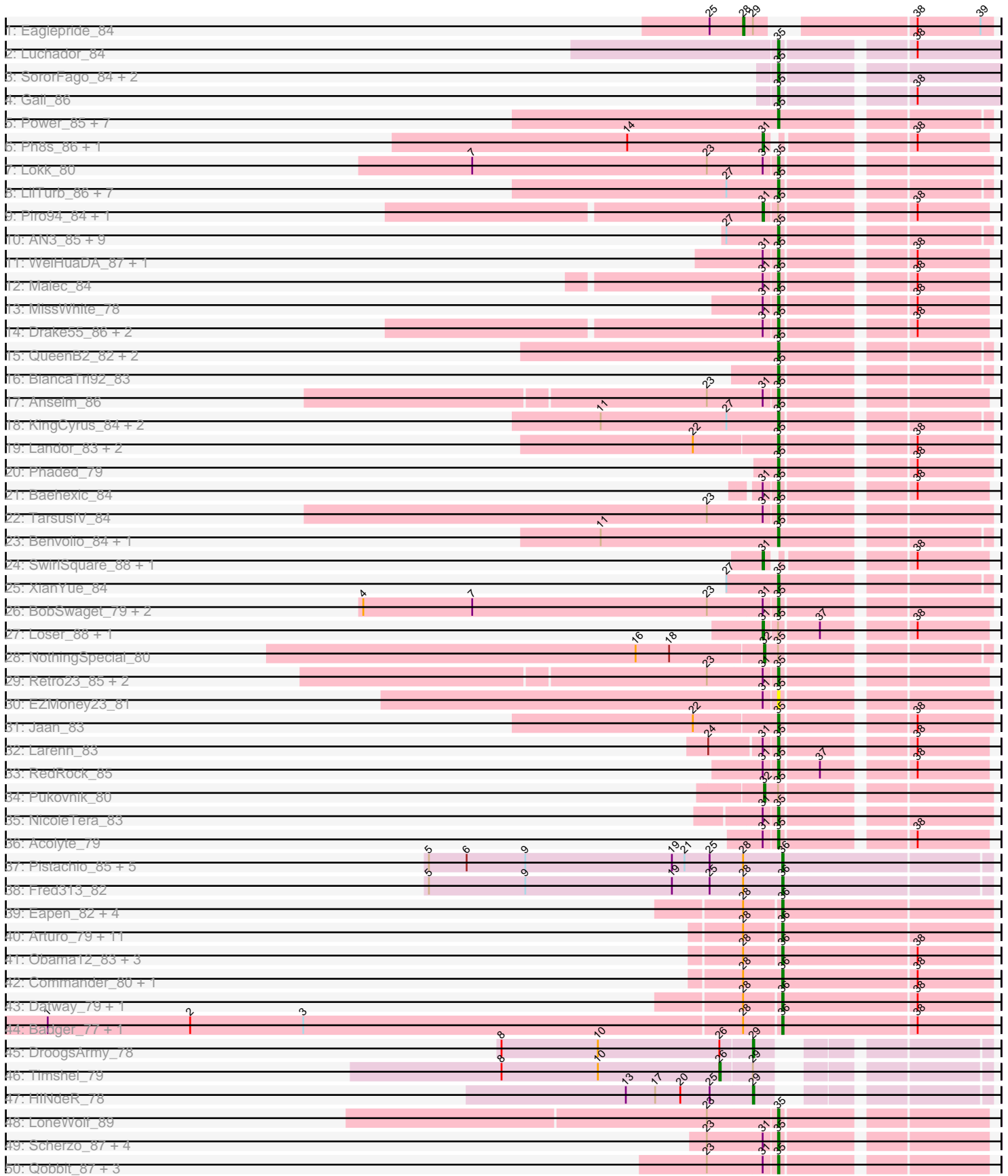
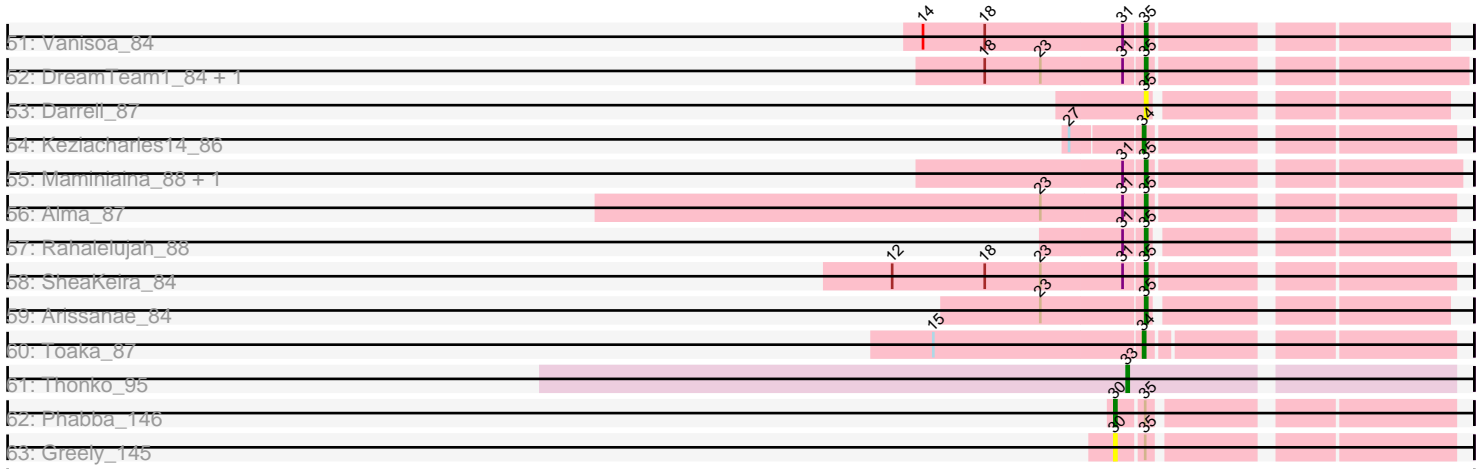


Pham 171264



Pham 171264



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 171264 Report

This analysis was run 07/10/24 on database version 566.

