

(14, 35969), (29, 36086), (Start: 62 @36182 has 7 MA's), (Start: 71 @36212 has 18 MA's), (Start: 77 @36245 has 1 MA's), (110, 36386), (113, 36398), (116, 36413), (124, 36437), (129, 36449), (131, 36455), (136, 36488),

Gene: Galactic\_80 Start: 48440, Stop: 48724, Start Num: 69

Candidate Starts for Galactic\_80:

(44, 48380), (Start: 69 @48440 has 165 MA's), (Start: 74 @48464 has 6 MA's), (96, 48539), (116, 48668), (129, 48704),

Gene: Gandalph\_83 Start: 47074, Stop: 47445, Start Num: 68

Candidate Starts for Gandalph\_83:

(Start: 68 @47074 has 87 MA's), (Start: 74 @47098 has 6 MA's), (75, 47107), (106, 47221), (110, 47281), (139, 47422),

Gene: Gandalph\_79 Start: 46011, Stop: 46295, Start Num: 70

Candidate Starts for Gandalph\_79:

(Start: 70 @46011 has 2 MA's), (Start: 74 @46035 has 6 MA's), (96, 46110), (116, 46239), (129, 46275),

Gene: Geralt\_75 Start: 48346, Stop: 48630, Start Num: 69

Candidate Starts for Geralt\_75:

(Start: 69 @48346 has 165 MA's), (Start: 74 @48370 has 6 MA's), (96, 48445), (116, 48574), (129, 48610),

Gene: Gex\_59 Start: 37534, Stop: 37896, Start Num: 71

Candidate Starts for Gex\_59:

(14, 37291), (29, 37408), (Start: 62 @37504 has 7 MA's), (Start: 71 @37534 has 18 MA's), (Start: 77 @37567 has 1 MA's), (110, 37708), (113, 37720), (116, 37735), (124, 37759), (129, 37771), (131, 37777), (136, 37810),

Gene: Girafales\_91 Start: 51196, Stop: 51480, Start Num: 68

Candidate Starts for Girafales\_91:

(Start: 68 @51196 has 87 MA's), (Start: 74 @51220 has 6 MA's), (75, 51229), (102, 51328), (106, 51343), (126, 51457),

Gene: Gonephishing\_71 Start: 47256, Stop: 46885, Start Num: 68

Candidate Starts for Gonephishing\_71:

(46, 47295), (60, 47277), (Start: 68 @47256 has 87 MA's), (Start: 74 @47232 has 6 MA's), (75, 47223), (102, 47124), (106, 47109), (139, 46908),

Gene: Guppsters\_76 Start: 46731, Stop: 47015, Start Num: 69

Candidate Starts for Guppsters\_76:

(Start: 58 @46707 has 1 MA's), (Start: 69 @46731 has 165 MA's), (Start: 74 @46755 has 6 MA's), (96, 46830), (116, 46959), (129, 46995),

Gene: Guppsters\_78 Start: 47339, Stop: 47707, Start Num: 68

Candidate Starts for Guppsters\_78:

(Start: 68 @47339 has 87 MA's), (Start: 74 @47363 has 6 MA's), (75, 47372), (87, 47405), (90, 47417), (92, 47420), (102, 47468), (106, 47483), (139, 47684),

Gene: Gwendoluna\_64 Start: 42781, Stop: 42374, Start Num: 68

Candidate Starts for Gwendoluna\_64:

(Start: 68 @42781 has 87 MA's), (75, 42748), (76, 42745), (83, 42718), (86, 42712), (106, 42592), (120, 42493), (121, 42490), (139, 42397),

Gene: Hades\_80 Start: 46896, Stop: 47180, Start Num: 69

Candidate Starts for Hades\_80:

(Start: 69 @46896 has 165 MA's), (Start: 74 @46920 has 6 MA's), (96, 46995), (116, 47124),

Gene: Halley\_77 Start: 51626, Stop: 51342, Start Num: 69

Candidate Starts for Halley\_77:

(Start: 69 @51626 has 165 MA's), (Start: 74 @51602 has 6 MA's), (96, 51527), (116, 51398), (129, 51362),

Gene: Hamulus\_80 Start: 48587, Stop: 48871, Start Num: 69

Candidate Starts for Hamulus\_80:

(Start: 69 @48587 has 165 MA's), (Start: 74 @48611 has 6 MA's), (96, 48686), (116, 48815), (129, 48851),

Gene: Hannaconda\_70 Start: 46036, Stop: 45752, Start Num: 69

Candidate Starts for Hannaconda\_70:

(Start: 69 @46036 has 165 MA's), (Start: 74 @46012 has 6 MA's), (116, 45808), (129, 45772),

Gene: Hannaconda\_68 Start: 45250, Stop: 44864, Start Num: 68

Candidate Starts for Hannaconda\_68:

(31, 45343), (38, 45319), (Start: 68 @45250 has 87 MA's), (73, 45229), (76, 45214), (106, 45088), (110, 45028), (139, 44887),

Gene: Harley\_85 Start: 49675, Stop: 50043, Start Num: 68

Candidate Starts for Harley\_85:

(46, 49636), (60, 49654), (Start: 68 @49675 has 87 MA's), (Start: 74 @49699 has 6 MA's), (75, 49708), (87, 49741), (90, 49753), (92, 49756), (102, 49804), (106, 49819), (139, 50020),

Gene: Harley\_80 Start: 48340, Stop: 48624, Start Num: 69

Candidate Starts for Harley\_80:

(Start: 69 @48340 has 165 MA's), (Start: 74 @48364 has 6 MA's), (96, 48439), (116, 48568), (129, 48604),

Gene: Hegedechwinu\_83 Start: 48330, Stop: 48701, Start Num: 68

Candidate Starts for Hegedechwinu\_83:

(48, 48294), (Start: 68 @48330 has 87 MA's), (Start: 74 @48354 has 6 MA's), (75, 48363), (87, 48396), (106, 48477), (139, 48678),

Gene: Hlubikazi\_80 Start: 47314, Stop: 47595, Start Num: 69

Candidate Starts for Hlubikazi\_80:

(Start: 69 @47314 has 165 MA's), (Start: 74 @47338 has 6 MA's), (75, 47347), (106, 47461), (115, 47533), (116, 47539),

Gene: Hlubikazi\_76 Start: 46227, Stop: 46511, Start Num: 69

Candidate Starts for Hlubikazi\_76:

(Start: 58 @46203 has 1 MA's), (Start: 69 @46227 has 165 MA's), (Start: 74 @46251 has 6 MA's), (96, 46326), (116, 46455), (129, 46491),

Gene: HokkenD\_68 Start: 49895, Stop: 49611, Start Num: 69

Candidate Starts for HokkenD\_68:

(Start: 69 @49895 has 165 MA's), (Start: 74 @49871 has 6 MA's), (96, 49796), (116, 49667), (129, 49631),

Gene: Hughesyang\_74 Start: 51585, Stop: 51301, Start Num: 69

Candidate Starts for Hughesyang\_74:

(Start: 69 @51585 has 165 MA's), (Start: 74 @51561 has 6 MA's), (96, 51486), (116, 51357), (129, 51321),

Gene: Huphlebuff\_10 Start: 2982, Stop: 3266, Start Num: 69

Candidate Starts for Huphlebuff\_10:

(Start: 58 @2958 has 1 MA's), (Start: 69 @2982 has 165 MA's), (Start: 74 @3006 has 6 MA's), (96, 3081), (116, 3210), (129, 3246),

Gene: IHOP\_42 Start: 35685, Stop: 35389, Start Num: 69

Candidate Starts for IHOP\_42:

(Start: 69 @35685 has 165 MA's), (76, 35649), (79, 35631), (91, 35598), (99, 35556), (129, 35409),

Gene: Ibhubesi\_80 Start: 47022, Stop: 47336, Start Num: 55

Candidate Starts for Ibhubesi\_80:

(Start: 55 @47022 has 3 MA's), (Start: 58 @47028 has 1 MA's), (Start: 69 @47052 has 165 MA's), (Start: 74 @47076 has 6 MA's), (115, 47274), (116, 47280), (129, 47316),

Gene: IgnatiusPatJac\_61 Start: 40665, Stop: 40318, Start Num: 68

Candidate Starts for IgnatiusPatJac\_61:

(17, 40866), (43, 40722), (45, 40719), (Start: 68 @40665 has 87 MA's), (72, 40653), (78, 40623), (82, 40605), (95, 40572), (98, 40530), (118, 40416), (139, 40341),

Gene: Inca\_41 Start: 34210, Stop: 33914, Start Num: 69

Candidate Starts for Inca\_41:

(Start: 69 @34210 has 165 MA's), (76, 34174), (79, 34156), (91, 34123), (99, 34081), (129, 33934),

Gene: Inventum\_80 Start: 49225, Stop: 49596, Start Num: 68

Candidate Starts for Inventum\_80:

(16, 49024), (18, 49036), (25, 49096), (27, 49108), (39, 49162), (Start: 68 @49225 has 87 MA's), (Start: 74 @49249 has 6 MA's), (75, 49258), (102, 49357), (106, 49372), (139, 49573),

Gene: IrishSherpFalk\_83 Start: 50030, Stop: 50401, Start Num: 68

Candidate Starts for IrishSherpFalk\_83:

(Start: 68 @50030 has 87 MA's), (Start: 74 @50054 has 6 MA's), (75, 50063), (102, 50162), (106, 50177), (139, 50378),

Gene: IrishSherpFalk\_81 Start: 49331, Stop: 49615, Start Num: 69

Candidate Starts for IrishSherpFalk\_81:

(Start: 55 @49301 has 3 MA's), (Start: 58 @49307 has 1 MA's), (Start: 69 @49331 has 165 MA's), (Start: 74 @49355 has 6 MA's), (96, 49430), (116, 49559), (129, 49595),

Gene: Jabbawokkie\_91 Start: 47805, Stop: 48089, Start Num: 69

Candidate Starts for Jabbawokkie\_91:

(Start: 69 @47805 has 165 MA's), (Start: 74 @47829 has 6 MA's), (116, 48033), (129, 48069),

Gene: JalFarm20\_90 Start: 50347, Stop: 50718, Start Num: 68

Candidate Starts for JalFarm20\_90:

(48, 50311), (Start: 68 @50347 has 87 MA's), (Start: 74 @50371 has 6 MA's), (75, 50380), (87, 50413), (106, 50494), (139, 50695),

Gene: James\_82 Start: 50466, Stop: 50750, Start Num: 69

Candidate Starts for James\_82:

(Start: 69 @50466 has 165 MA's), (Start: 74 @50490 has 6 MA's), (96, 50565), (116, 50694), (129, 50730),

Gene: James\_86 Start: 51529, Stop: 51900, Start Num: 68

Candidate Starts for James\_86:

(Start: 68 @51529 has 87 MA's), (Start: 74 @51553 has 6 MA's), (75, 51562), (102, 51661), (106, 51676), (139, 51877),

Gene: Jarcob\_85 Start: 51167, Stop: 51499, Start Num: 77

Candidate Starts for Jarcob\_85:

(Start: 77 @51167 has 1 MA's), (102, 51260), (106, 51275), (139, 51476),

Gene: Jarcob\_81 Start: 50063, Stop: 50347, Start Num: 69

Candidate Starts for Jarcob\_81:

(Start: 69 @50063 has 165 MA's), (Start: 74 @50087 has 6 MA's), (96, 50162), (116, 50291), (129, 50327),

Gene: Jinglebell\_86 Start: 49768, Stop: 50088, Start Num: 69

Candidate Starts for Jinglebell\_86:

(Start: 58 @49744 has 1 MA's), (Start: 69 @49768 has 165 MA's), (Start: 74 @49792 has 6 MA's), (96, 49867), (116, 49996), (129, 50032),

Gene: Job42\_81 Start: 51522, Stop: 51818, Start Num: 69

Candidate Starts for Job42\_81:

(Start: 69 @51522 has 165 MA's), (73, 51543), (76, 51558), (106, 51684), (116, 51762), (129, 51798),

Gene: JoeyJr\_86 Start: 51134, Stop: 51505, Start Num: 68

Candidate Starts for JoeyJr\_86:

(Start: 68 @51134 has 87 MA's), (Start: 74 @51158 has 6 MA's), (75, 51167), (102, 51266), (106, 51281), (139, 51482),

Gene: JoeyJr\_82 Start: 50251, Stop: 50535, Start Num: 69

Candidate Starts for JoeyJr\_82:



(Start: 69 @50251 has 165 MA's), (Start: 74 @50275 has 6 MA's), (96, 50350), (116, 50479), (129, 50515),

Gene: JoieB\_10 Start: 3201, Stop: 3485, Start Num: 69

Candidate Starts for JoieB\_10:

(Start: 58 @3177 has 1 MA's), (Start: 69 @3201 has 165 MA's), (Start: 74 @3225 has 6 MA's), (96, 3300), (116, 3429), (129, 3465),

Gene: JuicyJay\_74 Start: 52760, Stop: 52476, Start Num: 69

Candidate Starts for JuicyJay\_74:

(Start: 69 @52760 has 165 MA's), (Start: 74 @52736 has 6 MA's), (96, 52661), (116, 52532), (129, 52496),

Gene: Kalah2\_70 Start: 50919, Stop: 50635, Start Num: 69

Candidate Starts for Kalah2\_70:

(Start: 69 @50919 has 165 MA's), (Start: 74 @50895 has 6 MA's), (96, 50820), (116, 50691), (129, 50655),

Gene: KashFlow\_66 Start: 45121, Stop: 44753, Start Num: 68

Candidate Starts for KashFlow\_66:

(31, 45214), (38, 45190), (Start: 68 @45121 has 87 MA's), (Start: 74 @45097 has 6 MA's), (75, 45088), (87, 45055), (90, 45043), (92, 45040), (106, 44977), (110, 44917), (139, 44776),

Gene: Kenuha5\_79 Start: 50155, Stop: 50526, Start Num: 68

Candidate Starts for Kenuha5\_79:

(31, 50062), (38, 50086), (Start: 68 @50155 has 87 MA's), (Start: 74 @50179 has 6 MA's), (75, 50188), (106, 50302), (139, 50503),

Gene: Kenuha5\_77 Start: 49369, Stop: 49653, Start Num: 70

Candidate Starts for Kenuha5\_77:

(Start: 70 @49369 has 2 MA's), (Start: 74 @49393 has 6 MA's), (96, 49468), (116, 49597), (129, 49633),

Gene: KingMidas\_84 Start: 49936, Stop: 50313, Start Num: 62

Candidate Starts for KingMidas\_84:

(Start: 62 @49936 has 7 MA's), (Start: 74 @49978 has 6 MA's), (75, 49987), (102, 50086), (106, 50101), (117, 50194), (123, 50212), (130, 50224), (137, 50266), (139, 50290),

Gene: Kingsley\_85 Start: 51609, Stop: 51893, Start Num: 69

Candidate Starts for Kingsley\_85:

(Start: 69 @51609 has 165 MA's), (Start: 74 @51633 has 6 MA's), (116, 51837), (129, 51873),

Gene: Klein\_73 Start: 50165, Stop: 49884, Start Num: 69

Candidate Starts for Klein\_73:

(Start: 69 @50165 has 165 MA's), (Start: 74 @50144 has 6 MA's), (81, 50111), (116, 49940), (129, 49904),

Gene: Koella\_76 Start: 46177, Stop: 46458, Start Num: 69

Candidate Starts for Koella\_76:

(Start: 69 @46177 has 165 MA's), (Start: 74 @46198 has 6 MA's), (81, 46231), (116, 46402), (129, 46438),

Gene: KristaRAM\_82 Start: 48874, Stop: 49245, Start Num: 68

Candidate Starts for KristaRAM\_82:

(16, 48673), (18, 48685), (25, 48745), (27, 48757), (39, 48811), (Start: 68 @48874 has 87 MA's), (Start: 74 @48898 has 6 MA's), (75, 48907), (102, 49006), (106, 49021), (110, 49081), (139, 49222),

Gene: KristaRAM\_79 Start: 47927, Stop: 48211, Start Num: 69

Candidate Starts for KristaRAM\_79:

(Start: 69 @47927 has 165 MA's), (Start: 74 @47951 has 6 MA's), (96, 48026), (116, 48155), (129, 48191),

Gene: Kumao\_59 Start: 43007, Stop: 43291, Start Num: 69

Candidate Starts for Kumao\_59:

(44, 42947), (Start: 69 @43007 has 165 MA's), (Start: 74 @43031 has 6 MA's), (96, 43106), (116, 43235), (129, 43271),

Gene: Kykar\_62 Start: 41465, Stop: 41115, Start Num: 68

Candidate Starts for Kykar\_62:

(17, 41666), (43, 41522), (45, 41519), (Start: 68 @41465 has 87 MA's), (73, 41444), (106, 41333), (109, 41282), (120, 41234), (121, 41231), (139, 41138),

Gene: Lamina13\_65 Start: 42283, Stop: 41903, Start Num: 68

Candidate Starts for Lamina13\_65:

(17, 42484), (43, 42340), (45, 42337), (Start: 68 @42283 has 87 MA's), (73, 42262), (76, 42247), (106, 42121), (109, 42070), (120, 42022), (121, 42019), (139, 41926),

Gene: Latretium\_82 Start: 48306, Stop: 48590, Start Num: 69

Candidate Starts for Latretium\_82:

(Start: 69 @48306 has 165 MA's), (Start: 74 @48330 has 6 MA's), (96, 48405), (116, 48534), (129, 48570),

Gene: Leozinho\_79 Start: 46485, Stop: 46781, Start Num: 69

Candidate Starts for Leozinho\_79:

(Start: 69 @46485 has 165 MA's), (76, 46521), (79, 46539), (91, 46572), (99, 46614), (116, 46725), (129, 46761),

Gene: Leperchaun\_84 Start: 50368, Stop: 50739, Start Num: 68

Candidate Starts for Leperchaun\_84:

(Start: 68 @50368 has 87 MA's), (Start: 74 @50392 has 6 MA's), (75, 50401), (102, 50500), (106, 50515), (139, 50716),

Gene: Leperchaun\_80 Start: 49485, Stop: 49769, Start Num: 69

Candidate Starts for Leperchaun\_80:

