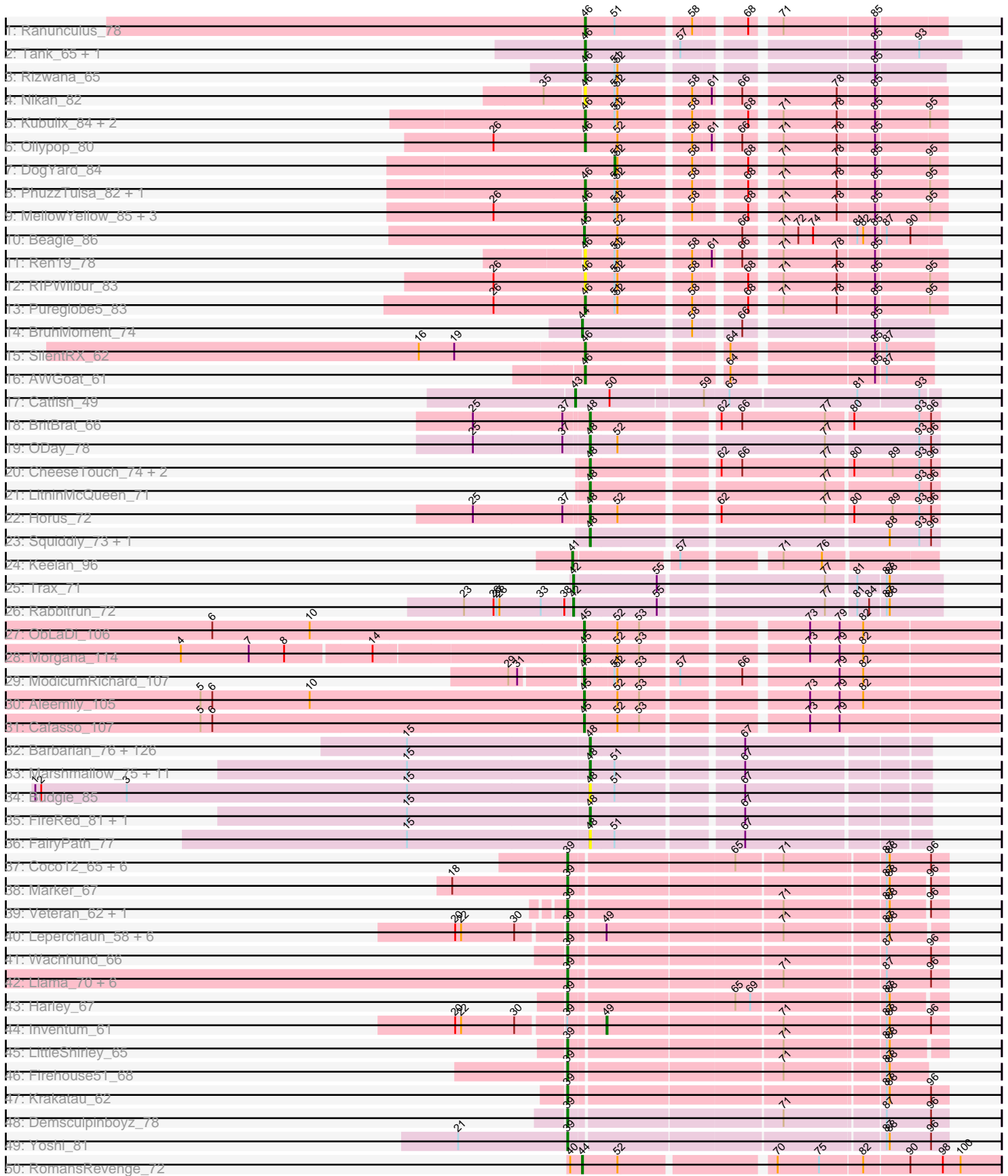
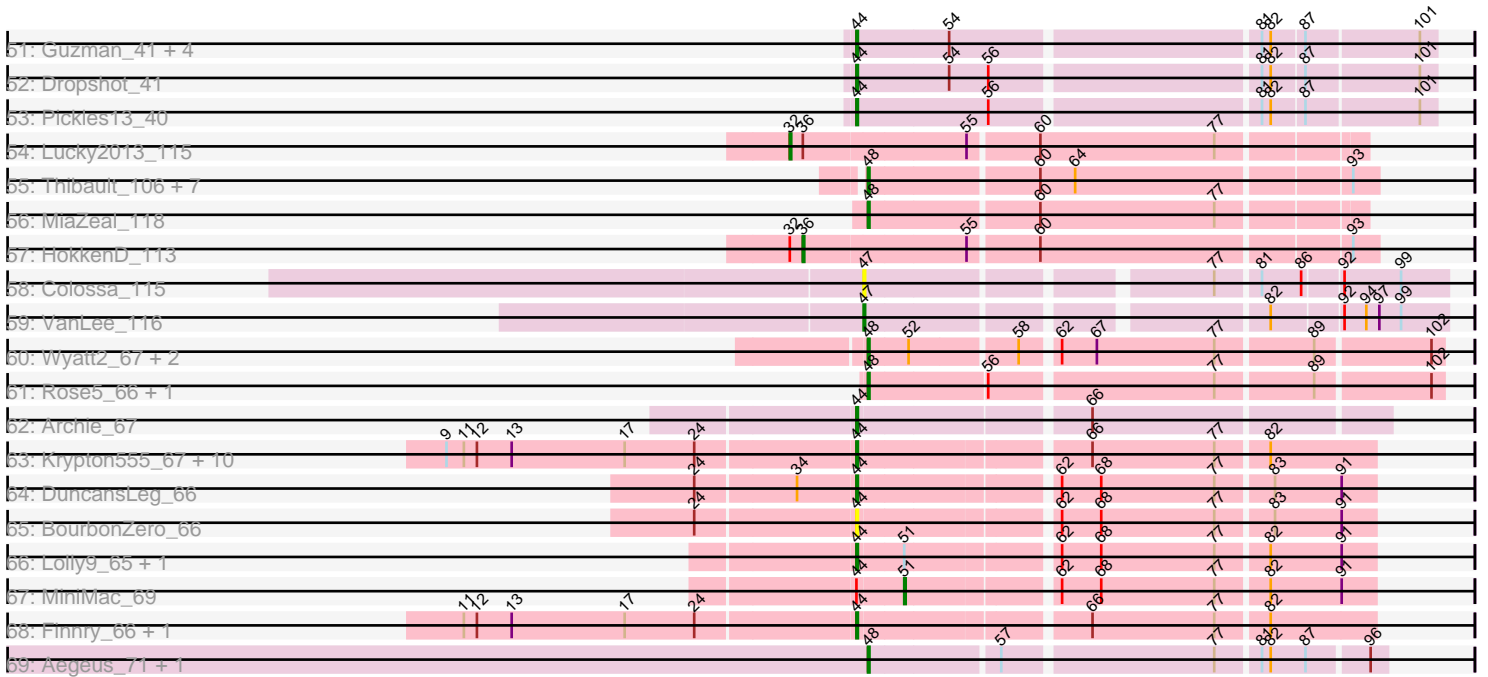


Pham 294393



Pham 294393



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 294393 Report

This analysis was run 04/18/26 on database version 643.

Pham number 294393 has 263 members, 28 are drafts.

Phages represented in each track:

- Track 1 : Ranunculus\_78
- Track 2 : Tank\_65, Wilde\_67
- Track 3 : Rizwana\_65
- Track 4 : Nikan\_82
- Track 5 : Kubulix\_84, Pointis\_81, BetaFish\_84
- Track 6 : Ollypop\_80
- Track 7 : DogYard\_84
- Track 8 : PhuzzTulsa\_82, Odyssey395\_85
- Track 9 : MellowYellow\_85, Forrestell\_84, NyleyClemson\_84, RazzB\_84
- Track 10 : Beagle\_86
- Track 11 : Ren19\_78
- Track 12 : RIPWilbur\_83
- Track 13 : Pureglobe5\_83
- Track 14 : BruhMoment\_74
- Track 15 : SilentRX\_62
- Track 16 : AWGoat\_61
- Track 17 : Catfish\_49
- Track 18 : BritBrat\_66
- Track 19 : ODay\_78
- Track 20 : CheeseTouch\_74, Kuwabara\_72, Ecliptus\_75
- Track 21 : LitninMcQueen\_71
- Track 22 : Horus\_72
- Track 23 : Squiddly\_73, Spooky\_68
- Track 24 : Keelan\_96
- Track 25 : Trax\_71
- Track 26 : Rabbitrun\_72
- Track 27 : ObLaDi\_106
- Track 28 : Morgana\_114
- Track 29 : ModicumRichard\_107
- Track 30 : Aleemily\_105
- Track 31 : Cafasso\_107
- Track 32 : Barbarian\_76, Greep\_81, Bench\_80, HufflyPuff\_80, Mindy\_76, AmericanBeauty\_81, Myrale\_77, Flypotenuse\_73, Dumbo\_77, Lilac\_79, Daikon\_79, Manda\_78, Ukulele\_72, Filch\_78, Bogg\_77, Teaspoon\_78, NoSleep\_78, Rimmer\_78, Porky\_76, NonchalantPear\_75, Kostya\_77, Buck\_78, Petra64142\_81, Phaux\_79, Highbury\_76, PaddyBaddy\_77, SophKB\_74, NelitzaMV\_75, MISSy\_78, FoghornLeghorn\_71, Czczczon1\_78, Eureka\_75, Miniwave\_72, Harella\_77,

Pumpkin\_80, TBrady12\_80, Wiggin\_79, TeardropMSU\_73, Nimrod\_78, Terminus\_80, DrDrey\_77, Lilizi\_78, BigBubba\_77, Sotrice96\_78, Mosby\_73, Hopey\_77, Thresher\_79, Elph10\_77, Icee\_78, Sassay\_72, MPhalcon\_78, MollyToe\_72, Youngblood\_80, Toto\_75, Murphy\_77, Inca\_74, Policronamos\_80, Kimchi\_81, Dusk\_74, Brewer\_72, Command613\_79, Gator\_75, Kanye\_74, Saints25\_76, CrystalP\_76, StormChicken\_79, 244\_78, ABCat\_74, Stark\_78, Phrux\_74, Cactus\_80, Contagion\_73, Elite2014\_76, BugsBunny\_77, Cjw1\_77, Hoonter\_80, Misfit\_78, Maxxinista\_79, Easy2Say\_78, ChosenOne\_77, Willez\_72, BaboJay\_74, Stank\_80, Pharsalus\_74, Simpliphy\_76, Goku\_75, Gage\_79, Moldemort\_80, Goldilocks\_80, Glexan\_76, BadStone\_74, Balomoji\_77, Asriel\_76, Argent26\_81, GooberAzure\_80, PhatBacter\_81, Gemini\_82, Palpatine\_79, xkcd\_80, Phaja\_75, Lilpickle\_76, RiverMonster\_77, Holt\_82, Bruin\_74, BilboSwaggins\_75, Henry\_75, Traaww1\_73, Xandras\_76, ShamWow\_77, Ptowny\_74, Emmina\_77, Murica\_80, JeTaime\_77, Becksu\_76, Rakim\_78, Tuco\_78, Paperbeatsrock\_76, HanKaySha\_77, Quallification\_78, IHOP\_75, StolenFromERC\_80, Adnama\_81, Thimble\_78, MadamMonkfish\_77, StellaBean\_75, GoldenSpark\_81, Tarkin\_76

