



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 202769 Report

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

Pham number 202769 has 131 members, 8 are drafts.

Phages represented in each track:

- Track 1 : DoctorDiddles\_16, Palpatine\_15, IHOP\_15, Bruin\_15, Icee\_15, Quallification\_17, Bask21\_15, Rakim\_17, Balomoji\_15, Dusk\_15, StellaBean\_16, Command613\_17, Gator\_14, CrystalP\_16, Mindy\_16, Tomaszewski\_15, Myrale\_16, Manda\_16, BugsBunny\_13, Harella\_14, FairyPath\_16, Marshmallow\_16, Miniwave\_16, YassJohnny\_16, ShamWow\_16, Rimmer\_15, Sotrice96\_16, SophKB\_16, Buck\_15, NelitzaMV\_16, Kostya\_16, Cactus\_17, Phaja\_15, Henry\_16, TeardropMSU\_15, ABCat\_15, Mosby\_15, SirDuracell\_15, BilboSwaggins\_16, Goldilocks\_17, Tuco\_16, Toto\_16, Sassay\_15, Contagion\_15, Willez\_15, Inca\_15, Asriel\_15, Barbarian\_15, Traaww1\_14, BadStone\_15, Cookies\_16, Flypotenuse\_14, Daikon\_14, Phaux\_14, Glexan\_14, Amao\_16, xkcd\_16, Holt\_17, Nala\_15
- Track 2 : Lilpickle\_14, Petra64142\_16, Adnama\_17, BigBubba\_15, FireRed\_15, TBrady12\_17, GoldenSpark\_17, Lilizi\_17, HankaySha\_16, ShereKhan\_17, Hopey\_16, MISSy\_15, Terminus\_15, Filch\_16, Easy2Say\_16, AmericanBeauty\_17, Thresher\_16, Bench\_17, Pharsalus\_16, Stark\_16, 244\_16, Maxxinista\_16, Hoonter\_17, Cjw1\_15, Ukulele\_15, Misfit\_15, MPhalcon\_15, Pat3\_15, Moldemort\_16, BaboJay\_15, ChosenOne\_14, Goku\_16, Simpliphy\_16, Teaspoon\_15, Pumpkin\_16, Czystczon1\_16, Highbury\_16, Stank\_17, Kanye\_17, RiverMonster\_15, Xandras\_17, GooberAzure\_17, Argent26\_17, Wiggin\_17, Nimrod\_15, OrionPax\_16, Emmina\_15, Youngblood\_15, DrDrey\_16, Elph10\_16, StolenFromERC\_17, Paperbeatsrock\_17, ChotaBhai\_15, Elite2014\_14, Murica\_14, Murphy\_15, Policronamos\_15, Gemini\_17, PhatBacter\_15, Phrux\_15, Lilac\_17, Dumbo\_15, JeTaime\_17, Porky\_14, Tarkin\_17, Gage\_17, NoSleep\_16, HuffyPuff\_14, Kimchi\_17, Saints25\_16
- Track 3 : Eureka\_16
- Track 4 : MadamMonkfish\_15

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

The start number called the most often in the published annotations is 1, it was called in 123 of the 123 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 244\_16, ABCat\_15, Adnama\_17, Amao\_16, AmericanBeauty\_17, Argent26\_17, Asriel\_15, BaboJay\_15, BadStone\_15, Balomoji\_15, Barbarian\_15, Bask21\_15, Bench\_17, BigBubba\_15, BilboSwaggins\_16, Bruin\_15, Buck\_15, BugsBunny\_13,

Cactus\_17, ChosenOne\_14, ChotaBhai\_15, Cjw1\_15, Command613\_17, Contagion\_15, Cookies\_16, CrystalP\_16, Czyszczone1\_16, Daikon\_14, DoctorDiddles\_16, DrDrey\_16, Dumbo\_15, Dusk\_15, Easy2Say\_16, Elite2014\_14, Elph10\_16, Emmina\_15, Eureka\_16, FairyPath\_16, Filch\_16, FireRed\_15, Flypotenuse\_14, Gage\_17, Gator\_14, Gemini\_17, Glexan\_14, Goku\_16, GoldenSpark\_17, Goldilocks\_17, GooberAzure\_17, HanKaySha\_16, Harella\_14, Henry\_16, Highbury\_16, Holt\_17, Hoonter\_17, Hopey\_16, HufflyPuff\_14, IHOP\_15, Icee\_15, Inca\_15, JeTaime\_17, Kanye\_17, Kimchi\_17, Kostya\_16, Lilac\_17, Lilizi\_17, Lilpickle\_14, MISSy\_15, MPhalcon\_15, MadamMonkfish\_15, Manda\_16, Marshmallow\_16, Maxxinista\_16, Mindy\_16, Miniwave\_16, Misfit\_15, Moldemort\_16, Mosby\_15, Murica\_14, Murphy\_15, Myrale\_16, Nala\_15, NelitzaMV\_16, Nimrod\_15, NoSleep\_16, OrionPax\_16, Palpatine\_15, Paperbeatsrock\_17, Pat3\_15, Petra64142\_16, Phaja\_15, Pharsalus\_16, PhatBacter\_15, Phaux\_14, Phrux\_15, Policronamos\_15, Porky\_14, Pumpkin\_16, Quallification\_17, Rakim\_17, Rimmer\_15, RiverMonster\_15, Saints25\_16, Sassay\_15, ShamWow\_16, ShereKhan\_17, Simpliphy\_16, SirDuracell\_15, SophKB\_16, Sotrice96\_16, Stank\_17, Stark\_16, StellaBean\_16, StolenFromERC\_17, TBrady12\_17, Tarkin\_17, TeardropMSU\_15, Teaspoon\_15, Terminus\_15, Thresher\_16, Tomaszewski\_15, Toto\_16, Traaww1\_14, Tuco\_16, Ukulele\_15, Wiggin\_17, Willez\_15, Xandras\_17, YassJohnny\_16, Youngblood\_15, xkcd\_16,