(Start: 69 @49485 has 165 MA's), (Start: 74 @49509 has 6 MA's), (96, 49584), (116, 49713), (129, 49749),

Gene: LilMoolah\_82 Start: 49634, Stop: 49918, Start Num: 69

Candidate Starts for LilMoolah\_82:

(23, 49496), (36, 49559), (Start: 69 @49634 has 165 MA's), (Start: 74 @49658 has 6 MA's), (96, 49733), (116, 49862), (129, 49898),

Gene: LilSpotty\_76 Start: 44396, Stop: 44653, Start Num: 71

Candidate Starts for LilSpotty\_76:

(20, 44225), (29, 44270), (Start: 62 @44366 has 7 MA's), (Start: 71 @44396 has 18 MA's), (Start: 77 @44429 has 1 MA's), (110, 44570), (111, 44573), (112, 44576), (115, 44600), (116, 44606), (124,

44630),

Gene: Lilbit\_10 Start: 3253, Stop: 3537, Start Num: 69

Candidate Starts for Lilbit\_10:

(Start: 58 @3229 has 1 MA's), (Start: 69 @3253 has 165 MA's), (Start: 74 @3277 has 6 MA's), (96, 3352), (116, 3481), (129, 3517),

Gene: Lilpickle\_40 Start: 33973, Stop: 33602, Start Num: 68

Candidate Starts for Lilpickle\_40:

(47, 34012), (61, 33994), (Start: 68 @33973 has 87 MA's), (Start: 74 @33949 has 6 MA's), (75, 33940), (106, 33826), (109, 33772), (122, 33709), (135, 33667), (139, 33625),

Gene: LittleE\_77 Start: 50428, Stop: 50147, Start Num: 69

Candidate Starts for LittleE\_77:

(Start: 69 @50428 has 165 MA's), (Start: 74 @50407 has 6 MA's), (96, 50332), (116, 50203), (129, 50167),

Gene: LittleLaf\_9 Start: 2982, Stop: 3266, Start Num: 69

Candidate Starts for LittleLaf\_9:

(Start: 58 @2958 has 1 MA's), (Start: 69 @2982 has 165 MA's), (Start: 74 @3006 has 6 MA's), (96, 3081), (116, 3210), (129, 3246),

Gene: Llama\_88 Start: 49624, Stop: 49944, Start Num: 69

Candidate Starts for Llama\_88:

(Start: 58 @49600 has 1 MA's), (Start: 69 @49624 has 165 MA's), (Start: 74 @49648 has 6 MA's), (96, 49723), (116, 49852), (129, 49888),

Gene: Llij\_77 Start: 46445, Stop: 46729, Start Num: 69

Candidate Starts for Llij\_77:

(Start: 69 @46445 has 165 MA's), (Start: 74 @46469 has 6 MA's), (96, 46544), (116, 46673), (129, 46709),

Gene: Lorde\_81 Start: 45732, Stop: 46016, Start Num: 69

Candidate Starts for Lorde\_81:

(Start: 69 @45732 has 165 MA's), (Start: 74 @45756 has 6 MA's), (96, 45831), (116, 45960), (129, 45996),

Gene: Lucky2013\_73 Start: 47341, Stop: 47081, Start Num: 74

Candidate Starts for Lucky2013\_73:

(Start: 69 @47365 has 165 MA's), (Start: 74 @47341 has 6 MA's), (96, 47266), (116, 47137), (129, 47101),

Gene: LunaBlu\_84 Start: 49474, Stop: 49758, Start Num: 69

Candidate Starts for LunaBlu\_84:

(Start: 69 @49474 has 165 MA's), (Start: 74 @49498 has 6 MA's), (96, 49573), (116, 49702), (129, 49738),

Gene: LunaStella\_73 Start: 48469, Stop: 48825, Start Num: 68

Candidate Starts for LunaStella\_73:

(51, 48427), (59, 48445), (Start: 68 @48469 has 87 MA's), (73, 48490), (75, 48502), (117, 48706), (127, 48724), (130, 48736), (137, 48778), (139, 48802),

Gene: MadMen\_89 Start: 50218, Stop: 50580, Start Num: 68

Candidate Starts for MadMen\_89:

(Start: 68 @50218 has 87 MA's), (73, 50239), (103, 50347), (109, 50413), (120, 50461), (121, 50464), (139, 50557),

Gene: MadMen\_87 Start: 49600, Stop: 49884, Start Num: 69

Candidate Starts for MadMen\_87:

(44, 49540), (Start: 69 @49600 has 165 MA's), (Start: 74 @49624 has 6 MA's), (96, 49699), (116, 49828), (129, 49864),

Gene: Magsby\_58 Start: 37535, Stop: 37897, Start Num: 71

Candidate Starts for Magsby\_58:

(14, 37292), (29, 37409), (Start: 62 @37505 has 7 MA's), (Start: 71 @37535 has 18 MA's), (Start: 77 @37568 has 1 MA's), (110, 37709), (113, 37721), (116, 37736), (124, 37760), (129, 37772), (131, 37778), (136, 37811),

Gene: Mahavrat\_81 Start: 47831, Stop: 48169, Start Num: 68

Candidate Starts for Mahavrat\_81:

(30, 47726), (37, 47756), (Start: 68 @47831 has 87 MA's), (73, 47852), (76, 47867), (106, 47957), (117, 48050), (127, 48068), (130, 48080), (137, 48122), (139, 48146),

Gene: Manda\_43 Start: 35798, Stop: 35514, Start Num: 69

Candidate Starts for Manda\_43:

(Start: 69 @35798 has 165 MA's), (Start: 74 @35774 has 6 MA's), (96, 35699), (116, 35570), (129, 35534),

Gene: Mandlovu\_80 Start: 47256, Stop: 47537, Start Num: 69

Candidate Starts for Mandlovu\_80:

(Start: 69 @47256 has 165 MA's), (Start: 74 @47280 has 6 MA's), (75, 47289), (106, 47403), (115, 47475), (116, 47481),

Gene: Mandlovu\_76 Start: 46169, Stop: 46453, Start Num: 69

Candidate Starts for Mandlovu\_76:

(Start: 58 @46145 has 1 MA's), (Start: 69 @46169 has 165 MA's), (Start: 74 @46193 has 6 MA's), (96, 46268), (116, 46397), (129, 46433),

Gene: Marker\_85 Start: 47302, Stop: 47679, Start Num: 73

Candidate Starts for Marker\_85:

(66, 47275), (73, 47302), (76, 47317), (94, 47386), (100, 47440), (101, 47443), (105, 47458), (106, 47467), (107, 47473), (117, 47560), (127, 47578), (130, 47590), (137, 47632), (139, 47656),

Gene: Marker\_96 Start: 50064, Stop: 50420, Start Num: 73

Candidate Starts for Marker\_96:

(73, 50064), (76, 50079), (84, 50103), (93, 50130), (97, 50160), (114, 50280), (135, 50355), (139, 50397),

Gene: Marker\_93 Start: 49400, Stop: 49684, Start Num: 69

Candidate Starts for Marker\_93:

(Start: 69 @49400 has 165 MA's), (Start: 74 @49424 has 6 MA's), (96, 49499), (116, 49628), (129, 49664),

Gene: Marshmallow\_43 Start: 36119, Stop: 35823, Start Num: 69

Candidate Starts for Marshmallow\_43:

(Start: 69 @36119 has 165 MA's), (76, 36083), (79, 36065), (91, 36032), (99, 35990), (129, 35843),

Gene: Marvin\_8 Start: 2964, Stop: 3248, Start Num: 69

Candidate Starts for Marvin\_8:

(Start: 58 @2940 has 1 MA's), (Start: 69 @2964 has 165 MA's), (Start: 74 @2988 has 6 MA's), (96, 3063), (116, 3192), (129, 3228),

Gene: Mattes\_82 Start: 50261, Stop: 50632, Start Num: 68

Candidate Starts for Mattes\_82:

(32, 50174), (Start: 68 @50261 has 87 MA's), (Start: 74 @50285 has 6 MA's), (75, 50294), (102, 50393), (106, 50408), (139, 50609),

Gene: Melville\_63 Start: 37059, Stop: 37451, Start Num: 62

Candidate Starts for Melville\_63:

(29, 36963), (Start: 62 @37059 has 7 MA's), (Start: 71 @37089 has 18 MA's), (Start: 77 @37122 has 1 MA's), (110, 37263), (113, 37275), (116, 37290), (124, 37314), (129, 37326), (131, 37332), (136, 37365),

Gene: MiaZeal\_76 Start: 48021, Stop: 47737, Start Num: 69

Candidate Starts for MiaZeal\_76:

(Start: 69 @48021 has 165 MA's), (Start: 74 @47997 has 6 MA's), (96, 47922), (116, 47793), (129, 47757),

Gene: MiaZeal\_72 Start: 46608, Stop: 46255, Start Num: 68

Candidate Starts for MiaZeal\_72:

(Start: 68 @46608 has 87 MA's), (73, 46587), (75, 46575), (106, 46467), (117, 46374), (127, 46356), (130, 46344), (137, 46302), (139, 46278),

Gene: MilanaBonita\_77 Start: 48008, Stop: 48292, Start Num: 69

Candidate Starts for MilanaBonita\_77:

(Start: 69 @48008 has 165 MA's), (Start: 74 @48032 has 6 MA's), (96, 48107), (116, 48236), (129, 48272),

Gene: MilleniumForce\_84 Start: 50365, Stop: 50733, Start Num: 68

Candidate Starts for MilleniumForce\_84:

(Start: 68 @50365 has 87 MA's), (Start: 74 @50389 has 6 MA's), (75, 50398), (87, 50431), (90, 50443), (92, 50446), (106, 50509), (139, 50710),

Gene: MilleniumForce\_82 Start: 49757, Stop: 50041, Start Num: 69

Candidate Starts for MilleniumForce\_82:

(Start: 69 @49757 has 165 MA's), (Start: 74 @49781 has 6 MA's), (96, 49856), (116, 49985), (129, 50021),

Gene: Minerva\_79 Start: 52268, Stop: 51984, Start Num: 69

Candidate Starts for Minerva\_79:

(Start: 58 @52292 has 1 MA's), (Start: 69 @52268 has 165 MA's), (Start: 74 @52244 has 6 MA's), (96, 52169), (116, 52040), (129, 52004),

Gene: MinionDave\_77 Start: 48491, Stop: 48775, Start Num: 69

Candidate Starts for MinionDave\_77:

(Start: 69 @48491 has 165 MA's), (Start: 74 @48515 has 6 MA's), (116, 48719), (129, 48755),

Gene: Minnie\_77 Start: 50537, Stop: 50821, Start Num: 69

Candidate Starts for Minnie\_77:

(Start: 55 @50507 has 3 MA's), (Start: 58 @50513 has 1 MA's), (Start: 69 @50537 has 165 MA's), (Start: 74 @50561 has 6 MA's), (96, 50636), (116, 50765), (129, 50801),

Gene: Modragons\_86 Start: 49612, Stop: 49932, Start Num: 69

Candidate Starts for Modragons\_86:

(Start: 58 @49588 has 1 MA's), (Start: 69 @49612 has 165 MA's), (Start: 74 @49636 has 6 MA's), (96, 49711), (116, 49840), (129, 49876),

Gene: Moonbeam\_83 Start: 49609, Stop: 49980, Start Num: 68

Candidate Starts for Moonbeam\_83:

(Start: 68 @49609 has 87 MA's), (Start: 74 @49633 has 6 MA's), (75, 49642), (102, 49741), (106, 49756), (139, 49957),

Gene: Mova\_80 Start: 47852, Stop: 48136, Start Num: 69

Candidate Starts for Mova\_80:

(Start: 69 @47852 has 165 MA's), (Start: 74 @47876 has 6 MA's), (96, 47951), (116, 48080), (129, 48116),

Gene: Mozy\_88 Start: 48337, Stop: 48621, Start Num: 69

Candidate Starts for Mozy\_88:

(Start: 69 @48337 has 165 MA's), (Start: 74 @48361 has 6 MA's), (96, 48436), (116, 48565), (129, 48601),

Gene: Mozy\_86 Start: 47832, Stop: 48131, Start Num: 68

Candidate Starts for Mozy\_86:

(51, 47790), (59, 47808), (Start: 68 @47832 has 87 MA's), (73, 47853), (75, 47865), (119, 48033), (139, 48108),

Gene: Mozy\_91 Start: 49284, Stop: 49655, Start Num: 68

Candidate Starts for Mozy\_91:

(16, 49083), (18, 49095), (25, 49155), (27, 49167), (39, 49221), (Start: 68 @49284 has 87 MA's), (Start: 74 @49308 has 6 MA's), (75, 49317), (106, 49431), (139, 49632),

Gene: MrGordo\_63 Start: 41253, Stop: 40939, Start Num: 55

Candidate Starts for MrGordo\_63:

(Start: 55 @41253 has 3 MA's), (Start: 58 @41247 has 1 MA's), (Start: 69 @41223 has 165 MA's), (Start: 74 @41199 has 6 MA's), (116, 40995), (129, 40959),

Gene: Ms6\_82 Start: 45701, Stop: 45985, Start Num: 69

Candidate Starts for Ms6\_82:

(Start: 69 @45701 has 165 MA's), (Start: 74 @45725 has 6 MA's), (96, 45800), (116, 45929), (129, 45965),

Gene: Mutaforma13\_86 Start: 49538, Stop: 49894, Start Num: 68

Candidate Starts for Mutaforma13\_86:

(51, 49496), (59, 49514), (Start: 68 @49538 has 87 MA's), (73, 49559), (117, 49775), (127, 49793), (130, 49805), (137, 49847), (139, 49871),

Gene: Myrale\_44 Start: 35984, Stop: 35688, Start Num: 69

Candidate Starts for Myrale\_44:

(Start: 69 @35984 has 165 MA's), (76, 35948), (79, 35930), (91, 35897), (99, 35855), (129, 35708),

Gene: NihilNomen\_76 Start: 51713, Stop: 51429, Start Num: 69

Candidate Starts for NihilNomen\_76:

(Start: 69 @51713 has 165 MA's), (Start: 74 @51689 has 6 MA's), (96, 51614), (116, 51485), (129, 51449),

Gene: Nimbo\_74 Start: 48349, Stop: 48633, Start Num: 69

Candidate Starts for Nimbo\_74:

(Start: 69 @48349 has 165 MA's), (Start: 74 @48373 has 6 MA's), (96, 48448), (116, 48577), (129, 48613),

Gene: Nitzel\_78 Start: 46831, Stop: 47190, Start Num: 68

Candidate Starts for Nitzel\_78:

(51, 46792), (Start: 62 @46810 has 7 MA's), (Start: 68 @46831 has 87 MA's), (Start: 74 @46855 has 6 MA's), (75, 46864), (102, 46963), (106, 46978), (117, 47071), (123, 47089), (130, 47101), (137, 47143), (139, 47167),

Gene: Nivrat\_80 Start: 49507, Stop: 49791, Start Num: 69

Candidate Starts for Nivrat\_80:

(23, 49369), (36, 49432), (Start: 69 @49507 has 165 MA's), (Start: 74 @49531 has 6 MA's), (96, 49606), (116, 49735), (129, 49771),

Gene: NormanBulbieJr\_82 Start: 50191, Stop: 50472, Start Num: 69

Candidate Starts for NormanBulbieJr\_82:

(Start: 69 @50191 has 165 MA's), (Start: 74 @50212 has 6 MA's), (81, 50245), (116, 50416), (129, 50452),

Gene: Ochi17\_87 Start: 49219, Stop: 49539, Start Num: 69

Candidate Starts for Ochi17\_87:

(Start: 58 @49195 has 1 MA's), (Start: 69 @49219 has 165 MA's), (Start: 74 @49243 has 6 MA's), (96, 49318), (116, 49447), (129, 49483),

Gene: Odette\_74 Start: 50756, Stop: 50472, Start Num: 69

Candidate Starts for Odette\_74:

(Start: 69 @50756 has 165 MA's), (Start: 74 @50732 has 6 MA's), (96, 50657), (116, 50528), (129, 50492),

Gene: OfUltron\_89 Start: 49768, Stop: 50088, Start Num: 69

Candidate Starts for OfUltron\_89:

(Start: 58 @49744 has 1 MA's), (Start: 69 @49768 has 165 MA's), (Start: 74 @49792 has 6 MA's), (96, 49867), (116, 49996), (129, 50032),

Gene: Ogopogo\_87 Start: 48817, Stop: 49101, Start Num: 69

Candidate Starts for Ogopogo\_87:

(Start: 69 @48817 has 165 MA's), (Start: 74 @48841 has 6 MA's), (96, 48916), (116, 49045), (129, 49081),

Gene: Oksu\_86 Start: 50903, Stop: 51256, Start Num: 68

Candidate Starts for Oksu\_86:

(Start: 68 @50903 has 87 MA's), (73, 50924), (75, 50936), (106, 51044), (117, 51137), (127, 51155), (130, 51167), (137, 51209), (139, 51233),

Gene: OldBen\_79 Start: 49741, Stop: 50025, Start Num: 69

Candidate Starts for OldBen\_79:

(Start: 69 @49741 has 165 MA's), (Start: 74 @49765 has 6 MA's), (96, 49840), (116, 49969), (129, 50005),

Gene: OlympiaSaint\_85 Start: 50471, Stop: 50842, Start Num: 68

Candidate Starts for OlympiaSaint\_85:

(Start: 68 @50471 has 87 MA's), (Start: 74 @50495 has 6 MA's), (75, 50504), (102, 50603), (106, 50618), (139, 50819),

Gene: OlympiaSaint\_81 Start: 49408, Stop: 49692, Start Num: 69

Candidate Starts for OlympiaSaint\_81:

(Start: 69 @49408 has 165 MA's), (Start: 74 @49432 has 6 MA's), (96, 49507), (116, 49636), (129, 49672),

Gene: Omega\_79 Start: 51648, Stop: 51367, Start Num: 69

Candidate Starts for Omega\_79:

(Start: 69 @51648 has 165 MA's), (Start: 74 @51627 has 6 MA's), (96, 51552), (116, 51423), (129, 51387),

Gene: Ovechkin\_89 Start: 50892, Stop: 51290, Start Num: 68

Candidate Starts for Ovechkin\_89:

(52, 50862), (Start: 55 @50868 has 3 MA's), (Start: 68 @50892 has 87 MA's), (76, 50928), (94, 50997), (101, 51054), (105, 51069), (106, 51078), (107, 51084), (117, 51171), (127, 51189), (130, 51201), (137, 51243), (139, 51267),

Gene: PHappiness\_82 Start: 50570, Stop: 50854, Start Num: 69

Candidate Starts for PHappiness\_82:

(Start: 69 @50570 has 165 MA's), (Start: 74 @50594 has 6 MA's), (96, 50669), (116, 50798), (129, 50834),

Gene: PMC\_78 Start: 47902, Stop: 48186, Start Num: 69

Candidate Starts for PMC\_78:

(Start: 69 @47902 has 165 MA's), (Start: 74 @47926 has 6 MA's), (96, 48001), (116, 48130), (129, 48166),

Gene: Paphu\_61 Start: 41641, Stop: 41261, Start Num: 68

Candidate Starts for Paphu\_61:

(17, 41842), (43, 41698), (45, 41695), (Start: 68 @41641 has 87 MA's), (73, 41620), (76, 41605), (106, 41479), (109, 41428), (120, 41380), (121, 41377), (139, 41284),

Gene: Parliament\_63 Start: 43433, Stop: 43053, Start Num: 68

Candidate Starts for Parliament\_63:

(17, 43634), (43, 43490), (45, 43487), (Start: 68 @43433 has 87 MA's), (73, 43412), (76, 43397), (106, 43271), (109, 43220), (120, 43172), (121, 43169), (139, 43076),

Gene: Parmesanjohn\_58 Start: 37538, Stop: 37900, Start Num: 71

Candidate Starts for Parmesanjohn\_58:

(14, 37295), (29, 37412), (Start: 62 @37508 has 7 MA's), (Start: 71 @37538 has 18 MA's), (Start: 77 @37571 has 1 MA's), (110, 37712), (113, 37724), (116, 37739), (124, 37763), (129, 37775), (131, 37781), (136, 37814),

Gene: Pepe\_59 Start: 39848, Stop: 39564, Start Num: 69

Candidate Starts for Pepe\_59:



(Start: 55 @39878 has 3 MA's), (Start: 58 @39872 has 1 MA's), (Start: 69 @39848 has 165 MA's),  
(Start: 74 @39824 has 6 MA's), (96, 39749), (116, 39620), (129, 39584),

Gene: Petra64142\_42 Start: 35106, Stop: 34705, Start Num: 74

Candidate Starts for Petra64142\_42:

(47, 35169), (61, 35151), (Start: 68 @35130 has 87 MA's), (Start: 74 @35106 has 6 MA's), (75,  
35097), (87, 35064), (90, 35052), (92, 35049), (106, 34986), (109, 34932), (122, 34869), (135, 34827),  
(140, 34776), (145, 34713),

Gene: Phaja\_42 Start: 35684, Stop: 35388, Start Num: 69

Candidate Starts for Phaja\_42:

(Start: 69 @35684 has 165 MA's), (76, 35648), (79, 35630), (91, 35597), (99, 35555), (129, 35408),

Gene: Phalconet\_78 Start: 48031, Stop: 48315, Start Num: 69

Candidate Starts for Phalconet\_78:

(Start: 69 @48031 has 165 MA's), (Start: 74 @48055 has 6 MA's), (116, 48259), (129, 48295),

Gene: Phanphagia\_84 Start: 50468, Stop: 50839, Start Num: 68

Candidate Starts for Phanphagia\_84:

(Start: 68 @50468 has 87 MA's), (Start: 74 @50492 has 6 MA's), (75, 50501), (102, 50600), (106,  
50615), (139, 50816),

Gene: Phanphagia\_80 Start: 49405, Stop: 49689, Start Num: 69

Candidate Starts for Phanphagia\_80:

(Start: 69 @49405 has 165 MA's), (Start: 74 @49429 has 6 MA's), (96, 49504), (116, 49633), (129,  
49669),

Gene: Phatniss\_78 Start: 47540, Stop: 47824, Start Num: 69

Candidate Starts for Phatniss\_78:

(Start: 69 @47540 has 165 MA's), (Start: 74 @47564 has 6 MA's), (96, 47639), (116, 47768), (129,  
47804),

Gene: PhesterPhotato\_84 Start: 49202, Stop: 49483, Start Num: 69

Candidate Starts for PhesterPhotato\_84:

(Start: 69 @49202 has 165 MA's), (Start: 74 @49223 has 6 MA's), (96, 49298), (116, 49427), (129,  
49463),

Gene: Philonius\_58 Start: 37703, Stop: 38065, Start Num: 71

Candidate Starts for Philonius\_58:

(1, 37097), (2, 37136), (3, 37181), (4, 37202), (5, 37214), (6, 37241), (7, 37271), (8, 37274), (10,  
37406), (12, 37427), (13, 37442), (29, 37577), (Start: 62 @37673 has 7 MA's), (Start: 71 @37703 has  
18 MA's), (Start: 77 @37736 has 1 MA's), (110, 37877), (113, 37889), (116, 37904), (124, 37928),  
(129, 37940), (131, 37946), (136, 37979),

Gene: Philus\_84 Start: 51107, Stop: 51391, Start Num: 69

Candidate Starts for Philus\_84:

(Start: 69 @51107 has 165 MA's), (Start: 74 @51131 has 6 MA's), (96, 51206), (116, 51335), (129,  
51371),

Gene: Phloss\_56 Start: 36945, Stop: 37307, Start Num: 71

Candidate Starts for Phloss\_56:

(14, 36702), (29, 36819), (Start: 62 @36915 has 7 MA's), (Start: 71 @36945 has 18 MA's), (Start: 77  
@36978 has 1 MA's), (110, 37119), (113, 37131), (116, 37146), (124, 37170), (129, 37182), (131,

37188), (136, 37221),

Gene: Phoebus\_74 Start: 51482, Stop: 51129, Start Num: 68

Candidate Starts for Phoebus\_74:

(Start: 68 @51482 has 87 MA's), (73, 51461), (75, 51449), (106, 51341), (117, 51248), (127, 51230), (130, 51218), (137, 51176), (139, 51152),

Gene: Phoebus\_78 Start: 52895, Stop: 52611, Start Num: 69

Candidate Starts for Phoebus\_78:

(Start: 69 @52895 has 165 MA's), (Start: 74 @52871 has 6 MA's), (96, 52796), (116, 52667), (129, 52631),

Gene: Piper2020\_82 Start: 50625, Stop: 51008, Start Num: 71

Candidate Starts for Piper2020\_82:

(29, 50499), (Start: 62 @50595 has 7 MA's), (Start: 71 @50625 has 18 MA's), (Start: 74 @50646 has 6 MA's), (108, 50814), (125, 50889), (133, 50916), (141, 50985), (142, 50991),

Gene: Pippy\_76 Start: 47591, Stop: 47887, Start Num: 69

Candidate Starts for Pippy\_76:

(Start: 69 @47591 has 165 MA's), (76, 47627), (79, 47645), (91, 47678), (99, 47720), (116, 47831), (129, 47867),

Gene: Pipsqueaks\_59 Start: 37516, Stop: 37878, Start Num: 71

Candidate Starts for Pipsqueaks\_59:

(14, 37273), (29, 37390), (Start: 62 @37486 has 7 MA's), (Start: 71 @37516 has 18 MA's), (Start: 77 @37549 has 1 MA's), (110, 37690), (113, 37702), (116, 37717), (124, 37741), (129, 37753), (131, 37759), (136, 37792),

Gene: Plumbus\_86 Start: 47486, Stop: 48037, Start Num: 68

Candidate Starts for Plumbus\_86:

(Start: 68 @47486 has 87 MA's), (Start: 74 @47510 has 6 MA's), (75, 47519), (102, 47618), (106, 47633), (139, 47834), (142, 47855), (146, 47909), (147, 47915), (149, 47939),

Gene: Poenanya\_88 Start: 50710, Stop: 51087, Start Num: 62

Candidate Starts for Poenanya\_88:

(Start: 62 @50710 has 7 MA's), (Start: 74 @50752 has 6 MA's), (75, 50761), (106, 50875), (117, 50968), (123, 50986), (130, 50998), (137, 51040), (139, 51064),

Gene: Poise\_9 Start: 2787, Stop: 3071, Start Num: 69

Candidate Starts for Poise\_9:

(Start: 69 @2787 has 165 MA's), (Start: 74 @2811 has 6 MA's), (96, 2886), (116, 3015), (129, 3051),

Gene: Polka14\_89 Start: 51500, Stop: 51877, Start Num: 62

Candidate Starts for Polka14\_89:

(Start: 62 @51500 has 7 MA's), (Start: 74 @51542 has 6 MA's), (75, 51551), (102, 51650), (106, 51665), (117, 51758), (123, 51776), (130, 51788), (137, 51830), (139, 51854),

Gene: PopTart\_77 Start: 47157, Stop: 47441, Start Num: 68

Candidate Starts for PopTart\_77:

(Start: 68 @47157 has 87 MA's), (Start: 74 @47181 has 6 MA's), (75, 47190), (102, 47289), (106, 47304), (126, 47418),

Gene: PopTart\_73 Start: 46094, Stop: 46378, Start Num: 69

Candidate Starts for PopTart\_73:

(Start: 58 @46070 has 1 MA's), (Start: 69 @46094 has 165 MA's), (Start: 74 @46118 has 6 MA's), (96, 46193), (116, 46322), (129, 46358),

Gene: Porcelain\_71 Start: 46608, Stop: 46255, Start Num: 68

Candidate Starts for Porcelain\_71:

(Start: 68 @46608 has 87 MA's), (73, 46587), (75, 46575), (106, 46467), (117, 46374), (127, 46356), (130, 46344), (137, 46302), (139, 46278),

Gene: Porcelain\_75 Start: 48021, Stop: 47737, Start Num: 69

Candidate Starts for Porcelain\_75:

(Start: 69 @48021 has 165 MA's), (Start: 74 @47997 has 6 MA's), (96, 47922), (116, 47793), (129, 47757),

Gene: Porky\_42 Start: 34896, Stop: 34549, Start Num: 74

Candidate Starts for Porky\_42:

(Start: 68 @34920 has 87 MA's), (Start: 74 @34896 has 6 MA's), (75, 34887), (106, 34773), (109, 34719), (122, 34656), (135, 34614), (139, 34572),

Gene: Pound\_77 Start: 53540, Stop: 53256, Start Num: 69

Candidate Starts for Pound\_77:

(Start: 58 @53564 has 1 MA's), (Start: 69 @53540 has 165 MA's), (Start: 74 @53516 has 6 MA's), (96, 53441), (116, 53312), (129, 53276),

Gene: Pringar\_9 Start: 2807, Stop: 3091, Start Num: 69

Candidate Starts for Pringar\_9:

(Start: 58 @2783 has 1 MA's), (Start: 69 @2807 has 165 MA's), (Start: 74 @2831 has 6 MA's), (96, 2906), (116, 3035), (129, 3071),

Gene: Priscilla\_84 Start: 50289, Stop: 50570, Start Num: 69

Candidate Starts for Priscilla\_84:

(Start: 69 @50289 has 165 MA's), (Start: 74 @50310 has 6 MA's), (81, 50343), (116, 50514), (129, 50550),

Gene: Quico\_91 Start: 51411, Stop: 51695, Start Num: 68

Candidate Starts for Quico\_91:

(Start: 68 @51411 has 87 MA's), (Start: 74 @51435 has 6 MA's), (75, 51444), (102, 51543), (106, 51558), (126, 51672),

Gene: Raela\_9 Start: 3191, Stop: 3475, Start Num: 69

Candidate Starts for Raela\_9:

(Start: 69 @3191 has 165 MA's), (Start: 74 @3215 has 6 MA's), (96, 3290), (116, 3419), (129, 3455),

Gene: Ramsey\_86 Start: 51149, Stop: 51520, Start Num: 68

Candidate Starts for Ramsey\_86:

(16, 50948), (18, 50960), (25, 51020), (27, 51032), (39, 51086), (Start: 68 @51149 has 87 MA's), (Start: 74 @51173 has 6 MA's), (75, 51182), (102, 51281), (106, 51296), (139, 51497),

Gene: RedBird\_83 Start: 50910, Stop: 51281, Start Num: 68

Candidate Starts for RedBird\_83:

(16, 50709), (18, 50721), (25, 50781), (27, 50793), (39, 50847), (Start: 68 @50910 has 87 MA's), (Start: 74 @50934 has 6 MA's), (75, 50943), (102, 51042), (106, 51057), (139, 51258),

Gene: Redno2\_72 Start: 48485, Stop: 48225, Start Num: 74  
Candidate Starts for Redno2\_72:  
(Start: 69 @48509 has 165 MA's), (Start: 74 @48485 has 6 MA's), (96, 48410), (116, 48281), (129, 48245),

Gene: Rimmer\_40 Start: 34315, Stop: 33944, Start Num: 68  
Candidate Starts for Rimmer\_40:  
(47, 34354), (61, 34336), (Start: 68 @34315 has 87 MA's), (Start: 74 @34291 has 6 MA's), (75, 34282), (106, 34168), (109, 34114), (122, 34051), (135, 34009), (139, 33967),

Gene: Rita\_88 Start: 51756, Stop: 52040, Start Num: 69  
Candidate Starts for Rita\_88:  
(Start: 69 @51756 has 165 MA's), (Start: 74 @51780 has 6 MA's), (96, 51855), (116, 51984), (129, 52020),

Gene: RitaG\_82 Start: 50372, Stop: 50656, Start Num: 69  
Candidate Starts for RitaG\_82:  
(Start: 69 @50372 has 165 MA's), (Start: 74 @50396 has 6 MA's), (96, 50471), (116, 50600), (129, 50636),

Gene: Rockne\_82 Start: 47914, Stop: 48198, Start Num: 69  
Candidate Starts for Rockne\_82:  
(Start: 69 @47914 has 165 MA's), (Start: 74 @47938 has 6 MA's), (96, 48013), (116, 48142), (129, 48178),

Gene: Royals2015\_90 Start: 49759, Stop: 50043, Start Num: 68  
Candidate Starts for Royals2015\_90:  
(Start: 68 @49759 has 87 MA's), (Start: 74 @49783 has 6 MA's), (75, 49792), (102, 49891), (106, 49906), (126, 50020),

Gene: SG4\_86 Start: 50874, Stop: 51251, Start Num: 68  
Candidate Starts for SG4\_86:  
(Start: 68 @50874 has 87 MA's), (73, 50895), (76, 50910), (84, 50934), (106, 51027), (110, 51087), (139, 51228),

Gene: SG4\_81 Start: 49453, Stop: 49737, Start Num: 69  
Candidate Starts for SG4\_81:  
(Start: 69 @49453 has 165 MA's), (Start: 74 @49477 has 6 MA's), (96, 49552), (116, 49681), (129, 49717),

Gene: SG4\_84 Start: 50324, Stop: 50698, Start Num: 68  
Candidate Starts for SG4\_84:  
(Start: 68 @50324 has 87 MA's), (73, 50345), (76, 50360), (106, 50486), (117, 50579), (127, 50597), (130, 50609), (137, 50651), (139, 50675),

Gene: Sandalphon\_83 Start: 50748, Stop: 51119, Start Num: 68  
Candidate Starts for Sandalphon\_83:  
(Start: 68 @50748 has 87 MA's), (Start: 74 @50772 has 6 MA's), (75, 50781), (106, 50895), (139, 51096),

Gene: Sandalphon\_75 Start: 48522, Stop: 48806, Start Num: 69  
Candidate Starts for Sandalphon\_75:

(Start: 55 @48492 has 3 MA's), (Start: 58 @48498 has 1 MA's), (Start: 69 @48522 has 165 MA's), (Start: 74 @48546 has 6 MA's), (96, 48621), (116, 48750), (129, 48786),

Gene: Sarma624\_80 Start: 45621, Stop: 45905, Start Num: 69

Candidate Starts for Sarma624\_80:

(Start: 58 @45597 has 1 MA's), (Start: 69 @45621 has 165 MA's), (Start: 74 @45645 has 6 MA's), (96, 45720), (116, 45849), (129, 45885),

Gene: Sassafras\_83 Start: 49224, Stop: 49595, Start Num: 68

Candidate Starts for Sassafras\_83:

(16, 49023), (18, 49035), (25, 49095), (27, 49107), (39, 49161), (Start: 68 @49224 has 87 MA's), (Start: 74 @49248 has 6 MA's), (75, 49257), (102, 49356), (106, 49371), (139, 49572),

Gene: SassyB\_77 Start: 47157, Stop: 47441, Start Num: 68

Candidate Starts for SassyB\_77:

(Start: 68 @47157 has 87 MA's), (Start: 74 @47181 has 6 MA's), (75, 47190), (102, 47289), (106, 47304), (126, 47418),

Gene: SassyB\_73 Start: 46094, Stop: 46378, Start Num: 69

Candidate Starts for SassyB\_73:

(Start: 58 @46070 has 1 MA's), (Start: 69 @46094 has 165 MA's), (Start: 74 @46118 has 6 MA's), (96, 46193), (116, 46322), (129, 46358),

Gene: Schatzie\_70 Start: 50503, Stop: 50219, Start Num: 69

Candidate Starts for Schatzie\_70:

(Start: 69 @50503 has 165 MA's), (Start: 74 @50479 has 6 MA's), (96, 50404), (116, 50275), (129, 50239),

Gene: Schnauzer\_59 Start: 37538, Stop: 37900, Start Num: 71

Candidate Starts for Schnauzer\_59:

(14, 37295), (29, 37412), (Start: 62 @37508 has 7 MA's), (Start: 71 @37538 has 18 MA's), (Start: 77 @37571 has 1 MA's), (110, 37712), (113, 37724), (116, 37739), (124, 37763), (129, 37775), (131, 37781), (136, 37814),

Gene: Scottish\_83 Start: 49191, Stop: 49568, Start Num: 62

Candidate Starts for Scottish\_83:

(Start: 62 @49191 has 7 MA's), (Start: 74 @49233 has 6 MA's), (75, 49242), (102, 49341), (106, 49356), (117, 49449), (123, 49467), (130, 49479), (137, 49521), (139, 49545),

Gene: Seabastian\_89 Start: 49769, Stop: 50089, Start Num: 69

Candidate Starts for Seabastian\_89:

(Start: 58 @49745 has 1 MA's), (Start: 69 @49769 has 165 MA's), (Start: 74 @49793 has 6 MA's), (96, 49868), (116, 49997), (129, 50033),

Gene: Seagreen\_84 Start: 50260, Stop: 50628, Start Num: 68

Candidate Starts for Seagreen\_84:

(Start: 68 @50260 has 87 MA's), (Start: 74 @50284 has 6 MA's), (75, 50293), (87, 50326), (90, 50338), (92, 50341), (102, 50389), (106, 50404), (110, 50464), (139, 50605),

Gene: Seagreen\_80 Start: 49149, Stop: 49481, Start Num: 49

Candidate Starts for Seagreen\_80:

(24, 49053), (Start: 49 @49149 has 1 MA's), (Start: 55 @49164 has 3 MA's), (Start: 69 @49197 has 165 MA's), (Start: 74 @49221 has 6 MA's), (116, 49425), (129, 49461),

Gene: ShamWow\_44 Start: 36121, Stop: 35825, Start Num: 69  
Candidate Starts for ShamWow\_44:  
(Start: 69 @36121 has 165 MA's), (76, 36085), (79, 36067), (91, 36034), (99, 35992), (129, 35845),

Gene: Shauna1\_81 Start: 49655, Stop: 49939, Start Num: 69  
Candidate Starts for Shauna1\_81:  
(Start: 69 @49655 has 165 MA's), (Start: 74 @49679 has 6 MA's), (96, 49754), (116, 49883), (129, 49919),

Gene: Shauna1\_83 Start: 50441, Stop: 50812, Start Num: 68  
Candidate Starts for Shauna1\_83:  
(31, 50348), (38, 50372), (Start: 68 @50441 has 87 MA's), (Start: 74 @50465 has 6 MA's), (75, 50474), (102, 50573), (106, 50588), (139, 50789),

Gene: ShiLan\_85 Start: 51984, Stop: 52355, Start Num: 68  
Candidate Starts for ShiLan\_85:  
(Start: 68 @51984 has 87 MA's), (Start: 74 @52008 has 6 MA's), (75, 52017), (102, 52116), (106, 52131), (139, 52332),

Gene: ShroomBoi\_82 Start: 49425, Stop: 49781, Start Num: 68  
Candidate Starts for ShroomBoi\_82:  
(51, 49383), (59, 49401), (Start: 68 @49425 has 87 MA's), (73, 49446), (75, 49458), (117, 49662), (127, 49680), (130, 49692), (137, 49734), (139, 49758),

Gene: Silvafighter\_59 Start: 37081, Stop: 37443, Start Num: 71  
Candidate Starts for Silvafighter\_59:  
(29, 36955), (Start: 62 @37051 has 7 MA's), (Start: 71 @37081 has 18 MA's), (Start: 77 @37114 has 1 MA's), (110, 37255), (113, 37267), (116, 37282), (124, 37306), (129, 37318), (131, 37324), (136, 37357),

Gene: SimranZ1\_83 Start: 48924, Stop: 49286, Start Num: 68  
Candidate Starts for SimranZ1\_83:  
(Start: 68 @48924 has 87 MA's), (73, 48945), (109, 49119), (120, 49167), (121, 49170), (139, 49263),

Gene: SkiPole\_68 Start: 41922, Stop: 41608, Start Num: 55  
Candidate Starts for SkiPole\_68:  
(Start: 55 @41922 has 3 MA's), (Start: 58 @41916 has 1 MA's), (Start: 69 @41892 has 165 MA's), (Start: 74 @41868 has 6 MA's), (96, 41793), (116, 41664), (129, 41628),

Gene: Smurph\_58 Start: 37538, Stop: 37900, Start Num: 71  
Candidate Starts for Smurph\_58:  
(14, 37295), (29, 37412), (Start: 62 @37508 has 7 MA's), (Start: 71 @37538 has 18 MA's), (Start: 77 @37571 has 1 MA's), (110, 37712), (113, 37724), (116, 37739), (124, 37763), (129, 37775), (131, 37781), (136, 37814),

Gene: Solon\_60 Start: 40387, Stop: 40100, Start Num: 69  
Candidate Starts for Solon\_60:  
(Start: 69 @40387 has 165 MA's), (73, 40366), (76, 40351), (80, 40327), (106, 40234), (116, 40156), (129, 40120),

Gene: Soul22\_82 Start: 47187, Stop: 47471, Start Num: 69  
Candidate Starts for Soul22\_82:

(Start: 55 @47157 has 3 MA's), (Start: 58 @47163 has 1 MA's), (Start: 69 @47187 has 165 MA's), (Start: 74 @47211 has 6 MA's), (96, 47286), (116, 47415), (129, 47451),

Gene: Spartacus\_87 Start: 51565, Stop: 51846, Start Num: 69

Candidate Starts for Spartacus\_87:

(Start: 69 @51565 has 165 MA's), (Start: 74 @51586 has 6 MA's), (81, 51619), (116, 51790), (129, 51826),

Gene: Spartacus\_89 Start: 52261, Stop: 52542, Start Num: 69

Candidate Starts for Spartacus\_89:

(Start: 69 @52261 has 165 MA's), (Start: 74 @52285 has 6 MA's), (75, 52294), (106, 52408), (115, 52480), (116, 52486),

Gene: Spoonbill\_81 Start: 47897, Stop: 48268, Start Num: 68

Candidate Starts for Spoonbill\_81:

(Start: 68 @47897 has 87 MA's), (Start: 74 @47921 has 6 MA's), (75, 47930), (102, 48029), (106, 48044), (139, 48245),

Gene: Squint\_76 Start: 48140, Stop: 47856, Start Num: 69

Candidate Starts for Squint\_76:

(Start: 69 @48140 has 165 MA's), (Start: 74 @48116 has 6 MA's), (96, 48041), (116, 47912), (129, 47876),

Gene: Squint\_72 Start: 46727, Stop: 46374, Start Num: 68

Candidate Starts for Squint\_72:

(Start: 68 @46727 has 87 MA's), (73, 46706), (75, 46694), (106, 46586), (117, 46493), (127, 46475), (130, 46463), (137, 46421), (139, 46397),

Gene: Squirty\_81 Start: 52224, Stop: 52505, Start Num: 69

Candidate Starts for Squirty\_81:

(Start: 69 @52224 has 165 MA's), (Start: 74 @52248 has 6 MA's), (96, 52323), (116, 52452), (124, 52476), (129, 52488), (132, 52494),

Gene: StAnnes\_83 Start: 50113, Stop: 50397, Start Num: 69

Candidate Starts for StAnnes\_83:

(54, 50083), (Start: 69 @50113 has 165 MA's), (Start: 74 @50137 has 6 MA's), (96, 50212), (116, 50341), (129, 50377),

Gene: Stap\_78 Start: 46857, Stop: 47246, Start Num: 64

Candidate Starts for Stap\_78:

(Start: 64 @46857 has 1 MA's), (Start: 74 @46899 has 6 MA's), (75, 46908), (102, 47007), (106, 47022), (109, 47076), (122, 47139), (135, 47181), (139, 47223),

Gene: StellaBean\_42 Start: 35445, Stop: 35149, Start Num: 69

Candidate Starts for StellaBean\_42:

(Start: 69 @35445 has 165 MA's), (76, 35409), (79, 35391), (91, 35358), (99, 35316), (129, 35169),

Gene: Strokeseat\_80 Start: 47313, Stop: 47594, Start Num: 69

Candidate Starts for Strokeseat\_80:

(Start: 69 @47313 has 165 MA's), (Start: 74 @47337 has 6 MA's), (75, 47346), (106, 47460), (115, 47532), (116, 47538),

Gene: Strokeseat\_76 Start: 46226, Stop: 46510, Start Num: 69

Candidate Starts for Strokeseat\_76:

(Start: 58 @46202 has 1 MA's), (Start: 69 @46226 has 165 MA's), (Start: 74 @46250 has 6 MA's), (96, 46325), (116, 46454), (129, 46490),

Gene: SuperGrey\_84 Start: 51807, Stop: 52193, Start Num: 68

Candidate Starts for SuperGrey\_84:

(31, 51714), (38, 51738), (Start: 68 @51807 has 87 MA's), (73, 51828), (76, 51843), (106, 51969), (110, 52029), (139, 52170),

Gene: Superphikiman\_73 Start: 47231, Stop: 46947, Start Num: 69

Candidate Starts for Superphikiman\_73:

(Start: 69 @47231 has 165 MA's), (Start: 74 @47207 has 6 MA's), (96, 47132), (116, 47003), (129, 46967),

Gene: TChen\_82 Start: 50420, Stop: 50776, Start Num: 68

Candidate Starts for TChen\_82:

(51, 50378), (59, 50396), (Start: 68 @50420 has 87 MA's), (73, 50441), (75, 50453), (117, 50657), (127, 50675), (130, 50687), (137, 50729), (139, 50753),

Gene: Taj\_88 Start: 50947, Stop: 51231, Start Num: 69

Candidate Starts for Taj\_88:

(21, 50785), (Start: 69 @50947 has 165 MA's), (Start: 74 @50971 has 6 MA's), (96, 51046), (116, 51175), (129, 51211),

