





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 294395 Report

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

Pham number 294395 has 261 members, 30 are drafts.

Phages represented in each track:

- Track 1 : Eyeball\_64
- Track 2 : Sanya\_57
- Track 3 : Fenn\_64, Naira\_64
- Track 4 : Squee\_63
- Track 5 : Trouble\_63
- Track 6 : Monet\_65
- Track 7 : Marsha\_61
- Track 8 : Mkhuseleli\_58
- Track 9 : Treddle\_63
- Track 10 : Oogway\_61
- Track 11 : ThursdayNight\_37
- Track 12 : Mudpuppy\_32
- Track 13 : Asa16\_34, Skelbel\_35, Niobe\_34, Jstan\_36, Eraser\_34
- Track 14 : Adolin\_32
- Track 15 : JuneStar\_33
- Track 16 : VResidence\_33
- Track 17 : Maureen\_36, MaGuCo\_34
- Track 18 : ShakeltOph\_39, JasmineDragon\_39, MiniMommy\_40
- Track 19 : VroomVroom\_39
- Track 20 : JohnThicc\_42, FiveHead\_43
- Track 21 : Stuu\_31, Mysterium\_31, Giorgio\_31, Gumpizza\_31
- Track 22 : Gambol\_31, Sooty\_31, Cappuccino\_31, Sabourin\_31
- Track 23 : Halsey\_31, Ashes\_31, Beaupre\_31
- Track 24 : SpecialK\_31
- Track 25 : RockScotty\_31
- Track 26 : Moss\_31
- Track 27 : Kalimba\_31
- Track 28 : Donkey\_31
- Track 29 : AinMach\_35
- Track 30 : Stark\_38, Gage\_39, 244\_39, Phrux\_37, CrystalP\_37, Wiggin\_40, Policronamos\_37, PhatBacter\_37, Goldilocks\_38, Elite2014\_36, Cjw1\_37, BugsBunny\_35, Elph10\_38, Maxxinista\_38, Misfit\_37, Icee\_36, MPhalcon\_36, Argent26\_39, StormChicken\_37, Moldemort\_38, Emmina\_38, Ptowny\_38, Adnama\_40, Kostya\_38, Simpliphy\_38, Highbury\_38, Greep\_38, HuffyPuff\_36, Kimchi\_39, ChosenOne\_37, Saints25\_38, Lilpickle\_36, Thresher\_38, StolenFromERC\_39, HanKaySha\_38, Petra64142\_39, FireRed\_37, Bask21\_37, ABCat\_36, Bruin\_37, Xandras\_39, Paperbeatsrock\_39, MISSy\_36, Willez\_36,

Manda\_38, Nimrod\_37, Easy2Say\_39, Tuco\_38, MollyToe\_37, Rakim\_38, DrDrey\_38, Gemini\_40, Quallification\_38, NonchalantPear\_37, Dumbo\_37, Asriel\_36, StellaBean\_37, Palpatine\_37, Thimble\_37, JeTaime\_39, BilboSwaggins\_37, PaddyBaddy\_38, Hoonter\_39, Nala\_37, Traaww1\_35, Myrale\_37, Ukulele\_37, Lilac\_39, Becksu\_37, Marshmallow\_37, TeamEdward\_37, TBrady12\_39, Filch\_38, YassJohnny\_38, ShamWow\_37, Rimmer\_36, Phaux\_36, Porky\_37, SophKB\_37, Teaspoon\_38, Buck\_36, Sotrice96\_37, FoghornLeghorn\_36, Barbarian\_36, NelitzaMV\_37, Cactus\_38, MadamMonkfish\_37, Czyszczon1\_38, xkcd\_38, NoSleep\_38, Kanye\_39, RiverMonster\_37, TeardropMSU\_36, Gator\_35, GoldenSpark\_39, GooberAzure\_39, OrionPax\_38, Hopey\_39, Lilizi\_39, Toto\_37, Terminus\_37, AmericanBeauty\_39, Sassay\_36, Tarkin\_39, Command613\_38, Murphy\_38, Pharsalus\_38, Murica\_36, Bench\_39, Pumpkin\_39, Stank\_40, Inca\_36, Miniwave\_37

- Track 31 : ChotaBhai\_37, Harella\_36, BadStone\_36, Flypotenuse\_35, Amao\_37, Henry\_38, Glexan\_35, DoctorDiddles\_37, Mosby\_36, Contagion\_36, Daikon\_36, Holt\_38, Balomoji\_36, Mindy\_37, Tomaszewski\_36, Brewer\_37, Cookies\_37, Youngblood\_37, SirDuracell\_36, BigBubba\_38, Pat3\_36, Dusk\_36

- Track 32 : Goku\_38, BaboJay\_37, Eureka\_38, Boggy\_38

- Track 33 : MissAmericana\_7

- Track 34 : Pollywog\_85

- Track 35 : Mireles\_3

- Track 36 : KashFlow\_45, Hannaconda\_48, Bobby\_51

- Track 37 : Pound\_54, Wanda\_58, NihilNomen\_51, Duke13\_55, Optimus\_57, Bombitas\_49, Phoebus\_51, Minerva\_58

- Track 38 : Rearden\_46

- Track 39 : AddiRose\_51, Daddyjeff\_52

- Track 40 : Sweetclover\_51

- Track 41 : Serenabean\_52

- Track 42 : TM4\_67

- Track 43 : BoostSeason\_69

- Track 44 : Chancellor\_70, DanSyl44\_73, Cheetobro\_70, Malthus\_71, Fionnbharth\_70, Slarp\_70, Wintermute\_70, Kraw\_70, Qhanda\_72, Juliette\_72, SamScheppers\_68, Lebo14\_69

- Track 45 : Eponine\_72

- Track 46 : Reptar3000\_67

- Track 47 : Taquito\_69

- Track 48 : YasnayaPolyana\_69

- Track 49 : MissDaisy\_67

- Track 50 : Bobquesha\_71, Patt\_66

- Track 51 : Mitti\_70

- Track 52 : Baoshan\_31

- Track 53 : Zakai\_32

- Track 54 : Clautastrophe\_31, Nicholas\_31, MiniLon\_31, Samty\_31, Lumos\_31, Kingsolomon\_31, MiniMac\_31, Jubie\_31, Bellis\_31, Finnry\_31, MsGreen\_31, Lolly9\_31, TriFive\_31, Snenia\_31

- Track 55 : Krypton555\_31

- Track 56 : DuncansLeg\_31, LiyuLake\_31, Ellson\_31

- Track 57 : Whirlwind\_32

- Track 58 : DyoEdafos\_31, Kropertea\_30

- Track 59 : Douge\_30

- Track 60 : Reindeer\_39

- Track 61 : GenevaB15\_44, Aziz\_44

- Track 62 : Rey\_44

- Track 63 : Estes\_45
- Track 64 : MrMagoo\_44, GardenSalsa\_44
- Track 65 : Nanosmite\_44
- Track 66 : Journey\_52
- Track 67 : DS6A\_74
- Track 68 : Footloose\_59

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

The start number called the most often in the published annotations is 28, it was called in 187 of the 231 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 244\_39, ABCat\_36, AddiRose\_51, Adnama\_40, AinMach\_35, Amao\_37, AmericanBeauty\_39, Argent26\_39, Ashes\_31, Asriel\_36, BadStone\_36, Balomoji\_36, Baoshan\_31, Barbarian\_36, Bask21\_37, Beaupre\_31, Becksu\_37, Bellis\_31, Bench\_39, BigBubba\_38, BilboSwaggins\_37, Bobby\_51, Bombitas\_49, Brewer\_37, Bruin\_37, Buck\_36, BugsBunny\_35, Cactus\_38, Cappuccino\_31, ChosenOne\_37, ChotaBhai\_37, Cjw1\_37, Clautastrophe\_31, Command613\_38, Contagion\_36, Cookies\_37, CrystalP\_37, Czyszczonek\_38, Daddyjeff\_52, Daikon\_36, DoctorDiddles\_37, Donkey\_31, Douge\_30, DrDrey\_38, Duke13\_55, Dumbo\_37, DuncansLeg\_31, Dusk\_36, DyoEdafos\_31, Easy2Say\_39, Elite2014\_36, Ellson\_31, Elph10\_38, Emmina\_38, Filch\_38, Finnry\_31, FireRed\_37, FiveHead\_43, Flypotenuse\_35, FoghornLeghorn\_36, Footloose\_59, Gage\_39, Gambol\_31, Gator\_35, Gemini\_40, Giorgio\_31, Glexan\_35, GoldenSpark\_39, Goldilocks\_38, GooberAzure\_39, Greep\_38, Gumpizza\_31, Halsey\_31, HanKaySha\_38, Hannaconda\_48, Harella\_36, Henry\_38, Highbury\_38, Holt\_38, Hoonter\_39, Hopey\_39, HuffyPuff\_36, Icee\_36, Inca\_36, JasmineDragon\_39, JeTaime\_39, JohnThicc\_42, Journey\_52, Jubie\_31, JuneStar\_33, Kalimba\_31, Kanye\_39, KashFlow\_45, Kimchi\_39, Kingsolomon\_31, Kostya\_38, Kropertea\_30, Krypton555\_31, Lilac\_39, Lilizi\_39, Lilpickle\_36, LiyuLake\_31, Lolly9\_31, Lumos\_31, MISSy\_36, MPhalcon\_36, MaGuCo\_34, MadamMonkfish\_37, Manda\_38, Marshmallow\_37, Maureen\_36, Maxxinista\_38, Mindy\_37, Minerva\_58, MiniLon\_31, MiniMac\_31, MiniMommy\_40, Miniwave\_37, Mireles\_3, Misfit\_37, MissAmericana\_7, Moldemort\_38, MollyToe\_37, Mosby\_36, Moss\_31, MsGreen\_31, Mudpuppy\_32, Murica\_36, Murphy\_38, Myrale\_37, Mysterium\_31, Nala\_37, NelitzaMV\_37, Nicholas\_31, NihilNomen\_51, Nimrod\_37, NoSleep\_38, NonchalantPear\_37, Optimus\_57, OrionPax\_38, PaddyBaddy\_38, Palpatine\_37, Paperbeatsrock\_39, Pat3\_36, Petra64142\_39, Pharsalus\_38, PhatBacter\_37, Phaux\_36, Phoebus\_51, Phrux\_37, Policronamos\_37, Porky\_37, Pound\_54, Ptowny\_38, Pumpkin\_39, Quallification\_38, Rakim\_38, Rearden\_46, Rey\_44, Rimmer\_36, RiverMonster\_37, RockScotty\_31, Sabourin\_31, Saints25\_38, Samty\_31, Sassay\_36, Serenabean\_52, ShakeltOph\_39, ShamWow\_37, Simpliphy\_38, SirDuracell\_36, Snenia\_31, Sooty\_31, SophKB\_37, Sotrice96\_37, SpecialK\_31, Stank\_40, Stark\_38, StellaBean\_37, StolenFromERC\_39, StormChicken\_37, Stuu\_31, Sweetclover\_51, TBrady12\_39, Tarkin\_39, TeamEdward\_37, TeardropMSU\_36, Teaspoon\_38, Terminus\_37, Thimble\_37, Thresher\_38, Tomaszewski\_36, Toto\_37, Traaww1\_35, TriFive\_31, Tuco\_38, Ukulele\_37, VResidence\_33, VroomVroom\_39, Wanda\_58, Whirlwind\_32, Wiggin\_40, Willez\_36, Xandras\_39, YassJohnny\_38, Youngblood\_37, Zakai\_32, xkcd\_38,

