

Pham 193648



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 193648 Report

This analysis was run 11/02/24 on database version 579.

Pham number 193648 has 436 members, 29 are drafts.

Phages represented in each track:

- Track 1 : Munch\_17, Lucivia\_17, Bowtie\_17, Orange\_17, MaCh\_17, TinyTimmy\_17, Et2Brutus\_16, Bachome\_17, Ebony\_17, Fibonacci\_17, Gilberta\_17, Timothy\_17, Joselito\_17, Aneem\_17, Bud\_17, Mabel\_17
- Track 2 : Pharaoh\_17
- Track 3 : Zimmer\_19, Refuge\_20
- Track 4 : DarthPhader\_18
- Track 5 : Remus\_19, MinecraftSteve\_20, Switzerland\_19, Battleship\_20, LastResort\_19, JSwag\_19, ShayRa\_20, Iceman\_17, Rosalind\_19, KatherineG\_19, DekHockey33\_19, Soups\_19, Oofda\_20, Waits\_19, Nebulosus\_19, ReMo\_19, OKaNui\_17, Nedarya\_18, Anaysia\_19, Epsocamisio\_19, Strosahl\_19, Boohoo\_19, Looper\_20
- Track 6 : 40AC\_20
- Track 7 : Kimona\_13
- Track 8 : QueenBeesly\_17, Anselm\_17, AN3\_17, Georgie2\_18, Dignity\_19, AbbyPaige\_19, SweetiePie\_17, Whabigail7\_19, DudeLittle\_17, VA6\_17, Benvolio\_17, Power\_17, Retro23\_17, Dalmatian\_17, Smeagan\_19, Buggy\_19, Leviathan\_19, LilTurb\_19, Agape74\_19, JoshKayV\_19, SnapTap\_17, Echild\_17, Crucio\_17, SemperFi\_19, FiringLine\_17, Turbido\_19
- Track 9 : Tomathan\_20, First\_0017, D29\_18, PainterBoy\_18, EvilGenius\_19, Superchunk\_16, Caraxes\_16, Anon\_17, LadyBird\_17, StarStuff\_20, Travvers\_20, Trooper\_17, HarryHoudini\_19, Updawg\_19, BiancaTri92\_19, DBQu4n\_20, NaSiaTalie\_17, Adzzy\_18, Duplo\_20, EZMoney23\_21, Flare16\_17, ChipMunk\_19, Equemioh13\_19, AnnaL29\_20, Kerberos\_20, 20ES\_17, D32\_20, KingCyrus\_19, Lucyedi\_18, Baehexic\_18, TarsusIV\_17, MiculUcigas\_17, Pomar16\_20, WideWale\_19, Kalpine\_20, Odin\_16, SwirlSquare\_19, Ph8s\_18, Trixie\_20, Centaur\_19, Drake55\_19, Naji\_20, Changeling\_20, WeiHuaDA\_23, EagleEye\_19, BobSwaget\_20, Piro94\_18
- Track 10 : IronMan\_19
- Track 11 : Jerm\_19
- Track 12 : TipsytheTRex\_16
- Track 13 : CRB1\_17
- Track 14 : Bradman\_16, Quokka\_15, MajorMajor\_16
- Track 15 : Malec\_18, Miko\_20, Colin\_21, Leogania\_19, Lokk\_20, Larenn\_18
- Track 16 : Deloris\_18, BengiVuitton\_18
- Track 17 : Fameo\_17, QueenB2\_17
- Track 18 : L5\_18
- Track 19 : Landor\_18, Phaded\_20

- Track 20 : MissWhite\_17
- Track 21 : Koduck\_17
- Track 22 : Serenity\_16, Pukovnik\_19, XianYue\_17
- Track 23 : Journey13\_15
- Track 24 : Iwokeuplikedis\_18
- Track 25 : Che12\_19
- Track 26 : Bactobuster\_18, Jaan\_20
- Track 27 : Heffalump\_19
- Track 28 : BabyBack\_19
- Track 29 : Acolyte\_17
- Track 30 : Jsquared\_16
- Track 31 : NothingSpecial\_19
- Track 32 : Kinmap\_16
- Track 33 : Norbert\_16, Noella\_17, ResDef\_17, Caviar\_17, Popcicle\_17, Pocahontas\_17, Todacoro\_17, Hookmount\_17, Texage\_16, Margo\_17, Lambert1\_17, QuinnKiro\_16
- Track 34 : Anubis\_20, Rummer\_18, LugYA\_20, Misomonster\_20, JenCasNa\_18, LarryKay\_18, Louie6\_18, Wooldri\_20, Spike509\_18, Hercules11\_18, P28Green\_18, DaHudson\_18, PGHhamlin\_20, Pembroke\_18, Stagni\_18, MadMarie\_18, Grub\_18, Methuselah\_18, KADY\_19, MoneyMay\_18, Marie\_18, HashRod\_19, SoYo\_18, Sabinator\_18, Bxz2\_18, PotatoSplit\_19, Farber\_18, Microwolf\_18, AgronaGT15\_18, Vix\_18, Dieselweasel\_18, BreSam8\_18, MuchMore\_20, BuzzBuzz\_17, Colbster\_18, Fernando\_18, Daishi\_17, Phoebe\_18, Grum1\_18, Taurus\_18, LBerry\_18, JHC117\_18, GtownJaz\_18, Soshari\_20, Tiffany\_18, Beauxregard13\_18, EpicPhail\_18, Penny1\_18, Mainiac\_18, Cullens\_18, Phoxy\_18, Aglet\_18, MarQuardt\_18, Watson\_18, AugsMagnumOpus\_20, Sabia\_18, Lilith\_18, Snickers\_18
- Track 35 : SoilDragon\_18, Jobu08\_18
- Track 36 : Heliosoles\_18, Wiks\_20, CloudWang3\_20, PhishRPhriends\_17, VohminGhazi\_20, ACFishhook\_18, HaveUMetTed\_19, OlanP\_18, SmellyB\_20, Gemma\_18, Reba\_19, Manu\_19, Roksolana\_20, Chartreuse\_20, DaVinci\_20, Blinn1\_20, Kalb97\_19, Yokurt\_20, Kalnoky\_19, Kipper29\_20, Artemis2UCLA\_20, WunderPhul\_20, EricB\_20, Groupthink\_19, Phranny\_19, Kazan\_20, GreedyLawyer\_20, PurpleHaze\_18, Indra\_20, Hexamo\_20, Zulu\_20, Lilbunny\_20, JeppNRM\_19, Hoot\_20, Marius\_19, Zaka\_20, Pawn\_19, McFly\_20
- Track 37 : MA5\_16
- Track 38 : Scamp\_16, BubbleTrouble\_16, Baby16\_16, RhynO\_17, Spino\_16, Chiqui\_15, Roosevelt\_16, Kremtemulon\_16, Romney\_16, Connomayer\_16, Taquarus\_16, Kyee\_16, Rebeuca\_17, Pipcraft\_16, Maverick\_16, Cocoaberry\_16, NorthStar\_16, Eagle\_15, ChampagnePapi\_16, Commander\_16, Bombshell\_16, CentreCat\_16, Ulysses\_15, Chaph\_16, KFPoly\_16, BangNhom\_15, Obama12\_16, Phacado\_16, Funston\_16, Wizard007\_16, Shaka\_16, Deano\_16, LHTSCC\_16, Rowdy\_19, MeeZee\_16, WalterMcMickey\_16, Cerulean\_16, Dhanush\_16, NotAPhaseMom\_16, Gadost\_16, Medusa\_16, DustyMartin\_19, Pumbaa\_16, Bartimeaus\_16, Morrow\_16, Blackmoor\_16, Bruiser\_16, Happiness\_16, Shapes\_19, Eros\_16, Burger\_15, Iracema64\_16, Albee\_16, Houdini22\_16, Flux\_16, Anthony\_16, Palestino\_16, Anyyong\_16, Caelakin\_16, Stasia\_17, Twister\_16, JoongJeon\_16, Melvin\_16, LochMonster\_16, BabyJohn\_15, PeterPeter\_16, Avle17\_16, Phelipe\_16, Mazhar510\_16, Topanga\_16, Eris\_16, Thanksgivukkah\_16, Cintron\_16, Broseidon\_16, Druantia\_16, Lorenzo\_16, SheldonCooper\_16, Kratark\_16, Kristoff\_17, Kingmustik0402\_16, TroyPia\_16, Millski\_16, Nemo27\_16, Citius\_16, LittleB\_16, Edison31\_16, Phighter1804\_16, Wander\_16, DirtyDunning\_16, Wilbur\_16
- Track 39 : Noelle\_16, Eurydice\_16, GaugeLDP\_19, JetBlade\_16, ANI8\_20, Rosa24\_15, BellusTerra\_16, Peaches\_16, LittleGuy\_16, Ohfah\_16, LeoAvram\_16,

Floean\_16, Tinybot\_15, ICleared\_16, Polymorphads\_16, Lunsford\_17, Nebs\_16, HamSlice\_15, Arturo\_15, Clarenza\_16, YoSam321\_16, Phontbonne\_16, Sparxx\_16, TiroTheta9\_16, Ruin\_16, Koreni\_15, Eapen\_16, C3\_15, Sabertooth\_16, Alberto7\_17, AN9\_20, Camperdownii\_15, Abdiel\_16, Maxo\_16, LappelDuVide\_16, Holli\_16, TygerBlood\_16, Relief\_16, Kamy\_16, TinaFeyge\_16, Nyxis\_16, Jaykayelowell\_16, Lemur\_16, Rachaly\_20, VC3\_20, Skipitt\_16

- Track 40 : Miramae\_16, NicoleTera\_21, RedRock\_20, Loser\_20, Mundrea\_16, Cindaradix\_15, ArcherNM\_19
- Track 41 : Rifter\_20, Koko\_20, SuperCallie99\_20, Tucker\_20, Hammer\_20, Gladiator\_20, Blue7\_20, Gruunaga\_20, Jeffabunny\_20
- Track 42 : Cookiedough\_20, Isiphiwo\_20, Jordennis\_20, Neeharika16\_20, Newrala\_20, Helmet\_21, BABullseye\_20, Candra\_20, Priamo\_20, SuperAwesome\_20, Garak\_21
- Track 43 : JewelBug\_20, Dorothea\_20
- Track 44 : Pmask\_20
- Track 45 : DroogsArmy\_17, HINdeR\_16, Timshel\_17
- Track 46 : RGL3\_6
- Track 47 : PhailMary\_12

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

The start number called the most often in the published annotations is 15, it was called in 402 of the 407 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 20ES\_17, 40AC\_20, ACFishhook\_18, AN3\_17, AN9\_20, ANI8\_20, AbbyPaige\_19, Abdiel\_16, Acolyte\_17, Adzzy\_18, Agape74\_19, Aglet\_18, AgronaGT15\_18, Albee\_16, Alberto7\_17, Anaysia\_19, Aneem\_17, AnnaL29\_20, Annyong\_16, Anon\_17, Anselm\_17, Anthony\_16, Anubis\_20, ArcherNM\_19, Artemis2UCLA\_20, Arturo\_15, AugsMagnumOpus\_20, Avle17\_16, BABullseye\_20, Baby16\_16, BabyBack\_19, BabyJohn\_15, Bachome\_17, Bactobuster\_18, Baehexic\_18, BangNhom\_15, Bartimeaus\_16, Battleship\_20, Beauxregard13\_18, BellusTerra\_16, BengiVuitton\_18, Benvolio\_17, BiancaTri92\_19, Blackmoor\_16, Blinn1\_20, Blue7\_20, BobSwaget\_20, Bombshell\_16, Boohoo\_19, Bowtie\_17, Bradman\_16, BreSam8\_18, Broseidon\_16, Bruiser\_16, BubbleTrouble\_16, Bud\_17, Buggy\_19, Burger\_15, BuzzBuzz\_17, Bxz2\_18, C3\_15, CRB1\_17, Caelakin\_16, Camperdownii\_15, Candra\_20, Caraxes\_16, Caviar\_17, Centaur\_19, CentreCat\_16, Cerulean\_16, ChampagnePapi\_16, Changeling\_20, Chaph\_16, Chartreuse\_20, Che12\_19, ChipMunk\_19, Chiqui\_15, Cindaradix\_15, Cintron\_16, Citius\_16, Clarenza\_16, CloudWang3\_20, Cocoaberry\_16, Colbster\_18, Colin\_21, Commander\_16, Connomayer\_16, Cookiedough\_20, Crucio\_17, Cullens\_18, D29\_18, D32\_20, DBQu4n\_20, DaHudson\_18, DaVinci\_20, Daishi\_17, Dalmatian\_17, DarthPhader\_18, Deano\_16, DekHockey33\_19, Deloris\_18, Dhanush\_16, Dieselweasel\_18, Dignity\_19, DirtyDunning\_16, Dorothea\_20, Drake55\_19, DroogsArmy\_17, Druantia\_16, DudeLittle\_17, Duplo\_20, DustyMartin\_19, EZMoney23\_21, EagleEye\_19, Eagle\_15, Eapen\_16, Ebony\_17, Echild\_17, Edison31\_16, EpicPhail\_18, Epsocamisio\_19, Equemioh13\_19, EricB\_20, Eris\_16, Eros\_16, Et2Brutus\_16, Eurydice\_16, EvilGenius\_19, Fameo\_17, Farber\_18, Fernando\_18, Fibonacci\_17, FiringLine\_17, First\_0017, Flare16\_17, Floean\_16, Flux\_16, Funston\_16, Gadost\_16, Garak\_21, GaugeLDP\_19, Gemma\_18,