Pham number 171264 has 141 members, 13 are drafts.

Phages represented in each track:

- Track 1 : Eaglepride\_84
- Track 2 : Luchador\_84
- Track 3 : SororFago\_84, Iwokeuplikedis\_89, Jeeves\_86
- Track 4 : Gail\_86
- Track 5 : Power\_85, SnapTap\_85, Georgie2\_87, SweetiePie\_85, FiringLine\_85, Crucio\_85, QueenBeesly\_85, SemperFi\_85
- Track 6 : Ph8s\_86, Adzzy\_86
- Track 7 : Lokk\_80
- Track 8 : LilTurb\_86, Leviathan\_87, Jerm\_87, Turbido\_86, Dignity\_87, Agape74\_87, Smeagan\_88, AbbyPaige\_87
- Track 9 : Piro94\_84, NaSiaTalie\_86
- Track 10 : AN3\_85, First\_0086, CRB1\_86, VA6\_85, LadyBird\_89, Deloris\_87, BengiVuitton\_87, 20ES\_87, JoshKayV\_87, Elephantoon\_89
- Track 11 : WeiHuaDA\_87, Kalpine\_87
- Track 12 : Malec\_84
- Track 13 : MissWhite\_78
- Track 14 : Drake55\_86, Updawg\_86, Centaur\_85
- Track 15 : QueenB2\_82, Fameo\_83, Heffalump\_82
- Track 16 : BiancaTri92\_83
- Track 17 : Anselm\_86
- Track 18 : KingCyrus\_84, EvilGenius\_85, ChipMunk\_86
- Track 19 : Landor\_83, Bactobuster\_77, IronMan\_82
- Track 20 : Phaded\_79
- Track 21 : Baehexic\_84
- Track 22 : TarsusIV\_84
- Track 23 : Benvolio\_84, Echild\_88
- Track 24 : SwirlSquare\_88, Che12\_87
- Track 25 : XianYue\_84
- Track 26 : BobSwaget\_79, Miko\_80, Rachaly\_82
- Track 27 : Loser\_88, AnnaL29\_87
- Track 28 : NothingSpecial\_80
- Track 29 : Retro23\_85, DudeLittle\_83, Dalmatian\_85
- Track 30 : EZMoney23\_81
- Track 31 : Jaan\_83
- Track 32 : Larenn\_83
- Track 33 : RedRock\_85
- Track 34 : Pukovnik\_80

- Track 35 : NicoleTera\_83
- Track 36 : Acolyte\_79
- Track 37 : Pistachio\_85, SaturnRing\_86, Puppy\_86, BlueBird\_87, Giroux\_83, Bugatti\_86
- Track 38 : Fred313\_82
- Track 39 : Eapen\_82, NorthStar\_79, SheldonCooper\_82, Relief\_81, Skipitt\_81
- Track 40 : Arturo\_79, Gadost\_82, Nemo27\_81, Kingmustik0402\_82, MeeZee\_81, NotAPhaseMom\_81, Cocoaberry\_82, TygerBlood\_82, Avle17\_82, Houdini22\_81, Eagle\_81, Kremtemulon\_76
- Track 41 : Obama12\_83, AvatarAhPeg\_82, Deano\_79, Stink\_82
- Track 42 : Commander\_80, Eros\_82
- Track 43 : Datway\_79, Cindaradix\_77
- Track 44 : Badger\_77, Katalie136\_78
- Track 45 : DroogsArmy\_78
- Track 46 : Timshel\_79
- Track 47 : HINdeR\_78
- Track 48 : LoneWolf\_89
- Track 49 : Scherzo\_87, Phonnegut\_89, Beemo\_89, Pioneer\_89, Ugenie5\_76
- Track 50 : Qobbit\_87, ExplosioNervosa\_87, Priya\_87, Phaeder\_89
- Track 51 : Vanisoa\_84
- Track 52 : DreamTeam1\_84, Charm\_84
- Track 53 : Darrell\_87
- Track 54 : Keziacharles14\_86
- Track 55 : Maminiaina\_88, BogosyJay\_88
- Track 56 : Alma\_87
- Track 57 : Rahalelujah\_88
- Track 58 : SheaKeira\_84
- Track 59 : Arissanae\_84
- Track 60 : Toaka\_87
- Track 61 : Thonko\_95
- Track 62 : Phabba\_146
- Track 63 : Greely\_145

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

The start number called the most often in the published annotations is 35, it was called in 81 of the 128 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 20ES\_87, AN3\_85, AbbyPaige\_87, Acolyte\_79, Agape74\_87, Alma\_87, Anselm\_86, Arissanae\_84, Bactobuster\_77, Baehexic\_84, Beemo\_89, BengiVuitton\_87, Benvolio\_84, BiancaTri92\_83, BobSwaget\_79, BogosyJay\_88, CRB1\_86, Centaur\_85, Charm\_84, ChipMunk\_86, Crucio\_85, Dalmatian\_85, Darrell\_87, Deloris\_87, Dignity\_87, Drake55\_86, DreamTeam1\_84, DudeLittle\_83, EZMoney23\_81, Echild\_88, Elephantoon\_89, EvilGenius\_85, ExplosioNervosa\_87, Fameo\_83, FiringLine\_85, First\_0086, Gail\_86, Georgie2\_87, Heffalump\_82, IronMan\_82, Iwokeuplikedis\_89, Jaan\_83, Jeeves\_86, Jerm\_87, JoshKayV\_87, Kalpine\_87, KingCyrus\_84, LadyBird\_89, Landor\_83, Larenn\_83, Leviathan\_87, LilTurb\_86, Lokk\_80, LoneWolf\_89, Luchador\_84, Malec\_84, Maminiaina\_88, Miko\_80, MissWhite\_78, NicoleTera\_83, Phaded\_79, Phaeder\_89, Phonnegut\_89,