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

- 

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

- 

### Summary by start number:

Start 1:

- Found in 131 of 131 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 123 of 123
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 244\_16 (E), ABCat\_15 (E), Adnama\_17 (E), Amao\_16 (E), AmericanBeauty\_17 (E), Argent26\_17 (E), Asriel\_15 (E), BaboJay\_15 (E), BadStone\_15 (E), Balomoji\_15 (E), Barbarian\_15 (E), Bask21\_15 (E), Bench\_17 (E), BigBubba\_15 (E), BilboSwaggins\_16 (E), Bruin\_15 (E), Buck\_15 (E), BugsBunny\_13 (E), Cactus\_17 (E), ChosenOne\_14 (E), ChotaBhai\_15 (E), Cjw1\_15 (E), Command613\_17 (E), Contagion\_15 (E), Cookies\_16 (E), CrystalP\_16 (E), Czyszczone1\_16 (E), Daikon\_14 (E), DoctorDiddles\_16 (E), DrDrey\_16 (E), Dumbo\_15 (E), Dusk\_15 (E), Easy2Say\_16 (E), Elite2014\_14 (E), Elph10\_16 (E), Emmina\_15 (E), Eureka\_16 (E), FairyPath\_16 (E), Filch\_16 (E), FireRed\_15 (E), Flypotenuse\_14 (E), Gage\_17 (E), Gator\_14 (E), Gemini\_17 (E), Glexan\_14 (E), Goku\_16 (E), GoldenSpark\_17 (E), Goldilocks\_17 (E), GooberAzure\_17 (E), HanKaySha\_16 (E), Harella\_14 (E), Henry\_16 (E), Highbury\_16 (E), Holt\_17 (E), Hoonter\_17 (E), Hopey\_16 (E), HufflyPuff\_14 (E), IHOP\_15 (E), Icee\_15 (E), Inca\_15 (E), JeTaime\_17 (E), Kanye\_17 (E), Kimchi\_17 (E), Kostya\_16 (E), Lilac\_17 (E), Lilizi\_17 (E), Lilpickle\_14 (E), MISSy\_15 (E), MPhalcon\_15 (E), MadamMonkfish\_15 (E), Manda\_16 (E), Marshmallow\_16 (E), Maxxinista\_16 (E), Mindy\_16 (E), Miniwave\_16 (E), Misfit\_15 (E), Moldemort\_16 (E), Mosby\_15 (E), Murica\_14 (E), Murphy\_15 (E), Myrale\_16 (E), Nala\_15 (E), NelitzaMV\_16 (E), Nimrod\_15 (E), NoSleep\_16 (E), OrionPax\_16 (E), Palpatine\_15 (E), Paperbeatsrock\_17 (E), Pat3\_15 (E), Petra64142\_16 (E), Phaja\_15 (E), Pharsalus\_16 (E), PhatBacter\_15 (E),

Phaux\_14 (E), Phrux\_15 (E), Policronamos\_15 (E), Porky\_14 (E), Pumpkin\_16 (E), Quallification\_17 (E), Rakim\_17 (E), Rimmer\_15 (E), RiverMonster\_15 (E), Saints25\_16 (E), Sassay\_15 (E), ShamWow\_16 (E), ShereKhan\_17 (E), Simpliphy\_16 (E), SirDuracell\_15 (E), SophKB\_16 (E), Sotrice96\_16 (E), Stank\_17 (E), Stark\_16 (E), StellaBean\_16 (E), StolenFromERC\_17 (E), TBrady12\_17 (E), Tarkin\_17 (E), TeardropMSU\_15 (E), Teaspoon\_15 (E), Terminus\_15 (E), Thresher\_16 (E), Tomaszewski\_15 (E), Toto\_16 (E), Traaww1\_14 (E), Tuco\_16 (E), Ukulele\_15 (E), Wiggin\_17 (E), Willez\_15 (E), Xandras\_17 (E), YassJohnny\_16 (E), Youngblood\_15 (E), xkcd\_16 (E),

### **Summary by clusters:**

There is one cluster represented in this pham: E

Info for manual annotations of cluster E:

•Start number 1 was manually annotated 123 times for cluster E.

### **Gene Information:**

Gene: 244\_16 Start: 9482, Stop: 9817, Start Num: 1

Candidate Starts for 244\_16:

(Start: 1 @9482 has 123 MA's), (2, 9563), (5, 9677), (6, 9728), (7, 9740), (8, 9791),

Gene: ABCat\_15 Start: 10257, Stop: 10592, Start Num: 1

Candidate Starts for ABCat\_15:

(Start: 1 @10257 has 123 MA's), (2, 10338), (3, 10359), (5, 10452), (7, 10515), (8, 10566),

Gene: Adnama\_17 Start: 9714, Stop: 10049, Start Num: 1

Candidate Starts for Adnama\_17:

(Start: 1 @9714 has 123 MA's), (2, 9795), (5, 9909), (6, 9960), (7, 9972), (8, 10023),

Gene: Amao\_16 Start: 9462, Stop: 9797, Start Num: 1

Candidate Starts for Amao\_16:

(Start: 1 @9462 has 123 MA's), (2, 9543), (3, 9564), (5, 9657), (7, 9720), (8, 9771),

Gene: AmericanBeauty\_17 Start: 9711, Stop: 10046, Start Num: 1

Candidate Starts for AmericanBeauty\_17:

(Start: 1 @9711 has 123 MA's), (2, 9792), (5, 9906), (6, 9957), (7, 9969), (8, 10020),