Georgie2\_18, Gilberta\_17, Gladiator\_20, GreedyLawyer\_20, Groupthink\_19, Grub\_18, Grum1\_18, Gruunaga\_20, GtownJaz\_18, HINdeR\_16, HamSlice\_15, Hammer\_20, Happiness\_16, HarryHoudini\_19, HashRod\_19, HaveUMetTed\_19, Heffalump\_19, Heliosoles\_18, Helmet\_21, Hercules11\_18, Hexamo\_20, Holli\_16, Hookmount\_17, Hoot\_20, Houdini22\_16, ICleared\_16, Iceman\_17, Indra\_20, Iracema64\_16, IronMan\_19, Isiphiwo\_20, Iwokeuplikedis\_18, JHC117\_18, JSwag\_19, Jaan\_20, Jaykayelowell\_16, Jeffabunny\_20, JenCasNa\_18, JeppNRM\_19, JetBlade\_16, JewelBug\_20, Jobu08\_18, JoongJeon\_16, Jordennis\_20, Joselito\_17, JoshKayV\_19, Journey13\_15, Jsquared\_16, KADY\_19, KFPoly\_16, Kalb97\_19, Kalnoky\_19, Kalpine\_20, Kampy\_16, KatherineG\_19, Kazan\_20, Kerberos\_20, Kimona\_13, KingCyrus\_19, Kingmustik0402\_16, Kinmap\_16, Kipper29\_20, Koduck\_17, Koko\_20, Koreni\_15, Kratark\_16, Kremtemulon\_16, Kristoff\_17, Kye\_16, LBerry\_18, LHTSCC\_16, LadyBird\_17, Lambert1\_17, LappelDuVide\_16, Larenn\_18, LarryKay\_18, LastResort\_19, Lemur\_16, LeoAvram\_16, Leogania\_19, Leviathan\_19, LilTurb\_19, Lilbunny\_20, Lilith\_18, LittleB\_16, LittleGuy\_16, LochMonster\_16, Lokk\_20, Looper\_20, Lorenzo\_16, Loser\_20, Louie6\_18, Lucivia\_17, Lucyedi\_18, LugYA\_20, Lunsford\_17, MA5\_16, MaCh\_17, Mabel\_17, MadMarie\_18, Mainiac\_18, MajorMajor\_16, Malec\_18, Manu\_19, MarQuardt\_18, Margo\_17, Marie\_18, Marius\_19, Maverick\_16, Maxo\_16, Mazhar510\_16, McFly\_20, Medusa\_16, MeeZee\_16, Melvin\_16, Methuselah\_18, Microwolf\_18, MiculUcigas\_17, Miko\_20, Millski\_16, MinecraftSteve\_20, Miramae\_16, Misomonster\_20, MissWhite\_17, MoneyMay\_18, Morrow\_16, MuchMore\_20, Munch\_17, Mundrea\_16, NaSiaTalie\_17, Naji\_20, Nebs\_16, Nebulosus\_19, Nedarya\_18, Neeharika16\_20, Nemo27\_16, Newrala\_20, NicoleTera\_21, Noella\_17, Noelle\_16, Norbert\_16, NorthStar\_16, NotAPhaseMom\_16, NothingSpecial\_19, Nyxis\_16, OKaNui\_17, Obama12\_16, Odin\_16, Ohfah\_16, OlanP\_18, Oofda\_20, Orange\_17, P28Green\_18, PGHhamlin\_20, PainterBoy\_18, Palestino\_16, Pawn\_19, Peaches\_16, Pembroke\_18, Penny1\_18, PeterPeter\_16, Ph8s\_18, Phacado\_16, Pharaoh\_17, Felipe\_16, Phighter1804\_16, PhishRPhriends\_17, Phoebe\_18, Phontbonne\_16, Phoxy\_18, Phranny\_19, Pipcraft\_16, Piro94\_18, Pmask\_20, Pocahontas\_17, Polymorphads\_16, Pomar16\_20, Popcicle\_17, PotatoSplit\_19, Power\_17, Priamo\_20, Pukovnik\_19, Pumbaa\_16, PurpleHaze\_18, QueenB2\_17, QueenBeesly\_17, QuinnKiro\_16, Quokka\_15, RGL3\_6, Rachaly\_20, ReMo\_19, Reba\_19, Rebeuca\_17, RedRock\_20, Refuge\_20, Relief\_16, Remus\_19, ResDef\_17, Retro23\_17, RhynO\_17, Rifter\_20, Roksolana\_20, Romney\_16, Roosevelt\_16, Rosa24\_15, Rosalind\_19, Rowdy\_19, Ruin\_16, Rummer\_18, Sabertooth\_16, Sabia\_18, Sabinator\_18, Scamp\_16, SemperFi\_19, Serenity\_16, Shaka\_16, Shapes\_19, ShayRa\_20, SheldonCooper\_16, Skipitt\_16, Smeagan\_19, SmellyB\_20, SnapTap\_17, Snickers\_18, SoYo\_18, SoilDragon\_18, Soshari\_20, Soups\_19, Sparxx\_16, Spike509\_18, Spino\_16, Stagni\_18, StarStuff\_20, Stasia\_17, Strosahl\_19, SuperAwesome\_20, SuperCallie99\_20, Superchunk\_16, SweetiePie\_17, SwirlSquare\_19, Switzerland\_19, Taquarus\_16, TarsusIV\_17, Taurus\_18, Texage\_16, Thanksgivukkah\_16, Tiffany\_18, Timothy\_17, Timshel\_17, TinaFeyge\_16, TinyTimmy\_17, Tinybot\_15, TopsytheTRex\_16, TiroTheta9\_16, Todacoro\_17, Tomathan\_20, Topanga\_16, Travvers\_20, Trixie\_20, Trooper\_17, TroyPia\_16, Tucker\_20, Turbido\_19, Twister\_16, TygerBlood\_16, Ulysses\_15, Updawg\_19, VA6\_17, VC3\_20, Vix\_18, VohminGhazi\_20, Waits\_19, WalterMcMickey\_16, Wander\_16, Watson\_18, WeiHuaDA\_23, Whabigail7\_19, WideWale\_19, Wiks\_20, Wilbur\_16, Wizard007\_16, Wooldri\_20, WunderPhul\_20, XianYue\_17, YoSam321\_16, Yokurt\_20, Zaka\_20, Zimmer\_19, Zulu\_20,

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

- Jerm\_19, L5\_18, Landor\_18, Phaded\_20, PhailMary\_12,

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

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### Summary by start number:

Start 4:

- Found in 30 of 436 ( 6.9% ) of genes in pham
- Manual Annotations of this start: 2 of 407
- Called 6.7% of time when present
- Phage (with cluster) where this start called: Jerm\_19 (A2), PhailMary\_12 (CA),

Start 10:

- Found in 2 of 436 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 407
- Called 50.0% of time when present
- Phage (with cluster) where this start called: L5\_18 (A2),

Start 11:

- Found in 4 of 436 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 2 of 407
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Landor\_18 (A2), Phaded\_20 (A2),

Start 15:

- Found in 436 of 436 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 402 of 407
- Called 98.9% of time when present
- Phage (with cluster) where this start called: 20ES\_17 (A2), 40AC\_20 (A17), ACFishhook\_18 (A3), AN3\_17 (A2), AN9\_20 (A2), AN18\_20 (A2), AbbyPaige\_19 (A2), Abdiel\_16 (A4), Acolyte\_17 (A2), Adzzy\_18 (A2), Agape74\_19 (A2), Aglet\_18 (A3), AgronaGT15\_18 (A3), Albee\_16 (A4), Alberto7\_17 (A4), Anaysia\_19 (A15), Aneem\_17 (A11), AnnaL29\_20 (A2), Anyong\_16 (A4), Anon\_17 (A15), Anselm\_17 (A2), Anthony\_16 (A20), Anubis\_20 (A3), ArcherNM\_19 (A2), Artemis2UCLA\_20 (A6), Arturo\_15 (A4), AugsMagnumOpus\_20 (A3), Avle17\_16 (A4), BABullseye\_20 (A6), Baby16\_16 (A4), BabyBack\_19 (A2), BabyJohn\_15 (A3), Bachome\_17 (A11), Bactobuster\_18 (A2), Baehexic\_18 (A2), BangNhom\_15 (A4), Bartimeaus\_16 (A4), Battleship\_20 (A15), Beauxregard13\_18 (A3), BellusTerra\_16 (A4), BengiVuitton\_18 (A2), Benvolio\_17 (A2), BiancaTri92\_19 (A2), Blackmoor\_16 (A4), Blinn1\_20 (A6), Blue7\_20 (A6), BobSwaget\_20 (A2), Bombshell\_16 (A4), Boohoo\_19 (A15), Bowtie\_17 (A11), Bradman\_16 (A2), BreSam8\_18 (A3), Broseidon\_16 (A4), Bruiser\_16 (A4), BubbleTrouble\_16 (A4), Bud\_17 (A11), Buggy\_19 (A2), Burger\_15 (A4), BuzzBuzz\_17 (A3), Bxz2\_18 (A3), C3\_15 (A2), CRB1\_17 (A2), Caelakin\_16 (A4), Camperdownii\_15 (A4), Candra\_20 (A6), Caraxes\_16 (A2), Caviar\_17 (A3), Centaur\_19 (A2), CentreCat\_16 (A4), Cerulean\_16 (A4), ChampagnePapi\_16 (A4), Changeling\_20 (A2), Chaph\_16 (A4), Chartreuse\_20 (A6), Che12\_19 (A2), ChipMunk\_19 (A2), Chiqui\_15 (A3), Cindaradix\_15 (A4), Cintron\_16 (A4), Citius\_16 (A4), Clarenza\_16 (A4), CloudWang3\_20 (A6), Cocoberry\_16 (A4), Colbster\_18 (A3), Colin\_21 (A2), Commander\_16 (A4), Connomayer\_16 (A4), Cookiedough\_20 (A6), Crucio\_17 (A2), Cullens\_18 (A3), D29\_18 (A2), D32\_20 (A2), DBQu4n\_20 (A2), DaHudson\_18 (A3), DaVinci\_20 (A6), Daishi\_17 (A3), Dalmatian\_17 (A2), DarthPhader\_18 (A12), Deano\_16 (A4), DekHockey33\_19 (A15), Deloris\_18 (A2),

Dhanush\_16 (A4), Dieselweasel\_18 (A3), Dignity\_19 (A2), DirtyDunning\_16 (A4), Dorothea\_20 (A6), Drake55\_19 (A2), DroogsArmy\_17 (A7), Druantia\_16 (A4), DudeLittle\_17 (A2), Duplo\_20 (A2), DustyMartin\_19 (A10), EZMoney23\_21 (A2), EagleEye\_19 (A16), Eagle\_15 (A4), Eapen\_16 (A4), Ebony\_17 (A11), Echild\_17 (A2), Edison31\_16 (A10), EpicPhail\_18 (A3), Epsocamisio\_19 (A15), Equemioh13\_19 (A2), EricB\_20 (A6), Eris\_16 (A4), Eros\_16 (A4), Et2Brutus\_16 (A11), Eurydice\_16 (A4), EvilGenius\_19 (A2), Fameo\_17 (A2), Farber\_18 (A3), Fernando\_18 (A3), Fibonacci\_17 (A11), FiringLine\_17 (A2), First\_0017 (A2), Flare16\_17 (A2), Florean\_16 (A4), Flux\_16 (A4), Funston\_16 (A4), Gadost\_16 (A4), Garak\_21 (A6), GaugeLDP\_19 (A2), Gemma\_18 (A3), Georgie2\_18 (A2), Gilberta\_17 (A11), Gladiator\_20 (A6), GreedyLawyer\_20 (A6), Groupthink\_19 (A3), Grub\_18 (A3), Grum1\_18 (A3), Gruunaga\_20 (A6), GtownJaz\_18 (A3), HINdeR\_16 (A7), HamSlice\_15 (A4), Hammer\_20 (A6), Happiness\_16 (A4), HarryHoudini\_19 (A2), HashRod\_19 (A3), HaveUMetTed\_19 (A3), Heffalump\_19 (A2), Heliosoles\_18 (A3), Helmet\_21 (A6), Hercules11\_18 (A3), Hexamo\_20 (A6), Holli\_16 (A4), Hookmount\_17 (A3), Hoot\_20 (A6), Houdini22\_16 (A4), ICleared\_16 (A4), Iceman\_17 (A4), Indra\_20 (A6), Iracema64\_16 (A4), IronMan\_19 (A2), Isiphiwo\_20 (A6), Iwokeuplikedis\_18 (A2), JHC117\_18 (A3), JSwag\_19 (A15), Jaan\_20 (A2), Jaykayelowell\_16 (A4), Jeffabunny\_20 (A6), JenCasNa\_18 (A3), JeppNRM\_19 (A3), JetBlade\_16 (A4), JewelBug\_20 (A6), Jobu08\_18 (A3), JoongJeon\_16 (A4), Jordennis\_20 (A6), Joselito\_17 (A11), JoshKayV\_19 (A2), Journey13\_15 (A2), Jsquared\_16 (A2), KADY\_19 (A3), KFPoly\_16 (A4), Kalb97\_19 (A3), Kalnoky\_19 (A3), Kalpine\_20 (A2), Kampy\_16 (A4), KatherineG\_19 (A15), Kazan\_20 (A6), Kerberos\_20 (A2), Kimona\_13 (A19), KingCyrus\_19 (A2), Kingmustik0402\_16 (A4), Kinmap\_16 (A21), Kipper29\_20 (A6), Koduck\_17 (A2), Koko\_20 (A6), Koreni\_15 (A4), Kratak\_16 (A4), Kremtemulon\_16 (A4), Kristoff\_17 (A10), Kyee\_16 (A4), LBerry\_18 (A3), LHTSCC\_16 (A4), LadyBird\_17 (A2), Lambert1\_17 (A3), LappelDuVide\_16 (A4), Larenn\_18 (A2), LarryKay\_18 (A3), LastResort\_19 (A15), Lemur\_16 (A4), LeoAvram\_16 (A4), Leogania\_19 (A2), Leviathan\_19 (A2), LilTurb\_19 (A2), Lilbunny\_20 (A6), Lilith\_18 (A3), LittleB\_16 (A4), LittleGuy\_16 (A4), LochMonster\_16 (A4), Lokk\_20 (A2), Looper\_20 (A15), Lorenzo\_16 (A4), Loser\_20 (A2), Louie6\_18 (A3), Lucivia\_17 (A11), Lucyedi\_18 (A16), LugYA\_20 (A3), Lunsford\_17 (A4), MA5\_16 (A3), MaCh\_17 (A11), Mabel\_17 (A11), MadMarie\_18 (A3), Mainiac\_18 (A3), MajorMajor\_16 (A2), Malec\_18 (A2), Manu\_19 (A3), MarQuardt\_18 (A3), Margo\_17 (A3), Marie\_18 (A3), Marius\_19 (A3), Maverick\_16 (A4), Maxo\_16 (A4), Mazhar510\_16 (A4), McFly\_20 (A6), Medusa\_16 (A4), MeeZee\_16 (A4), Melvin\_16 (A4), Methuselah\_18 (A3), Microwolf\_18 (A3), MiculUcigas\_17 (A2), Miko\_20 (A2), Millski\_16 (A4), MinecraftSteve\_20 (A15), Miramae\_16 (A4), Misomonster\_20 (A3), MissWhite\_17 (A2), MoneyMay\_18 (A3), Morrow\_16 (A4), MuchMore\_20 (A3), Munch\_17 (A11), Mundrea\_16 (A4), NaSiaTalie\_17 (A2), Naji\_20 (A2), Nebs\_16 (A4), Nebulosus\_19 (A15), Nedarya\_18 (A15), Neeharika16\_20 (A6), Nemo27\_16 (A4), Newrala\_20 (A6), NicoleTera\_21 (A2), Noella\_17 (A3), Noelle\_16 (A4), Norbert\_16 (A3), NorthStar\_16 (A4), NotAPhaseMom\_16 (A4), NothingSpecial\_19 (A2), Nyxis\_16 (A4), OKaNui\_17 (A4), Obama12\_16 (A4), Odin\_16 (A2), Ohfah\_16 (A4), OlanP\_18 (A3), Oofda\_20 (A15), Orange\_17 (A11), P28Green\_18 (A3), PGHhamlin\_20 (A3), PainterBoy\_18 (A16), Palestino\_16 (A4), Pawn\_19 (A3), Peaches\_16 (A4), Pembroke\_18 (A3), Penny1\_18 (A3), PeterPeter\_16 (A4), Ph8s\_18 (A2), Phacado\_16 (A4), Pharaoh\_17 (A12), Felipe\_16 (A4), Phighter1804\_16 (A4), PhishRPhriends\_17 (A3), Phoebe\_18 (A3), Phontbonne\_16 (A4), Phoxy\_18 (A3), Phranny\_19 (A3), Pipcraft\_16 (A4), Piro94\_18 (A2), Pmask\_20 (A6), Pocahontas\_17 (A3), Polymorphads\_16 (A4), Pomar16\_20 (A2), Popcicle\_17 (A3), PotatoSplit\_19 (A3), Power\_17 (A2), Priamo\_20 (A6), Pukovnik\_19 (A2), Pumbaa\_16 (A4), PurpleHaze\_18 (A3), QueenB2\_17 (A2),