Gene: Tasp14\_65 Start: 42922, Stop: 42542, Start Num: 68

Candidate Starts for Tasp14\_65:

(17, 43123), (43, 42979), (45, 42976), (Start: 68 @42922 has 87 MA's), (73, 42901), (76, 42886), (106, 42760), (109, 42709), (120, 42661), (121, 42658), (139, 42565),

Gene: Teaspoon\_43 Start: 35600, Stop: 35256, Start Num: 74

Candidate Starts for Teaspoon\_43:

(Start: 68 @35627 has 87 MA's), (Start: 74 @35600 has 6 MA's), (75, 35591), (87, 35558), (90, 35546), (92, 35543), (106, 35480), (109, 35426), (122, 35363), (135, 35321), (139, 35279),

Gene: Teodoridan\_59 Start: 40032, Stop: 39670, Start Num: 68

Candidate Starts for Teodoridan\_59:

(Start: 68 @40032 has 87 MA's), (75, 39999), (76, 39996), (83, 39969), (86, 39963), (106, 39843), (110, 39783), (139, 39693),

Gene: Tesla\_9 Start: 2778, Stop: 3062, Start Num: 69

Candidate Starts for Tesla\_9:

(Start: 69 @2778 has 165 MA's), (Start: 74 @2802 has 6 MA's), (96, 2877), (116, 3006), (129, 3042),

Gene: ThreeRngTarjay\_73 Start: 51787, Stop: 51503, Start Num: 69

Candidate Starts for ThreeRngTarjay\_73:

(Start: 69 @51787 has 165 MA's), (Start: 74 @51763 has 6 MA's), (96, 51688), (116, 51559), (129, 51523),

Gene: Tootsieroll\_80 Start: 50185, Stop: 50562, Start Num: 62

Candidate Starts for Tootsieroll\_80:

(Start: 62 @50185 has 7 MA's), (Start: 74 @50227 has 6 MA's), (75, 50236), (102, 50335), (106, 50350), (117, 50443), (123, 50461), (130, 50473), (137, 50515), (139, 50539),



Gene: Toto\_43 Start: 36121, Stop: 35825, Start Num: 69  
Candidate Starts for Toto\_43:  
(Start: 69 @36121 has 165 MA's), (76, 36085), (79, 36067), (91, 36034), (99, 35992), (129, 35845),

Gene: Tuco\_45 Start: 36629, Stop: 36333, Start Num: 69  
Candidate Starts for Tuco\_45:  
(Start: 69 @36629 has 165 MA's), (76, 36593), (79, 36575), (91, 36542), (99, 36500), (129, 36353),

Gene: Tweety\_82 Start: 50025, Stop: 50309, Start Num: 69  
Candidate Starts for Tweety\_82:  
(21, 49863), (Start: 69 @50025 has 165 MA's), (Start: 74 @50049 has 6 MA's), (96, 50124), (116, 50253), (129, 50289),

Gene: UncleRicky\_80 Start: 47788, Stop: 48072, Start Num: 69  
Candidate Starts for UncleRicky\_80:  
(Start: 69 @47788 has 165 MA's), (Start: 74 @47812 has 6 MA's), (96, 47887), (116, 48016), (129, 48052),

Gene: VRedHorse\_86 Start: 47830, Stop: 48114, Start Num: 69  
Candidate Starts for VRedHorse\_86:  
(Start: 58 @47806 has 1 MA's), (Start: 69 @47830 has 165 MA's), (Start: 74 @47854 has 6 MA's), (96, 47929), (116, 48058), (129, 48094),

Gene: Velveteen\_75 Start: 45597, Stop: 45905, Start Num: 58  
Candidate Starts for Velveteen\_75:  
(Start: 58 @45597 has 1 MA's), (Start: 69 @45621 has 165 MA's), (Start: 74 @45645 has 6 MA's), (96, 45720), (116, 45849), (129, 45885),

Gene: Wanda\_77 Start: 50474, Stop: 50193, Start Num: 69  
Candidate Starts for Wanda\_77:  
(Start: 69 @50474 has 165 MA's), (Start: 74 @50453 has 6 MA's), (81, 50420), (116, 50249), (129, 50213),

Gene: Wee\_87 Start: 51023, Stop: 51307, Start Num: 69  
Candidate Starts for Wee\_87:  
(21, 50861), (Start: 69 @51023 has 165 MA's), (Start: 74 @51047 has 6 MA's), (96, 51122), (116, 51251), (129, 51287),

Gene: Whatsapiecost\_76 Start: 44789, Stop: 45166, Start Num: 68  
Candidate Starts for Whatsapiecost\_76:  
(Start: 68 @44789 has 87 MA's), (73, 44810), (76, 44825), (84, 44849), (106, 44942), (110, 45002), (139, 45143),

Gene: Wheeler\_63 Start: 41547, Stop: 41161, Start Num: 68  
Candidate Starts for Wheeler\_63:  
(17, 41748), (43, 41604), (45, 41601), (Start: 68 @41547 has 87 MA's), (72, 41535), (139, 41184),

Gene: WillSterrel\_82 Start: 50063, Stop: 50434, Start Num: 68  
Candidate Starts for WillSterrel\_82:  
(Start: 68 @50063 has 87 MA's), (Start: 74 @50087 has 6 MA's), (75, 50096), (102, 50195), (106, 50210), (139, 50411),

Gene: WillSterrel\_80 Start: 49364, Stop: 49648, Start Num: 69

Candidate Starts for WillSterrel\_80:

(Start: 55 @49334 has 3 MA's), (Start: 58 @49340 has 1 MA's), (Start: 69 @49364 has 165 MA's),  
(Start: 74 @49388 has 6 MA's), (96, 49463), (116, 49592), (129, 49628),

Gene: XFactor\_77 Start: 48229, Stop: 48513, Start Num: 69

Candidate Starts for XFactor\_77:

(Start: 69 @48229 has 165 MA's), (Start: 74 @48253 has 6 MA's), (96, 48328), (129, 48493),

Gene: Xerxes\_58 Start: 37535, Stop: 37897, Start Num: 71

Candidate Starts for Xerxes\_58:

(14, 37292), (29, 37409), (Start: 62 @37505 has 7 MA's), (Start: 71 @37535 has 18 MA's), (Start: 77  
@37568 has 1 MA's), (110, 37709), (113, 37721), (116, 37736), (124, 37760), (129, 37772), (131,  
37778), (136, 37811),

Gene: Yeet\_71 Start: 50004, Stop: 49720, Start Num: 69

Candidate Starts for Yeet\_71:

(Start: 69 @50004 has 165 MA's), (Start: 74 @49980 has 6 MA's), (116, 49776), (129, 49740),

Gene: Yoshi\_92 Start: 49392, Stop: 49736, Start Num: 65

Candidate Starts for Yoshi\_92:

(Start: 65 @49392 has 3 MA's), (73, 49419), (76, 49434), (106, 49524), (134, 49665), (138, 49692),  
(139, 49713),

Gene: Youngblood\_41 Start: 34902, Stop: 34555, Start Num: 74

Candidate Starts for Youngblood\_41:

(47, 34965), (61, 34947), (Start: 68 @34926 has 87 MA's), (Start: 74 @34902 has 6 MA's), (75,  
34893), (106, 34779), (109, 34725), (122, 34662), (135, 34620), (139, 34578),

Gene: Zapner\_90 Start: 47899, Stop: 48183, Start Num: 69

Candidate Starts for Zapner\_90:

(Start: 69 @47899 has 165 MA's), (Start: 74 @47923 has 6 MA's), (116, 48127), (129, 48163),

Gene: Zelink\_73 Start: 52099, Stop: 51815, Start Num: 69

Candidate Starts for Zelink\_73:

(Start: 69 @52099 has 165 MA's), (Start: 74 @52075 has 6 MA's), (96, 52000), (116, 51871), (129,  
51835),

Gene: ZenTime222\_56 Start: 39238, Stop: 39498, Start Num: 71

Candidate Starts for ZenTime222\_56:

(9, 38935), (11, 38956), (15, 39010), (29, 39112), (Start: 62 @39208 has 7 MA's), (Start: 71 @39238  
has 18 MA's), (Start: 77 @39271 has 1 MA's), (110, 39412), (113, 39424), (116, 39439), (124, 39463),  
(129, 39475), (131, 39481),

Gene: Zerg\_82 Start: 49172, Stop: 49456, Start Num: 69

Candidate Starts for Zerg\_82:

(Start: 58 @49148 has 1 MA's), (Start: 69 @49172 has 165 MA's), (Start: 74 @49196 has 6 MA's),  
(96, 49271), (116, 49400), (129, 49436),

Gene: Zeuska\_61 Start: 42220, Stop: 41843, Start Num: 68

Candidate Starts for Zeuska\_61:

(Start: 68 @42220 has 87 MA's), (73, 42199), (76, 42184), (84, 42160), (106, 42067), (139, 41866),

Gene: Zizzle\_86 Start: 51134, Stop: 51478, Start Num: 65

Candidate Starts for Zizzle\_86:

(Start: 65 @51134 has 3 MA's), (73, 51161), (76, 51176), (106, 51266), (117, 51359), (127, 51377),  
(130, 51389), (137, 51431), (139, 51455),