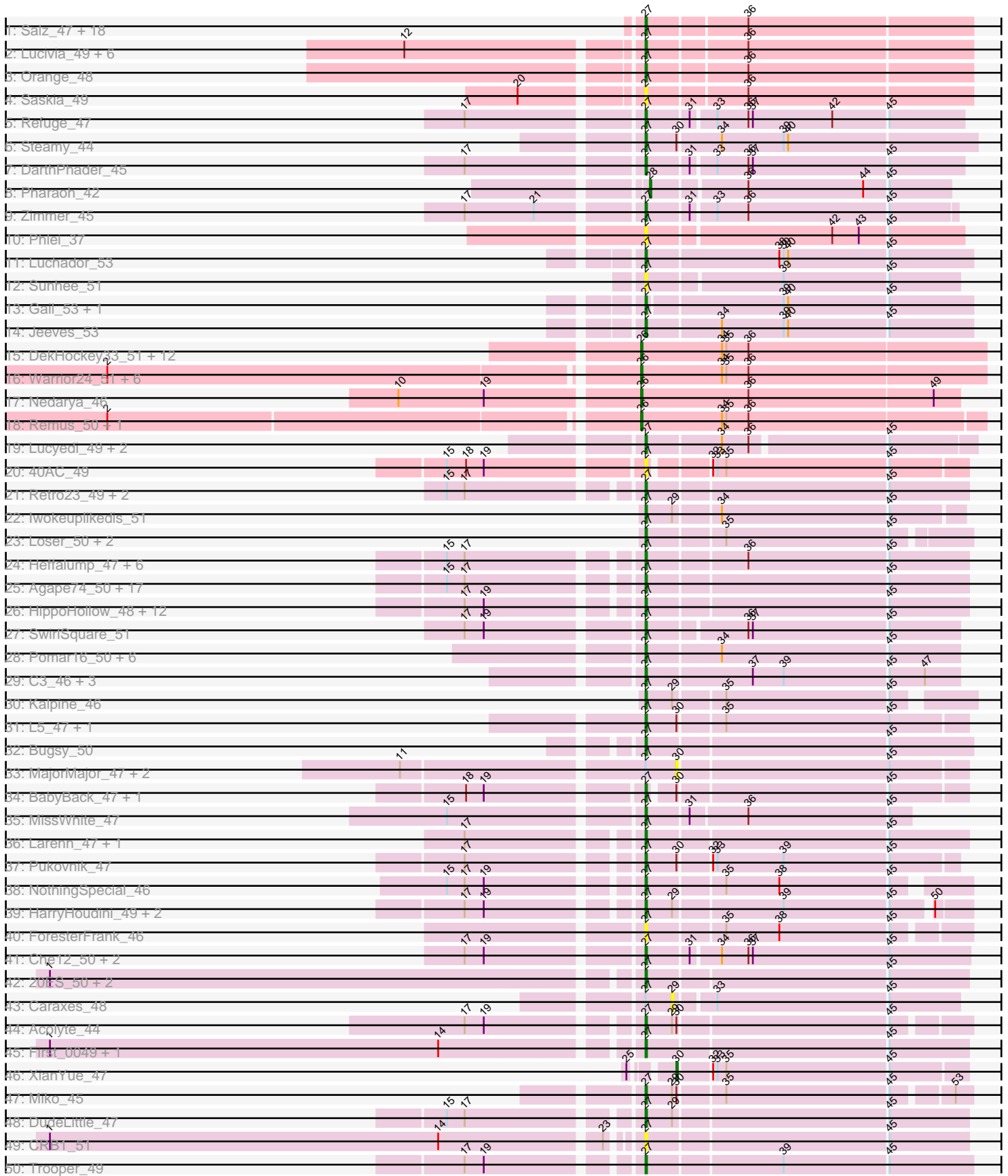
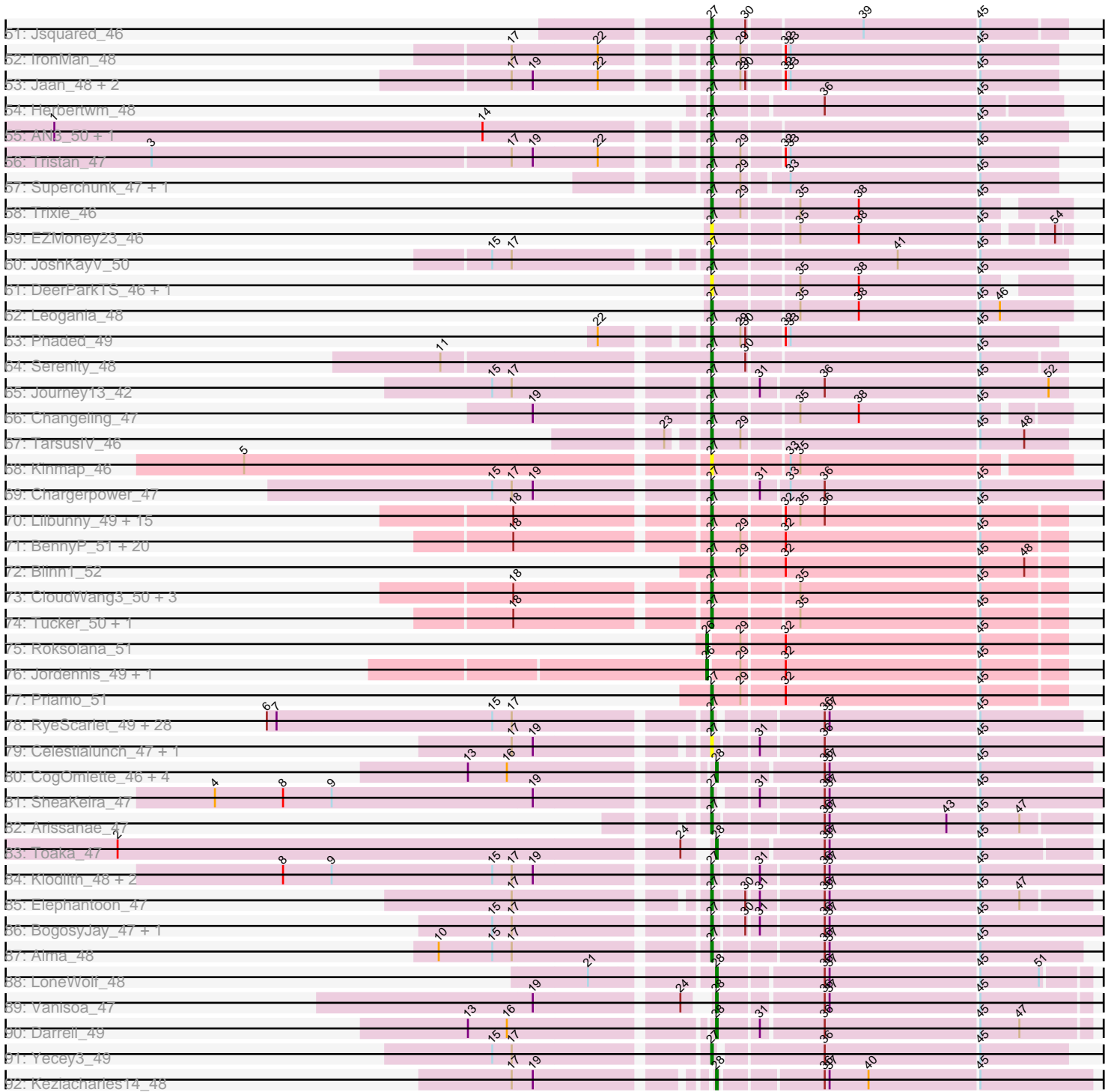


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Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. 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 294384 Report

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

Pham number 294384 has 279 members, 45 are drafts.

Phages represented in each track:

- Track 1 : Salz\_47, Bachome\_50, Wolpertinger\_47, Fibonacci\_48, Petersenfast\_47, Bud\_48, Insomnia\_49, Hutc2\_48, Mulciber\_48, Snape\_48, MaCh\_49, Jabith\_49, Timothy\_48, TinyTimmy\_48, Sham4\_48, Ebony\_48, Et2Brutus\_47, Mabel\_48, Kimba\_48
- Track 2 : Lucivia\_49, Flaverint\_49, Bowtie\_49, Gilberta\_49, Munch\_49, Aneem\_49, Joselito\_49
- Track 3 : Orange\_48
- Track 4 : Saskia\_49
- Track 5 : Refuge\_47
- Track 6 : Steamy\_44
- Track 7 : DarthPhader\_45
- Track 8 : Pharaoh\_42
- Track 9 : Zimmer\_45
- Track 10 : Phlei\_37
- Track 11 : Luchador\_53
- Track 12 : Sunhee\_51
- Track 13 : Gail\_53, SororFago\_51
- Track 14 : Jeeves\_53
- Track 15 : DekHockey33\_51, Boohoo\_51, ShayRa\_52, Anaysia\_51, LastResort\_50, Oofda\_50, Soups\_51, Epsocamisio\_49, KatherineG\_52, ReMo\_50, Looper\_51, Ravana\_53, Nebulosus\_50
- Track 16 : Warrior24\_51, Rosalind\_49, Switzerland\_50, JSwag\_49, MinecraftSteve\_51, Waits\_50, Battleship\_51
- Track 17 : Nedarya\_46
- Track 18 : Remus\_50, Strosahl\_50
- Track 19 : Lucyedi\_49, EagleEye\_50, PainterBoy\_49
- Track 20 : 40AC\_49
- Track 21 : Retro23\_49, Dalmatian\_49, Anselm\_49
- Track 22 : Iwokeuplikedis\_51
- Track 23 : Loser\_50, AnnaL29\_50, RedRock\_50
- Track 24 : Heffalump\_47, Crucio\_48, Echild\_48, QueenB2\_47, Fameo\_48, Benvolio\_45, Turbido\_49
- Track 25 : Agape74\_50, Georgie2\_49, ChipMunk\_50, Smeagan\_51, Dignity\_50, AbbyPaige\_50, FiringLine\_48, Leviathan\_50, Whabigail7\_49, Power\_47, LilTurb\_49, SemperFi\_49, SnapTap\_48, KingCyrus\_50, Jerm\_50, EvilGenius\_50, SweetiePie\_48, QueenBeesly\_48

- Track 26 : HippoHollow\_48, Baehexic\_47, Sknot\_48, MiculUcigas\_48, Equemioh13\_49, Updawg\_49, Centaur\_49, Gratitude\_48, Terrific\_51, NaSiaTalie\_48, LionsBait\_50, WideWale\_49, Flare16\_48
- Track 27 : SwirlSquare\_51
- Track 28 : Pomar16\_50, Duplo\_50, Tomathan\_50, Kerberos\_50, DBQu4n\_50, Travvers\_50, StarStuff\_50
- Track 29 : C3\_46, VC3\_51, AN9\_51, ANI8\_51
- Track 30 : Kalpine\_46
- Track 31 : L5\_47, Koduck\_49
- Track 32 : Bugsy\_50
- Track 33 : MajorMajor\_47, Bradman\_47, Quokka\_46
- Track 34 : BabyBack\_47, GaugeLDP\_46
- Track 35 : MissWhite\_47
- Track 36 : Larenn\_47, Malec\_48
- Track 37 : Pukovnik\_47
- Track 38 : NothingSpecial\_46
- Track 39 : HarryHoudini\_49, Piro94\_48, Drake55\_50
- Track 40 : ForesterFrank\_46
- Track 41 : Che12\_50, Ph8s\_50, Adzzy\_50
- Track 42 : 20ES\_50, BengiVuitton\_49, Deloris\_48
- Track 43 : Caraxes\_48
- Track 44 : Acolyte\_44
- Track 45 : First\_0049, LadyBird\_52
- Track 46 : XianYue\_47
- Track 47 : Miko\_45
- Track 48 : DudeLittle\_47
- Track 49 : CRB1\_51
- Track 50 : Trooper\_49
- Track 51 : Jsquared\_46
- Track 52 : IronMan\_48
- Track 53 : Jaan\_48, Landor\_48, Bactobuster\_47
- Track 54 : Herbertwm\_48
- Track 55 : AN3\_50, VA6\_48
- Track 56 : Tristan\_47
- Track 57 : Superchunk\_47, Odin\_47
- Track 58 : Trixie\_46
- Track 59 : EZMoney23\_46
- Track 60 : JoshKayV\_50
- Track 61 : DeerParkTS\_46, Prudy\_46
- Track 62 : Leogania\_48
- Track 63 : Phaded\_49
- Track 64 : Serenity\_48
- Track 65 : Journey13\_42
- Track 66 : Changeling\_47
- Track 67 : TarsusIV\_46
- Track 68 : Kinmap\_46
- Track 69 : Chargerpower\_47
- Track 70 : Lilbunny\_49, Artemis2UCLA\_50, Wiks\_49, WunderPhul\_50, Garak\_52, ToneTone\_47, Temprado\_51, Helmet\_52, Zaka\_50, Yokurt\_50, BlessJoy\_51, Indra\_53, Rifter\_51, Hexamo\_50, Gruunaga\_50, Jeffabunny\_50
- Track 71 : BennyP\_51, SmellyB\_50, Isiphiwo\_48, SuperAwesome\_50, Candra\_50, GreedyLawyer\_50, Kipper29\_50, Gladiator\_48, SuperCallie99\_49, VohminGhazi\_50, Cookiedough\_50, McFly\_50, Kazan\_51, EricB\_50, Pmask\_50, Chartreuse\_49,