QueenBeesly\_17 (A2), QuinnKiro\_16 (A3), Quokka\_15 (A2), RGL3\_6 (CA), Rachaly\_20 (A2), ReMo\_19 (A15), Reba\_19 (A3), Rebeuca\_17 (A10), RedRock\_20 (A2), Refuge\_20 (A12), Relief\_16 (A4), Remus\_19 (A15), ResDef\_17 (A3), Retro23\_17 (A2), RhynO\_17 (A10), Rifter\_20 (A6), Roksolana\_20 (A6), Romney\_16 (A4), Roosevelt\_16 (A4), Rosa24\_15 (A4), Rosalind\_19 (A15), Rowdy\_19 (A10), Ruin\_16 (A4), Rummer\_18 (A3), Sabertooth\_16 (A4), Sabia\_18 (A3), Sabinator\_18 (A3), Scamp\_16 (A4), SemperFi\_19 (A2), Serenity\_16 (A2), Shaka\_16 (A4), Shapes\_19 (A10), ShayRa\_20 (A15), SheldonCooper\_16 (A4), Skipitt\_16 (A4), Smeagan\_19 (A2), SmellyB\_20 (A6), SnapTap\_17 (A2), Snickers\_18 (A3), SoYo\_18 (A3), SoilDragon\_18 (A3), Soshari\_20 (A3), Soups\_19 (A15), Sparxx\_16 (A4), Spike509\_18 (A3), Spino\_16 (A4), Stagni\_18 (A3), StarStuff\_20 (A2), Stasia\_17 (A4), Strosahl\_19 (A15), SuperAwesome\_20 (A6), SuperCallie99\_20 (A6), Superchunk\_16 (A2), SweetiePie\_17 (A2), SwirlSquare\_19 (A2), Switzerland\_19 (A15), Taquarus\_16 (A4), TarsusIV\_17 (A2), Taurus\_18 (A3), Texage\_16 (A3), Thanksgivukkah\_16 (A4), Tiffany\_18 (A3), Timothy\_17 (A11), Timshel\_17 (A7), TinaFeyge\_16 (A4), TinyTimmy\_17 (A11), Tinybot\_15 (A4), TipsytheTRex\_16 (A2), TiroTheta9\_16 (A4), Todacoro\_17 (A3), Tomathan\_20 (A2), Topanga\_16 (A10), Travvers\_20 (A2), Trixie\_20 (A2), Trooper\_17 (A2), TroyPia\_16 (A4), Tucker\_20 (A6), Turbido\_19 (A2), Twister\_16 (A10), TygerBlood\_16 (A4), Ulysses\_15 (A4), Updawg\_19 (A2), VA6\_17 (A2), VC3\_20 (A2), Vix\_18 (A3), VohminGhazi\_20 (A6), Waits\_19 (A15), WalterMcMickey\_16 (A10), Wander\_16 (A4), Watson\_18 (A3), WeiHuaDA\_23 (A2), Whabigail7\_19 (A2), WideWale\_19 (A2), Wiks\_20 (A6), Wilbur\_16 (A4), Wizard007\_16 (A4), Wooldri\_20 (A3), WunderPhul\_20 (A6), XianYue\_17 (A2), YoSam321\_16 (A4), Yokurt\_20 (A6), Zaka\_20 (A6), Zimmer\_19 (A12), Zulu\_20 (A6),

### Summary by clusters:

There are 15 clusters represented in this pham: A15, A20, A17, A16, A11, A10, A12, CA, A19, A21, A3, A2, A4, A7, A6,

Info for manual annotations of cluster A10:

- Start number 15 was manually annotated 7 times for cluster A10.

Info for manual annotations of cluster A11:

- Start number 15 was manually annotated 16 times for cluster A11.

Info for manual annotations of cluster A12:

- Start number 15 was manually annotated 4 times for cluster A12.

Info for manual annotations of cluster A15:

- Start number 15 was manually annotated 21 times for cluster A15.

Info for manual annotations of cluster A16:

- Start number 15 was manually annotated 3 times for cluster A16.

Info for manual annotations of cluster A19:

- Start number 15 was manually annotated 1 time for cluster A19.

Info for manual annotations of cluster A2:

- Start number 4 was manually annotated 1 time for cluster A2.
- Start number 10 was manually annotated 1 time for cluster A2.
- Start number 11 was manually annotated 2 times for cluster A2.



- Start number 15 was manually annotated 97 times for cluster A2.

Info for manual annotations of cluster A20:

- Start number 15 was manually annotated 1 time for cluster A20.

Info for manual annotations of cluster A3:

- Start number 15 was manually annotated 87 times for cluster A3.

Info for manual annotations of cluster A4:

- Start number 15 was manually annotated 121 times for cluster A4.

Info for manual annotations of cluster A6:

- Start number 15 was manually annotated 41 times for cluster A6.

Info for manual annotations of cluster A7:

- Start number 15 was manually annotated 3 times for cluster A7.

Info for manual annotations of cluster CA:

- Start number 4 was manually annotated 1 time for cluster CA.

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

Gene: 20ES\_17 Start: 13206, Stop: 13382, Start Num: 15

Candidate Starts for 20ES\_17:

(Start: 15 @13206 has 402 MA's),

Gene: 40AC\_20 Start: 15229, Stop: 15408, Start Num: 15

Candidate Starts for 40AC\_20:

(Start: 15 @15229 has 402 MA's), (27, 15382),

Gene: ACFishhook\_18 Start: 12760, Stop: 12942, Start Num: 15

Candidate Starts for ACFishhook\_18:

(Start: 15 @12760 has 402 MA's),

Gene: AN3\_17 Start: 13196, Stop: 13372, Start Num: 15

Candidate Starts for AN3\_17:

(Start: 4 @13148 has 2 MA's), (Start: 15 @13196 has 402 MA's),

Gene: AN9\_20 Start: 13198, Stop: 13377, Start Num: 15

Candidate Starts for AN9\_20:

(Start: 15 @13198 has 402 MA's),

Gene: ANI8\_20 Start: 13198, Stop: 13377, Start Num: 15

Candidate Starts for ANI8\_20:

(Start: 15 @13198 has 402 MA's),

Gene: AbbyPaige\_19 Start: 13651, Stop: 13833, Start Num: 15

Candidate Starts for AbbyPaige\_19:

(Start: 4 @13603 has 2 MA's), (Start: 15 @13651 has 402 MA's),

Gene: Abdiel\_16 Start: 12475, Stop: 12681, Start Num: 15  
Candidate Starts for Abdiel\_16:  
(Start: 15 @12475 has 402 MA's),

Gene: Acolyte\_17 Start: 13345, Stop: 13500, Start Num: 15  
Candidate Starts for Acolyte\_17:  
(Start: 15 @13345 has 402 MA's), (18, 13384),

Gene: Adzzy\_18 Start: 11960, Stop: 12115, Start Num: 15  
Candidate Starts for Adzzy\_18:  
(Start: 15 @11960 has 402 MA's),

Gene: Agape74\_19 Start: 13651, Stop: 13833, Start Num: 15  
Candidate Starts for Agape74\_19:  
(Start: 4 @13603 has 2 MA's), (Start: 15 @13651 has 402 MA's),

Gene: Aglet\_18 Start: 12603, Stop: 12788, Start Num: 15  
Candidate Starts for Aglet\_18:  
(Start: 15 @12603 has 402 MA's), (19, 12666),

Gene: AgronaGT15\_18 Start: 12510, Stop: 12695, Start Num: 15  
Candidate Starts for AgronaGT15\_18:  
(Start: 15 @12510 has 402 MA's), (19, 12573),

Gene: Albee\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Albee\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: Alberto7\_17 Start: 12780, Stop: 12986, Start Num: 15  
Candidate Starts for Alberto7\_17:  
(Start: 15 @12780 has 402 MA's),

Gene: Anaysia\_19 Start: 12316, Stop: 12486, Start Num: 15  
Candidate Starts for Anaysia\_19:  
(Start: 15 @12316 has 402 MA's),

Gene: Aneem\_17 Start: 13757, Stop: 13924, Start Num: 15  
Candidate Starts for Aneem\_17:  
(12, 13739), (Start: 15 @13757 has 402 MA's), (17, 13793), (21, 13841),

Gene: AnnaL29\_20 Start: 15039, Stop: 15221, Start Num: 15  
Candidate Starts for AnnaL29\_20:  
(Start: 15 @15039 has 402 MA's),

Gene: Annyong\_16 Start: 12479, Stop: 12685, Start Num: 15  
Candidate Starts for Annyong\_16:  
(Start: 15 @12479 has 402 MA's),

Gene: Anon\_17 Start: 12677, Stop: 12832, Start Num: 15  
Candidate Starts for Anon\_17:  
(Start: 15 @12677 has 402 MA's),

Gene: Anselm\_17 Start: 13298, Stop: 13480, Start Num: 15

Candidate Starts for Anselm\_17:  
(Start: 4 @13250 has 2 MA's), (Start: 15 @13298 has 402 MA's),

Gene: Anthony\_16 Start: 11421, Stop: 11594, Start Num: 15  
Candidate Starts for Anthony\_16:  
(Start: 15 @11421 has 402 MA's),

Gene: Anubis\_20 Start: 12488, Stop: 12673, Start Num: 15  
Candidate Starts for Anubis\_20:  
(Start: 15 @12488 has 402 MA's), (19, 12551),

Gene: ArcherNM\_19 Start: 14988, Stop: 15173, Start Num: 15  
Candidate Starts for ArcherNM\_19:  
(Start: 15 @14988 has 402 MA's),

Gene: Artemis2UCLA\_20 Start: 13162, Stop: 13359, Start Num: 15  
Candidate Starts for Artemis2UCLA\_20:  
(Start: 15 @13162 has 402 MA's),

Gene: Arturo\_15 Start: 12589, Stop: 12795, Start Num: 15  
Candidate Starts for Arturo\_15:  
(Start: 15 @12589 has 402 MA's),

Gene: AugsMagnumOpus\_20 Start: 12594, Stop: 12779, Start Num: 15  
Candidate Starts for AugsMagnumOpus\_20:  
(Start: 15 @12594 has 402 MA's), (19, 12657),

Gene: Avle17\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Avle17\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: BABullseye\_20 Start: 13275, Stop: 13472, Start Num: 15  
Candidate Starts for BABullseye\_20:  
(2, 13209), (3, 13221), (9, 13254), (Start: 15 @13275 has 402 MA's),

Gene: Baby16\_16 Start: 12487, Stop: 12693, Start Num: 15  
Candidate Starts for Baby16\_16:  
(Start: 15 @12487 has 402 MA's),

Gene: BabyBack\_19 Start: 14848, Stop: 15012, Start Num: 15  
Candidate Starts for BabyBack\_19:  
(Start: 15 @14848 has 402 MA's), (25, 14947),

Gene: BabyJohn\_15 Start: 12395, Stop: 12571, Start Num: 15  
Candidate Starts for BabyJohn\_15:  
(Start: 15 @12395 has 402 MA's),

Gene: Bachome\_17 Start: 13754, Stop: 13921, Start Num: 15  
Candidate Starts for Bachome\_17:  
(12, 13736), (Start: 15 @13754 has 402 MA's), (17, 13790), (21, 13838),

Gene: Bactobuster\_18 Start: 14922, Stop: 15104, Start Num: 15  
Candidate Starts for Bactobuster\_18:

(Start: 11 @14904 has 2 MA's), (Start: 15 @14922 has 402 MA's),

Gene: Baehexic\_18 Start: 13700, Stop: 13879, Start Num: 15

Candidate Starts for Baehexic\_18:

(Start: 15 @13700 has 402 MA's),

Gene: BangNhom\_15 Start: 12456, Stop: 12668, Start Num: 15

Candidate Starts for BangNhom\_15:

(Start: 15 @12456 has 402 MA's),

Gene: Bartimeaus\_16 Start: 12478, Stop: 12684, Start Num: 15

Candidate Starts for Bartimeaus\_16:

(Start: 15 @12478 has 402 MA's),

Gene: Battleship\_20 Start: 12431, Stop: 12601, Start Num: 15

Candidate Starts for Battleship\_20:

(Start: 15 @12431 has 402 MA's),

Gene: Beauxregard13\_18 Start: 12602, Stop: 12787, Start Num: 15

Candidate Starts for Beauxregard13\_18:

(Start: 15 @12602 has 402 MA's), (19, 12665),

Gene: BellusTerra\_16 Start: 12475, Stop: 12681, Start Num: 15

Candidate Starts for BellusTerra\_16:

(Start: 15 @12475 has 402 MA's),

Gene: BengiVuitton\_18 Start: 13613, Stop: 13795, Start Num: 15

Candidate Starts for BengiVuitton\_18:

(Start: 15 @13613 has 402 MA's), (21, 13697),

Gene: Benvolio\_17 Start: 13288, Stop: 13470, Start Num: 15

Candidate Starts for Benvolio\_17:

(Start: 4 @13240 has 2 MA's), (Start: 15 @13288 has 402 MA's),

Gene: BiancaTri92\_19 Start: 14972, Stop: 15157, Start Num: 15

Candidate Starts for BiancaTri92\_19:

(Start: 15 @14972 has 402 MA's),

Gene: Blackmoor\_16 Start: 12478, Stop: 12684, Start Num: 15

Candidate Starts for Blackmoor\_16:

(Start: 15 @12478 has 402 MA's),

Gene: Blinn1\_20 Start: 13317, Stop: 13514, Start Num: 15

Candidate Starts for Blinn1\_20:

(Start: 15 @13317 has 402 MA's),

Gene: Blue7\_20 Start: 13252, Stop: 13449, Start Num: 15

Candidate Starts for Blue7\_20:

(Start: 15 @13252 has 402 MA's), (23, 13342),

Gene: BobSwaget\_20 Start: 14847, Stop: 15023, Start Num: 15

Candidate Starts for BobSwaget\_20:

(Start: 15 @14847 has 402 MA's),

Gene: Bombshell\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Bombshell\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: Boohoo\_19 Start: 12316, Stop: 12486, Start Num: 15  
Candidate Starts for Boohoo\_19:  
(Start: 15 @12316 has 402 MA's),

Gene: Bowtie\_17 Start: 13757, Stop: 13924, Start Num: 15  
Candidate Starts for Bowtie\_17:  
(12, 13739), (Start: 15 @13757 has 402 MA's), (17, 13793), (21, 13841),

Gene: Bradman\_16 Start: 12104, Stop: 12289, Start Num: 15  
Candidate Starts for Bradman\_16:  
(Start: 15 @12104 has 402 MA's), (20, 12182),

Gene: BreSam8\_18 Start: 12595, Stop: 12780, Start Num: 15  
Candidate Starts for BreSam8\_18:  
(Start: 15 @12595 has 402 MA's), (19, 12658),

Gene: Broseidon\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Broseidon\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: Bruiser\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Bruiser\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: BubbleTrouble\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for BubbleTrouble\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: Bud\_17 Start: 13763, Stop: 13930, Start Num: 15  
Candidate Starts for Bud\_17:  
(12, 13745), (Start: 15 @13763 has 402 MA's), (17, 13799), (21, 13847),

Gene: Buggy\_19 Start: 13650, Stop: 13832, Start Num: 15  
Candidate Starts for Buggy\_19:  
(Start: 4 @13602 has 2 MA's), (Start: 15 @13650 has 402 MA's),

Gene: Burger\_15 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Burger\_15:  
(Start: 15 @12478 has 402 MA's),

Gene: BuzzBuzz\_17 Start: 12686, Stop: 12871, Start Num: 15  
Candidate Starts for BuzzBuzz\_17:  
(Start: 15 @12686 has 402 MA's), (19, 12749),

Gene: Bxz2\_18 Start: 12696, Stop: 12881, Start Num: 15  
Candidate Starts for Bxz2\_18:  
(Start: 15 @12696 has 402 MA's), (19, 12759),

Gene: C3\_15 Start: 13198, Stop: 13377, Start Num: 15  
Candidate Starts for C3\_15:  
(Start: 15 @13198 has 402 MA's),

Gene: CRB1\_17 Start: 13172, Stop: 13351, Start Num: 15  
Candidate Starts for CRB1\_17:  
(Start: 15 @13172 has 402 MA's), (23, 13262), (24, 13265),

Gene: Caelakin\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Caelakin\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: Camperdownii\_15 Start: 12097, Stop: 12303, Start Num: 15  
Candidate Starts for Camperdownii\_15:  
(Start: 15 @12097 has 402 MA's),

Gene: Candra\_20 Start: 13318, Stop: 13515, Start Num: 15  
Candidate Starts for Candra\_20:  
(2, 13252), (3, 13264), (9, 13297), (Start: 15 @13318 has 402 MA's),

Gene: Caraxes\_16 Start: 11860, Stop: 12015, Start Num: 15  
Candidate Starts for Caraxes\_16:  
(Start: 15 @11860 has 402 MA's),

Gene: Caviar\_17 Start: 12696, Stop: 12875, Start Num: 15  
Candidate Starts for Caviar\_17:  
(13, 12681), (Start: 15 @12696 has 402 MA's),

Gene: Centaur\_19 Start: 13678, Stop: 13857, Start Num: 15  
Candidate Starts for Centaur\_19:  
(Start: 15 @13678 has 402 MA's),

Gene: CentreCat\_16 Start: 12479, Stop: 12685, Start Num: 15  
Candidate Starts for CentreCat\_16:  
(Start: 15 @12479 has 402 MA's),

Gene: Cerulean\_16 Start: 12457, Stop: 12669, Start Num: 15  
Candidate Starts for Cerulean\_16:  
(Start: 15 @12457 has 402 MA's),

Gene: ChampagnePapi\_16 Start: 12456, Stop: 12668, Start Num: 15  
Candidate Starts for ChampagnePapi\_16:  
(Start: 15 @12456 has 402 MA's),

Gene: Changeling\_20 Start: 15040, Stop: 15222, Start Num: 15  
Candidate Starts for Changeling\_20:  
(Start: 15 @15040 has 402 MA's),

Gene: Chaph\_16 Start: 12487, Stop: 12693, Start Num: 15  
Candidate Starts for Chaph\_16:  
(Start: 15 @12487 has 402 MA's),

Gene: Chartreuse\_20 Start: 13231, Stop: 13428, Start Num: 15

Candidate Starts for Chartreuse\_20:  
(Start: 15 @13231 has 402 MA's),

Gene: Che12\_19 Start: 12126, Stop: 12281, Start Num: 15  
Candidate Starts for Che12\_19:  
(Start: 15 @12126 has 402 MA's),

Gene: ChipMunk\_19 Start: 13586, Stop: 13768, Start Num: 15  
Candidate Starts for ChipMunk\_19:  
(Start: 15 @13586 has 402 MA's),

Gene: Chiqui\_15 Start: 12395, Stop: 12571, Start Num: 15  
Candidate Starts for Chiqui\_15:  
(Start: 15 @12395 has 402 MA's),

Gene: Cindaradix\_15 Start: 12200, Stop: 12409, Start Num: 15  
Candidate Starts for Cindaradix\_15:  
(Start: 15 @12200 has 402 MA's),

Gene: Cintron\_16 Start: 12526, Stop: 12732, Start Num: 15  
Candidate Starts for Cintron\_16:  
(Start: 15 @12526 has 402 MA's),

Gene: Citius\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Citius\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: Clarenza\_16 Start: 12475, Stop: 12681, Start Num: 15  
Candidate Starts for Clarenza\_16:  
(Start: 15 @12475 has 402 MA's),

Gene: CloudWang3\_20 Start: 13262, Stop: 13459, Start Num: 15  
Candidate Starts for CloudWang3\_20:  
(Start: 15 @13262 has 402 MA's),

Gene: Cocoaberry\_16 Start: 12482, Stop: 12688, Start Num: 15  
Candidate Starts for Cocoaberry\_16:  
(Start: 15 @12482 has 402 MA's),

Gene: Colbster\_18 Start: 12602, Stop: 12787, Start Num: 15  
Candidate Starts for Colbster\_18:  
(Start: 15 @12602 has 402 MA's), (19, 12665),

Gene: Colin\_21 Start: 14879, Stop: 15061, Start Num: 15  
Candidate Starts for Colin\_21:  
(Start: 15 @14879 has 402 MA's),

Gene: Commander\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Commander\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: Connomayer\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Connomayer\_16:

(Start: 15 @12478 has 402 MA's),

Gene: Cookiedough\_20 Start: 13275, Stop: 13472, Start Num: 15  
Candidate Starts for Cookiedough\_20:  
(2, 13209), (3, 13221), (9, 13254), (Start: 15 @13275 has 402 MA's),

Gene: Crucio\_17 Start: 13133, Stop: 13315, Start Num: 15  
Candidate Starts for Crucio\_17:  
(Start: 4 @13085 has 2 MA's), (Start: 15 @13133 has 402 MA's),

Gene: Cullens\_18 Start: 12600, Stop: 12785, Start Num: 15  
Candidate Starts for Cullens\_18:  
(Start: 15 @12600 has 402 MA's), (19, 12663),

Gene: D29\_18 Start: 13113, Stop: 13268, Start Num: 15  
Candidate Starts for D29\_18:  
(Start: 15 @13113 has 402 MA's),

Gene: D32\_20 Start: 13113, Stop: 13268, Start Num: 15  
Candidate Starts for D32\_20:  
(Start: 15 @13113 has 402 MA's),

Gene: DBQu4n\_20 Start: 13113, Stop: 13268, Start Num: 15  
Candidate Starts for DBQu4n\_20:  
(Start: 15 @13113 has 402 MA's),

Gene: DaHudson\_18 Start: 12594, Stop: 12779, Start Num: 15  
Candidate Starts for DaHudson\_18:  
(Start: 15 @12594 has 402 MA's), (19, 12657),

Gene: DaVinci\_20 Start: 13285, Stop: 13482, Start Num: 15  
Candidate Starts for DaVinci\_20:  
(Start: 15 @13285 has 402 MA's),

Gene: Daishi\_17 Start: 11527, Stop: 11712, Start Num: 15  
Candidate Starts for Daishi\_17:  
(Start: 15 @11527 has 402 MA's), (19, 11590),

Gene: Dalmatian\_17 Start: 13283, Stop: 13465, Start Num: 15  
Candidate Starts for Dalmatian\_17:  
(Start: 4 @13235 has 2 MA's), (Start: 15 @13283 has 402 MA's),

Gene: DarthPhader\_18 Start: 14100, Stop: 14303, Start Num: 15  
Candidate Starts for DarthPhader\_18:  
(6, 14076), (8, 14079), (Start: 15 @14100 has 402 MA's), (16, 14130),

Gene: Deano\_16 Start: 12486, Stop: 12692, Start Num: 15  
Candidate Starts for Deano\_16:  
(Start: 15 @12486 has 402 MA's),

Gene: DekHockey33\_19 Start: 12438, Stop: 12608, Start Num: 15  
Candidate Starts for DekHockey33\_19:  
(Start: 15 @12438 has 402 MA's),



Gene: Deloris\_18 Start: 13613, Stop: 13795, Start Num: 15  
Candidate Starts for Deloris\_18:  
(Start: 15 @13613 has 402 MA's), (21, 13697),

Gene: Dhanush\_16 Start: 12481, Stop: 12687, Start Num: 15  
Candidate Starts for Dhanush\_16:  
(Start: 15 @12481 has 402 MA's),

Gene: Dieselweasel\_18 Start: 12603, Stop: 12788, Start Num: 15  
Candidate Starts for Dieselweasel\_18:  
(Start: 15 @12603 has 402 MA's), (19, 12666),

Gene: Dignity\_19 Start: 13595, Stop: 13777, Start Num: 15  
Candidate Starts for Dignity\_19:  
(Start: 4 @13547 has 2 MA's), (Start: 15 @13595 has 402 MA's),

Gene: DirtyDunning\_16 Start: 12474, Stop: 12680, Start Num: 15  
Candidate Starts for DirtyDunning\_16:  
(Start: 15 @12474 has 402 MA's),

Gene: Dorothea\_20 Start: 13286, Stop: 13483, Start Num: 15  
Candidate Starts for Dorothea\_20:  
(Start: 15 @13286 has 402 MA's),

Gene: Drake55\_19 Start: 13696, Stop: 13875, Start Num: 15  
Candidate Starts for Drake55\_19:  
(Start: 15 @13696 has 402 MA's),

Gene: DroogsArmy\_17 Start: 13841, Stop: 14029, Start Num: 15  
Candidate Starts for DroogsArmy\_17:  
(Start: 15 @13841 has 402 MA's),

Gene: Druantia\_16 Start: 12479, Stop: 12685, Start Num: 15  
Candidate Starts for Druantia\_16:  
(Start: 15 @12479 has 402 MA's),

Gene: DudeLittle\_17 Start: 13285, Stop: 13467, Start Num: 15  
Candidate Starts for DudeLittle\_17:  
(Start: 4 @13237 has 2 MA's), (Start: 15 @13285 has 402 MA's),

Gene: Duplo\_20 Start: 13154, Stop: 13309, Start Num: 15  
Candidate Starts for Duplo\_20:  
(Start: 15 @13154 has 402 MA's),

Gene: DustyMartin\_19 Start: 12326, Stop: 12511, Start Num: 15  
Candidate Starts for DustyMartin\_19:  
(Start: 15 @12326 has 402 MA's),

Gene: EZMoney23\_21 Start: 15171, Stop: 15350, Start Num: 15  
Candidate Starts for EZMoney23\_21:  
(Start: 15 @15171 has 402 MA's),

Gene: Eagle\_15 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Eagle\_15:  
(Start: 15 @12478 has 402 MA's),

Gene: EagleEye\_19 Start: 13431, Stop: 13613, Start Num: 15  
Candidate Starts for EagleEye\_19:  
(Start: 15 @13431 has 402 MA's),

Gene: Eapen\_16 Start: 12477, Stop: 12683, Start Num: 15  
Candidate Starts for Eapen\_16:  
(Start: 15 @12477 has 402 MA's),

Gene: Ebony\_17 Start: 13806, Stop: 13973, Start Num: 15  
Candidate Starts for Ebony\_17:  
(12, 13788), (Start: 15 @13806 has 402 MA's), (17, 13842), (21, 13890),

Gene: Echild\_17 Start: 13288, Stop: 13470, Start Num: 15  
Candidate Starts for Echild\_17:  
(Start: 4 @13240 has 2 MA's), (Start: 15 @13288 has 402 MA's),

Gene: Edison31\_16 Start: 12290, Stop: 12475, Start Num: 15  
Candidate Starts for Edison31\_16:  
(Start: 15 @12290 has 402 MA's),

Gene: EpicPhail\_18 Start: 12602, Stop: 12787, Start Num: 15  
Candidate Starts for EpicPhail\_18:  
(Start: 15 @12602 has 402 MA's), (19, 12665),

Gene: Epsocamisio\_19 Start: 12316, Stop: 12486, Start Num: 15  
Candidate Starts for Epsocamisio\_19:  
(Start: 15 @12316 has 402 MA's),

Gene: Equemioh13\_19 Start: 13681, Stop: 13860, Start Num: 15  
Candidate Starts for Equemioh13\_19:  
(Start: 15 @13681 has 402 MA's),

Gene: EricB\_20 Start: 13275, Stop: 13472, Start Num: 15  
Candidate Starts for EricB\_20:  
(Start: 15 @13275 has 402 MA's),

Gene: Eris\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Eris\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: Eros\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Eros\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: Et2Brutus\_16 Start: 13760, Stop: 13927, Start Num: 15  
Candidate Starts for Et2Brutus\_16:  
(12, 13742), (Start: 15 @13760 has 402 MA's), (17, 13796), (21, 13844),

