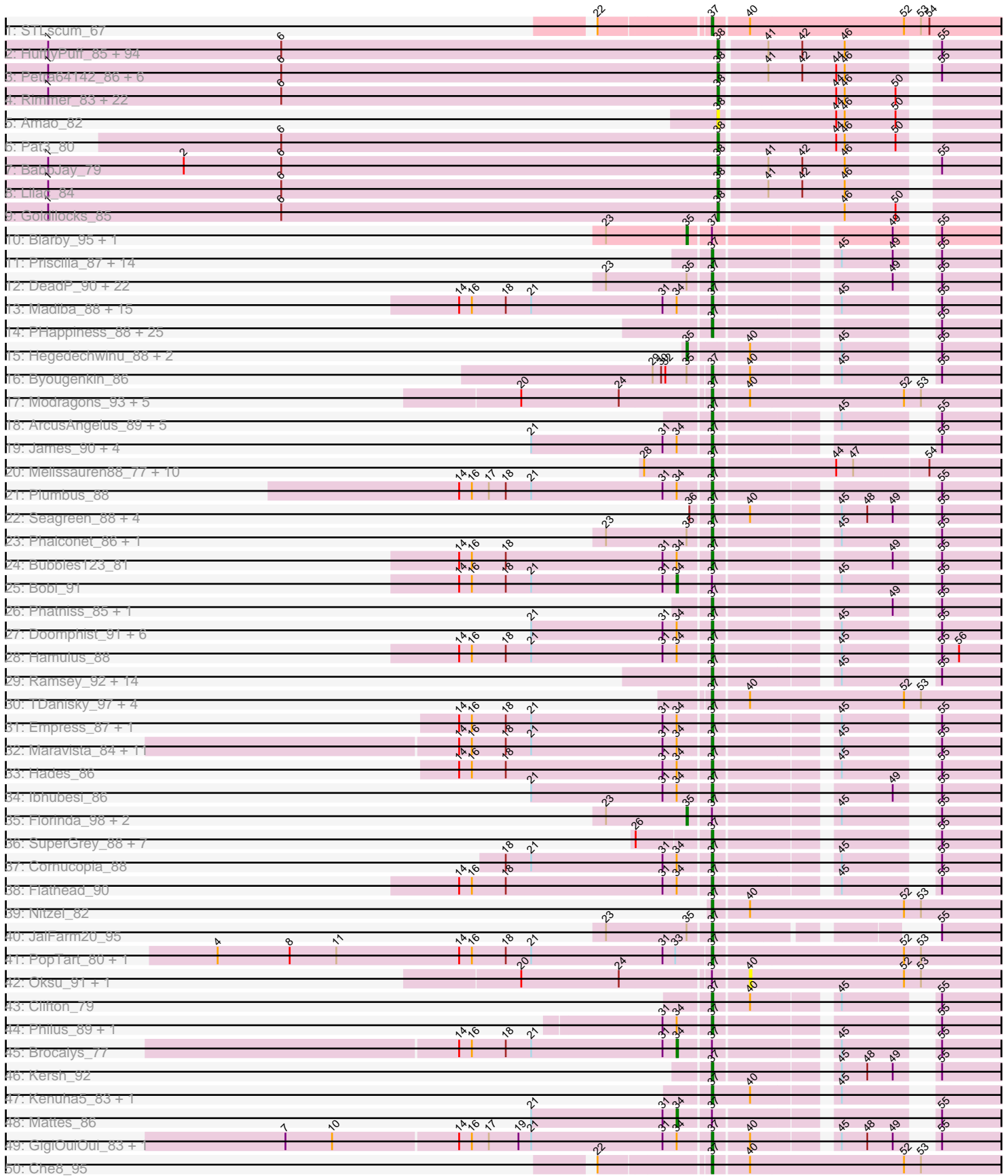
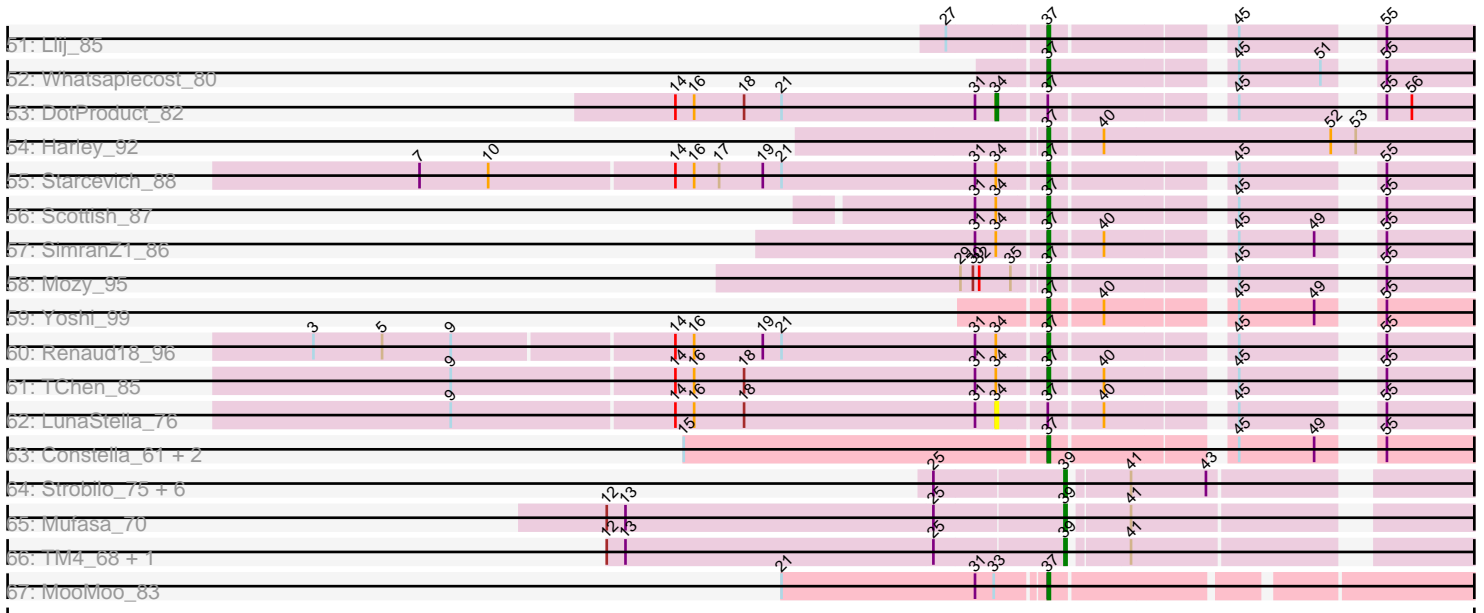


Pham 163278



Pham 163278



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 163278 Report

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

Pham number 163278 has 357 members, 29 are drafts.

Phages represented in each track:

- Track 1 : STLscum\_67
- Track 2 : HuffyPuff\_85, Lilizi\_83, Palpatine\_84, Teaspoon\_79, NelitzaMV\_80, BugsBunny\_82, Mindy\_81, Inca\_79, Kostya\_82, Stank\_85, Emmina\_82, Moldemort\_85, StellaBean\_78, Bench\_85, AmericanBeauty\_89, Tomaszewski\_77, Ukulele\_77, Lilpickle\_81, 244\_83, Misfit\_83, SophKB\_79, Pumpkin\_85, Terminus\_85, Sassay\_77, Dusk\_79, Goku\_80, Cjw1\_82, Buck\_83, Hopey\_82, Asriel\_81, BadStone\_79, Elph10\_82, Simpliphy\_81, DrDrey\_82, Xandras\_81, PhatBacter\_86, GooberAzure\_85, Toto\_80, MadamMonkfish\_82, BilboSwaggins\_81, TeardropMSU\_78, Holt\_87, Murica\_85, JeTaime\_82, Gemini\_87, Adnama\_86, IHOP\_80, MPhalcon\_83, Mosby\_78, Nala\_84, Porky\_81, Filch\_83, Czyszczonek1\_83, ShereKhan\_80, Maxxinista\_84, FireRed\_86, TBrady12\_85, Qualification\_83, Stark\_83, RiverMonster\_82, Easy2Say\_83, Elite2014\_81, Phrux\_79, Eureka\_80, Willez\_77, Barbarian\_81, xkcd\_85, Murphy\_82, Phaux\_84, Bruin\_79, HanKaySha\_82, Contagion\_78, Tuco\_83, GoldenSpark\_86, Traaww1\_78, MISSy\_83, Highbury\_81, CrystalP\_81, Thresher\_84, Command613\_84, ShamWow\_82, ChosenOne\_82, Marshmallow\_80, Youngblood\_85, Policronamos\_86, Henry\_80, Manda\_83, Nimrod\_83, Wiggin\_84, NoSleep\_83, Argent26\_86, OrionPax\_81, ABCat\_79, Saints25\_81, Dumbo\_82
- Track 3 : Petra64142\_86, Miniwave\_77, Phaja\_80, Tarkin\_81, YassJohnny\_79, Pharsalus\_79, Paperbeatsrock\_81
- Track 4 : Rimmer\_83, Cookies\_79, SirDuracell\_81, Sotrice96\_83, Bask21\_82, DoctorDiddles\_81, ChotaBhai\_82, Rakim\_83, Myrale\_82, Kanye\_79, Balomoji\_82, Cactus\_85, Harella\_82, Daikon\_84, Icee\_83, Hoonter\_85, StolenFromERC\_85, BigBubba\_82, Flypotenuse\_78, Glexan\_81, Gator\_80, Kimchi\_86, Gage\_84
- Track 5 : Amao\_82
- Track 6 : Pat3\_80
- Track 7 : BaboJay\_79
- Track 8 : Lilac\_84
- Track 9 : Goldilocks\_85
- Track 10 : Blarby\_95, UncleRicky\_87
- Track 11 : Priscilla\_87, VRedHorse\_89, Martik\_84, Dante\_86, LunaBlu\_91, BAKA\_79, Duke13\_77, Demsculpinboyz\_100, Latretium\_89, ShowerHandel\_83, ByChance\_76, Sandalphon\_87, Koella\_79, Sabbb\_92, NormanBulbieJr\_85
- Track 12 : DeadP\_90, Jabbawokkie\_95, Cerasum\_83, Wee\_94, Kingsley\_93, Karhdo\_84, PMC\_85, BigPhil\_82, Filuzino\_89, DaWorst\_87, Rockne\_89, Drago\_85, Taj\_96, Lorde\_88, DirtMcgirt\_87, Velveteen\_83, Shauna1\_87, Coco12\_86, Enby\_89, DLane\_87, Phanphagia\_90, Sarma624\_88, Zapner\_94

- Track 13 : Madiba\_88, PhesterPhotato\_91, MilanaBonita\_82, Batiatus\_86, Royals2015\_93, Hegedechwinu\_96, IbOuu\_84, Eish\_93, Ardmore\_73, Akhila\_83, BlueCrab\_89, Emma\_91, Ms6\_89, Soul22\_88, StAnnes\_92, XFactor\_80
- Track 14 : PHappiness\_88, Zerg\_88, Geralt\_81, Girr\_86, QuickMath\_89, Totinger\_90, ShroomBoi\_86, Leozinho\_86, Veteran\_81, LittleShirley\_93, Nimbo\_80, MisterCuddles\_87, Mantra\_86, RitaG\_88, Krakatau\_81, DillTech15\_92, Tweety\_89, SiSi\_85, OldBen\_85, Beakin\_80, GUmbie\_86, Ruby\_84, Juice456\_87, Deb65\_81, Fastidio\_87, Kimberlium\_91
- Track 15 : Hegedechwinu\_88, Spartacus\_94, Galactic\_88
- Track 16 : Byougenkin\_86
- Track 17 : Modragons\_93, AlpineSix\_87, Seabastian\_96, Llama\_95, OfUltron\_96, Ochi17\_94
- Track 18 : ArcusAngelus\_89, Wachhund\_85, Whouxphf\_88, Chevrolet\_95, Mutaforma13\_90, Firehouse51\_83
- Track 19 : James\_90, ShiLan\_89, Jarcob\_89, OlympiaSaint\_89, Spoonbill\_85
- Track 20 : Melissauen88\_77, Squirty\_88, Radiance\_84, SG4\_90, KristaRAM\_88, Aubs\_88, BodEinwohner17\_96, Leperchaun\_89, ThetaBob\_89, JoeyJr\_91, Stap\_84
- Track 21 : Plumbus\_88
- Track 22 : Seagreen\_88, Strokeseat\_85, Mandlovu\_85, Ovechkin\_93, Hlubikazi\_85
- Track 23 : Phalconet\_86, Mova\_91
- Track 24 : Bubbles123\_81
- Track 25 : Bobi\_91
- Track 26 : Phatniss\_85, EleanorGeorge\_89
- Track 27 : Doomphist\_91, Zizzle\_90, Guppsters\_81, Polka14\_92, Poenanya\_91, Tootsieroll\_83, KingMidas\_87
- Track 28 : Hamulus\_88
- Track 29 : Ramsey\_92, Eradicator\_80, OwlsT2W\_87, Ogotogo\_93, BuzzLyseyear\_96, Fruitloop\_88, DaddyRickover\_91, Pacc40\_84, Yorick\_80, Phasih\_84, MinionDave\_86, CaptainTrips\_90, Nivrat\_86, Job42\_88, LilMoolah\_88
- Track 30 : TDanisky\_97, Rialto\_93, Pollywog\_89, Sparkdehlily\_96, Moonbeam\_90
- Track 31 : Empress\_87, MilleniumForce\_88
- Track 32 : Maravista\_84, Cabrinians\_83, Crumble\_81, Pippy\_82, Saal\_83, Gorge\_85, FreddyB\_95, SwagPiggett\_88, LastJedi\_77, Burwell21\_81, BobaPhett\_87, Lizziana\_88
- Track 33 : Hades\_86
- Track 34 : Ibhubesi\_86
- Track 35 : Florinda\_98, Girafales\_95, Quico\_95
- Track 36 : SuperGrey\_88, WillSterrel\_86, MadMen\_93, Doug\_85, Gandalph\_87, Bipolar\_89, IrishSherpFalk\_87, Blexus\_84
- Track 37 : Cornucopia\_88
- Track 38 : Flathead\_90
- Track 39 : Nitzel\_82
- Track 40 : JalFarm20\_95
- Track 41 : PopTart\_80, SassyB\_80
- Track 42 : Oksu\_91, Jinglebell\_93
- Track 43 : Clifton\_79
- Track 44 : Philus\_89, DRBy19\_90
- Track 45 : Brocalys\_77
- Track 46 : Kersh\_92
- Track 47 : Kenuha5\_83, Donkeykong\_94
- Track 48 : Mattes\_86
- Track 49 : GigiOuiOui\_83, Alexphander\_90
- Track 50 : Che8\_95

- Track 51 : Llij\_85
- Track 52 : Whatsapiecost\_80
- Track 53 : DotProduct\_82
- Track 54 : Harley\_92
- Track 55 : Starcevich\_88
- Track 56 : Scottish\_87
- Track 57 : SimranZ1\_86
- Track 58 : Mozy\_95
- Track 59 : Yoshi\_99
- Track 60 : Renaud18\_96
- Track 61 : TChen\_85
- Track 62 : LunaStella\_76
- Track 63 : Constella\_61, Estave1\_96, Avani\_93
- Track 64 : Strobilo\_75, Marcoliusprime\_70, DismalStressor\_70, ZoeJ\_69, Findley\_70, DismalFunk\_70, Milly\_70
- Track 65 : Mufasa\_70
- Track 66 : TM4\_68, BoostSeason\_70
- Track 67 : MooMoo\_83