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

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

- Adolin\_32, Asa16\_34, Aziz\_44, BaboJay\_37, Bobquesha\_71, Bogg\_38, BoostSeason\_69, Chancellor\_70, Cheetobro\_70, DS6A\_74, DanSyl44\_73, Eponine\_72, Eraser\_34, Estes\_45, Eureka\_38, Eyeball\_64, Fenn\_64, Fionnbharth\_70, GardenSalsa\_44, GenevaB15\_44, Goku\_38, Jstan\_36, Juliette\_72, Kraw\_70, Lebo14\_69, Malthus\_71, Marsha\_61, MissDaisy\_67, Mitti\_70, Mkhuseleli\_58, Monet\_65, MrMagoo\_44, Naira\_64, Nanosmite\_44, Niobe\_34, Oogway\_61, Patt\_66, Pollywog\_85, Qhanda\_72, Reindeer\_39, Reptar3000\_67, SamScheppers\_68, Sanya\_57, Skelbel\_35, Slarp\_70, Squee\_63, TM4\_67, Taquito\_69, ThursdayNight\_37, Treddle\_63, Trouble\_63, Wintermute\_70, YasnayaPolyana\_69,

### Summary by start number:

Start 17:

- Found in 8 of 261 ( 3.1% ) of genes in pham
- Manual Annotations of this start: 2 of 231
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Treddle\_63 (A1), Trouble\_63 (A1),

Start 18:

- Found in 12 of 261 ( 4.6% ) of genes in pham
- Manual Annotations of this start: 7 of 231
- Called 58.3% of time when present
- Phage (with cluster) where this start called: Eyeball\_64 (A1), Fenn\_64 (A1), Marsha\_61 (A1), Monet\_65 (A1), Naira\_64 (A1), Pollywog\_85 (F1), Squee\_63 (A1),

Start 23:

- Found in 1 of 261 ( 0.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ThursdayNight\_37 (AZ),

Start 24:

- Found in 1 of 261 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 231
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Reindeer\_39 (M1),

Start 25:

- Found in 20 of 261 ( 7.7% ) of genes in pham
- Manual Annotations of this start: 16 of 231
- Called 95.0% of time when present
- Phage (with cluster) where this start called: Bobquesha\_71 (K4), Chancellor\_70 (K4), Cheetobro\_70 (K4), DanSyl44\_73 (K4), Eponine\_72 (K4), Fionnbharth\_70 (K4), Juliette\_72 (K4), Kraw\_70 (K4), Lebo14\_69 (K4), Malthus\_71 (K4), Mitti\_70 (K4), Patt\_66 (K4), Qhanda\_72 (K4), Reptar3000\_67 (K4), SamScheppers\_68 (K4), Slarp\_70 (K4), Taquito\_69 (K4), Wintermute\_70 (K4), YasnayaPolyana\_69 (K4),

Start 26:

- Found in 10 of 261 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 7 of 231
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Adolin\_32 (AZ1), Asa16\_34 (AZ1), BaboJay\_37 (E), Bogg\_38 (E), Eraser\_34 (AZ1), Eureka\_38 (E), Goku\_38 (E), Jstan\_36 (AZ1), Niobe\_34 (AZ1), Skelbel\_35 (AZ1),

Start 27:

- Found in 1 of 261 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 231
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Oogway\_61 (A1),

Start 28:

- Found in 208 of 261 ( 79.7% ) of genes in pham
- Manual Annotations of this start: 187 of 231
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 244\_39 (E), ABCat\_36 (E), AddiRose\_51 (JA), Adnama\_40 (E), AinMach\_35 (AZ7), Amao\_37 (E), AmericanBeauty\_39 (E), Argent26\_39 (E), Ashes\_31 (AZ5), Asriel\_36 (E), BadStone\_36 (E), Balomoji\_36 (E), Baoshan\_31 (L2), Barbarian\_36 (E), Bask21\_37 (E), Beaupre\_31 (AZ5), Becksu\_37 (E), Bellis\_31 (L3), Bench\_39 (E), BigBubba\_38 (E), BilboSwaggins\_37 (E), Bobby\_51 (J), Bombitas\_49 (J), Brewer\_37 (E), Bruin\_37 (E), Buck\_36 (E), BugsBunny\_35 (E), Cactus\_38 (E), Cappuccino\_31 (AZ5), ChosenOne\_37 (E), ChotaBhai\_37 (E), Cjw1\_37 (E), Clautastrophe\_31 (L3), Command613\_38 (E), Contagion\_36 (E), Cookies\_37 (E), CrystalP\_37 (E), Czystczon1\_38 (E), Daddyjeff\_52 (JA), Daikon\_36 (E), DoctorDiddles\_37 (E), Donkey\_31 (AZ5), Douge\_30 (L4), DrDrey\_38 (E), Duke13\_55 (J), Dumbo\_37 (E), DuncansLeg\_31 (L3), Dusk\_36 (E), DyoEdafos\_31 (L4), Easy2Say\_39 (E), Elite2014\_36 (E), Ellson\_31 (L3), Elph10\_38 (E), Emmina\_38 (E), Filch\_38 (E), Finnry\_31 (L3), FireRed\_37 (E), FiveHead\_43 (AZ4), Flypotenuse\_35 (E), FoghornLeghorn\_36 (E), Footloose\_59 (singleton), Gage\_39 (E), Gambol\_31 (AZ5), Gator\_35 (E), Gemini\_40 (E), Giorgio\_31 (AZ5), Glexan\_35 (E), GoldenSpark\_39 (E), Goldilocks\_38 (E), GooberAzure\_39 (E), Greep\_38 (E), Gumpizza\_31 (AZ5), Halsey\_31 (AZ5), HanKaySha\_38 (E), Hannaconda\_48 (J), Harella\_36 (E), Henry\_38 (E), Highbury\_38 (E), Holt\_38 (E), Hoonter\_39 (E), Hopey\_39 (E), HufflyPuff\_36 (E), Icee\_36 (E), Inca\_36 (E), JasmineDragon\_39 (AZ4), JeTaime\_39 (E), JohnThicc\_42 (AZ4), Journey\_52 (N), Jubie\_31 (L3), JuneStar\_33 (AZ1), Kalimba\_31 (AZ5), Kanye\_39 (E), KashFlow\_45 (J), Kimchi\_39 (E), Kingsolomon\_31 (L3), Kostya\_38 (E), Kropertea\_30 (L4), Krypton555\_31 (L3), Lilac\_39 (E), Lilizi\_39 (E), Lilpickle\_36 (E), LiyuLake\_31 (L3), Lolly9\_31 (L3), Lumos\_31 (L3), MISSy\_36 (E), MPhalcon\_36 (E), MaGuCo\_34 (AZ2), MadamMonkfish\_37 (E), Manda\_38 (E), Marshmallow\_37 (E), Maureen\_36 (AZ2), Maxxinista\_38 (E), Mindy\_37 (E), Minerva\_58 (J), MiniLon\_31 (L3), MiniMac\_31 (L3), MiniMommy\_40 (AZ4), Miniwave\_37 (E), Mireles\_3 (FR), Misfit\_37 (E), MissAmericana\_7 (EM2), Moldemort\_38 (E), MollyToe\_37 (E), Mosby\_36 (E), Moss\_31 (AZ5), MsGreen\_31 (L3), Mudpuppy\_32 (AZ1), Murica\_36 (E), Murphy\_38 (E), Myrale\_37 (E), Mysterium\_31 (AZ5), Nala\_37 (E), NelitzaMV\_37 (E), Nicholas\_31 (L3), NihilNomen\_51 (J), Nimrod\_37 (E), NoSleep\_38 (E), NonchalantPear\_37 (E), Optimus\_57 (J), OrionPax\_38 (E), PaddyBaddy\_38 (E), Palpatine\_37 (E), Paperbeatsrock\_39 (E), Pat3\_36 (E), Petra64142\_39 (E), Pharsalus\_38 (E), PhatBacter\_37 (E), Phaux\_36 (E), Phoebus\_51 (J), Phrux\_37 (E), Policronamos\_37 (E), Porky\_37 (E), Pound\_54 (J),

Ptowny\_38 (E), Pumpkin\_39 (E), Qualification\_38 (E), Rakim\_38 (E), Rearden\_46 (J), Rey\_44 (M2), Rimmer\_36 (E), RiverMonster\_37 (E), RockScotty\_31 (AZ5), Sabourin\_31 (AZ5), Saints25\_38 (E), Samty\_31 (L3), Sassay\_36 (E), Serenabean\_52 (JA), ShakeltOph\_39 (AZ4), ShamWow\_37 (E), Simpliphy\_38 (E), SirDuracell\_36 (E), Snenia\_31 (L3), Sooty\_31 (AZ5), SophKB\_37 (E), Sotrice96\_37 (E), SpecialK\_31 (AZ5), Stank\_40 (E), Stark\_38 (E), StellaBean\_37 (E), StolenFromERC\_39 (E), StormChicken\_37 (E), Stuu\_31 (AZ5), Sweetclover\_51 (JA), TBrady12\_39 (E), Tarkin\_39 (E), TeamEdward\_37 (E), TeardropMSU\_36 (E), Teaspoon\_38 (E), Terminus\_37 (E), Thimble\_37 (E), Thresher\_38 (E), Tomaszewski\_36 (E), Toto\_37 (E), Traaww1\_35 (E), TriFive\_31 (L3), Tuco\_38 (E), Ukulele\_37 (E), VResidence\_33 (AZ1), VroomVroom\_39 (AZ4), Wanda\_58 (J), Whirlwind\_32 (L3), Wiggin\_40 (E), Willez\_36 (E), Xandras\_39 (E), YassJohnny\_38 (E), Youngblood\_37 (E), Zakai\_32 (L2), xkcd\_38 (E),

Start 29:

- Found in 7 of 261 ( 2.7% ) of genes in pham
- Manual Annotations of this start: 6 of 231
- Called 85.7% of time when present
- Phage (with cluster) where this start called: Aziz\_44 (M2), Estes\_45 (M2), GardenSalsa\_44 (M2), GenevaB15\_44 (M2), MrMagoo\_44 (M2), Nanosmite\_44 (M3),

Start 30:

- Found in 9 of 261 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 3 of 231
- Called 33.3% of time when present
- Phage (with cluster) where this start called: BoostSeason\_69 (K2), DS6A\_74 (singleton), TM4\_67 (K2),

Start 31:

- Found in 17 of 261 ( 6.5% ) of genes in pham
- Manual Annotations of this start: 1 of 231
- Called 5.9% of time when present
- Phage (with cluster) where this start called: MissDaisy\_67 (K4),

Start 33:

- Found in 33 of 261 ( 12.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 6.1% of time when present
- Phage (with cluster) where this start called: Mkhuseleli\_58 (A1), Sanya\_57 (A1),

### Summary by clusters:

There are 23 clusters represented in this pham: FR, K4, singleton, K2, M1, M3, M2, JA, A1, E, J, N, L4, L2, L3, AZ, F1, EM2, AZ1, AZ2, AZ4, AZ5, AZ7,

Info for manual annotations of cluster A1:

- Start number 17 was manually annotated 2 times for cluster A1.
- Start number 18 was manually annotated 6 times for cluster A1.
- Start number 27 was manually annotated 1 time for cluster A1.

Info for manual annotations of cluster AZ1:

- Start number 26 was manually annotated 4 times for cluster AZ1.

- Start number 28 was manually annotated 3 times for cluster AZ1.

Info for manual annotations of cluster AZ2:

- Start number 28 was manually annotated 2 times for cluster AZ2.

Info for manual annotations of cluster AZ4:

- Start number 28 was manually annotated 4 times for cluster AZ4.

Info for manual annotations of cluster AZ5:

- Start number 28 was manually annotated 16 times for cluster AZ5.