Pioneer\_89, Power\_85, Priya\_87, Qobbit\_87, QueenB2\_82, QueenBeesly\_85, Rachaly\_82, Rahalelujah\_88, RedRock\_85, Retro23\_85, Scherzo\_87, SemperFi\_85, SheaKeira\_84, Smeagan\_88, SnapTap\_85, SororFago\_84, SweetiePie\_85, TarsusIV\_84, Turbido\_86, Ugenie5\_76, Updawg\_86, VA6\_85, Vanisoa\_84, WeiHuaDA\_87, XianYue\_84,

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

- AnnaL29\_87, Greely\_145, Loser\_88, NaSiaTalie\_86, NothingSpecial\_80, Phabba\_146, Piro94\_84, Pukovnik\_80,

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

- Adzzy\_86, Arturo\_79, AvatarAhPeg\_82, Avle17\_82, Badger\_77, BlueBird\_87, Bugatti\_86, Che12\_87, Cindaradix\_77, Cocoaberry\_82, Commander\_80, Datway\_79, Deano\_79, DroogsArmy\_78, Eagle\_81, Eaglepride\_84, Eapen\_82, Eros\_82, Fred313\_82, Gadost\_82, Giroux\_83, HINdeR\_78, Houdini22\_81, Katalie136\_78, Keziacharles14\_86, Kingmustik0402\_82, Kremtemulon\_76, MeeZee\_81, Nemo27\_81, NorthStar\_79, NotAPhaseMom\_81, Obama12\_83, Ph8s\_86, Pistachio\_85, Puppy\_86, Relief\_81, SaturnRing\_86, SheldonCooper\_82, Skipitt\_81, Stink\_82, SwirlSquare\_88, Thonko\_95, Timshel\_79, Toaka\_87, TygerBlood\_82,

### Summary by start number:

Start 26:

- Found in 2 of 141 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 1 of 128
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Timshel\_79 (A7),

Start 28:

- Found in 35 of 141 ( 24.8% ) of genes in pham
- Manual Annotations of this start: 1 of 128
- Called 2.9% of time when present
- Phage (with cluster) where this start called: Eaglepride\_84 (A10),

Start 29:

- Found in 4 of 141 ( 2.8% ) of genes in pham
- Manual Annotations of this start: 2 of 128
- Called 50.0% of time when present
- Phage (with cluster) where this start called: DroogsArmy\_78 (A7), HINdeR\_78 (A7),

Start 30:

- Found in 2 of 141 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 1 of 128
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Greely\_145 (C2), Phabba\_146 (C2),

Start 31:

- Found in 47 of 141 ( 33.3% ) of genes in pham
- Manual Annotations of this start: 7 of 128
- Called 17.0% of time when present
- Phage (with cluster) where this start called: Adzzy\_86 (A2), AnnaL29\_87 (A2), Che12\_87 (A2), Loser\_88 (A2), NaSiaTalie\_86 (A2), Ph8s\_86 (A2), Piro94\_84 (A2), SwirlSquare\_88 (A2),

Start 32:

- Found in 2 of 141 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 2 of 128
- Called 100.0% of time when present
- Phage (with cluster) where this start called: NothingSpecial\_80 (A2), Pukovnik\_80 (A2),

Start 33:

- Found in 1 of 141 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 128
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Thonko\_95 (B8),

Start 34:

- Found in 2 of 141 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 2 of 128
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Keziacharles14\_86 (A9), Toaka\_87 (A9),

Start 35:

- Found in 96 of 141 ( 68.1% ) of genes in pham
- Manual Annotations of this start: 81 of 128
- Called 91.7% of time when present
- Phage (with cluster) where this start called: 20ES\_87 (A2), AN3\_85 (A2), AbbyPaige\_87 (A2), Acolyte\_79 (A2), Agape74\_87 (A2), Alma\_87 (A9), Anselm\_86 (A2), Arissanae\_84 (A9), Bactobuster\_77 (A2), Baehexic\_84 (A2), Beemo\_89 (A9), BengiVuitton\_87 (A2), Benvolio\_84 (A2), BiancaTri92\_83 (A2), BobSwaget\_79 (A2), BogosyJay\_88 (A9), CRB1\_86 (A2), Centaur\_85 (A2), Charm\_84 (A9), ChipMunk\_86 (A2), Crucio\_85 (A2), Dalmatian\_85 (A2), Darrell\_87 (A9), Deloris\_87 (A2), Dignity\_87 (A2), Drake55\_86 (A2), DreamTeam1\_84 (A9), DudeLittle\_83 (A2), EZMoney23\_81 (A2), Echild\_88 (A2), Elephantoon\_89 (A9), EvilGenius\_85 (A2), ExplosioNervosa\_87 (A9), Fameo\_83 (A2), FiringLine\_85 (A2), First\_0086 (A2), Gail\_86 (A14), Georgie2\_87 (A2), Heffalump\_82 (A2), IronMan\_82 (A2), Iwokeuplikedis\_89 (A2), Jaan\_83 (A2), Jeeves\_86 (A14), Jerm\_87 (A2), JoshKayV\_87 (A2), Kalpine\_87 (A2), KingCyrus\_84 (A2), LadyBird\_89 (A2), Landor\_83 (A2), Larenn\_83 (A2), Leviathan\_87 (A2), LiITurb\_86 (A2), Lokk\_80 (A2), LoneWolf\_89 (A9), Luchador\_84 (A14), Malec\_84 (A2), Maminaiaina\_88 (A9), Miko\_80 (A2), MissWhite\_78 (A2), NicoleTera\_83 (A2), Phaded\_79 (A2), Phaeder\_89 (A9), Phonnegut\_89 (A9), Pioneer\_89 (A9), Power\_85 (A2), Priya\_87 (A9), Qobbit\_87 (A9), QueenB2\_82 (A2), QueenBeesly\_85 (A2), Rachaly\_82 (A2), Rahalelujah\_88 (A9), RedRock\_85 (A2), Retro23\_85 (A2), Scherzo\_87 (A9), SemperFi\_85 (A2), SheaKeira\_84 (A9), Smeagan\_88 (A2), SnapTap\_85 (A2), SororFago\_84 (A14), SweetiePie\_85 (A2), TarsusIV\_84 (A2), Turbido\_86 (A2), Ugenie5\_76 (A9), Updawg\_86 (A2), VA6\_85 (A2), Vanisoa\_84 (A9), WeiHuaDA\_87 (A2), XianYue\_84 (A2),