- Track 33 : Marshmallow\_75, TeamEdward\_79, OrionPax\_76, Amao\_77, SirDuracell\_76, Tomaszewski\_72, Cookies\_74, ChotaBhai\_77, DoctorDiddles\_76, Bask21\_77, Pat3\_75, YassJohnny\_74
- Track 34 : Budgie\_85
- Track 35 : FireRed\_81, Nala\_79
- Track 36 : FairyPath\_77
- Track 37 : Coco12\_65, Cerasum\_62, Brookers\_63, Sarma624\_64, BigPhil\_62, Kingsley\_63, Velveteen\_61
- Track 38 : Marker\_67
- Track 39 : Veteran\_62, Cornucopia\_67
- Track 40 : Leperchaun\_58, JoeyJr\_61, PHappiness\_61, Polka14\_64, Daenerys\_60, Spoonbill\_63, RitaG\_61
- Track 41 : Wachhund\_66
- Track 42 : Llama\_70, Jinglebell\_71, AlpineSix\_71, Modragons\_69, Ochi17\_69, Seabastian\_71, OfUltron\_71
- Track 43 : Harley\_67
- Track 44 : Inventum\_61
- Track 45 : LittleShirley\_65
- Track 46 : Firehouse51\_68
- Track 47 : Krakatau\_62
- Track 48 : Demsculpinboyz\_78
- Track 49 : Yoshi\_81
- Track 50 : RomansRevenge\_72
- Track 51 : Guzman\_41, Winchester007\_57, Appa\_41, PhillyJawn\_42, Losacky\_42
- Track 52 : Dropshot\_41
- Track 53 : Pickles13\_40
- Track 54 : Lucky2013\_115
- Track 55 : Thibault\_106, Constella\_107, JuicyJay\_120, NihilNomen\_125, Dallas\_124, Beem\_125, Phoebus\_124, Dove\_109
- Track 56 : MiaZeal\_118
- Track 57 : HokkenD\_113
- Track 58 : Colossa\_115
- Track 59 : VanLee\_116
- Track 60 : Wyatt2\_67, AvadaKedavra\_66, Tyson\_67
- Track 61 : Rose5\_66, Wamburggrxpress\_66
- Track 62 : Archie\_67

- Track 63 : Krypton555\_67, Jubie\_65, Bellis\_66, Clautastrophe\_65, Whirlwind\_66, Lumos\_67, Jobypre\_66, MsGreen\_66, Red305\_66, TriFive\_67, Snenia\_65
- Track 64 : DuncansLeg\_66
- Track 65 : BourbonZero\_66
- Track 66 : Lolly9\_65, MiniLon\_69
- Track 67 : MiniMac\_69
- Track 68 : Finnry\_66, Samty\_66
- Track 69 : Aegeus\_71, Baudelaire\_71

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

The start number called the most often in the published annotations is 48, it was called in 152 of the 235 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 244\_78, ABCat\_74, Adnama\_81, Aegeus\_71, Amao\_77, AmericanBeauty\_81, Argent26\_81, Asriel\_76, AvadaKedavra\_66, BaboJay\_74, BadStone\_74, Balomoji\_77, Barbarian\_76, Bask21\_77, Baudelaire\_71, Becksu\_76, Beem\_125, Bench\_80, BigBubba\_77, BilboSwaggins\_75, Bogg\_77, Brewer\_72, BritBrat\_66, Bruin\_74, Buck\_78, Budgie\_85, BugsBunny\_77, Cactus\_80, CheeseTouch\_74, ChosenOne\_77, ChotaBhai\_77, Cjw1\_77, Command613\_79, Constella\_107, Contagion\_73, Cookies\_74, CrystalP\_76, Czystczon1\_78, Daikon\_79, Dallas\_124, DoctorDiddles\_76, Dove\_109, DrDrey\_77, Dumbo\_77, Dusk\_74, Easy2Say\_78, Ecliptus\_75, Elite2014\_76, Elph10\_77, Emmina\_77, Eureka\_75, FairyPath\_77, Filch\_78, FireRed\_81, Flypotenuse\_73, FoghornLeghorn\_71, Gage\_79, Gator\_75, Gemini\_82, Glexan\_76, Goku\_75, GoldenSpark\_81, Goldilocks\_80, GooberAzure\_80, Greep\_81, HanKaySha\_77, Harella\_77, Henry\_75, Highbury\_76, Holt\_82, Hoonter\_80, Hopey\_77, Horus\_72, HufflyPuff\_80, IHOP\_75, Icee\_78, Inca\_74, JeTaime\_77, JuicyJay\_120, Kanye\_74, Kimchi\_81, Kostya\_77, Kuwabara\_72, Lilac\_79, Lilizi\_78, Lilpickle\_76, LitninMcQueen\_71, MISSy\_78, MPhalcon\_78, MadamMonkfish\_77, Manda\_78, Marshmallow\_75, Maxxinista\_79, MiaZeal\_118, Mindy\_76, Miniwave\_72, Misfit\_78, Moldemort\_80, MollyToe\_72, Mosby\_73, Murica\_80, Murphy\_77, Myrale\_77, Nala\_79, NelitzaMV\_75, NihilNomen\_125, Nimrod\_78, NoSleep\_78, NonchalantPear\_75, ODay\_78, OrionPax\_76, PaddyBaddy\_77, Palpatine\_79, Paperbeatsrock\_76, Pat3\_75, Petra64142\_81, Phaja\_75, Pharsalus\_74, PhatBacter\_81, Phaux\_79, Phoebus\_124, Phrux\_74, Policronamos\_80, Porky\_76, Ptowny\_74, Pumpkin\_80, Quallification\_78, Rakim\_78, Rimmer\_78, RiverMonster\_77, Rose5\_66, Saints25\_76, Sassay\_72, ShamWow\_77, Simpliphy\_76, SirDuracell\_76, SophKB\_74, Sotrice96\_78, Spooky\_68, Squiddly\_73, Stank\_80, Stark\_78, StellaBean\_75, StolenFromERC\_80, StormChicken\_79, TBrady12\_80, Tarkin\_76, TeamEdward\_79, TeardropMSU\_73, Teaspoon\_78, Terminus\_80, Thibault\_106, Thimble\_78, Thresher\_79, Tomaszewski\_72, Toto\_75, Traaww1\_73, Tuco\_78, Tyson\_67, Ukulele\_72, Wamburgxpress\_66, Wiggin\_79, Willez\_72, Wyatt2\_67, Xandras\_76, YassJohnny\_74, Youngblood\_80, xkcd\_80,

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

- 

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

- AWGoat\_61, Aleemily\_105, AlpineSix\_71, Appa\_41, Archie\_67, Beagle\_86, Bellis\_66, BetaFish\_84, BigPhil\_62, BourbonZero\_66, Brookers\_63, BruhMoment\_74, Cafasso\_107, Catfish\_49, Cerasum\_62, Clautastrophe\_65, Coco12\_65, Colossa\_115, Cornucopia\_67, Daenerys\_60, Demsculpinboyz\_78, DogYard\_84, Dropshot\_41, DuncansLeg\_66, Finnry\_66, Firehouse51\_68, Forrestell\_84, Guzman\_41, Harley\_67, HokkenD\_113, Inventum\_61, Jinglebell\_71, Jobypre\_66, JoeyJr\_61, Jubie\_65, Keelan\_96, Kingsley\_63, Krakatau\_62, Krypton555\_67, Kubulix\_84, Leperchaun\_58, LittleShirley\_65, Llama\_70, Lolly9\_65, Losacky\_42, Lucky2013\_115, Lumos\_67, Marker\_67, MellowYellow\_85, MiniLon\_69, MiniMac\_69, ModicumRichard\_107, Modragons\_69, Morgana\_114, MsGreen\_66, Nikan\_82, NyleyClemson\_84, ObLaDi\_106, Ochi17\_69, Odyssey395\_85, OfUltron\_71, Ollypop\_80, PHappiness\_61, PhillyJawn\_42, PhuzzTulsa\_82, Pickles13\_40, Pointis\_81, Polka14\_64, Pureglobe5\_83, RIPWilbur\_83, Rabbitrun\_72, Ranunculus\_78, RazzB\_84, Red305\_66, Ren19\_78, RitaG\_61, Rizwana\_65, RomansRevenge\_72, Samty\_66, Sarma624\_64, Seabastian\_71, SilentRX\_62, Snenia\_65, Spoonbill\_63, Tank\_65, Trax\_71, TriFive\_67, VanLee\_116, Velveteen\_61, Veteran\_62, Wachhund\_66, Whirlwind\_66, Wilde\_67, Winchester007\_57, Yoshi\_81,

### Summary by start number:

#### Start 32:

- Found in 2 of 263 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 235
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Lucky2013\_115 (J),

#### Start 36:

- Found in 2 of 263 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 235
- Called 50.0% of time when present
- Phage (with cluster) where this start called: HokkenD\_113 (J),

#### Start 39:

- Found in 32 of 263 ( 12.2% ) of genes in pham
- Manual Annotations of this start: 31 of 235
- Called 96.9% of time when present
- Phage (with cluster) where this start called: AlpineSix\_71 (F1), BigPhil\_62 (F1), Brookers\_63 (F1), Cerasum\_62 (F1), Coco12\_65 (F1), Cornucopia\_67 (F1), Daenerys\_60 (F1), Demsculpinboyz\_78 (F2), Firehouse51\_68 (F1), Harley\_67 (F1), Jinglebell\_71 (F1), JoeyJr\_61 (F1), Kingsley\_63 (F1), Krakatau\_62 (F1), Leperchaun\_58 (F1), LittleShirley\_65 (F1), Llama\_70 (F1), Marker\_67 (F1), Modragons\_69 (F1), Ochi17\_69 (F1), OfUltron\_71 (F1), PHappiness\_61 (F1), Polka14\_64 (F1), RitaG\_61 (F1), Sarma624\_64 (F1), Seabastian\_71 (F1), Spoonbill\_63 (F1), Velveteen\_61 (F1), Veteran\_62 (F1), Wachhund\_66 (F1), Yoshi\_81 (F2),

#### Start 41:

- Found in 1 of 263 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 235
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Keelan\_96 (DP),

Start 42:

- Found in 2 of 263 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 2 of 235
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Rabbitrun\_72 (DU2), Trax\_71 (DU2),

Start 43:

- Found in 1 of 263 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 235
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Catfish\_49 (CU5),

Start 44:

- Found in 28 of 263 ( 10.6% ) of genes in pham
- Manual Annotations of this start: 22 of 235
- Called 96.4% of time when present
- Phage (with cluster) where this start called: Appa\_41 (GA), Archie\_67 (L2), Bellis\_66 (L3), BourbonZero\_66 (L3), BruhMoment\_74 (AP3), Clautastrophe\_65 (L3), Dropshot\_41 (GA), DuncansLeg\_66 (L3), Finnry\_66 (L3), Guzman\_41 (GA), Jobypre\_66 (L3), Jubie\_65 (L3), Krypton555\_67 (L3), Lolly9\_65 (L3), Losacky\_42 (GA), Lumos\_67 (L3), MiniLon\_69 (L3), MsGreen\_66 (L3), PhillyJawn\_42 (GA), Pickles13\_40 (GA), Red305\_66 (L3), RomansRevenge\_72 (FT), Samty\_66 (L3), Snenia\_65 (L3), TriFive\_67 (L3), Whirlwind\_66 (L3), Winchester007\_57 (GA),

Start 45:

- Found in 6 of 263 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 6 of 235
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aleemily\_105 (DZ), Beagle\_86 (AP2), Cafasso\_107 (DZ), ModicumRichard\_107 (DZ), Morgana\_114 (DZ), ObLaDi\_106 (DZ),

Start 46:

- Found in 20 of 263 ( 7.6% ) of genes in pham
- Manual Annotations of this start: 14 of 235
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AWGoat\_61 (AP4), BetaFish\_84 (AP2), Forrestell\_84 (AP2), Kubulix\_84 (AP2), MellowYellow\_85 (AP2), Nikan\_82 (AP2), NyleyClemson\_84 (AP2), Odyssey395\_85 (AP2), Ollypop\_80 (AP2), PhuzzTulsa\_82 (AP2), Pointis\_81 (AP2), Pureglobe5\_83 (AP2), RIPWilbur\_83 (AP2), Ranunculus\_78 (AP), RazzB\_84 (AP2), Ren19\_78 (AP2), Rizwana\_65 (AP1), SilentRX\_62 (AP4), Tank\_65 (AP1), Wilde\_67 (AP1),

Start 47:

- Found in 2 of 263 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 235
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Colossa\_115 (KA), VanLee\_116 (KA),

Start 48:

- Found in 168 of 263 ( 63.9% ) of genes in pham
- Manual Annotations of this start: 152 of 235
- Called 100.0% of time when present