- Neeharika16\_49, DaVinci\_49, Dorothea\_50, Newrala\_50, DelvinSonDorr\_48
- Track 72 : Blinn1\_52
  - Track 73 : CloudWang3\_50, Hammer\_51, Blue7\_52, Koko\_51
  - Track 74 : Tucker\_50, Zulu\_50
  - Track 75 : Roksolana\_51
  - Track 76 : Jordennis\_49, Polyphemus\_51
  - Track 77 : Priamo\_51
  - Track 78 : RyeScarlet\_49, Eidsmoe\_48, Holec\_47, Fayely\_48, Lilleskat\_46, Myxus\_48, Pioneer\_48, Beemo\_48, Aliter\_48, ExplosioNervosa\_48, EmyBug\_47, Priya\_48, PackMan\_47, Ugenie5\_45, Onglai\_46, Hanray\_46, Ayanochan\_49, HortumSL17\_48, EdogawaKiddo\_46, Conquerage\_48, Scherzo\_48, Phonnegut\_48, Sachima\_45, Jiawan\_46, Tubs\_48, Spouty\_48, Catalina\_49, Qobbit\_48, Phaeder\_48
  - Track 79 : Celestialunch\_47, MegTheThird\_47
  - Track 80 : CogOmlette\_46, Rahalelujah\_47, WorldCup\_46, Minispark\_46, Bellris\_46
  - Track 81 : SheaKeira\_47
  - Track 82 : Arissanae\_47
  - Track 83 : Toaka\_47
  - Track 84 : Klodlith\_48, Charm\_47, DreamTeam1\_47
  - Track 85 : Elephantoon\_47
  - Track 86 : BogosyJay\_47, Maminiaina\_47
  - Track 87 : Alma\_48
  - Track 88 : LoneWolf\_48
  - Track 89 : Vanisoa\_47
  - Track 90 : Darrell\_49
  - Track 91 : Yecey3\_49
  - Track 92 : Keziacharles14\_48

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

The start number called the most often in the published annotations is 27, it was called in 201 of the 234 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 20ES\_50, 40AC\_49, AN3\_50, AN9\_51, ANI8\_51, AbbyPaige\_50, Acolyte\_44, Adzzy\_50, Agape74\_50, Aliter\_48, Alma\_48, Aneem\_49, AnnaL29\_50, Anselm\_49, Arissanae\_47, Artemis2UCLA\_50, Ayanochan\_49, BabyBack\_47, Bachome\_50, Bactobuster\_47, Baehexic\_47, Beemo\_48, BengiVuitton\_49, BennyP\_51, Benvolio\_45, BlessJoy\_51, Blinn1\_52, Blue7\_52, BogosyJay\_47, Bowtie\_49, Bud\_48, Buggy\_50, C3\_46, CRB1\_51, Candra\_50, Catalina\_49, Celestialunch\_47, Centaur\_49, Changeling\_47, Chargerpower\_47, Charm\_47, Chartreuse\_49, Che12\_50, ChipMunk\_50, CloudWang3\_50, Conquerage\_48, Cookiedough\_50, Crucio\_48, DBQu4n\_50, DaVinci\_49, Dalmatian\_49, DARTHPhader\_45, DeerParkTS\_46, Deloris\_48, DelvinSonDorr\_48, Dignity\_50, Dorothea\_50, Drake55\_50, DreamTeam1\_47, DudeLittle\_47, Duplo\_50, EZMoney23\_46, EagleEye\_50, Ebony\_48, Echild\_48, EdogawaKiddo\_46, Eidsmoe\_48, Elephantoon\_47, EmyBug\_47, Equemioh13\_49, EricB\_50, Et2Brutus\_47, EvilGenius\_50, ExplosioNervosa\_48, Fameo\_48, Fayely\_48, Fibonacci\_48, FiringLine\_48, First\_0049, Flare16\_48, Flaverint\_49, ForesterFrank\_46, Gail\_53, Garak\_52, GaugeLDP\_46, Georgie2\_49, Gilberta\_49, Gladiator\_48, Gratitude\_48, GreedyLawyer\_50, Gruunaga\_50, Hammer\_51, Hanray\_46, HarryHoudini\_49,

Heffalump\_47, Helmet\_52, Herbertwm\_48, Hexamo\_50, HippoHollow\_48, Horex\_47, HortumSL17\_48, Hutc2\_48, Indra\_53, Insomnia\_49, IronMan\_48, Isiphiwo\_48, Iwokeuplikedis\_51, Jaan\_48, Jabith\_49, Jeeves\_53, Jeffabunny\_50, Jerm\_50, Jiawan\_46, Joselito\_49, JoshKayV\_50, Journey13\_42, Jsquared\_46, Kalpine\_46, Kazan\_51, Kerberos\_50, Kimba\_48, KingCyrus\_50, Kinmap\_46, Kipper29\_50, Klodlith\_48, Koduck\_49, Koko\_51, L5\_47, LadyBird\_52, Landor\_48, Larenn\_47, Leogania\_48, Leviathan\_50, LiiTurb\_49, Lilbunny\_49, Lilleskat\_46, LionsBait\_50, Loser\_50, Luchador\_53, Lucivia\_49, Lucyedi\_49, MaCh\_49, Mabel\_48, Malec\_48, Maminiaina\_47, McFly\_50, MegTheThird\_47, MiculUcigas\_48, Miko\_45, MissWhite\_47, Mulciber\_48, Munch\_49, Myxus\_48, NaSiaTalie\_48, Neeharika16\_49, Newrala\_50, NothingSpecial\_46, Odin\_47, Onglai\_46, Orange\_48, PackMan\_47, PainterBoy\_49, Petersenfast\_47, Ph8s\_50, Phaded\_49, Phaeder\_48, Phlei\_37, Phonnegut\_48, Pioneer\_48, Piro94\_48, Pmask\_50, Pomar16\_50, Power\_47, Priamo\_51, Priya\_48, Prudy\_46, Pukovnik\_47, Qobbit\_48, QueenB2\_47, QueenBeesly\_48, RedRock\_50, Refuge\_47, Retro23\_49, Rifter\_51, RyeScarlet\_49, Sachima\_45, Salz\_47, Saskia\_49, Scherzo\_48, SemperFi\_49, Serenity\_48, Sham4\_48, SheaKeira\_47, Sknot\_48, Smeagan\_51, SmellyB\_50, SnapTap\_48, Snape\_48, SororFago\_51, Spouty\_48, StarStuff\_50, Steamy\_44, Sunhee\_51, SuperAwesome\_50, SuperCallie99\_49, Superchunk\_47, SweetiePie\_48, SwirlSquare\_51, TarsusIV\_46, Temprado\_51, Terrific\_51, Timothy\_48, TinyTimmy\_48, Tomathan\_50, ToneTone\_47, Travvers\_50, Tristan\_47, Trixie\_46, Trooper\_49, Tubs\_48, Tucker\_50, Turbido\_49, Ugenie5\_45, Updawg\_49, VA6\_48, VC3\_51, VohminGhazi\_50, Whabigail7\_49, WideWale\_49, Wiks\_49, Wolpertinger\_47, WunderPhul\_50, Yecey3\_49, Yokurt\_50, Zaka\_50, Zimmer\_45, Zulu\_50,

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

- Bradman\_47, Caraxes\_48, MajorMajor\_47, Quokka\_46,

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

- Anaysia\_51, Battleship\_51, Bellris\_46, Boohoo\_51, CogOmlette\_46, Darrell\_49, DekHockey33\_51, Epsocamisio\_49, JSwag\_49, Jordennis\_49, KatherineG\_52, Keziacharles14\_48, LastResort\_50, LoneWolf\_48, Looper\_51, MinecraftSteve\_51, Minispark\_46, Nebulosus\_50, Nedarya\_46, Oofda\_50, Pharaoh\_42, Polyphemus\_51, Rahalelujah\_47, Ravana\_53, ReMo\_50, Remus\_50, Roksolana\_51, Rosalind\_49, ShayRa\_52, Soups\_51, Strosahl\_50, Switzerland\_50, Toaka\_47, Vanisoa\_47, Waits\_50, Warrior24\_51, WorldCup\_46, XianYue\_47,

### Summary by start number:

Start 26:

- Found in 26 of 279 ( 9.3% ) of genes in pham
- Manual Annotations of this start: 25 of 234
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anaysia\_51 (A15), Battleship\_51 (A15), Boohoo\_51 (A15), DekHockey33\_51 (A15), Epsocamisio\_49 (A15), JSwag\_49 (A15), Jordennis\_49 (A6), KatherineG\_52 (A15), LastResort\_50 (A15), Looper\_51 (A15), MinecraftSteve\_51 (A15), Nebulosus\_50 (A15), Nedarya\_46 (A15), Oofda\_50 (A15), Polyphemus\_51 (A6), Ravana\_53 (A15), ReMo\_50 (A15), Remus\_50 (A15), Roksolana\_51 (A6), Rosalind\_49 (A15), ShayRa\_52 (A15), Soups\_51 (A15), Strosahl\_50 (A15), Switzerland\_50 (A15), Waits\_50 (A15), Warrior24\_51 (A15),

Start 27:

- Found in 241 of 279 ( 86.4% ) of genes in pham
- Manual Annotations of this start: 201 of 234
- Called 98.3% of time when present
- Phage (with cluster) where this start called: 20ES\_50 (A2), 40AC\_49 (A17), AN3\_50 (A2), AN9\_51 (A2), ANI8\_51 (A2), AbbyPaige\_50 (A2), Acolyte\_44 (A2), Adzzy\_50 (A2), Agape74\_50 (A2), Aliter\_48 (A9), Alma\_48 (A9), Aneem\_49 (A11), AnnaL29\_50 (A2), Anselm\_49 (A2), Arissanae\_47 (A9), Artemis2UCLA\_50 (A6), Ayanochan\_49 (A9), BabyBack\_47 (A2), Bachome\_50 (A11), Bactobuster\_47 (A2), Baehexic\_47 (A2), Beemo\_48 (A9), BengiVuitton\_49 (A2), BennyP\_51 (A6), Benvolio\_45 (A2), BlessJoy\_51 (A6), Blinn1\_52 (A6), Blue7\_52 (A6), BogosyJay\_47 (A9), Bowtie\_49 (A11), Bud\_48 (A11), Bugsy\_50 (A2), C3\_46 (A2), CRB1\_51 (A2), Candra\_50 (A6), Catalina\_49 (A9), Celestialunch\_47 (A9), Centaur\_49 (A2), Changeling\_47 (A2), Chargerpower\_47 (A22), Charm\_47 (A9), Chartreuse\_49 (A6), Che12\_50 (A2), ChipMunk\_50 (A2), CloudWang3\_50 (A6), Conquerage\_48 (A9), Cookiedough\_50 (A6), Crucio\_48 (A2), DBQu4n\_50 (A2), DaVinci\_49 (A6), Dalmatian\_49 (A2), DARTHPhader\_45 (A12), DeerParkTS\_46 (A2), Deloris\_48 (A2), DelvinSonDorr\_48 (A6), Dignity\_50 (A2), Dorothea\_50 (A6), Drake55\_50 (A2), DreamTeam1\_47 (A9), DudeLittle\_47 (A2), Duplo\_50 (A2), EZMoney23\_46 (A2), EagleEye\_50 (A16), Ebony\_48 (A11), Echid\_48 (A2), EdogawaKiddo\_46 (A9), Eidsmoe\_48 (A9), Elephantoon\_47 (A9), EmyBug\_47 (A9), Equemioh13\_49 (A2), EricB\_50 (A6), Et2Brutus\_47 (A11), EvilGenius\_50 (A2), ExplosioNervosa\_48 (A9), Fameo\_48 (A2), Fayely\_48 (A9), Fibonacci\_48 (A11), FiringLine\_48 (A2), First\_0049 (A2), Flare16\_48 (A2), Flaverint\_49 (A11), ForesterFrank\_46 (A2), Gail\_53 (A14), Garak\_52 (A6), GaugeLDP\_46 (A2), Georgie2\_49 (A2), Gilberta\_49 (A11), Gladiator\_48 (A6), Gratitude\_48 (A2), GreedyLawyer\_50 (A6), Gruunaga\_50 (A6), Hammer\_51 (A6), Hanray\_46 (A9), HarryHoudini\_49 (A2), Heffalump\_47 (A2), Helmet\_52 (A6), Herbertwm\_48 (A2), Hexamo\_50 (A6), HippoHollow\_48 (A2), Holes\_47 (A9), HortumSL17\_48 (A9), Hutc2\_48 (A11), Indra\_53 (A6), Insomnia\_49 (A11), IronMan\_48 (A2), Isiphiwo\_48 (A6), Iwokeuplikedis\_51 (A2), Jaan\_48 (A2), Jabith\_49 (A11), Jeeves\_53 (A14), Jeffabunny\_50 (A6), Jerm\_50 (A2), Jiawan\_46 (A9), Joselito\_49 (A11), JoshKayV\_50 (A2), Journey13\_42 (A2), Jsquared\_46 (A2), Kalpine\_46 (A2), Kazan\_51 (A6), Kerberos\_50 (A2), Kimba\_48 (A11), KingCyrus\_50 (A2), Kinmap\_46 (A21), Kipper29\_50 (A6), Klodlith\_48 (A9), Koduck\_49 (A2), Koko\_51 (A6), L5\_47 (A2), LadyBird\_52 (A2), Landor\_48 (A2), Larenn\_47 (A2), Leogania\_48 (A2), Leviathan\_50 (A2), LiITurb\_49 (A2), Lilbunny\_49 (A6), Lilleskat\_46 (A9), LionsBait\_50 (A2), Loser\_50 (A2), Luchador\_53 (A14), Lucivia\_49 (A11), Lucyedi\_49 (A16), MaCh\_49 (A11), Mabel\_48 (A11), Malec\_48 (A2), Maminiaina\_47 (A9), McFly\_50 (A6), MegTheThird\_47 (A9), MiculUcigas\_48 (A2), Miko\_45 (A2), MissWhite\_47 (A2), Mulciber\_48 (A11), Munch\_49 (A11), Myxus\_48 (A9), NaSiaTalie\_48 (A2), Neeharika16\_49 (A6), Newrala\_50 (A6), NothingSpecial\_46 (A2), Odin\_47 (A2), Onglai\_46 (A9), Orange\_48 (A11), PackMan\_47 (A9), PainterBoy\_49 (A16), Petersenfast\_47 (A11), Ph8s\_50 (A2), Phaded\_49 (A2), Phaeder\_48 (A9), Phlei\_37 (A13), Phonnegut\_48 (A9), Pioneer\_48 (A9), Piro94\_48 (A2), Pmask\_50 (A6), Pomar16\_50 (A2), Power\_47 (A2), Priamo\_51 (A6), Priya\_48 (A9), Prudy\_46 (A2), Pukovnik\_47 (A2), Qobbit\_48 (A9), QueenB2\_47 (A2), QueenBeesly\_48 (A2), RedRock\_50 (A2), Refuge\_47 (A12), Retro23\_49 (A2), Rifter\_51 (A6), RyeScarlet\_49 (A9), Sachima\_45 (A9), Salz\_47 (A11), Saskia\_49 (A11), Scherzo\_48 (A9), SemperFi\_49 (A2), Serenity\_48 (A2), Sham4\_48 (A11), SheaKeira\_47 (A9), Sknot\_48 (A2), Smeagan\_51 (A2), SmellyB\_50 (A6), SnapTap\_48 (A2), Snape\_48 (A11), SororFago\_51 (A14), Spouty\_48 (A9), StarStuff\_50 (A2), Steamy\_44 (A12), Sunhee\_51 (A14), SuperAwesome\_50 (A6), SuperCallie99\_49 (A6), Superchunk\_47 (A2), SweetiePie\_48 (A2), SwirlSquare\_51 (A2), TarsusIV\_46 (A2), Temprado\_51 (A6), Terrific\_51 (A2), Timothy\_48 (A11),

TinyTimmy\_48 (A11), Tomathan\_50 (A2), ToneTone\_47 (A6), Travvers\_50 (A2), Tristan\_47 (A2), Trixie\_46 (A2), Trooper\_49 (A2), Tubs\_48 (A9), Tucker\_50 (A6), Turbido\_49 (A2), Ugenie5\_45 (A9), Updawg\_49 (A2), VA6\_48 (A2), VC3\_51 (A2), VohminGhazi\_50 (A6), Whabigail7\_49 (A2), WideWale\_49 (A2), Wiks\_49 (A6), Wolpertinger\_47 (A11), WunderPhul\_50 (A6), Yecey3\_49 (A9), Yokurt\_50 (A6), Zaka\_50 (A6), Zimmer\_45 (A12), Zulu\_50 (A6),

Start 28:

- Found in 11 of 279 ( 3.9% ) of genes in pham
- Manual Annotations of this start: 7 of 234
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bellris\_46 (A9), CogOmlette\_46 (A9), Darrell\_49 (A9), Keziacharles14\_48 (A9), LoneWolf\_48 (A9), Minispark\_46 (A9), Pharaoh\_42 (A12), Rahalelujah\_47 (A9), Toaka\_47 (A9), Vanisoa\_47 (A9), WorldCup\_46 (A9),

Start 29:

- Found in 45 of 279 ( 16.1% ) of genes in pham
- No Manual Annotations of this start.
- Called 2.2% of time when present
- Phage (with cluster) where this start called: Caraxes\_48 (A2),

Start 30:

- Found in 21 of 279 ( 7.5% ) of genes in pham
- Manual Annotations of this start: 1 of 234
- Called 19.0% of time when present
- Phage (with cluster) where this start called: Bradman\_47 (A2), MajorMajor\_47 (A2), Quokka\_46 (A2), XianYue\_47 (A2),

### **Summary by clusters:**

There are 12 clusters represented in this pham: A15, A21, A17, A14, A11, A13, A12, A22, A2, A6, A9, A16,

Info for manual annotations of cluster A11:

- Start number 27 was manually annotated 24 times for cluster A11.

Info for manual annotations of cluster A12:

- Start number 27 was manually annotated 4 times for cluster A12.
- Start number 28 was manually annotated 1 time for cluster A12.

Info for manual annotations of cluster A14:

- Start number 27 was manually annotated 4 times for cluster A14.

Info for manual annotations of cluster A15:

- Start number 26 was manually annotated 22 times for cluster A15.

Info for manual annotations of cluster A16:

- Start number 27 was manually annotated 3 times for cluster A16.

Info for manual annotations of cluster A2:

- Start number 27 was manually annotated 95 times for cluster A2.
- Start number 30 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster A22:

- Start number 27 was manually annotated 1 time for cluster A22.

Info for manual annotations of cluster A6:

- Start number 26 was manually annotated 3 times for cluster A6.
- Start number 27 was manually annotated 41 times for cluster A6.

Info for manual annotations of cluster A9:

- Start number 27 was manually annotated 29 times for cluster A9.
- Start number 28 was manually annotated 6 times for cluster A9.

### **Gene Information:**

Gene: 20ES\_50 Start: 32641, Stop: 32432, Start Num: 27

Candidate Starts for 20ES\_50:

(1, 33025), (Start: 27 @32641 has 201 MA's), (45, 32485),

Gene: 40AC\_49 Start: 33650, Stop: 33450, Start Num: 27

Candidate Starts for 40AC\_49:

(15, 33770), (18, 33758), (19, 33746), (Start: 27 @33650 has 201 MA's), (32, 33617), (33, 33614), (35, 33608), (45, 33500),

Gene: AN3\_50 Start: 33012, Stop: 32803, Start Num: 27

Candidate Starts for AN3\_50:

(1, 33396), (14, 33132), (Start: 27 @33012 has 201 MA's), (45, 32856),

Gene: AN9\_51 Start: 32552, Stop: 32346, Start Num: 27

Candidate Starts for AN9\_51:

(Start: 27 @32552 has 201 MA's), (37, 32483), (39, 32462), (45, 32393), (47, 32369),

Gene: ANI8\_51 Start: 32552, Stop: 32346, Start Num: 27

Candidate Starts for ANI8\_51:

(Start: 27 @32552 has 201 MA's), (37, 32483), (39, 32462), (45, 32393), (47, 32369),

Gene: AbbyPaige\_50 Start: 32822, Stop: 32613, Start Num: 27

Candidate Starts for AbbyPaige\_50:

(15, 32936), (17, 32924), (Start: 27 @32822 has 201 MA's), (45, 32666),

Gene: Acolyte\_44 Start: 31789, Stop: 31586, Start Num: 27

Candidate Starts for Acolyte\_44:

(17, 31891), (19, 31879), (Start: 27 @31789 has 201 MA's), (29, 31771), (Start: 30 @31768 has 1 MA's), (45, 31633),

Gene: Adzzy\_50 Start: 31273, Stop: 31064, Start Num: 27

Candidate Starts for Adzzy\_50:

(17, 31381), (19, 31369), (Start: 27 @31273 has 201 MA's), (31, 31246), (34, 31228), (36, 31210), (37, 31207), (45, 31117),

Gene: Agape74\_50 Start: 32807, Stop: 32598, Start Num: 27  
Candidate Starts for Agape74\_50:  
(15, 32921), (17, 32909), (Start: 27 @32807 has 201 MA's), (45, 32651),

Gene: Aliter\_48 Start: 32246, Stop: 32034, Start Num: 27  
Candidate Starts for Aliter\_48:  
(6, 32504), (7, 32498), (15, 32366), (17, 32354), (Start: 27 @32246 has 201 MA's), (36, 32189), (37, 32186), (45, 32096),

Gene: Alma\_48 Start: 32372, Stop: 32157, Start Num: 27  
Candidate Starts for Alma\_48:  
(10, 32525), (15, 32492), (17, 32480), (Start: 27 @32372 has 201 MA's), (36, 32312), (37, 32309), (45, 32219),

Gene: Anaysia\_51 Start: 31080, Stop: 30850, Start Num: 26  
Candidate Starts for Anaysia\_51:  
(Start: 26 @31080 has 25 MA's), (34, 31026), (35, 31023), (36, 31008),

Gene: Aneem\_49 Start: 31910, Stop: 31698, Start Num: 27  
Candidate Starts for Aneem\_49:  
(12, 32057), (Start: 27 @31910 has 201 MA's), (36, 31847),

Gene: AnnaL29\_50 Start: 33346, Stop: 33143, Start Num: 27  
Candidate Starts for AnnaL29\_50:  
(Start: 27 @33346 has 201 MA's), (35, 33298), (45, 33190),

Gene: Anselm\_49 Start: 32738, Stop: 32529, Start Num: 27  
Candidate Starts for Anselm\_49:  
(15, 32852), (17, 32840), (Start: 27 @32738 has 201 MA's), (45, 32582),

Gene: Arissanae\_47 Start: 32905, Stop: 32687, Start Num: 27  
Candidate Starts for Arissanae\_47:  
(Start: 27 @32905 has 201 MA's), (36, 32845), (37, 32842), (43, 32770), (45, 32752), (47, 32728),

Gene: Artemis2UCLA\_50 Start: 31040, Stop: 30834, Start Num: 27  
Candidate Starts for Artemis2UCLA\_50:  
(18, 31148), (Start: 27 @31040 has 201 MA's), (32, 31001), (35, 30992), (36, 30977), (45, 30884),

Gene: Ayanochan\_49 Start: 32373, Stop: 32161, Start Num: 27  
Candidate Starts for Ayanochan\_49:  
(6, 32631), (7, 32625), (15, 32493), (17, 32481), (Start: 27 @32373 has 201 MA's), (36, 32316), (37, 32313), (45, 32223),

Gene: BabyBack\_47 Start: 33062, Stop: 32862, Start Num: 27  
Candidate Starts for BabyBack\_47:  
(18, 33170), (19, 33158), (Start: 27 @33062 has 201 MA's), (Start: 30 @33047 has 1 MA's), (45, 32912),

Gene: Bachome\_50 Start: 31898, Stop: 31686, Start Num: 27  
Candidate Starts for Bachome\_50:  
(Start: 27 @31898 has 201 MA's), (36, 31835),

Gene: Bactobuster\_47 Start: 33296, Stop: 33093, Start Num: 27  
Candidate Starts for Bactobuster\_47:  
(17, 33398), (19, 33386), (22, 33347), (Start: 27 @33296 has 201 MA's), (29, 33278), (Start: 30 @33275 has 1 MA's), (32, 33257), (33, 33254), (45, 33140),

Gene: Baehexic\_47 Start: 32512, Stop: 32300, Start Num: 27  
Candidate Starts for Baehexic\_47:  
(17, 32614), (19, 32602), (Start: 27 @32512 has 201 MA's), (45, 32356),

Gene: Battleship\_51 Start: 30813, Stop: 30583, Start Num: 26  
Candidate Starts for Battleship\_51:  
(2, 31158), (Start: 26 @30813 has 25 MA's), (34, 30759), (35, 30756), (36, 30741),

Gene: Beemo\_48 Start: 32368, Stop: 32156, Start Num: 27  
Candidate Starts for Beemo\_48:  
(6, 32626), (7, 32620), (15, 32488), (17, 32476), (Start: 27 @32368 has 201 MA's), (36, 32311), (37, 32308), (45, 32218),