Start 36:

- Found in 34 of 141 ( 24.1% ) of genes in pham
- Manual Annotations of this start: 30 of 128
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Arturo\_79 (A4), AvatarAhPeg\_82 (A4), Avle17\_82 (A4), Badger\_77 (A4), BlueBird\_87 (A3), Bugatti\_86 (A3), Cindaradix\_77 (A4), Cocoaberry\_82 (A4), Commander\_80 (A4), Datway\_79 (A4), Deano\_79 (A4), Eagle\_81 (A4), Eapen\_82 (A4), Eros\_82 (A4), Fred313\_82 (A3), Gadost\_82 (A4), Giroux\_83 (A3), Houdini22\_81 (A4), Katalie136\_78 (A4), Kingmustik0402\_82 (A4), Kremtemulon\_76 (A4), MeeZee\_81 (A4), Nemo27\_81 (A4), NorthStar\_79 (A4), NotAPhaseMom\_81 (A4), Obama12\_83 (A4), Pistachio\_85 (A3), Puppy\_86 (A3), Relief\_81 (A4), SaturnRing\_86 (A3), SheldonCooper\_82 (A4), Skipitt\_81 (A4), Stink\_82 (A4), TygerBlood\_82 (A4),

### **Summary by clusters:**

There are 9 clusters represented in this pham: A14, A10, A3, A2, A4, A7, A9, C2, B8,

Info for manual annotations of cluster A10:

- Start number 28 was manually annotated 1 time for cluster A10.

Info for manual annotations of cluster A14:

- Start number 35 was manually annotated 4 times for cluster A14.

Info for manual annotations of cluster A2:

- Start number 31 was manually annotated 7 times for cluster A2.
- Start number 32 was manually annotated 2 times for cluster A2.
- Start number 35 was manually annotated 57 times for cluster A2.

Info for manual annotations of cluster A3:

- Start number 36 was manually annotated 4 times for cluster A3.

Info for manual annotations of cluster A4:

- Start number 36 was manually annotated 26 times for cluster A4.

Info for manual annotations of cluster A7:

- Start number 26 was manually annotated 1 time for cluster A7.
- Start number 29 was manually annotated 2 times for cluster A7.

Info for manual annotations of cluster A9:

- Start number 34 was manually annotated 2 times for cluster A9.
- Start number 35 was manually annotated 20 times for cluster A9.

Info for manual annotations of cluster B8:

- Start number 33 was manually annotated 1 time for cluster B8.

Info for manual annotations of cluster C2:

- Start number 30 was manually annotated 1 time for cluster C2.

### **Gene Information:**

Gene: 20ES\_87 Start: 48610, Stop: 48476, Start Num: 35

Candidate Starts for 20ES\_87:

(27, 48646), (Start: 35 @48610 has 81 MA's),

Gene: AN3\_85 Start: 46868, Stop: 46734, Start Num: 35

Candidate Starts for AN3\_85:

(27, 46904), (Start: 35 @46868 has 81 MA's),

Gene: AbbyPaige\_87 Start: 48867, Stop: 48733, Start Num: 35

Candidate Starts for AbbyPaige\_87:

(27, 48903), (Start: 35 @48867 has 81 MA's),

Gene: Acolyte\_79 Start: 47568, Stop: 47434, Start Num: 35

Candidate Starts for Acolyte\_79:

(Start: 31 @47577 has 7 MA's), (Start: 35 @47568 has 81 MA's), (38, 47484),

Gene: Adzzy\_86 Start: 47386, Stop: 47249, Start Num: 31

Candidate Starts for Adzzy\_86:

(14, 47482), (Start: 31 @47386 has 7 MA's), (38, 47299),

Gene: Agape74\_87 Start: 48843, Stop: 48709, Start Num: 35

Candidate Starts for Agape74\_87:

(27, 48879), (Start: 35 @48843 has 81 MA's),

Gene: Alma\_87 Start: 48839, Stop: 48705, Start Num: 35

Candidate Starts for Alma\_87:

(23, 48887), (Start: 31 @48848 has 7 MA's), (Start: 35 @48839 has 81 MA's),

Gene: AnnaL29\_87 Start: 49009, Stop: 48866, Start Num: 31

Candidate Starts for AnnaL29\_87:

(Start: 31 @49009 has 7 MA's), (Start: 35 @49000 has 81 MA's), (37, 48973), (38, 48916),

Gene: Anselm\_86 Start: 48751, Stop: 48617, Start Num: 35

Candidate Starts for Anselm\_86:

(23, 48799), (Start: 31 @48760 has 7 MA's), (Start: 35 @48751 has 81 MA's),

Gene: Arissanae\_84 Start: 48711, Stop: 48583, Start Num: 35

Candidate Starts for Arissanae\_84:

(23, 48759), (Start: 35 @48711 has 81 MA's),

Gene: Arturo\_79 Start: 48170, Stop: 48024, Start Num: 36

Candidate Starts for Arturo\_79:

(Start: 28 @48194 has 1 MA's), (Start: 36 @48170 has 30 MA's),

Gene: AvatarAhPeg\_82 Start: 48295, Stop: 48149, Start Num: 36

Candidate Starts for AvatarAhPeg\_82:

(Start: 28 @48319 has 1 MA's), (Start: 36 @48295 has 30 MA's), (38, 48202),

Gene: Avle17\_82 Start: 48036, Stop: 47890, Start Num: 36

Candidate Starts for Avle17\_82:

(Start: 28 @48060 has 1 MA's), (Start: 36 @48036 has 30 MA's),

Gene: Bactobuster\_77 Start: 47335, Stop: 47198, Start Num: 35

Candidate Starts for Bactobuster\_77:

(22, 47392), (Start: 35 @47335 has 81 MA's), (38, 47251),

Gene: Badger\_77 Start: 47660, Stop: 47514, Start Num: 36



Candidate Starts for Badger\_77:

(1, 48179), (2, 48077), (3, 47996), (Start: 28 @47684 has 1 MA's), (Start: 36 @47660 has 30 MA's), (38, 47567),

Gene: Baehexic\_84 Start: 48234, Stop: 48100, Start Num: 35

Candidate Starts for Baehexic\_84:

(Start: 31 @48243 has 7 MA's), (Start: 35 @48234 has 81 MA's), (38, 48150),

Gene: Beemo\_89 Start: 48833, Stop: 48699, Start Num: 35

Candidate Starts for Beemo\_89:

(23, 48881), (Start: 31 @48842 has 7 MA's), (Start: 35 @48833 has 81 MA's),

Gene: BengiVuitton\_87 Start: 48715, Stop: 48581, Start Num: 35

Candidate Starts for BengiVuitton\_87:

(27, 48751), (Start: 35 @48715 has 81 MA's),

Gene: Benvolio\_84 Start: 48484, Stop: 48347, Start Num: 35

Candidate Starts for Benvolio\_84:

(11, 48610), (Start: 35 @48484 has 81 MA's),

Gene: BiancaTri92\_83 Start: 48320, Stop: 48186, Start Num: 35

Candidate Starts for BiancaTri92\_83:

(Start: 35 @48320 has 81 MA's),

Gene: BlueBird\_87 Start: 47517, Stop: 47374, Start Num: 36

Candidate Starts for BlueBird\_87:

(5, 47769), (6, 47742), (9, 47700), (19, 47595), (21, 47586), (25, 47568), (Start: 28 @47544 has 1 MA's), (Start: 36 @47517 has 30 MA's),

Gene: BobSwaget\_79 Start: 46253, Stop: 46116, Start Num: 35

Candidate Starts for BobSwaget\_79:

(4, 46547), (7, 46469), (23, 46301), (Start: 31 @46262 has 7 MA's), (Start: 35 @46253 has 81 MA's),

Gene: BogosyJay\_88 Start: 48878, Stop: 48741, Start Num: 35

Candidate Starts for BogosyJay\_88:

(Start: 31 @48887 has 7 MA's), (Start: 35 @48878 has 81 MA's),

Gene: Bugatti\_86 Start: 47517, Stop: 47374, Start Num: 36

Candidate Starts for Bugatti\_86:

(5, 47769), (6, 47742), (9, 47700), (19, 47595), (21, 47586), (25, 47568), (Start: 28 @47544 has 1 MA's), (Start: 36 @47517 has 30 MA's),

Gene: CRB1\_86 Start: 48863, Stop: 48729, Start Num: 35

Candidate Starts for CRB1\_86:

(27, 48899), (Start: 35 @48863 has 81 MA's),

Gene: Centaur\_85 Start: 48112, Stop: 47978, Start Num: 35

Candidate Starts for Centaur\_85:

(Start: 31 @48121 has 7 MA's), (Start: 35 @48112 has 81 MA's), (38, 48028),

Gene: Charm\_84 Start: 48231, Stop: 48091, Start Num: 35

Candidate Starts for Charm\_84:

(18, 48306), (23, 48279), (Start: 31 @48240 has 7 MA's), (Start: 35 @48231 has 81 MA's),

Gene: Che12\_87 Start: 47465, Stop: 47328, Start Num: 31

Candidate Starts for Che12\_87:

(Start: 31 @47465 has 7 MA's), (38, 47378),

Gene: ChipMunk\_86 Start: 49770, Stop: 49636, Start Num: 35

Candidate Starts for ChipMunk\_86:

(11, 49896), (27, 49806), (Start: 35 @49770 has 81 MA's),

Gene: Cindaradix\_77 Start: 48255, Stop: 48109, Start Num: 36

Candidate Starts for Cindaradix\_77:

(Start: 28 @48279 has 1 MA's), (Start: 36 @48255 has 30 MA's), (38, 48162),

Gene: Cocoaberry\_82 Start: 48043, Stop: 47897, Start Num: 36

Candidate Starts for Cocoaberry\_82:

(Start: 28 @48067 has 1 MA's), (Start: 36 @48043 has 30 MA's),

Gene: Commander\_80 Start: 48043, Stop: 47897, Start Num: 36

Candidate Starts for Commander\_80:

(Start: 28 @48070 has 1 MA's), (Start: 36 @48043 has 30 MA's), (38, 47950),

Gene: Crucio\_85 Start: 48717, Stop: 48580, Start Num: 35

Candidate Starts for Crucio\_85:

(Start: 35 @48717 has 81 MA's),

Gene: Dalmatian\_85 Start: 48536, Stop: 48402, Start Num: 35

Candidate Starts for Dalmatian\_85:

(23, 48584), (Start: 31 @48545 has 7 MA's), (Start: 35 @48536 has 81 MA's),

Gene: Darrell\_87 Start: 48031, Stop: 47903, Start Num: 35

Candidate Starts for Darrell\_87:

(Start: 35 @48031 has 81 MA's),

Gene: Datway\_79 Start: 47853, Stop: 47707, Start Num: 36

Candidate Starts for Datway\_79:

(Start: 28 @47877 has 1 MA's), (Start: 36 @47853 has 30 MA's), (38, 47760),

Gene: Deano\_79 Start: 48050, Stop: 47904, Start Num: 36

Candidate Starts for Deano\_79:

(Start: 28 @48074 has 1 MA's), (Start: 36 @48050 has 30 MA's), (38, 47957),

Gene: Deloris\_87 Start: 48408, Stop: 48274, Start Num: 35

Candidate Starts for Deloris\_87:

(27, 48444), (Start: 35 @48408 has 81 MA's),

Gene: Dignity\_87 Start: 48950, Stop: 48816, Start Num: 35

Candidate Starts for Dignity\_87:

(27, 48986), (Start: 35 @48950 has 81 MA's),

Gene: Drake55\_86 Start: 48363, Stop: 48229, Start Num: 35

Candidate Starts for Drake55\_86:

(Start: 31 @48372 has 7 MA's), (Start: 35 @48363 has 81 MA's), (38, 48279),

Gene: DreamTeam1\_84 Start: 48079, Stop: 47939, Start Num: 35  
Candidate Starts for DreamTeam1\_84:  
(18, 48154), (23, 48127), (Start: 31 @48088 has 7 MA's), (Start: 35 @48079 has 81 MA's),

Gene: DroogsArmy\_78 Start: 50033, Stop: 49902, Start Num: 29  
Candidate Starts for DroogsArmy\_78:  
(8, 50210), (10, 50141), (Start: 26 @50054 has 1 MA's), (Start: 29 @50033 has 2 MA's),

Gene: DudeLittle\_83 Start: 48254, Stop: 48120, Start Num: 35  
Candidate Starts for DudeLittle\_83:  
(23, 48302), (Start: 31 @48263 has 7 MA's), (Start: 35 @48254 has 81 MA's),

Gene: EZMoney23\_81 Start: 47816, Stop: 47679, Start Num: 35  
Candidate Starts for EZMoney23\_81:  
(Start: 31 @47825 has 7 MA's), (Start: 35 @47816 has 81 MA's),

Gene: Eagle\_81 Start: 48104, Stop: 47958, Start Num: 36  
Candidate Starts for Eagle\_81:  
(Start: 28 @48128 has 1 MA's), (Start: 36 @48104 has 30 MA's),

Gene: Eaglepride\_84 Start: 47732, Stop: 47583, Start Num: 28  
Candidate Starts for Eaglepride\_84:  
(25, 47756), (Start: 28 @47732 has 1 MA's), (Start: 29 @47726 has 2 MA's), (38, 47636), (39, 47591),

Gene: Eapen\_82 Start: 48037, Stop: 47891, Start Num: 36  
Candidate Starts for Eapen\_82:  
(Start: 28 @48061 has 1 MA's), (Start: 36 @48037 has 30 MA's),

Gene: Echild\_88 Start: 48508, Stop: 48371, Start Num: 35  
Candidate Starts for Echild\_88:  
(11, 48634), (Start: 35 @48508 has 81 MA's),

Gene: Elephantoon\_89 Start: 48757, Stop: 48626, Start Num: 35  
Candidate Starts for Elephantoon\_89:  
(27, 48790), (Start: 35 @48757 has 81 MA's),

Gene: Eros\_82 Start: 48047, Stop: 47901, Start Num: 36  
Candidate Starts for Eros\_82:  
(Start: 28 @48074 has 1 MA's), (Start: 36 @48047 has 30 MA's), (38, 47954),

Gene: EvilGenius\_85 Start: 49771, Stop: 49637, Start Num: 35  
Candidate Starts for EvilGenius\_85:  
(11, 49897), (27, 49807), (Start: 35 @49771 has 81 MA's),

Gene: ExplosioNervosa\_87 Start: 48669, Stop: 48535, Start Num: 35  
Candidate Starts for ExplosioNervosa\_87:  
(23, 48717), (Start: 31 @48678 has 7 MA's), (Start: 35 @48669 has 81 MA's),

Gene: Fameo\_83 Start: 48269, Stop: 48132, Start Num: 35  
Candidate Starts for Fameo\_83:  
(Start: 35 @48269 has 81 MA's),

Gene: FiringLine\_85 Start: 48657, Stop: 48520, Start Num: 35

Candidate Starts for FiringLine\_85:  
(Start: 35 @48657 has 81 MA's),

Gene: First\_0086 Start: 48510, Stop: 48376, Start Num: 35  
Candidate Starts for First\_0086:  
(27, 48546), (Start: 35 @48510 has 81 MA's),

Gene: Fred313\_82 Start: 47147, Stop: 47004, Start Num: 36  
Candidate Starts for Fred313\_82:  
(5, 47399), (9, 47330), (19, 47225), (25, 47198), (Start: 28 @47174 has 1 MA's), (Start: 36 @47147 has 30 MA's),

Gene: Gadost\_82 Start: 48043, Stop: 47897, Start Num: 36  
Candidate Starts for Gadost\_82:  
(Start: 28 @48067 has 1 MA's), (Start: 36 @48043 has 30 MA's),

Gene: Gail\_86 Start: 47979, Stop: 47836, Start Num: 35  
Candidate Starts for Gail\_86:  
(Start: 35 @47979 has 81 MA's), (38, 47895),

Gene: Georgie2\_87 Start: 48861, Stop: 48724, Start Num: 35  
Candidate Starts for Georgie2\_87:  
(Start: 35 @48861 has 81 MA's),

Gene: Giroux\_83 Start: 47516, Stop: 47373, Start Num: 36  
Candidate Starts for Giroux\_83:  
(5, 47768), (6, 47741), (9, 47699), (19, 47594), (21, 47585), (25, 47567), (Start: 28 @47543 has 1 MA's), (Start: 36 @47516 has 30 MA's),

Gene: Greely\_145 Start: 89424, Stop: 89567, Start Num: 30  
Candidate Starts for Greely\_145:  
(Start: 30 @89424 has 1 MA's), (Start: 35 @89436 has 81 MA's),