Gene: Argent26\_17 Start: 9714, Stop: 10049, Start Num: 1

Candidate Starts for Argent26\_17:

(Start: 1 @9714 has 123 MA's), (2, 9795), (5, 9909), (6, 9960), (7, 9972), (8, 10023),

Gene: Asriel\_15 Start: 9129, Stop: 9464, Start Num: 1

Candidate Starts for Asriel\_15:

(Start: 1 @9129 has 123 MA's), (2, 9210), (3, 9231), (5, 9324), (7, 9387), (8, 9438),

Gene: BaboJay\_15 Start: 9793, Stop: 10128, Start Num: 1

Candidate Starts for BaboJay\_15:

(Start: 1 @9793 has 123 MA's), (2, 9874), (5, 9988), (6, 10039), (7, 10051), (8, 10102),

Gene: BadStone\_15 Start: 10257, Stop: 10592, Start Num: 1  
Candidate Starts for BadStone\_15:  
(Start: 1 @10257 has 123 MA's), (2, 10338), (3, 10359), (5, 10452), (7, 10515), (8, 10566),

Gene: Balomoji\_15 Start: 9991, Stop: 10326, Start Num: 1  
Candidate Starts for Balomoji\_15:  
(Start: 1 @9991 has 123 MA's), (2, 10072), (3, 10093), (5, 10186), (7, 10249), (8, 10300),

Gene: Barbarian\_15 Start: 9129, Stop: 9464, Start Num: 1  
Candidate Starts for Barbarian\_15:  
(Start: 1 @9129 has 123 MA's), (2, 9210), (3, 9231), (5, 9324), (7, 9387), (8, 9438),

Gene: Bask21\_15 Start: 8924, Stop: 9259, Start Num: 1  
Candidate Starts for Bask21\_15:  
(Start: 1 @8924 has 123 MA's), (2, 9005), (3, 9026), (5, 9119), (7, 9182), (8, 9233),

Gene: Bench\_17 Start: 9587, Stop: 9922, Start Num: 1  
Candidate Starts for Bench\_17:  
(Start: 1 @9587 has 123 MA's), (2, 9668), (5, 9782), (6, 9833), (7, 9845), (8, 9896),

Gene: BigBubba\_15 Start: 8970, Stop: 9305, Start Num: 1  
Candidate Starts for BigBubba\_15:  
(Start: 1 @8970 has 123 MA's), (2, 9051), (5, 9165), (6, 9216), (7, 9228), (8, 9279),

Gene: BilboSwaggins\_16 Start: 10258, Stop: 10593, Start Num: 1  
Candidate Starts for BilboSwaggins\_16:  
(Start: 1 @10258 has 123 MA's), (2, 10339), (3, 10360), (5, 10453), (7, 10516), (8, 10567),

Gene: Bruin\_15 Start: 9765, Stop: 10100, Start Num: 1  
Candidate Starts for Bruin\_15:  
(Start: 1 @9765 has 123 MA's), (2, 9846), (3, 9867), (5, 9960), (7, 10023), (8, 10074),

Gene: Buck\_15 Start: 10214, Stop: 10549, Start Num: 1  
Candidate Starts for Buck\_15:  
(Start: 1 @10214 has 123 MA's), (2, 10295), (3, 10316), (5, 10409), (7, 10472), (8, 10523),

Gene: BugsBunny\_13 Start: 9331, Stop: 9666, Start Num: 1  
Candidate Starts for BugsBunny\_13:  
(Start: 1 @9331 has 123 MA's), (2, 9412), (3, 9433), (5, 9526), (7, 9589), (8, 9640),

Gene: Cactus\_17 Start: 9470, Stop: 9805, Start Num: 1  
Candidate Starts for Cactus\_17:  
(Start: 1 @9470 has 123 MA's), (2, 9551), (3, 9572), (5, 9665), (7, 9728), (8, 9779),

Gene: ChosenOne\_14 Start: 8934, Stop: 9269, Start Num: 1  
Candidate Starts for ChosenOne\_14:  
(Start: 1 @8934 has 123 MA's), (2, 9015), (5, 9129), (6, 9180), (7, 9192), (8, 9243),

Gene: ChotaBhai\_15 Start: 8970, Stop: 9305, Start Num: 1  
Candidate Starts for ChotaBhai\_15:  
(Start: 1 @8970 has 123 MA's), (2, 9051), (5, 9165), (6, 9216), (7, 9228), (8, 9279),

Gene: Cjw1\_15 Start: 10484, Stop: 10819, Start Num: 1

Candidate Starts for Cjw1\_15:

(Start: 1 @10484 has 123 MA's), (2, 10565), (5, 10679), (6, 10730), (7, 10742), (8, 10793),

Gene: Command613\_17 Start: 10526, Stop: 10861, Start Num: 1

Candidate Starts for Command613\_17:

(Start: 1 @10526 has 123 MA's), (2, 10607), (3, 10628), (5, 10721), (7, 10784), (8, 10835),

Gene: Contagion\_15 Start: 9765, Stop: 10100, Start Num: 1

Candidate Starts for Contagion\_15:

(Start: 1 @9765 has 123 MA's), (2, 9846), (3, 9867), (5, 9960), (7, 10023), (8, 10074),

Gene: Cookies\_16 Start: 10130, Stop: 10465, Start Num: 1

Candidate Starts for Cookies\_16:

(Start: 1 @10130 has 123 MA's), (2, 10211), (3, 10232), (5, 10325), (7, 10388), (8, 10439),

Gene: CrystalP\_16 Start: 10258, Stop: 10593, Start Num: 1

Candidate Starts for CrystalP\_16:

(Start: 1 @10258 has 123 MA's), (2, 10339), (3, 10360), (5, 10453), (7, 10516), (8, 10567),