Gene: Bellris\_46 Start: 31616, Stop: 31395, Start Num: 28  
Candidate Starts for Bellris\_46:  
(13, 31751), (16, 31727), (Start: 28 @31616 has 7 MA's), (36, 31556), (37, 31553), (45, 31463),

Gene: BengiVuitton\_49 Start: 32594, Stop: 32385, Start Num: 27  
Candidate Starts for BengiVuitton\_49:  
(1, 32978), (Start: 27 @32594 has 201 MA's), (45, 32438),

Gene: BennyP\_51 Start: 31491, Stop: 31282, Start Num: 27  
Candidate Starts for BennyP\_51:  
(18, 31599), (Start: 27 @31491 has 201 MA's), (29, 31473), (32, 31449), (45, 31332),

Gene: Benvolio\_45 Start: 31769, Stop: 31560, Start Num: 27  
Candidate Starts for Benvolio\_45:  
(15, 31883), (17, 31871), (Start: 27 @31769 has 201 MA's), (36, 31706), (45, 31613),

Gene: BlessJoy\_51 Start: 31501, Stop: 31295, Start Num: 27  
Candidate Starts for BlessJoy\_51:  
(18, 31609), (Start: 27 @31501 has 201 MA's), (32, 31462), (35, 31453), (36, 31438), (45, 31345),

Gene: Blinn1\_52 Start: 31303, Stop: 31094, Start Num: 27  
Candidate Starts for Blinn1\_52:  
(Start: 27 @31303 has 201 MA's), (29, 31285), (32, 31261), (45, 31144), (48, 31117),

Gene: Blue7\_52 Start: 31136, Stop: 30930, Start Num: 27  
Candidate Starts for Blue7\_52:  
(18, 31244), (Start: 27 @31136 has 201 MA's), (35, 31088), (45, 30980),

Gene: BogosyJay\_47 Start: 32089, Stop: 31862, Start Num: 27  
Candidate Starts for BogosyJay\_47:  
(15, 32209), (17, 32197), (Start: 27 @32089 has 201 MA's), (Start: 30 @32071 has 1 MA's), (31, 32065), (36, 32029), (37, 32026), (45, 31936),

Gene: Boohoo\_51 Start: 31080, Stop: 30850, Start Num: 26  
Candidate Starts for Boohoo\_51:

(Start: 26 @31080 has 25 MA's), (34, 31026), (35, 31023), (36, 31008),

Gene: Bowtie\_49 Start: 31917, Stop: 31705, Start Num: 27

Candidate Starts for Bowtie\_49:

(12, 32064), (Start: 27 @31917 has 201 MA's), (36, 31854),

Gene: Bradman\_47 Start: 31270, Stop: 31082, Start Num: 30

Candidate Starts for Bradman\_47:

(11, 31444), (Start: 27 @31291 has 201 MA's), (Start: 30 @31270 has 1 MA's), (45, 31132),

Gene: Bud\_48 Start: 31472, Stop: 31260, Start Num: 27

Candidate Starts for Bud\_48:

(Start: 27 @31472 has 201 MA's), (36, 31409),

Gene: Buggy\_50 Start: 32882, Stop: 32670, Start Num: 27

Candidate Starts for Buggy\_50:

(Start: 27 @32882 has 201 MA's), (45, 32726),

Gene: C3\_46 Start: 32552, Stop: 32346, Start Num: 27

Candidate Starts for C3\_46:

(Start: 27 @32552 has 201 MA's), (37, 32483), (39, 32462), (45, 32393), (47, 32369),

Gene: CRB1\_51 Start: 32987, Stop: 32778, Start Num: 27

Candidate Starts for CRB1\_51:

(1, 33368), (14, 33104), (23, 33002), (Start: 27 @32987 has 201 MA's), (45, 32831),

Gene: Candra\_50 Start: 31382, Stop: 31173, Start Num: 27

Candidate Starts for Candra\_50:

(18, 31490), (Start: 27 @31382 has 201 MA's), (29, 31364), (32, 31340), (45, 31223),

Gene: Caraxes\_48 Start: 30908, Stop: 30723, Start Num: 29

Candidate Starts for Caraxes\_48:

(Start: 27 @30926 has 201 MA's), (29, 30908), (33, 30884), (45, 30770),

Gene: Catalina\_49 Start: 32319, Stop: 32107, Start Num: 27

Candidate Starts for Catalina\_49:

(6, 32577), (7, 32571), (15, 32439), (17, 32427), (Start: 27 @32319 has 201 MA's), (36, 32262), (37, 32259), (45, 32169),

Gene: Celestiallunch\_47 Start: 31903, Stop: 31673, Start Num: 27

Candidate Starts for Celestiallunch\_47:

(17, 32005), (19, 31993), (Start: 27 @31903 has 201 MA's), (31, 31879), (36, 31843), (45, 31750),

Gene: Centaur\_49 Start: 32729, Stop: 32517, Start Num: 27

Candidate Starts for Centaur\_49:

(17, 32831), (19, 32819), (Start: 27 @32729 has 201 MA's), (45, 32573),

Gene: Changeling\_47 Start: 32928, Stop: 32725, Start Num: 27

Candidate Starts for Changeling\_47:

(19, 33024), (Start: 27 @32928 has 201 MA's), (35, 32880), (38, 32844), (45, 32772),

Gene: Chargerpower\_47 Start: 31274, Stop: 31038, Start Num: 27

Candidate Starts for Chargerpower\_47:

(15, 31394), (17, 31382), (19, 31370), (Start: 27 @31274 has 201 MA's), (31, 31247), (33, 31232), (36, 31211), (45, 31118),

Gene: Charm\_47 Start: 32120, Stop: 31896, Start Num: 27

Candidate Starts for Charm\_47:

(8, 32369), (9, 32339), (15, 32240), (17, 32228), (19, 32216), (Start: 27 @32120 has 201 MA's), (31, 32096), (36, 32060), (37, 32057), (45, 31967),

Gene: Chartreuse\_49 Start: 30742, Stop: 30533, Start Num: 27

Candidate Starts for Chartreuse\_49:

(18, 30850), (Start: 27 @30742 has 201 MA's), (29, 30724), (32, 30700), (45, 30583),

Gene: Che12\_50 Start: 31360, Stop: 31148, Start Num: 27

Candidate Starts for Che12\_50:

(17, 31468), (19, 31456), (Start: 27 @31360 has 201 MA's), (31, 31333), (34, 31315), (36, 31297), (37, 31294), (45, 31201),

Gene: ChipMunk\_50 Start: 34079, Stop: 33870, Start Num: 27

Candidate Starts for ChipMunk\_50:

(15, 34193), (17, 34181), (Start: 27 @34079 has 201 MA's), (45, 33923),

Gene: CloudWang3\_50 Start: 31140, Stop: 30934, Start Num: 27

Candidate Starts for CloudWang3\_50:

(18, 31248), (Start: 27 @31140 has 201 MA's), (35, 31092), (45, 30984),

Gene: CogOmlette\_46 Start: 31613, Stop: 31392, Start Num: 28

Candidate Starts for CogOmlette\_46:

(13, 31748), (16, 31724), (Start: 28 @31613 has 7 MA's), (36, 31553), (37, 31550), (45, 31460),

Gene: Conquerage\_48 Start: 32342, Stop: 32130, Start Num: 27

Candidate Starts for Conquerage\_48:

(6, 32600), (7, 32594), (15, 32462), (17, 32450), (Start: 27 @32342 has 201 MA's), (36, 32285), (37, 32282), (45, 32192),

Gene: Cookiedough\_50 Start: 31358, Stop: 31149, Start Num: 27

Candidate Starts for Cookiedough\_50:

(18, 31466), (Start: 27 @31358 has 201 MA's), (29, 31340), (32, 31316), (45, 31199),

Gene: Crucio\_48 Start: 32322, Stop: 32113, Start Num: 27

Candidate Starts for Crucio\_48:

(15, 32436), (17, 32424), (Start: 27 @32322 has 201 MA's), (36, 32259), (45, 32166),

Gene: DBQu4n\_50 Start: 32112, Stop: 31906, Start Num: 27

Candidate Starts for DBQu4n\_50:

(Start: 27 @32112 has 201 MA's), (34, 32064), (45, 31953),

Gene: DaVinci\_49 Start: 30796, Stop: 30587, Start Num: 27

Candidate Starts for DaVinci\_49:

(18, 30904), (Start: 27 @30796 has 201 MA's), (29, 30778), (32, 30754), (45, 30637),

Gene: Dalmatian\_49 Start: 32714, Stop: 32505, Start Num: 27

Candidate Starts for Dalmatian\_49:

(15, 32828), (17, 32816), (Start: 27 @32714 has 201 MA's), (45, 32558),

Gene: Darrell\_49 Start: 32708, Stop: 32490, Start Num: 28  
Candidate Starts for Darrell\_49:  
(13, 32843), (16, 32819), (Start: 28 @32708 has 7 MA's), (31, 32684), (36, 32648), (45, 32555), (47, 32531),

Gene: DarthPhader\_45 Start: 33153, Stop: 32947, Start Num: 27  
Candidate Starts for DarthPhader\_45:  
(17, 33261), (Start: 27 @33153 has 201 MA's), (31, 33126), (33, 33111), (36, 33090), (37, 33087), (45, 32997),

Gene: DeerParkTS\_46 Start: 31840, Stop: 31640, Start Num: 27  
Candidate Starts for DeerParkTS\_46:  
(Start: 27 @31840 has 201 MA's), (35, 31792), (38, 31756), (45, 31684),

Gene: DekHockey33\_51 Start: 31295, Stop: 31065, Start Num: 26  
Candidate Starts for DekHockey33\_51:  
(Start: 26 @31295 has 25 MA's), (34, 31241), (35, 31238), (36, 31223),

Gene: Deloris\_48 Start: 32263, Stop: 32054, Start Num: 27  
Candidate Starts for Deloris\_48:  
(1, 32647), (Start: 27 @32263 has 201 MA's), (45, 32107),

Gene: DelvinSonDorr\_48 Start: 31234, Stop: 31025, Start Num: 27  
Candidate Starts for DelvinSonDorr\_48:  
(18, 31342), (Start: 27 @31234 has 201 MA's), (29, 31216), (32, 31192), (45, 31075),

Gene: Dignity\_50 Start: 32887, Stop: 32678, Start Num: 27  
Candidate Starts for Dignity\_50:  
(15, 33001), (17, 32989), (Start: 27 @32887 has 201 MA's), (45, 32731),

Gene: Dorothea\_50 Start: 31365, Stop: 31156, Start Num: 27  
Candidate Starts for Dorothea\_50:  
(18, 31473), (Start: 27 @31365 has 201 MA's), (29, 31347), (32, 31323), (45, 31206),

Gene: Drake55\_50 Start: 32805, Stop: 32602, Start Num: 27  
Candidate Starts for Drake55\_50:  
(17, 32907), (19, 32895), (Start: 27 @32805 has 201 MA's), (29, 32787), (39, 32718), (45, 32649), (50, 32625),

Gene: DreamTeam1\_47 Start: 31994, Stop: 31770, Start Num: 27  
Candidate Starts for DreamTeam1\_47:  
(8, 32243), (9, 32213), (15, 32114), (17, 32102), (19, 32090), (Start: 27 @31994 has 201 MA's), (31, 31970), (36, 31934), (37, 31931), (45, 31841),

Gene: DudeLittle\_47 Start: 32456, Stop: 32247, Start Num: 27  
Candidate Starts for DudeLittle\_47:  
(15, 32570), (17, 32558), (Start: 27 @32456 has 201 MA's), (29, 32438), (45, 32300),

Gene: Duplo\_50 Start: 32150, Stop: 31944, Start Num: 27  
Candidate Starts for Duplo\_50:  
(Start: 27 @32150 has 201 MA's), (34, 32102), (45, 31991),

Gene: EZMoney23\_46 Start: 32252, Stop: 32052, Start Num: 27  
Candidate Starts for EZMoney23\_46:  
(Start: 27 @32252 has 201 MA's), (35, 32204), (38, 32168), (45, 32096), (54, 32060),

Gene: EagleEye\_50 Start: 31872, Stop: 31663, Start Num: 27  
Candidate Starts for EagleEye\_50:  
(Start: 27 @31872 has 201 MA's), (34, 31824), (36, 31806), (45, 31719),

Gene: Ebony\_48 Start: 31489, Stop: 31277, Start Num: 27  
Candidate Starts for Ebony\_48:  
(Start: 27 @31489 has 201 MA's), (36, 31426),

Gene: Echild\_48 Start: 31793, Stop: 31584, Start Num: 27  
Candidate Starts for Echild\_48:  
(15, 31907), (17, 31895), (Start: 27 @31793 has 201 MA's), (36, 31730), (45, 31637),

Gene: EdogawaKiddo\_46 Start: 32319, Stop: 32107, Start Num: 27  
Candidate Starts for EdogawaKiddo\_46:  
(6, 32577), (7, 32571), (15, 32439), (17, 32427), (Start: 27 @32319 has 201 MA's), (36, 32262), (37, 32259), (45, 32169),