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

The start number called the most often in the published annotations is 37, it was called in 189 of the 328 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Akhila\_83, Alexphander\_90, AlpineSix\_87, ArcusAngelus\_89, Ardmore\_73, Aubs\_88, Avani\_93, BAKA\_79, Batiatus\_86, Beakin\_80, BigPhil\_82, Bipolar\_89, Blexus\_84, BlueCrab\_89, BobaPhett\_87, BodEinwohner17\_96, Bubbles123\_81, Burwell21\_81, BuzzLyseyear\_96, ByChance\_76, Byougenkin\_86, Cabrinians\_83, CaptainTrips\_90, Cerasum\_83, Che8\_95, Chevrolet\_95, Clifton\_79, Coco12\_86, Constella\_61, Cornucopia\_88, Crumble\_81, DLane\_87, DRBy19\_90, DaWorst\_87, DaddyRickover\_91, Dante\_86, DeadP\_90, Deb65\_81, Demsculpinboyz\_100, DillTech15\_92, DirtMcgirt\_87, Donkeykong\_94, Doomphist\_91, Doug\_85, Drago\_85, Duke13\_77, Eish\_93, EleanorGeorge\_89, Emma\_91, Empress\_87, Enby\_89, Eradicator\_80, Estave1\_96, Fastidio\_87, Filuzino\_89, Firehouse51\_83, Flathead\_90, FreddyB\_95, Fruitloop\_88, GUmbe\_86, Gandolph\_87, Geralt\_81, GigiOuiOui\_83, Girr\_86, Gorge\_85, Guppsters\_81, Hades\_86, Hamulus\_88, Harley\_92, Hegedechwinu\_96, Hlubikazi\_85, IbOuu\_84, Ihubesi\_86, IrishSherpFalk\_87, Jabbawokkie\_95, JalFarm20\_95, James\_90, Jarcob\_89, Job42\_88, JoeyJr\_91, Juice456\_87, Karhdo\_84, Kenuha5\_83, Kersh\_92, Kimberlium\_91, KingMidas\_87, Kingsley\_93, Koella\_79, Krakatau\_81, KristaRAM\_88, LastJedi\_77, Latretium\_89, Leozinho\_86, Leperchaun\_89, LilMoolah\_88, LittleShirley\_93, Lizziana\_88, Llama\_95, Llij\_85, Lorde\_88, LunaBlu\_91, MadMen\_93, Madiba\_88, Mandlovu\_85, Mantra\_86, Maravista\_84, Martik\_84, Melissauren88\_77, MilanaBonita\_82, MilleniumForce\_88, MinionDave\_86, MisterCuddles\_87, Modragons\_93, MooMoo\_83, Moonbeam\_90, Mova\_91, Mozy\_95, Ms6\_89, Mutaforma13\_90, Nimbo\_80, Nitzel\_82, Nivrat\_86, NormanBulbieJr\_85, Ochi17\_94, OfUltron\_96, Ogotogo\_93, OldBen\_85, OlympiaSaint\_89, Ovechkin\_93, OwlsT2W\_87, PHappiness\_88, PMC\_85, Pacc40\_84, Phalconet\_86, Phanphagia\_90, Phasih\_84, Phatniss\_85, PhesterPhotato\_91, Philus\_89, Pippy\_82, Plumbus\_88, Poenanya\_91,

Polka14\_92, Pollywog\_89, PopTart\_80, Priscilla\_87, QuickMath\_89, Radiance\_84, Ramsey\_92, Renaud18\_96, Rialto\_93, RitaG\_88, Rockne\_89, Royals2015\_93, Ruby\_84, SG4\_90, STLscum\_67, Saal\_83, Sabbb\_92, Sandalphon\_87, Sarma624\_88, SassyB\_80, Scottish\_87, Seabastian\_96, Seagreen\_88, Shauna1\_87, ShiLan\_89, ShowerHandel\_83, ShroomBoi\_86, SiSi\_85, SimranZ1\_86, Soul22\_88, Sparkdehlily\_96, Spoonbill\_85, Squirty\_88, StAnnes\_92, Stap\_84, Starceвич\_88, Strokeseat\_85, SuperGrey\_88, SwagPiggett\_88, TChen\_85, TDanisky\_97, Taj\_96, ThetaBob\_89, Tootsieroll\_83, Totinger\_90, Tweety\_89, VRedHorse\_89, Velveteen\_83, Veteran\_81, Wachhund\_85, Wee\_94, Whatsapiecost\_80, Whouxphf\_88, WillSterrel\_86, XFactor\_80, Yorick\_80, Yoshi\_99, Zapner\_94, Zerg\_88, Zizzle\_90,

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

- Blarby\_95, Bobi\_91, Brocalys\_77, DotProduct\_82, Florinda\_98, Girafales\_95, Jinglebell\_93, LunaStella\_76, Mattes\_86, Oksu\_91, Quico\_95, UncleRicky\_87,

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

- 244\_83, ABCat\_79, Adnama\_86, Amao\_82, AmericanBeauty\_89, Argent26\_86, Asriel\_81, BaboJay\_79, BadStone\_79, Balomoji\_82, Barbarian\_81, Bask21\_82, Bench\_85, BigBubba\_82, BilboSwaggins\_81, BoostSeason\_70, Bruin\_79, Buck\_83, BugsBunny\_82, Cactus\_85, ChosenOne\_82, ChotaBhai\_82, Cjw1\_82, Command613\_84, Contagion\_78, Cookies\_79, CrystalP\_81, Czystczon1\_83, Daikon\_84, DismalFunk\_70, DismalStressor\_70, DoctorDiddles\_81, DrDrey\_82, Dumbo\_82, Dusk\_79, Easy2Say\_83, Elite2014\_81, Elph10\_82, Emmina\_82, Eureka\_80, Filch\_83, Findley\_70, FireRed\_86, Flypotenuse\_78, Gage\_84, Galactic\_88, Gator\_80, Gemini\_87, Glexan\_81, Goku\_80, GoldenSpark\_86, Goldilocks\_85, GooberAzure\_85, HanKaySha\_82, Harella\_82, Hegedechwinu\_88, Henry\_80, Highbury\_81, Holt\_87, Hoonter\_85, Hopey\_82, HufflyPuff\_85, IHOP\_80, Icee\_83, Inca\_79, JeTaime\_82, Kanye\_79, Kimchi\_86, Kostya\_82, Lilac\_84, Lilizi\_83, Lilpickle\_81, MISSy\_83, MPhalcon\_83, MadamMonkfish\_82, Manda\_83, Marcoliusprime\_70, Marshmallow\_80, Maxxinista\_84, Milly\_70, Mindy\_81, Miniwave\_77, Misfit\_83, Moldemort\_85, Mosby\_78, Mufasa\_70, Murica\_85, Murphy\_82, Myrale\_82, Nala\_84, NelitzaMV\_80, Nimrod\_83, NoSleep\_83, OrionPax\_81, Palpatine\_84, Paperbeatsrock\_81, Pat3\_80, Petra64142\_86, Phaja\_80, Pharsalus\_79, PhatBacter\_86, Phaux\_84, Phrux\_79, Policronamos\_86, Porky\_81, Pumpkin\_85, Quallification\_83, Rakim\_83, Rimmer\_83, RiverMonster\_82, Saints25\_81, Sassay\_77, ShamWow\_82, ShereKhan\_80, Simpliphy\_81, SirDuracell\_81, SophKB\_79, Sotrice96\_83, Spartacus\_94, Stank\_85, Stark\_83, StellaBean\_78, StolenFromERC\_85, Strobilo\_75, TBrady12\_85, TM4\_68, Tarkin\_81, TeardropMSU\_78, Teaspoon\_79, Terminus\_85, Thresher\_84, Tomaszewski\_77, Toto\_80, Traaww1\_78, Tuco\_83, Ukulele\_77, Wiggins\_84, Willez\_77, Xandras\_81, YassJohnny\_79, Youngblood\_85, ZoeJ\_69, xkcd\_85,

### Summary by start number:

Start 34:

- Found in 63 of 357 ( 17.6% ) of genes in pham
- Manual Annotations of this start: 4 of 328
- Called 7.9% of time when present
- Phage (with cluster) where this start called: Bobi\_91 (F1), Brocalys\_77 (F1), DotProduct\_82 (F1), LunaStella\_76 (F4), Mattes\_86 (F1),

Start 35:

- Found in 36 of 357 ( 10.1% ) of genes in pham
- Manual Annotations of this start: 7 of 328
- Called 22.2% of time when present
- Phage (with cluster) where this start called: Blarby\_95 (F), Florinda\_98 (F1), Galactic\_88 (F1), Girafales\_95 (F1), Hegedechwinu\_88 (F1), Quico\_95 (F1), Spartacus\_94 (F1), UncleRicky\_87 (F1),

Start 37:

- Found in 214 of 357 ( 59.9% ) of genes in pham
- Manual Annotations of this start: 189 of 328
- Called 94.4% of time when present
- Phage (with cluster) where this start called: Akhila\_83 (F1), Alexphander\_90 (F1), AlpineSix\_87 (F1), ArcusAngelus\_89 (F1), Ardmore\_73 (F1), Aubs\_88 (F1), Avani\_93 (F2), BAKA\_79 (J), Batiatus\_86 (F1), Beakin\_80 (F1), BigPhil\_82 (F1), Bipolar\_89 (F1), Blexus\_84 (F1), BlueCrab\_89 (F1), BobaPhett\_87 (F1), BodEinwohner17\_96 (F1), Bubbles123\_81 (F1), Burwell21\_81 (F1), BuzzLyseyear\_96 (F1), ByChance\_76 (F1), Byougenkin\_86 (F1), Cabrinians\_83 (F1), CaptainTrips\_90 (F1), Cerasum\_83 (F1), Che8\_95 (F1), Chevrolet\_95 (F1), Clifton\_79 (F1), Coco12\_86 (F1), Constella\_61 (J), Cornucopia\_88 (F1), Crumble\_81 (F1), DLane\_87 (F1), DRBy19\_90 (F1), DaWorst\_87 (F1), DaddyRickover\_91 (F1), Dante\_86 (F1), DeadP\_90 (F1), Deb65\_81 (F1), Demsculpinboyz\_100 (F2), DillTech15\_92 (F1), DirtMcgirt\_87 (F1), Donkeykong\_94 (F1), Doomphist\_91 (F1), Doug\_85 (F1), Drago\_85 (F1), Duke13\_77 (J), Eish\_93 (F1), EleanorGeorge\_89 (F1), Emma\_91 (F1), Empress\_87 (F1), Enby\_89 (F1), Eradicator\_80 (F1), Estave1\_96 (F1), Fastidio\_87 (F1), Filuzino\_89 (F1), Firehouse51\_83 (F1), Flathead\_90 (F1), FreddyB\_95 (F1), Fruitloop\_88 (F1), GUmbie\_86 (F1), Gandolph\_87 (F1), Geralt\_81 (F1), GigiOuiOui\_83 (F1), Girr\_86 (F1), Gorge\_85 (F1), Guppsters\_81 (F1), Hades\_86 (F1), Hamulus\_88 (F1), Harley\_92 (F1), Hegedechwinu\_96 (F1), Hlubikazi\_85 (F1), IbOuu\_84 (F1), Ibhubesi\_86 (F1), IrishSherpFalk\_87 (F1), Jabbawokkie\_95 (F2), JalFarm20\_95 (F1), James\_90 (F1), Jarcob\_89 (F1), Job42\_88 (F1), JoeyJr\_91 (F1), Juice456\_87 (F1), Karhdo\_84 (F1), Kenuha5\_83 (F1), Kersh\_92 (F1), Kimberlium\_91 (F1), KingMidas\_87 (F1), Kingsley\_93 (F1), Koella\_79 (F1), Krakatau\_81 (F1), KristaRAM\_88 (F1), LastJedi\_77 (F1), Latretium\_89 (F1), Leozinho\_86 (F1), Leperchaun\_89 (F1), LilMoolah\_88 (F1), LittleShirley\_93 (F1), Lizziana\_88 (F1), Llama\_95 (F1), Llij\_85 (F1), Lorde\_88 (F1), LunaBlu\_91 (F1), MadMen\_93 (F1), Madiba\_88 (F1), Mandlovu\_85 (F1), Mantra\_86 (F1), Maravista\_84 (F1), Martik\_84 (F1), Melissauren88\_77 (F1), MilanaBonita\_82 (F1), MilleniumForce\_88 (F1), MinionDave\_86 (F1), MisterCuddles\_87 (F1), Modragons\_93 (F1), MooMoo\_83 (singleton), Moonbeam\_90 (F1), Mova\_91 (F1), Mozy\_95 (F1), Ms6\_89 (F1), Mutaforma13\_90 (F1), Nimbo\_80 (F1), Nitzel\_82 (F1), Nivrat\_86 (F1), NormanBulbieJr\_85 (F1), Ochi17\_94 (F1), OfUltron\_96 (F1), Ogoopogo\_93 (F1), OldBen\_85 (F1), OlympiaSaint\_89 (F1), Ovechkin\_93 (F1), OwlsT2W\_87 (F1), PHappiness\_88 (F1), PMC\_85 (F1), Pacc40\_84 (F1), Phalconet\_86 (F1), Phanphagia\_90 (F1), Phasih\_84 (F1), Phatniss\_85 (F1), PhesterPhotato\_91 (F1), Philus\_89 (F1), Pippy\_82 (F1), Plumbus\_88 (F1), Poenanya\_91 (F1), Polka14\_92 (F1), Pollywog\_89 (F1), PopTart\_80 (F1), Priscilla\_87 (F1), QuickMath\_89 (F1), Radiance\_84 (F1), Ramsey\_92 (F1), Renaud18\_96 (F4), Rialto\_93 (F1), RitaG\_88 (F1), Rockne\_89 (F1), Royals2015\_93 (F1), Ruby\_84 (F1), SG4\_90 (F1), STLscum\_67 (A1), Saal\_83 (F1), Sabbb\_92 (F1), Sandalphon\_87 (F1), Sarma624\_88 (F1), SassyB\_80 (F1), Scottish\_87 (F1), Seabastian\_96 (F1), Seagreen\_88 (F1), Shauna1\_87 (F1), ShiLan\_89 (F1), ShowerHandel\_83 (F1), ShroomBoi\_86 (F1), SiSi\_85 (F1), SimranZ1\_86 (F1), Soul22\_88 (F2), Sparkdehlily\_96 (F1), Spoonbill\_85 (F1), Squirty\_88 (F3),

StAnnes\_92 (F1), Stap\_84 (F1), Starceвич\_88 (F1), Strokeseat\_85 (F1), SuperGrey\_88 (F1), SwagPigglett\_88 (F1), TChen\_85 (F4), TDanisky\_97 (F1), Taj\_96 (F1), ThetaBob\_89 (F4), Tootsieroll\_83 (F1), Totinger\_90 (F1), Tweety\_89 (F1), VRedHorse\_89 (F1), Velveteen\_83 (F1), Veteran\_81 (F1), Wachhund\_85 (F1), Wee\_94 (F1), Whatsapiecost\_80 (F1), Whouxphf\_88 (F1), WillSterrel\_86 (F1), XFactor\_80 (F1), Yorick\_80 (F1), Yoshi\_99 (F2), Zapner\_94 (F2), Zerg\_88 (F1), Zizzle\_90 (F1),

#### Start 38:

- Found in 130 of 357 ( 36.4% ) of genes in pham
- Manual Annotations of this start: 119 of 328
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 244\_83 (E), ABCat\_79 (E), Adnama\_86 (E), Amao\_82 (E), AmericanBeauty\_89 (E), Argent26\_86 (E), Asriel\_81 (E), BaboJay\_79 (E), BadStone\_79 (E), Balomoji\_82 (E), Barbarian\_81 (E), Bask21\_82 (E), Bench\_85 (E), BigBubba\_82 (E), BilboSwaggins\_81 (E), Bruin\_79 (E), Buck\_83 (E), BugsBunny\_82 (E), Cactus\_85 (E), ChosenOne\_82 (E), ChotaBhai\_82 (E), Cjw1\_82 (E), Command613\_84 (E), Contagion\_78 (E), Cookies\_79 (E), CrystalP\_81 (E), Czyszczonek\_83 (E), Daikon\_84 (E), DoctorDiddles\_81 (E), DrDrey\_82 (E), Dumbo\_82 (E), Dusk\_79 (E), Easy2Say\_83 (E), Elite2014\_81 (E), Elph10\_82 (E), Emmina\_82 (E), Eureka\_80 (E), Filch\_83 (E), FireRed\_86 (E), Flypotenuse\_78 (E), Gage\_84 (E), Gator\_80 (E), Gemini\_87 (E), Glexan\_81 (E), Goku\_80 (E), GoldenSpark\_86 (E), Goldilocks\_85 (E), GooberAzure\_85 (E), HanKaySha\_82 (E), Harella\_82 (E), Henry\_80 (E), Highbury\_81 (E), Holt\_87 (E), Hoonter\_85 (E), Hopey\_82 (E), HufflyPuff\_85 (E), IHOP\_80 (E), Icee\_83 (E), Inca\_79 (E), JeTaimie\_82 (E), Kanye\_79 (E), Kimchi\_86 (E), Kostya\_82 (E), Lilac\_84 (E), Lilizi\_83 (E), Lilpickle\_81 (E), MISSy\_83 (E), MPhalcon\_83 (E), MadamMonkfish\_82 (E), Manda\_83 (E), Marshmallow\_80 (E), Maxxinista\_84 (E), Mindy\_81 (E), Miniwave\_77 (E), Misfit\_83 (E), Moldemort\_85 (E), Mosby\_78 (E), Murica\_85 (E), Murphy\_82 (E), Myrale\_82 (E), Nala\_84 (E), NelitzaMV\_80 (E), Nimrod\_83 (E), NoSleep\_83 (E), OrionPax\_81 (E), Palpatine\_84 (E), Paperbeatsrock\_81 (E), Pat3\_80 (E), Petra64142\_86 (E), Phaja\_80 (E), Pharsalus\_79 (E), PhatBacter\_86 (E), Phaux\_84 (E), Phrux\_79 (E), Policronamos\_86 (E), Porky\_81 (E), Pumpkin\_85 (E), Quallification\_83 (E), Rakim\_83 (E), Rimmer\_83 (E), RiverMonster\_82 (E), Saints25\_81 (E), Sassay\_77 (E), ShamWow\_82 (E), ShereKhan\_80 (E), Simpliphy\_81 (E), SirDuracell\_81 (E), SophKB\_79 (E), Sotrice96\_83 (E), Stank\_85 (E), Stark\_83 (E), StellaBean\_78 (E), StolenFromERC\_85 (E), TBrady12\_85 (E), Tarkin\_81 (E), TeardropMSU\_78 (E), Teaspoon\_79 (E), Terminus\_85 (E), Thresher\_84 (E), Tomaszewski\_77 (E), Toto\_80 (E), Traaww1\_78 (E), Tuco\_83 (E), Ukulele\_77 (E), Wiggin\_84 (E), Willez\_77 (E), Xandras\_81 (E), YassJohnny\_79 (E), Youngblood\_85 (E), xkcd\_85 (E),

#### Start 39:

- Found in 10 of 357 ( 2.8% ) of genes in pham
- Manual Annotations of this start: 9 of 328
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BoostSeason\_70 (K2), DismalFunk\_70 (K2), DismalStressor\_70 (K2), Findley\_70 (K2), Marcoliusprime\_70 (K2), Milly\_70 (K2), Mufasa\_70 (K2), Strobilo\_75 (K2), TM4\_68 (K2), ZoeJ\_69 (K2),

#### Start 40:

- Found in 35 of 357 ( 9.8% ) of genes in pham
- No Manual Annotations of this start.