Info for manual annotations of cluster E:

- Start number 26 was manually annotated 3 times for cluster E.
- Start number 28 was manually annotated 122 times for cluster E.

Info for manual annotations of cluster EM2:

- Start number 28 was manually annotated 1 time for cluster EM2.

Info for manual annotations of cluster F1:

- Start number 18 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster J:

- Start number 28 was manually annotated 11 times for cluster J.

Info for manual annotations of cluster JA:

- Start number 28 was manually annotated 4 times for cluster JA.

Info for manual annotations of cluster K2:

- Start number 30 was manually annotated 2 times for cluster K2.

Info for manual annotations of cluster K4:

- Start number 25 was manually annotated 16 times for cluster K4.
- Start number 31 was manually annotated 1 time for cluster K4.

Info for manual annotations of cluster L2:

- Start number 28 was manually annotated 2 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 28 was manually annotated 17 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 28 was manually annotated 2 times for cluster L4.

Info for manual annotations of cluster M1:

- Start number 24 was manually annotated 1 time for cluster M1.

Info for manual annotations of cluster M2:

- Start number 28 was manually annotated 1 time for cluster M2.
- Start number 29 was manually annotated 5 times for cluster M2.

Info for manual annotations of cluster M3:

- Start number 29 was manually annotated 1 time for cluster M3.

Info for manual annotations of cluster N:

- Start number 28 was manually annotated 1 time for cluster N.

**Gene Information:**

Gene: 244\_39 Start: 33415, Stop: 33660, Start Num: 28

Candidate Starts for 244\_39:

(Start: 28 @33415 has 187 MA's), (40, 33472), (47, 33505), (49, 33511), (57, 33565), (60, 33577),

Gene: ABCat\_36 Start: 33127, Stop: 33372, Start Num: 28

Candidate Starts for ABCat\_36:

(Start: 28 @33127 has 187 MA's), (40, 33184), (47, 33217), (49, 33223), (57, 33277), (60, 33289),

Gene: AddiRose\_51 Start: 34005, Stop: 34238, Start Num: 28

Candidate Starts for AddiRose\_51:

(Start: 28 @34005 has 187 MA's), (51, 34140),

Gene: Adnama\_40 Start: 33642, Stop: 33887, Start Num: 28

Candidate Starts for Adnama\_40:

(Start: 28 @33642 has 187 MA's), (40, 33699), (47, 33732), (49, 33738), (57, 33792), (60, 33804),

Gene: Adolin\_32 Start: 23104, Stop: 23349, Start Num: 26

Candidate Starts for Adolin\_32:

(2, 22735), (3, 22849), (6, 22885), (Start: 26 @23104 has 7 MA's),

Gene: AinMach\_35 Start: 25558, Stop: 25839, Start Num: 28

Candidate Starts for AinMach\_35:

(9, 25390), (22, 25534), (Start: 28 @25558 has 187 MA's), (57, 25723),

Gene: Amao\_37 Start: 32339, Stop: 32584, Start Num: 28

Candidate Starts for Amao\_37:

(Start: 28 @32339 has 187 MA's), (40, 32396), (47, 32429), (49, 32435), (55, 32483), (57, 32489), (60, 32501),

Gene: AmericanBeauty\_39 Start: 33122, Stop: 33367, Start Num: 28

Candidate Starts for AmericanBeauty\_39:

(Start: 28 @33122 has 187 MA's), (40, 33179), (47, 33212), (49, 33218), (57, 33272), (60, 33284),

Gene: Argent26\_39 Start: 33125, Stop: 33370, Start Num: 28

Candidate Starts for Argent26\_39:

(Start: 28 @33125 has 187 MA's), (40, 33182), (47, 33215), (49, 33221), (57, 33275), (60, 33287),

Gene: Asa16\_34 Start: 26607, Stop: 26864, Start Num: 26

Candidate Starts for Asa16\_34:

(3, 26370), (4, 26379), (Start: 26 @26607 has 7 MA's), (37, 26655), (60, 26772),

Gene: Ashes\_31 Start: 22585, Stop: 22851, Start Num: 28

Candidate Starts for Ashes\_31:

(Start: 28 @22585 has 187 MA's), (32, 22600), (42, 22663), (45, 22681), (62, 22783),

Gene: Asriel\_36 Start: 31996, Stop: 32241, Start Num: 28  
Candidate Starts for Asriel\_36:  
(Start: 28 @31996 has 187 MA's), (40, 32053), (47, 32086), (49, 32092), (57, 32146), (60, 32158),

Gene: Aziz\_44 Start: 33930, Stop: 34181, Start Num: 29  
Candidate Starts for Aziz\_44:  
(Start: 29 @33930 has 6 MA's), (47, 34023), (54, 34074), (55, 34077), (59, 34092), (66, 34146),

Gene: BaboJay\_37 Start: 33214, Stop: 33462, Start Num: 26  
Candidate Starts for BaboJay\_37:  
(12, 33145), (13, 33148), (19, 33175), (Start: 26 @33214 has 7 MA's), (40, 33274), (47, 33307), (49, 33313), (57, 33367), (60, 33379),

Gene: BadStone\_36 Start: 33127, Stop: 33372, Start Num: 28  
Candidate Starts for BadStone\_36:  
(Start: 28 @33127 has 187 MA's), (40, 33184), (47, 33217), (49, 33223), (55, 33271), (57, 33277), (60, 33289),

Gene: Balomoji\_36 Start: 32861, Stop: 33106, Start Num: 28  
Candidate Starts for Balomoji\_36:  
(Start: 28 @32861 has 187 MA's), (40, 32918), (47, 32951), (49, 32957), (55, 33005), (57, 33011), (60, 33023),

Gene: Baoshan\_31 Start: 28243, Stop: 28509, Start Num: 28  
Candidate Starts for Baoshan\_31:  
(Start: 28 @28243 has 187 MA's), (36, 28288), (48, 28339), (68, 28477), (72, 28498),

Gene: Barbarian\_36 Start: 31996, Stop: 32241, Start Num: 28  
Candidate Starts for Barbarian\_36:  
(Start: 28 @31996 has 187 MA's), (40, 32053), (47, 32086), (49, 32092), (57, 32146), (60, 32158),

Gene: Bask21\_37 Start: 32313, Stop: 32558, Start Num: 28  
Candidate Starts for Bask21\_37:  
(Start: 28 @32313 has 187 MA's), (40, 32370), (47, 32403), (49, 32409), (57, 32463), (60, 32475),

Gene: Beaupre\_31 Start: 22586, Stop: 22852, Start Num: 28  
Candidate Starts for Beaupre\_31:  
(Start: 28 @22586 has 187 MA's), (32, 22601), (42, 22664), (45, 22682), (62, 22784),

Gene: Becksu\_37 Start: 33318, Stop: 33563, Start Num: 28  
Candidate Starts for Becksu\_37:  
(Start: 28 @33318 has 187 MA's), (40, 33375), (47, 33408), (49, 33414), (57, 33468), (60, 33480),

Gene: Bellis\_31 Start: 28787, Stop: 29053, Start Num: 28  
Candidate Starts for Bellis\_31:  
(Start: 28 @28787 has 187 MA's), (33, 28799), (36, 28832),

Gene: Bench\_39 Start: 32995, Stop: 33240, Start Num: 28  
Candidate Starts for Bench\_39:  
(Start: 28 @32995 has 187 MA's), (40, 33052), (47, 33085), (49, 33091), (57, 33145), (60, 33157),

Gene: BigBubba\_38 Start: 32898, Stop: 33143, Start Num: 28

Candidate Starts for BigBubba\_38:

(Start: 28 @32898 has 187 MA's), (40, 32955), (47, 32988), (49, 32994), (55, 33042), (57, 33048), (60, 33060),

Gene: BilboSwaggins\_37 Start: 33135, Stop: 33380, Start Num: 28

Candidate Starts for BilboSwaggins\_37:

(Start: 28 @33135 has 187 MA's), (40, 33192), (47, 33225), (49, 33231), (57, 33285), (60, 33297),

Gene: Bobby\_51 Start: 42712, Stop: 42957, Start Num: 28

Candidate Starts for Bobby\_51:

(Start: 28 @42712 has 187 MA's), (53, 42844),

Gene: Bobquesha\_71 Start: 42269, Stop: 42532, Start Num: 25

Candidate Starts for Bobquesha\_71:

(7, 42086), (Start: 25 @42269 has 16 MA's), (47, 42371), (63, 42467), (69, 42521),

Gene: Bogg\_38 Start: 32564, Stop: 32812, Start Num: 26

Candidate Starts for Bogg\_38:

(12, 32495), (13, 32498), (19, 32525), (Start: 26 @32564 has 7 MA's), (40, 32624), (47, 32657), (49, 32663), (57, 32717), (60, 32729),

Gene: Bombitas\_49 Start: 43727, Stop: 43975, Start Num: 28

Candidate Starts for Bombitas\_49:

(Start: 28 @43727 has 187 MA's), (53, 43859),

Gene: BoostSeason\_69 Start: 45667, Stop: 45912, Start Num: 30

Candidate Starts for BoostSeason\_69:

(15, 45610), (16, 45616), (Start: 30 @45667 has 3 MA's), (47, 45757), (59, 45826), (64, 45850), (71, 45904),

Gene: Brewer\_37 Start: 33383, Stop: 33628, Start Num: 28

Candidate Starts for Brewer\_37:

(Start: 28 @33383 has 187 MA's), (40, 33440), (47, 33473), (49, 33479), (55, 33527), (57, 33533), (60, 33545),

Gene: Bruin\_37 Start: 33155, Stop: 33400, Start Num: 28

Candidate Starts for Bruin\_37:

(Start: 28 @33155 has 187 MA's), (40, 33212), (47, 33245), (49, 33251), (57, 33305), (60, 33317),

Gene: Buck\_36 Start: 33091, Stop: 33336, Start Num: 28

Candidate Starts for Buck\_36:

(Start: 28 @33091 has 187 MA's), (40, 33148), (47, 33181), (49, 33187), (57, 33241), (60, 33253),

Gene: BugsBunny\_35 Start: 32724, Stop: 32969, Start Num: 28

Candidate Starts for BugsBunny\_35:

(Start: 28 @32724 has 187 MA's), (40, 32781), (47, 32814), (49, 32820), (57, 32874), (60, 32886),

Gene: Cactus\_38 Start: 32346, Stop: 32591, Start Num: 28

Candidate Starts for Cactus\_38:

(Start: 28 @32346 has 187 MA's), (40, 32403), (47, 32436), (49, 32442), (57, 32496), (60, 32508),

Gene: Cappuccino\_31 Start: 22494, Stop: 22760, Start Num: 28

Candidate Starts for Cappuccino\_31:

(Start: 28 @22494 has 187 MA's), (Start: 30 @22503 has 3 MA's), (32, 22509), (42, 22572),

Gene: Chancellor\_70 Start: 43377, Stop: 43640, Start Num: 25

Candidate Starts for Chancellor\_70:

(Start: 25 @43377 has 16 MA's), (Start: 31 @43392 has 1 MA's), (47, 43479), (63, 43575), (69, 43629),

Gene: Cheetobro\_70 Start: 43374, Stop: 43637, Start Num: 25

Candidate Starts for Cheetobro\_70:

(Start: 25 @43374 has 16 MA's), (Start: 31 @43389 has 1 MA's), (47, 43476), (63, 43572), (69, 43626),

Gene: ChosenOne\_37 Start: 32343, Stop: 32588, Start Num: 28

Candidate Starts for ChosenOne\_37:

(Start: 28 @32343 has 187 MA's), (40, 32400), (47, 32433), (49, 32439), (57, 32493), (60, 32505),

Gene: ChotaBhai\_37 Start: 32381, Stop: 32626, Start Num: 28

Candidate Starts for ChotaBhai\_37:

(Start: 28 @32381 has 187 MA's), (40, 32438), (47, 32471), (49, 32477), (55, 32525), (57, 32531), (60, 32543),

Gene: Cjw1\_37 Start: 33895, Stop: 34140, Start Num: 28

Candidate Starts for Cjw1\_37:

(Start: 28 @33895 has 187 MA's), (40, 33952), (47, 33985), (49, 33991), (57, 34045), (60, 34057),

Gene: Clautastrophe\_31 Start: 28784, Stop: 29050, Start Num: 28

Candidate Starts for Clautastrophe\_31:

(Start: 28 @28784 has 187 MA's), (33, 28796), (36, 28829),

Gene: Command613\_38 Start: 33402, Stop: 33647, Start Num: 28

Candidate Starts for Command613\_38:

(Start: 28 @33402 has 187 MA's), (40, 33459), (47, 33492), (49, 33498), (57, 33552), (60, 33564),

Gene: Contagion\_36 Start: 32639, Stop: 32884, Start Num: 28

Candidate Starts for Contagion\_36:

(Start: 28 @32639 has 187 MA's), (40, 32696), (47, 32729), (49, 32735), (55, 32783), (57, 32789), (60, 32801),

Gene: Cookies\_37 Start: 33004, Stop: 33249, Start Num: 28

Candidate Starts for Cookies\_37:

(Start: 28 @33004 has 187 MA's), (40, 33061), (47, 33094), (49, 33100), (55, 33148), (57, 33154), (60, 33166),

Gene: CrystalP\_37 Start: 33135, Stop: 33380, Start Num: 28

Candidate Starts for CrystalP\_37:

(Start: 28 @33135 has 187 MA's), (40, 33192), (47, 33225), (49, 33231), (57, 33285), (60, 33297),

Gene: Czyszczon1\_38 Start: 32880, Stop: 33125, Start Num: 28

Candidate Starts for Czyszczon1\_38:

(Start: 28 @32880 has 187 MA's), (40, 32937), (47, 32970), (49, 32976), (57, 33030), (60, 33042),

Gene: DS6A\_74 Start: 48826, Stop: 49065, Start Num: 30

Candidate Starts for DS6A\_74:

(8, 48631), (Start: 30 @48826 has 3 MA's), (36, 48868), (43, 48901), (59, 48985),

Gene: Daddyjeff\_52 Start: 34278, Stop: 34511, Start Num: 28

Candidate Starts for Daddyjeff\_52:

(Start: 28 @34278 has 187 MA's), (51, 34413),

Gene: Daikon\_36 Start: 32873, Stop: 33118, Start Num: 28

Candidate Starts for Daikon\_36:

(Start: 28 @32873 has 187 MA's), (40, 32930), (47, 32963), (49, 32969), (55, 33017), (57, 33023), (60, 33035),

Gene: DanSyl44\_73 Start: 44568, Stop: 44831, Start Num: 25

Candidate Starts for DanSyl44\_73:

(Start: 25 @44568 has 16 MA's), (Start: 31 @44583 has 1 MA's), (47, 44670), (63, 44766), (69, 44820),

Gene: DoctorDiddles\_37 Start: 32297, Stop: 32542, Start Num: 28

Candidate Starts for DoctorDiddles\_37:

(Start: 28 @32297 has 187 MA's), (40, 32354), (47, 32387), (49, 32393), (55, 32441), (57, 32447), (60, 32459),

Gene: Donkey\_31 Start: 22496, Stop: 22762, Start Num: 28

Candidate Starts for Donkey\_31:

(Start: 28 @22496 has 187 MA's), (Start: 30 @22505 has 3 MA's), (32, 22511), (42, 22574),

Gene: Douge\_30 Start: 27474, Stop: 27737, Start Num: 28

Candidate Starts for Douge\_30:

(Start: 28 @27474 has 187 MA's), (36, 27519), (47, 27567), (60, 27633),

Gene: DrDrey\_38 Start: 33627, Stop: 33872, Start Num: 28

Candidate Starts for DrDrey\_38:

(Start: 28 @33627 has 187 MA's), (40, 33684), (47, 33717), (49, 33723), (57, 33777), (60, 33789),

Gene: Duke13\_55 Start: 43999, Stop: 44247, Start Num: 28

Candidate Starts for Duke13\_55:

(Start: 28 @43999 has 187 MA's), (53, 44131),

Gene: Dumbo\_37 Start: 32602, Stop: 32847, Start Num: 28

Candidate Starts for Dumbo\_37:

(Start: 28 @32602 has 187 MA's), (40, 32659), (47, 32692), (49, 32698), (57, 32752), (60, 32764),

Gene: DuncansLeg\_31 Start: 28758, Stop: 29024, Start Num: 28

Candidate Starts for DuncansLeg\_31:

(Start: 28 @28758 has 187 MA's), (33, 28770), (36, 28803), (47, 28851),

Gene: Dusk\_36 Start: 32787, Stop: 33032, Start Num: 28

Candidate Starts for Dusk\_36:

(Start: 28 @32787 has 187 MA's), (40, 32844), (47, 32877), (49, 32883), (55, 32931), (57, 32937), (60, 32949),

Gene: DyoEdafos\_31 Start: 27675, Stop: 27938, Start Num: 28

Candidate Starts for DyoEdafos\_31:

(Start: 28 @27675 has 187 MA's), (36, 27720), (60, 27834),

Gene: Easy2Say\_39 Start: 34385, Stop: 34630, Start Num: 28

Candidate Starts for Easy2Say\_39:

(Start: 28 @34385 has 187 MA's), (40, 34442), (47, 34475), (49, 34481), (57, 34535), (60, 34547),

Gene: Elite2014\_36 Start: 32342, Stop: 32587, Start Num: 28

Candidate Starts for Elite2014\_36:

(Start: 28 @32342 has 187 MA's), (40, 32399), (47, 32432), (49, 32438), (57, 32492), (60, 32504),

Gene: Ellson\_31 Start: 28745, Stop: 29011, Start Num: 28

Candidate Starts for Ellson\_31:

(Start: 28 @28745 has 187 MA's), (33, 28757), (36, 28790), (47, 28838),

Gene: Elph10\_38 Start: 32605, Stop: 32850, Start Num: 28

Candidate Starts for Elph10\_38:

(Start: 28 @32605 has 187 MA's), (40, 32662), (47, 32695), (49, 32701), (57, 32755), (60, 32767),

Gene: Emmina\_38 Start: 32963, Stop: 33208, Start Num: 28

Candidate Starts for Emmina\_38:

(Start: 28 @32963 has 187 MA's), (40, 33020), (47, 33053), (49, 33059), (57, 33113), (60, 33125),

Gene: Eponine\_72 Start: 44220, Stop: 44483, Start Num: 25

Candidate Starts for Eponine\_72:

(Start: 25 @44220 has 16 MA's), (Start: 31 @44235 has 1 MA's), (47, 44322), (63, 44418), (67, 44463), (69, 44472),

Gene: Eraser\_34 Start: 26614, Stop: 26871, Start Num: 26

Candidate Starts for Eraser\_34:

(3, 26377), (4, 26386), (Start: 26 @26614 has 7 MA's), (37, 26662), (60, 26779),

Gene: Estes\_45 Start: 34058, Stop: 34309, Start Num: 29

Candidate Starts for Estes\_45:

(Start: 29 @34058 has 6 MA's), (47, 34151), (54, 34202), (55, 34205), (66, 34274),

Gene: Eureka\_38 Start: 33647, Stop: 33895, Start Num: 26

Candidate Starts for Eureka\_38:

(12, 33578), (13, 33581), (19, 33608), (Start: 26 @33647 has 7 MA's), (40, 33707), (47, 33740), (49, 33746), (57, 33800), (60, 33812),

Gene: Eyeball\_64 Start: 42166, Stop: 41900, Start Num: 18

Candidate Starts for Eyeball\_64:

(Start: 17 @42169 has 2 MA's), (Start: 18 @42166 has 7 MA's), (21, 42154), (33, 42133), (41, 42082), (43, 42067), (49, 42046), (50, 42025), (51, 42016), (58, 41986), (70, 41911),

Gene: Fenn\_64 Start: 42653, Stop: 42378, Start Num: 18

Candidate Starts for Fenn\_64:

(Start: 18 @42653 has 7 MA's), (21, 42641), (33, 42611), (41, 42560), (43, 42545), (49, 42524), (50, 42503), (51, 42494), (58, 42464), (70, 42389),

Gene: Filch\_38 Start: 32893, Stop: 33138, Start Num: 28

Candidate Starts for Filch\_38:

(Start: 28 @32893 has 187 MA's), (40, 32950), (47, 32983), (49, 32989), (57, 33043), (60, 33055),

Gene: Finnry\_31 Start: 28788, Stop: 29054, Start Num: 28

Candidate Starts for Finnry\_31:

(Start: 28 @28788 has 187 MA's), (33, 28800), (36, 28833),

Gene: Fionnbharth\_70 Start: 43618, Stop: 43881, Start Num: 25  
Candidate Starts for Fionnbharth\_70:  
(Start: 25 @43618 has 16 MA's), (Start: 31 @43633 has 1 MA's), (47, 43720), (63, 43816), (69, 43870),

Gene: FireRed\_37 Start: 33163, Stop: 33408, Start Num: 28  
Candidate Starts for FireRed\_37:  
(Start: 28 @33163 has 187 MA's), (40, 33220), (47, 33253), (49, 33259), (57, 33313), (60, 33325),

Gene: FiveHead\_43 Start: 26555, Stop: 26893, Start Num: 28  
Candidate Starts for FiveHead\_43:  
(10, 26408), (Start: 28 @26555 has 187 MA's),

Gene: Flypotenuse\_35 Start: 32731, Stop: 32976, Start Num: 28  
Candidate Starts for Flypotenuse\_35:  
(Start: 28 @32731 has 187 MA's), (40, 32788), (47, 32821), (49, 32827), (55, 32875), (57, 32881), (60, 32893),

Gene: FoghornLeghorn\_36 Start: 32639, Stop: 32884, Start Num: 28  
Candidate Starts for FoghornLeghorn\_36:  
(Start: 28 @32639 has 187 MA's), (40, 32696), (47, 32729), (49, 32735), (57, 32789), (60, 32801),

Gene: Footloose\_59 Start: 33811, Stop: 34044, Start Num: 28  
Candidate Starts for Footloose\_59:  
(Start: 28 @33811 has 187 MA's), (34, 33826), (46, 33895), (51, 33931), (53, 33940), (60, 33967),

Gene: Gage\_39 Start: 33125, Stop: 33370, Start Num: 28  
Candidate Starts for Gage\_39:  
(Start: 28 @33125 has 187 MA's), (40, 33182), (47, 33215), (49, 33221), (57, 33275), (60, 33287),

Gene: Gambol\_31 Start: 22494, Stop: 22760, Start Num: 28  
Candidate Starts for Gambol\_31:  
(Start: 28 @22494 has 187 MA's), (Start: 30 @22503 has 3 MA's), (32, 22509), (42, 22572),

Gene: GardenSalsa\_44 Start: 33882, Stop: 34133, Start Num: 29  
Candidate Starts for GardenSalsa\_44:  
(Start: 29 @33882 has 6 MA's), (54, 34026), (55, 34029), (59, 34044), (66, 34098),

Gene: Gator\_35 Start: 32743, Stop: 32988, Start Num: 28  
Candidate Starts for Gator\_35:  
(Start: 28 @32743 has 187 MA's), (40, 32800), (47, 32833), (49, 32839), (57, 32893), (60, 32905),