Gene: Eurydice\_16 Start: 12475, Stop: 12681, Start Num: 15

Candidate Starts for Eurydice\_16:  
(Start: 15 @12475 has 402 MA's),

Gene: EvilGenius\_19 Start: 13596, Stop: 13778, Start Num: 15  
Candidate Starts for EvilGenius\_19:  
(Start: 15 @13596 has 402 MA's),

Gene: Fameo\_17 Start: 13210, Stop: 13392, Start Num: 15  
Candidate Starts for Fameo\_17:  
(Start: 4 @13162 has 2 MA's), (Start: 15 @13210 has 402 MA's), (20, 13288),

Gene: Farber\_18 Start: 12595, Stop: 12780, Start Num: 15  
Candidate Starts for Farber\_18:  
(Start: 15 @12595 has 402 MA's), (19, 12658),

Gene: Fernando\_18 Start: 12600, Stop: 12785, Start Num: 15  
Candidate Starts for Fernando\_18:  
(Start: 15 @12600 has 402 MA's), (19, 12663),

Gene: Fibonacci\_17 Start: 13760, Stop: 13927, Start Num: 15  
Candidate Starts for Fibonacci\_17:  
(12, 13742), (Start: 15 @13760 has 402 MA's), (17, 13796), (21, 13844),

Gene: FiringLine\_17 Start: 13133, Stop: 13315, Start Num: 15  
Candidate Starts for FiringLine\_17:  
(Start: 4 @13085 has 2 MA's), (Start: 15 @13133 has 402 MA's),

Gene: First\_0017 Start: 13206, Stop: 13382, Start Num: 15  
Candidate Starts for First\_0017:  
(Start: 15 @13206 has 402 MA's),

Gene: Flare16\_17 Start: 13239, Stop: 13418, Start Num: 15  
Candidate Starts for Flare16\_17:  
(Start: 15 @13239 has 402 MA's),

Gene: Florean\_16 Start: 12475, Stop: 12681, Start Num: 15  
Candidate Starts for Florean\_16:  
(Start: 15 @12475 has 402 MA's),

Gene: Flux\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Flux\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: Funston\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Funston\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: Gadost\_16 Start: 12482, Stop: 12688, Start Num: 15  
Candidate Starts for Gadost\_16:  
(Start: 15 @12482 has 402 MA's),

Gene: Garak\_21 Start: 13280, Stop: 13477, Start Num: 15  
Candidate Starts for Garak\_21:

(2, 13214), (3, 13226), (9, 13259), (Start: 15 @13280 has 402 MA's),

Gene: GaugeLDP\_19 Start: 14527, Stop: 14685, Start Num: 15  
Candidate Starts for GaugeLDP\_19:  
(Start: 15 @14527 has 402 MA's),

Gene: Gemma\_18 Start: 12679, Stop: 12861, Start Num: 15  
Candidate Starts for Gemma\_18:  
(Start: 15 @12679 has 402 MA's),

Gene: Georgie2\_18 Start: 13134, Stop: 13316, Start Num: 15  
Candidate Starts for Georgie2\_18:  
(Start: 4 @13086 has 2 MA's), (Start: 15 @13134 has 402 MA's),

Gene: Gilberta\_17 Start: 13754, Stop: 13921, Start Num: 15  
Candidate Starts for Gilberta\_17:  
(12, 13736), (Start: 15 @13754 has 402 MA's), (17, 13790), (21, 13838),

Gene: Gladiator\_20 Start: 13252, Stop: 13449, Start Num: 15  
Candidate Starts for Gladiator\_20:  
(Start: 15 @13252 has 402 MA's), (23, 13342),

Gene: GreedyLawyer\_20 Start: 13284, Stop: 13481, Start Num: 15  
Candidate Starts for GreedyLawyer\_20:  
(Start: 15 @13284 has 402 MA's),

Gene: Groupthink\_19 Start: 12679, Stop: 12861, Start Num: 15  
Candidate Starts for Groupthink\_19:  
(Start: 15 @12679 has 402 MA's),

Gene: Grub\_18 Start: 12594, Stop: 12779, Start Num: 15  
Candidate Starts for Grub\_18:  
(Start: 15 @12594 has 402 MA's), (19, 12657),

Gene: Grum1\_18 Start: 12595, Stop: 12780, Start Num: 15  
Candidate Starts for Grum1\_18:  
(Start: 15 @12595 has 402 MA's), (19, 12658),

Gene: Gruunaga\_20 Start: 13252, Stop: 13449, Start Num: 15  
Candidate Starts for Gruunaga\_20:  
(Start: 15 @13252 has 402 MA's), (23, 13342),

Gene: GtownJaz\_18 Start: 12603, Stop: 12788, Start Num: 15  
Candidate Starts for GtownJaz\_18:  
(Start: 15 @12603 has 402 MA's), (19, 12666),

Gene: HINdeR\_16 Start: 13946, Stop: 14134, Start Num: 15  
Candidate Starts for HINdeR\_16:  
(Start: 15 @13946 has 402 MA's),

Gene: HamSlice\_15 Start: 12476, Stop: 12682, Start Num: 15  
Candidate Starts for HamSlice\_15:  
(Start: 15 @12476 has 402 MA's),

Gene: Hammer\_20 Start: 13267, Stop: 13464, Start Num: 15  
Candidate Starts for Hammer\_20:  
(Start: 15 @13267 has 402 MA's), (23, 13357),

Gene: Happiness\_16 Start: 12484, Stop: 12690, Start Num: 15  
Candidate Starts for Happiness\_16:  
(Start: 15 @12484 has 402 MA's),

Gene: HarryHoudini\_19 Start: 13696, Stop: 13875, Start Num: 15  
Candidate Starts for HarryHoudini\_19:  
(Start: 15 @13696 has 402 MA's),

Gene: HashRod\_19 Start: 12686, Stop: 12871, Start Num: 15  
Candidate Starts for HashRod\_19:  
(Start: 15 @12686 has 402 MA's), (19, 12749),

Gene: HaveUMetTed\_19 Start: 12673, Stop: 12855, Start Num: 15  
Candidate Starts for HaveUMetTed\_19:  
(Start: 15 @12673 has 402 MA's),

Gene: Heffalump\_19 Start: 15012, Stop: 15194, Start Num: 15  
Candidate Starts for Heffalump\_19:  
(Start: 15 @15012 has 402 MA's), (20, 15090),

Gene: Heliosoles\_18 Start: 12679, Stop: 12861, Start Num: 15  
Candidate Starts for Heliosoles\_18:  
(Start: 15 @12679 has 402 MA's),

Gene: Helmet\_21 Start: 13280, Stop: 13477, Start Num: 15  
Candidate Starts for Helmet\_21:  
(2, 13214), (3, 13226), (9, 13259), (Start: 15 @13280 has 402 MA's),

Gene: Hercules11\_18 Start: 12609, Stop: 12794, Start Num: 15  
Candidate Starts for Hercules11\_18:  
(Start: 15 @12609 has 402 MA's), (19, 12672),

Gene: Hexamo\_20 Start: 13234, Stop: 13431, Start Num: 15  
Candidate Starts for Hexamo\_20:  
(Start: 15 @13234 has 402 MA's),

Gene: Holli\_16 Start: 12268, Stop: 12474, Start Num: 15  
Candidate Starts for Holli\_16:  
(Start: 15 @12268 has 402 MA's),

Gene: Hookmount\_17 Start: 12696, Stop: 12875, Start Num: 15  
Candidate Starts for Hookmount\_17:  
(13, 12681), (Start: 15 @12696 has 402 MA's),

Gene: Hoot\_20 Start: 13263, Stop: 13460, Start Num: 15  
Candidate Starts for Hoot\_20:  
(Start: 15 @13263 has 402 MA's),

Gene: Houdini22\_16 Start: 12482, Stop: 12688, Start Num: 15  
Candidate Starts for Houdini22\_16:  
(Start: 15 @12482 has 402 MA's),

Gene: ICleared\_16 Start: 12476, Stop: 12682, Start Num: 15  
Candidate Starts for ICleared\_16:  
(Start: 15 @12476 has 402 MA's),

Gene: Iceman\_17 Start: 12767, Stop: 12973, Start Num: 15  
Candidate Starts for Iceman\_17:  
(Start: 15 @12767 has 402 MA's),

Gene: Indra\_20 Start: 13279, Stop: 13476, Start Num: 15  
Candidate Starts for Indra\_20:  
(Start: 15 @13279 has 402 MA's),

Gene: Iracema64\_16 Start: 12456, Stop: 12668, Start Num: 15  
Candidate Starts for Iracema64\_16:  
(Start: 15 @12456 has 402 MA's),

Gene: IronMan\_19 Start: 14887, Stop: 15060, Start Num: 15  
Candidate Starts for IronMan\_19:  
(Start: 15 @14887 has 402 MA's), (19, 14950),

Gene: Isiphiwo\_20 Start: 13275, Stop: 13472, Start Num: 15  
Candidate Starts for Isiphiwo\_20:  
(2, 13209), (3, 13221), (9, 13254), (Start: 15 @13275 has 402 MA's),

Gene: Iwokeuplikedis\_18 Start: 13175, Stop: 13345, Start Num: 15  
Candidate Starts for Iwokeuplikedis\_18:  
(14, 13172), (Start: 15 @13175 has 402 MA's),

Gene: JHC117\_18 Start: 12600, Stop: 12785, Start Num: 15  
Candidate Starts for JHC117\_18:  
(Start: 15 @12600 has 402 MA's), (19, 12663),

Gene: JSwag\_19 Start: 12302, Stop: 12472, Start Num: 15  
Candidate Starts for JSwag\_19:  
(Start: 15 @12302 has 402 MA's),

Gene: Jaan\_20 Start: 15276, Stop: 15458, Start Num: 15  
Candidate Starts for Jaan\_20:  
(Start: 11 @15258 has 2 MA's), (Start: 15 @15276 has 402 MA's),

Gene: Jaykayelowell\_16 Start: 12474, Stop: 12680, Start Num: 15  
Candidate Starts for Jaykayelowell\_16:  
(Start: 15 @12474 has 402 MA's),

Gene: Jeffabunny\_20 Start: 13286, Stop: 13483, Start Num: 15  
Candidate Starts for Jeffabunny\_20:  
(Start: 15 @13286 has 402 MA's), (23, 13376),

Gene: JenCasNa\_18 Start: 12600, Stop: 12785, Start Num: 15

Candidate Starts for JenCasNa\_18:  
(Start: 15 @12600 has 402 MA's), (19, 12663),

Gene: JeppNRM\_19 Start: 12677, Stop: 12859, Start Num: 15  
Candidate Starts for JeppNRM\_19:  
(Start: 15 @12677 has 402 MA's),

Gene: Jerm\_19 Start: 13563, Stop: 13793, Start Num: 4  
Candidate Starts for Jerm\_19:  
(Start: 4 @13563 has 2 MA's), (Start: 15 @13611 has 402 MA's),

Gene: JetBlade\_16 Start: 12475, Stop: 12681, Start Num: 15  
Candidate Starts for JetBlade\_16:  
(Start: 15 @12475 has 402 MA's),

Gene: JewelBug\_20 Start: 13287, Stop: 13484, Start Num: 15  
Candidate Starts for JewelBug\_20:  
(Start: 15 @13287 has 402 MA's),

Gene: Jobu08\_18 Start: 12669, Stop: 12854, Start Num: 15  
Candidate Starts for Jobu08\_18:  
(Start: 15 @12669 has 402 MA's), (19, 12732),

Gene: JoongJeon\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for JoongJeon\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: Jordennis\_20 Start: 13275, Stop: 13472, Start Num: 15  
Candidate Starts for Jordennis\_20:  
(2, 13209), (3, 13221), (9, 13254), (Start: 15 @13275 has 402 MA's),

Gene: Joselito\_17 Start: 13757, Stop: 13924, Start Num: 15  
Candidate Starts for Joselito\_17:  
(12, 13739), (Start: 15 @13757 has 402 MA's), (17, 13793), (21, 13841),

Gene: JoshKayV\_19 Start: 13615, Stop: 13797, Start Num: 15  
Candidate Starts for JoshKayV\_19:  
(Start: 4 @13567 has 2 MA's), (Start: 15 @13615 has 402 MA's),

Gene: Journey13\_15 Start: 12341, Stop: 12505, Start Num: 15  
Candidate Starts for Journey13\_15:  
(Start: 15 @12341 has 402 MA's), (18, 12377),

Gene: Jsquared\_16 Start: 12051, Stop: 12206, Start Num: 15  
Candidate Starts for Jsquared\_16:  
(Start: 15 @12051 has 402 MA's), (19, 12114),

Gene: KADY\_19 Start: 12686, Stop: 12871, Start Num: 15  
Candidate Starts for KADY\_19:  
(Start: 15 @12686 has 402 MA's), (19, 12749),

Gene: KFPoly\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for KFPoly\_16:

(Start: 15 @12478 has 402 MA's),

Gene: Kalb97\_19 Start: 12677, Stop: 12859, Start Num: 15

Candidate Starts for Kalb97\_19:

(Start: 15 @12677 has 402 MA's),

Gene: Kalnoky\_19 Start: 12679, Stop: 12861, Start Num: 15

Candidate Starts for Kalnoky\_19:

(Start: 15 @12679 has 402 MA's),

Gene: Kalpine\_20 Start: 14973, Stop: 15155, Start Num: 15

Candidate Starts for Kalpine\_20:

(Start: 15 @14973 has 402 MA's),

Gene: Kamy\_16 Start: 12476, Stop: 12682, Start Num: 15

Candidate Starts for Kamy\_16:

(Start: 15 @12476 has 402 MA's),

Gene: KatherineG\_19 Start: 12438, Stop: 12608, Start Num: 15

Candidate Starts for KatherineG\_19:

(Start: 15 @12438 has 402 MA's),

Gene: Kazan\_20 Start: 13290, Stop: 13487, Start Num: 15

Candidate Starts for Kazan\_20:

(Start: 15 @13290 has 402 MA's),

Gene: Kerberos\_20 Start: 13113, Stop: 13268, Start Num: 15

Candidate Starts for Kerberos\_20:

(Start: 15 @13113 has 402 MA's),

Gene: Kimona\_13 Start: 9941, Stop: 10147, Start Num: 15

Candidate Starts for Kimona\_13:

(Start: 15 @9941 has 402 MA's), (19, 10004), (21, 10025), (28, 10127),

Gene: KingCyrus\_19 Start: 13586, Stop: 13768, Start Num: 15

Candidate Starts for KingCyrus\_19:

(Start: 15 @13586 has 402 MA's),

Gene: Kingmustik0402\_16 Start: 12470, Stop: 12676, Start Num: 15

Candidate Starts for Kingmustik0402\_16:

(Start: 15 @12470 has 402 MA's),

Gene: Kinmap\_16 Start: 13042, Stop: 13212, Start Num: 15

Candidate Starts for Kinmap\_16:

(5, 13003), (Start: 15 @13042 has 402 MA's),

Gene: Kipper29\_20 Start: 13284, Stop: 13481, Start Num: 15

Candidate Starts for Kipper29\_20:

(Start: 15 @13284 has 402 MA's),

Gene: Koduck\_17 Start: 12395, Stop: 12547, Start Num: 15

Candidate Starts for Koduck\_17:

(Start: 10 @12374 has 1 MA's), (Start: 15 @12395 has 402 MA's), (19, 12458), (22, 12482),



Gene: Koko\_20 Start: 13278, Stop: 13475, Start Num: 15

Candidate Starts for Koko\_20:

(Start: 15 @13278 has 402 MA's), (23, 13368),

Gene: Koreni\_15 Start: 12124, Stop: 12330, Start Num: 15

Candidate Starts for Koreni\_15:

(Start: 15 @12124 has 402 MA's),

Gene: Kratark\_16 Start: 12473, Stop: 12679, Start Num: 15

Candidate Starts for Kratark\_16:

(Start: 15 @12473 has 402 MA's),

Gene: Kremtemulon\_16 Start: 12526, Stop: 12732, Start Num: 15

Candidate Starts for Kremtemulon\_16:

(Start: 15 @12526 has 402 MA's),

Gene: Kristoff\_17 Start: 12438, Stop: 12623, Start Num: 15

Candidate Starts for Kristoff\_17:

(Start: 15 @12438 has 402 MA's),

Gene: Kyee\_16 Start: 12479, Stop: 12685, Start Num: 15

Candidate Starts for Kyee\_16:

(Start: 15 @12479 has 402 MA's),

Gene: L5\_18 Start: 12382, Stop: 12555, Start Num: 10

Candidate Starts for L5\_18:

(Start: 10 @12382 has 1 MA's), (Start: 15 @12403 has 402 MA's), (19, 12466), (22, 12490),

Gene: LBerry\_18 Start: 12602, Stop: 12787, Start Num: 15

Candidate Starts for LBerry\_18:

(Start: 15 @12602 has 402 MA's), (19, 12665),

Gene: LHTSCC\_16 Start: 12456, Stop: 12668, Start Num: 15

Candidate Starts for LHTSCC\_16:

(Start: 15 @12456 has 402 MA's),

Gene: LadyBird\_17 Start: 13155, Stop: 13337, Start Num: 15

Candidate Starts for LadyBird\_17:

(Start: 15 @13155 has 402 MA's),

Gene: Lambert1\_17 Start: 12696, Stop: 12875, Start Num: 15

Candidate Starts for Lambert1\_17:

(13, 12681), (Start: 15 @12696 has 402 MA's),

Gene: Landor\_18 Start: 14910, Stop: 15110, Start Num: 11

Candidate Starts for Landor\_18:

(Start: 11 @14910 has 2 MA's), (Start: 15 @14928 has 402 MA's),

Gene: LappelDuVide\_16 Start: 12475, Stop: 12681, Start Num: 15

Candidate Starts for LappelDuVide\_16:

(Start: 15 @12475 has 402 MA's),

Gene: Larenn\_18 Start: 13470, Stop: 13649, Start Num: 15  
Candidate Starts for Larenn\_18:  
(Start: 15 @13470 has 402 MA's),

Gene: LarryKay\_18 Start: 12688, Stop: 12873, Start Num: 15  
Candidate Starts for LarryKay\_18:  
(Start: 15 @12688 has 402 MA's), (19, 12751),

Gene: LastResort\_19 Start: 12316, Stop: 12486, Start Num: 15  
Candidate Starts for LastResort\_19:  
(Start: 15 @12316 has 402 MA's),

Gene: Lemur\_16 Start: 12475, Stop: 12681, Start Num: 15  
Candidate Starts for Lemur\_16:  
(Start: 15 @12475 has 402 MA's),

Gene: LeoAvram\_16 Start: 12475, Stop: 12681, Start Num: 15  
Candidate Starts for LeoAvram\_16:  
(Start: 15 @12475 has 402 MA's),

Gene: Leogania\_19 Start: 15329, Stop: 15514, Start Num: 15  
Candidate Starts for Leogania\_19:  
(Start: 15 @15329 has 402 MA's),

Gene: Leviathan\_19 Start: 13643, Stop: 13825, Start Num: 15  
Candidate Starts for Leviathan\_19:  
(Start: 4 @13595 has 2 MA's), (Start: 15 @13643 has 402 MA's),

Gene: LilTurb\_19 Start: 13670, Stop: 13852, Start Num: 15  
Candidate Starts for LilTurb\_19:  
(Start: 4 @13622 has 2 MA's), (Start: 15 @13670 has 402 MA's),

Gene: Lilbunny\_20 Start: 13260, Stop: 13457, Start Num: 15  
Candidate Starts for Lilbunny\_20:  
(Start: 15 @13260 has 402 MA's),

Gene: Lilith\_18 Start: 12595, Stop: 12780, Start Num: 15  
Candidate Starts for Lilith\_18:  
(Start: 15 @12595 has 402 MA's), (19, 12658),

Gene: LittleB\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for LittleB\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: LittleGuy\_16 Start: 12421, Stop: 12627, Start Num: 15  
Candidate Starts for LittleGuy\_16:  
(Start: 15 @12421 has 402 MA's),

Gene: LochMonster\_16 Start: 12453, Stop: 12659, Start Num: 15  
Candidate Starts for LochMonster\_16:  
(Start: 15 @12453 has 402 MA's),

Gene: Lokk\_20 Start: 14867, Stop: 15043, Start Num: 15

Candidate Starts for Lökk\_20:  
(Start: 15 @14867 has 402 MA's),

Gene: Looper\_20 Start: 12316, Stop: 12486, Start Num: 15  
Candidate Starts for Looper\_20:  
(Start: 15 @12316 has 402 MA's),

Gene: Lorenzo\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Lorenzo\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: Loser\_20 Start: 14963, Stop: 15145, Start Num: 15  
Candidate Starts for Loser\_20:  
(Start: 15 @14963 has 402 MA's),

Gene: Louie6\_18 Start: 12689, Stop: 12874, Start Num: 15  
Candidate Starts for Louie6\_18:  
(Start: 15 @12689 has 402 MA's), (19, 12752),

Gene: Lucivia\_17 Start: 13806, Stop: 13973, Start Num: 15  
Candidate Starts for Lucivia\_17:  
(12, 13788), (Start: 15 @13806 has 402 MA's), (17, 13842), (21, 13890),

Gene: Lucyedi\_18 Start: 13368, Stop: 13550, Start Num: 15  
Candidate Starts for Lucyedi\_18:  
(Start: 15 @13368 has 402 MA's),

Gene: LugYA\_20 Start: 12600, Stop: 12785, Start Num: 15  
Candidate Starts for LugYA\_20:  
(Start: 15 @12600 has 402 MA's), (19, 12663),

Gene: Lunsford\_17 Start: 12475, Stop: 12681, Start Num: 15  
Candidate Starts for Lunsford\_17:  
(Start: 15 @12475 has 402 MA's),

Gene: MA5\_16 Start: 11752, Stop: 11931, Start Num: 15  
Candidate Starts for MA5\_16:  
(13, 11737), (Start: 15 @11752 has 402 MA's), (17, 11788), (18, 11791),

Gene: MaCh\_17 Start: 13754, Stop: 13921, Start Num: 15  
Candidate Starts for MaCh\_17:  
(12, 13736), (Start: 15 @13754 has 402 MA's), (17, 13790), (21, 13838),

Gene: Mabel\_17 Start: 13821, Stop: 13988, Start Num: 15  
Candidate Starts for Mabel\_17:  
(12, 13803), (Start: 15 @13821 has 402 MA's), (17, 13857), (21, 13905),

Gene: MadMarie\_18 Start: 12604, Stop: 12789, Start Num: 15  
Candidate Starts for MadMarie\_18:  
(Start: 15 @12604 has 402 MA's), (19, 12667),

Gene: Mainiac\_18 Start: 12595, Stop: 12780, Start Num: 15  
Candidate Starts for Mainiac\_18:

(Start: 15 @12595 has 402 MA's), (19, 12658),

Gene: MajorMajor\_16 Start: 12104, Stop: 12289, Start Num: 15

Candidate Starts for MajorMajor\_16:

(Start: 15 @12104 has 402 MA's), (20, 12182),

Gene: Malec\_18 Start: 13475, Stop: 13654, Start Num: 15

Candidate Starts for Malec\_18:

(Start: 15 @13475 has 402 MA's),

Gene: Manu\_19 Start: 12679, Stop: 12861, Start Num: 15

Candidate Starts for Manu\_19:

(Start: 15 @12679 has 402 MA's),

Gene: MarQuardt\_18 Start: 12603, Stop: 12788, Start Num: 15

Candidate Starts for MarQuardt\_18:

(Start: 15 @12603 has 402 MA's), (19, 12666),

Gene: Margo\_17 Start: 12721, Stop: 12900, Start Num: 15

Candidate Starts for Margo\_17:

(13, 12706), (Start: 15 @12721 has 402 MA's),

Gene: Marie\_18 Start: 12600, Stop: 12785, Start Num: 15

Candidate Starts for Marie\_18:

(Start: 15 @12600 has 402 MA's), (19, 12663),

Gene: Marius\_19 Start: 12679, Stop: 12861, Start Num: 15

Candidate Starts for Marius\_19:

(Start: 15 @12679 has 402 MA's),

Gene: Maverick\_16 Start: 12478, Stop: 12684, Start Num: 15

Candidate Starts for Maverick\_16:

(Start: 15 @12478 has 402 MA's),

Gene: Maxo\_16 Start: 12476, Stop: 12682, Start Num: 15

Candidate Starts for Maxo\_16:

(Start: 15 @12476 has 402 MA's),

Gene: Mazhar510\_16 Start: 12479, Stop: 12685, Start Num: 15

Candidate Starts for Mazhar510\_16:

(Start: 15 @12479 has 402 MA's),

Gene: McFly\_20 Start: 13284, Stop: 13481, Start Num: 15

Candidate Starts for McFly\_20:

(Start: 15 @13284 has 402 MA's),

Gene: Medusa\_16 Start: 12479, Stop: 12685, Start Num: 15

Candidate Starts for Medusa\_16:

(Start: 15 @12479 has 402 MA's),

Gene: MeeZee\_16 Start: 12478, Stop: 12684, Start Num: 15

Candidate Starts for MeeZee\_16:

(Start: 15 @12478 has 402 MA's),

Gene: Melvin\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Melvin\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: Methuselah\_18 Start: 12685, Stop: 12870, Start Num: 15  
Candidate Starts for Methuselah\_18:  
(Start: 15 @12685 has 402 MA's), (19, 12748),

Gene: Microwolf\_18 Start: 12603, Stop: 12788, Start Num: 15  
Candidate Starts for Microwolf\_18:  
(Start: 15 @12603 has 402 MA's), (19, 12666),

Gene: MiculUcigas\_17 Start: 13239, Stop: 13418, Start Num: 15  
Candidate Starts for MiculUcigas\_17:  
(Start: 15 @13239 has 402 MA's),

Gene: Miko\_20 Start: 14836, Stop: 15012, Start Num: 15  
Candidate Starts for Miko\_20:  
(Start: 15 @14836 has 402 MA's),

Gene: Millski\_16 Start: 12481, Stop: 12687, Start Num: 15  
Candidate Starts for Millski\_16:  
(Start: 15 @12481 has 402 MA's),

Gene: MinecraftSteve\_20 Start: 12438, Stop: 12608, Start Num: 15  
Candidate Starts for MinecraftSteve\_20:  
(Start: 15 @12438 has 402 MA's),

Gene: Miramae\_16 Start: 12438, Stop: 12632, Start Num: 15  
Candidate Starts for Miramae\_16:  
(Start: 15 @12438 has 402 MA's),

Gene: Misomonster\_20 Start: 12685, Stop: 12870, Start Num: 15  
Candidate Starts for Misomonster\_20:  
(Start: 15 @12685 has 402 MA's), (19, 12748),

Gene: MissWhite\_17 Start: 12278, Stop: 12454, Start Num: 15  
Candidate Starts for MissWhite\_17:  
(Start: 15 @12278 has 402 MA's), (19, 12341), (24, 12371),

Gene: MoneyMay\_18 Start: 12600, Stop: 12785, Start Num: 15  
Candidate Starts for MoneyMay\_18:  
(Start: 15 @12600 has 402 MA's), (19, 12663),

Gene: Morrow\_16 Start: 12481, Stop: 12687, Start Num: 15  
Candidate Starts for Morrow\_16:  
(Start: 15 @12481 has 402 MA's),

Gene: MuchMore\_20 Start: 12594, Stop: 12779, Start Num: 15  
Candidate Starts for MuchMore\_20:  
(Start: 15 @12594 has 402 MA's), (19, 12657),

Gene: Munch\_17 Start: 13757, Stop: 13924, Start Num: 15  
Candidate Starts for Munch\_17:  
(12, 13739), (Start: 15 @13757 has 402 MA's), (17, 13793), (21, 13841),

Gene: Mundrea\_16 Start: 12441, Stop: 12650, Start Num: 15  
Candidate Starts for Mundrea\_16:  
(Start: 15 @12441 has 402 MA's),

Gene: NaSiaTalie\_17 Start: 13236, Stop: 13415, Start Num: 15  
Candidate Starts for NaSiaTalie\_17:  
(Start: 15 @13236 has 402 MA's),

Gene: Naji\_20 Start: 13113, Stop: 13268, Start Num: 15  
Candidate Starts for Naji\_20:  
(Start: 15 @13113 has 402 MA's),

Gene: Nebs\_16 Start: 12475, Stop: 12681, Start Num: 15  
Candidate Starts for Nebs\_16:  
(Start: 15 @12475 has 402 MA's),

Gene: Nebulosus\_19 Start: 12316, Stop: 12486, Start Num: 15  
Candidate Starts for Nebulosus\_19:  
(Start: 15 @12316 has 402 MA's),

Gene: Nedarya\_18 Start: 12899, Stop: 13075, Start Num: 15  
Candidate Starts for Nedarya\_18:  
(Start: 15 @12899 has 402 MA's),

Gene: Neeharika16\_20 Start: 13275, Stop: 13472, Start Num: 15  
Candidate Starts for Neeharika16\_20:  
(2, 13209), (3, 13221), (9, 13254), (Start: 15 @13275 has 402 MA's),

Gene: Nemo27\_16 Start: 12477, Stop: 12683, Start Num: 15  
Candidate Starts for Nemo27\_16:  
(Start: 15 @12477 has 402 MA's),