- Phage (with cluster) where this start called: 244\_78 (E), ABCat\_74 (E), Adnama\_81 (E), Aegeus\_71 (L5), Amao\_77 (E), AmericanBeauty\_81 (E), Argent26\_81 (E), Asriel\_76 (E), AvadaKedavra\_66 (L1), BaboJay\_74 (E), BadStone\_74 (E), Balomoji\_77 (E), Barbarian\_76 (E), Bask21\_77 (E), Baudelaire\_71 (L5), Becksu\_76 (E), Beem\_125 (J), Bench\_80 (E), BigBubba\_77 (E), BilboSwaggins\_75 (E), Bogg\_77 (E), Brewer\_72 (E), BritBrat\_66 (CY2), Bruin\_74 (E), Buck\_78 (E), Budgie\_85 (E), BugsBunny\_77 (E), Cactus\_80 (E), CheeseTouch\_74 (DN1), ChosenOne\_77 (E), ChotaBhai\_77 (E), Cjw1\_77 (E), Command613\_79 (E), Constella\_107 (J), Contagion\_73 (E), Cookies\_74 (E), CrystalP\_76 (E), Czyszczonek\_78 (E), Daikon\_79 (E), Dallas\_124 (J), DoctorDiddles\_76 (E), Dove\_109 (J), DrDrey\_77 (E), Dumbo\_77 (E), Dusk\_74 (E), Easy2Say\_78 (E), Ecliptus\_75 (DN), Elite2014\_76 (E), Elph10\_77 (E), Emmina\_77 (E), Eureka\_75 (E), FairyPath\_77 (E), Filch\_78 (E), FireRed\_81 (E), Flypotenuse\_73 (E), FoghornLeghorn\_71 (E), Gage\_79 (E), Gator\_75 (E), Gemini\_82 (E), Glexan\_76 (E), Goku\_75 (E), GoldenSpark\_81 (E), Goldilocks\_80 (E), GooberAzure\_80 (E), Greep\_81 (E), HanKaySha\_77 (E), Harella\_77 (E), Henry\_75 (E), Highbury\_76 (E), Holt\_82 (E), Hoonter\_80 (E), Hopey\_77 (E), Horus\_72 (DN1), HufflyPuff\_80 (E), IHOP\_75 (E), Icee\_78 (E), Inca\_74 (E), JeTaime\_77 (E), JuicyJay\_120 (J), Kanye\_74 (E), Kimchi\_81 (E), Kostya\_77 (E), Kuwabara\_72 (DN4), Lilac\_79 (E), Lilizi\_78 (E), Lilpickle\_76 (E), LitninMcQueen\_71 (DN1), MISSy\_78 (E), MPhalcon\_78 (E), MadamMonkfish\_77 (E), Manda\_78 (E), Marshmallow\_75 (E), Maxxinista\_79 (E), MiaZeal\_118 (J), Mindy\_76 (E), Miniwave\_72 (E), Misfit\_78 (E), Moldemort\_80 (E), MollyToe\_72 (E), Mosby\_73 (E), Murica\_80 (E), Murphy\_77 (E), Myrale\_77 (E), Nala\_79 (E), NelitzaMV\_75 (E), NihilNomen\_125 (J), Nimrod\_78 (E), NoSleep\_78 (E), NonchalantPear\_75 (E), ODay\_78 (DN), OrionPax\_76 (E), PaddyBaddy\_77 (E), Palpatine\_79 (E), Paperbeatsrock\_76 (E), Pat3\_75 (E), Petra64142\_81 (E), Phaja\_75 (E), Pharsalus\_74 (E), PhatBacter\_81 (E), Phaux\_79 (E), Phoebus\_124 (J), Phrux\_74 (E), Policronamos\_80 (E), Porky\_76 (E), Ptowny\_74 (E), Pumpkin\_80 (E), Quallification\_78 (E), Rakim\_78 (E), Rimmer\_78 (E), RiverMonster\_77 (E), Rose5\_66 (L1), Saints25\_76 (E), Sassay\_72 (E), ShamWow\_77 (E), Simpliphy\_76 (E), SirDuracell\_76 (E), SophKB\_74 (E), Sotrice96\_78 (E), Spooky\_68 (DN2), Squiddly\_73 (DN2), Stank\_80 (E), Stark\_78 (E), StellaBean\_75 (E), StolenFromERC\_80 (E), StormChicken\_79 (E), TBrady12\_80 (E), Tarkin\_76 (E), TeamEdward\_79 (E), TeardropMSU\_73 (E), Teaspoon\_78 (E), Terminus\_80 (E), Thibault\_106 (J), Thimble\_78 (E), Thresher\_79 (E), Tomaszewski\_72 (E), Toto\_75 (E), Traaww1\_73 (E), Tuco\_78 (E), Tyson\_67 (L1), Ukulele\_72 (E), Wamburggrxpress\_66 (L1), Wiggin\_79 (E), Willez\_72 (E), Wyatt2\_67 (L1), Xandras\_76 (E), YassJohnny\_74 (E), Youngblood\_80 (E), xkcd\_80 (E),

Start 49:

- Found in 8 of 263 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 1 of 235
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Inventum\_61 (F1),

Start 51:

- Found in 34 of 263 ( 12.9% ) of genes in pham
- Manual Annotations of this start: 2 of 235
- Called 5.9% of time when present
- Phage (with cluster) where this start called: DogYard\_84 (AP2), MiniMac\_69 (L3),

**Summary by clusters:**

There are 25 clusters represented in this pham: DN, FT, AP2, AP3, AP1, AP4, DZ, DP, CU5, DN4, DN1, DN2, DU2, CY2, E, J, KA, AP, L5, L2, L3, GA, L1, F1, F2,

Info for manual annotations of cluster AP:

- Start number 46 was manually annotated 1 time for cluster AP.

Info for manual annotations of cluster AP1:

- Start number 46 was manually annotated 3 times for cluster AP1.

Info for manual annotations of cluster AP2:

- Start number 45 was manually annotated 1 time for cluster AP2.
- Start number 46 was manually annotated 8 times for cluster AP2.
- Start number 51 was manually annotated 1 time for cluster AP2.

Info for manual annotations of cluster AP3:

- Start number 44 was manually annotated 1 time for cluster AP3.

Info for manual annotations of cluster AP4:

- Start number 46 was manually annotated 2 times for cluster AP4.

Info for manual annotations of cluster CU5:

- Start number 43 was manually annotated 1 time for cluster CU5.

Info for manual annotations of cluster CY2:

- Start number 48 was manually annotated 1 time for cluster CY2.

Info for manual annotations of cluster DN:

- Start number 48 was manually annotated 2 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 48 was manually annotated 3 times for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 48 was manually annotated 2 times for cluster DN2.

Info for manual annotations of cluster DN4:

- Start number 48 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster DP:

- Start number 41 was manually annotated 1 time for cluster DP.

Info for manual annotations of cluster DU2:

- Start number 42 was manually annotated 2 times for cluster DU2.

Info for manual annotations of cluster DZ:

- Start number 45 was manually annotated 5 times for cluster DZ.

Info for manual annotations of cluster E:

- Start number 48 was manually annotated 127 times for cluster E.

Info for manual annotations of cluster F1:

- Start number 39 was manually annotated 29 times for cluster F1.
- Start number 49 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster F2:

- Start number 39 was manually annotated 2 times for cluster F2.

Info for manual annotations of cluster FT:

- Start number 44 was manually annotated 1 time for cluster FT.

Info for manual annotations of cluster GA:

- Start number 44 was manually annotated 4 times for cluster GA.

Info for manual annotations of cluster J:

- Start number 32 was manually annotated 1 time for cluster J.
- Start number 36 was manually annotated 1 time for cluster J.
- Start number 48 was manually annotated 9 times for cluster J.

Info for manual annotations of cluster KA:

- Start number 47 was manually annotated 1 time for cluster KA.

Info for manual annotations of cluster L1:

- Start number 48 was manually annotated 5 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 44 was manually annotated 1 time for cluster L2.

Info for manual annotations of cluster L3:

- Start number 44 was manually annotated 15 times for cluster L3.
- Start number 51 was manually annotated 1 time for cluster L3.

Info for manual annotations of cluster L5:

- Start number 48 was manually annotated 2 times for cluster L5.

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

Gene: 244\_78 Start: 48609, Stop: 48926, Start Num: 48

Candidate Starts for 244\_78:

(15, 48426), (Start: 48 @48609 has 152 MA's), (67, 48750),

Gene: ABCat\_74 Start: 48962, Stop: 49279, Start Num: 48

Candidate Starts for ABCat\_74:

(15, 48779), (Start: 48 @48962 has 152 MA's), (67, 49103),

Gene: AWGoat\_61 Start: 44482, Stop: 44168, Start Num: 46

Candidate Starts for AWGoat\_61:

(Start: 46 @44482 has 14 MA's), (64, 44356), (85, 44224), (87, 44215),

Gene: Adnama\_81 Start: 48988, Stop: 49305, Start Num: 48

Candidate Starts for Adnama\_81:

(15, 48805), (Start: 48 @48988 has 152 MA's), (67, 49129),

Gene: Aegeus\_71 Start: 46495, Stop: 46824, Start Num: 48

Candidate Starts for Aegeus\_71:

(Start: 48 @46495 has 152 MA's), (57, 46579), (77, 46717), (81, 46744), (82, 46750), (87, 46774), (96, 46813),

Gene: Aleemily\_105 Start: 59933, Stop: 60322, Start Num: 45

Candidate Starts for Aleemily\_105:

(5, 59546), (6, 59558), (10, 59657), (Start: 45 @59933 has 6 MA's), (52, 59966), (53, 59987), (73, 60134), (79, 60164), (82, 60188),

Gene: AlpineSix\_71 Start: 45319, Stop: 45681, Start Num: 39

Candidate Starts for AlpineSix\_71:

(Start: 39 @45319 has 31 MA's), (71, 45523), (87, 45619), (96, 45664),

Gene: Amao\_77 Start: 48382, Stop: 48699, Start Num: 48

Candidate Starts for Amao\_77:

(15, 48199), (Start: 48 @48382 has 152 MA's), (Start: 51 @48406 has 2 MA's), (67, 48523),

Gene: AmericanBeauty\_81 Start: 49131, Stop: 49448, Start Num: 48

Candidate Starts for AmericanBeauty\_81:

(15, 48948), (Start: 48 @49131 has 152 MA's), (67, 49272),

Gene: Appa\_41 Start: 25620, Stop: 25997, Start Num: 44

Candidate Starts for Appa\_41:

(Start: 44 @25620 has 22 MA's), (54, 25683), (81, 25884), (82, 25890), (87, 25911), (101, 25986),

Gene: Archie\_67 Start: 46551, Stop: 46892, Start Num: 44

Candidate Starts for Archie\_67:

(Start: 44 @46551 has 22 MA's), (66, 46698),

Gene: Argent26\_81 Start: 48769, Stop: 49086, Start Num: 48

Candidate Starts for Argent26\_81:

(15, 48586), (Start: 48 @48769 has 152 MA's), (67, 48910),

Gene: Asriel\_76 Start: 47325, Stop: 47642, Start Num: 48

Candidate Starts for Asriel\_76:

(15, 47142), (Start: 48 @47325 has 152 MA's), (67, 47466),

Gene: AvadaKedavra\_66 Start: 45153, Stop: 45521, Start Num: 48

Candidate Starts for AvadaKedavra\_66:

(Start: 48 @45153 has 152 MA's), (52, 45180), (58, 45249), (62, 45270), (67, 45294), (77, 45375), (89, 45438), (102, 45513),

Gene: BaboJay\_74 Start: 48162, Stop: 48479, Start Num: 48

Candidate Starts for BaboJay\_74:

(15, 47979), (Start: 48 @48162 has 152 MA's), (67, 48303),

Gene: BadStone\_74 Start: 48531, Stop: 48848, Start Num: 48

Candidate Starts for BadStone\_74:

(15, 48348), (Start: 48 @48531 has 152 MA's), (67, 48672),

Gene: Balomoji\_77 Start: 49092, Stop: 49409, Start Num: 48

Candidate Starts for Balomoji\_77:

(15, 48909), (Start: 48 @49092 has 152 MA's), (67, 49233),

Gene: Barbarian\_76 Start: 47325, Stop: 47642, Start Num: 48

Candidate Starts for Barbarian\_76:

(15, 47142), (Start: 48 @47325 has 152 MA's), (67, 47466),

Gene: Bask21\_77 Start: 47945, Stop: 48262, Start Num: 48

Candidate Starts for Bask21\_77:

(15, 47762), (Start: 48 @47945 has 152 MA's), (Start: 51 @47969 has 2 MA's), (67, 48086),

Gene: Baudelaire\_71 Start: 46495, Stop: 46824, Start Num: 48

Candidate Starts for Baudelaire\_71:

(Start: 48 @46495 has 152 MA's), (57, 46579), (77, 46717), (81, 46744), (82, 46750), (87, 46774), (96, 46813),