Gene: Gemini\_40 Start: 33642, Stop: 33887, Start Num: 28  
Candidate Starts for Gemini\_40:  
(Start: 28 @33642 has 187 MA's), (40, 33699), (47, 33732), (49, 33738), (57, 33792), (60, 33804),

Gene: GenevaB15\_44 Start: 33930, Stop: 34181, Start Num: 29  
Candidate Starts for GenevaB15\_44:  
(Start: 29 @33930 has 6 MA's), (47, 34023), (54, 34074), (55, 34077), (59, 34092), (66, 34146),

Gene: Giorgio\_31 Start: 22596, Stop: 22862, Start Num: 28  
Candidate Starts for Giorgio\_31:  
(Start: 28 @22596 has 187 MA's), (32, 22611), (42, 22674), (62, 22794),

Gene: Glexan\_35 Start: 32731, Stop: 32976, Start Num: 28

Candidate Starts for Glexan\_35:

(Start: 28 @32731 has 187 MA's), (40, 32788), (47, 32821), (49, 32827), (55, 32875), (57, 32881), (60, 32893),

Gene: Goku\_38 Start: 33376, Stop: 33624, Start Num: 26

Candidate Starts for Goku\_38:

(12, 33307), (13, 33310), (19, 33337), (Start: 26 @33376 has 7 MA's), (40, 33436), (47, 33469), (49, 33475), (57, 33529), (60, 33541),

Gene: GoldenSpark\_39 Start: 33125, Stop: 33370, Start Num: 28

Candidate Starts for GoldenSpark\_39:

(Start: 28 @33125 has 187 MA's), (40, 33182), (47, 33215), (49, 33221), (57, 33275), (60, 33287),

Gene: Goldilocks\_38 Start: 32545, Stop: 32790, Start Num: 28

Candidate Starts for Goldilocks\_38:

(Start: 28 @32545 has 187 MA's), (40, 32602), (47, 32635), (49, 32641), (57, 32695), (60, 32707),

Gene: GooberAzure\_39 Start: 33125, Stop: 33370, Start Num: 28

Candidate Starts for GooberAzure\_39:

(Start: 28 @33125 has 187 MA's), (40, 33182), (47, 33215), (49, 33221), (57, 33275), (60, 33287),

Gene: Greep\_38 Start: 33455, Stop: 33700, Start Num: 28

Candidate Starts for Greep\_38:

(Start: 28 @33455 has 187 MA's), (40, 33512), (47, 33545), (49, 33551), (57, 33605), (60, 33617),

Gene: Gumpizza\_31 Start: 22588, Stop: 22854, Start Num: 28

Candidate Starts for Gumpizza\_31:

(Start: 28 @22588 has 187 MA's), (32, 22603), (42, 22666), (62, 22786),

Gene: Halsey\_31 Start: 22590, Stop: 22856, Start Num: 28

Candidate Starts for Halsey\_31:

(Start: 28 @22590 has 187 MA's), (32, 22605), (42, 22668), (45, 22686), (62, 22788),

Gene: HanKaySha\_38 Start: 32877, Stop: 33122, Start Num: 28

Candidate Starts for HanKaySha\_38:

(Start: 28 @32877 has 187 MA's), (40, 32934), (47, 32967), (49, 32973), (57, 33027), (60, 33039),

Gene: Hannaconda\_48 Start: 38620, Stop: 38868, Start Num: 28

Candidate Starts for Hannaconda\_48:

(Start: 28 @38620 has 187 MA's), (53, 38752),

Gene: Harella\_36 Start: 33247, Stop: 33492, Start Num: 28

Candidate Starts for Harella\_36:

(Start: 28 @33247 has 187 MA's), (40, 33304), (47, 33337), (49, 33343), (55, 33391), (57, 33397), (60, 33409),

Gene: Henry\_38 Start: 33135, Stop: 33380, Start Num: 28

Candidate Starts for Henry\_38:

(Start: 28 @33135 has 187 MA's), (40, 33192), (47, 33225), (49, 33231), (55, 33279), (57, 33285), (60, 33297),

Gene: Highbury\_38 Start: 32793, Stop: 33038, Start Num: 28  
Candidate Starts for Highbury\_38:  
(Start: 28 @32793 has 187 MA's), (40, 32850), (47, 32883), (49, 32889), (57, 32943), (60, 32955),

Gene: Holt\_38 Start: 32412, Stop: 32657, Start Num: 28  
Candidate Starts for Holt\_38:  
(Start: 28 @32412 has 187 MA's), (40, 32469), (47, 32502), (49, 32508), (55, 32556), (57, 32562), (60, 32574),

Gene: Hoonter\_39 Start: 33125, Stop: 33370, Start Num: 28  
Candidate Starts for Hoonter\_39:  
(Start: 28 @33125 has 187 MA's), (40, 33182), (47, 33215), (49, 33221), (57, 33275), (60, 33287),

Gene: Hokey\_39 Start: 33412, Stop: 33657, Start Num: 28  
Candidate Starts for Hokey\_39:  
(Start: 28 @33412 has 187 MA's), (40, 33469), (47, 33502), (49, 33508), (57, 33562), (60, 33574),

Gene: HufflyPuff\_36 Start: 33119, Stop: 33364, Start Num: 28  
Candidate Starts for HufflyPuff\_36:  
(Start: 28 @33119 has 187 MA's), (40, 33176), (47, 33209), (49, 33215), (57, 33269), (60, 33281),

Gene: Icee\_36 Start: 32793, Stop: 33038, Start Num: 28  
Candidate Starts for Icee\_36:  
(Start: 28 @32793 has 187 MA's), (40, 32850), (47, 32883), (49, 32889), (57, 32943), (60, 32955),

Gene: Inca\_36 Start: 31814, Stop: 32059, Start Num: 28  
Candidate Starts for Inca\_36:  
(Start: 28 @31814 has 187 MA's), (40, 31871), (47, 31904), (49, 31910), (57, 31964), (60, 31976),

Gene: JasmineDragon\_39 Start: 26463, Stop: 26750, Start Num: 28  
Candidate Starts for JasmineDragon\_39:  
(Start: 28 @26463 has 187 MA's), (60, 26655),

Gene: JeTaime\_39 Start: 33936, Stop: 34181, Start Num: 28  
Candidate Starts for JeTaime\_39:  
(Start: 28 @33936 has 187 MA's), (40, 33993), (47, 34026), (49, 34032), (57, 34086), (60, 34098),

Gene: JohnThicc\_42 Start: 26555, Stop: 26893, Start Num: 28  
Candidate Starts for JohnThicc\_42:  
(10, 26408), (Start: 28 @26555 has 187 MA's),

Gene: Journey\_52 Start: 34954, Stop: 35292, Start Num: 28  
Candidate Starts for Journey\_52:  
(14, 34888), (Start: 28 @34954 has 187 MA's), (33, 34966), (35, 34972), (44, 35038), (52, 35083), (59, 35113), (73, 35248), (74, 35275), (75, 35284),

Gene: Jstan\_36 Start: 26608, Stop: 26865, Start Num: 26  
Candidate Starts for Jstan\_36:  
(3, 26371), (4, 26380), (Start: 26 @26608 has 7 MA's), (37, 26656), (60, 26773),

Gene: Jubie\_31 Start: 28785, Stop: 29051, Start Num: 28  
Candidate Starts for Jubie\_31:  
(Start: 28 @28785 has 187 MA's), (33, 28797), (36, 28830),

Gene: Juliette\_72 Start: 43682, Stop: 43945, Start Num: 25  
Candidate Starts for Juliette\_72:  
(Start: 25 @43682 has 16 MA's), (Start: 31 @43697 has 1 MA's), (47, 43784), (63, 43880), (69, 43934),

Gene: JuneStar\_33 Start: 26763, Stop: 27023, Start Num: 28  
Candidate Starts for JuneStar\_33:  
(Start: 28 @26763 has 187 MA's), (59, 26922),

Gene: Kalimba\_31 Start: 22493, Stop: 22759, Start Num: 28  
Candidate Starts for Kalimba\_31:  
(Start: 28 @22493 has 187 MA's), (Start: 30 @22502 has 3 MA's), (32, 22508), (42, 22571),

Gene: Kanye\_39 Start: 34121, Stop: 34366, Start Num: 28  
Candidate Starts for Kanye\_39:  
(Start: 28 @34121 has 187 MA's), (40, 34178), (47, 34211), (49, 34217), (57, 34271), (60, 34283),

Gene: KashFlow\_45 Start: 38241, Stop: 38489, Start Num: 28  
Candidate Starts for KashFlow\_45:  
(Start: 28 @38241 has 187 MA's), (53, 38373),

Gene: Kimchi\_39 Start: 33128, Stop: 33373, Start Num: 28  
Candidate Starts for Kimchi\_39:  
(Start: 28 @33128 has 187 MA's), (40, 33185), (47, 33218), (49, 33224), (57, 33278), (60, 33290),

Gene: Kingsolomon\_31 Start: 28784, Stop: 29050, Start Num: 28  
Candidate Starts for Kingsolomon\_31:  
(Start: 28 @28784 has 187 MA's), (33, 28796), (36, 28829),

Gene: Kostya\_38 Start: 33136, Stop: 33381, Start Num: 28  
Candidate Starts for Kostya\_38:  
(Start: 28 @33136 has 187 MA's), (40, 33193), (47, 33226), (49, 33232), (57, 33286), (60, 33298),

Gene: Kraw\_70 Start: 43370, Stop: 43633, Start Num: 25  
Candidate Starts for Kraw\_70:  
(Start: 25 @43370 has 16 MA's), (Start: 31 @43385 has 1 MA's), (47, 43472), (63, 43568), (69, 43622),

Gene: Kropertea\_30 Start: 27482, Stop: 27745, Start Num: 28  
Candidate Starts for Kropertea\_30:  
(Start: 28 @27482 has 187 MA's), (36, 27527), (60, 27641),

Gene: Krypton555\_31 Start: 28682, Stop: 28948, Start Num: 28  
Candidate Starts for Krypton555\_31:  
(20, 28643), (Start: 28 @28682 has 187 MA's), (33, 28694), (36, 28727), (47, 28775),

Gene: Lebo14\_69 Start: 43703, Stop: 43966, Start Num: 25  
Candidate Starts for Lebo14\_69:  
(Start: 25 @43703 has 16 MA's), (Start: 31 @43718 has 1 MA's), (47, 43805), (63, 43901), (69, 43955),

Gene: Lilac\_39 Start: 32632, Stop: 32877, Start Num: 28  
Candidate Starts for Lilac\_39:  
(Start: 28 @32632 has 187 MA's), (40, 32689), (47, 32722), (49, 32728), (57, 32782), (60, 32794),

Gene: Lilizi\_39 Start: 32840, Stop: 33085, Start Num: 28  
Candidate Starts for Lilizi\_39:  
(Start: 28 @32840 has 187 MA's), (40, 32897), (47, 32930), (49, 32936), (57, 32990), (60, 33002),

Gene: Lilpickle\_36 Start: 32342, Stop: 32587, Start Num: 28  
Candidate Starts for Lilpickle\_36:  
(Start: 28 @32342 has 187 MA's), (40, 32399), (47, 32432), (49, 32438), (57, 32492), (60, 32504),

Gene: LiyuLake\_31 Start: 28737, Stop: 29003, Start Num: 28  
Candidate Starts for LiyuLake\_31:  
(Start: 28 @28737 has 187 MA's), (33, 28749), (36, 28782), (47, 28830),

Gene: Lolly9\_31 Start: 28548, Stop: 28814, Start Num: 28  
Candidate Starts for Lolly9\_31:  
(Start: 28 @28548 has 187 MA's), (33, 28560), (36, 28593),