Gene: Eidsmoe\_48 Start: 32382, Stop: 32170, Start Num: 27  
Candidate Starts for Eidsmoe\_48:  
(6, 32640), (7, 32634), (15, 32502), (17, 32490), (Start: 27 @32382 has 201 MA's), (36, 32325), (37, 32322), (45, 32232),

Gene: Elephantoon\_47 Start: 31688, Stop: 31470, Start Num: 27  
Candidate Starts for Elephantoon\_47:  
(17, 31790), (Start: 27 @31688 has 201 MA's), (Start: 30 @31670 has 1 MA's), (31, 31664), (36, 31628), (37, 31625), (45, 31535), (47, 31511),

Gene: EmyBug\_47 Start: 32384, Stop: 32172, Start Num: 27  
Candidate Starts for EmyBug\_47:  
(6, 32642), (7, 32636), (15, 32504), (17, 32492), (Start: 27 @32384 has 201 MA's), (36, 32327), (37, 32324), (45, 32234),

Gene: Epsocamisio\_49 Start: 30615, Stop: 30388, Start Num: 26  
Candidate Starts for Epsocamisio\_49:  
(Start: 26 @30615 has 25 MA's), (34, 30561), (35, 30558), (36, 30543),

Gene: Equemioh13\_49 Start: 32631, Stop: 32419, Start Num: 27  
Candidate Starts for Equemioh13\_49:  
(17, 32733), (19, 32721), (Start: 27 @32631 has 201 MA's), (45, 32475),

Gene: EricB\_50 Start: 31339, Stop: 31130, Start Num: 27  
Candidate Starts for EricB\_50:  
(18, 31447), (Start: 27 @31339 has 201 MA's), (29, 31321), (32, 31297), (45, 31180),

Gene: Et2Brutus\_47 Start: 31449, Stop: 31237, Start Num: 27  
Candidate Starts for Et2Brutus\_47:  
(Start: 27 @31449 has 201 MA's), (36, 31386),

Gene: EvilGenius\_50 Start: 34083, Stop: 33874, Start Num: 27

Candidate Starts for EvilGenius\_50:  
(15, 34197), (17, 34185), (Start: 27 @34083 has 201 MA's), (45, 33927),

Gene: ExplosioNervosa\_48 Start: 32402, Stop: 32190, Start Num: 27  
Candidate Starts for ExplosioNervosa\_48:  
(6, 32660), (7, 32654), (15, 32522), (17, 32510), (Start: 27 @32402 has 201 MA's), (36, 32345), (37, 32342), (45, 32252),

Gene: Fameo\_48 Start: 32632, Stop: 32423, Start Num: 27  
Candidate Starts for Fameo\_48:  
(15, 32746), (17, 32734), (Start: 27 @32632 has 201 MA's), (36, 32569), (45, 32476),

Gene: Fayely\_48 Start: 32351, Stop: 32139, Start Num: 27  
Candidate Starts for Fayely\_48:  
(6, 32609), (7, 32603), (15, 32471), (17, 32459), (Start: 27 @32351 has 201 MA's), (36, 32294), (37, 32291), (45, 32201),

Gene: Fibonacci\_48 Start: 31464, Stop: 31252, Start Num: 27  
Candidate Starts for Fibonacci\_48:  
(Start: 27 @31464 has 201 MA's), (36, 31401),

Gene: FiringLine\_48 Start: 32303, Stop: 32094, Start Num: 27  
Candidate Starts for FiringLine\_48:  
(15, 32417), (17, 32405), (Start: 27 @32303 has 201 MA's), (45, 32147),

Gene: First\_0049 Start: 32517, Stop: 32308, Start Num: 27  
Candidate Starts for First\_0049:  
(1, 32901), (14, 32637), (Start: 27 @32517 has 201 MA's), (45, 32361),

Gene: Flare16\_48 Start: 32390, Stop: 32178, Start Num: 27  
Candidate Starts for Flare16\_48:  
(17, 32492), (19, 32480), (Start: 27 @32390 has 201 MA's), (45, 32234),

Gene: Flaverint\_49 Start: 31911, Stop: 31699, Start Num: 27  
Candidate Starts for Flaverint\_49:  
(12, 32058), (Start: 27 @31911 has 201 MA's), (36, 31848),

Gene: ForesterFrank\_46 Start: 32997, Stop: 32794, Start Num: 27  
Candidate Starts for ForesterFrank\_46:  
(Start: 27 @32997 has 201 MA's), (35, 32949), (38, 32913), (45, 32841),

Gene: Gail\_53 Start: 34071, Stop: 33859, Start Num: 27  
Candidate Starts for Gail\_53:  
(Start: 27 @34071 has 201 MA's), (39, 33984), (40, 33981), (45, 33915),

Gene: Garak\_52 Start: 31507, Stop: 31301, Start Num: 27  
Candidate Starts for Garak\_52:  
(18, 31615), (Start: 27 @31507 has 201 MA's), (32, 31468), (35, 31459), (36, 31444), (45, 31351),

Gene: GaugeLDP\_46 Start: 32685, Stop: 32485, Start Num: 27  
Candidate Starts for GaugeLDP\_46:  
(18, 32793), (19, 32781), (Start: 27 @32685 has 201 MA's), (Start: 30 @32670 has 1 MA's), (45, 32535),

Gene: Georgie2\_49 Start: 32348, Stop: 32139, Start Num: 27  
Candidate Starts for Georgie2\_49:  
(15, 32462), (17, 32450), (Start: 27 @32348 has 201 MA's), (45, 32192),

Gene: Gilberta\_49 Start: 31901, Stop: 31689, Start Num: 27  
Candidate Starts for Gilberta\_49:  
(12, 32048), (Start: 27 @31901 has 201 MA's), (36, 31838),

Gene: Gladiator\_48 Start: 30670, Stop: 30461, Start Num: 27  
Candidate Starts for Gladiator\_48:  
(18, 30778), (Start: 27 @30670 has 201 MA's), (29, 30652), (32, 30628), (45, 30511),

Gene: Gratitude\_48 Start: 32631, Stop: 32419, Start Num: 27  
Candidate Starts for Gratitude\_48:  
(17, 32733), (19, 32721), (Start: 27 @32631 has 201 MA's), (45, 32475),

Gene: GreedyLawyer\_50 Start: 31346, Stop: 31137, Start Num: 27  
Candidate Starts for GreedyLawyer\_50:  
(18, 31454), (Start: 27 @31346 has 201 MA's), (29, 31328), (32, 31304), (45, 31187),

Gene: Gruunaga\_50 Start: 31343, Stop: 31137, Start Num: 27  
Candidate Starts for Gruunaga\_50:  
(18, 31451), (Start: 27 @31343 has 201 MA's), (32, 31304), (35, 31295), (36, 31280), (45, 31187),

Gene: Hammer\_51 Start: 30946, Stop: 30740, Start Num: 27  
Candidate Starts for Hammer\_51:  
(18, 31054), (Start: 27 @30946 has 201 MA's), (35, 30898), (45, 30790),

Gene: Hanray\_46 Start: 32323, Stop: 32111, Start Num: 27  
Candidate Starts for Hanray\_46:  
(6, 32581), (7, 32575), (15, 32443), (17, 32431), (Start: 27 @32323 has 201 MA's), (36, 32266), (37, 32263), (45, 32173),

Gene: HarryHoudini\_49 Start: 32814, Stop: 32611, Start Num: 27  
Candidate Starts for HarryHoudini\_49:  
(17, 32916), (19, 32904), (Start: 27 @32814 has 201 MA's), (29, 32796), (39, 32727), (45, 32658), (50, 32634),

Gene: Heffalump\_47 Start: 33100, Stop: 32891, Start Num: 27  
Candidate Starts for Heffalump\_47:  
(15, 33214), (17, 33202), (Start: 27 @33100 has 201 MA's), (36, 33037), (45, 32944),

Gene: Helmet\_52 Start: 31507, Stop: 31301, Start Num: 27  
Candidate Starts for Helmet\_52:  
(18, 31615), (Start: 27 @31507 has 201 MA's), (32, 31468), (35, 31459), (36, 31444), (45, 31351),

Gene: Herbertwm\_48 Start: 32176, Stop: 31973, Start Num: 27  
Candidate Starts for Herbertwm\_48:  
(Start: 27 @32176 has 201 MA's), (36, 32113), (45, 32020),

Gene: Hexamo\_50 Start: 31128, Stop: 30922, Start Num: 27  
Candidate Starts for Hexamo\_50:

(18, 31236), (Start: 27 @31128 has 201 MA's), (32, 31089), (35, 31080), (36, 31065), (45, 30972),

Gene: HippoHollow\_48 Start: 33853, Stop: 33644, Start Num: 27

Candidate Starts for HippoHollow\_48:

(17, 33955), (19, 33943), (Start: 27 @33853 has 201 MA's), (45, 33697),

Gene: Holec\_47 Start: 32342, Stop: 32130, Start Num: 27

Candidate Starts for Holec\_47:

(6, 32600), (7, 32594), (15, 32462), (17, 32450), (Start: 27 @32342 has 201 MA's), (36, 32285), (37, 32282), (45, 32192),

Gene: HortumSL17\_48 Start: 32318, Stop: 32106, Start Num: 27

Candidate Starts for HortumSL17\_48:

(6, 32576), (7, 32570), (15, 32438), (17, 32426), (Start: 27 @32318 has 201 MA's), (36, 32261), (37, 32258), (45, 32168),

Gene: Hutc2\_48 Start: 31464, Stop: 31252, Start Num: 27

Candidate Starts for Hutc2\_48:

(Start: 27 @31464 has 201 MA's), (36, 31401),

Gene: Indra\_53 Start: 31508, Stop: 31302, Start Num: 27

Candidate Starts for Indra\_53:

(18, 31616), (Start: 27 @31508 has 201 MA's), (32, 31469), (35, 31460), (36, 31445), (45, 31352),

Gene: Insomnia\_49 Start: 31969, Stop: 31757, Start Num: 27

Candidate Starts for Insomnia\_49:

(Start: 27 @31969 has 201 MA's), (36, 31906),

Gene: IronMan\_48 Start: 33479, Stop: 33276, Start Num: 27

Candidate Starts for IronMan\_48:

(17, 33581), (22, 33530), (Start: 27 @33479 has 201 MA's), (29, 33461), (32, 33440), (33, 33437), (45, 33323),

Gene: Isiphiwo\_48 Start: 30883, Stop: 30674, Start Num: 27

Candidate Starts for Isiphiwo\_48:

(18, 30991), (Start: 27 @30883 has 201 MA's), (29, 30865), (32, 30841), (45, 30724),

Gene: Iwokeuplikedis\_51 Start: 32416, Stop: 32213, Start Num: 27

Candidate Starts for Iwokeuplikedis\_51:

(Start: 27 @32416 has 201 MA's), (29, 32398), (34, 32371), (45, 32260),

Gene: JSwag\_49 Start: 30553, Stop: 30326, Start Num: 26

Candidate Starts for JSwag\_49:

(2, 30898), (Start: 26 @30553 has 25 MA's), (34, 30499), (35, 30496), (36, 30481),

Gene: Jaan\_48 Start: 33645, Stop: 33442, Start Num: 27

Candidate Starts for Jaan\_48:

(17, 33747), (19, 33735), (22, 33696), (Start: 27 @33645 has 201 MA's), (29, 33627), (Start: 30 @33624 has 1 MA's), (32, 33606), (33, 33603), (45, 33489),

Gene: Jabith\_49 Start: 31970, Stop: 31758, Start Num: 27

Candidate Starts for Jabith\_49:

(Start: 27 @31970 has 201 MA's), (36, 31907),

Gene: Jeeves\_53 Start: 32846, Stop: 32631, Start Num: 27

Candidate Starts for Jeeves\_53:

(Start: 27 @32846 has 201 MA's), (34, 32798), (39, 32756), (40, 32753), (45, 32687),

Gene: Jeffabunny\_50 Start: 31164, Stop: 30958, Start Num: 27

Candidate Starts for Jeffabunny\_50:

(18, 31272), (Start: 27 @31164 has 201 MA's), (32, 31125), (35, 31116), (36, 31101), (45, 31008),

Gene: Jerm\_50 Start: 32880, Stop: 32671, Start Num: 27

Candidate Starts for Jerm\_50:

(15, 32994), (17, 32982), (Start: 27 @32880 has 201 MA's), (45, 32724),

Gene: Jiawan\_46 Start: 32355, Stop: 32143, Start Num: 27

Candidate Starts for Jiawan\_46:

(6, 32613), (7, 32607), (15, 32475), (17, 32463), (Start: 27 @32355 has 201 MA's), (36, 32298), (37, 32295), (45, 32205),

Gene: Jordennis\_49 Start: 30803, Stop: 30594, Start Num: 26

Candidate Starts for Jordennis\_49:

(Start: 26 @30803 has 25 MA's), (29, 30785), (32, 30761), (45, 30644),

Gene: Joselito\_49 Start: 31910, Stop: 31698, Start Num: 27

Candidate Starts for Joselito\_49:

(12, 32057), (Start: 27 @31910 has 201 MA's), (36, 31847),

Gene: JoshKayV\_50 Start: 32961, Stop: 32752, Start Num: 27

Candidate Starts for JoshKayV\_50:

(15, 33075), (17, 33063), (Start: 27 @32961 has 201 MA's), (41, 32853), (45, 32805),

Gene: Journey13\_42 Start: 30735, Stop: 30526, Start Num: 27

Candidate Starts for Journey13\_42:

(15, 30855), (17, 30843), (Start: 27 @30735 has 201 MA's), (31, 30708), (36, 30672), (45, 30579), (52, 30537),

Gene: Jsquared\_46 Start: 31228, Stop: 31022, Start Num: 27

Candidate Starts for Jsquared\_46:

(Start: 27 @31228 has 201 MA's), (Start: 30 @31207 has 1 MA's), (39, 31141), (45, 31072),

Gene: Kalpine\_46 Start: 32595, Stop: 32392, Start Num: 27

Candidate Starts for Kalpine\_46:

(Start: 27 @32595 has 201 MA's), (29, 32577), (35, 32547), (45, 32439),

Gene: KatherineG\_52 Start: 31295, Stop: 31065, Start Num: 26

Candidate Starts for KatherineG\_52:

(Start: 26 @31295 has 25 MA's), (34, 31241), (35, 31238), (36, 31223),

Gene: Kazan\_51 Start: 31352, Stop: 31143, Start Num: 27

Candidate Starts for Kazan\_51:

(18, 31460), (Start: 27 @31352 has 201 MA's), (29, 31334), (32, 31310), (45, 31193),

Gene: Kerberos\_50 Start: 32112, Stop: 31906, Start Num: 27

Candidate Starts for Kerberos\_50:

(Start: 27 @32112 has 201 MA's), (34, 32064), (45, 31953),

Gene: Keziacharles14\_48 Start: 33355, Stop: 33137, Start Num: 28

Candidate Starts for Keziacharles14\_48:

(17, 33457), (19, 33445), (Start: 28 @33355 has 7 MA's), (36, 33298), (37, 33295), (40, 33271), (45, 33205),

Gene: Kimba\_48 Start: 31490, Stop: 31278, Start Num: 27

Candidate Starts for Kimba\_48:

(Start: 27 @31490 has 201 MA's), (36, 31427),

Gene: KingCyrus\_50 Start: 34078, Stop: 33869, Start Num: 27

Candidate Starts for KingCyrus\_50:

(15, 34192), (17, 34180), (Start: 27 @34078 has 201 MA's), (45, 33922),

Gene: Kinmap\_46 Start: 31629, Stop: 31423, Start Num: 27

Candidate Starts for Kinmap\_46:

(5, 31902), (Start: 27 @31629 has 201 MA's), (33, 31587), (35, 31581),

Gene: Kipper29\_50 Start: 31365, Stop: 31156, Start Num: 27

Candidate Starts for Kipper29\_50:

(18, 31473), (Start: 27 @31365 has 201 MA's), (29, 31347), (32, 31323), (45, 31206),

Gene: Klodlith\_48 Start: 32014, Stop: 31787, Start Num: 27

Candidate Starts for Klodlith\_48:

(8, 32263), (9, 32233), (15, 32134), (17, 32122), (19, 32110), (Start: 27 @32014 has 201 MA's), (31, 31990), (36, 31954), (37, 31951), (45, 31861),

Gene: Koduck\_49 Start: 31520, Stop: 31314, Start Num: 27

Candidate Starts for Koduck\_49:

(Start: 27 @31520 has 201 MA's), (Start: 30 @31499 has 1 MA's), (35, 31472), (45, 31364),

Gene: Koko\_51 Start: 31485, Stop: 31279, Start Num: 27

Candidate Starts for Koko\_51:

(18, 31593), (Start: 27 @31485 has 201 MA's), (35, 31437), (45, 31329),

Gene: L5\_47 Start: 31595, Stop: 31386, Start Num: 27

Candidate Starts for L5\_47:

(Start: 27 @31595 has 201 MA's), (Start: 30 @31574 has 1 MA's), (35, 31547), (45, 31436),

Gene: LadyBird\_52 Start: 32952, Stop: 32743, Start Num: 27

Candidate Starts for LadyBird\_52:

(1, 33336), (14, 33072), (Start: 27 @32952 has 201 MA's), (45, 32796),

Gene: Landor\_48 Start: 33557, Stop: 33354, Start Num: 27

Candidate Starts for Landor\_48:

(17, 33659), (19, 33647), (22, 33608), (Start: 27 @33557 has 201 MA's), (29, 33539), (Start: 30 @33536 has 1 MA's), (32, 33518), (33, 33515), (45, 33401),

Gene: Larenn\_47 Start: 32493, Stop: 32284, Start Num: 27

Candidate Starts for Larenn\_47:

(17, 32595), (Start: 27 @32493 has 201 MA's), (45, 32337),

Gene: LastResort\_50 Start: 30856, Stop: 30626, Start Num: 26  
Candidate Starts for LastResort\_50:  
(Start: 26 @30856 has 25 MA's), (34, 30802), (35, 30799), (36, 30784),

Gene: Leogania\_48 Start: 33507, Stop: 33295, Start Num: 27  
Candidate Starts for Leogania\_48:  
(Start: 27 @33507 has 201 MA's), (35, 33459), (38, 33423), (45, 33351), (46, 33339),

Gene: Leviathan\_50 Start: 32936, Stop: 32727, Start Num: 27  
Candidate Starts for Leviathan\_50:  
(15, 33050), (17, 33038), (Start: 27 @32936 has 201 MA's), (45, 32780),

Gene: LilTurb\_49 Start: 32769, Stop: 32560, Start Num: 27  
Candidate Starts for LilTurb\_49:  
(15, 32883), (17, 32871), (Start: 27 @32769 has 201 MA's), (45, 32613),

Gene: Lilbunny\_49 Start: 31138, Stop: 30932, Start Num: 27  
Candidate Starts for Lilbunny\_49:  
(18, 31246), (Start: 27 @31138 has 201 MA's), (32, 31099), (35, 31090), (36, 31075), (45, 30982),

Gene: Lilleskat\_46 Start: 32272, Stop: 32060, Start Num: 27  
Candidate Starts for Lilleskat\_46:  
(6, 32530), (7, 32524), (15, 32392), (17, 32380), (Start: 27 @32272 has 201 MA's), (36, 32215), (37, 32212), (45, 32122),

Gene: LionsBait\_50 Start: 33854, Stop: 33645, Start Num: 27  
Candidate Starts for LionsBait\_50:  
(17, 33956), (19, 33944), (Start: 27 @33854 has 201 MA's), (45, 33698),

Gene: LoneWolf\_48 Start: 32078, Stop: 31863, Start Num: 28  
Candidate Starts for LoneWolf\_48:  
(21, 32144), (Start: 28 @32078 has 7 MA's), (36, 32018), (37, 32015), (45, 31925), (51, 31889),

Gene: Looper\_51 Start: 30833, Stop: 30603, Start Num: 26  
Candidate Starts for Looper\_51:  
(Start: 26 @30833 has 25 MA's), (34, 30779), (35, 30776), (36, 30761),

Gene: Loser\_50 Start: 33295, Stop: 33092, Start Num: 27  
Candidate Starts for Loser\_50:  
(Start: 27 @33295 has 201 MA's), (35, 33247), (45, 33139),

Gene: Luchador\_53 Start: 34634, Stop: 34419, Start Num: 27  
Candidate Starts for Luchador\_53:  
(Start: 27 @34634 has 201 MA's), (38, 34547), (39, 34544), (40, 34541), (45, 34475),

Gene: Lucivia\_49 Start: 31959, Stop: 31747, Start Num: 27  
Candidate Starts for Lucivia\_49:  
(12, 32106), (Start: 27 @31959 has 201 MA's), (36, 31896),

Gene: Lucyedi\_49 Start: 32067, Stop: 31858, Start Num: 27  
Candidate Starts for Lucyedi\_49:  
(Start: 27 @32067 has 201 MA's), (34, 32019), (36, 32001), (45, 31914),

Gene: MaCh\_49 Start: 31897, Stop: 31685, Start Num: 27

Candidate Starts for MaCh\_49:

(Start: 27 @31897 has 201 MA's), (36, 31834),

Gene: Mabel\_48 Start: 31499, Stop: 31287, Start Num: 27

Candidate Starts for Mabel\_48:

(Start: 27 @31499 has 201 MA's), (36, 31436),

Gene: MajorMajor\_47 Start: 31270, Stop: 31082, Start Num: 30

Candidate Starts for MajorMajor\_47:

(11, 31444), (Start: 27 @31291 has 201 MA's), (Start: 30 @31270 has 1 MA's), (45, 31132),

Gene: Malec\_48 Start: 33057, Stop: 32848, Start Num: 27

Candidate Starts for Malec\_48:

(17, 33159), (Start: 27 @33057 has 201 MA's), (45, 32901),

Gene: Maminiaina\_47 Start: 32071, Stop: 31844, Start Num: 27

Candidate Starts for Maminiaina\_47:

(15, 32191), (17, 32179), (Start: 27 @32071 has 201 MA's), (Start: 30 @32053 has 1 MA's), (31, 32047), (36, 32011), (37, 32008), (45, 31918),

Gene: McFly\_50 Start: 31346, Stop: 31137, Start Num: 27

Candidate Starts for McFly\_50:

(18, 31454), (Start: 27 @31346 has 201 MA's), (29, 31328), (32, 31304), (45, 31187),

Gene: MegTheThird\_47 Start: 31902, Stop: 31672, Start Num: 27

Candidate Starts for MegTheThird\_47:

(17, 32004), (19, 31992), (Start: 27 @31902 has 201 MA's), (31, 31878), (36, 31842), (45, 31749),

Gene: MiculUcigas\_48 Start: 32290, Stop: 32078, Start Num: 27

Candidate Starts for MiculUcigas\_48:

(17, 32392), (19, 32380), (Start: 27 @32290 has 201 MA's), (45, 32134),

Gene: Miko\_45 Start: 32443, Stop: 32240, Start Num: 27

Candidate Starts for Miko\_45:

(Start: 27 @32443 has 201 MA's), (29, 32425), (Start: 30 @32422 has 1 MA's), (35, 32395), (45, 32287), (53, 32251),

Gene: MinecraftSteve\_51 Start: 30817, Stop: 30590, Start Num: 26

Candidate Starts for MinecraftSteve\_51:

(2, 31162), (Start: 26 @30817 has 25 MA's), (34, 30763), (35, 30760), (36, 30745),

Gene: Minispark\_46 Start: 31610, Stop: 31389, Start Num: 28

Candidate Starts for Minispark\_46:

(13, 31745), (16, 31721), (Start: 28 @31610 has 7 MA's), (36, 31550), (37, 31547), (45, 31457),

Gene: MissWhite\_47 Start: 30815, Stop: 30645, Start Num: 27

Candidate Starts for MissWhite\_47:

(15, 30935), (Start: 27 @30815 has 201 MA's), (31, 30788), (36, 30752), (45, 30659),

Gene: Mulciber\_48 Start: 31461, Stop: 31249, Start Num: 27

Candidate Starts for Mulciber\_48:

(Start: 27 @31461 has 201 MA's), (36, 31398),

Gene: Munch\_49 Start: 31910, Stop: 31698, Start Num: 27

Candidate Starts for Munch\_49:

(12, 32057), (Start: 27 @31910 has 201 MA's), (36, 31847),

Gene: Myxus\_48 Start: 32318, Stop: 32106, Start Num: 27

Candidate Starts for Myxus\_48:

(6, 32576), (7, 32570), (15, 32438), (17, 32426), (Start: 27 @32318 has 201 MA's), (36, 32261), (37, 32258), (45, 32168),

Gene: NaSiaTalie\_48 Start: 32387, Stop: 32175, Start Num: 27

Candidate Starts for NaSiaTalie\_48:

(17, 32489), (19, 32477), (Start: 27 @32387 has 201 MA's), (45, 32231),

Gene: Nebulosus\_50 Start: 30852, Stop: 30622, Start Num: 26

Candidate Starts for Nebulosus\_50:

(Start: 26 @30852 has 25 MA's), (34, 30798), (35, 30795), (36, 30780),

Gene: Nedarya\_46 Start: 30263, Stop: 30051, Start Num: 26

Candidate Starts for Nedarya\_46:

(10, 30416), (19, 30359), (Start: 26 @30263 has 25 MA's), (36, 30191), (49, 30068),

Gene: Neeharika16\_49 Start: 30806, Stop: 30597, Start Num: 27

Candidate Starts for Neeharika16\_49:

(18, 30914), (Start: 27 @30806 has 201 MA's), (29, 30788), (32, 30764), (45, 30647),