Gene: Czyszczone1\_16 Start: 9469, Stop: 9804, Start Num: 1

Candidate Starts for Czyszczone1\_16:

(Start: 1 @9469 has 123 MA's), (2, 9550), (5, 9664), (6, 9715), (7, 9727), (8, 9778),

Gene: Daikon\_14 Start: 9992, Stop: 10327, Start Num: 1

Candidate Starts for Daikon\_14:

(Start: 1 @9992 has 123 MA's), (2, 10073), (3, 10094), (5, 10187), (7, 10250), (8, 10301),

Gene: DoctorDiddles\_16 Start: 9423, Stop: 9758, Start Num: 1

Candidate Starts for DoctorDiddles\_16:

(Start: 1 @9423 has 123 MA's), (2, 9504), (3, 9525), (5, 9618), (7, 9681), (8, 9732),

Gene: DrDrey\_16 Start: 10210, Stop: 10545, Start Num: 1

Candidate Starts for DrDrey\_16:

(Start: 1 @10210 has 123 MA's), (2, 10291), (5, 10405), (6, 10456), (7, 10468), (8, 10519),

Gene: Dumbo\_15 Start: 9191, Stop: 9526, Start Num: 1

Candidate Starts for Dumbo\_15:

(Start: 1 @9191 has 123 MA's), (2, 9272), (5, 9386), (6, 9437), (7, 9449), (8, 9500),

Gene: Dusk\_15 Start: 9917, Stop: 10252, Start Num: 1

Candidate Starts for Dusk\_15:

(Start: 1 @9917 has 123 MA's), (2, 9998), (3, 10019), (5, 10112), (7, 10175), (8, 10226),

Gene: Easy2Say\_16 Start: 10457, Stop: 10792, Start Num: 1

Candidate Starts for Easy2Say\_16:

(Start: 1 @10457 has 123 MA's), (2, 10538), (5, 10652), (6, 10703), (7, 10715), (8, 10766),

Gene: Elite2014\_14 Start: 8934, Stop: 9269, Start Num: 1

Candidate Starts for Elite2014\_14:

(Start: 1 @8934 has 123 MA's), (2, 9015), (5, 9129), (6, 9180), (7, 9192), (8, 9243),

Gene: Elph10\_16 Start: 9194, Stop: 9529, Start Num: 1

Candidate Starts for Elph10\_16:

(Start: 1 @9194 has 123 MA's), (2, 9275), (5, 9389), (6, 9440), (7, 9452), (8, 9503),

Gene: Emmina\_15 Start: 9039, Stop: 9374, Start Num: 1

Candidate Starts for Emmina\_15:

(Start: 1 @9039 has 123 MA's), (2, 9120), (5, 9234), (6, 9285), (7, 9297), (8, 9348),

Gene: Eureka\_16 Start: 10237, Stop: 10572, Start Num: 1

Candidate Starts for Eureka\_16:

(Start: 1 @10237 has 123 MA's), (2, 10318), (4, 10423), (5, 10432), (7, 10495), (8, 10546),

Gene: FairyPath\_16 Start: 10455, Stop: 10790, Start Num: 1

Candidate Starts for FairyPath\_16:

(Start: 1 @10455 has 123 MA's), (2, 10536), (3, 10557), (5, 10650), (7, 10713), (8, 10764),

Gene: Filch\_16 Start: 9479, Stop: 9814, Start Num: 1

Candidate Starts for Filch\_16:

(Start: 1 @9479 has 123 MA's), (2, 9560), (5, 9674), (6, 9725), (7, 9737), (8, 9788),

Gene: FireRed\_15 Start: 9767, Stop: 10102, Start Num: 1

Candidate Starts for FireRed\_15:

(Start: 1 @9767 has 123 MA's), (2, 9848), (5, 9962), (6, 10013), (7, 10025), (8, 10076),

Gene: Flypotenuse\_14 Start: 9874, Stop: 10209, Start Num: 1

Candidate Starts for Flypotenuse\_14:

(Start: 1 @9874 has 123 MA's), (2, 9955), (3, 9976), (5, 10069), (7, 10132), (8, 10183),

Gene: Gage\_17 Start: 9714, Stop: 10049, Start Num: 1

Candidate Starts for Gage\_17:

(Start: 1 @9714 has 123 MA's), (2, 9795), (5, 9909), (6, 9960), (7, 9972), (8, 10023),

Gene: Gator\_14 Start: 9873, Stop: 10208, Start Num: 1

Candidate Starts for Gator\_14:

(Start: 1 @9873 has 123 MA's), (2, 9954), (3, 9975), (5, 10068), (7, 10131), (8, 10182),

Gene: Gemini\_17 Start: 9714, Stop: 10049, Start Num: 1

Candidate Starts for Gemini\_17:

(Start: 1 @9714 has 123 MA's), (2, 9795), (5, 9909), (6, 9960), (7, 9972), (8, 10023),

Gene: Glexan\_14 Start: 9874, Stop: 10209, Start Num: 1

Candidate Starts for Glexan\_14:

(Start: 1 @9874 has 123 MA's), (2, 9955), (3, 9976), (5, 10069), (7, 10132), (8, 10183),

Gene: Goku\_16 Start: 9966, Stop: 10301, Start Num: 1

Candidate Starts for Goku\_16:

(Start: 1 @9966 has 123 MA's), (2, 10047), (5, 10161), (6, 10212), (7, 10224), (8, 10275),

Gene: GoldenSpark\_17 Start: 9714, Stop: 10049, Start Num: 1

Candidate Starts for GoldenSpark\_17:

(Start: 1 @9714 has 123 MA's), (2, 9795), (5, 9909), (6, 9960), (7, 9972), (8, 10023),