- Called 5.7% of time when present
- Phage (with cluster) where this start called: Jinglebell\_93 (F1), Oksu\_91 (F1),

### **Summary by clusters:**

There are 10 clusters represented in this pham: F1, F2, F3, E, F, J, singleton, A1, K2, F4,

Info for manual annotations of cluster A1:

- Start number 37 was manually annotated 1 time for cluster A1.

Info for manual annotations of cluster E:

- Start number 38 was manually annotated 119 times for cluster E.

Info for manual annotations of cluster F1:

- Start number 34 was manually annotated 4 times for cluster F1.
- Start number 35 was manually annotated 7 times for cluster F1.
- Start number 37 was manually annotated 174 times for cluster F1.

Info for manual annotations of cluster F2:

- Start number 37 was manually annotated 6 times for cluster F2.

Info for manual annotations of cluster F3:

- Start number 37 was manually annotated 1 time for cluster F3.

Info for manual annotations of cluster F4:

- Start number 37 was manually annotated 3 times for cluster F4.

Info for manual annotations of cluster J:

- Start number 37 was manually annotated 3 times for cluster J.

Info for manual annotations of cluster K2:

- Start number 39 was manually annotated 9 times for cluster K2.

### **Gene Information:**

Gene: 244\_83 Start: 51383, Stop: 51571, Start Num: 38

Candidate Starts for 244\_83:

(1, 50909), (6, 51074), (Start: 38 @51383 has 119 MA's), (41, 51413), (42, 51437), (46, 51467), (55, 51518),

Gene: ABCat\_79 Start: 51736, Stop: 51924, Start Num: 38

Candidate Starts for ABCat\_79:

(1, 51262), (6, 51427), (Start: 38 @51736 has 119 MA's), (41, 51766), (42, 51790), (46, 51820), (55, 51871),

Gene: Adnama\_86 Start: 51759, Stop: 51947, Start Num: 38

Candidate Starts for Adnama\_86:

(1, 51285), (6, 51450), (Start: 38 @51759 has 119 MA's), (41, 51789), (42, 51813), (46, 51843), (55, 51894),

Gene: Akhila\_83 Start: 49346, Stop: 49525, Start Num: 37

Candidate Starts for Akhila\_83:

(14, 49172), (16, 49181), (18, 49205), (21, 49223), (31, 49316), (Start: 34 @49325 has 4 MA's), (Start: 37 @49346 has 189 MA's), (45, 49421), (55, 49472),

Gene: Alexphander\_90 Start: 51762, Stop: 51941, Start Num: 37

Candidate Starts for Alexphander\_90:

(7, 51468), (10, 51501), (14, 51588), (16, 51597), (17, 51609), (19, 51630), (21, 51639), (31, 51732), (Start: 34 @51741 has 4 MA's), (Start: 37 @51762 has 189 MA's), (40, 51786), (45, 51837), (48, 51855), (49, 51873), (55, 51888),

Gene: AlpineSix\_87 Start: 50112, Stop: 50324, Start Num: 37

Candidate Starts for AlpineSix\_87:

(20, 49983), (24, 50052), (Start: 37 @50112 has 189 MA's), (40, 50136), (52, 50244), (53, 50256),

Gene: Amao\_82 Start: 51153, Stop: 51341, Start Num: 38

Candidate Starts for Amao\_82:

(Start: 38 @51153 has 119 MA's), (44, 51231), (46, 51237), (50, 51273),

Gene: AmericanBeauty\_89 Start: 51905, Stop: 52093, Start Num: 38

Candidate Starts for AmericanBeauty\_89:

(1, 51431), (6, 51596), (Start: 38 @51905 has 119 MA's), (41, 51935), (42, 51959), (46, 51989), (55, 52040),

Gene: ArcusAngelus\_89 Start: 51558, Stop: 51737, Start Num: 37

Candidate Starts for ArcusAngelus\_89:

(Start: 37 @51558 has 189 MA's), (45, 51633), (55, 51684),

Gene: Ardmore\_73 Start: 45470, Stop: 45649, Start Num: 37

Candidate Starts for Ardmore\_73:

(14, 45296), (16, 45305), (18, 45329), (21, 45347), (31, 45440), (Start: 34 @45449 has 4 MA's), (Start: 37 @45470 has 189 MA's), (45, 45545), (55, 45596),

Gene: Argent26\_86 Start: 51543, Stop: 51731, Start Num: 38

Candidate Starts for Argent26\_86:

(1, 51069), (6, 51234), (Start: 38 @51543 has 119 MA's), (41, 51573), (42, 51597), (46, 51627), (55, 51678),

Gene: Asriel\_81 Start: 50096, Stop: 50284, Start Num: 38

Candidate Starts for Asriel\_81:

(1, 49622), (6, 49787), (Start: 38 @50096 has 119 MA's), (41, 50126), (42, 50150), (46, 50180), (55, 50231),

Gene: Aubs\_88 Start: 51536, Stop: 51745, Start Num: 37

Candidate Starts for Aubs\_88:

(28, 51488), (Start: 37 @51536 has 189 MA's), (44, 51620), (47, 51632), (54, 51683),

Gene: Avani\_93 Start: 48223, Stop: 48402, Start Num: 37

Candidate Starts for Avani\_93:

(15, 48052), (Start: 37 @48223 has 189 MA's), (45, 48298), (49, 48334), (55, 48349),

Gene: BAKA\_79 Start: 51643, Stop: 51464, Start Num: 37

Candidate Starts for BAKA\_79:  
(Start: 37 @51643 has 189 MA's), (45, 51568), (49, 51532), (55, 51517),

Gene: BaboJay\_79 Start: 50936, Stop: 51139, Start Num: 38  
Candidate Starts for BaboJay\_79:  
(1, 50462), (2, 50558), (6, 50627), (Start: 38 @50936 has 119 MA's), (41, 50966), (42, 50990), (46, 51020), (55, 51071),

Gene: BadStone\_79 Start: 51305, Stop: 51493, Start Num: 38  
Candidate Starts for BadStone\_79:  
(1, 50831), (6, 50996), (Start: 38 @51305 has 119 MA's), (41, 51335), (42, 51359), (46, 51389), (55, 51440),

Gene: Balomoji\_82 Start: 51866, Stop: 52054, Start Num: 38  
Candidate Starts for Balomoji\_82:  
(1, 51392), (6, 51557), (Start: 38 @51866 has 119 MA's), (44, 51944), (46, 51950), (50, 51986),

Gene: Barbarian\_81 Start: 50096, Stop: 50284, Start Num: 38  
Candidate Starts for Barbarian\_81:  
(1, 49622), (6, 49787), (Start: 38 @50096 has 119 MA's), (41, 50126), (42, 50150), (46, 50180), (55, 50231),

Gene: Bask21\_82 Start: 50719, Stop: 50907, Start Num: 38  
Candidate Starts for Bask21\_82:  
(1, 50245), (6, 50410), (Start: 38 @50719 has 119 MA's), (44, 50797), (46, 50803), (50, 50839),

Gene: Batiatus\_86 Start: 50344, Stop: 50523, Start Num: 37  
Candidate Starts for Batiatus\_86:  
(14, 50170), (16, 50179), (18, 50203), (21, 50221), (31, 50314), (Start: 34 @50323 has 4 MA's), (Start: 37 @50344 has 189 MA's), (45, 50419), (55, 50470),

Gene: Beakin\_80 Start: 47095, Stop: 47274, Start Num: 37  
Candidate Starts for Beakin\_80:  
(Start: 37 @47095 has 189 MA's), (55, 47221),

Gene: Bench\_85 Start: 51400, Stop: 51588, Start Num: 38  
Candidate Starts for Bench\_85:  
(1, 50926), (6, 51091), (Start: 38 @51400 has 119 MA's), (41, 51430), (42, 51454), (46, 51484), (55, 51535),

Gene: BigBubba\_82 Start: 51112, Stop: 51300, Start Num: 38  
Candidate Starts for BigBubba\_82:  
(1, 50638), (6, 50803), (Start: 38 @51112 has 119 MA's), (44, 51190), (46, 51196), (50, 51232),

Gene: BigPhil\_82 Start: 46962, Stop: 47141, Start Num: 37  
Candidate Starts for BigPhil\_82:  
(23, 46890), (Start: 35 @46947 has 7 MA's), (Start: 37 @46962 has 189 MA's), (49, 47073), (55, 47088),

Gene: BilboSwaggins\_81 Start: 51741, Stop: 51929, Start Num: 38  
Candidate Starts for BilboSwaggins\_81:  
(1, 51267), (6, 51432), (Start: 38 @51741 has 119 MA's), (41, 51771), (42, 51795), (46, 51825), (55, 51876),

Gene: Bipolar\_89 Start: 52261, Stop: 52440, Start Num: 37

Candidate Starts for Bipolar\_89:

(26, 52213), (Start: 37 @52261 has 189 MA's), (55, 52387),

Gene: Blarby\_95 Start: 48975, Stop: 49169, Start Num: 35

Candidate Starts for Blarby\_95:

(23, 48918), (Start: 35 @48975 has 7 MA's), (Start: 37 @48990 has 189 MA's), (49, 49101), (55, 49116),

Gene: Blexus\_84 Start: 50870, Stop: 51049, Start Num: 37

Candidate Starts for Blexus\_84:

(26, 50822), (Start: 37 @50870 has 189 MA's), (55, 50996),

Gene: BlueCrab\_89 Start: 51554, Stop: 51733, Start Num: 37

Candidate Starts for BlueCrab\_89:

(14, 51380), (16, 51389), (18, 51413), (21, 51431), (31, 51524), (Start: 34 @51533 has 4 MA's), (Start: 37 @51554 has 189 MA's), (45, 51629), (55, 51680),

Gene: BobaPhett\_87 Start: 52286, Stop: 52465, Start Num: 37

Candidate Starts for BobaPhett\_87:

(14, 52112), (16, 52121), (18, 52145), (21, 52163), (31, 52256), (Start: 34 @52265 has 4 MA's), (Start: 37 @52286 has 189 MA's), (45, 52361), (55, 52412),

Gene: Bobi\_91 Start: 52068, Stop: 52268, Start Num: 34

Candidate Starts for Bobi\_91:

(14, 51915), (16, 51924), (18, 51948), (21, 51966), (31, 52059), (Start: 34 @52068 has 4 MA's), (Start: 37 @52089 has 189 MA's), (45, 52164), (55, 52215),

Gene: BodEinwohner17\_96 Start: 53328, Stop: 53537, Start Num: 37

Candidate Starts for BodEinwohner17\_96:

(28, 53280), (Start: 37 @53328 has 189 MA's), (44, 53412), (47, 53424), (54, 53475),

Gene: BoostSeason\_70 Start: 45912, Stop: 46079, Start Num: 39

Candidate Starts for BoostSeason\_70:

(12, 45696), (13, 45705), (25, 45852), (Start: 39 @45912 has 9 MA's), (41, 45936),

Gene: Brocalys\_77 Start: 47745, Stop: 47945, Start Num: 34

Candidate Starts for Brocalys\_77:

(14, 47592), (16, 47601), (18, 47625), (21, 47643), (31, 47736), (Start: 34 @47745 has 4 MA's), (Start: 37 @47766 has 189 MA's), (45, 47841), (55, 47892),

Gene: Bruin\_79 Start: 50279, Stop: 50467, Start Num: 38

Candidate Starts for Bruin\_79:

(1, 49805), (6, 49970), (Start: 38 @50279 has 119 MA's), (41, 50309), (42, 50333), (46, 50363), (55, 50414),

Gene: Bubbles123\_81 Start: 50063, Stop: 50242, Start Num: 37

Candidate Starts for Bubbles123\_81:

(14, 49889), (16, 49898), (18, 49922), (31, 50033), (Start: 34 @50042 has 4 MA's), (Start: 37 @50063 has 189 MA's), (49, 50174), (55, 50189),

Gene: Buck\_83 Start: 51984, Stop: 52172, Start Num: 38

Candidate Starts for Buck\_83:

(1, 51510), (6, 51675), (Start: 38 @51984 has 119 MA's), (41, 52014), (42, 52038), (46, 52068), (55, 52119),

Gene: BugsBunny\_82 Start: 51808, Stop: 51996, Start Num: 38

Candidate Starts for BugsBunny\_82:

(1, 51334), (6, 51499), (Start: 38 @51808 has 119 MA's), (41, 51838), (42, 51862), (46, 51892), (55, 51943),

Gene: Burwell21\_81 Start: 50052, Stop: 50231, Start Num: 37

Candidate Starts for Burwell21\_81:

(14, 49878), (16, 49887), (18, 49911), (21, 49929), (31, 50022), (Start: 34 @50031 has 4 MA's), (Start: 37 @50052 has 189 MA's), (45, 50127), (55, 50178),

Gene: BuzzLyseyear\_96 Start: 53526, Stop: 53705, Start Num: 37

Candidate Starts for BuzzLyseyear\_96:

(Start: 37 @53526 has 189 MA's), (45, 53601), (55, 53652),

Gene: ByChance\_76 Start: 45678, Stop: 45857, Start Num: 37

Candidate Starts for ByChance\_76:

(Start: 37 @45678 has 189 MA's), (45, 45753), (49, 45789), (55, 45804),

Gene: Byougenkin\_86 Start: 48273, Stop: 48452, Start Num: 37

Candidate Starts for Byougenkin\_86:

(29, 48237), (30, 48243), (32, 48246), (Start: 35 @48261 has 7 MA's), (Start: 37 @48273 has 189 MA's), (40, 48297), (45, 48348), (55, 48399),

Gene: Cabrinians\_83 Start: 49686, Stop: 49865, Start Num: 37

Candidate Starts for Cabrinians\_83:

(14, 49512), (16, 49521), (18, 49545), (21, 49563), (31, 49656), (Start: 34 @49665 has 4 MA's), (Start: 37 @49686 has 189 MA's), (45, 49761), (55, 49812),

Gene: Cactus\_85 Start: 50760, Stop: 50948, Start Num: 38

Candidate Starts for Cactus\_85:

(1, 50286), (6, 50451), (Start: 38 @50760 has 119 MA's), (44, 50838), (46, 50844), (50, 50880),

Gene: CaptainTrips\_90 Start: 50975, Stop: 51154, Start Num: 37

Candidate Starts for CaptainTrips\_90:

(Start: 37 @50975 has 189 MA's), (45, 51050), (55, 51101),

Gene: Cerasum\_83 Start: 46980, Stop: 47159, Start Num: 37

Candidate Starts for Cerasum\_83:

(23, 46908), (Start: 35 @46965 has 7 MA's), (Start: 37 @46980 has 189 MA's), (49, 47091), (55, 47106),

Gene: Che8\_95 Start: 52189, Stop: 52401, Start Num: 37

Candidate Starts for Che8\_95:

(22, 52117), (Start: 37 @52189 has 189 MA's), (40, 52213), (52, 52321), (53, 52333),