Gene: Newrala\_50 Start: 31357, Stop: 31148, Start Num: 27

Candidate Starts for Newrala\_50:

(18, 31465), (Start: 27 @31357 has 201 MA's), (29, 31339), (32, 31315), (45, 31198),

Gene: NothingSpecial\_46 Start: 32902, Stop: 32702, Start Num: 27

Candidate Starts for NothingSpecial\_46:

(15, 33016), (17, 33004), (19, 32992), (Start: 27 @32902 has 201 MA's), (35, 32854), (38, 32818), (45, 32746),

Gene: Odin\_47 Start: 31075, Stop: 30872, Start Num: 27

Candidate Starts for Odin\_47:

(Start: 27 @31075 has 201 MA's), (29, 31057), (33, 31033), (45, 30919),

Gene: Onglai\_46 Start: 30659, Stop: 30447, Start Num: 27

Candidate Starts for Onglai\_46:

(6, 30917), (7, 30911), (15, 30779), (17, 30767), (Start: 27 @30659 has 201 MA's), (36, 30602), (37, 30599), (45, 30509),

Gene: Oofda\_50 Start: 30708, Stop: 30481, Start Num: 26

Candidate Starts for Oofda\_50:

(Start: 26 @30708 has 25 MA's), (34, 30654), (35, 30651), (36, 30636),

Gene: Orange\_48 Start: 31459, Stop: 31247, Start Num: 27

Candidate Starts for Orange\_48:

(Start: 27 @31459 has 201 MA's), (36, 31396),

Gene: PackMan\_47 Start: 32318, Stop: 32106, Start Num: 27

Candidate Starts for PackMan\_47:

(6, 32576), (7, 32570), (15, 32438), (17, 32426), (Start: 27 @32318 has 201 MA's), (36, 32261), (37, 32258), (45, 32168),

Gene: PainterBoy\_49 Start: 32003, Stop: 31794, Start Num: 27

Candidate Starts for PainterBoy\_49:

(Start: 27 @32003 has 201 MA's), (34, 31955), (36, 31937), (45, 31850),

Gene: Petersenfast\_47 Start: 31466, Stop: 31254, Start Num: 27

Candidate Starts for Petersenfast\_47:

(Start: 27 @31466 has 201 MA's), (36, 31403),

Gene: Ph8s\_50 Start: 31708, Stop: 31499, Start Num: 27

Candidate Starts for Ph8s\_50:

(17, 31816), (19, 31804), (Start: 27 @31708 has 201 MA's), (31, 31681), (34, 31663), (36, 31645), (37, 31642), (45, 31552),

Gene: Phaded\_49 Start: 33539, Stop: 33336, Start Num: 27

Candidate Starts for Phaded\_49:

(22, 33590), (Start: 27 @33539 has 201 MA's), (29, 33521), (Start: 30 @33518 has 1 MA's), (32, 33500), (33, 33497), (45, 33383),

Gene: Phaeder\_48 Start: 32318, Stop: 32106, Start Num: 27

Candidate Starts for Phaeder\_48:

(6, 32576), (7, 32570), (15, 32438), (17, 32426), (Start: 27 @32318 has 201 MA's), (36, 32261), (37, 32258), (45, 32168),

Gene: Pharaoh\_42 Start: 31876, Stop: 31682, Start Num: 28

Candidate Starts for Pharaoh\_42:

(Start: 28 @31876 has 7 MA's), (36, 31816), (44, 31738), (45, 31723),

Gene: Phlei\_37 Start: 31812, Stop: 31606, Start Num: 27

Candidate Starts for Phlei\_37:

(Start: 27 @31812 has 201 MA's), (42, 31692), (43, 31674), (45, 31656),

Gene: Phonnegut\_48 Start: 32367, Stop: 32155, Start Num: 27

Candidate Starts for Phonnegut\_48:

(6, 32625), (7, 32619), (15, 32487), (17, 32475), (Start: 27 @32367 has 201 MA's), (36, 32310), (37, 32307), (45, 32217),

Gene: Pioneer\_48 Start: 32367, Stop: 32155, Start Num: 27

Candidate Starts for Pioneer\_48:

(6, 32625), (7, 32619), (15, 32487), (17, 32475), (Start: 27 @32367 has 201 MA's), (36, 32310), (37, 32307), (45, 32217),

Gene: Piro94\_48 Start: 32731, Stop: 32528, Start Num: 27

Candidate Starts for Piro94\_48:

(17, 32833), (19, 32821), (Start: 27 @32731 has 201 MA's), (29, 32713), (39, 32644), (45, 32575), (50, 32551),

Gene: Pmask\_50 Start: 31358, Stop: 31149, Start Num: 27

Candidate Starts for Pmask\_50:

(18, 31466), (Start: 27 @31358 has 201 MA's), (29, 31340), (32, 31316), (45, 31199),

Gene: Polyphemus\_51 Start: 31501, Stop: 31292, Start Num: 26  
Candidate Starts for Polyphemus\_51:  
(Start: 26 @31501 has 25 MA's), (29, 31483), (32, 31459), (45, 31342),

Gene: Pomar16\_50 Start: 32153, Stop: 31947, Start Num: 27  
Candidate Starts for Pomar16\_50:  
(Start: 27 @32153 has 201 MA's), (34, 32105), (45, 31994),

Gene: Power\_47 Start: 32356, Stop: 32147, Start Num: 27  
Candidate Starts for Power\_47:  
(15, 32470), (17, 32458), (Start: 27 @32356 has 201 MA's), (45, 32200),

Gene: Priamo\_51 Start: 30975, Stop: 30766, Start Num: 27  
Candidate Starts for Priamo\_51:  
(Start: 27 @30975 has 201 MA's), (29, 30957), (32, 30933), (45, 30816),

Gene: Priya\_48 Start: 32385, Stop: 32173, Start Num: 27  
Candidate Starts for Priya\_48:  
(6, 32643), (7, 32637), (15, 32505), (17, 32493), (Start: 27 @32385 has 201 MA's), (36, 32328), (37, 32325), (45, 32235),

Gene: Prudy\_46 Start: 32829, Stop: 32629, Start Num: 27  
Candidate Starts for Prudy\_46:  
(Start: 27 @32829 has 201 MA's), (35, 32781), (38, 32745), (45, 32673),

Gene: Pukovnik\_47 Start: 33141, Stop: 32941, Start Num: 27  
Candidate Starts for Pukovnik\_47:  
(17, 33243), (Start: 27 @33141 has 201 MA's), (Start: 30 @33120 has 1 MA's), (32, 33102), (33, 33099), (39, 33054), (45, 32985),

Gene: Qobbit\_48 Start: 32347, Stop: 32135, Start Num: 27  
Candidate Starts for Qobbit\_48:  
(6, 32605), (7, 32599), (15, 32467), (17, 32455), (Start: 27 @32347 has 201 MA's), (36, 32290), (37, 32287), (45, 32197),

Gene: QueenB2\_47 Start: 32316, Stop: 32107, Start Num: 27  
Candidate Starts for QueenB2\_47:  
(15, 32430), (17, 32418), (Start: 27 @32316 has 201 MA's), (36, 32253), (45, 32160),

Gene: QueenBeesly\_48 Start: 32303, Stop: 32094, Start Num: 27  
Candidate Starts for QueenBeesly\_48:  
(15, 32417), (17, 32405), (Start: 27 @32303 has 201 MA's), (45, 32147),

Gene: Quokka\_46 Start: 31270, Stop: 31082, Start Num: 30  
Candidate Starts for Quokka\_46:  
(11, 31444), (Start: 27 @31291 has 201 MA's), (Start: 30 @31270 has 1 MA's), (45, 31132),

Gene: Rahalelujah\_47 Start: 31625, Stop: 31404, Start Num: 28  
Candidate Starts for Rahalelujah\_47:  
(13, 31760), (16, 31736), (Start: 28 @31625 has 7 MA's), (36, 31565), (37, 31562), (45, 31472),

Gene: Ravana\_53 Start: 31445, Stop: 31218, Start Num: 26

Candidate Starts for Ravana\_53:

(Start: 26 @31445 has 25 MA's), (34, 31391), (35, 31388), (36, 31373),

Gene: ReMo\_50 Start: 30853, Stop: 30623, Start Num: 26

Candidate Starts for ReMo\_50:

(Start: 26 @30853 has 25 MA's), (34, 30799), (35, 30796), (36, 30781),

Gene: RedRock\_50 Start: 33508, Stop: 33305, Start Num: 27

Candidate Starts for RedRock\_50:

(Start: 27 @33508 has 201 MA's), (35, 33460), (45, 33352),

Gene: Refuge\_47 Start: 33529, Stop: 33323, Start Num: 27

Candidate Starts for Refuge\_47:

(17, 33637), (Start: 27 @33529 has 201 MA's), (31, 33502), (33, 33487), (36, 33466), (37, 33463), (42, 33409), (45, 33373),

Gene: Remus\_50 Start: 30533, Stop: 30306, Start Num: 26

Candidate Starts for Remus\_50:

(2, 30875), (Start: 26 @30533 has 25 MA's), (34, 30479), (35, 30476), (36, 30461),

Gene: Retro23\_49 Start: 32710, Stop: 32501, Start Num: 27

Candidate Starts for Retro23\_49:

(15, 32824), (17, 32812), (Start: 27 @32710 has 201 MA's), (45, 32554),

Gene: Rifter\_51 Start: 30909, Stop: 30703, Start Num: 27

Candidate Starts for Rifter\_51:

(18, 31017), (Start: 27 @30909 has 201 MA's), (32, 30870), (35, 30861), (36, 30846), (45, 30753),

Gene: Roksolana\_51 Start: 31394, Stop: 31185, Start Num: 26

Candidate Starts for Roksolana\_51:

(Start: 26 @31394 has 25 MA's), (29, 31376), (32, 31352), (45, 31235),

Gene: Rosalind\_49 Start: 30736, Stop: 30509, Start Num: 26

Candidate Starts for Rosalind\_49:

(2, 31081), (Start: 26 @30736 has 25 MA's), (34, 30682), (35, 30679), (36, 30664),

Gene: RyeScarlet\_49 Start: 32342, Stop: 32130, Start Num: 27

Candidate Starts for RyeScarlet\_49:

(6, 32600), (7, 32594), (15, 32462), (17, 32450), (Start: 27 @32342 has 201 MA's), (36, 32285), (37, 32282), (45, 32192),

Gene: Sachima\_45 Start: 32252, Stop: 32040, Start Num: 27

Candidate Starts for Sachima\_45:

(6, 32510), (7, 32504), (15, 32372), (17, 32360), (Start: 27 @32252 has 201 MA's), (36, 32195), (37, 32192), (45, 32102),

Gene: Salz\_47 Start: 31437, Stop: 31225, Start Num: 27

Candidate Starts for Salz\_47:

(Start: 27 @31437 has 201 MA's), (36, 31374),

Gene: Saskia\_49 Start: 31431, Stop: 31219, Start Num: 27

Candidate Starts for Saskia\_49:

(20, 31503), (Start: 27 @31431 has 201 MA's), (36, 31368),

Gene: Scherzo\_48 Start: 32556, Stop: 32344, Start Num: 27  
Candidate Starts for Scherzo\_48:  
(6, 32814), (7, 32808), (15, 32676), (17, 32664), (Start: 27 @32556 has 201 MA's), (36, 32499), (37, 32496), (45, 32406),

Gene: SemperFi\_49 Start: 32571, Stop: 32362, Start Num: 27  
Candidate Starts for SemperFi\_49:  
(15, 32685), (17, 32673), (Start: 27 @32571 has 201 MA's), (45, 32415),

Gene: Serenity\_48 Start: 31452, Stop: 31246, Start Num: 27  
Candidate Starts for Serenity\_48:  
(11, 31605), (Start: 27 @31452 has 201 MA's), (Start: 30 @31431 has 1 MA's), (45, 31296),

Gene: Sham4\_48 Start: 31465, Stop: 31253, Start Num: 27  
Candidate Starts for Sham4\_48:  
(Start: 27 @31465 has 201 MA's), (36, 31402),

Gene: ShayRa\_52 Start: 31057, Stop: 30827, Start Num: 26  
Candidate Starts for ShayRa\_52:  
(Start: 26 @31057 has 25 MA's), (34, 31003), (35, 31000), (36, 30985),

Gene: SheaKeira\_47 Start: 31905, Stop: 31681, Start Num: 27  
Candidate Starts for SheaKeira\_47:  
(4, 32196), (8, 32154), (9, 32124), (19, 32001), (Start: 27 @31905 has 201 MA's), (31, 31884), (36, 31848), (37, 31845), (45, 31755),

Gene: Sknot\_48 Start: 32390, Stop: 32178, Start Num: 27  
Candidate Starts for Sknot\_48:  
(17, 32492), (19, 32480), (Start: 27 @32390 has 201 MA's), (45, 32234),