Gene: Beagle\_86 Start: 50592, Stop: 50260, Start Num: 45

Candidate Starts for Beagle\_86:

(Start: 45 @50592 has 6 MA's), (52, 50559), (66, 50442), (71, 50412), (72, 50397), (74, 50382), (81, 50340), (82, 50334), (85, 50322), (87, 50313), (90, 50289),

Gene: Becksu\_76 Start: 49161, Stop: 49478, Start Num: 48

Candidate Starts for Becksu\_76:

(15, 48978), (Start: 48 @49161 has 152 MA's), (67, 49302),

Gene: Beem\_125 Start: 69590, Stop: 69922, Start Num: 48

Candidate Starts for Beem\_125:

(Start: 48 @69590 has 152 MA's), (60, 69701), (64, 69725), (93, 69905),

Gene: Bellis\_66 Start: 46470, Stop: 46802, Start Num: 44

Candidate Starts for Bellis\_66:

(9, 46194), (11, 46206), (12, 46215), (13, 46239), (17, 46317), (24, 46365), (Start: 44 @46470 has 22 MA's), (66, 46614), (77, 46698), (82, 46731),

Gene: Bench\_80 Start: 48629, Stop: 48946, Start Num: 48

Candidate Starts for Bench\_80:

(15, 48446), (Start: 48 @48629 has 152 MA's), (67, 48770),

Gene: BetaFish\_84 Start: 50810, Stop: 50484, Start Num: 46

Candidate Starts for BetaFish\_84:

(Start: 46 @50810 has 14 MA's), (Start: 51 @50780 has 2 MA's), (52, 50777), (58, 50711), (68, 50666), (71, 50642), (78, 50588), (85, 50552), (95, 50501),

Gene: BigBubba\_77 Start: 48341, Stop: 48658, Start Num: 48

Candidate Starts for BigBubba\_77:

(15, 48158), (Start: 48 @48341 has 152 MA's), (67, 48482),

Gene: BigPhil\_62 Start: 39148, Stop: 39510, Start Num: 39

Candidate Starts for BigPhil\_62:

(Start: 39 @39148 has 31 MA's), (65, 39307), (71, 39352), (87, 39448), (88, 39451), (96, 39493),

Gene: BilboSwaggins\_75 Start: 48970, Stop: 49287, Start Num: 48

Candidate Starts for BilboSwaggins\_75:

(15, 48787), (Start: 48 @48970 has 152 MA's), (67, 49111),

Gene: Bogg\_77 Start: 47908, Stop: 48225, Start Num: 48

Candidate Starts for Bogg\_77:

(15, 47725), (Start: 48 @47908 has 152 MA's), (67, 48049),

Gene: BourbonZero\_66 Start: 46515, Stop: 46847, Start Num: 44

Candidate Starts for BourbonZero\_66:

(24, 46410), (Start: 44 @46515 has 22 MA's), (62, 46638), (68, 46665), (77, 46743), (83, 46779), (91, 46824),

Gene: Brewer\_72 Start: 47431, Stop: 47748, Start Num: 48

Candidate Starts for Brewer\_72:

(15, 47248), (Start: 48 @47431 has 152 MA's), (67, 47572),

Gene: BritBrat\_66 Start: 43849, Stop: 44178, Start Num: 48

Candidate Starts for BritBrat\_66:

(25, 43735), (37, 43825), (Start: 48 @43849 has 152 MA's), (62, 43963), (66, 43984), (77, 44068), (80, 44092), (93, 44158), (96, 44170),

Gene: Brookers\_63 Start: 42099, Stop: 42461, Start Num: 39

Candidate Starts for Brookers\_63:

(Start: 39 @42099 has 31 MA's), (65, 42258), (71, 42303), (87, 42399), (88, 42402), (96, 42444),

Gene: BruhMoment\_74 Start: 49610, Stop: 49293, Start Num: 44

Candidate Starts for BruhMoment\_74:

(Start: 44 @49610 has 22 MA's), (58, 49508), (66, 49469), (85, 49349),

Gene: Bruin\_74 Start: 47505, Stop: 47822, Start Num: 48

Candidate Starts for Bruin\_74:

(15, 47322), (Start: 48 @47505 has 152 MA's), (67, 47646),

Gene: Buck\_78 Start: 49210, Stop: 49527, Start Num: 48

Candidate Starts for Buck\_78:

(15, 49027), (Start: 48 @49210 has 152 MA's), (67, 49351),

Gene: Budgie\_85 Start: 49000, Stop: 49317, Start Num: 48

Candidate Starts for Budgie\_85:

(1, 48439), (2, 48445), (3, 48532), (15, 48817), (Start: 48 @49000 has 152 MA's), (Start: 51 @49024 has 2 MA's), (67, 49141),

Gene: BugsBunny\_77 Start: 49037, Stop: 49354, Start Num: 48

Candidate Starts for BugsBunny\_77:

(15, 48854), (Start: 48 @49037 has 152 MA's), (67, 49178),

Gene: Cactus\_80 Start: 47986, Stop: 48303, Start Num: 48

Candidate Starts for Cactus\_80:

(15, 47803), (Start: 48 @47986 has 152 MA's), (67, 48127),

Gene: Cafasso\_107 Start: 60484, Stop: 60873, Start Num: 45

Candidate Starts for Cafasso\_107:

(5, 60097), (6, 60109), (Start: 45 @60484 has 6 MA's), (52, 60517), (53, 60538), (73, 60685), (79, 60715),

Gene: Catfish\_49 Start: 34051, Stop: 34401, Start Num: 43

Candidate Starts for Catfish\_49:

(Start: 43 @34051 has 1 MA's), (50, 34084), (59, 34174), (63, 34198), (81, 34324), (93, 34384),

Gene: Cerasum\_62 Start: 39166, Stop: 39528, Start Num: 39

Candidate Starts for Cerasum\_62:

(Start: 39 @39166 has 31 MA's), (65, 39325), (71, 39370), (87, 39466), (88, 39469), (96, 39511),

Gene: CheeseTouch\_74 Start: 39429, Stop: 39758, Start Num: 48

Candidate Starts for CheeseTouch\_74:

(Start: 48 @39429 has 152 MA's), (62, 39543), (66, 39564), (77, 39648), (80, 39672), (89, 39711), (93, 39738), (96, 39750),

Gene: ChosenOne\_77 Start: 47986, Stop: 48303, Start Num: 48

Candidate Starts for ChosenOne\_77:

(15, 47803), (Start: 48 @47986 has 152 MA's), (67, 48127),

Gene: ChotaBhai\_77 Start: 48310, Stop: 48627, Start Num: 48

Candidate Starts for ChotaBhai\_77:

(15, 48127), (Start: 48 @48310 has 152 MA's), (Start: 51 @48334 has 2 MA's), (67, 48451),

Gene: Cjw1\_77 Start: 49683, Stop: 50000, Start Num: 48

Candidate Starts for Cjw1\_77:

(15, 49500), (Start: 48 @49683 has 152 MA's), (67, 49824),

Gene: Clautastrophe\_65 Start: 46467, Stop: 46799, Start Num: 44

Candidate Starts for Clautastrophe\_65:

(9, 46191), (11, 46203), (12, 46212), (13, 46236), (17, 46314), (24, 46362), (Start: 44 @46467 has 22 MA's), (66, 46611), (77, 46695), (82, 46728),

Gene: Coco12\_65 Start: 43223, Stop: 43585, Start Num: 39

Candidate Starts for Coco12\_65:

(Start: 39 @43223 has 31 MA's), (65, 43382), (71, 43427), (87, 43523), (88, 43526), (96, 43568),

Gene: Colossa\_115 Start: 60533, Stop: 60895, Start Num: 47

Candidate Starts for Colossa\_115:

(Start: 47 @60533 has 1 MA's), (77, 60746), (81, 60773), (86, 60800), (92, 60824), (99, 60863),

Gene: Command613\_79 Start: 49025, Stop: 49342, Start Num: 48

Candidate Starts for Command613\_79:

(15, 48842), (Start: 48 @49025 has 152 MA's), (67, 49166),

Gene: Constella\_107 Start: 63055, Stop: 63387, Start Num: 48

Candidate Starts for Constella\_107:

(Start: 48 @63055 has 152 MA's), (60, 63166), (64, 63190), (93, 63370),

Gene: Contagion\_73 Start: 47786, Stop: 48103, Start Num: 48

Candidate Starts for Contagion\_73:

(15, 47603), (Start: 48 @47786 has 152 MA's), (67, 47927),

Gene: Cookies\_74 Start: 48167, Stop: 48484, Start Num: 48

Candidate Starts for Cookies\_74:

(15, 47984), (Start: 48 @48167 has 152 MA's), (Start: 51 @48191 has 2 MA's), (67, 48308),

Gene: Cornucopia\_67 Start: 42579, Stop: 42941, Start Num: 39

Candidate Starts for Cornucopia\_67:  
(Start: 39 @42579 has 31 MA's), (71, 42783), (87, 42879), (88, 42882), (96, 42924),

Gene: CrystalP\_76 Start: 48970, Stop: 49287, Start Num: 48  
Candidate Starts for CrystalP\_76:  
(15, 48787), (Start: 48 @48970 has 152 MA's), (67, 49111),

Gene: Czyszczone1\_78 Start: 48492, Stop: 48809, Start Num: 48  
Candidate Starts for Czyszczone1\_78:  
(15, 48309), (Start: 48 @48492 has 152 MA's), (67, 48633),

Gene: Daenerys\_60 Start: 41329, Stop: 41685, Start Num: 39  
Candidate Starts for Daenerys\_60:  
(20, 41224), (22, 41230), (30, 41284), (Start: 39 @41329 has 31 MA's), (Start: 49 @41362 has 1 MA's),  
(71, 41533), (87, 41629), (88, 41632),

Gene: Daikon\_79 Start: 49113, Stop: 49430, Start Num: 48  
Candidate Starts for Daikon\_79:  
(15, 48930), (Start: 48 @49113 has 152 MA's), (67, 49254),

Gene: Dallas\_124 Start: 69105, Stop: 69437, Start Num: 48  
Candidate Starts for Dallas\_124:  
(Start: 48 @69105 has 152 MA's), (60, 69216), (64, 69240), (93, 69420),

Gene: Demsculpinboyz\_78 Start: 42611, Stop: 42973, Start Num: 39  
Candidate Starts for Demsculpinboyz\_78:  
(Start: 39 @42611 has 31 MA's), (71, 42815), (87, 42911), (96, 42956),

Gene: DoctorDiddles\_76 Start: 48354, Stop: 48671, Start Num: 48  
Candidate Starts for DoctorDiddles\_76:  
(15, 48171), (Start: 48 @48354 has 152 MA's), (Start: 51 @48378 has 2 MA's), (67, 48495),

Gene: DogYard\_84 Start: 50267, Stop: 49971, Start Num: 51  
Candidate Starts for DogYard\_84:  
(Start: 51 @50267 has 2 MA's), (52, 50264), (58, 50198), (68, 50153), (71, 50129), (78, 50075), (85,  
50039), (95, 49988),

Gene: Dove\_109 Start: 64018, Stop: 64350, Start Num: 48  
Candidate Starts for Dove\_109:  
(Start: 48 @64018 has 152 MA's), (60, 64129), (64, 64153), (93, 64333),

Gene: DrDrey\_77 Start: 49411, Stop: 49728, Start Num: 48  
Candidate Starts for DrDrey\_77:  
(15, 49228), (Start: 48 @49411 has 152 MA's), (67, 49552),

Gene: Dropshot\_41 Start: 25455, Stop: 25832, Start Num: 44  
Candidate Starts for Dropshot\_41:  
(Start: 44 @25455 has 22 MA's), (54, 25518), (56, 25545), (81, 25719), (82, 25725), (87, 25746), (101,  
25821),

Gene: Dumbo\_77 Start: 47891, Stop: 48208, Start Num: 48  
Candidate Starts for Dumbo\_77:  
(15, 47708), (Start: 48 @47891 has 152 MA's), (67, 48032),

Gene: DuncansLeg\_66 Start: 46503, Stop: 46835, Start Num: 44

Candidate Starts for DuncansLeg\_66:

(24, 46398), (34, 46464), (Start: 44 @46503 has 22 MA's), (62, 46626), (68, 46653), (77, 46731), (83, 46767), (91, 46812),