Gene: Goldilocks\_17 Start: 9668, Stop: 10003, Start Num: 1

Candidate Starts for Goldilocks\_17:

(Start: 1 @9668 has 123 MA's), (2, 9749), (3, 9770), (5, 9863), (7, 9926), (8, 9977),

Gene: GooberAzure\_17 Start: 9714, Stop: 10049, Start Num: 1  
Candidate Starts for GooberAzure\_17:  
(Start: 1 @9714 has 123 MA's), (2, 9795), (5, 9909), (6, 9960), (7, 9972), (8, 10023),

Gene: HanKaySha\_16 Start: 9469, Stop: 9804, Start Num: 1  
Candidate Starts for HanKaySha\_16:  
(Start: 1 @9469 has 123 MA's), (2, 9550), (5, 9664), (6, 9715), (7, 9727), (8, 9778),

Gene: Harella\_14 Start: 9874, Stop: 10209, Start Num: 1  
Candidate Starts for Harella\_14:  
(Start: 1 @9874 has 123 MA's), (2, 9955), (3, 9976), (5, 10069), (7, 10132), (8, 10183),

Gene: Henry\_16 Start: 10257, Stop: 10592, Start Num: 1  
Candidate Starts for Henry\_16:  
(Start: 1 @10257 has 123 MA's), (2, 10338), (3, 10359), (5, 10452), (7, 10515), (8, 10566),

Gene: Highbury\_16 Start: 9388, Stop: 9723, Start Num: 1  
Candidate Starts for Highbury\_16:  
(Start: 1 @9388 has 123 MA's), (2, 9469), (5, 9583), (6, 9634), (7, 9646), (8, 9697),

Gene: Holt\_17 Start: 9541, Stop: 9876, Start Num: 1  
Candidate Starts for Holt\_17:  
(Start: 1 @9541 has 123 MA's), (2, 9622), (3, 9643), (5, 9736), (7, 9799), (8, 9850),

Gene: Hoonter\_17 Start: 9714, Stop: 10049, Start Num: 1  
Candidate Starts for Hoonter\_17:  
(Start: 1 @9714 has 123 MA's), (2, 9795), (5, 9909), (6, 9960), (7, 9972), (8, 10023),

Gene: Hokey\_16 Start: 9479, Stop: 9814, Start Num: 1  
Candidate Starts for Hokey\_16:  
(Start: 1 @9479 has 123 MA's), (2, 9560), (5, 9674), (6, 9725), (7, 9737), (8, 9788),

Gene: HufflyPuff\_14 Start: 9723, Stop: 10058, Start Num: 1  
Candidate Starts for HufflyPuff\_14:  
(Start: 1 @9723 has 123 MA's), (2, 9804), (5, 9918), (6, 9969), (7, 9981), (8, 10032),

Gene: IHOP\_15 Start: 9917, Stop: 10252, Start Num: 1  
Candidate Starts for IHOP\_15:  
(Start: 1 @9917 has 123 MA's), (2, 9998), (3, 10019), (5, 10112), (7, 10175), (8, 10226),

Gene: Icee\_15 Start: 9917, Stop: 10252, Start Num: 1  
Candidate Starts for Icee\_15:  
(Start: 1 @9917 has 123 MA's), (2, 9998), (3, 10019), (5, 10112), (7, 10175), (8, 10226),

Gene: Inca\_15 Start: 8937, Stop: 9272, Start Num: 1  
Candidate Starts for Inca\_15:  
(Start: 1 @8937 has 123 MA's), (2, 9018), (3, 9039), (5, 9132), (7, 9195), (8, 9246),

Gene: JeTaime\_17 Start: 10519, Stop: 10854, Start Num: 1  
Candidate Starts for JeTaime\_17:  
(Start: 1 @10519 has 123 MA's), (2, 10600), (5, 10714), (6, 10765), (7, 10777), (8, 10828),



Gene: Kanye\_17 Start: 10707, Stop: 11042, Start Num: 1  
Candidate Starts for Kanye\_17:  
(Start: 1 @10707 has 123 MA's), (2, 10788), (5, 10902), (6, 10953), (7, 10965), (8, 11016),

Gene: Kimchi\_17 Start: 9714, Stop: 10049, Start Num: 1  
Candidate Starts for Kimchi\_17:  
(Start: 1 @9714 has 123 MA's), (2, 9795), (5, 9909), (6, 9960), (7, 9972), (8, 10023),

Gene: Kostya\_16 Start: 10257, Stop: 10592, Start Num: 1  
Candidate Starts for Kostya\_16:  
(Start: 1 @10257 has 123 MA's), (2, 10338), (3, 10359), (5, 10452), (7, 10515), (8, 10566),

Gene: Lilac\_17 Start: 9215, Stop: 9550, Start Num: 1  
Candidate Starts for Lilac\_17:  
(Start: 1 @9215 has 123 MA's), (2, 9296), (5, 9410), (6, 9461), (7, 9473), (8, 9524),

Gene: Lilizi\_17 Start: 9426, Stop: 9761, Start Num: 1  
Candidate Starts for Lilizi\_17:  
(Start: 1 @9426 has 123 MA's), (2, 9507), (5, 9621), (6, 9672), (7, 9684), (8, 9735),

Gene: Lilpickle\_14 Start: 8934, Stop: 9269, Start Num: 1  
Candidate Starts for Lilpickle\_14:  
(Start: 1 @8934 has 123 MA's), (2, 9015), (5, 9129), (6, 9180), (7, 9192), (8, 9243),

Gene: MISSy\_15 Start: 9767, Stop: 10102, Start Num: 1  
Candidate Starts for MISSy\_15:  
(Start: 1 @9767 has 123 MA's), (2, 9848), (5, 9962), (6, 10013), (7, 10025), (8, 10076),