Gene: Smeagan\_51 Start: 33023, Stop: 32814, Start Num: 27  
Candidate Starts for Smeagan\_51:  
(15, 33137), (17, 33125), (Start: 27 @33023 has 201 MA's), (45, 32867),

Gene: SmellyB\_50 Start: 31346, Stop: 31137, Start Num: 27  
Candidate Starts for SmellyB\_50:  
(18, 31454), (Start: 27 @31346 has 201 MA's), (29, 31328), (32, 31304), (45, 31187),

Gene: SnapTap\_48 Start: 32382, Stop: 32173, Start Num: 27  
Candidate Starts for SnapTap\_48:  
(15, 32496), (17, 32484), (Start: 27 @32382 has 201 MA's), (45, 32226),

Gene: Snape\_48 Start: 31463, Stop: 31251, Start Num: 27  
Candidate Starts for Snape\_48:  
(Start: 27 @31463 has 201 MA's), (36, 31400),

Gene: SororFago\_51 Start: 33958, Stop: 33743, Start Num: 27  
Candidate Starts for SororFago\_51:  
(Start: 27 @33958 has 201 MA's), (39, 33868), (40, 33865), (45, 33799),

Gene: Soups\_51 Start: 31056, Stop: 30826, Start Num: 26  
Candidate Starts for Soups\_51:

(Start: 26 @31056 has 25 MA's), (34, 31002), (35, 30999), (36, 30984),

Gene: Spouty\_48 Start: 32384, Stop: 32172, Start Num: 27

Candidate Starts for Spouty\_48:

(6, 32642), (7, 32636), (15, 32504), (17, 32492), (Start: 27 @32384 has 201 MA's), (36, 32327), (37, 32324), (45, 32234),

Gene: StarStuff\_50 Start: 32115, Stop: 31909, Start Num: 27

Candidate Starts for StarStuff\_50:

(Start: 27 @32115 has 201 MA's), (34, 32067), (45, 31956),

Gene: Steamy\_44 Start: 31813, Stop: 31595, Start Num: 27

Candidate Starts for Steamy\_44:

(Start: 27 @31813 has 201 MA's), (Start: 30 @31792 has 1 MA's), (34, 31765), (39, 31723), (40, 31720),

Gene: Strosahl\_50 Start: 30533, Stop: 30306, Start Num: 26

Candidate Starts for Strosahl\_50:

(2, 30875), (Start: 26 @30533 has 25 MA's), (34, 30479), (35, 30476), (36, 30461),

Gene: Sunhee\_51 Start: 32274, Stop: 32071, Start Num: 27

Candidate Starts for Sunhee\_51:

(Start: 27 @32274 has 201 MA's), (39, 32187), (45, 32118),

Gene: SuperAwesome\_50 Start: 31357, Stop: 31148, Start Num: 27

Candidate Starts for SuperAwesome\_50:

(18, 31465), (Start: 27 @31357 has 201 MA's), (29, 31339), (32, 31315), (45, 31198),

Gene: SuperCallie99\_49 Start: 31230, Stop: 31021, Start Num: 27

Candidate Starts for SuperCallie99\_49:

(18, 31338), (Start: 27 @31230 has 201 MA's), (29, 31212), (32, 31188), (45, 31071),

Gene: Superchunk\_47 Start: 30926, Stop: 30723, Start Num: 27

Candidate Starts for Superchunk\_47:

(Start: 27 @30926 has 201 MA's), (29, 30908), (33, 30884), (45, 30770),

Gene: SweetiePie\_48 Start: 32511, Stop: 32302, Start Num: 27

Candidate Starts for SweetiePie\_48:

(15, 32625), (17, 32613), (Start: 27 @32511 has 201 MA's), (45, 32355),

Gene: SwirlSquare\_51 Start: 31593, Stop: 31390, Start Num: 27

Candidate Starts for SwirlSquare\_51:

(17, 31701), (19, 31689), (Start: 27 @31593 has 201 MA's), (36, 31530), (37, 31527), (45, 31437),

Gene: Switzerland\_50 Start: 30916, Stop: 30689, Start Num: 26

Candidate Starts for Switzerland\_50:

(2, 31261), (Start: 26 @30916 has 25 MA's), (34, 30862), (35, 30859), (36, 30844),

Gene: TarsusIV\_46 Start: 32170, Stop: 31961, Start Num: 27

Candidate Starts for TarsusIV\_46:

(23, 32188), (Start: 27 @32170 has 201 MA's), (29, 32152), (45, 32014), (48, 31987),

Gene: Temprado\_51 Start: 31507, Stop: 31301, Start Num: 27

Candidate Starts for Temprado\_51:  
(18, 31615), (Start: 27 @31507 has 201 MA's), (32, 31468), (35, 31459), (36, 31444), (45, 31351),

Gene: Terrific\_51 Start: 32744, Stop: 32532, Start Num: 27  
Candidate Starts for Terrific\_51:  
(17, 32846), (19, 32834), (Start: 27 @32744 has 201 MA's), (45, 32588),

Gene: Timothy\_48 Start: 31440, Stop: 31228, Start Num: 27  
Candidate Starts for Timothy\_48:  
(Start: 27 @31440 has 201 MA's), (36, 31377),

Gene: TinyTimmy\_48 Start: 31483, Stop: 31271, Start Num: 27  
Candidate Starts for TinyTimmy\_48:  
(Start: 27 @31483 has 201 MA's), (36, 31420),

Gene: Toaka\_47 Start: 31887, Stop: 31669, Start Num: 28  
Candidate Starts for Toaka\_47:  
(2, 32235), (24, 31899), (Start: 28 @31887 has 7 MA's), (36, 31827), (37, 31824), (45, 31734),

Gene: Tomathan\_50 Start: 32112, Stop: 31906, Start Num: 27  
Candidate Starts for Tomathan\_50:  
(Start: 27 @32112 has 201 MA's), (34, 32064), (45, 31953),

Gene: ToneTone\_47 Start: 31070, Stop: 30864, Start Num: 27  
Candidate Starts for ToneTone\_47:  
(18, 31178), (Start: 27 @31070 has 201 MA's), (32, 31031), (35, 31022), (36, 31007), (45, 30914),

Gene: Travvers\_50 Start: 32112, Stop: 31906, Start Num: 27  
Candidate Starts for Travvers\_50:  
(Start: 27 @32112 has 201 MA's), (34, 32064), (45, 31953),

Gene: Tristan\_47 Start: 33343, Stop: 33140, Start Num: 27  
Candidate Starts for Tristan\_47:  
(3, 33664), (17, 33445), (19, 33433), (22, 33394), (Start: 27 @33343 has 201 MA's), (29, 33325), (32, 33304), (33, 33301), (45, 33187),

Gene: Trixie\_46 Start: 32430, Stop: 32230, Start Num: 27  
Candidate Starts for Trixie\_46:  
(Start: 27 @32430 has 201 MA's), (29, 32412), (35, 32382), (38, 32346), (45, 32274),

Gene: Trooper\_49 Start: 32735, Stop: 32523, Start Num: 27  
Candidate Starts for Trooper\_49:  
(17, 32837), (19, 32825), (Start: 27 @32735 has 201 MA's), (39, 32648), (45, 32579),

Gene: Tubs\_48 Start: 32318, Stop: 32106, Start Num: 27  
Candidate Starts for Tubs\_48:  
(6, 32576), (7, 32570), (15, 32438), (17, 32426), (Start: 27 @32318 has 201 MA's), (36, 32261), (37, 32258), (45, 32168),

Gene: Tucker\_50 Start: 30957, Stop: 30751, Start Num: 27  
Candidate Starts for Tucker\_50:  
(18, 31065), (Start: 27 @30957 has 201 MA's), (35, 30909), (45, 30801),

Gene: Turbido\_49 Start: 32766, Stop: 32557, Start Num: 27  
Candidate Starts for Turbido\_49:  
(15, 32880), (17, 32868), (Start: 27 @32766 has 201 MA's), (36, 32703), (45, 32610),

Gene: Ugenie5\_45 Start: 32555, Stop: 32343, Start Num: 27  
Candidate Starts for Ugenie5\_45:  
(6, 32813), (7, 32807), (15, 32675), (17, 32663), (Start: 27 @32555 has 201 MA's), (36, 32498), (37, 32495), (45, 32405),

Gene: Updawg\_49 Start: 32631, Stop: 32419, Start Num: 27  
Candidate Starts for Updawg\_49:  
(17, 32733), (19, 32721), (Start: 27 @32631 has 201 MA's), (45, 32475),

Gene: VA6\_48 Start: 32486, Stop: 32277, Start Num: 27  
Candidate Starts for VA6\_48:  
(1, 32870), (14, 32606), (Start: 27 @32486 has 201 MA's), (45, 32330),

Gene: VC3\_51 Start: 32552, Stop: 32346, Start Num: 27  
Candidate Starts for VC3\_51:  
(Start: 27 @32552 has 201 MA's), (37, 32483), (39, 32462), (45, 32393), (47, 32369),

Gene: Vanisoa\_47 Start: 32916, Stop: 32698, Start Num: 28  
Candidate Starts for Vanisoa\_47:  
(19, 33006), (24, 32925), (Start: 28 @32916 has 7 MA's), (36, 32856), (37, 32853), (45, 32763),

Gene: VohminGhazi\_50 Start: 31347, Stop: 31138, Start Num: 27  
Candidate Starts for VohminGhazi\_50:  
(18, 31455), (Start: 27 @31347 has 201 MA's), (29, 31329), (32, 31305), (45, 31188),

Gene: Waits\_50 Start: 30705, Stop: 30478, Start Num: 26  
Candidate Starts for Waits\_50:  
(2, 31050), (Start: 26 @30705 has 25 MA's), (34, 30651), (35, 30648), (36, 30633),

Gene: Warrior24\_51 Start: 30915, Stop: 30685, Start Num: 26  
Candidate Starts for Warrior24\_51:  
(2, 31260), (Start: 26 @30915 has 25 MA's), (34, 30861), (35, 30858), (36, 30843),

Gene: Whabigail7\_49 Start: 32751, Stop: 32542, Start Num: 27  
Candidate Starts for Whabigail7\_49:  
(15, 32865), (17, 32853), (Start: 27 @32751 has 201 MA's), (45, 32595),

Gene: WideWale\_49 Start: 32631, Stop: 32419, Start Num: 27  
Candidate Starts for WideWale\_49:  
(17, 32733), (19, 32721), (Start: 27 @32631 has 201 MA's), (45, 32475),

Gene: Wiks\_49 Start: 31138, Stop: 30932, Start Num: 27  
Candidate Starts for Wiks\_49:  
(18, 31246), (Start: 27 @31138 has 201 MA's), (32, 31099), (35, 31090), (36, 31075), (45, 30982),

Gene: Wolpertinger\_47 Start: 31466, Stop: 31254, Start Num: 27  
Candidate Starts for Wolpertinger\_47:  
(Start: 27 @31466 has 201 MA's), (36, 31403),

Gene: WorldCup\_46 Start: 31619, Stop: 31398, Start Num: 28

Candidate Starts for WorldCup\_46:

(13, 31754), (16, 31730), (Start: 28 @31619 has 7 MA's), (36, 31559), (37, 31556), (45, 31466),

Gene: WunderPhul\_50 Start: 31136, Stop: 30930, Start Num: 27

Candidate Starts for WunderPhul\_50:

(18, 31244), (Start: 27 @31136 has 201 MA's), (32, 31097), (35, 31088), (36, 31073), (45, 30980),

Gene: XianYue\_47 Start: 32071, Stop: 31886, Start Num: 30

Candidate Starts for XianYue\_47:

(25, 32092), (Start: 30 @32071 has 1 MA's), (32, 32053), (33, 32050), (35, 32044), (45, 31936),

Gene: Yecey3\_49 Start: 31785, Stop: 31579, Start Num: 27

Candidate Starts for Yecey3\_49:

(15, 31905), (17, 31893), (Start: 27 @31785 has 201 MA's), (36, 31725), (45, 31632),

Gene: Yokurt\_50 Start: 31138, Stop: 30932, Start Num: 27

Candidate Starts for Yokurt\_50:

(18, 31246), (Start: 27 @31138 has 201 MA's), (32, 31099), (35, 31090), (36, 31075), (45, 30982),

Gene: Zaka\_50 Start: 31138, Stop: 30932, Start Num: 27

Candidate Starts for Zaka\_50:

(18, 31246), (Start: 27 @31138 has 201 MA's), (32, 31099), (35, 31090), (36, 31075), (45, 30982),

Gene: Zimmer\_45 Start: 33020, Stop: 32820, Start Num: 27

Candidate Starts for Zimmer\_45:

(17, 33128), (21, 33083), (Start: 27 @33020 has 201 MA's), (31, 32993), (33, 32978), (36, 32957), (45, 32864),

Gene: Zulu\_50 Start: 30938, Stop: 30732, Start Num: 27

Candidate Starts for Zulu\_50:

(18, 31046), (Start: 27 @30938 has 201 MA's), (35, 30890), (45, 30782),