Gene: Dusk\_74 Start: 48191, Stop: 48508, Start Num: 48

Candidate Starts for Dusk\_74:

(15, 48008), (Start: 48 @48191 has 152 MA's), (67, 48332),

Gene: Easy2Say\_78 Start: 49435, Stop: 49752, Start Num: 48

Candidate Starts for Easy2Say\_78:

(15, 49252), (Start: 48 @49435 has 152 MA's), (67, 49576),

Gene: Ecliptus\_75 Start: 44750, Stop: 45079, Start Num: 48

Candidate Starts for Ecliptus\_75:

(Start: 48 @44750 has 152 MA's), (62, 44864), (66, 44885), (77, 44969), (80, 44993), (89, 45032), (93, 45059), (96, 45071),

Gene: Elite2014\_76 Start: 47985, Stop: 48302, Start Num: 48

Candidate Starts for Elite2014\_76:

(15, 47802), (Start: 48 @47985 has 152 MA's), (67, 48126),

Gene: Elph10\_77 Start: 47990, Stop: 48307, Start Num: 48

Candidate Starts for Elph10\_77:

(15, 47807), (Start: 48 @47990 has 152 MA's), (67, 48131),

Gene: Emmina\_77 Start: 47892, Stop: 48209, Start Num: 48

Candidate Starts for Emmina\_77:

(15, 47709), (Start: 48 @47892 has 152 MA's), (67, 48033),

Gene: Eureka\_75 Start: 48456, Stop: 48773, Start Num: 48

Candidate Starts for Eureka\_75:

(15, 48273), (Start: 48 @48456 has 152 MA's), (67, 48597),

Gene: FairyPath\_77 Start: 49104, Stop: 49421, Start Num: 48

Candidate Starts for FairyPath\_77:

(15, 48921), (Start: 48 @49104 has 152 MA's), (Start: 51 @49128 has 2 MA's), (67, 49245),

Gene: Filch\_78 Start: 47917, Stop: 48234, Start Num: 48

Candidate Starts for Filch\_78:

(15, 47734), (Start: 48 @47917 has 152 MA's), (67, 48058),

Gene: Finnry\_66 Start: 46731, Stop: 47063, Start Num: 44

Candidate Starts for Finnry\_66:

(11, 46467), (12, 46476), (13, 46500), (17, 46578), (24, 46626), (Start: 44 @46731 has 22 MA's), (66, 46875), (77, 46959), (82, 46992),

Gene: FireRed\_81 Start: 49479, Stop: 49796, Start Num: 48

Candidate Starts for FireRed\_81:

(15, 49296), (Start: 48 @49479 has 152 MA's), (67, 49620),

Gene: Firehouse51\_68 Start: 46363, Stop: 46704, Start Num: 39

Candidate Starts for Firehouse51\_68:  
(Start: 39 @46363 has 31 MA's), (71, 46567), (87, 46663), (88, 46666),

Gene: Flypotenuse\_73 Start: 47976, Stop: 48293, Start Num: 48  
Candidate Starts for Flypotenuse\_73:  
(15, 47793), (Start: 48 @47976 has 152 MA's), (67, 48117),

Gene: FoghornLeghorn\_71 Start: 46989, Stop: 47306, Start Num: 48  
Candidate Starts for FoghornLeghorn\_71:  
(15, 46806), (Start: 48 @46989 has 152 MA's), (67, 47130),

Gene: Forrestell\_84 Start: 49543, Stop: 49217, Start Num: 46  
Candidate Starts for Forrestell\_84:  
(26, 49636), (Start: 46 @49543 has 14 MA's), (Start: 51 @49513 has 2 MA's), (52, 49510), (58, 49444),  
(68, 49399), (71, 49375), (78, 49321), (85, 49285), (95, 49234),

Gene: Gage\_79 Start: 48769, Stop: 49086, Start Num: 48  
Candidate Starts for Gage\_79:  
(15, 48586), (Start: 48 @48769 has 152 MA's), (67, 48910),

Gene: Gator\_75 Start: 48822, Stop: 49139, Start Num: 48  
Candidate Starts for Gator\_75:  
(15, 48639), (Start: 48 @48822 has 152 MA's), (67, 48963),

Gene: Gemini\_82 Start: 49286, Stop: 49603, Start Num: 48  
Candidate Starts for Gemini\_82:  
(15, 49103), (Start: 48 @49286 has 152 MA's), (67, 49427),

Gene: Glexan\_76 Start: 49106, Stop: 49423, Start Num: 48  
Candidate Starts for Glexan\_76:  
(15, 48923), (Start: 48 @49106 has 152 MA's), (67, 49247),

Gene: Goku\_75 Start: 48185, Stop: 48502, Start Num: 48  
Candidate Starts for Goku\_75:  
(15, 48002), (Start: 48 @48185 has 152 MA's), (67, 48326),

Gene: GoldenSpark\_81 Start: 48769, Stop: 49086, Start Num: 48  
Candidate Starts for GoldenSpark\_81:  
(15, 48586), (Start: 48 @48769 has 152 MA's), (67, 48910),

Gene: Goldilocks\_80 Start: 48267, Stop: 48584, Start Num: 48  
Candidate Starts for Goldilocks\_80:  
(15, 48084), (Start: 48 @48267 has 152 MA's), (67, 48408),

Gene: GooberAzure\_80 Start: 48769, Stop: 49086, Start Num: 48  
Candidate Starts for GooberAzure\_80:  
(15, 48586), (Start: 48 @48769 has 152 MA's), (67, 48910),

Gene: Greep\_81 Start: 49768, Stop: 50085, Start Num: 48  
Candidate Starts for Greep\_81:  
(15, 49585), (Start: 48 @49768 has 152 MA's), (67, 49909),

Gene: Guzman\_41 Start: 25719, Stop: 26096, Start Num: 44

Candidate Starts for Guzman\_41:

(Start: 44 @25719 has 22 MA's), (54, 25782), (81, 25983), (82, 25989), (87, 26010), (101, 26085),

Gene: HanKaySha\_77 Start: 48070, Stop: 48387, Start Num: 48

Candidate Starts for HanKaySha\_77:

(15, 47887), (Start: 48 @48070 has 152 MA's), (67, 48211),

Gene: Harella\_77 Start: 49622, Stop: 49939, Start Num: 48

Candidate Starts for Harella\_77:

(15, 49439), (Start: 48 @49622 has 152 MA's), (67, 49763),

Gene: Harley\_67 Start: 42941, Stop: 43297, Start Num: 39

Candidate Starts for Harley\_67:

(Start: 39 @42941 has 31 MA's), (65, 43100), (69, 43115), (87, 43241), (88, 43244),

Gene: Henry\_75 Start: 48410, Stop: 48727, Start Num: 48

Candidate Starts for Henry\_75:

(15, 48227), (Start: 48 @48410 has 152 MA's), (67, 48551),

Gene: Highbury\_76 Start: 48058, Stop: 48375, Start Num: 48

Candidate Starts for Highbury\_76:

(15, 47875), (Start: 48 @48058 has 152 MA's), (67, 48199),

Gene: HokkenD\_113 Start: 67777, Stop: 68151, Start Num: 36

Candidate Starts for HokkenD\_113:

(Start: 32 @67768 has 1 MA's), (Start: 36 @67777 has 1 MA's), (55, 67885), (60, 67930), (93, 68134),

Gene: Holt\_82 Start: 49183, Stop: 49500, Start Num: 48

Candidate Starts for Holt\_82:

(15, 49000), (Start: 48 @49183 has 152 MA's), (67, 49324),

Gene: Hoonter\_80 Start: 48769, Stop: 49086, Start Num: 48

Candidate Starts for Hoonter\_80:

(15, 48586), (Start: 48 @48769 has 152 MA's), (67, 48910),

Gene: Hopey\_77 Start: 48602, Stop: 48919, Start Num: 48

Candidate Starts for Hopey\_77:

(15, 48419), (Start: 48 @48602 has 152 MA's), (67, 48743),

Gene: Horus\_72 Start: 44321, Stop: 44650, Start Num: 48

Candidate Starts for Horus\_72:

(25, 44207), (37, 44297), (Start: 48 @44321 has 152 MA's), (52, 44348), (62, 44435), (77, 44540), (80, 44564), (89, 44603), (93, 44630), (96, 44642),

Gene: HufflyPuff\_80 Start: 49435, Stop: 49752, Start Num: 48

Candidate Starts for HufflyPuff\_80:

(15, 49252), (Start: 48 @49435 has 152 MA's), (67, 49576),

Gene: IHOP\_75 Start: 48534, Stop: 48851, Start Num: 48

Candidate Starts for IHOP\_75:

(15, 48351), (Start: 48 @48534 has 152 MA's), (67, 48675),

Gene: Icee\_78 Start: 48433, Stop: 48750, Start Num: 48

Candidate Starts for Icee\_78:

(15, 48250), (Start: 48 @48433 has 152 MA's), (67, 48574),

Gene: Inca\_74 Start: 47059, Stop: 47376, Start Num: 48

Candidate Starts for Inca\_74:

(15, 46876), (Start: 48 @47059 has 152 MA's), (67, 47200),

Gene: Inventum\_61 Start: 42492, Stop: 42821, Start Num: 49

Candidate Starts for Inventum\_61:

(20, 42354), (22, 42360), (30, 42414), (Start: 39 @42459 has 31 MA's), (Start: 49 @42492 has 1 MA's), (71, 42663), (87, 42759), (88, 42762), (96, 42804),

Gene: JeTaime\_77 Start: 49251, Stop: 49568, Start Num: 48

Candidate Starts for JeTaime\_77:

(15, 49068), (Start: 48 @49251 has 152 MA's), (67, 49392),

Gene: Jinglebell\_71 Start: 45318, Stop: 45680, Start Num: 39

Candidate Starts for Jinglebell\_71:

(Start: 39 @45318 has 31 MA's), (71, 45522), (87, 45618), (96, 45663),

Gene: Jobypre\_66 Start: 46467, Stop: 46799, Start Num: 44

Candidate Starts for Jobypre\_66:

(9, 46191), (11, 46203), (12, 46212), (13, 46236), (17, 46314), (24, 46362), (Start: 44 @46467 has 22 MA's), (66, 46611), (77, 46695), (82, 46728),

Gene: JoeyJr\_61 Start: 41497, Stop: 41853, Start Num: 39

Candidate Starts for JoeyJr\_61:

(20, 41392), (22, 41398), (30, 41452), (Start: 39 @41497 has 31 MA's), (Start: 49 @41530 has 1 MA's), (71, 41701), (87, 41797), (88, 41800),

Gene: Jubie\_65 Start: 46602, Stop: 46934, Start Num: 44

Candidate Starts for Jubie\_65:

(9, 46326), (11, 46338), (12, 46347), (13, 46371), (17, 46449), (24, 46497), (Start: 44 @46602 has 22 MA's), (66, 46746), (77, 46830), (82, 46863),

Gene: JuicyJay\_120 Start: 70726, Stop: 71058, Start Num: 48

Candidate Starts for JuicyJay\_120:

(Start: 48 @70726 has 152 MA's), (60, 70837), (64, 70861), (93, 71041),

Gene: Kanye\_74 Start: 48115, Stop: 48432, Start Num: 48

Candidate Starts for Kanye\_74:

(15, 47932), (Start: 48 @48115 has 152 MA's), (67, 48256),

Gene: Keelan\_96 Start: 49018, Stop: 49347, Start Num: 41

Candidate Starts for Keelan\_96:

(Start: 41 @49018 has 1 MA's), (57, 49114), (71, 49198), (76, 49237),

Gene: Kimchi\_81 Start: 48772, Stop: 49089, Start Num: 48

Candidate Starts for Kimchi\_81:

(15, 48589), (Start: 48 @48772 has 152 MA's), (67, 48913),

Gene: Kingsley\_63 Start: 41956, Stop: 42318, Start Num: 39

Candidate Starts for Kingsley\_63:

(Start: 39 @41956 has 31 MA's), (65, 42115), (71, 42160), (87, 42256), (88, 42259), (96, 42301),

Gene: Kostya\_77 Start: 48633, Stop: 48950, Start Num: 48

Candidate Starts for Kostya\_77:

(15, 48450), (Start: 48 @48633 has 152 MA's), (67, 48774),

Gene: Krakatau\_62 Start: 41145, Stop: 41507, Start Num: 39

Candidate Starts for Krakatau\_62:

(Start: 39 @41145 has 31 MA's), (87, 41445), (88, 41448), (96, 41490),

Gene: Krypton555\_67 Start: 46693, Stop: 47025, Start Num: 44

Candidate Starts for Krypton555\_67:

(9, 46417), (11, 46429), (12, 46438), (13, 46462), (17, 46540), (24, 46588), (Start: 44 @46693 has 22 MA's), (66, 46837), (77, 46921), (82, 46954),

Gene: Kubulix\_84 Start: 49967, Stop: 49641, Start Num: 46

Candidate Starts for Kubulix\_84:

(Start: 46 @49967 has 14 MA's), (Start: 51 @49937 has 2 MA's), (52, 49934), (58, 49868), (68, 49823), (71, 49799), (78, 49745), (85, 49709), (95, 49658),

Gene: Kuwabara\_72 Start: 44078, Stop: 44407, Start Num: 48

Candidate Starts for Kuwabara\_72:

(Start: 48 @44078 has 152 MA's), (62, 44192), (66, 44213), (77, 44297), (80, 44321), (89, 44360), (93, 44387), (96, 44399),

Gene: Leperchaun\_58 Start: 40727, Stop: 41083, Start Num: 39

Candidate Starts for Leperchaun\_58:

(20, 40622), (22, 40628), (30, 40682), (Start: 39 @40727 has 31 MA's), (Start: 49 @40760 has 1 MA's), (71, 40931), (87, 41027), (88, 41030),

Gene: Lilac\_79 Start: 48387, Stop: 48704, Start Num: 48

Candidate Starts for Lilac\_79:

(15, 48204), (Start: 48 @48387 has 152 MA's), (67, 48528),

Gene: Lilizi\_78 Start: 48100, Stop: 48417, Start Num: 48

Candidate Starts for Lilizi\_78:

(15, 47917), (Start: 48 @48100 has 152 MA's), (67, 48241),

Gene: Lilpickle\_76 Start: 47985, Stop: 48302, Start Num: 48

Candidate Starts for Lilpickle\_76:

(15, 47802), (Start: 48 @47985 has 152 MA's), (67, 48126),

Gene: LitninMcQueen\_71 Start: 42944, Stop: 43273, Start Num: 48

Candidate Starts for LitninMcQueen\_71:

(Start: 48 @42944 has 152 MA's), (77, 43163), (93, 43253), (96, 43265),

Gene: LittleShirley\_65 Start: 42793, Stop: 43149, Start Num: 39

Candidate Starts for LittleShirley\_65:

(Start: 39 @42793 has 31 MA's), (71, 42997), (87, 43093), (88, 43096),

Gene: Llama\_70 Start: 45173, Stop: 45535, Start Num: 39

Candidate Starts for Llama\_70:

(Start: 39 @45173 has 31 MA's), (71, 45377), (87, 45473), (96, 45518),

Gene: Lolly9\_65 Start: 46290, Stop: 46622, Start Num: 44

Candidate Starts for Lolly9\_65:

(Start: 44 @46290 has 22 MA's), (Start: 51 @46320 has 2 MA's), (62, 46413), (68, 46440), (77, 46518), (82, 46551), (91, 46599),

Gene: Losacky\_42 Start: 25840, Stop: 26217, Start Num: 44

Candidate Starts for Losacky\_42:

(Start: 44 @25840 has 22 MA's), (54, 25903), (81, 26104), (82, 26110), (87, 26131), (101, 26206),

Gene: Lucky2013\_115 Start: 64045, Stop: 64419, Start Num: 32

Candidate Starts for Lucky2013\_115:

(Start: 32 @64045 has 1 MA's), (Start: 36 @64054 has 1 MA's), (55, 64162), (60, 64207), (77, 64327),

Gene: Lumos\_67 Start: 46464, Stop: 46796, Start Num: 44

Candidate Starts for Lumos\_67:

(9, 46188), (11, 46200), (12, 46209), (13, 46233), (17, 46311), (24, 46359), (Start: 44 @46464 has 22 MA's), (66, 46608), (77, 46692), (82, 46725),

Gene: MISSy\_78 Start: 48491, Stop: 48808, Start Num: 48

Candidate Starts for MISSy\_78:

(15, 48308), (Start: 48 @48491 has 152 MA's), (67, 48632),

Gene: MPhalcon\_78 Start: 48484, Stop: 48801, Start Num: 48

Candidate Starts for MPhalcon\_78:

(15, 48301), (Start: 48 @48484 has 152 MA's), (67, 48625),

Gene: MadamMonkfish\_77 Start: 47709, Stop: 48026, Start Num: 48

Candidate Starts for MadamMonkfish\_77:

(15, 47526), (Start: 48 @47709 has 152 MA's), (67, 47850),

Gene: Manda\_78 Start: 49571, Stop: 49888, Start Num: 48

Candidate Starts for Manda\_78:

(15, 49388), (Start: 48 @49571 has 152 MA's), (67, 49712),

Gene: Marker\_67 Start: 42458, Stop: 42814, Start Num: 39

Candidate Starts for Marker\_67:

(18, 42341), (Start: 39 @42458 has 31 MA's), (87, 42758), (88, 42761), (96, 42797),

Gene: Marshmallow\_75 Start: 49264, Stop: 49581, Start Num: 48

Candidate Starts for Marshmallow\_75:

(15, 49081), (Start: 48 @49264 has 152 MA's), (Start: 51 @49288 has 2 MA's), (67, 49405),

Gene: Maxxinista\_79 Start: 48360, Stop: 48677, Start Num: 48

Candidate Starts for Maxxinista\_79:

(15, 48177), (Start: 48 @48360 has 152 MA's), (67, 48501),

Gene: MellowYellow\_85 Start: 50209, Stop: 49883, Start Num: 46

Candidate Starts for MellowYellow\_85:

(26, 50302), (Start: 46 @50209 has 14 MA's), (Start: 51 @50179 has 2 MA's), (52, 50176), (58, 50110), (68, 50065), (71, 50041), (78, 49987), (85, 49951), (95, 49900),

Gene: MiaZeal\_118 Start: 64854, Stop: 65177, Start Num: 48

Candidate Starts for MiaZeal\_118:

(Start: 48 @64854 has 152 MA's), (60, 64965), (77, 65085),

Gene: Mindy\_76 Start: 47576, Stop: 47893, Start Num: 48

Candidate Starts for Mindy\_76:

(15, 47393), (Start: 48 @47576 has 152 MA's), (67, 47717),

Gene: MiniLon\_69 Start: 46291, Stop: 46623, Start Num: 44

Candidate Starts for MiniLon\_69:

(Start: 44 @46291 has 22 MA's), (Start: 51 @46321 has 2 MA's), (62, 46414), (68, 46441), (77, 46519), (82, 46552), (91, 46600),

Gene: MiniMac\_69 Start: 46319, Stop: 46621, Start Num: 51

Candidate Starts for MiniMac\_69:

(Start: 44 @46289 has 22 MA's), (Start: 51 @46319 has 2 MA's), (62, 46412), (68, 46439), (77, 46517), (82, 46550), (91, 46598),

Gene: Miniwave\_72 Start: 48029, Stop: 48346, Start Num: 48

Candidate Starts for Miniwave\_72:

(15, 47846), (Start: 48 @48029 has 152 MA's), (67, 48170),

Gene: Misfit\_78 Start: 49503, Stop: 49820, Start Num: 48

Candidate Starts for Misfit\_78:

(15, 49320), (Start: 48 @49503 has 152 MA's), (67, 49644),

Gene: ModicumRichard\_107 Start: 60769, Stop: 61155, Start Num: 45

Candidate Starts for ModicumRichard\_107:

(29, 60703), (31, 60712), (Start: 45 @60769 has 6 MA's), (Start: 51 @60796 has 2 MA's), (52, 60799), (53, 60820), (57, 60856), (66, 60910), (79, 60997), (82, 61021),

Gene: Modragons\_69 Start: 45162, Stop: 45524, Start Num: 39

Candidate Starts for Modragons\_69:

(Start: 39 @45162 has 31 MA's), (71, 45366), (87, 45462), (96, 45507),

Gene: Moldemort\_80 Start: 48588, Stop: 48905, Start Num: 48

Candidate Starts for Moldemort\_80:

(15, 48405), (Start: 48 @48588 has 152 MA's), (67, 48729),

Gene: MollyToe\_72 Start: 47330, Stop: 47647, Start Num: 48

Candidate Starts for MollyToe\_72:

(15, 47147), (Start: 48 @47330 has 152 MA's), (67, 47471),

Gene: Morgana\_114 Start: 62857, Stop: 63246, Start Num: 45

Candidate Starts for Morgana\_114:

(4, 62464), (7, 62533), (8, 62569), (14, 62653), (Start: 45 @62857 has 6 MA's), (52, 62890), (53, 62911), (73, 63058), (79, 63088), (82, 63112),

Gene: Mosby\_73 Start: 47786, Stop: 48103, Start Num: 48

Candidate Starts for Mosby\_73:

(15, 47603), (Start: 48 @47786 has 152 MA's), (67, 47927),

Gene: MsGreen\_66 Start: 46467, Stop: 46799, Start Num: 44

Candidate Starts for MsGreen\_66:

(9, 46191), (11, 46203), (12, 46212), (13, 46236), (17, 46314), (24, 46362), (Start: 44 @46467 has 22 MA's), (66, 46611), (77, 46695), (82, 46728),

Gene: Murica\_80 Start: 49435, Stop: 49752, Start Num: 48  
Candidate Starts for Murica\_80:  
(15, 49252), (Start: 48 @49435 has 152 MA's), (67, 49576),

Gene: Murphy\_77 Start: 48872, Stop: 49189, Start Num: 48  
Candidate Starts for Murphy\_77:  
(15, 48689), (Start: 48 @48872 has 152 MA's), (67, 49013),

Gene: Myrale\_77 Start: 49129, Stop: 49446, Start Num: 48  
Candidate Starts for Myrale\_77:  
(15, 48946), (Start: 48 @49129 has 152 MA's), (67, 49270),

Gene: Nala\_79 Start: 48993, Stop: 49310, Start Num: 48  
Candidate Starts for Nala\_79:  
(15, 48810), (Start: 48 @48993 has 152 MA's), (67, 49134),

Gene: NelitzaMV\_75 Start: 48075, Stop: 48392, Start Num: 48  
Candidate Starts for NelitzaMV\_75:  
(15, 47892), (Start: 48 @48075 has 152 MA's), (67, 48216),

Gene: NihilNomen\_125 Start: 68678, Stop: 69010, Start Num: 48  
Candidate Starts for NihilNomen\_125:  
(Start: 48 @68678 has 152 MA's), (60, 68789), (64, 68813), (93, 68993),

Gene: Nikan\_82 Start: 50187, Stop: 49861, Start Num: 46  
Candidate Starts for Nikan\_82:  
(35, 50226), (Start: 46 @50187 has 14 MA's), (Start: 51 @50157 has 2 MA's), (52, 50154), (58, 50088),  
(61, 50070), (66, 50049), (78, 49965), (85, 49929),

Gene: Nimrod\_78 Start: 49696, Stop: 50013, Start Num: 48  
Candidate Starts for Nimrod\_78:  
(15, 49513), (Start: 48 @49696 has 152 MA's), (67, 49837),

Gene: NoSleep\_78 Start: 48330, Stop: 48647, Start Num: 48  
Candidate Starts for NoSleep\_78:  
(15, 48147), (Start: 48 @48330 has 152 MA's), (67, 48471),

Gene: NonchalantPear\_75 Start: 48183, Stop: 48500, Start Num: 48  
Candidate Starts for NonchalantPear\_75:  
(15, 48000), (Start: 48 @48183 has 152 MA's), (67, 48324),

Gene: NyleyClemson\_84 Start: 49827, Stop: 49501, Start Num: 46  
Candidate Starts for NyleyClemson\_84:  
(26, 49920), (Start: 46 @49827 has 14 MA's), (Start: 51 @49797 has 2 MA's), (52, 49794), (58, 49728),  
(68, 49683), (71, 49659), (78, 49605), (85, 49569), (95, 49518),

Gene: ODay\_78 Start: 45557, Stop: 45886, Start Num: 48  
Candidate Starts for ODay\_78:  
(25, 45443), (37, 45533), (Start: 48 @45557 has 152 MA's), (52, 45584), (77, 45776), (93, 45866), (96, 45878),