Gene: MPhalcon\_15 Start: 9767, Stop: 10102, Start Num: 1  
Candidate Starts for MPhalcon\_15:  
(Start: 1 @9767 has 123 MA's), (2, 9848), (5, 9962), (6, 10013), (7, 10025), (8, 10076),

Gene: MadamMonkfish\_15 Start: 9145, Stop: 9480, Start Num: 1  
Candidate Starts for MadamMonkfish\_15:  
(Start: 1 @9145 has 123 MA's), (2, 9226), (5, 9340), (6, 9391), (7, 9403),

Gene: Manda\_16 Start: 10227, Stop: 10562, Start Num: 1  
Candidate Starts for Manda\_16:  
(Start: 1 @10227 has 123 MA's), (2, 10308), (3, 10329), (5, 10422), (7, 10485), (8, 10536),

Gene: Marshmallow\_16 Start: 10257, Stop: 10592, Start Num: 1  
Candidate Starts for Marshmallow\_16:  
(Start: 1 @10257 has 123 MA's), (2, 10338), (3, 10359), (5, 10452), (7, 10515), (8, 10566),

Gene: Maxxinista\_16 Start: 9194, Stop: 9529, Start Num: 1  
Candidate Starts for Maxxinista\_16:  
(Start: 1 @9194 has 123 MA's), (2, 9275), (5, 9389), (6, 9440), (7, 9452), (8, 9503),

Gene: Mindy\_16 Start: 10036, Stop: 10371, Start Num: 1  
Candidate Starts for Mindy\_16:  
(Start: 1 @10036 has 123 MA's), (2, 10117), (3, 10138), (5, 10231), (7, 10294), (8, 10345),

Gene: Miniwave\_16 Start: 10455, Stop: 10790, Start Num: 1

Candidate Starts for Miniwave\_16:

(Start: 1 @10455 has 123 MA's), (2, 10536), (3, 10557), (5, 10650), (7, 10713), (8, 10764),

Gene: Misfit\_15 Start: 9811, Stop: 10146, Start Num: 1

Candidate Starts for Misfit\_15:

(Start: 1 @9811 has 123 MA's), (2, 9892), (5, 10006), (6, 10057), (7, 10069), (8, 10120),

Gene: Moldemort\_16 Start: 9469, Stop: 9804, Start Num: 1

Candidate Starts for Moldemort\_16:

(Start: 1 @9469 has 123 MA's), (2, 9550), (5, 9664), (6, 9715), (7, 9727), (8, 9778),

Gene: Mosby\_15 Start: 9765, Stop: 10100, Start Num: 1

Candidate Starts for Mosby\_15:

(Start: 1 @9765 has 123 MA's), (2, 9846), (3, 9867), (5, 9960), (7, 10023), (8, 10074),

Gene: Murica\_14 Start: 9723, Stop: 10058, Start Num: 1

Candidate Starts for Murica\_14:

(Start: 1 @9723 has 123 MA's), (2, 9804), (5, 9918), (6, 9969), (7, 9981), (8, 10032),

Gene: Murphy\_15 Start: 9186, Stop: 9521, Start Num: 1

Candidate Starts for Murphy\_15:

(Start: 1 @9186 has 123 MA's), (2, 9267), (5, 9381), (6, 9432), (7, 9444), (8, 9495),

Gene: Myrale\_16 Start: 10128, Stop: 10463, Start Num: 1

Candidate Starts for Myrale\_16:

(Start: 1 @10128 has 123 MA's), (2, 10209), (3, 10230), (5, 10323), (7, 10386), (8, 10437),

Gene: Nala\_15 Start: 9765, Stop: 10100, Start Num: 1

Candidate Starts for Nala\_15:

(Start: 1 @9765 has 123 MA's), (2, 9846), (3, 9867), (5, 9960), (7, 10023), (8, 10074),

Gene: NelitzaMV\_16 Start: 10327, Stop: 10662, Start Num: 1

Candidate Starts for NelitzaMV\_16:

(Start: 1 @10327 has 123 MA's), (2, 10408), (3, 10429), (5, 10522), (7, 10585), (8, 10636),

Gene: Nimrod\_15 Start: 9966, Stop: 10301, Start Num: 1

Candidate Starts for Nimrod\_15:

(Start: 1 @9966 has 123 MA's), (2, 10047), (5, 10161), (6, 10212), (7, 10224), (8, 10275),

Gene: NoSleep\_16 Start: 9466, Stop: 9801, Start Num: 1

Candidate Starts for NoSleep\_16:

(Start: 1 @9466 has 123 MA's), (2, 9547), (5, 9661), (6, 9712), (7, 9724), (8, 9775),

Gene: OrionPax\_16 Start: 9469, Stop: 9804, Start Num: 1

Candidate Starts for OrionPax\_16:

(Start: 1 @9469 has 123 MA's), (2, 9550), (5, 9664), (6, 9715), (7, 9727), (8, 9778),

Gene: Palpatine\_15 Start: 9762, Stop: 10097, Start Num: 1

Candidate Starts for Palpatine\_15:

(Start: 1 @9762 has 123 MA's), (2, 9843), (3, 9864), (5, 9957), (7, 10020), (8, 10071),

Gene: Paperbeatsrock\_17 Start: 10701, Stop: 11036, Start Num: 1

Candidate Starts for Paperbeatsrock\_17:

(Start: 1 @10701 has 123 MA's), (2, 10782), (5, 10896), (6, 10947), (7, 10959), (8, 11010),

Gene: Pat3\_15 Start: 8969, Stop: 9304, Start Num: 1

Candidate Starts for Pat3\_15:

(Start: 1 @8969 has 123 MA's), (2, 9050), (5, 9164), (6, 9215), (7, 9227), (8, 9278),