Gene: Lumos\_31 Start: 28781, Stop: 29047, Start Num: 28  
Candidate Starts for Lumos\_31:  
(Start: 28 @28781 has 187 MA's), (33, 28793), (36, 28826),

Gene: MISSy\_36 Start: 32648, Stop: 32893, Start Num: 28  
Candidate Starts for MISSy\_36:  
(Start: 28 @32648 has 187 MA's), (40, 32705), (47, 32738), (49, 32744), (57, 32798), (60, 32810),

Gene: MPhalcon\_36 Start: 32641, Stop: 32886, Start Num: 28  
Candidate Starts for MPhalcon\_36:  
(Start: 28 @32641 has 187 MA's), (40, 32698), (47, 32731), (49, 32737), (57, 32791), (60, 32803),

Gene: MaGuCo\_34 Start: 25599, Stop: 25841, Start Num: 28  
Candidate Starts for MaGuCo\_34:  
(Start: 28 @25599 has 187 MA's), (38, 25650), (59, 25758),

Gene: MadamMonkfish\_37 Start: 32553, Stop: 32798, Start Num: 28  
Candidate Starts for MadamMonkfish\_37:  
(Start: 28 @32553 has 187 MA's), (40, 32610), (47, 32643), (49, 32649), (57, 32703), (60, 32715),

Gene: Malthus\_71 Start: 43370, Stop: 43633, Start Num: 25  
Candidate Starts for Malthus\_71:  
(Start: 25 @43370 has 16 MA's), (Start: 31 @43385 has 1 MA's), (47, 43472), (63, 43568), (69, 43622),

Gene: Manda\_38 Start: 33620, Stop: 33865, Start Num: 28  
Candidate Starts for Manda\_38:  
(Start: 28 @33620 has 187 MA's), (40, 33677), (47, 33710), (49, 33716), (57, 33770), (60, 33782),

Gene: Marsha\_61 Start: 42250, Stop: 41984, Start Num: 18  
Candidate Starts for Marsha\_61:  
(Start: 17 @42253 has 2 MA's), (Start: 18 @42250 has 7 MA's), (33, 42217), (41, 42166), (43, 42151),  
(49, 42130), (50, 42109), (51, 42100), (58, 42070),

Gene: Marshmallow\_37 Start: 33133, Stop: 33378, Start Num: 28  
Candidate Starts for Marshmallow\_37:  
(Start: 28 @33133 has 187 MA's), (40, 33190), (47, 33223), (49, 33229), (57, 33283), (60, 33295),

Gene: Maureen\_36 Start: 26752, Stop: 26994, Start Num: 28

Candidate Starts for Maureen\_36:

(Start: 28 @26752 has 187 MA's), (38, 26803), (59, 26911),

Gene: Maxxinista\_38 Start: 32602, Stop: 32847, Start Num: 28

Candidate Starts for Maxxinista\_38:

(Start: 28 @32602 has 187 MA's), (40, 32659), (47, 32692), (49, 32698), (57, 32752), (60, 32764),

Gene: Mindy\_37 Start: 32913, Stop: 33158, Start Num: 28

Candidate Starts for Mindy\_37:

(Start: 28 @32913 has 187 MA's), (40, 32970), (47, 33003), (49, 33009), (55, 33057), (57, 33063), (60, 33075),

Gene: Minerva\_58 Start: 45548, Stop: 45796, Start Num: 28

Candidate Starts for Minerva\_58:

(Start: 28 @45548 has 187 MA's), (53, 45680),

Gene: MiniLon\_31 Start: 28548, Stop: 28814, Start Num: 28

Candidate Starts for MiniLon\_31:

(Start: 28 @28548 has 187 MA's), (33, 28560), (36, 28593),

Gene: MiniMac\_31 Start: 28549, Stop: 28815, Start Num: 28

Candidate Starts for MiniMac\_31:

(Start: 28 @28549 has 187 MA's), (33, 28561), (36, 28594),

Gene: MiniMommy\_40 Start: 26464, Stop: 26751, Start Num: 28

Candidate Starts for MiniMommy\_40:

(Start: 28 @26464 has 187 MA's), (60, 26656),

Gene: Miniwave\_37 Start: 33332, Stop: 33577, Start Num: 28

Candidate Starts for Miniwave\_37:

(Start: 28 @33332 has 187 MA's), (40, 33389), (47, 33422), (49, 33428), (57, 33482), (60, 33494),

Gene: Mireles\_3 Start: 895, Stop: 1137, Start Num: 28

Candidate Starts for Mireles\_3:

(Start: 28 @895 has 187 MA's),

Gene: Misfit\_37 Start: 33222, Stop: 33467, Start Num: 28

Candidate Starts for Misfit\_37:

(Start: 28 @33222 has 187 MA's), (40, 33279), (47, 33312), (49, 33318), (57, 33372), (60, 33384),

Gene: MissAmericana\_7 Start: 5312, Stop: 5025, Start Num: 28

Candidate Starts for MissAmericana\_7:

(Start: 28 @5312 has 187 MA's), (53, 5159), (65, 5072),

Gene: MissDaisy\_67 Start: 42299, Stop: 42547, Start Num: 31

Candidate Starts for MissDaisy\_67:

(7, 42101), (Start: 25 @42284 has 16 MA's), (Start: 31 @42299 has 1 MA's), (47, 42386), (63, 42482), (69, 42536),

Gene: Mitti\_70 Start: 43525, Stop: 43788, Start Num: 25

Candidate Starts for Mitti\_70:

(Start: 25 @43525 has 16 MA's), (Start: 31 @43540 has 1 MA's), (47, 43627), (63, 43723), (69, 43777),

Gene: Mkhuseleli\_58 Start: 39493, Stop: 39260, Start Num: 33

Candidate Starts for Mkhuseleli\_58:

(Start: 17 @39529 has 2 MA's), (Start: 18 @39526 has 7 MA's), (21, 39514), (33, 39493), (41, 39442), (43, 39427), (49, 39406), (51, 39376), (58, 39346),

Gene: Moldemort\_38 Start: 32877, Stop: 33122, Start Num: 28

Candidate Starts for Moldemort\_38:

(Start: 28 @32877 has 187 MA's), (40, 32934), (47, 32967), (49, 32973), (57, 33027), (60, 33039),

Gene: MollyToe\_37 Start: 33306, Stop: 33551, Start Num: 28

Candidate Starts for MollyToe\_37:

(Start: 28 @33306 has 187 MA's), (40, 33363), (47, 33396), (49, 33402), (57, 33456), (60, 33468),

Gene: Monet\_65 Start: 43052, Stop: 42786, Start Num: 18

Candidate Starts for Monet\_65:

(Start: 17 @43055 has 2 MA's), (Start: 18 @43052 has 7 MA's), (21, 43040), (33, 43019), (41, 42968), (43, 42953), (49, 42932), (50, 42911), (51, 42902), (58, 42872),

Gene: Mosby\_36 Start: 32639, Stop: 32884, Start Num: 28

Candidate Starts for Mosby\_36:

(Start: 28 @32639 has 187 MA's), (40, 32696), (47, 32729), (49, 32735), (55, 32783), (57, 32789), (60, 32801),

Gene: Moss\_31 Start: 22585, Stop: 22851, Start Num: 28

Candidate Starts for Moss\_31:

(Start: 28 @22585 has 187 MA's), (32, 22600), (42, 22663), (62, 22783),

Gene: MrMagoo\_44 Start: 33882, Stop: 34133, Start Num: 29

Candidate Starts for MrMagoo\_44:

(Start: 29 @33882 has 6 MA's), (54, 34026), (55, 34029), (59, 34044), (66, 34098),

Gene: MsGreen\_31 Start: 28784, Stop: 29050, Start Num: 28

Candidate Starts for MsGreen\_31:

(Start: 28 @28784 has 187 MA's), (33, 28796), (36, 28829),

Gene: Mudpuppy\_32 Start: 24535, Stop: 24777, Start Num: 28

Candidate Starts for Mudpuppy\_32:

(3, 24277), (6, 24313), (Start: 28 @24535 has 187 MA's), (59, 24694),

Gene: Murica\_36 Start: 33119, Stop: 33364, Start Num: 28

Candidate Starts for Murica\_36:

(Start: 28 @33119 has 187 MA's), (40, 33176), (47, 33209), (49, 33215), (57, 33269), (60, 33281),

Gene: Murphy\_38 Start: 33114, Stop: 33359, Start Num: 28

Candidate Starts for Murphy\_38:

(Start: 28 @33114 has 187 MA's), (40, 33171), (47, 33204), (49, 33210), (57, 33264), (60, 33276),

Gene: Myrale\_37 Start: 32998, Stop: 33243, Start Num: 28

Candidate Starts for Myrale\_37:

(Start: 28 @32998 has 187 MA's), (40, 33055), (47, 33088), (49, 33094), (57, 33148), (60, 33160),

Gene: Mysterium\_31 Start: 22590, Stop: 22856, Start Num: 28

Candidate Starts for Mysterium\_31:

(Start: 28 @22590 has 187 MA's), (32, 22605), (42, 22668), (62, 22788),

Gene: Naira\_64 Start: 42709, Stop: 42434, Start Num: 18

Candidate Starts for Naira\_64:

(Start: 18 @42709 has 7 MA's), (21, 42697), (33, 42667), (41, 42616), (43, 42601), (49, 42580), (50, 42559), (51, 42550), (58, 42520), (70, 42445),

Gene: Nala\_37 Start: 33153, Stop: 33398, Start Num: 28

Candidate Starts for Nala\_37:

(Start: 28 @33153 has 187 MA's), (40, 33210), (47, 33243), (49, 33249), (57, 33303), (60, 33315),

Gene: Nanosmite\_44 Start: 33715, Stop: 33966, Start Num: 29

Candidate Starts for Nanosmite\_44:

(Start: 29 @33715 has 6 MA's), (41, 33778), (47, 33808), (54, 33859),

Gene: NelitzaMV\_37 Start: 33203, Stop: 33448, Start Num: 28

Candidate Starts for NelitzaMV\_37:

(Start: 28 @33203 has 187 MA's), (40, 33260), (47, 33293), (49, 33299), (57, 33353), (60, 33365),

Gene: Nicholas\_31 Start: 28784, Stop: 29050, Start Num: 28

Candidate Starts for Nicholas\_31:

(Start: 28 @28784 has 187 MA's), (33, 28796), (36, 28829),

Gene: NihilNomen\_51 Start: 44218, Stop: 44466, Start Num: 28

Candidate Starts for NihilNomen\_51:

(Start: 28 @44218 has 187 MA's), (53, 44350),

Gene: Nimrod\_37 Start: 33377, Stop: 33622, Start Num: 28

Candidate Starts for Nimrod\_37:

(Start: 28 @33377 has 187 MA's), (40, 33434), (47, 33467), (49, 33473), (57, 33527), (60, 33539),

Gene: Niobe\_34 Start: 26608, Stop: 26865, Start Num: 26

Candidate Starts for Niobe\_34:

(3, 26371), (4, 26380), (Start: 26 @26608 has 7 MA's), (37, 26656), (60, 26773),

Gene: NoSleep\_38 Start: 32874, Stop: 33119, Start Num: 28

Candidate Starts for NoSleep\_38:

(Start: 28 @32874 has 187 MA's), (40, 32931), (47, 32964), (49, 32970), (57, 33024), (60, 33036),

Gene: NonchalantPear\_37 Start: 32827, Stop: 33072, Start Num: 28

Candidate Starts for NonchalantPear\_37:

(Start: 28 @32827 has 187 MA's), (40, 32884), (47, 32917), (49, 32923), (57, 32977), (60, 32989),

Gene: Oogway\_61 Start: 42078, Stop: 41827, Start Num: 27

Candidate Starts for Oogway\_61:

(Start: 17 @42126 has 2 MA's), (Start: 18 @42123 has 7 MA's), (21, 42111), (Start: 27 @42078 has 1 MA's), (33, 42060), (41, 42009), (43, 41994), (49, 41973), (51, 41943), (58, 41913), (70, 41838),

Gene: Optimus\_57 Start: 45133, Stop: 45381, Start Num: 28

Candidate Starts for Optimus\_57:

(Start: 28 @45133 has 187 MA's), (53, 45265),

Gene: OrionPax\_38 Start: 32880, Stop: 33125, Start Num: 28  
Candidate Starts for OrionPax\_38:  
(Start: 28 @32880 has 187 MA's), (40, 32937), (47, 32970), (49, 32976), (57, 33030), (60, 33042),

Gene: PaddyBaddy\_38 Start: 32890, Stop: 33135, Start Num: 28  
Candidate Starts for PaddyBaddy\_38:  
(Start: 28 @32890 has 187 MA's), (40, 32947), (47, 32980), (49, 32986), (57, 33040), (60, 33052),

Gene: Palpatine\_37 Start: 33149, Stop: 33394, Start Num: 28  
Candidate Starts for Palpatine\_37:  
(Start: 28 @33149 has 187 MA's), (40, 33206), (47, 33239), (49, 33245), (57, 33299), (60, 33311),

Gene: Paperbeatsrock\_39 Start: 34115, Stop: 34360, Start Num: 28  
Candidate Starts for Paperbeatsrock\_39:  
(Start: 28 @34115 has 187 MA's), (40, 34172), (47, 34205), (49, 34211), (57, 34265), (60, 34277),

Gene: Pat3\_36 Start: 31861, Stop: 32106, Start Num: 28  
Candidate Starts for Pat3\_36:  
(Start: 28 @31861 has 187 MA's), (40, 31918), (47, 31951), (49, 31957), (55, 32005), (57, 32011), (60, 32023),

Gene: Patt\_66 Start: 42008, Stop: 42271, Start Num: 25  
Candidate Starts for Patt\_66:  
(7, 41825), (Start: 25 @42008 has 16 MA's), (47, 42110), (63, 42206), (69, 42260),

Gene: Petra64142\_39 Start: 33595, Stop: 33840, Start Num: 28  
Candidate Starts for Petra64142\_39:  
(Start: 28 @33595 has 187 MA's), (40, 33652), (47, 33685), (49, 33691), (57, 33745), (60, 33757),

Gene: Pharsalus\_38 Start: 33915, Stop: 34160, Start Num: 28  
Candidate Starts for Pharsalus\_38:  
(Start: 28 @33915 has 187 MA's), (40, 33972), (47, 34005), (49, 34011), (57, 34065), (60, 34077),

Gene: PhatBacter\_37 Start: 33163, Stop: 33408, Start Num: 28  
Candidate Starts for PhatBacter\_37:  
(Start: 28 @33163 has 187 MA's), (40, 33220), (47, 33253), (49, 33259), (57, 33313), (60, 33325),

Gene: Phaux\_36 Start: 33161, Stop: 33406, Start Num: 28  
Candidate Starts for Phaux\_36:  
(Start: 28 @33161 has 187 MA's), (40, 33218), (47, 33251), (49, 33257), (57, 33311), (60, 33323),

Gene: Phoebus\_51 Start: 44419, Stop: 44667, Start Num: 28  
Candidate Starts for Phoebus\_51:  
(Start: 28 @44419 has 187 MA's), (53, 44551),

Gene: Phrux\_37 Start: 32876, Stop: 33121, Start Num: 28  
Candidate Starts for Phrux\_37:  
(Start: 28 @32876 has 187 MA's), (40, 32933), (47, 32966), (49, 32972), (57, 33026), (60, 33038),

Gene: Policronamos\_37 Start: 33161, Stop: 33406, Start Num: 28  
Candidate Starts for Policronamos\_37:  
(Start: 28 @33161 has 187 MA's), (40, 33218), (47, 33251), (49, 33257), (57, 33311), (60, 33323),

Gene: Pollywog\_85 Start: 50811, Stop: 51077, Start Num: 18

Candidate Starts for Pollywog\_85:

(Start: 18 @50811 has 7 MA's), (21, 50823), (33, 50844), (41, 50895), (43, 50910), (49, 50931), (50, 50952), (51, 50961), (58, 50991), (70, 51066),

Gene: Porky\_37 Start: 32972, Stop: 33217, Start Num: 28

Candidate Starts for Porky\_37:

(Start: 28 @32972 has 187 MA's), (40, 33029), (47, 33062), (49, 33068), (57, 33122), (60, 33134),

Gene: Pound\_54 Start: 45996, Stop: 46244, Start Num: 28

Candidate Starts for Pound\_54:

(Start: 28 @45996 has 187 MA's), (53, 46128),

Gene: Ptowny\_38 Start: 32517, Stop: 32762, Start Num: 28

Candidate Starts for Ptowny\_38:

(Start: 28 @32517 has 187 MA's), (40, 32574), (47, 32607), (49, 32613), (57, 32667), (60, 32679),

Gene: Pumpkin\_39 Start: 33212, Stop: 33457, Start Num: 28

Candidate Starts for Pumpkin\_39:

(Start: 28 @33212 has 187 MA's), (40, 33269), (47, 33302), (49, 33308), (57, 33362), (60, 33374),

Gene: Qhanda\_72 Start: 43386, Stop: 43649, Start Num: 25

Candidate Starts for Qhanda\_72:

(Start: 25 @43386 has 16 MA's), (Start: 31 @43401 has 1 MA's), (47, 43488), (63, 43584), (69, 43638),

Gene: Quallification\_38 Start: 33341, Stop: 33586, Start Num: 28

Candidate Starts for Quallification\_38:

(Start: 28 @33341 has 187 MA's), (40, 33398), (47, 33431), (49, 33437), (57, 33491), (60, 33503),

Gene: Rakim\_38 Start: 33241, Stop: 33486, Start Num: 28

Candidate Starts for Rakim\_38:

(Start: 28 @33241 has 187 MA's), (40, 33298), (47, 33331), (49, 33337), (57, 33391), (60, 33403),

Gene: Rearden\_46 Start: 40216, Stop: 40461, Start Num: 28

Candidate Starts for Rearden\_46:

(Start: 28 @40216 has 187 MA's), (33, 40228), (53, 40348),

Gene: Reindeer\_39 Start: 33229, Stop: 33507, Start Num: 24

Candidate Starts for Reindeer\_39:

(Start: 24 @33229 has 1 MA's), (Start: 29 @33247 has 6 MA's), (41, 33310), (43, 33325), (56, 33397), (58, 33406), (59, 33409), (61, 33415),

Gene: Reptar3000\_67 Start: 41997, Stop: 42260, Start Num: 25

Candidate Starts for Reptar3000\_67:

(Start: 25 @41997 has 16 MA's), (47, 42099), (63, 42195), (69, 42249),

Gene: Rey\_44 Start: 34155, Stop: 34406, Start Num: 28

Candidate Starts for Rey\_44:

(Start: 28 @34155 has 187 MA's), (47, 34248), (54, 34299), (55, 34302), (58, 34314),

Gene: Rimmer\_36 Start: 32701, Stop: 32946, Start Num: 28

Candidate Starts for Rimmer\_36:

(Start: 28 @32701 has 187 MA's), (40, 32758), (47, 32791), (49, 32797), (57, 32851), (60, 32863),

Gene: RiverMonster\_37 Start: 32890, Stop: 33135, Start Num: 28  
Candidate Starts for RiverMonster\_37:  
(Start: 28 @32890 has 187 MA's), (40, 32947), (47, 32980), (49, 32986), (57, 33040), (60, 33052),

Gene: RockScotty\_31 Start: 22561, Stop: 22827, Start Num: 28  
Candidate Starts for RockScotty\_31:  
(Start: 28 @22561 has 187 MA's), (32, 22576), (42, 22639), (45, 22657), (62, 22759),

Gene: Sabourin\_31 Start: 22493, Stop: 22759, Start Num: 28  
Candidate Starts for Sabourin\_31:  
(Start: 28 @22493 has 187 MA's), (Start: 30 @22502 has 3 MA's), (32, 22508), (42, 22571),

Gene: Saints25\_38 Start: 32793, Stop: 33038, Start Num: 28  
Candidate Starts for Saints25\_38:  
(Start: 28 @32793 has 187 MA's), (40, 32850), (47, 32883), (49, 32889), (57, 32943), (60, 32955),

Gene: SamScheppers\_68 Start: 43849, Stop: 44112, Start Num: 25  
Candidate Starts for SamScheppers\_68:  
(Start: 25 @43849 has 16 MA's), (Start: 31 @43864 has 1 MA's), (47, 43951), (63, 44047), (69, 44101),

Gene: Samty\_31 Start: 28787, Stop: 29053, Start Num: 28  
Candidate Starts for Samty\_31:  
(Start: 28 @28787 has 187 MA's), (33, 28799), (36, 28832),

Gene: Sanya\_57 Start: 41974, Stop: 41741, Start Num: 33  
Candidate Starts for Sanya\_57:  
(Start: 18 @42007 has 7 MA's), (21, 41995), (33, 41974), (41, 41923), (43, 41908), (49, 41887), (51, 41857), (58, 41827), (70, 41752),

Gene: Sassay\_36 Start: 32639, Stop: 32884, Start Num: 28  
Candidate Starts for Sassay\_36:  
(Start: 28 @32639 has 187 MA's), (40, 32696), (47, 32729), (49, 32735), (57, 32789), (60, 32801),

Gene: Serenabean\_52 Start: 34263, Stop: 34496, Start Num: 28  
Candidate Starts for Serenabean\_52:  
(Start: 28 @34263 has 187 MA's), (41, 34326), (51, 34398),

Gene: ShakeltOph\_39 Start: 26463, Stop: 26750, Start Num: 28  
Candidate Starts for ShakeltOph\_39:  
(Start: 28 @26463 has 187 MA's), (60, 26655),

Gene: ShamWow\_37 Start: 33135, Stop: 33380, Start Num: 28  
Candidate Starts for ShamWow\_37:  
(Start: 28 @33135 has 187 MA's), (40, 33192), (47, 33225), (49, 33231), (57, 33285), (60, 33297),

Gene: Simpliphy\_38 Start: 32880, Stop: 33125, Start Num: 28  
Candidate Starts for Simpliphy\_38:  
(Start: 28 @32880 has 187 MA's), (40, 32937), (47, 32970), (49, 32976), (57, 33030), (60, 33042),

Gene: SirDuracell\_36 Start: 31800, Stop: 32045, Start Num: 28  
Candidate Starts for SirDuracell\_36:

(Start: 28 @31800 has 187 MA's), (40, 31857), (47, 31890), (49, 31896), (55, 31944), (57, 31950), (60, 31962),

Gene: Skelbel\_35 Start: 26608, Stop: 26865, Start Num: 26

Candidate Starts for Skelbel\_35:

(3, 26371), (4, 26380), (Start: 26 @26608 has 7 MA's), (37, 26656), (60, 26773),

Gene: Slarp\_70 Start: 43377, Stop: 43640, Start Num: 25

Candidate Starts for Slarp\_70:

(Start: 25 @43377 has 16 MA's), (Start: 31 @43392 has 1 MA's), (47, 43479), (63, 43575), (69, 43629),

Gene: Snenia\_31 Start: 28785, Stop: 29051, Start Num: 28

Candidate Starts for Snenia\_31:

(Start: 28 @28785 has 187 MA's), (33, 28797), (36, 28830),

Gene: Sooty\_31 Start: 22496, Stop: 22762, Start Num: 28

Candidate Starts for Sooty\_31:

(Start: 28 @22496 has 187 MA's), (Start: 30 @22505 has 3 MA's), (32, 22511), (42, 22574),

Gene: SophKB\_37 Start: 33134, Stop: 33379, Start Num: 28

Candidate Starts for SophKB\_37:

(Start: 28 @33134 has 187 MA's), (40, 33191), (47, 33224), (49, 33230), (57, 33284), (60, 33296),

Gene: Sotrice96\_37 Start: 33089, Stop: 33334, Start Num: 28

Candidate Starts for Sotrice96\_37:

(Start: 28 @33089 has 187 MA's), (40, 33146), (47, 33179), (49, 33185), (57, 33239), (60, 33251),

Gene: SpecialK\_31 Start: 22493, Stop: 22759, Start Num: 28

Candidate Starts for SpecialK\_31:

(Start: 28 @22493 has 187 MA's), (32, 22508), (42, 22571), (62, 22691),

Gene: Squee\_63 Start: 41158, Stop: 40892, Start Num: 18

Candidate Starts for Squee\_63:

(Start: 17 @41161 has 2 MA's), (Start: 18 @41158 has 7 MA's), (21, 41146), (33, 41125), (43, 41059), (49, 41038), (50, 41017), (51, 41008), (58, 40978), (70, 40903),

Gene: Stank\_40 Start: 33641, Stop: 33886, Start Num: 28

Candidate Starts for Stank\_40:

(Start: 28 @33641 has 187 MA's), (40, 33698), (47, 33731), (49, 33737), (57, 33791), (60, 33803),

Gene: Stark\_38 Start: 32893, Stop: 33138, Start Num: 28

Candidate Starts for Stark\_38:

(Start: 28 @32893 has 187 MA's), (40, 32950), (47, 32983), (49, 32989), (57, 33043), (60, 33055),

Gene: StellaBean\_37 Start: 33134, Stop: 33379, Start Num: 28

Candidate Starts for StellaBean\_37:

(Start: 28 @33134 has 187 MA's), (40, 33191), (47, 33224), (49, 33230), (57, 33284), (60, 33296),

Gene: StolenFromERC\_39 Start: 33125, Stop: 33370, Start Num: 28

Candidate Starts for StolenFromERC\_39:

(Start: 28 @33125 has 187 MA's), (40, 33182), (47, 33215), (49, 33221), (57, 33275), (60, 33287),

Gene: StormChicken\_37 Start: 33309, Stop: 33554, Start Num: 28

Candidate Starts for StormChicken\_37:

(Start: 28 @33309 has 187 MA's), (40, 33366), (47, 33399), (49, 33405), (57, 33459), (60, 33471),

Gene: Stuu\_31 Start: 22587, Stop: 22853, Start Num: 28

Candidate Starts for Stuu\_31:

(Start: 28 @22587 has 187 MA's), (32, 22602), (42, 22665), (62, 22785),

Gene: Sweetclover\_51 Start: 33033, Stop: 33266, Start Num: 28

Candidate Starts for Sweetclover\_51:

(11, 32928), (Start: 28 @33033 has 187 MA's), (41, 33096), (51, 33168),

Gene: TBrady12\_39 Start: 33125, Stop: 33370, Start Num: 28

Candidate Starts for TBrady12\_39:

(Start: 28 @33125 has 187 MA's), (40, 33182), (47, 33215), (49, 33221), (57, 33275), (60, 33287),

Gene: TM4\_67 Start: 40730, Stop: 40975, Start Num: 30

Candidate Starts for TM4\_67:

(1, 39989), (15, 40673), (16, 40679), (Start: 30 @40730 has 3 MA's), (47, 40820), (59, 40889), (64, 40913), (71, 40967),

Gene: Taquito\_69 Start: 43582, Stop: 43845, Start Num: 25

Candidate Starts for Taquito\_69:

(Start: 25 @43582 has 16 MA's), (Start: 31 @43597 has 1 MA's), (47, 43684), (63, 43780), (69, 43834),

Gene: Tarkin\_39 Start: 34124, Stop: 34369, Start Num: 28

Candidate Starts for Tarkin\_39:

(Start: 28 @34124 has 187 MA's), (40, 34181), (47, 34214), (49, 34220), (57, 34274), (60, 34286),

Gene: TeamEdward\_37 Start: 33306, Stop: 33551, Start Num: 28

Candidate Starts for TeamEdward\_37:

(Start: 28 @33306 has 187 MA's), (40, 33363), (47, 33396), (49, 33402), (57, 33456), (60, 33468),

Gene: TeardropMSU\_36 Start: 33035, Stop: 33280, Start Num: 28

Candidate Starts for TeardropMSU\_36:

(Start: 28 @33035 has 187 MA's), (40, 33092), (47, 33125), (49, 33131), (57, 33185), (60, 33197),

Gene: Teaspoon\_38 Start: 33088, Stop: 33333, Start Num: 28

Candidate Starts for Teaspoon\_38:

(Start: 28 @33088 has 187 MA's), (40, 33145), (47, 33178), (49, 33184), (57, 33238), (60, 33250),

Gene: Terminus\_37 Start: 33222, Stop: 33467, Start Num: 28

Candidate Starts for Terminus\_37:

(Start: 28 @33222 has 187 MA's), (40, 33279), (47, 33312), (49, 33318), (57, 33372), (60, 33384),

Gene: Thimble\_37 Start: 32085, Stop: 32330, Start Num: 28

Candidate Starts for Thimble\_37:

(Start: 28 @32085 has 187 MA's), (40, 32142), (47, 32175), (49, 32181), (57, 32235), (60, 32247),

Gene: Thresher\_38 Start: 33889, Stop: 34134, Start Num: 28

Candidate Starts for Thresher\_38:

(Start: 28 @33889 has 187 MA's), (40, 33946), (47, 33979), (49, 33985), (57, 34039), (60, 34051),

Gene: ThursdayNight\_37 Start: 26453, Stop: 26713, Start Num: 23

Candidate Starts for ThursdayNight\_37:  
(5, 26240), (6, 26249), (23, 26453), (59, 26624),

Gene: Tomaszewski\_36 Start: 32732, Stop: 32977, Start Num: 28  
Candidate Starts for Tomaszewski\_36:  
(Start: 28 @32732 has 187 MA's), (40, 32789), (47, 32822), (49, 32828), (55, 32876), (57, 32882), (60, 32894),

Gene: Toto\_37 Start: 33135, Stop: 33380, Start Num: 28  
Candidate Starts for Toto\_37:  
(Start: 28 @33135 has 187 MA's), (40, 33192), (47, 33225), (49, 33231), (57, 33285), (60, 33297),

Gene: Traaww1\_35 Start: 32773, Stop: 33018, Start Num: 28  
Candidate Starts for Traaww1\_35:  
(Start: 28 @32773 has 187 MA's), (40, 32830), (47, 32863), (49, 32869), (57, 32923), (60, 32935),

Gene: Treddle\_63 Start: 42567, Stop: 42298, Start Num: 17  
Candidate Starts for Treddle\_63:  
(Start: 17 @42567 has 2 MA's), (Start: 18 @42564 has 7 MA's), (21, 42552), (33, 42531), (41, 42480), (43, 42465), (49, 42444), (50, 42423), (51, 42414), (58, 42384),

Gene: TriFive\_31 Start: 28784, Stop: 29050, Start Num: 28  
Candidate Starts for TriFive\_31:  
(Start: 28 @28784 has 187 MA's), (33, 28796), (36, 28829),

Gene: Trouble\_63 Start: 41668, Stop: 41399, Start Num: 17  
Candidate Starts for Trouble\_63:  
(Start: 17 @41668 has 2 MA's), (Start: 18 @41665 has 7 MA's), (21, 41653), (33, 41632), (43, 41566), (49, 41545), (50, 41524), (51, 41515), (58, 41485),

Gene: Tuco\_38 Start: 33643, Stop: 33888, Start Num: 28  
Candidate Starts for Tuco\_38:  
(Start: 28 @33643 has 187 MA's), (40, 33700), (47, 33733), (49, 33739), (57, 33793), (60, 33805),

Gene: Ukulele\_37 Start: 32893, Stop: 33138, Start Num: 28  
Candidate Starts for Ukulele\_37:  
(Start: 28 @32893 has 187 MA's), (40, 32950), (47, 32983), (49, 32989), (57, 33043), (60, 33055),

Gene: VResidence\_33 Start: 24693, Stop: 24935, Start Num: 28  
Candidate Starts for VResidence\_33:  
(Start: 28 @24693 has 187 MA's), (39, 24747), (60, 24855),

Gene: VroomVroom\_39 Start: 26557, Stop: 26892, Start Num: 28  
Candidate Starts for VroomVroom\_39:  
(Start: 28 @26557 has 187 MA's), (60, 26749),

Gene: Wanda\_58 Start: 44007, Stop: 44255, Start Num: 28  
Candidate Starts for Wanda\_58:  
(Start: 28 @44007 has 187 MA's), (53, 44139),

Gene: Whirlwind\_32 Start: 28525, Stop: 28791, Start Num: 28  
Candidate Starts for Whirlwind\_32:  
(20, 28486), (Start: 28 @28525 has 187 MA's), (33, 28537), (36, 28570), (47, 28618),

Gene: Wiggin\_40 Start: 33639, Stop: 33884, Start Num: 28

Candidate Starts for Wiggin\_40:

(Start: 28 @33639 has 187 MA's), (40, 33696), (47, 33729), (49, 33735), (57, 33789), (60, 33801),

Gene: Willez\_36 Start: 32639, Stop: 32884, Start Num: 28

Candidate Starts for Willez\_36:

(Start: 28 @32639 has 187 MA's), (40, 32696), (47, 32729), (49, 32735), (57, 32789), (60, 32801),

Gene: Wintermute\_70 Start: 43607, Stop: 43870, Start Num: 25

Candidate Starts for Wintermute\_70:

(Start: 25 @43607 has 16 MA's), (Start: 31 @43622 has 1 MA's), (47, 43709), (63, 43805), (69, 43859),

Gene: Xandras\_39 Start: 33125, Stop: 33370, Start Num: 28

Candidate Starts for Xandras\_39:

(Start: 28 @33125 has 187 MA's), (40, 33182), (47, 33215), (49, 33221), (57, 33275), (60, 33287),

Gene: YasnayaPolyana\_69 Start: 43433, Stop: 43696, Start Num: 25

Candidate Starts for YasnayaPolyana\_69:

(Start: 25 @43433 has 16 MA's), (Start: 31 @43448 has 1 MA's), (47, 43535), (63, 43631), (69, 43685),

Gene: YassJohnny\_38 Start: 33650, Stop: 33895, Start Num: 28

Candidate Starts for YassJohnny\_38:

(Start: 28 @33650 has 187 MA's), (40, 33707), (47, 33740), (49, 33746), (57, 33800), (60, 33812),

Gene: Youngblood\_37 Start: 33295, Stop: 33540, Start Num: 28

Candidate Starts for Youngblood\_37:

(Start: 28 @33295 has 187 MA's), (40, 33352), (47, 33385), (49, 33391), (55, 33439), (57, 33445), (60, 33457),

Gene: Zakai\_32 Start: 28678, Stop: 28944, Start Num: 28

Candidate Starts for Zakai\_32:

(Start: 28 @28678 has 187 MA's), (36, 28723), (61, 28840), (72, 28933),

Gene: xkcd\_38 Start: 33304, Stop: 33549, Start Num: 28

Candidate Starts for xkcd\_38:

(Start: 28 @33304 has 187 MA's), (40, 33361), (47, 33394), (49, 33400), (57, 33454), (60, 33466),