Gene: ObLaDi\_106 Start: 60168, Stop: 60557, Start Num: 45

Candidate Starts for ObLaDi\_106:

(6, 59793), (10, 59892), (Start: 45 @60168 has 6 MA's), (52, 60201), (53, 60222), (73, 60369), (79, 60399), (82, 60423),

Gene: Ochi17\_69 Start: 44769, Stop: 45131, Start Num: 39

Candidate Starts for Ochi17\_69:

(Start: 39 @44769 has 31 MA's), (71, 44973), (87, 45069), (96, 45114),

Gene: Odyssey395\_85 Start: 50318, Stop: 49992, Start Num: 46

Candidate Starts for Odyssey395\_85:

(Start: 46 @50318 has 14 MA's), (Start: 51 @50288 has 2 MA's), (52, 50285), (58, 50219), (68, 50174), (71, 50150), (78, 50096), (85, 50060), (95, 50009),

Gene: OfUltron\_71 Start: 45318, Stop: 45680, Start Num: 39

Candidate Starts for OfUltron\_71:

(Start: 39 @45318 has 31 MA's), (71, 45522), (87, 45618), (96, 45663),

Gene: Ollypop\_80 Start: 50972, Stop: 50646, Start Num: 46

Candidate Starts for Ollypop\_80:

(26, 51065), (Start: 46 @50972 has 14 MA's), (52, 50939), (58, 50873), (61, 50855), (66, 50834), (71, 50804), (78, 50750), (85, 50714),

Gene: OrionPax\_76 Start: 48081, Stop: 48398, Start Num: 48

Candidate Starts for OrionPax\_76:

(15, 47898), (Start: 48 @48081 has 152 MA's), (Start: 51 @48105 has 2 MA's), (67, 48222),

Gene: PHappiness\_61 Start: 41273, Stop: 41629, Start Num: 39

Candidate Starts for PHappiness\_61:

(20, 41168), (22, 41174), (30, 41228), (Start: 39 @41273 has 31 MA's), (Start: 49 @41306 has 1 MA's), (71, 41477), (87, 41573), (88, 41576),

Gene: PaddyBaddy\_77 Start: 48084, Stop: 48401, Start Num: 48

Candidate Starts for PaddyBaddy\_77:

(15, 47901), (Start: 48 @48084 has 152 MA's), (67, 48225),

Gene: Palpatine\_79 Start: 49462, Stop: 49779, Start Num: 48

Candidate Starts for Palpatine\_79:

(15, 49279), (Start: 48 @49462 has 152 MA's), (67, 49603),

Gene: Paperbeatsrock\_76 Start: 48707, Stop: 49024, Start Num: 48

Candidate Starts for Paperbeatsrock\_76:

(15, 48524), (Start: 48 @48707 has 152 MA's), (67, 48848),

Gene: Pat3\_75 Start: 47239, Stop: 47556, Start Num: 48

Candidate Starts for Pat3\_75:

(15, 47056), (Start: 48 @47239 has 152 MA's), (Start: 51 @47263 has 2 MA's), (67, 47380),

Gene: Petra64142\_81 Start: 49926, Stop: 50243, Start Num: 48

Candidate Starts for Petra64142\_81:

(15, 49743), (Start: 48 @49926 has 152 MA's), (67, 50067),

Gene: Phaja\_75 Start: 48533, Stop: 48850, Start Num: 48  
Candidate Starts for Phaja\_75:  
(15, 48350), (Start: 48 @48533 has 152 MA's), (67, 48674),

Gene: Pharsalus\_74 Start: 48507, Stop: 48824, Start Num: 48  
Candidate Starts for Pharsalus\_74:  
(15, 48324), (Start: 48 @48507 has 152 MA's), (67, 48648),

Gene: PhatBacter\_81 Start: 49479, Stop: 49796, Start Num: 48  
Candidate Starts for PhatBacter\_81:  
(15, 49296), (Start: 48 @49479 has 152 MA's), (67, 49620),

Gene: Phaux\_79 Start: 49474, Stop: 49791, Start Num: 48  
Candidate Starts for Phaux\_79:  
(15, 49291), (Start: 48 @49474 has 152 MA's), (67, 49615),

Gene: PhillyJawn\_42 Start: 25617, Stop: 25994, Start Num: 44  
Candidate Starts for PhillyJawn\_42:  
(Start: 44 @25617 has 22 MA's), (54, 25680), (81, 25881), (82, 25887), (87, 25908), (101, 25983),

Gene: Phoebus\_124 Start: 70535, Stop: 70867, Start Num: 48  
Candidate Starts for Phoebus\_124:  
(Start: 48 @70535 has 152 MA's), (60, 70646), (64, 70670), (93, 70850),

Gene: Phrux\_74 Start: 48070, Stop: 48387, Start Num: 48  
Candidate Starts for Phrux\_74:  
(15, 47887), (Start: 48 @48070 has 152 MA's), (67, 48211),

Gene: PhuzzTulsa\_82 Start: 50446, Stop: 50120, Start Num: 46  
Candidate Starts for PhuzzTulsa\_82:  
(Start: 46 @50446 has 14 MA's), (Start: 51 @50416 has 2 MA's), (52, 50413), (58, 50347), (68, 50302),  
(71, 50278), (78, 50224), (85, 50188), (95, 50137),

Gene: Pickles13\_40 Start: 25930, Stop: 26307, Start Num: 44  
Candidate Starts for Pickles13\_40:  
(Start: 44 @25930 has 22 MA's), (56, 26020), (81, 26194), (82, 26200), (87, 26221), (101, 26296),

Gene: Pointis\_81 Start: 49894, Stop: 49568, Start Num: 46  
Candidate Starts for Pointis\_81:  
(Start: 46 @49894 has 14 MA's), (Start: 51 @49864 has 2 MA's), (52, 49861), (58, 49795), (68, 49750),  
(71, 49726), (78, 49672), (85, 49636), (95, 49585),

Gene: Policronamos\_80 Start: 49474, Stop: 49791, Start Num: 48  
Candidate Starts for Policronamos\_80:  
(15, 49291), (Start: 48 @49474 has 152 MA's), (67, 49615),

Gene: Polka14\_64 Start: 42337, Stop: 42693, Start Num: 39  
Candidate Starts for Polka14\_64:  
(20, 42232), (22, 42238), (30, 42292), (Start: 39 @42337 has 31 MA's), (Start: 49 @42370 has 1 MA's),  
(71, 42541), (87, 42637), (88, 42640),

Gene: Porky\_76 Start: 47900, Stop: 48217, Start Num: 48  
Candidate Starts for Porky\_76:

(15, 47717), (Start: 48 @47900 has 152 MA's), (67, 48041),

Gene: Ptowny\_74 Start: 47369, Stop: 47686, Start Num: 48

Candidate Starts for Ptowny\_74:

(15, 47186), (Start: 48 @47369 has 152 MA's), (67, 47510),

Gene: Pumpkin\_80 Start: 49128, Stop: 49445, Start Num: 48

Candidate Starts for Pumpkin\_80:

(15, 48945), (Start: 48 @49128 has 152 MA's), (67, 49269),

Gene: Pureglobe5\_83 Start: 50341, Stop: 50015, Start Num: 46

Candidate Starts for Pureglobe5\_83:

(26, 50434), (Start: 46 @50341 has 14 MA's), (Start: 51 @50311 has 2 MA's), (52, 50308), (58, 50242), (68, 50197), (71, 50173), (78, 50119), (85, 50083), (95, 50032),

Gene: Qualification\_78 Start: 49115, Stop: 49432, Start Num: 48

Candidate Starts for Qualification\_78:

(15, 48932), (Start: 48 @49115 has 152 MA's), (67, 49256),

Gene: RIPWilbur\_83 Start: 49861, Stop: 49535, Start Num: 46

Candidate Starts for RIPWilbur\_83:

(26, 49954), (Start: 46 @49861 has 14 MA's), (Start: 51 @49831 has 2 MA's), (52, 49828), (58, 49762), (68, 49717), (71, 49693), (78, 49639), (85, 49603), (95, 49552),

Gene: Rabbitrun\_72 Start: 44571, Stop: 44918, Start Num: 42

Candidate Starts for Rabbitrun\_72:

(23, 44460), (26, 44490), (27, 44493), (28, 44496), (33, 44538), (38, 44562), (Start: 42 @44571 has 2 MA's), (55, 44652), (77, 44808), (81, 44835), (84, 44847), (87, 44862), (88, 44865),

Gene: Rakim\_78 Start: 48584, Stop: 48901, Start Num: 48

Candidate Starts for Rakim\_78:

(15, 48401), (Start: 48 @48584 has 152 MA's), (67, 48725),

Gene: Ranunculus\_78 Start: 52647, Stop: 52321, Start Num: 46

Candidate Starts for Ranunculus\_78:

(Start: 46 @52647 has 14 MA's), (Start: 51 @52617 has 2 MA's), (58, 52548), (68, 52503), (71, 52479), (85, 52389),

Gene: RazzB\_84 Start: 49953, Stop: 49627, Start Num: 46

Candidate Starts for RazzB\_84:

(26, 50046), (Start: 46 @49953 has 14 MA's), (Start: 51 @49923 has 2 MA's), (52, 49920), (58, 49854), (68, 49809), (71, 49785), (78, 49731), (85, 49695), (95, 49644),

Gene: Red305\_66 Start: 46467, Stop: 46799, Start Num: 44

Candidate Starts for Red305\_66:

(9, 46191), (11, 46203), (12, 46212), (13, 46236), (17, 46314), (24, 46362), (Start: 44 @46467 has 22 MA's), (66, 46611), (77, 46695), (82, 46728),

Gene: Ren19\_78 Start: 49730, Stop: 49404, Start Num: 46

Candidate Starts for Ren19\_78:

(Start: 46 @49730 has 14 MA's), (Start: 51 @49700 has 2 MA's), (52, 49697), (58, 49631), (61, 49613), (66, 49592), (71, 49562), (78, 49508), (85, 49472),

Gene: Rimmer\_78 Start: 48820, Stop: 49137, Start Num: 48

Candidate Starts for Rimmer\_78:

(15, 48637), (Start: 48 @48820 has 152 MA's), (67, 48961),

Gene: RitaG\_61 Start: 41618, Stop: 41974, Start Num: 39

Candidate Starts for RitaG\_61:

(20, 41513), (22, 41519), (30, 41573), (Start: 39 @41618 has 31 MA's), (Start: 49 @41651 has 1 MA's), (71, 41822), (87, 41918), (88, 41921),

Gene: RiverMonster\_77 Start: 48648, Stop: 48965, Start Num: 48

Candidate Starts for RiverMonster\_77:

(15, 48465), (Start: 48 @48648 has 152 MA's), (67, 48789),

Gene: Rizwana\_65 Start: 46684, Stop: 46358, Start Num: 46

Candidate Starts for Rizwana\_65:

(Start: 46 @46684 has 14 MA's), (Start: 51 @46654 has 2 MA's), (52, 46651), (85, 46426),

Gene: RomansRevenge\_72 Start: 48362, Stop: 47964, Start Num: 44

Candidate Starts for RomansRevenge\_72:

(40, 48374), (Start: 44 @48362 has 22 MA's), (52, 48326), (70, 48185), (75, 48143), (82, 48101), (90, 48056), (98, 48023), (100, 48005),

Gene: Rose5\_66 Start: 45488, Stop: 45859, Start Num: 48

Candidate Starts for Rose5\_66:

(Start: 48 @45488 has 152 MA's), (56, 45566), (77, 45713), (89, 45776), (102, 45851),

Gene: Saints25\_76 Start: 48058, Stop: 48375, Start Num: 48

Candidate Starts for Saints25\_76:

(15, 47875), (Start: 48 @48058 has 152 MA's), (67, 48199),

Gene: Samty\_66 Start: 46475, Stop: 46807, Start Num: 44

Candidate Starts for Samty\_66:

(11, 46211), (12, 46220), (13, 46244), (17, 46322), (24, 46370), (Start: 44 @46475 has 22 MA's), (66, 46619), (77, 46703), (82, 46736),

Gene: Sarma624\_64 Start: 39148, Stop: 39510, Start Num: 39

Candidate Starts for Sarma624\_64:

(Start: 39 @39148 has 31 MA's), (65, 39307), (71, 39352), (87, 39448), (88, 39451), (96, 39493),