Gene: Chevrolet\_95 Start: 51559, Stop: 51738, Start Num: 37

Candidate Starts for Chevrolet\_95:

(Start: 37 @51559 has 189 MA's), (45, 51634), (55, 51685),

Gene: ChosenOne\_82 Start: 50760, Stop: 50948, Start Num: 38  
Candidate Starts for ChosenOne\_82:  
(1, 50286), (6, 50451), (Start: 38 @50760 has 119 MA's), (41, 50790), (42, 50814), (46, 50844), (55, 50895),

Gene: ChotaBhai\_82 Start: 51084, Stop: 51272, Start Num: 38  
Candidate Starts for ChotaBhai\_82:  
(1, 50610), (6, 50775), (Start: 38 @51084 has 119 MA's), (44, 51162), (46, 51168), (50, 51204),

Gene: Cjw1\_82 Start: 52454, Stop: 52642, Start Num: 38  
Candidate Starts for Cjw1\_82:  
(1, 51980), (6, 52145), (Start: 38 @52454 has 119 MA's), (41, 52484), (42, 52508), (46, 52538), (55, 52589),

Gene: Clifton\_79 Start: 48858, Stop: 49037, Start Num: 37  
Candidate Starts for Clifton\_79:  
(Start: 37 @48858 has 189 MA's), (40, 48882), (45, 48933), (55, 48984),

Gene: Coco12\_86 Start: 51037, Stop: 51216, Start Num: 37  
Candidate Starts for Coco12\_86:  
(23, 50965), (Start: 35 @51022 has 7 MA's), (Start: 37 @51037 has 189 MA's), (49, 51148), (55, 51163),

Gene: Command613\_84 Start: 51799, Stop: 51987, Start Num: 38  
Candidate Starts for Command613\_84:  
(1, 51325), (6, 51490), (Start: 38 @51799 has 119 MA's), (41, 51829), (42, 51853), (46, 51883), (55, 51934),

Gene: Constella\_61 Start: 45314, Stop: 45135, Start Num: 37  
Candidate Starts for Constella\_61:  
(15, 45485), (Start: 37 @45314 has 189 MA's), (45, 45239), (49, 45203), (55, 45188),

Gene: Contagion\_78 Start: 50560, Stop: 50748, Start Num: 38  
Candidate Starts for Contagion\_78:  
(1, 50086), (6, 50251), (Start: 38 @50560 has 119 MA's), (41, 50590), (42, 50614), (46, 50644), (55, 50695),

Gene: Cookies\_79 Start: 50941, Stop: 51129, Start Num: 38  
Candidate Starts for Cookies\_79:  
(1, 50467), (6, 50632), (Start: 38 @50941 has 119 MA's), (44, 51019), (46, 51025), (50, 51061),

Gene: Cornucopia\_88 Start: 49212, Stop: 49391, Start Num: 37  
Candidate Starts for Cornucopia\_88:  
(18, 49071), (21, 49089), (31, 49182), (Start: 34 @49191 has 4 MA's), (Start: 37 @49212 has 189 MA's), (45, 49287), (55, 49338),

Gene: Crumble\_81 Start: 46411, Stop: 46590, Start Num: 37  
Candidate Starts for Crumble\_81:  
(14, 46237), (16, 46246), (18, 46270), (21, 46288), (31, 46381), (Start: 34 @46390 has 4 MA's), (Start: 37 @46411 has 189 MA's), (45, 46486), (55, 46537),

Gene: CrystalP\_81 Start: 51741, Stop: 51929, Start Num: 38  
Candidate Starts for CrystalP\_81:

(1, 51267), (6, 51432), (Start: 38 @51741 has 119 MA's), (41, 51771), (42, 51795), (46, 51825), (55, 51876),

Gene: Czyszczone1\_83 Start: 51263, Stop: 51451, Start Num: 38

Candidate Starts for Czyszczone1\_83:

(1, 50789), (6, 50954), (Start: 38 @51263 has 119 MA's), (41, 51293), (42, 51317), (46, 51347), (55, 51398),

Gene: DLane\_87 Start: 51666, Stop: 51845, Start Num: 37

Candidate Starts for DLane\_87:

(23, 51594), (Start: 35 @51651 has 7 MA's), (Start: 37 @51666 has 189 MA's), (49, 51777), (55, 51792),

Gene: DRBy19\_90 Start: 52394, Stop: 52573, Start Num: 37

Candidate Starts for DRBy19\_90:

(31, 52364), (Start: 34 @52373 has 4 MA's), (Start: 37 @52394 has 189 MA's), (55, 52520),

Gene: DaWorst\_87 Start: 49979, Stop: 50158, Start Num: 37

Candidate Starts for DaWorst\_87:

(23, 49907), (Start: 35 @49964 has 7 MA's), (Start: 37 @49979 has 189 MA's), (49, 50090), (55, 50105),

Gene: DaddyRickover\_91 Start: 51901, Stop: 52080, Start Num: 37

Candidate Starts for DaddyRickover\_91:

(Start: 37 @51901 has 189 MA's), (45, 51976), (55, 52027),

Gene: Daikon\_84 Start: 51887, Stop: 52075, Start Num: 38

Candidate Starts for Daikon\_84:

(1, 51413), (6, 51578), (Start: 38 @51887 has 119 MA's), (44, 51965), (46, 51971), (50, 52007),

Gene: Dante\_86 Start: 52237, Stop: 52416, Start Num: 37

Candidate Starts for Dante\_86:

(Start: 37 @52237 has 189 MA's), (45, 52312), (49, 52348), (55, 52363),

Gene: DeadP\_90 Start: 50061, Stop: 50240, Start Num: 37

Candidate Starts for DeadP\_90:

(23, 49989), (Start: 35 @50046 has 7 MA's), (Start: 37 @50061 has 189 MA's), (49, 50172), (55, 50187),

Gene: Deb65\_81 Start: 49784, Stop: 49963, Start Num: 37

Candidate Starts for Deb65\_81:

(Start: 37 @49784 has 189 MA's), (55, 49910),

Gene: Demsculpinboyz\_100 Start: 50162, Stop: 50341, Start Num: 37

Candidate Starts for Demsculpinboyz\_100:

(Start: 37 @50162 has 189 MA's), (45, 50237), (49, 50273), (55, 50288),

Gene: DillTech15\_92 Start: 50171, Stop: 50350, Start Num: 37

Candidate Starts for DillTech15\_92:

(Start: 37 @50171 has 189 MA's), (55, 50297),

Gene: DirtMcgirt\_87 Start: 48038, Stop: 48217, Start Num: 37

Candidate Starts for DirtMcgirt\_87:

(23, 47966), (Start: 35 @48023 has 7 MA's), (Start: 37 @48038 has 189 MA's), (49, 48149), (55, 48164),

Gene: DismalFunk\_70 Start: 46337, Stop: 46504, Start Num: 39  
Candidate Starts for DismalFunk\_70:  
(25, 46277), (Start: 39 @46337 has 9 MA's), (41, 46361), (43, 46397),

Gene: DismalStressor\_70 Start: 46337, Stop: 46504, Start Num: 39  
Candidate Starts for DismalStressor\_70:  
(25, 46277), (Start: 39 @46337 has 9 MA's), (41, 46361), (43, 46397),

Gene: DoctorDiddles\_81 Start: 51128, Stop: 51316, Start Num: 38  
Candidate Starts for DoctorDiddles\_81:  
(1, 50654), (6, 50819), (Start: 38 @51128 has 119 MA's), (44, 51206), (46, 51212), (50, 51248),

Gene: Donkeykong\_94 Start: 52976, Stop: 53158, Start Num: 37  
Candidate Starts for Donkeykong\_94:  
(Start: 37 @52976 has 189 MA's), (40, 53003), (45, 53054),

Gene: Doomphist\_91 Start: 51481, Stop: 51660, Start Num: 37  
Candidate Starts for Doomphist\_91:  
(21, 51358), (31, 51451), (Start: 34 @51460 has 4 MA's), (Start: 37 @51481 has 189 MA's), (45, 51556), (55, 51607),

Gene: DotProduct\_82 Start: 48547, Stop: 48747, Start Num: 34  
Candidate Starts for DotProduct\_82:  
(14, 48394), (16, 48403), (18, 48427), (21, 48445), (31, 48538), (Start: 34 @48547 has 4 MA's), (Start: 37 @48568 has 189 MA's), (45, 48643), (55, 48694), (56, 48706),

Gene: Doug\_85 Start: 51570, Stop: 51749, Start Num: 37  
Candidate Starts for Doug\_85:  
(26, 51522), (Start: 37 @51570 has 189 MA's), (55, 51696),

Gene: DrDrey\_82 Start: 52182, Stop: 52370, Start Num: 38  
Candidate Starts for DrDrey\_82:  
(1, 51708), (6, 51873), (Start: 38 @52182 has 119 MA's), (41, 52212), (42, 52236), (46, 52266), (55, 52317),

Gene: Drago\_85 Start: 48041, Stop: 48220, Start Num: 37  
Candidate Starts for Drago\_85:  
(23, 47969), (Start: 35 @48026 has 7 MA's), (Start: 37 @48041 has 189 MA's), (49, 48152), (55, 48167),

Gene: Duke13\_77 Start: 50855, Stop: 50676, Start Num: 37  
Candidate Starts for Duke13\_77:  
(Start: 37 @50855 has 189 MA's), (45, 50780), (49, 50744), (55, 50729),

Gene: Dumbo\_82 Start: 50665, Stop: 50853, Start Num: 38  
Candidate Starts for Dumbo\_82:  
(1, 50191), (6, 50356), (Start: 38 @50665 has 119 MA's), (41, 50695), (42, 50719), (46, 50749), (55, 50800),

Gene: Dusk\_79 Start: 50965, Stop: 51153, Start Num: 38



Candidate Starts for Dusk\_79:

(1, 50491), (6, 50656), (Start: 38 @50965 has 119 MA's), (41, 50995), (42, 51019), (46, 51049), (55, 51100),

Gene: Easy2Say\_83 Start: 52206, Stop: 52394, Start Num: 38

Candidate Starts for Easy2Say\_83:

(1, 51732), (6, 51897), (Start: 38 @52206 has 119 MA's), (41, 52236), (42, 52260), (46, 52290), (55, 52341),

Gene: Eish\_93 Start: 52092, Stop: 52271, Start Num: 37

Candidate Starts for Eish\_93:

(14, 51918), (16, 51927), (18, 51951), (21, 51969), (31, 52062), (Start: 34 @52071 has 4 MA's), (Start: 37 @52092 has 189 MA's), (45, 52167), (55, 52218),

Gene: EleanorGeorge\_89 Start: 51749, Stop: 51928, Start Num: 37

Candidate Starts for EleanorGeorge\_89:

(Start: 37 @51749 has 189 MA's), (49, 51860), (55, 51875),

Gene: Elite2014\_81 Start: 50759, Stop: 50947, Start Num: 38

Candidate Starts for Elite2014\_81:

(1, 50285), (6, 50450), (Start: 38 @50759 has 119 MA's), (41, 50789), (42, 50813), (46, 50843), (55, 50894),

Gene: Elph10\_82 Start: 50761, Stop: 50949, Start Num: 38

Candidate Starts for Elph10\_82:

(1, 50287), (6, 50452), (Start: 38 @50761 has 119 MA's), (41, 50791), (42, 50815), (46, 50845), (55, 50896),

Gene: Emma\_91 Start: 49790, Stop: 49969, Start Num: 37

Candidate Starts for Emma\_91:

(14, 49616), (16, 49625), (18, 49649), (21, 49667), (31, 49760), (Start: 34 @49769 has 4 MA's), (Start: 37 @49790 has 189 MA's), (45, 49865), (55, 49916),

Gene: Emmina\_82 Start: 50663, Stop: 50851, Start Num: 38

Candidate Starts for Emmina\_82:

(1, 50189), (6, 50354), (Start: 38 @50663 has 119 MA's), (41, 50693), (42, 50717), (46, 50747), (55, 50798),

Gene: Empress\_87 Start: 50476, Stop: 50655, Start Num: 37

Candidate Starts for Empress\_87:

(14, 50302), (16, 50311), (18, 50335), (21, 50353), (31, 50446), (Start: 34 @50455 has 4 MA's), (Start: 37 @50476 has 189 MA's), (45, 50551), (55, 50602),

Gene: Enby\_89 Start: 48317, Stop: 48496, Start Num: 37

Candidate Starts for Enby\_89:

(23, 48245), (Start: 35 @48302 has 7 MA's), (Start: 37 @48317 has 189 MA's), (49, 48428), (55, 48443),

Gene: Eradicator\_80 Start: 48972, Stop: 49151, Start Num: 37

Candidate Starts for Eradicator\_80:

(Start: 37 @48972 has 189 MA's), (45, 49047), (55, 49098),

Gene: Estave1\_96 Start: 54581, Stop: 54760, Start Num: 37

Candidate Starts for Estave1\_96:

(15, 54410), (Start: 37 @54581 has 189 MA's), (45, 54656), (49, 54692), (55, 54707),

Gene: Eureka\_80 Start: 51227, Stop: 51430, Start Num: 38

Candidate Starts for Eureka\_80:

(1, 50753), (6, 50918), (Start: 38 @51227 has 119 MA's), (41, 51257), (42, 51281), (46, 51311), (55, 51362),

Gene: Fastidio\_87 Start: 48066, Stop: 48245, Start Num: 37

Candidate Starts for Fastidio\_87:

(Start: 37 @48066 has 189 MA's), (55, 48192),

Gene: Filch\_83 Start: 50688, Stop: 50876, Start Num: 38

Candidate Starts for Filch\_83:

(1, 50214), (6, 50379), (Start: 38 @50688 has 119 MA's), (41, 50718), (42, 50742), (46, 50772), (55, 50823),

Gene: Filuzino\_89 Start: 52975, Stop: 53154, Start Num: 37

Candidate Starts for Filuzino\_89:

(23, 52903), (Start: 35 @52960 has 7 MA's), (Start: 37 @52975 has 189 MA's), (49, 53086), (55, 53101),

Gene: Findley\_70 Start: 46331, Stop: 46498, Start Num: 39

Candidate Starts for Findley\_70:

(25, 46271), (Start: 39 @46331 has 9 MA's), (41, 46355), (43, 46391),

Gene: FireRed\_86 Start: 52253, Stop: 52441, Start Num: 38

Candidate Starts for FireRed\_86:

(1, 51779), (6, 51944), (Start: 38 @52253 has 119 MA's), (41, 52283), (42, 52307), (46, 52337), (55, 52388),

Gene: Firehouse51\_83 Start: 51603, Stop: 51785, Start Num: 37

Candidate Starts for Firehouse51\_83:

(Start: 37 @51603 has 189 MA's), (45, 51681), (55, 51732),

Gene: Flathead\_90 Start: 50924, Stop: 51103, Start Num: 37

Candidate Starts for Flathead\_90:

(14, 50750), (16, 50759), (18, 50783), (31, 50894), (Start: 34 @50903 has 4 MA's), (Start: 37 @50924 has 189 MA's), (45, 50999), (55, 51050),

Gene: Florinda\_98 Start: 52463, Stop: 52657, Start Num: 35

Candidate Starts for Florinda\_98:

(23, 52406), (Start: 35 @52463 has 7 MA's), (Start: 37 @52478 has 189 MA's), (45, 52553), (55, 52604),

Gene: Flypotenuse\_78 Start: 50750, Stop: 50938, Start Num: 38

Candidate Starts for Flypotenuse\_78:

(1, 50276), (6, 50441), (Start: 38 @50750 has 119 MA's), (44, 50828), (46, 50834), (50, 50870),

Gene: FreddyB\_95 Start: 51333, Stop: 51512, Start Num: 37

Candidate Starts for FreddyB\_95:

(14, 51159), (16, 51168), (18, 51192), (21, 51210), (31, 51303), (Start: 34 @51312 has 4 MA's), (Start: 37 @51333 has 189 MA's), (45, 51408), (55, 51459),

Gene: Fruitloop\_88 Start: 52115, Stop: 52294, Start Num: 37

Candidate Starts for Fruitloop\_88:

(Start: 37 @52115 has 189 MA's), (45, 52190), (55, 52241),

Gene: GUmbie\_86 Start: 50787, Stop: 50966, Start Num: 37

Candidate Starts for GUmbie\_86:

(Start: 37 @50787 has 189 MA's), (55, 50913),

Gene: Gage\_84 Start: 51543, Stop: 51731, Start Num: 38

Candidate Starts for Gage\_84:

(1, 51069), (6, 51234), (Start: 38 @51543 has 119 MA's), (44, 51621), (46, 51627), (50, 51663),

Gene: Galactic\_88 Start: 50334, Stop: 50525, Start Num: 35

Candidate Starts for Galactic\_88:

(Start: 35 @50334 has 7 MA's), (40, 50370), (45, 50421), (55, 50472),

Gene: Gandalph\_87 Start: 48105, Stop: 48284, Start Num: 37

Candidate Starts for Gandalph\_87:

(26, 48057), (Start: 37 @48105 has 189 MA's), (55, 48231),

Gene: Gator\_80 Start: 51593, Stop: 51781, Start Num: 38

Candidate Starts for Gator\_80:

(1, 51119), (6, 51284), (Start: 38 @51593 has 119 MA's), (44, 51671), (46, 51677), (50, 51713),

Gene: Gemini\_87 Start: 52060, Stop: 52248, Start Num: 38

Candidate Starts for Gemini\_87:

(1, 51586), (6, 51751), (Start: 38 @52060 has 119 MA's), (41, 52090), (42, 52114), (46, 52144), (55, 52195),

Gene: Geralt\_81 Start: 49782, Stop: 49961, Start Num: 37

Candidate Starts for Geralt\_81:

(Start: 37 @49782 has 189 MA's), (55, 49908),

Gene: GigiOuiOui\_83 Start: 49914, Stop: 50093, Start Num: 37

Candidate Starts for GigiOuiOui\_83:

(7, 49620), (10, 49653), (14, 49740), (16, 49749), (17, 49761), (19, 49782), (21, 49791), (31, 49884), (Start: 34 @49893 has 4 MA's), (Start: 37 @49914 has 189 MA's), (40, 49938), (45, 49989), (48, 50007), (49, 50025), (55, 50040),

Gene: Girafales\_95 Start: 52068, Stop: 52262, Start Num: 35

Candidate Starts for Girafales\_95:

(23, 52011), (Start: 35 @52068 has 7 MA's), (Start: 37 @52083 has 189 MA's), (45, 52158), (55, 52209),

Gene: Girr\_86 Start: 51179, Stop: 51358, Start Num: 37

Candidate Starts for Girr\_86:

(Start: 37 @51179 has 189 MA's), (55, 51305),

Gene: Glexan\_81 Start: 51880, Stop: 52068, Start Num: 38

Candidate Starts for Glexan\_81:

(1, 51406), (6, 51571), (Start: 38 @51880 has 119 MA's), (44, 51958), (46, 51964), (50, 52000),

Gene: Goku\_80 Start: 50956, Stop: 51159, Start Num: 38

Candidate Starts for Goku\_80:

(1, 50482), (6, 50647), (Start: 38 @50956 has 119 MA's), (41, 50986), (42, 51010), (46, 51040), (55, 51091),

Gene: GoldenSpark\_86 Start: 51543, Stop: 51731, Start Num: 38

Candidate Starts for GoldenSpark\_86:

(1, 51069), (6, 51234), (Start: 38 @51543 has 119 MA's), (41, 51573), (42, 51597), (46, 51627), (55, 51678),

Gene: Goldilocks\_85 Start: 51038, Stop: 51226, Start Num: 38

Candidate Starts for Goldilocks\_85:

(1, 50564), (6, 50729), (Start: 38 @51038 has 119 MA's), (46, 51122), (50, 51158),

Gene: GooberAzure\_85 Start: 51543, Stop: 51731, Start Num: 38

Candidate Starts for GooberAzure\_85:

(1, 51069), (6, 51234), (Start: 38 @51543 has 119 MA's), (41, 51573), (42, 51597), (46, 51627), (55, 51678),

Gene: Gorge\_85 Start: 50960, Stop: 51139, Start Num: 37

Candidate Starts for Gorge\_85:

(14, 50786), (16, 50795), (18, 50819), (21, 50837), (31, 50930), (Start: 34 @50939 has 4 MA's), (Start: 37 @50960 has 189 MA's), (45, 51035), (55, 51086),

Gene: Guppsters\_81 Start: 48017, Stop: 48196, Start Num: 37

Candidate Starts for Guppsters\_81:

(21, 47894), (31, 47987), (Start: 34 @47996 has 4 MA's), (Start: 37 @48017 has 189 MA's), (45, 48092), (55, 48143),

Gene: Hades\_86 Start: 48507, Stop: 48686, Start Num: 37

Candidate Starts for Hades\_86:

(14, 48333), (16, 48342), (18, 48366), (31, 48477), (Start: 34 @48486 has 4 MA's), (Start: 37 @48507 has 189 MA's), (45, 48582), (55, 48633),

Gene: Hamulus\_88 Start: 50433, Stop: 50612, Start Num: 37

Candidate Starts for Hamulus\_88:

(14, 50259), (16, 50268), (18, 50292), (21, 50310), (31, 50403), (Start: 34 @50412 has 4 MA's), (Start: 37 @50433 has 189 MA's), (45, 50508), (55, 50559), (56, 50571),

Gene: HanKaySha\_82 Start: 50841, Stop: 51029, Start Num: 38

Candidate Starts for HanKaySha\_82:

(1, 50367), (6, 50532), (Start: 38 @50841 has 119 MA's), (41, 50871), (42, 50895), (46, 50925), (55, 50976),

Gene: Harella\_82 Start: 52396, Stop: 52584, Start Num: 38

Candidate Starts for Harella\_82:

(1, 51922), (6, 52087), (Start: 38 @52396 has 119 MA's), (44, 52474), (46, 52480), (50, 52516),

Gene: Harley\_92 Start: 51737, Stop: 51949, Start Num: 37

Candidate Starts for Harley\_92:

(Start: 37 @51737 has 189 MA's), (40, 51761), (52, 51869), (53, 51881),

Gene: Hegedechwinu\_88 Start: 49433, Stop: 49624, Start Num: 35

Candidate Starts for Hegedechwinu\_88:

(Start: 35 @49433 has 7 MA's), (40, 49469), (45, 49520), (55, 49571),

Gene: Hegedechwinu\_96 Start: 51479, Stop: 51658, Start Num: 37

Candidate Starts for Hegedechwinu\_96:

(14, 51305), (16, 51314), (18, 51338), (21, 51356), (31, 51449), (Start: 34 @51458 has 4 MA's), (Start: 37 @51479 has 189 MA's), (45, 51554), (55, 51605),

Gene: Henry\_80 Start: 51181, Stop: 51369, Start Num: 38

Candidate Starts for Henry\_80:

(1, 50707), (6, 50872), (Start: 38 @51181 has 119 MA's), (41, 51211), (42, 51235), (46, 51265), (55, 51316),

Gene: Highbury\_81 Start: 50832, Stop: 51020, Start Num: 38

Candidate Starts for Highbury\_81:

(1, 50358), (6, 50523), (Start: 38 @50832 has 119 MA's), (41, 50862), (42, 50886), (46, 50916), (55, 50967),

Gene: Hlubikazi\_85 Start: 48622, Stop: 48801, Start Num: 37

Candidate Starts for Hlubikazi\_85:

(36, 48610), (Start: 37 @48622 has 189 MA's), (40, 48646), (45, 48697), (48, 48715), (49, 48733), (55, 48748),

Gene: Holt\_87 Start: 51957, Stop: 52145, Start Num: 38

Candidate Starts for Holt\_87:

(1, 51483), (6, 51648), (Start: 38 @51957 has 119 MA's), (41, 51987), (42, 52011), (46, 52041), (55, 52092),

Gene: Hoonter\_85 Start: 51540, Stop: 51728, Start Num: 38

Candidate Starts for Hoonter\_85:

(1, 51066), (6, 51231), (Start: 38 @51540 has 119 MA's), (44, 51618), (46, 51624), (50, 51660),

Gene: Hopey\_82 Start: 51373, Stop: 51561, Start Num: 38

Candidate Starts for Hopey\_82:

(1, 50899), (6, 51064), (Start: 38 @51373 has 119 MA's), (41, 51403), (42, 51427), (46, 51457), (55, 51508),

Gene: HufflyPuff\_85 Start: 52206, Stop: 52394, Start Num: 38

Candidate Starts for HufflyPuff\_85:

(1, 51732), (6, 51897), (Start: 38 @52206 has 119 MA's), (41, 52236), (42, 52260), (46, 52290), (55, 52341),

Gene: IHOP\_80 Start: 51305, Stop: 51493, Start Num: 38

Candidate Starts for IHOP\_80:

(1, 50831), (6, 50996), (Start: 38 @51305 has 119 MA's), (41, 51335), (42, 51359), (46, 51389), (55, 51440),

Gene: lbOuu\_84 Start: 48764, Stop: 48943, Start Num: 37

Candidate Starts for lbOuu\_84:

(14, 48590), (16, 48599), (18, 48623), (21, 48641), (31, 48734), (Start: 34 @48743 has 4 MA's), (Start: 37 @48764 has 189 MA's), (45, 48839), (55, 48890),

Gene: lbhubesi\_86 Start: 48818, Stop: 48997, Start Num: 37

Candidate Starts for Ibhubesi\_86:

(21, 48695), (31, 48788), (Start: 34 @48797 has 4 MA's), (Start: 37 @48818 has 189 MA's), (49, 48929), (55, 48944),

Gene: Icee\_83 Start: 51207, Stop: 51395, Start Num: 38

Candidate Starts for Icee\_83:

(1, 50733), (6, 50898), (Start: 38 @51207 has 119 MA's), (44, 51285), (46, 51291), (50, 51327),

Gene: Inca\_79 Start: 49833, Stop: 50021, Start Num: 38

Candidate Starts for Inca\_79:

(1, 49359), (6, 49524), (Start: 38 @49833 has 119 MA's), (41, 49863), (42, 49887), (46, 49917), (55, 49968),

Gene: IrishSherpFalk\_87 Start: 51061, Stop: 51240, Start Num: 37

Candidate Starts for IrishSherpFalk\_87:

(26, 51013), (Start: 37 @51061 has 189 MA's), (55, 51187),

Gene: Jabbawokkie\_95 Start: 48910, Stop: 49089, Start Num: 37

Candidate Starts for Jabbawokkie\_95:

(23, 48838), (Start: 35 @48895 has 7 MA's), (Start: 37 @48910 has 189 MA's), (49, 49021), (55, 49036),

Gene: JalFarm20\_95 Start: 51589, Stop: 51753, Start Num: 37

Candidate Starts for JalFarm20\_95:

(23, 51517), (Start: 35 @51574 has 7 MA's), (Start: 37 @51589 has 189 MA's), (55, 51700),

Gene: James\_90 Start: 52478, Stop: 52657, Start Num: 37

Candidate Starts for James\_90:

(21, 52355), (31, 52448), (Start: 34 @52457 has 4 MA's), (Start: 37 @52478 has 189 MA's), (55, 52604),

Gene: Jacob\_89 Start: 52077, Stop: 52256, Start Num: 37

Candidate Starts for Jacob\_89:

(21, 51954), (31, 52047), (Start: 34 @52056 has 4 MA's), (Start: 37 @52077 has 189 MA's), (55, 52203),

Gene: JeTaime\_82 Start: 52022, Stop: 52210, Start Num: 38

Candidate Starts for JeTaime\_82:

(1, 51548), (6, 51713), (Start: 38 @52022 has 119 MA's), (41, 52052), (42, 52076), (46, 52106), (55, 52157),

Gene: Jinglebell\_93 Start: 52033, Stop: 52221, Start Num: 40

Candidate Starts for Jinglebell\_93:

(20, 51880), (24, 51949), (Start: 37 @52009 has 189 MA's), (40, 52033), (52, 52141), (53, 52153),

Gene: Job42\_88 Start: 53278, Stop: 53457, Start Num: 37

Candidate Starts for Job42\_88:

(Start: 37 @53278 has 189 MA's), (45, 53353), (55, 53404),

Gene: JoeyJr\_91 Start: 52607, Stop: 52816, Start Num: 37

Candidate Starts for JoeyJr\_91:

(28, 52559), (Start: 37 @52607 has 189 MA's), (44, 52691), (47, 52703), (54, 52754),

Gene: Juice456\_87 Start: 50688, Stop: 50867, Start Num: 37

Candidate Starts for Juice456\_87:

(Start: 37 @50688 has 189 MA's), (55, 50814),

Gene: Kanye\_79 Start: 50889, Stop: 51077, Start Num: 38

Candidate Starts for Kanye\_79:

(1, 50415), (6, 50580), (Start: 38 @50889 has 119 MA's), (44, 50967), (46, 50973), (50, 51009),

Gene: Karhdo\_84 Start: 48593, Stop: 48772, Start Num: 37

Candidate Starts for Karhdo\_84:

(23, 48521), (Start: 35 @48578 has 7 MA's), (Start: 37 @48593 has 189 MA's), (49, 48704), (55, 48719),

Gene: Kenuha5\_83 Start: 51021, Stop: 51203, Start Num: 37

Candidate Starts for Kenuha5\_83:

(Start: 37 @51021 has 189 MA's), (40, 51048), (45, 51099),

Gene: Kersh\_92 Start: 53467, Stop: 53646, Start Num: 37

Candidate Starts for Kersh\_92:

(Start: 37 @53467 has 189 MA's), (45, 53542), (48, 53560), (49, 53578), (55, 53593),

Gene: Kimberlium\_91 Start: 50788, Stop: 50967, Start Num: 37

Candidate Starts for Kimberlium\_91:

(Start: 37 @50788 has 189 MA's), (55, 50914),

Gene: Kimchi\_86 Start: 51546, Stop: 51734, Start Num: 38

Candidate Starts for Kimchi\_86:

(1, 51072), (6, 51237), (Start: 38 @51546 has 119 MA's), (44, 51624), (46, 51630), (50, 51666),

Gene: KingMidas\_87 Start: 50707, Stop: 50886, Start Num: 37

Candidate Starts for KingMidas\_87:

(21, 50584), (31, 50677), (Start: 34 @50686 has 4 MA's), (Start: 37 @50707 has 189 MA's), (45, 50782), (55, 50833),

Gene: Kingsley\_93 Start: 53644, Stop: 53823, Start Num: 37

Candidate Starts for Kingsley\_93:

(23, 53572), (Start: 35 @53629 has 7 MA's), (Start: 37 @53644 has 189 MA's), (49, 53755), (55, 53770),

Gene: Koella\_79 Start: 47172, Stop: 47351, Start Num: 37

Candidate Starts for Koella\_79:

(Start: 37 @47172 has 189 MA's), (45, 47247), (49, 47283), (55, 47298),

Gene: Kostya\_82 Start: 51407, Stop: 51595, Start Num: 38

Candidate Starts for Kostya\_82:

(1, 50933), (6, 51098), (Start: 38 @51407 has 119 MA's), (41, 51437), (42, 51461), (46, 51491), (55, 51542),

Gene: Krakatau\_81 Start: 46587, Stop: 46766, Start Num: 37

Candidate Starts for Krakatau\_81:

(Start: 37 @46587 has 189 MA's), (55, 46713),

Gene: KristaRAM\_88 Start: 50345, Stop: 50554, Start Num: 37

Candidate Starts for KristaRAM\_88:

(28, 50297), (Start: 37 @50345 has 189 MA's), (44, 50429), (47, 50441), (54, 50492),

Gene: LastJedi\_77 Start: 48160, Stop: 48339, Start Num: 37

Candidate Starts for LastJedi\_77:

(14, 47986), (16, 47995), (18, 48019), (21, 48037), (31, 48130), (Start: 34 @48139 has 4 MA's), (Start: 37 @48160 has 189 MA's), (45, 48235), (55, 48286),

Gene: Latretium\_89 Start: 50528, Stop: 50707, Start Num: 37

Candidate Starts for Latretium\_89:

(Start: 37 @50528 has 189 MA's), (45, 50603), (49, 50639), (55, 50654),

Gene: Leozinho\_86 Start: 48229, Stop: 48408, Start Num: 37

Candidate Starts for Leozinho\_86:

(Start: 37 @48229 has 189 MA's), (55, 48355),

Gene: Leperchaun\_89 Start: 51841, Stop: 52050, Start Num: 37

Candidate Starts for Leperchaun\_89:

(28, 51793), (Start: 37 @51841 has 189 MA's), (44, 51925), (47, 51937), (54, 51988),

Gene: LilMoolah\_88 Start: 51366, Stop: 51545, Start Num: 37

Candidate Starts for LilMoolah\_88:

(Start: 37 @51366 has 189 MA's), (45, 51441), (55, 51492),

Gene: Lilac\_84 Start: 51158, Stop: 51346, Start Num: 38

Candidate Starts for Lilac\_84:

(1, 50684), (6, 50849), (Start: 38 @51158 has 119 MA's), (41, 51188), (42, 51212), (46, 51242),

Gene: Lilizi\_83 Start: 50871, Stop: 51059, Start Num: 38

Candidate Starts for Lilizi\_83:

(1, 50397), (6, 50562), (Start: 38 @50871 has 119 MA's), (41, 50901), (42, 50925), (46, 50955), (55, 51006),