Gene: Petra64142\_16 Start: 10182, Stop: 10517, Start Num: 1

Candidate Starts for Petra64142\_16:

(Start: 1 @10182 has 123 MA's), (2, 10263), (5, 10377), (6, 10428), (7, 10440), (8, 10491),

Gene: Phaja\_15 Start: 9917, Stop: 10252, Start Num: 1

Candidate Starts for Phaja\_15:

(Start: 1 @9917 has 123 MA's), (2, 9998), (3, 10019), (5, 10112), (7, 10175), (8, 10226),

Gene: Pharsalus\_16 Start: 10501, Stop: 10836, Start Num: 1

Candidate Starts for Pharsalus\_16:

(Start: 1 @10501 has 123 MA's), (2, 10582), (5, 10696), (6, 10747), (7, 10759), (8, 10810),

Gene: PhatBacter\_15 Start: 9767, Stop: 10102, Start Num: 1

Candidate Starts for PhatBacter\_15:

(Start: 1 @9767 has 123 MA's), (2, 9848), (5, 9962), (6, 10013), (7, 10025), (8, 10076),

Gene: Phaux\_14 Start: 9765, Stop: 10100, Start Num: 1

Candidate Starts for Phaux\_14:

(Start: 1 @9765 has 123 MA's), (2, 9846), (3, 9867), (5, 9960), (7, 10023), (8, 10074),

Gene: Phrux\_15 Start: 9465, Stop: 9800, Start Num: 1

Candidate Starts for Phrux\_15:

(Start: 1 @9465 has 123 MA's), (2, 9546), (5, 9660), (6, 9711), (7, 9723), (8, 9774),

Gene: Policronamos\_15 Start: 9767, Stop: 10102, Start Num: 1

Candidate Starts for Policronamos\_15:

(Start: 1 @9767 has 123 MA's), (2, 9848), (5, 9962), (6, 10013), (7, 10025), (8, 10076),

Gene: Porky\_14 Start: 9039, Stop: 9374, Start Num: 1

Candidate Starts for Porky\_14:

(Start: 1 @9039 has 123 MA's), (2, 9120), (5, 9234), (6, 9285), (7, 9297), (8, 9348),

Gene: Pumpkin\_16 Start: 9282, Stop: 9617, Start Num: 1

Candidate Starts for Pumpkin\_16:

(Start: 1 @9282 has 123 MA's), (2, 9363), (5, 9477), (6, 9528), (7, 9540), (8, 9591),

Gene: Quallification\_17 Start: 10464, Stop: 10799, Start Num: 1

Candidate Starts for Quallification\_17:

(Start: 1 @10464 has 123 MA's), (2, 10545), (3, 10566), (5, 10659), (7, 10722), (8, 10773),

Gene: Rakim\_17 Start: 10371, Stop: 10706, Start Num: 1

Candidate Starts for Rakim\_17:

(Start: 1 @10371 has 123 MA's), (2, 10452), (3, 10473), (5, 10566), (7, 10629), (8, 10680),

Gene: Rimmer\_15 Start: 9824, Stop: 10159, Start Num: 1

Candidate Starts for Rimmer\_15:

(Start: 1 @9824 has 123 MA's), (2, 9905), (3, 9926), (5, 10019), (7, 10082), (8, 10133),

Gene: RiverMonster\_15 Start: 9479, Stop: 9814, Start Num: 1  
Candidate Starts for RiverMonster\_15:  
(Start: 1 @9479 has 123 MA's), (2, 9560), (5, 9674), (6, 9725), (7, 9737), (8, 9788),

Gene: Saints25\_16 Start: 9388, Stop: 9723, Start Num: 1  
Candidate Starts for Saints25\_16:  
(Start: 1 @9388 has 123 MA's), (2, 9469), (5, 9583), (6, 9634), (7, 9646), (8, 9697),

Gene: Sassay\_15 Start: 9765, Stop: 10100, Start Num: 1  
Candidate Starts for Sassay\_15:  
(Start: 1 @9765 has 123 MA's), (2, 9846), (3, 9867), (5, 9960), (7, 10023), (8, 10074),

Gene: ShamWow\_16 Start: 10258, Stop: 10593, Start Num: 1  
Candidate Starts for ShamWow\_16:  
(Start: 1 @10258 has 123 MA's), (2, 10339), (3, 10360), (5, 10453), (7, 10516), (8, 10567),

Gene: ShereKhan\_17 Start: 10707, Stop: 11042, Start Num: 1  
Candidate Starts for ShereKhan\_17:  
(Start: 1 @10707 has 123 MA's), (2, 10788), (5, 10902), (6, 10953), (7, 10965), (8, 11016),

Gene: Simpliphy\_16 Start: 9469, Stop: 9804, Start Num: 1  
Candidate Starts for Simpliphy\_16:  
(Start: 1 @9469 has 123 MA's), (2, 9550), (5, 9664), (6, 9715), (7, 9727), (8, 9778),

Gene: SirDuracell\_15 Start: 8924, Stop: 9259, Start Num: 1  
Candidate Starts for SirDuracell\_15:  
(Start: 1 @8924 has 123 MA's), (2, 9005), (3, 9026), (5, 9119), (7, 9182), (8, 9233),

Gene: SophKB\_16 Start: 10257, Stop: 10592, Start Num: 1  
Candidate Starts for SophKB\_16:  
(Start: 1 @10257 has 123 MA's), (2, 10338), (3, 10359), (5, 10452), (7, 10515), (8, 10566),

Gene: Sotrice96\_16 Start: 10213, Stop: 10548, Start Num: 1  
Candidate Starts for Sotrice96\_16:  
(Start: 1 @10213 has 123 MA's), (2, 10294), (3, 10315), (5, 10408), (7, 10471), (8, 10522),