Gene: Sassay\_72 Start: 46748, Stop: 47065, Start Num: 48

Candidate Starts for Sassay\_72:

(15, 46565), (Start: 48 @46748 has 152 MA's), (67, 46889),

Gene: Seabastian\_71 Start: 45319, Stop: 45681, Start Num: 39

Candidate Starts for Seabastian\_71:

(Start: 39 @45319 has 31 MA's), (71, 45523), (87, 45619), (96, 45664),

Gene: ShamWow\_77 Start: 48970, Stop: 49287, Start Num: 48

Candidate Starts for ShamWow\_77:

(15, 48787), (Start: 48 @48970 has 152 MA's), (67, 49111),

Gene: SilentRX\_62 Start: 45416, Stop: 45102, Start Num: 46

Candidate Starts for SilentRX\_62:

(16, 45581), (19, 45545), (Start: 46 @45416 has 14 MA's), (64, 45290), (85, 45158), (87, 45149),

Gene: Simpliphy\_76 Start: 48048, Stop: 48365, Start Num: 48

Candidate Starts for Simpliphy\_76:

(15, 47865), (Start: 48 @48048 has 152 MA's), (67, 48189),

Gene: SirDuracell\_76 Start: 47334, Stop: 47651, Start Num: 48

Candidate Starts for SirDuracell\_76:

(15, 47151), (Start: 48 @47334 has 152 MA's), (Start: 51 @47358 has 2 MA's), (67, 47475),

Gene: Snenia\_65 Start: 46468, Stop: 46800, Start Num: 44

Candidate Starts for Snenia\_65:

(9, 46192), (11, 46204), (12, 46213), (13, 46237), (17, 46315), (24, 46363), (Start: 44 @46468 has 22 MA's), (66, 46612), (77, 46696), (82, 46729),

Gene: SophKB\_74 Start: 47726, Stop: 48043, Start Num: 48

Candidate Starts for SophKB\_74:

(15, 47543), (Start: 48 @47726 has 152 MA's), (67, 47867),

Gene: Sotrice96\_78 Start: 48729, Stop: 49046, Start Num: 48

Candidate Starts for Sotrice96\_78:

(15, 48546), (Start: 48 @48729 has 152 MA's), (67, 48870),

Gene: Spooky\_68 Start: 42098, Stop: 42427, Start Num: 48

Candidate Starts for Spooky\_68:

(Start: 48 @42098 has 152 MA's), (88, 42377), (93, 42407), (96, 42419),

Gene: Spoonbill\_63 Start: 41578, Stop: 41934, Start Num: 39

Candidate Starts for Spoonbill\_63:

(20, 41473), (22, 41479), (30, 41533), (Start: 39 @41578 has 31 MA's), (Start: 49 @41611 has 1 MA's), (71, 41782), (87, 41878), (88, 41881),

Gene: Squiddly\_73 Start: 46416, Stop: 46745, Start Num: 48

Candidate Starts for Squiddly\_73:

(Start: 48 @46416 has 152 MA's), (88, 46695), (93, 46725), (96, 46737),

Gene: Stank\_80 Start: 48987, Stop: 49304, Start Num: 48

Candidate Starts for Stank\_80:

(15, 48804), (Start: 48 @48987 has 152 MA's), (67, 49128),

Gene: Stark\_78 Start: 48531, Stop: 48848, Start Num: 48

Candidate Starts for Stark\_78:

(15, 48348), (Start: 48 @48531 has 152 MA's), (67, 48672),

Gene: StellaBean\_75 Start: 48294, Stop: 48611, Start Num: 48

Candidate Starts for StellaBean\_75:

(15, 48111), (Start: 48 @48294 has 152 MA's), (67, 48435),

Gene: StolenFromERC\_80 Start: 48769, Stop: 49086, Start Num: 48

Candidate Starts for StolenFromERC\_80:

(15, 48586), (Start: 48 @48769 has 152 MA's), (67, 48910),

Gene: StormChicken\_79 Start: 49427, Stop: 49744, Start Num: 48

Candidate Starts for StormChicken\_79:  
(15, 49244), (Start: 48 @49427 has 152 MA's), (67, 49568),

Gene: TBrady12\_80 Start: 48468, Stop: 48785, Start Num: 48  
Candidate Starts for TBrady12\_80:  
(15, 48285), (Start: 48 @48468 has 152 MA's), (67, 48609),

Gene: Tank\_65 Start: 46679, Stop: 46338, Start Num: 46  
Candidate Starts for Tank\_65:  
(Start: 46 @46679 has 14 MA's), (57, 46592), (85, 46421), (93, 46379),

Gene: Tarkin\_76 Start: 48716, Stop: 49033, Start Num: 48  
Candidate Starts for Tarkin\_76:  
(15, 48533), (Start: 48 @48716 has 152 MA's), (67, 48857),

Gene: TeamEdward\_79 Start: 49421, Stop: 49738, Start Num: 48  
Candidate Starts for TeamEdward\_79:  
(15, 49238), (Start: 48 @49421 has 152 MA's), (Start: 51 @49445 has 2 MA's), (67, 49562),

Gene: TeardropMSU\_73 Start: 47716, Stop: 48033, Start Num: 48  
Candidate Starts for TeardropMSU\_73:  
(15, 47533), (Start: 48 @47716 has 152 MA's), (67, 47857),

Gene: Teaspoon\_78 Start: 48610, Stop: 48927, Start Num: 48  
Candidate Starts for Teaspoon\_78:  
(15, 48427), (Start: 48 @48610 has 152 MA's), (67, 48751),

Gene: Terminus\_80 Start: 49503, Stop: 49820, Start Num: 48  
Candidate Starts for Terminus\_80:  
(15, 49320), (Start: 48 @49503 has 152 MA's), (67, 49644),

Gene: Thibault\_106 Start: 63336, Stop: 63668, Start Num: 48  
Candidate Starts for Thibault\_106:  
(Start: 48 @63336 has 152 MA's), (60, 63447), (64, 63471), (93, 63651),

Gene: Thimble\_78 Start: 47951, Stop: 48268, Start Num: 48  
Candidate Starts for Thimble\_78:  
(15, 47768), (Start: 48 @47951 has 152 MA's), (67, 48092),

Gene: Thresher\_79 Start: 49590, Stop: 49907, Start Num: 48  
Candidate Starts for Thresher\_79:  
(15, 49407), (Start: 48 @49590 has 152 MA's), (67, 49731),

Gene: Tomaszewski\_72 Start: 47879, Stop: 48196, Start Num: 48  
Candidate Starts for Tomaszewski\_72:  
(15, 47696), (Start: 48 @47879 has 152 MA's), (Start: 51 @47903 has 2 MA's), (67, 48020),

Gene: Toto\_75 Start: 48970, Stop: 49287, Start Num: 48  
Candidate Starts for Toto\_75:  
(15, 48787), (Start: 48 @48970 has 152 MA's), (67, 49111),

Gene: Traaww1\_73 Start: 48154, Stop: 48471, Start Num: 48  
Candidate Starts for Traaww1\_73:

(15, 47971), (Start: 48 @48154 has 152 MA's), (67, 48295),

Gene: Trax\_71 Start: 44944, Stop: 45291, Start Num: 42

Candidate Starts for Trax\_71:

(Start: 42 @44944 has 2 MA's), (55, 45025), (77, 45181), (81, 45208), (87, 45235), (88, 45238),

Gene: TriFive\_67 Start: 46467, Stop: 46799, Start Num: 44

Candidate Starts for TriFive\_67:

(9, 46191), (11, 46203), (12, 46212), (13, 46236), (17, 46314), (24, 46362), (Start: 44 @46467 has 22 MA's), (66, 46611), (77, 46695), (82, 46728),

Gene: Tuco\_78 Start: 49478, Stop: 49795, Start Num: 48

Candidate Starts for Tuco\_78:

(15, 49295), (Start: 48 @49478 has 152 MA's), (67, 49619),

Gene: Tyson\_67 Start: 45417, Stop: 45785, Start Num: 48

Candidate Starts for Tyson\_67:

(Start: 48 @45417 has 152 MA's), (52, 45444), (58, 45513), (62, 45534), (67, 45558), (77, 45639), (89, 45702), (102, 45777),

Gene: Ukulele\_72 Start: 47861, Stop: 48178, Start Num: 48

Candidate Starts for Ukulele\_72:

(15, 47678), (Start: 48 @47861 has 152 MA's), (67, 48002),

Gene: VanLee\_116 Start: 60612, Stop: 60974, Start Num: 47

Candidate Starts for VanLee\_116:

(Start: 47 @60612 has 1 MA's), (82, 60858), (92, 60903), (94, 60918), (97, 60927), (99, 60942),

Gene: Velveteen\_61 Start: 39148, Stop: 39510, Start Num: 39

Candidate Starts for Velveteen\_61:

(Start: 39 @39148 has 31 MA's), (65, 39307), (71, 39352), (87, 39448), (88, 39451), (96, 39493),

Gene: Veteran\_62 Start: 40798, Stop: 41154, Start Num: 39

Candidate Starts for Veteran\_62:

(Start: 39 @40798 has 31 MA's), (71, 41002), (87, 41098), (88, 41101), (96, 41137),

Gene: Wachhund\_66 Start: 42028, Stop: 42390, Start Num: 39

Candidate Starts for Wachhund\_66:

(Start: 39 @42028 has 31 MA's), (87, 42328), (96, 42373),

Gene: Wamburgexpress\_66 Start: 45044, Stop: 45415, Start Num: 48

Candidate Starts for Wamburgexpress\_66:

(Start: 48 @45044 has 152 MA's), (56, 45122), (77, 45269), (89, 45332), (102, 45407),

Gene: Whirlwind\_66 Start: 46283, Stop: 46615, Start Num: 44

Candidate Starts for Whirlwind\_66:

(9, 46007), (11, 46019), (12, 46028), (13, 46052), (17, 46130), (24, 46178), (Start: 44 @46283 has 22 MA's), (66, 46427), (77, 46511), (82, 46544),

Gene: Wiggin\_79 Start: 48555, Stop: 48872, Start Num: 48

Candidate Starts for Wiggin\_79:

(15, 48372), (Start: 48 @48555 has 152 MA's), (67, 48696),

Gene: Wilde\_67 Start: 46978, Stop: 46637, Start Num: 46  
Candidate Starts for Wilde\_67:  
(Start: 46 @46978 has 14 MA's), (57, 46891), (85, 46720), (93, 46678),

Gene: Willez\_72 Start: 46748, Stop: 47065, Start Num: 48  
Candidate Starts for Willez\_72:  
(15, 46565), (Start: 48 @46748 has 152 MA's), (67, 46889),

Gene: Winchester007\_57 Start: 31732, Stop: 32109, Start Num: 44  
Candidate Starts for Winchester007\_57:  
(Start: 44 @31732 has 22 MA's), (54, 31795), (81, 31996), (82, 32002), (87, 32023), (101, 32098),

Gene: Wyatt2\_67 Start: 45415, Stop: 45783, Start Num: 48  
Candidate Starts for Wyatt2\_67:  
(Start: 48 @45415 has 152 MA's), (52, 45442), (58, 45511), (62, 45532), (67, 45556), (77, 45637), (89, 45700), (102, 45775),

Gene: Xandras\_76 Start: 47963, Stop: 48280, Start Num: 48  
Candidate Starts for Xandras\_76:  
(15, 47780), (Start: 48 @47963 has 152 MA's), (67, 48104),

Gene: YassJohnny\_74 Start: 47918, Stop: 48235, Start Num: 48  
Candidate Starts for YassJohnny\_74:  
(15, 47735), (Start: 48 @47918 has 152 MA's), (Start: 51 @47942 has 2 MA's), (67, 48059),

Gene: Yoshi\_81 Start: 44512, Stop: 44874, Start Num: 39  
Candidate Starts for Yoshi\_81:  
(21, 44401), (Start: 39 @44512 has 31 MA's), (87, 44812), (88, 44815), (96, 44857),

Gene: Youngblood\_80 Start: 49430, Stop: 49747, Start Num: 48  
Candidate Starts for Youngblood\_80:  
(15, 49247), (Start: 48 @49430 has 152 MA's), (67, 49571),

Gene: xkcd\_80 Start: 49620, Stop: 49937, Start Num: 48  
Candidate Starts for xkcd\_80:  
(15, 49437), (Start: 48 @49620 has 152 MA's), (67, 49761),