Gene: Lilpickle\_81 Start: 50759, Stop: 50947, Start Num: 38

Candidate Starts for Lilpickle\_81:

(1, 50285), (6, 50450), (Start: 38 @50759 has 119 MA's), (41, 50789), (42, 50813), (46, 50843), (55, 50894),

Gene: LittleShirley\_93 Start: 51342, Stop: 51521, Start Num: 37

Candidate Starts for LittleShirley\_93:

(Start: 37 @51342 has 189 MA's), (55, 51468),

Gene: Lizziana\_88 Start: 51409, Stop: 51588, Start Num: 37

Candidate Starts for Lizziana\_88:

(14, 51235), (16, 51244), (18, 51268), (21, 51286), (31, 51379), (Start: 34 @51388 has 4 MA's), (Start: 37 @51409 has 189 MA's), (45, 51484), (55, 51535),

Gene: Llama\_95 Start: 51865, Stop: 52077, Start Num: 37

Candidate Starts for Llama\_95:

(20, 51736), (24, 51805), (Start: 37 @51865 has 189 MA's), (40, 51889), (52, 51997), (53, 52009),

Gene: Llij\_85 Start: 49760, Stop: 49939, Start Num: 37

Candidate Starts for Llij\_85:



(27, 49718), (Start: 37 @49760 has 189 MA's), (45, 49835), (55, 49886),

Gene: Lorde\_88 Start: 47482, Stop: 47661, Start Num: 37

Candidate Starts for Lorde\_88:

(23, 47410), (Start: 35 @47467 has 7 MA's), (Start: 37 @47482 has 189 MA's), (49, 47593), (55, 47608),

Gene: LunaBlu\_91 Start: 51670, Stop: 51849, Start Num: 37

Candidate Starts for LunaBlu\_91:

(Start: 37 @51670 has 189 MA's), (45, 51745), (49, 51781), (55, 51796),

Gene: LunaStella\_76 Start: 49198, Stop: 49398, Start Num: 34

Candidate Starts for LunaStella\_76:

(9, 48940), (14, 49045), (16, 49054), (18, 49078), (31, 49189), (Start: 34 @49198 has 4 MA's), (Start: 37 @49219 has 189 MA's), (40, 49243), (45, 49294), (55, 49345),

Gene: MISSy\_83 Start: 51265, Stop: 51453, Start Num: 38

Candidate Starts for MISSy\_83:

(1, 50791), (6, 50956), (Start: 38 @51265 has 119 MA's), (41, 51295), (42, 51319), (46, 51349), (55, 51400),

Gene: MPhalcon\_83 Start: 51258, Stop: 51446, Start Num: 38

Candidate Starts for MPhalcon\_83:

(1, 50784), (6, 50949), (Start: 38 @51258 has 119 MA's), (41, 51288), (42, 51312), (46, 51342), (55, 51393),

Gene: MadMen\_93 Start: 51324, Stop: 51503, Start Num: 37

Candidate Starts for MadMen\_93:

(26, 51276), (Start: 37 @51324 has 189 MA's), (55, 51450),

Gene: MadamMonkfish\_82 Start: 50486, Stop: 50674, Start Num: 38

Candidate Starts for MadamMonkfish\_82:

(1, 50012), (6, 50177), (Start: 38 @50486 has 119 MA's), (41, 50516), (42, 50540), (46, 50570), (55, 50621),

Gene: Madiba\_88 Start: 50610, Stop: 50789, Start Num: 37

Candidate Starts for Madiba\_88:

(14, 50436), (16, 50445), (18, 50469), (21, 50487), (31, 50580), (Start: 34 @50589 has 4 MA's), (Start: 37 @50610 has 189 MA's), (45, 50685), (55, 50736),

Gene: Manda\_83 Start: 52345, Stop: 52548, Start Num: 38

Candidate Starts for Manda\_83:

(1, 51871), (6, 52036), (Start: 38 @52345 has 119 MA's), (41, 52375), (42, 52399), (46, 52429), (55, 52480),

Gene: Mandlovu\_85 Start: 48564, Stop: 48743, Start Num: 37

Candidate Starts for Mandlovu\_85:

(36, 48552), (Start: 37 @48564 has 189 MA's), (40, 48588), (45, 48639), (48, 48657), (49, 48675), (55, 48690),

Gene: Mantra\_86 Start: 50751, Stop: 50930, Start Num: 37

Candidate Starts for Mantra\_86:

(Start: 37 @50751 has 189 MA's), (55, 50877),

Gene: Maravista\_84 Start: 52017, Stop: 52196, Start Num: 37  
Candidate Starts for Maravista\_84:  
(14, 51843), (16, 51852), (18, 51876), (21, 51894), (31, 51987), (Start: 34 @51996 has 4 MA's), (Start: 37 @52017 has 189 MA's), (45, 52092), (55, 52143),

Gene: Marcoliusprime\_70 Start: 46337, Stop: 46504, Start Num: 39  
Candidate Starts for Marcoliusprime\_70:  
(25, 46277), (Start: 39 @46337 has 9 MA's), (41, 46361), (43, 46397),

Gene: Marshmallow\_80 Start: 52035, Stop: 52223, Start Num: 38  
Candidate Starts for Marshmallow\_80:  
(1, 51561), (6, 51726), (Start: 38 @52035 has 119 MA's), (41, 52065), (42, 52089), (46, 52119), (55, 52170),

Gene: Martik\_84 Start: 51689, Stop: 51868, Start Num: 37  
Candidate Starts for Martik\_84:  
(Start: 37 @51689 has 189 MA's), (45, 51764), (49, 51800), (55, 51815),

Gene: Mattes\_86 Start: 51189, Stop: 51389, Start Num: 34  
Candidate Starts for Mattes\_86:  
(21, 51087), (31, 51180), (Start: 34 @51189 has 4 MA's), (Start: 37 @51210 has 189 MA's), (55, 51336),

Gene: Maxxinista\_84 Start: 51131, Stop: 51319, Start Num: 38  
Candidate Starts for Maxxinista\_84:  
(1, 50657), (6, 50822), (Start: 38 @51131 has 119 MA's), (41, 51161), (42, 51185), (46, 51215), (55, 51266),

Gene: Melissauren88\_77 Start: 46817, Stop: 47026, Start Num: 37  
Candidate Starts for Melissauren88\_77:  
(28, 46769), (Start: 37 @46817 has 189 MA's), (44, 46901), (47, 46913), (54, 46964),

Gene: MilanaBonita\_82 Start: 49346, Stop: 49525, Start Num: 37  
Candidate Starts for MilanaBonita\_82:  
(14, 49172), (16, 49181), (18, 49205), (21, 49223), (31, 49316), (Start: 34 @49325 has 4 MA's), (Start: 37 @49346 has 189 MA's), (45, 49421), (55, 49472),

Gene: MilleniumForce\_88 Start: 51311, Stop: 51490, Start Num: 37  
Candidate Starts for MilleniumForce\_88:  
(14, 51137), (16, 51146), (18, 51170), (21, 51188), (31, 51281), (Start: 34 @51290 has 4 MA's), (Start: 37 @51311 has 189 MA's), (45, 51386), (55, 51437),

Gene: Milly\_70 Start: 46311, Stop: 46478, Start Num: 39  
Candidate Starts for Milly\_70:  
(25, 46251), (Start: 39 @46311 has 9 MA's), (41, 46335), (43, 46371),

Gene: Mindy\_81 Start: 50347, Stop: 50535, Start Num: 38  
Candidate Starts for Mindy\_81:  
(1, 49873), (6, 50038), (Start: 38 @50347 has 119 MA's), (41, 50377), (42, 50401), (46, 50431), (55, 50482),

Gene: MinionDave\_86 Start: 50975, Stop: 51154, Start Num: 37

Candidate Starts for MinionDave\_86:  
(Start: 37 @50975 has 189 MA's), (45, 51050), (55, 51101),

Gene: Miniwave\_77 Start: 50803, Stop: 50991, Start Num: 38  
Candidate Starts for Miniwave\_77:  
(1, 50329), (6, 50494), (Start: 38 @50803 has 119 MA's), (41, 50833), (42, 50857), (44, 50881), (46, 50887), (55, 50938),

Gene: Misfit\_83 Start: 52277, Stop: 52465, Start Num: 38  
Candidate Starts for Misfit\_83:  
(1, 51803), (6, 51968), (Start: 38 @52277 has 119 MA's), (41, 52307), (42, 52331), (46, 52361), (55, 52412),

Gene: MisterCuddles\_87 Start: 51179, Stop: 51358, Start Num: 37  
Candidate Starts for MisterCuddles\_87:  
(Start: 37 @51179 has 189 MA's), (55, 51305),

Gene: Modragons\_93 Start: 51853, Stop: 52065, Start Num: 37  
Candidate Starts for Modragons\_93:  
(20, 51724), (24, 51793), (Start: 37 @51853 has 189 MA's), (40, 51877), (52, 51985), (53, 51997),

Gene: Moldemort\_85 Start: 51359, Stop: 51547, Start Num: 38  
Candidate Starts for Moldemort\_85:  
(1, 50885), (6, 51050), (Start: 38 @51359 has 119 MA's), (41, 51389), (42, 51413), (46, 51443), (55, 51494),

Gene: MooMoo\_83 Start: 48800, Stop: 48997, Start Num: 37  
Candidate Starts for MooMoo\_83:  
(21, 48677), (31, 48770), (33, 48779), (Start: 37 @48800 has 189 MA's),

Gene: Moonbeam\_90 Start: 51626, Stop: 51838, Start Num: 37  
Candidate Starts for Moonbeam\_90:  
(Start: 37 @51626 has 189 MA's), (40, 51650), (52, 51758), (53, 51770),

Gene: Mosby\_78 Start: 50560, Stop: 50748, Start Num: 38  
Candidate Starts for Mosby\_78:  
(1, 50086), (6, 50251), (Start: 38 @50560 has 119 MA's), (41, 50590), (42, 50614), (46, 50644), (55, 50695),

Gene: Mova\_91 Start: 51149, Stop: 51328, Start Num: 37  
Candidate Starts for Mova\_91:  
(23, 51077), (Start: 35 @51134 has 7 MA's), (Start: 37 @51149 has 189 MA's), (45, 51224), (55, 51275),

Gene: Mozy\_95 Start: 50915, Stop: 51094, Start Num: 37  
Candidate Starts for Mozy\_95:  
(29, 50879), (30, 50885), (32, 50888), (Start: 35 @50903 has 7 MA's), (Start: 37 @50915 has 189 MA's), (45, 50990), (55, 51041),

Gene: Ms6\_89 Start: 47480, Stop: 47659, Start Num: 37  
Candidate Starts for Ms6\_89:  
(14, 47306), (16, 47315), (18, 47339), (21, 47357), (31, 47450), (Start: 34 @47459 has 4 MA's), (Start: 37 @47480 has 189 MA's), (45, 47555), (55, 47606),

Gene: Mufasa\_70 Start: 45897, Stop: 46064, Start Num: 39

Candidate Starts for Mufasa\_70:

(12, 45681), (13, 45690), (25, 45837), (Start: 39 @45897 has 9 MA's), (41, 45921),

Gene: Murica\_85 Start: 52206, Stop: 52394, Start Num: 38

Candidate Starts for Murica\_85:

(1, 51732), (6, 51897), (Start: 38 @52206 has 119 MA's), (41, 52236), (42, 52260), (46, 52290), (55, 52341),

Gene: Murphy\_82 Start: 51643, Stop: 51831, Start Num: 38

Candidate Starts for Murphy\_82:

(1, 51169), (6, 51334), (Start: 38 @51643 has 119 MA's), (41, 51673), (42, 51697), (46, 51727), (55, 51778),

Gene: Mutaforma13\_90 Start: 50446, Stop: 50628, Start Num: 37

Candidate Starts for Mutaforma13\_90:

(Start: 37 @50446 has 189 MA's), (45, 50524), (55, 50575),

Gene: Myrale\_82 Start: 51903, Stop: 52091, Start Num: 38

Candidate Starts for Myrale\_82:

(1, 51429), (6, 51594), (Start: 38 @51903 has 119 MA's), (44, 51981), (46, 51987), (50, 52023),

Gene: Nala\_84 Start: 51767, Stop: 51955, Start Num: 38

Candidate Starts for Nala\_84:

(1, 51293), (6, 51458), (Start: 38 @51767 has 119 MA's), (41, 51797), (42, 51821), (46, 51851), (55, 51902),

Gene: NelitzaMV\_80 Start: 50849, Stop: 51037, Start Num: 38

Candidate Starts for NelitzaMV\_80:

(1, 50375), (6, 50540), (Start: 38 @50849 has 119 MA's), (41, 50879), (42, 50903), (46, 50933), (55, 50984),

Gene: Nimbo\_80 Start: 49784, Stop: 49963, Start Num: 37

Candidate Starts for Nimbo\_80:

(Start: 37 @49784 has 189 MA's), (55, 49910),

Gene: Nimrod\_83 Start: 52470, Stop: 52658, Start Num: 38

Candidate Starts for Nimrod\_83:

(1, 51996), (6, 52161), (Start: 38 @52470 has 119 MA's), (41, 52500), (42, 52524), (46, 52554), (55, 52605),

Gene: Nitzel\_82 Start: 47847, Stop: 48059, Start Num: 37

Candidate Starts for Nitzel\_82:

(Start: 37 @47847 has 189 MA's), (40, 47871), (52, 47979), (53, 47991),

Gene: Nivrat\_86 Start: 51239, Stop: 51418, Start Num: 37

Candidate Starts for Nivrat\_86:

(Start: 37 @51239 has 189 MA's), (45, 51314), (55, 51365),

Gene: NoSleep\_83 Start: 51104, Stop: 51292, Start Num: 38

Candidate Starts for NoSleep\_83:

(1, 50630), (6, 50795), (Start: 38 @51104 has 119 MA's), (41, 51134), (42, 51158), (46, 51188), (55, 51239),

Gene: NormanBulbieJr\_85 Start: 51186, Stop: 51365, Start Num: 37

Candidate Starts for NormanBulbieJr\_85:

(Start: 37 @51186 has 189 MA's), (45, 51261), (49, 51297), (55, 51312),

Gene: Ochi17\_94 Start: 51460, Stop: 51672, Start Num: 37

Candidate Starts for Ochi17\_94:

(20, 51331), (24, 51400), (Start: 37 @51460 has 189 MA's), (40, 51484), (52, 51592), (53, 51604),

Gene: OfUltron\_96 Start: 52009, Stop: 52221, Start Num: 37

Candidate Starts for OfUltron\_96:

(20, 51880), (24, 51949), (Start: 37 @52009 has 189 MA's), (40, 52033), (52, 52141), (53, 52153),

Gene: Ogopogo\_93 Start: 50508, Stop: 50687, Start Num: 37

Candidate Starts for Ogopogo\_93:

(Start: 37 @50508 has 189 MA's), (45, 50583), (55, 50634),

Gene: Oksu\_91 Start: 52614, Stop: 52802, Start Num: 40

Candidate Starts for Oksu\_91:

(20, 52461), (24, 52530), (Start: 37 @52590 has 189 MA's), (40, 52614), (52, 52722), (53, 52734),

Gene: OldBen\_85 Start: 51176, Stop: 51355, Start Num: 37

Candidate Starts for OldBen\_85:

(Start: 37 @51176 has 189 MA's), (55, 51302),

Gene: OlympiaSaint\_89 Start: 51420, Stop: 51599, Start Num: 37

Candidate Starts for OlympiaSaint\_89:

(21, 51297), (31, 51390), (Start: 34 @51399 has 4 MA's), (Start: 37 @51420 has 189 MA's), (55, 51546),

Gene: OrionPax\_81 Start: 50855, Stop: 51043, Start Num: 38

Candidate Starts for OrionPax\_81:

(1, 50381), (6, 50546), (Start: 38 @50855 has 119 MA's), (41, 50885), (42, 50909), (46, 50939), (55, 50990),

Gene: Ovechkin\_93 Start: 52013, Stop: 52192, Start Num: 37

Candidate Starts for Ovechkin\_93:

(36, 52001), (Start: 37 @52013 has 189 MA's), (40, 52037), (45, 52088), (48, 52106), (49, 52124), (55, 52139),

Gene: OwlsT2W\_87 Start: 49851, Stop: 50030, Start Num: 37

Candidate Starts for OwlsT2W\_87:

(Start: 37 @49851 has 189 MA's), (45, 49926), (55, 49977),

Gene: PHappiness\_88 Start: 52005, Stop: 52184, Start Num: 37

Candidate Starts for PHappiness\_88:

(Start: 37 @52005 has 189 MA's), (55, 52131),

Gene: PMC\_85 Start: 49652, Stop: 49831, Start Num: 37

Candidate Starts for PMC\_85:

(23, 49580), (Start: 35 @49637 has 7 MA's), (Start: 37 @49652 has 189 MA's), (49, 49763), (55, 49778),

Gene: Pacc40\_84 Start: 51605, Stop: 51784, Start Num: 37  
Candidate Starts for Pacc40\_84:  
(Start: 37 @51605 has 189 MA's), (45, 51680), (55, 51731),

Gene: Palpatine\_84 Start: 52233, Stop: 52421, Start Num: 38  
Candidate Starts for Palpatine\_84:  
(1, 51759), (6, 51924), (Start: 38 @52233 has 119 MA's), (41, 52263), (42, 52287), (46, 52317), (55, 52368),

Gene: Paperbeatsrock\_81 Start: 51481, Stop: 51669, Start Num: 38  
Candidate Starts for Paperbeatsrock\_81:  
(1, 51007), (6, 51172), (Start: 38 @51481 has 119 MA's), (41, 51511), (42, 51535), (44, 51559), (46, 51565), (55, 51616),

Gene: Pat3\_80 Start: 50013, Stop: 50201, Start Num: 38  
Candidate Starts for Pat3\_80:  
(6, 49704), (Start: 38 @50013 has 119 MA's), (44, 50091), (46, 50097), (50, 50133),

Gene: Petra64142\_86 Start: 52700, Stop: 52888, Start Num: 38  
Candidate Starts for Petra64142\_86:  
(1, 52226), (6, 52391), (Start: 38 @52700 has 119 MA's), (41, 52730), (42, 52754), (44, 52778), (46, 52784), (55, 52835),

Gene: Phaja\_80 Start: 51307, Stop: 51495, Start Num: 38  
Candidate Starts for Phaja\_80:  
(1, 50833), (6, 50998), (Start: 38 @51307 has 119 MA's), (41, 51337), (42, 51361), (44, 51385), (46, 51391), (55, 51442),

Gene: Phalconet\_86 Start: 49981, Stop: 50160, Start Num: 37  
Candidate Starts for Phalconet\_86:  
(23, 49909), (Start: 35 @49966 has 7 MA's), (Start: 37 @49981 has 189 MA's), (45, 50056), (55, 50107),

Gene: Phanphagia\_90 Start: 51883, Stop: 52062, Start Num: 37  
Candidate Starts for Phanphagia\_90:  
(23, 51811), (Start: 35 @51868 has 7 MA's), (Start: 37 @51883 has 189 MA's), (49, 51994), (55, 52009),

Gene: Pharsalus\_79 Start: 51281, Stop: 51469, Start Num: 38  
Candidate Starts for Pharsalus\_79:  
(1, 50807), (6, 50972), (Start: 38 @51281 has 119 MA's), (41, 51311), (42, 51335), (44, 51359), (46, 51365), (55, 51416),

Gene: Phasih\_84 Start: 49369, Stop: 49548, Start Num: 37  
Candidate Starts for Phasih\_84:  
(Start: 37 @49369 has 189 MA's), (45, 49444), (55, 49495),

Gene: PhatBacter\_86 Start: 52253, Stop: 52441, Start Num: 38  
Candidate Starts for PhatBacter\_86:

(1, 51779), (6, 51944), (Start: 38 @52253 has 119 MA's), (41, 52283), (42, 52307), (46, 52337), (55, 52388),

Gene: Phatniss\_85 Start: 50038, Stop: 50217, Start Num: 37

Candidate Starts for Phatniss\_85:

(Start: 37 @50038 has 189 MA's), (49, 50149), (55, 50164),

Gene: Phaux\_84 Start: 52248, Stop: 52436, Start Num: 38

Candidate Starts for Phaux\_84:

(1, 51774), (6, 51939), (Start: 38 @52248 has 119 MA's), (41, 52278), (42, 52302), (46, 52332), (55, 52383),

Gene: PhesterPhotato\_91 Start: 50856, Stop: 51035, Start Num: 37

Candidate Starts for PhesterPhotato\_91:

(14, 50682), (16, 50691), (18, 50715), (21, 50733), (31, 50826), (Start: 34 @50835 has 4 MA's), (Start: 37 @50856 has 189 MA's), (45, 50931), (55, 50982),

Gene: Philus\_89 Start: 52370, Stop: 52549, Start Num: 37

Candidate Starts for Philus\_89:

(31, 52340), (Start: 34 @52349 has 4 MA's), (Start: 37 @52370 has 189 MA's), (55, 52496),

Gene: Phrux\_79 Start: 50841, Stop: 51029, Start Num: 38

Candidate Starts for Phrux\_79:

(1, 50367), (6, 50532), (Start: 38 @50841 has 119 MA's), (41, 50871), (42, 50895), (46, 50925), (55, 50976),

Gene: Pippy\_82 Start: 49069, Stop: 49248, Start Num: 37

Candidate Starts for Pippy\_82:

(14, 48895), (16, 48904), (18, 48928), (21, 48946), (31, 49039), (Start: 34 @49048 has 4 MA's), (Start: 37 @49069 has 189 MA's), (45, 49144), (55, 49195),

Gene: Plumbus\_88 Start: 48222, Stop: 48401, Start Num: 37

Candidate Starts for Plumbus\_88:

(14, 48048), (16, 48057), (17, 48069), (18, 48081), (21, 48099), (31, 48192), (Start: 34 @48201 has 4 MA's), (Start: 37 @48222 has 189 MA's), (55, 48348),

Gene: Poenanya\_91 Start: 51481, Stop: 51660, Start Num: 37

Candidate Starts for Poenanya\_91:

(21, 51358), (31, 51451), (Start: 34 @51460 has 4 MA's), (Start: 37 @51481 has 189 MA's), (45, 51556), (55, 51607),

Gene: Policronamos\_86 Start: 52248, Stop: 52436, Start Num: 38

Candidate Starts for Policronamos\_86:

(1, 51774), (6, 51939), (Start: 38 @52248 has 119 MA's), (41, 52278), (42, 52302), (46, 52332), (55, 52383),

Gene: Polka14\_92 Start: 52271, Stop: 52450, Start Num: 37

Candidate Starts for Polka14\_92:

(21, 52148), (31, 52241), (Start: 34 @52250 has 4 MA's), (Start: 37 @52271 has 189 MA's), (45, 52346), (55, 52397),

Gene: Pollywog\_89 Start: 52081, Stop: 52293, Start Num: 37

Candidate Starts for Pollywog\_89:

(Start: 37 @52081 has 189 MA's), (40, 52105), (52, 52213), (53, 52225),

Gene: PopTart\_80 Start: 47838, Stop: 48050, Start Num: 37

Candidate Starts for PopTart\_80:

(4, 47490), (8, 47541), (11, 47574), (14, 47661), (16, 47670), (18, 47694), (21, 47712), (31, 47805), (33, 47814), (Start: 37 @47838 has 189 MA's), (52, 47970), (53, 47982),

Gene: Porky\_81 Start: 50671, Stop: 50859, Start Num: 38

Candidate Starts for Porky\_81:

(1, 50197), (6, 50362), (Start: 38 @50671 has 119 MA's), (41, 50701), (42, 50725), (46, 50755), (55, 50806),

Gene: Priscilla\_87 Start: 51284, Stop: 51463, Start Num: 37

Candidate Starts for Priscilla\_87:

(Start: 37 @51284 has 189 MA's), (45, 51359), (49, 51395), (55, 51410),

Gene: Pumpkin\_85 Start: 51899, Stop: 52087, Start Num: 38

Candidate Starts for Pumpkin\_85:

(1, 51425), (6, 51590), (Start: 38 @51899 has 119 MA's), (41, 51929), (42, 51953), (46, 51983), (55, 52034),

Gene: Quallification\_83 Start: 51889, Stop: 52077, Start Num: 38

Candidate Starts for Quallification\_83:

(1, 51415), (6, 51580), (Start: 38 @51889 has 119 MA's), (41, 51919), (42, 51943), (46, 51973), (55, 52024),

Gene: QuickMath\_89 Start: 51040, Stop: 51219, Start Num: 37

Candidate Starts for QuickMath\_89:

(Start: 37 @51040 has 189 MA's), (55, 51166),

Gene: Quico\_95 Start: 52283, Stop: 52477, Start Num: 35

Candidate Starts for Quico\_95:

(23, 52226), (Start: 35 @52283 has 7 MA's), (Start: 37 @52298 has 189 MA's), (45, 52373), (55, 52424),

Gene: Radiance\_84 Start: 50365, Stop: 50574, Start Num: 37

Candidate Starts for Radiance\_84:

(28, 50317), (Start: 37 @50365 has 189 MA's), (44, 50449), (47, 50461), (54, 50512),

Gene: Rakim\_83 Start: 51355, Stop: 51543, Start Num: 38

Candidate Starts for Rakim\_83:

(1, 50881), (6, 51046), (Start: 38 @51355 has 119 MA's), (44, 51433), (46, 51439), (50, 51475),

Gene: Ramsey\_92 Start: 52536, Stop: 52715, Start Num: 37

Candidate Starts for Ramsey\_92:

(Start: 37 @52536 has 189 MA's), (45, 52611), (55, 52662),

Gene: Renaud18\_96 Start: 51315, Stop: 51494, Start Num: 37

Candidate Starts for Renaud18\_96:

(3, 50973), (5, 51006), (9, 51039), (14, 51141), (16, 51150), (19, 51183), (21, 51192), (31, 51285), (Start: 34 @51294 has 4 MA's), (Start: 37 @51315 has 189 MA's), (45, 51390), (55, 51441),

Gene: Rialto\_93 Start: 51722, Stop: 51934, Start Num: 37



Candidate Starts for Rialto\_93:  
(Start: 37 @51722 has 189 MA's), (40, 51746), (52, 51854), (53, 51866),

Gene: Rimmer\_83 Start: 51594, Stop: 51782, Start Num: 38  
Candidate Starts for Rimmer\_83:  
(1, 51120), (6, 51285), (Start: 38 @51594 has 119 MA's), (44, 51672), (46, 51678), (50, 51714),

Gene: RitaG\_88 Start: 51807, Stop: 51986, Start Num: 37  
Candidate Starts for RitaG\_88:  
(Start: 37 @51807 has 189 MA's), (55, 51933),

Gene: RiverMonster\_82 Start: 51419, Stop: 51607, Start Num: 38  
Candidate Starts for RiverMonster\_82:  
(1, 50945), (6, 51110), (Start: 38 @51419 has 119 MA's), (41, 51449), (42, 51473), (46, 51503), (55, 51554),

Gene: Rockne\_89 Start: 49664, Stop: 49843, Start Num: 37  
Candidate Starts for Rockne\_89:  
(23, 49592), (Start: 35 @49649 has 7 MA's), (Start: 37 @49664 has 189 MA's), (49, 49775), (55, 49790),

Gene: Royals2015\_93 Start: 50353, Stop: 50532, Start Num: 37  
Candidate Starts for Royals2015\_93:  
(14, 50179), (16, 50188), (18, 50212), (21, 50230), (31, 50323), (Start: 34 @50332 has 4 MA's), (Start: 37 @50353 has 189 MA's), (45, 50428), (55, 50479),

Gene: Ruby\_84 Start: 51180, Stop: 51359, Start Num: 37  
Candidate Starts for Ruby\_84:  
(Start: 37 @51180 has 189 MA's), (55, 51306),

Gene: SG4\_90 Start: 51986, Stop: 52195, Start Num: 37  
Candidate Starts for SG4\_90:  
(28, 51938), (Start: 37 @51986 has 189 MA's), (44, 52070), (47, 52082), (54, 52133),

Gene: STLscum\_67 Start: 42317, Stop: 42105, Start Num: 37  
Candidate Starts for STLscum\_67:  
(22, 42389), (Start: 37 @42317 has 189 MA's), (40, 42293), (52, 42185), (53, 42173), (54, 42167),

Gene: Saal\_83 Start: 50780, Stop: 50959, Start Num: 37  
Candidate Starts for Saal\_83:  
(14, 50606), (16, 50615), (18, 50639), (21, 50657), (31, 50750), (Start: 34 @50759 has 4 MA's), (Start: 37 @50780 has 189 MA's), (45, 50855), (55, 50906),

Gene: Sabbb\_92 Start: 49485, Stop: 49664, Start Num: 37  
Candidate Starts for Sabbb\_92:  
(Start: 37 @49485 has 189 MA's), (45, 49560), (49, 49596), (55, 49611),

Gene: Saints25\_81 Start: 50832, Stop: 51020, Start Num: 38  
Candidate Starts for Saints25\_81:  
(1, 50358), (6, 50523), (Start: 38 @50832 has 119 MA's), (41, 50862), (42, 50886), (46, 50916), (55, 50967),

Gene: Sandalphon\_87 Start: 51671, Stop: 51844, Start Num: 37

Candidate Starts for Sandalphon\_87:  
(Start: 37 @51671 has 189 MA's), (45, 51746), (49, 51782), (55, 51797),

Gene: Sarma624\_88 Start: 47656, Stop: 47835, Start Num: 37  
Candidate Starts for Sarma624\_88:  
(23, 47584), (Start: 35 @47641 has 7 MA's), (Start: 37 @47656 has 189 MA's), (49, 47767), (55, 47782),

Gene: Sassay\_77 Start: 49522, Stop: 49710, Start Num: 38  
Candidate Starts for Sassay\_77:  
(1, 49048), (6, 49213), (Start: 38 @49522 has 119 MA's), (41, 49552), (42, 49576), (46, 49606), (55, 49657),

Gene: SassyB\_80 Start: 47838, Stop: 48050, Start Num: 37  
Candidate Starts for SassyB\_80:  
(4, 47490), (8, 47541), (11, 47574), (14, 47661), (16, 47670), (18, 47694), (21, 47712), (31, 47805), (33, 47814), (Start: 37 @47838 has 189 MA's), (52, 47970), (53, 47982),

Gene: Scottish\_87 Start: 50146, Stop: 50325, Start Num: 37  
Candidate Starts for Scottish\_87:  
(31, 50116), (Start: 34 @50125 has 4 MA's), (Start: 37 @50146 has 189 MA's), (45, 50221), (55, 50272),

Gene: Seabastian\_96 Start: 52010, Stop: 52222, Start Num: 37  
Candidate Starts for Seabastian\_96:  
(20, 51881), (24, 51950), (Start: 37 @52010 has 189 MA's), (40, 52034), (52, 52142), (53, 52154),

Gene: Seagreen\_88 Start: 51351, Stop: 51530, Start Num: 37  
Candidate Starts for Seagreen\_88:  
(36, 51339), (Start: 37 @51351 has 189 MA's), (40, 51375), (45, 51426), (48, 51444), (49, 51462), (55, 51477),

Gene: ShamWow\_82 Start: 51741, Stop: 51929, Start Num: 38  
Candidate Starts for ShamWow\_82:  
(1, 51267), (6, 51432), (Start: 38 @51741 has 119 MA's), (41, 51771), (42, 51795), (46, 51825), (55, 51876),

Gene: Shauna1\_87 Start: 51499, Stop: 51678, Start Num: 37  
Candidate Starts for Shauna1\_87:  
(23, 51427), (Start: 35 @51484 has 7 MA's), (Start: 37 @51499 has 189 MA's), (49, 51610), (55, 51625),

Gene: ShereKhan\_80 Start: 51814, Stop: 52002, Start Num: 38  
Candidate Starts for ShereKhan\_80:  
(1, 51340), (6, 51505), (Start: 38 @51814 has 119 MA's), (41, 51844), (42, 51868), (46, 51898), (55, 51949),

Gene: ShiLan\_89 Start: 52933, Stop: 53112, Start Num: 37  
Candidate Starts for ShiLan\_89:  
(21, 52810), (31, 52903), (Start: 34 @52912 has 4 MA's), (Start: 37 @52933 has 189 MA's), (55, 53059),

Gene: ShowerHandel\_83 Start: 49616, Stop: 49795, Start Num: 37

Candidate Starts for ShowerHandel\_83:  
(Start: 37 @49616 has 189 MA's), (45, 49691), (49, 49727), (55, 49742),

Gene: ShroomBoi\_86 Start: 50441, Stop: 50620, Start Num: 37  
Candidate Starts for ShroomBoi\_86:  
(Start: 37 @50441 has 189 MA's), (55, 50567),

Gene: SiSi\_85 Start: 50276, Stop: 50455, Start Num: 37  
Candidate Starts for SiSi\_85:  
(Start: 37 @50276 has 189 MA's), (55, 50402),

Gene: Simpliphy\_81 Start: 50822, Stop: 51010, Start Num: 38  
Candidate Starts for Simpliphy\_81:  
(1, 50348), (6, 50513), (Start: 38 @50822 has 119 MA's), (41, 50852), (42, 50876), (46, 50906), (55, 50957),