Gene: Newrala\_20 Start: 13275, Stop: 13472, Start Num: 15  
Candidate Starts for Newrala\_20:  
(2, 13209), (3, 13221), (9, 13254), (Start: 15 @13275 has 402 MA's),

Gene: NicoleTera\_21 Start: 14947, Stop: 15129, Start Num: 15  
Candidate Starts for NicoleTera\_21:  
(Start: 15 @14947 has 402 MA's),

Gene: Noella\_17 Start: 12696, Stop: 12875, Start Num: 15  
Candidate Starts for Noella\_17:  
(13, 12681), (Start: 15 @12696 has 402 MA's),

Gene: Noelle\_16 Start: 12541, Stop: 12738, Start Num: 15  
Candidate Starts for Noelle\_16:  
(Start: 15 @12541 has 402 MA's),

Gene: Norbert\_16 Start: 12696, Stop: 12875, Start Num: 15

Candidate Starts for Norbert\_16:  
(13, 12681), (Start: 15 @12696 has 402 MA's),

Gene: NorthStar\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for NorthStar\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: NotAPhaseMom\_16 Start: 12482, Stop: 12688, Start Num: 15  
Candidate Starts for NotAPhaseMom\_16:  
(Start: 15 @12482 has 402 MA's),

Gene: NothingSpecial\_19 Start: 15200, Stop: 15382, Start Num: 15  
Candidate Starts for NothingSpecial\_19:  
(Start: 15 @15200 has 402 MA's),

Gene: Nyxis\_16 Start: 12421, Stop: 12627, Start Num: 15  
Candidate Starts for Nyxis\_16:  
(Start: 15 @12421 has 402 MA's),

Gene: OKaNui\_17 Start: 12531, Stop: 12737, Start Num: 15  
Candidate Starts for OKaNui\_17:  
(Start: 15 @12531 has 402 MA's),

Gene: Obama12\_16 Start: 12458, Stop: 12670, Start Num: 15  
Candidate Starts for Obama12\_16:  
(Start: 15 @12458 has 402 MA's),

Gene: Odin\_16 Start: 12002, Stop: 12157, Start Num: 15  
Candidate Starts for Odin\_16:  
(Start: 15 @12002 has 402 MA's),

Gene: Ohfah\_16 Start: 12475, Stop: 12681, Start Num: 15  
Candidate Starts for Ohfah\_16:  
(Start: 15 @12475 has 402 MA's),

Gene: OlanP\_18 Start: 12859, Stop: 13041, Start Num: 15  
Candidate Starts for OlanP\_18:  
(Start: 15 @12859 has 402 MA's),

Gene: Oofda\_20 Start: 12287, Stop: 12457, Start Num: 15  
Candidate Starts for Oofda\_20:  
(Start: 15 @12287 has 402 MA's),

Gene: Orange\_17 Start: 13757, Stop: 13924, Start Num: 15  
Candidate Starts for Orange\_17:  
(12, 13739), (Start: 15 @13757 has 402 MA's), (17, 13793), (21, 13841),

Gene: P28Green\_18 Start: 12601, Stop: 12786, Start Num: 15  
Candidate Starts for P28Green\_18:  
(Start: 15 @12601 has 402 MA's), (19, 12664),

Gene: PGHhamlin\_20 Start: 12594, Stop: 12779, Start Num: 15  
Candidate Starts for PGHhamlin\_20:

(Start: 15 @12594 has 402 MA's), (19, 12657),

Gene: PainterBoy\_18 Start: 13368, Stop: 13550, Start Num: 15

Candidate Starts for PainterBoy\_18:

(Start: 15 @13368 has 402 MA's),

Gene: Palestino\_16 Start: 12478, Stop: 12684, Start Num: 15

Candidate Starts for Palestino\_16:

(Start: 15 @12478 has 402 MA's),

Gene: Pawn\_19 Start: 12679, Stop: 12861, Start Num: 15

Candidate Starts for Pawn\_19:

(Start: 15 @12679 has 402 MA's),

Gene: Peaches\_16 Start: 12477, Stop: 12683, Start Num: 15

Candidate Starts for Peaches\_16:

(Start: 15 @12477 has 402 MA's),

Gene: Pembroke\_18 Start: 12603, Stop: 12788, Start Num: 15

Candidate Starts for Pembroke\_18:

(Start: 15 @12603 has 402 MA's), (19, 12666),

Gene: Penny1\_18 Start: 12602, Stop: 12787, Start Num: 15

Candidate Starts for Penny1\_18:

(Start: 15 @12602 has 402 MA's), (19, 12665),

Gene: PeterPeter\_16 Start: 12478, Stop: 12684, Start Num: 15

Candidate Starts for PeterPeter\_16:

(Start: 15 @12478 has 402 MA's),

Gene: Ph8s\_18 Start: 11961, Stop: 12116, Start Num: 15

Candidate Starts for Ph8s\_18:

(Start: 15 @11961 has 402 MA's),

Gene: Phacado\_16 Start: 12477, Stop: 12683, Start Num: 15

Candidate Starts for Phacado\_16:

(Start: 15 @12477 has 402 MA's),

Gene: Phaded\_20 Start: 15257, Stop: 15457, Start Num: 11

Candidate Starts for Phaded\_20:

(Start: 11 @15257 has 2 MA's), (Start: 15 @15275 has 402 MA's),

Gene: PhailMary\_12 Start: 8693, Stop: 8923, Start Num: 4

Candidate Starts for PhailMary\_12:

(Start: 4 @8693 has 2 MA's), (Start: 15 @8741 has 402 MA's),

Gene: Pharaoh\_17 Start: 13693, Stop: 13884, Start Num: 15

Candidate Starts for Pharaoh\_17:

(1, 13597), (8, 13666), (Start: 15 @13693 has 402 MA's), (16, 13723),

Gene: Phelipe\_16 Start: 12478, Stop: 12684, Start Num: 15

Candidate Starts for Phelipe\_16:

(Start: 15 @12478 has 402 MA's),



Gene: Phighter1804\_16 Start: 12456, Stop: 12662, Start Num: 15  
Candidate Starts for Phighter1804\_16:  
(Start: 15 @12456 has 402 MA's),

Gene: PhishRPhriends\_17 Start: 11864, Stop: 12046, Start Num: 15  
Candidate Starts for PhishRPhriends\_17:  
(Start: 15 @11864 has 402 MA's),

Gene: Phoebe\_18 Start: 12600, Stop: 12785, Start Num: 15  
Candidate Starts for Phoebe\_18:  
(Start: 15 @12600 has 402 MA's), (19, 12663),

Gene: Phontbonne\_16 Start: 12422, Stop: 12628, Start Num: 15  
Candidate Starts for Phontbonne\_16:  
(Start: 15 @12422 has 402 MA's),

Gene: Phoxy\_18 Start: 12686, Stop: 12871, Start Num: 15  
Candidate Starts for Phoxy\_18:  
(Start: 15 @12686 has 402 MA's), (19, 12749),

Gene: Phranny\_19 Start: 12671, Stop: 12853, Start Num: 15  
Candidate Starts for Phranny\_19:  
(Start: 15 @12671 has 402 MA's),

Gene: Pipcraft\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Pipcraft\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: Piro94\_18 Start: 13697, Stop: 13876, Start Num: 15  
Candidate Starts for Piro94\_18:  
(Start: 15 @13697 has 402 MA's),

Gene: Pmask\_20 Start: 13276, Stop: 13473, Start Num: 15  
Candidate Starts for Pmask\_20:  
(9, 13255), (Start: 15 @13276 has 402 MA's),

Gene: Pocahontas\_17 Start: 12693, Stop: 12872, Start Num: 15  
Candidate Starts for Pocahontas\_17:  
(13, 12678), (Start: 15 @12693 has 402 MA's),

Gene: Polymorphads\_16 Start: 12475, Stop: 12681, Start Num: 15  
Candidate Starts for Polymorphads\_16:  
(Start: 15 @12475 has 402 MA's),

Gene: Pomar16\_20 Start: 13154, Stop: 13309, Start Num: 15  
Candidate Starts for Pomar16\_20:  
(Start: 15 @13154 has 402 MA's),

Gene: Popcicle\_17 Start: 12693, Stop: 12872, Start Num: 15  
Candidate Starts for Popcicle\_17:  
(13, 12678), (Start: 15 @12693 has 402 MA's),

Gene: PotatoSplit\_19 Start: 12602, Stop: 12787, Start Num: 15  
Candidate Starts for PotatoSplit\_19:  
(Start: 15 @12602 has 402 MA's), (19, 12665),

Gene: Power\_17 Start: 13133, Stop: 13315, Start Num: 15  
Candidate Starts for Power\_17:  
(Start: 4 @13085 has 2 MA's), (Start: 15 @13133 has 402 MA's),

Gene: Priamo\_20 Start: 13303, Stop: 13500, Start Num: 15  
Candidate Starts for Priamo\_20:  
(2, 13237), (3, 13249), (9, 13282), (Start: 15 @13303 has 402 MA's),

Gene: Pukovnik\_19 Start: 14843, Stop: 15010, Start Num: 15  
Candidate Starts for Pukovnik\_19:  
(Start: 15 @14843 has 402 MA's),

Gene: Pumbaa\_16 Start: 12453, Stop: 12659, Start Num: 15  
Candidate Starts for Pumbaa\_16:  
(Start: 15 @12453 has 402 MA's),

Gene: PurpleHaze\_18 Start: 12678, Stop: 12860, Start Num: 15  
Candidate Starts for PurpleHaze\_18:  
(Start: 15 @12678 has 402 MA's),

Gene: QueenB2\_17 Start: 13210, Stop: 13392, Start Num: 15  
Candidate Starts for QueenB2\_17:  
(Start: 4 @13162 has 2 MA's), (Start: 15 @13210 has 402 MA's), (20, 13288),

Gene: QueenBeesly\_17 Start: 13133, Stop: 13315, Start Num: 15  
Candidate Starts for QueenBeesly\_17:  
(Start: 4 @13085 has 2 MA's), (Start: 15 @13133 has 402 MA's),

Gene: QuinnKiro\_16 Start: 12696, Stop: 12875, Start Num: 15  
Candidate Starts for QuinnKiro\_16:  
(13, 12681), (Start: 15 @12696 has 402 MA's),

Gene: Quokka\_15 Start: 12104, Stop: 12289, Start Num: 15  
Candidate Starts for Quokka\_15:  
(Start: 15 @12104 has 402 MA's), (20, 12182),

Gene: RGL3\_6 Start: 5567, Stop: 5749, Start Num: 15  
Candidate Starts for RGL3\_6:  
(Start: 15 @5567 has 402 MA's), (26, 5720),

Gene: Rachaly\_20 Start: 14864, Stop: 15040, Start Num: 15  
Candidate Starts for Rachaly\_20:  
(Start: 15 @14864 has 402 MA's),

Gene: ReMo\_19 Start: 12316, Stop: 12486, Start Num: 15  
Candidate Starts for ReMo\_19:  
(Start: 15 @12316 has 402 MA's),

Gene: Reba\_19 Start: 12344, Stop: 12526, Start Num: 15

Candidate Starts for Reba\_19:  
(Start: 15 @12344 has 402 MA's),

Gene: Rebeuca\_17 Start: 12439, Stop: 12624, Start Num: 15  
Candidate Starts for Rebeuca\_17:  
(Start: 15 @12439 has 402 MA's),

Gene: RedRock\_20 Start: 15120, Stop: 15302, Start Num: 15  
Candidate Starts for RedRock\_20:  
(Start: 15 @15120 has 402 MA's),

Gene: Refuge\_20 Start: 15497, Stop: 15685, Start Num: 15  
Candidate Starts for Refuge\_20:  
(1, 15428), (7, 15473), (Start: 15 @15497 has 402 MA's), (16, 15527),

Gene: Relief\_16 Start: 12476, Stop: 12682, Start Num: 15  
Candidate Starts for Relief\_16:  
(Start: 15 @12476 has 402 MA's),

Gene: Remus\_19 Start: 12277, Stop: 12447, Start Num: 15  
Candidate Starts for Remus\_19:  
(Start: 15 @12277 has 402 MA's),

Gene: ResDef\_17 Start: 12696, Stop: 12875, Start Num: 15  
Candidate Starts for ResDef\_17:  
(13, 12681), (Start: 15 @12696 has 402 MA's),

Gene: Retro23\_17 Start: 13284, Stop: 13466, Start Num: 15  
Candidate Starts for Retro23\_17:  
(Start: 4 @13236 has 2 MA's), (Start: 15 @13284 has 402 MA's),

Gene: RhynO\_17 Start: 12415, Stop: 12600, Start Num: 15  
Candidate Starts for RhynO\_17:  
(Start: 15 @12415 has 402 MA's),

Gene: Rifter\_20 Start: 13251, Stop: 13448, Start Num: 15  
Candidate Starts for Rifter\_20:  
(Start: 15 @13251 has 402 MA's), (23, 13341),

Gene: Roksolana\_20 Start: 13279, Stop: 13476, Start Num: 15  
Candidate Starts for Roksolana\_20:  
(Start: 15 @13279 has 402 MA's),

Gene: Romney\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Romney\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: Roosevelt\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Roosevelt\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: Rosa24\_15 Start: 12451, Stop: 12657, Start Num: 15  
Candidate Starts for Rosa24\_15:

(Start: 15 @12451 has 402 MA's),

Gene: Rosalind\_19 Start: 12438, Stop: 12608, Start Num: 15

Candidate Starts for Rosalind\_19:

(Start: 15 @12438 has 402 MA's),

Gene: Rowdy\_19 Start: 12326, Stop: 12511, Start Num: 15

Candidate Starts for Rowdy\_19:

(Start: 15 @12326 has 402 MA's),

Gene: Ruin\_16 Start: 12474, Stop: 12680, Start Num: 15

Candidate Starts for Ruin\_16:

(Start: 15 @12474 has 402 MA's),

Gene: Rummer\_18 Start: 12686, Stop: 12871, Start Num: 15

Candidate Starts for Rummer\_18:

(Start: 15 @12686 has 402 MA's), (19, 12749),

Gene: Sabertooth\_16 Start: 12475, Stop: 12681, Start Num: 15

Candidate Starts for Sabertooth\_16:

(Start: 15 @12475 has 402 MA's),

Gene: Sabia\_18 Start: 12595, Stop: 12780, Start Num: 15

Candidate Starts for Sabia\_18:

(Start: 15 @12595 has 402 MA's), (19, 12658),

Gene: Sabinator\_18 Start: 12600, Stop: 12785, Start Num: 15

Candidate Starts for Sabinator\_18:

(Start: 15 @12600 has 402 MA's), (19, 12663),

Gene: Scamp\_16 Start: 12478, Stop: 12684, Start Num: 15

Candidate Starts for Scamp\_16:

(Start: 15 @12478 has 402 MA's),

Gene: SemperFi\_19 Start: 13561, Stop: 13743, Start Num: 15

Candidate Starts for SemperFi\_19:

(Start: 4 @13513 has 2 MA's), (Start: 15 @13561 has 402 MA's),

Gene: Serenity\_16 Start: 12104, Stop: 12289, Start Num: 15

Candidate Starts for Serenity\_16:

(Start: 15 @12104 has 402 MA's),

Gene: Shaka\_16 Start: 12478, Stop: 12684, Start Num: 15

Candidate Starts for Shaka\_16:

(Start: 15 @12478 has 402 MA's),

Gene: Shapes\_19 Start: 12326, Stop: 12511, Start Num: 15

Candidate Starts for Shapes\_19:

(Start: 15 @12326 has 402 MA's),

Gene: ShayRa\_20 Start: 12438, Stop: 12608, Start Num: 15

Candidate Starts for ShayRa\_20:

(Start: 15 @12438 has 402 MA's),

Gene: SheldonCooper\_16 Start: 12457, Stop: 12669, Start Num: 15  
Candidate Starts for SheldonCooper\_16:  
(Start: 15 @12457 has 402 MA's),

Gene: Skipitt\_16 Start: 12475, Stop: 12681, Start Num: 15  
Candidate Starts for Skipitt\_16:  
(Start: 15 @12475 has 402 MA's),

Gene: Smeagan\_19 Start: 13646, Stop: 13828, Start Num: 15  
Candidate Starts for Smeagan\_19:  
(Start: 4 @13598 has 2 MA's), (Start: 15 @13646 has 402 MA's),

Gene: SmellyB\_20 Start: 13284, Stop: 13481, Start Num: 15  
Candidate Starts for SmellyB\_20:  
(Start: 15 @13284 has 402 MA's),

Gene: SnapTap\_17 Start: 13133, Stop: 13315, Start Num: 15  
Candidate Starts for SnapTap\_17:  
(Start: 4 @13085 has 2 MA's), (Start: 15 @13133 has 402 MA's),

Gene: Snickers\_18 Start: 12576, Stop: 12761, Start Num: 15  
Candidate Starts for Snickers\_18:  
(Start: 15 @12576 has 402 MA's), (19, 12639),

Gene: SoYo\_18 Start: 12513, Stop: 12698, Start Num: 15  
Candidate Starts for SoYo\_18:  
(Start: 15 @12513 has 402 MA's), (19, 12576),

Gene: SoilDragon\_18 Start: 12285, Stop: 12470, Start Num: 15  
Candidate Starts for SoilDragon\_18:  
(Start: 15 @12285 has 402 MA's), (19, 12348),

Gene: Soshari\_20 Start: 12685, Stop: 12870, Start Num: 15  
Candidate Starts for Soshari\_20:  
(Start: 15 @12685 has 402 MA's), (19, 12748),

Gene: Soups\_19 Start: 12438, Stop: 12608, Start Num: 15  
Candidate Starts for Soups\_19:  
(Start: 15 @12438 has 402 MA's),

Gene: Sparxx\_16 Start: 12475, Stop: 12681, Start Num: 15  
Candidate Starts for Sparxx\_16:  
(Start: 15 @12475 has 402 MA's),

Gene: Spike509\_18 Start: 12686, Stop: 12871, Start Num: 15  
Candidate Starts for Spike509\_18:  
(Start: 15 @12686 has 402 MA's), (19, 12749),

Gene: Spino\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Spino\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: Stagni\_18 Start: 12604, Stop: 12789, Start Num: 15  
Candidate Starts for Stagni\_18:  
(Start: 15 @12604 has 402 MA's), (19, 12667),

Gene: StarStuff\_20 Start: 13113, Stop: 13268, Start Num: 15  
Candidate Starts for StarStuff\_20:  
(Start: 15 @13113 has 402 MA's),

Gene: Stasia\_17 Start: 12932, Stop: 13120, Start Num: 15  
Candidate Starts for Stasia\_17:  
(Start: 15 @12932 has 402 MA's),

Gene: Strosahl\_19 Start: 12277, Stop: 12447, Start Num: 15  
Candidate Starts for Strosahl\_19:  
(Start: 15 @12277 has 402 MA's),

Gene: SuperAwesome\_20 Start: 13275, Stop: 13472, Start Num: 15  
Candidate Starts for SuperAwesome\_20:  
(2, 13209), (3, 13221), (9, 13254), (Start: 15 @13275 has 402 MA's),

Gene: SuperCallie99\_20 Start: 13274, Stop: 13471, Start Num: 15  
Candidate Starts for SuperCallie99\_20:  
(Start: 15 @13274 has 402 MA's), (23, 13364),

Gene: Superchunk\_16 Start: 11860, Stop: 12015, Start Num: 15  
Candidate Starts for Superchunk\_16:  
(Start: 15 @11860 has 402 MA's),

Gene: SweetiePie\_17 Start: 13133, Stop: 13315, Start Num: 15  
Candidate Starts for SweetiePie\_17:  
(Start: 4 @13085 has 2 MA's), (Start: 15 @13133 has 402 MA's),

Gene: SwirlSquare\_19 Start: 12039, Stop: 12194, Start Num: 15  
Candidate Starts for SwirlSquare\_19:  
(Start: 15 @12039 has 402 MA's),

Gene: Switzerland\_19 Start: 12431, Stop: 12601, Start Num: 15  
Candidate Starts for Switzerland\_19:  
(Start: 15 @12431 has 402 MA's),

Gene: Taquarus\_16 Start: 12481, Stop: 12687, Start Num: 15  
Candidate Starts for Taquarus\_16:  
(Start: 15 @12481 has 402 MA's),

Gene: TarsusIV\_17 Start: 13232, Stop: 13414, Start Num: 15  
Candidate Starts for TarsusIV\_17:  
(Start: 15 @13232 has 402 MA's),

Gene: Taurus\_18 Start: 12600, Stop: 12785, Start Num: 15  
Candidate Starts for Taurus\_18:  
(Start: 15 @12600 has 402 MA's), (19, 12663),

Gene: Texage\_16 Start: 12696, Stop: 12875, Start Num: 15

Candidate Starts for Texage\_16:  
(13, 12681), (Start: 15 @12696 has 402 MA's),

Gene: Thanksgivukkah\_16 Start: 12482, Stop: 12688, Start Num: 15  
Candidate Starts for Thanksgivukkah\_16:  
(Start: 15 @12482 has 402 MA's),

Gene: Tiffany\_18 Start: 12496, Stop: 12681, Start Num: 15  
Candidate Starts for Tiffany\_18:  
(Start: 15 @12496 has 402 MA's), (19, 12559),

Gene: Timothy\_17 Start: 13757, Stop: 13924, Start Num: 15  
Candidate Starts for Timothy\_17:  
(12, 13739), (Start: 15 @13757 has 402 MA's), (17, 13793), (21, 13841),

Gene: Timshel\_17 Start: 14080, Stop: 14268, Start Num: 15  
Candidate Starts for Timshel\_17:  
(Start: 15 @14080 has 402 MA's),

Gene: TinaFeyge\_16 Start: 12475, Stop: 12681, Start Num: 15  
Candidate Starts for TinaFeyge\_16:  
(Start: 15 @12475 has 402 MA's),

Gene: TinyTimmy\_17 Start: 13800, Stop: 13967, Start Num: 15  
Candidate Starts for TinyTimmy\_17:  
(12, 13782), (Start: 15 @13800 has 402 MA's), (17, 13836), (21, 13884),

Gene: Tinybot\_15 Start: 12456, Stop: 12662, Start Num: 15  
Candidate Starts for Tinybot\_15:  
(Start: 15 @12456 has 402 MA's),

Gene: TipsytheTRex\_16 Start: 12263, Stop: 12424, Start Num: 15  
Candidate Starts for TipsytheTRex\_16:  
(Start: 15 @12263 has 402 MA's), (18, 12302),

Gene: TiroTheta9\_16 Start: 12475, Stop: 12681, Start Num: 15  
Candidate Starts for TiroTheta9\_16:  
(Start: 15 @12475 has 402 MA's),

Gene: Todacoro\_17 Start: 12696, Stop: 12875, Start Num: 15  
Candidate Starts for Todacoro\_17:  
(13, 12681), (Start: 15 @12696 has 402 MA's),

Gene: Tomathan\_20 Start: 13113, Stop: 13268, Start Num: 15  
Candidate Starts for Tomathan\_20:  
(Start: 15 @13113 has 402 MA's),

Gene: Topanga\_16 Start: 12392, Stop: 12577, Start Num: 15  
Candidate Starts for Topanga\_16:  
(Start: 15 @12392 has 402 MA's),

Gene: Travvers\_20 Start: 13113, Stop: 13268, Start Num: 15  
Candidate Starts for Travvers\_20:

(Start: 15 @13113 has 402 MA's),

Gene: Trixie\_20 Start: 14845, Stop: 15027, Start Num: 15

Candidate Starts for Trixie\_20:

(Start: 15 @14845 has 402 MA's),

Gene: Trooper\_17 Start: 13023, Stop: 13205, Start Num: 15

Candidate Starts for Trooper\_17:

(Start: 15 @13023 has 402 MA's),

Gene: TroyPia\_16 Start: 12478, Stop: 12684, Start Num: 15

Candidate Starts for TroyPia\_16:

(Start: 15 @12478 has 402 MA's),

Gene: Tucker\_20 Start: 13278, Stop: 13475, Start Num: 15

Candidate Starts for Tucker\_20:

(Start: 15 @13278 has 402 MA's), (23, 13368),

Gene: Turbido\_19 Start: 13673, Stop: 13855, Start Num: 15

Candidate Starts for Turbido\_19:

(Start: 4 @13625 has 2 MA's), (Start: 15 @13673 has 402 MA's),

Gene: Twister\_16 Start: 12291, Stop: 12476, Start Num: 15

Candidate Starts for Twister\_16:

(Start: 15 @12291 has 402 MA's),

Gene: TygerBlood\_16 Start: 12477, Stop: 12683, Start Num: 15

Candidate Starts for TygerBlood\_16:

(Start: 15 @12477 has 402 MA's),

Gene: Ulysses\_15 Start: 12199, Stop: 12405, Start Num: 15

Candidate Starts for Ulysses\_15:

(Start: 15 @12199 has 402 MA's),

Gene: Updawg\_19 Start: 13681, Stop: 13860, Start Num: 15

Candidate Starts for Updawg\_19:

(Start: 15 @13681 has 402 MA's),

Gene: VA6\_17 Start: 13196, Stop: 13372, Start Num: 15

Candidate Starts for VA6\_17:

(Start: 4 @13148 has 2 MA's), (Start: 15 @13196 has 402 MA's),

Gene: VC3\_20 Start: 13198, Stop: 13377, Start Num: 15

Candidate Starts for VC3\_20:

(Start: 15 @13198 has 402 MA's),

Gene: Vix\_18 Start: 12684, Stop: 12869, Start Num: 15

Candidate Starts for Vix\_18:

(Start: 15 @12684 has 402 MA's), (19, 12747),

Gene: VohminGhazi\_20 Start: 13284, Stop: 13481, Start Num: 15

Candidate Starts for VohminGhazi\_20:

(Start: 15 @13284 has 402 MA's),



Gene: Waits\_19 Start: 12283, Stop: 12453, Start Num: 15  
Candidate Starts for Waits\_19:  
(Start: 15 @12283 has 402 MA's),

Gene: WalterMcMickey\_16 Start: 12291, Stop: 12476, Start Num: 15  
Candidate Starts for WalterMcMickey\_16:  
(Start: 15 @12291 has 402 MA's),

Gene: Wander\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Wander\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: Watson\_18 Start: 12594, Stop: 12779, Start Num: 15  
Candidate Starts for Watson\_18:  
(Start: 15 @12594 has 402 MA's), (19, 12657),

Gene: WeiHuaDA\_23 Start: 15447, Stop: 15629, Start Num: 15  
Candidate Starts for WeiHuaDA\_23:  
(Start: 15 @15447 has 402 MA's),

Gene: Whabigail7\_19 Start: 13661, Stop: 13843, Start Num: 15  
Candidate Starts for Whabigail7\_19:  
(Start: 4 @13613 has 2 MA's), (Start: 15 @13661 has 402 MA's),

Gene: WideWale\_19 Start: 13681, Stop: 13860, Start Num: 15  
Candidate Starts for WideWale\_19:  
(Start: 15 @13681 has 402 MA's),

Gene: Wiks\_20 Start: 13260, Stop: 13457, Start Num: 15  
Candidate Starts for Wiks\_20:  
(Start: 15 @13260 has 402 MA's),

Gene: Wilbur\_16 Start: 12478, Stop: 12684, Start Num: 15  
Candidate Starts for Wilbur\_16:  
(Start: 15 @12478 has 402 MA's),

Gene: Wizard007\_16 Start: 12480, Stop: 12686, Start Num: 15  
Candidate Starts for Wizard007\_16:  
(Start: 15 @12480 has 402 MA's),

Gene: Wooldri\_20 Start: 12513, Stop: 12698, Start Num: 15  
Candidate Starts for Wooldri\_20:  
(Start: 15 @12513 has 402 MA's), (19, 12576),

Gene: WunderPhul\_20 Start: 13260, Stop: 13457, Start Num: 15  
Candidate Starts for WunderPhul\_20:  
(Start: 15 @13260 has 402 MA's),

Gene: XianYue\_17 Start: 13149, Stop: 13334, Start Num: 15  
Candidate Starts for XianYue\_17:  
(Start: 15 @13149 has 402 MA's),

Gene: YoSam321\_16 Start: 12475, Stop: 12681, Start Num: 15  
Candidate Starts for YoSam321\_16:  
(Start: 15 @12475 has 402 MA's),

Gene: Yokurt\_20 Start: 13260, Stop: 13457, Start Num: 15  
Candidate Starts for Yokurt\_20:  
(Start: 15 @13260 has 402 MA's),

Gene: Zaka\_20 Start: 13260, Stop: 13457, Start Num: 15  
Candidate Starts for Zaka\_20:  
(Start: 15 @13260 has 402 MA's),

Gene: Zimmer\_19 Start: 14756, Stop: 14941, Start Num: 15  
Candidate Starts for Zimmer\_19:  
(1, 14687), (7, 14732), (Start: 15 @14756 has 402 MA's), (16, 14786),

Gene: Zulu\_20 Start: 13259, Stop: 13456, Start Num: 15  
Candidate Starts for Zulu\_20:  
(Start: 15 @13259 has 402 MA's),