Gene: Stank\_17 Start: 9714, Stop: 10049, Start Num: 1  
Candidate Starts for Stank\_17:  
(Start: 1 @9714 has 123 MA's), (2, 9795), (5, 9909), (6, 9960), (7, 9972), (8, 10023),

Gene: Stark\_16 Start: 9482, Stop: 9817, Start Num: 1  
Candidate Starts for Stark\_16:  
(Start: 1 @9482 has 123 MA's), (2, 9563), (5, 9677), (6, 9728), (7, 9740), (8, 9791),

Gene: StellaBean\_16 Start: 10257, Stop: 10592, Start Num: 1  
Candidate Starts for StellaBean\_16:  
(Start: 1 @10257 has 123 MA's), (2, 10338), (3, 10359), (5, 10452), (7, 10515), (8, 10566),

Gene: StolenFromERC\_17 Start: 9714, Stop: 10049, Start Num: 1  
Candidate Starts for StolenFromERC\_17:  
(Start: 1 @9714 has 123 MA's), (2, 9795), (5, 9909), (6, 9960), (7, 9972), (8, 10023),

Gene: TBrady12\_17 Start: 9711, Stop: 10046, Start Num: 1  
Candidate Starts for TBrady12\_17:  
(Start: 1 @9711 has 123 MA's), (2, 9792), (5, 9906), (6, 9957), (7, 9969), (8, 10020),

Gene: Tarkin\_17 Start: 10710, Stop: 11045, Start Num: 1  
Candidate Starts for Tarkin\_17:  
(Start: 1 @10710 has 123 MA's), (2, 10791), (5, 10905), (6, 10956), (7, 10968), (8, 11019),

Gene: TeardropMSU\_15 Start: 10165, Stop: 10500, Start Num: 1  
Candidate Starts for TeardropMSU\_15:  
(Start: 1 @10165 has 123 MA's), (2, 10246), (3, 10267), (5, 10360), (7, 10423), (8, 10474),

Gene: Teaspoon\_15 Start: 9164, Stop: 9499, Start Num: 1  
Candidate Starts for Teaspoon\_15:  
(Start: 1 @9164 has 123 MA's), (2, 9245), (5, 9359), (6, 9410), (7, 9422), (8, 9473),

Gene: Terminus\_15 Start: 9811, Stop: 10146, Start Num: 1  
Candidate Starts for Terminus\_15:  
(Start: 1 @9811 has 123 MA's), (2, 9892), (5, 10006), (6, 10057), (7, 10069), (8, 10120),

Gene: Thresher\_16 Start: 10472, Stop: 10807, Start Num: 1  
Candidate Starts for Thresher\_16:  
(Start: 1 @10472 has 123 MA's), (2, 10553), (5, 10667), (6, 10718), (7, 10730), (8, 10781),

Gene: Tomaszewski\_15 Start: 9858, Stop: 10193, Start Num: 1  
Candidate Starts for Tomaszewski\_15:  
(Start: 1 @9858 has 123 MA's), (2, 9939), (3, 9960), (5, 10053), (7, 10116), (8, 10167),

Gene: Toto\_16 Start: 10258, Stop: 10593, Start Num: 1  
Candidate Starts for Toto\_16:  
(Start: 1 @10258 has 123 MA's), (2, 10339), (3, 10360), (5, 10453), (7, 10516), (8, 10567),

Gene: Traaww1\_14 Start: 9903, Stop: 10238, Start Num: 1  
Candidate Starts for Traaww1\_14:  
(Start: 1 @9903 has 123 MA's), (2, 9984), (3, 10005), (5, 10098), (7, 10161), (8, 10212),

Gene: Tuco\_16 Start: 10257, Stop: 10592, Start Num: 1  
Candidate Starts for Tuco\_16:  
(Start: 1 @10257 has 123 MA's), (2, 10338), (3, 10359), (5, 10452), (7, 10515), (8, 10566),

Gene: Ukulele\_15 Start: 9482, Stop: 9817, Start Num: 1  
Candidate Starts for Ukulele\_15:  
(Start: 1 @9482 has 123 MA's), (2, 9563), (5, 9677), (6, 9728), (7, 9740), (8, 9791),

Gene: Wiggin\_17 Start: 9714, Stop: 10049, Start Num: 1  
Candidate Starts for Wiggin\_17:  
(Start: 1 @9714 has 123 MA's), (2, 9795), (5, 9909), (6, 9960), (7, 9972), (8, 10023),

Gene: Willez\_15 Start: 9765, Stop: 10100, Start Num: 1  
Candidate Starts for Willez\_15:  
(Start: 1 @9765 has 123 MA's), (2, 9846), (3, 9867), (5, 9960), (7, 10023), (8, 10074),

Gene: Xandras\_17 Start: 9714, Stop: 10049, Start Num: 1

Candidate Starts for Xandras\_17:

(Start: 1 @9714 has 123 MA's), (2, 9795), (5, 9909), (6, 9960), (7, 9972), (8, 10023),

Gene: YassJohnny\_16 Start: 10257, Stop: 10592, Start Num: 1

Candidate Starts for YassJohnny\_16:

(Start: 1 @10257 has 123 MA's), (2, 10338), (3, 10359), (5, 10452), (7, 10515), (8, 10566),

Gene: Youngblood\_15 Start: 9892, Stop: 10227, Start Num: 1

Candidate Starts for Youngblood\_15:

(Start: 1 @9892 has 123 MA's), (2, 9973), (5, 10087), (6, 10138), (7, 10150), (8, 10201),

Gene: xkcd\_16 Start: 9917, Stop: 10252, Start Num: 1

Candidate Starts for xkcd\_16:

(Start: 1 @9917 has 123 MA's), (2, 9998), (3, 10019), (5, 10112), (7, 10175), (8, 10226),