Gene: SimranZ1\_86 Start: 49680, Stop: 49859, Start Num: 37  
Candidate Starts for SimranZ1\_86:  
(31, 49650), (Start: 34 @49659 has 4 MA's), (Start: 37 @49680 has 189 MA's), (40, 49704), (45, 49755), (49, 49791), (55, 49806),

Gene: SirDuracell\_81 Start: 50108, Stop: 50296, Start Num: 38  
Candidate Starts for SirDuracell\_81:  
(1, 49634), (6, 49799), (Start: 38 @50108 has 119 MA's), (44, 50186), (46, 50192), (50, 50228),

Gene: SophKB\_79 Start: 50500, Stop: 50688, Start Num: 38  
Candidate Starts for SophKB\_79:  
(1, 50026), (6, 50191), (Start: 38 @50500 has 119 MA's), (41, 50530), (42, 50554), (46, 50584), (55, 50635),

Gene: Sotrice96\_83 Start: 51503, Stop: 51691, Start Num: 38  
Candidate Starts for Sotrice96\_83:  
(1, 51029), (6, 51194), (Start: 38 @51503 has 119 MA's), (44, 51581), (46, 51587), (50, 51623),

Gene: Soul22\_88 Start: 48698, Stop: 48877, Start Num: 37  
Candidate Starts for Soul22\_88:  
(14, 48524), (16, 48533), (18, 48557), (21, 48575), (31, 48668), (Start: 34 @48677 has 4 MA's), (Start: 37 @48698 has 189 MA's), (45, 48773), (55, 48824),

Gene: Sparkdehlily\_96 Start: 49993, Stop: 50205, Start Num: 37  
Candidate Starts for Sparkdehlily\_96:  
(Start: 37 @49993 has 189 MA's), (40, 50017), (52, 50125), (53, 50137),

Gene: Spartacus\_94 Start: 53310, Stop: 53501, Start Num: 35  
Candidate Starts for Spartacus\_94:  
(Start: 35 @53310 has 7 MA's), (40, 53346), (45, 53397), (55, 53448),

Gene: Spoonbill\_85 Start: 48846, Stop: 49025, Start Num: 37  
Candidate Starts for Spoonbill\_85:  
(21, 48723), (31, 48816), (Start: 34 @48825 has 4 MA's), (Start: 37 @48846 has 189 MA's), (55, 48972),

Gene: Squirty\_88 Start: 54631, Stop: 54840, Start Num: 37

Candidate Starts for Squirty\_88:

(28, 54583), (Start: 37 @54631 has 189 MA's), (44, 54715), (47, 54727), (54, 54778),

Gene: StAnnes\_92 Start: 52364, Stop: 52543, Start Num: 37

Candidate Starts for StAnnes\_92:

(14, 52190), (16, 52199), (18, 52223), (21, 52241), (31, 52334), (Start: 34 @52343 has 4 MA's), (Start: 37 @52364 has 189 MA's), (45, 52439), (55, 52490),

Gene: Stank\_85 Start: 51761, Stop: 51949, Start Num: 38

Candidate Starts for Stank\_85:

(1, 51287), (6, 51452), (Start: 38 @51761 has 119 MA's), (41, 51791), (42, 51815), (46, 51845), (55, 51896),

Gene: Stap\_84 Start: 48346, Stop: 48555, Start Num: 37

Candidate Starts for Stap\_84:

(28, 48298), (Start: 37 @48346 has 189 MA's), (44, 48430), (47, 48442), (54, 48493),

Gene: Starcevich\_88 Start: 51870, Stop: 52049, Start Num: 37

Candidate Starts for Starcevich\_88:

(7, 51576), (10, 51609), (14, 51696), (16, 51705), (17, 51717), (19, 51738), (21, 51747), (31, 51840), (Start: 34 @51849 has 4 MA's), (Start: 37 @51870 has 189 MA's), (45, 51945), (55, 51996),

Gene: Stark\_83 Start: 51302, Stop: 51490, Start Num: 38

Candidate Starts for Stark\_83:

(1, 50828), (6, 50993), (Start: 38 @51302 has 119 MA's), (41, 51332), (42, 51356), (46, 51386), (55, 51437),

Gene: StellaBean\_78 Start: 51065, Stop: 51253, Start Num: 38

Candidate Starts for StellaBean\_78:

(1, 50591), (6, 50756), (Start: 38 @51065 has 119 MA's), (41, 51095), (42, 51119), (46, 51149), (55, 51200),

Gene: StolenFromERC\_85 Start: 51543, Stop: 51731, Start Num: 38

Candidate Starts for StolenFromERC\_85:

(1, 51069), (6, 51234), (Start: 38 @51543 has 119 MA's), (44, 51621), (46, 51627), (50, 51663),

Gene: Strobilo\_75 Start: 46313, Stop: 46480, Start Num: 39

Candidate Starts for Strobilo\_75:

(25, 46253), (Start: 39 @46313 has 9 MA's), (41, 46337), (43, 46373),

Gene: Strokeseat\_85 Start: 48621, Stop: 48800, Start Num: 37

Candidate Starts for Strokeseat\_85:

(36, 48609), (Start: 37 @48621 has 189 MA's), (40, 48645), (45, 48696), (48, 48714), (49, 48732), (55, 48747),

Gene: SuperGrey\_88 Start: 52853, Stop: 53032, Start Num: 37

Candidate Starts for SuperGrey\_88:

(26, 52805), (Start: 37 @52853 has 189 MA's), (55, 52979),

Gene: SwagPiggett\_88 Start: 51916, Stop: 52095, Start Num: 37

Candidate Starts for SwagPiggett\_88:

(14, 51742), (16, 51751), (18, 51775), (21, 51793), (31, 51886), (Start: 34 @51895 has 4 MA's), (Start: 37 @51916 has 189 MA's), (45, 51991), (55, 52042),

Gene: TBrady12\_85 Start: 51242, Stop: 51430, Start Num: 38

Candidate Starts for TBrady12\_85:

(1, 50768), (6, 50933), (Start: 38 @51242 has 119 MA's), (41, 51272), (42, 51296), (46, 51326), (55, 51377),

Gene: TChen\_85 Start: 51170, Stop: 51349, Start Num: 37

Candidate Starts for TChen\_85:

(9, 50891), (14, 50996), (16, 51005), (18, 51029), (31, 51140), (Start: 34 @51149 has 4 MA's), (Start: 37 @51170 has 189 MA's), (40, 51194), (45, 51245), (55, 51296),

Gene: TDanisky\_97 Start: 49993, Stop: 50205, Start Num: 37

Candidate Starts for TDanisky\_97:

(Start: 37 @49993 has 189 MA's), (40, 50017), (52, 50125), (53, 50137),

Gene: TM4\_68 Start: 40975, Stop: 41142, Start Num: 39

Candidate Starts for TM4\_68:

(12, 40759), (13, 40768), (25, 40915), (Start: 39 @40975 has 9 MA's), (41, 40999),

Gene: Taj\_96 Start: 52898, Stop: 53077, Start Num: 37

Candidate Starts for Taj\_96:

(23, 52826), (Start: 35 @52883 has 7 MA's), (Start: 37 @52898 has 189 MA's), (49, 53009), (55, 53024),

Gene: Tarkin\_81 Start: 51490, Stop: 51678, Start Num: 38

Candidate Starts for Tarkin\_81:

(1, 51016), (6, 51181), (Start: 38 @51490 has 119 MA's), (41, 51520), (42, 51544), (44, 51568), (46, 51574), (55, 51625),

Gene: TeardropMSU\_78 Start: 50490, Stop: 50678, Start Num: 38

Candidate Starts for TeardropMSU\_78:

(1, 50016), (6, 50181), (Start: 38 @50490 has 119 MA's), (41, 50520), (42, 50544), (46, 50574), (55, 50625),

Gene: Teaspoon\_79 Start: 51384, Stop: 51572, Start Num: 38

Candidate Starts for Teaspoon\_79:

(1, 50910), (6, 51075), (Start: 38 @51384 has 119 MA's), (41, 51414), (42, 51438), (46, 51468), (55, 51519),

Gene: Terminus\_85 Start: 52277, Stop: 52465, Start Num: 38

Candidate Starts for Terminus\_85:

(1, 51803), (6, 51968), (Start: 38 @52277 has 119 MA's), (41, 52307), (42, 52331), (46, 52361), (55, 52412),

Gene: ThetaBob\_89 Start: 49960, Stop: 50169, Start Num: 37

Candidate Starts for ThetaBob\_89:

(28, 49912), (Start: 37 @49960 has 189 MA's), (44, 50044), (47, 50056), (54, 50107),

Gene: Thresher\_84 Start: 52361, Stop: 52549, Start Num: 38

Candidate Starts for Thresher\_84:

(1, 51887), (6, 52052), (Start: 38 @52361 has 119 MA's), (41, 52391), (42, 52415), (46, 52445), (55, 52496),

Gene: Tomaszewski\_77 Start: 50653, Stop: 50841, Start Num: 38  
Candidate Starts for Tomaszewski\_77:  
(1, 50179), (6, 50344), (Start: 38 @50653 has 119 MA's), (41, 50683), (42, 50707), (46, 50737), (55, 50788),

Gene: Tootsieroll\_83 Start: 50956, Stop: 51135, Start Num: 37  
Candidate Starts for Tootsieroll\_83:  
(21, 50833), (31, 50926), (Start: 34 @50935 has 4 MA's), (Start: 37 @50956 has 189 MA's), (45, 51031), (55, 51082),

Gene: Totinger\_90 Start: 50419, Stop: 50598, Start Num: 37  
Candidate Starts for Totinger\_90:  
(Start: 37 @50419 has 189 MA's), (55, 50545),

Gene: Toto\_80 Start: 51741, Stop: 51929, Start Num: 38  
Candidate Starts for Toto\_80:  
(1, 51267), (6, 51432), (Start: 38 @51741 has 119 MA's), (41, 51771), (42, 51795), (46, 51825), (55, 51876),

Gene: Traaww1\_78 Start: 50925, Stop: 51113, Start Num: 38  
Candidate Starts for Traaww1\_78:  
(1, 50451), (6, 50616), (Start: 38 @50925 has 119 MA's), (41, 50955), (42, 50979), (46, 51009), (55, 51060),

Gene: Tuco\_83 Start: 52249, Stop: 52437, Start Num: 38  
Candidate Starts for Tuco\_83:  
(1, 51775), (6, 51940), (Start: 38 @52249 has 119 MA's), (41, 52279), (42, 52303), (46, 52333), (55, 52384),

Gene: Tweety\_89 Start: 51948, Stop: 52127, Start Num: 37  
Candidate Starts for Tweety\_89:  
(Start: 37 @51948 has 189 MA's), (55, 52074),

Gene: Ukulele\_77 Start: 50635, Stop: 50823, Start Num: 38  
Candidate Starts for Ukulele\_77:  
(1, 50161), (6, 50326), (Start: 38 @50635 has 119 MA's), (41, 50665), (42, 50689), (46, 50719), (55, 50770),

Gene: UncleRicky\_87 Start: 49523, Stop: 49717, Start Num: 35  
Candidate Starts for UncleRicky\_87:  
(23, 49466), (Start: 35 @49523 has 7 MA's), (Start: 37 @49538 has 189 MA's), (49, 49649), (55, 49664),

Gene: VRedHorse\_89 Start: 48720, Stop: 48899, Start Num: 37  
Candidate Starts for VRedHorse\_89:  
(Start: 37 @48720 has 189 MA's), (45, 48795), (49, 48831), (55, 48846),

Gene: Velveteen\_83 Start: 47656, Stop: 47835, Start Num: 37  
Candidate Starts for Velveteen\_83:  
(23, 47584), (Start: 35 @47641 has 7 MA's), (Start: 37 @47656 has 189 MA's), (49, 47767), (55, 47782),

Gene: Veteran\_81 Start: 50144, Stop: 50323, Start Num: 37

Candidate Starts for Veteran\_81:  
(Start: 37 @50144 has 189 MA's), (55, 50270),

Gene: Wachhund\_85 Start: 47819, Stop: 48001, Start Num: 37  
Candidate Starts for Wachhund\_85:  
(Start: 37 @47819 has 189 MA's), (45, 47897), (55, 47948),

Gene: Wee\_94 Start: 52974, Stop: 53153, Start Num: 37  
Candidate Starts for Wee\_94:  
(23, 52902), (Start: 35 @52959 has 7 MA's), (Start: 37 @52974 has 189 MA's), (49, 53085), (55, 53100),

Gene: Whatsapiecost\_80 Start: 45661, Stop: 45843, Start Num: 37  
Candidate Starts for Whatsapiecost\_80:  
(Start: 37 @45661 has 189 MA's), (45, 45739), (51, 45778), (55, 45790),

Gene: Whouxphf\_88 Start: 51159, Stop: 51338, Start Num: 37  
Candidate Starts for Whouxphf\_88:  
(Start: 37 @51159 has 189 MA's), (45, 51234), (55, 51285),

Gene: Wiggin\_84 Start: 51326, Stop: 51514, Start Num: 38  
Candidate Starts for Wiggin\_84:  
(1, 50852), (6, 51017), (Start: 38 @51326 has 119 MA's), (41, 51356), (42, 51380), (46, 51410), (55, 51461),

Gene: WillSterrel\_86 Start: 51094, Stop: 51273, Start Num: 37  
Candidate Starts for WillSterrel\_86:  
(26, 51046), (Start: 37 @51094 has 189 MA's), (55, 51220),

Gene: Willez\_77 Start: 49522, Stop: 49710, Start Num: 38  
Candidate Starts for Willez\_77:  
(1, 49048), (6, 49213), (Start: 38 @49522 has 119 MA's), (41, 49552), (42, 49576), (46, 49606), (55, 49657),

Gene: XFactor\_80 Start: 49287, Stop: 49466, Start Num: 37  
Candidate Starts for XFactor\_80:  
(14, 49113), (16, 49122), (18, 49146), (21, 49164), (31, 49257), (Start: 34 @49266 has 4 MA's), (Start: 37 @49287 has 189 MA's), (45, 49362), (55, 49413),

Gene: Xandras\_81 Start: 50734, Stop: 50922, Start Num: 38  
Candidate Starts for Xandras\_81:  
(1, 50260), (6, 50425), (Start: 38 @50734 has 119 MA's), (41, 50764), (42, 50788), (46, 50818), (55, 50869),

Gene: YassJohnny\_79 Start: 50692, Stop: 50880, Start Num: 38  
Candidate Starts for YassJohnny\_79:  
(1, 50218), (6, 50383), (Start: 38 @50692 has 119 MA's), (41, 50722), (42, 50746), (44, 50770), (46, 50776), (55, 50827),

Gene: Yorick\_80 Start: 50663, Stop: 50842, Start Num: 37  
Candidate Starts for Yorick\_80:  
(Start: 37 @50663 has 189 MA's), (45, 50738), (55, 50789),

Gene: Yoshi\_99 Start: 51375, Stop: 51554, Start Num: 37  
Candidate Starts for Yoshi\_99:  
(Start: 37 @51375 has 189 MA's), (40, 51399), (45, 51450), (49, 51486), (55, 51501),

Gene: Youngblood\_85 Start: 52204, Stop: 52392, Start Num: 38  
Candidate Starts for Youngblood\_85:  
(1, 51730), (6, 51895), (Start: 38 @52204 has 119 MA's), (41, 52234), (42, 52258), (46, 52288), (55, 52339),

Gene: Zapner\_94 Start: 49004, Stop: 49183, Start Num: 37  
Candidate Starts for Zapner\_94:  
(23, 48932), (Start: 35 @48989 has 7 MA's), (Start: 37 @49004 has 189 MA's), (49, 49115), (55, 49130),

Gene: Zerg\_88 Start: 50607, Stop: 50786, Start Num: 37  
Candidate Starts for Zerg\_88:  
(Start: 37 @50607 has 189 MA's), (55, 50733),

Gene: Zizzle\_90 Start: 52056, Stop: 52235, Start Num: 37  
Candidate Starts for Zizzle\_90:  
(21, 51933), (31, 52026), (Start: 34 @52035 has 4 MA's), (Start: 37 @52056 has 189 MA's), (45, 52131), (55, 52182),

Gene: ZoeJ\_69 Start: 45716, Stop: 45883, Start Num: 39  
Candidate Starts for ZoeJ\_69:  
(25, 45656), (Start: 39 @45716 has 9 MA's), (41, 45740), (43, 45776),

Gene: xkcd\_85 Start: 52391, Stop: 52579, Start Num: 38  
Candidate Starts for xkcd\_85:  
(1, 51917), (6, 52082), (Start: 38 @52391 has 119 MA's), (41, 52421), (42, 52445), (46, 52475), (55, 52526),