Gene: HINdeR\_78 Start: 49444, Stop: 49313, Start Num: 29  
Candidate Starts for HINdeR\_78:  
(13, 49534), (17, 49513), (20, 49495), (25, 49474), (Start: 29 @49444 has 2 MA's),

Gene: Heffalump\_82 Start: 48737, Stop: 48600, Start Num: 35  
Candidate Starts for Heffalump\_82:  
(Start: 35 @48737 has 81 MA's),

Gene: Houdini22\_81 Start: 48043, Stop: 47897, Start Num: 36  
Candidate Starts for Houdini22\_81:  
(Start: 28 @48067 has 1 MA's), (Start: 36 @48043 has 30 MA's),

Gene: IronMan\_82 Start: 48859, Stop: 48722, Start Num: 35  
Candidate Starts for IronMan\_82:  
(22, 48916), (Start: 35 @48859 has 81 MA's), (38, 48775),

Gene: Iwokeuplikedis\_89 Start: 48834, Stop: 48700, Start Num: 35  
Candidate Starts for Iwokeuplikedis\_89:  
(Start: 35 @48834 has 81 MA's),

Gene: Jaan\_83 Start: 48967, Stop: 48830, Start Num: 35  
Candidate Starts for Jaan\_83:  
(22, 49024), (Start: 35 @48967 has 81 MA's), (38, 48883),

Gene: Jeeves\_86 Start: 46696, Stop: 46556, Start Num: 35  
Candidate Starts for Jeeves\_86:  
(Start: 35 @46696 has 81 MA's),

Gene: Jerm\_87 Start: 48918, Stop: 48784, Start Num: 35  
Candidate Starts for Jerm\_87:  
(27, 48954), (Start: 35 @48918 has 81 MA's),

Gene: JoshKayV\_87 Start: 49086, Stop: 48952, Start Num: 35  
Candidate Starts for JoshKayV\_87:  
(27, 49122), (Start: 35 @49086 has 81 MA's),

Gene: Kalpine\_87 Start: 49082, Stop: 48948, Start Num: 35  
Candidate Starts for Kalpine\_87:  
(Start: 31 @49091 has 7 MA's), (Start: 35 @49082 has 81 MA's), (38, 48998),

Gene: Katalie136\_78 Start: 47660, Stop: 47514, Start Num: 36  
Candidate Starts for Katalie136\_78:  
(1, 48179), (2, 48077), (3, 47996), (Start: 28 @47684 has 1 MA's), (Start: 36 @47660 has 30 MA's),  
(38, 47567),

Gene: Keziacharles14\_86 Start: 49418, Stop: 49284, Start Num: 34  
Candidate Starts for Keziacharles14\_86:  
(27, 49448), (Start: 34 @49418 has 2 MA's),

Gene: KingCyrus\_84 Start: 49784, Stop: 49650, Start Num: 35  
Candidate Starts for KingCyrus\_84:  
(11, 49910), (27, 49820), (Start: 35 @49784 has 81 MA's),

Gene: Kingmustik0402\_82 Start: 48031, Stop: 47885, Start Num: 36  
Candidate Starts for Kingmustik0402\_82:  
(Start: 28 @48055 has 1 MA's), (Start: 36 @48031 has 30 MA's),

Gene: Kremtemulon\_76 Start: 47922, Stop: 47776, Start Num: 36  
Candidate Starts for Kremtemulon\_76:  
(Start: 28 @47946 has 1 MA's), (Start: 36 @47922 has 30 MA's),

Gene: LadyBird\_89 Start: 49008, Stop: 48874, Start Num: 35  
Candidate Starts for LadyBird\_89:  
(27, 49044), (Start: 35 @49008 has 81 MA's),

Gene: Landor\_83 Start: 48892, Stop: 48755, Start Num: 35  
Candidate Starts for Landor\_83:  
(22, 48949), (Start: 35 @48892 has 81 MA's), (38, 48808),

Gene: Larenn\_83 Start: 48362, Stop: 48228, Start Num: 35  
Candidate Starts for Larenn\_83:  
(24, 48407), (Start: 31 @48371 has 7 MA's), (Start: 35 @48362 has 81 MA's), (38, 48278),

Gene: Leviathan\_87 Start: 48999, Stop: 48865, Start Num: 35

Candidate Starts for Leviathan\_87:

(27, 49035), (Start: 35 @48999 has 81 MA's),

Gene: LilTurb\_86 Start: 48795, Stop: 48661, Start Num: 35

Candidate Starts for LilTurb\_86:

(27, 48831), (Start: 35 @48795 has 81 MA's),

Gene: Lokk\_80 Start: 46874, Stop: 46737, Start Num: 35

Candidate Starts for Lokk\_80:

(7, 47090), (23, 46922), (Start: 31 @46883 has 7 MA's), (Start: 35 @46874 has 81 MA's),

Gene: LoneWolf\_89 Start: 48940, Stop: 48806, Start Num: 35

Candidate Starts for LoneWolf\_89:

(23, 48988), (Start: 35 @48940 has 81 MA's),

Gene: Loser\_88 Start: 49259, Stop: 49116, Start Num: 31

Candidate Starts for Loser\_88:

(Start: 31 @49259 has 7 MA's), (Start: 35 @49250 has 81 MA's), (37, 49223), (38, 49166),

Gene: Luchador\_84 Start: 47960, Stop: 47817, Start Num: 35

Candidate Starts for Luchador\_84:

(Start: 35 @47960 has 81 MA's), (38, 47876),

Gene: Malec\_84 Start: 48932, Stop: 48798, Start Num: 35

Candidate Starts for Malec\_84:

(Start: 31 @48941 has 7 MA's), (Start: 35 @48932 has 81 MA's), (38, 48848),

Gene: Maminiaina\_88 Start: 48860, Stop: 48723, Start Num: 35

Candidate Starts for Maminiaina\_88:

(Start: 31 @48869 has 7 MA's), (Start: 35 @48860 has 81 MA's),

Gene: MeeZee\_81 Start: 48036, Stop: 47890, Start Num: 36

Candidate Starts for MeeZee\_81:

(Start: 28 @48060 has 1 MA's), (Start: 36 @48036 has 30 MA's),

Gene: Miko\_80 Start: 47639, Stop: 47502, Start Num: 35

Candidate Starts for Miko\_80:

(4, 47933), (7, 47855), (23, 47687), (Start: 31 @47648 has 7 MA's), (Start: 35 @47639 has 81 MA's),

Gene: MissWhite\_78 Start: 44927, Stop: 44793, Start Num: 35

Candidate Starts for MissWhite\_78:

(Start: 31 @44936 has 7 MA's), (Start: 35 @44927 has 81 MA's), (38, 44843),

Gene: NaSiaTalie\_86 Start: 48355, Stop: 48212, Start Num: 31

Candidate Starts for NaSiaTalie\_86:

(Start: 31 @48355 has 7 MA's), (Start: 35 @48346 has 81 MA's), (38, 48262),

Gene: Nemo27\_81 Start: 48038, Stop: 47892, Start Num: 36

Candidate Starts for Nemo27\_81:

(Start: 28 @48062 has 1 MA's), (Start: 36 @48038 has 30 MA's),

Gene: NicoleTera\_83 Start: 48277, Stop: 48140, Start Num: 35

Candidate Starts for NicoleTera\_83:

(Start: 31 @48286 has 7 MA's), (Start: 35 @48277 has 81 MA's),

Gene: NorthStar\_79 Start: 48042, Stop: 47896, Start Num: 36

Candidate Starts for NorthStar\_79:

(Start: 28 @48066 has 1 MA's), (Start: 36 @48042 has 30 MA's),

Gene: NotAPhaseMom\_81 Start: 48043, Stop: 47897, Start Num: 36

Candidate Starts for NotAPhaseMom\_81:

(Start: 28 @48067 has 1 MA's), (Start: 36 @48043 has 30 MA's),

Gene: NothingSpecial\_80 Start: 48222, Stop: 48079, Start Num: 32

Candidate Starts for NothingSpecial\_80:

(16, 48312), (18, 48288), (Start: 32 @48222 has 2 MA's), (Start: 35 @48213 has 81 MA's),

Gene: Obama12\_83 Start: 48466, Stop: 48320, Start Num: 36

Candidate Starts for Obama12\_83:

(Start: 28 @48490 has 1 MA's), (Start: 36 @48466 has 30 MA's), (38, 48373),

Gene: Ph8s\_86 Start: 47599, Stop: 47462, Start Num: 31

Candidate Starts for Ph8s\_86:

(14, 47695), (Start: 31 @47599 has 7 MA's), (38, 47512),

Gene: Phabba\_146 Start: 88539, Stop: 88682, Start Num: 30

Candidate Starts for Phabba\_146:

(Start: 30 @88539 has 1 MA's), (Start: 35 @88551 has 81 MA's),

Gene: Phaded\_79 Start: 48851, Stop: 48714, Start Num: 35

Candidate Starts for Phaded\_79:

(Start: 35 @48851 has 81 MA's), (38, 48767),

Gene: Phaeder\_89 Start: 48820, Stop: 48686, Start Num: 35

Candidate Starts for Phaeder\_89:

(23, 48868), (Start: 31 @48829 has 7 MA's), (Start: 35 @48820 has 81 MA's),

Gene: Phonnegut\_89 Start: 48832, Stop: 48698, Start Num: 35

Candidate Starts for Phonnegut\_89:

(23, 48880), (Start: 31 @48841 has 7 MA's), (Start: 35 @48832 has 81 MA's),

Gene: Pioneer\_89 Start: 48832, Stop: 48698, Start Num: 35

Candidate Starts for Pioneer\_89:

(23, 48880), (Start: 31 @48841 has 7 MA's), (Start: 35 @48832 has 81 MA's),

Gene: Piro94\_84 Start: 48303, Stop: 48160, Start Num: 31

Candidate Starts for Piro94\_84:

(Start: 31 @48303 has 7 MA's), (Start: 35 @48294 has 81 MA's), (38, 48210),

Gene: Pistachio\_85 Start: 47064, Stop: 46921, Start Num: 36

Candidate Starts for Pistachio\_85:

(5, 47316), (6, 47289), (9, 47247), (19, 47142), (21, 47133), (25, 47115), (Start: 28 @47091 has 1 MA's), (Start: 36 @47064 has 30 MA's),

Gene: Power\_85 Start: 48860, Stop: 48723, Start Num: 35

Candidate Starts for Power\_85:  
(Start: 35 @48860 has 81 MA's),

Gene: Priya\_87 Start: 48604, Stop: 48470, Start Num: 35  
Candidate Starts for Priya\_87:  
(23, 48652), (Start: 31 @48613 has 7 MA's), (Start: 35 @48604 has 81 MA's),

Gene: Pukovnik\_80 Start: 48328, Stop: 48182, Start Num: 32  
Candidate Starts for Pukovnik\_80:  
(Start: 32 @48328 has 2 MA's), (Start: 35 @48319 has 81 MA's),

Gene: Puppy\_86 Start: 47134, Stop: 46991, Start Num: 36  
Candidate Starts for Puppy\_86:  
(5, 47386), (6, 47359), (9, 47317), (19, 47212), (21, 47203), (25, 47185), (Start: 28 @47161 has 1 MA's), (Start: 36 @47134 has 30 MA's),

Gene: Qobbit\_87 Start: 48566, Stop: 48432, Start Num: 35  
Candidate Starts for Qobbit\_87:  
(23, 48614), (Start: 31 @48575 has 7 MA's), (Start: 35 @48566 has 81 MA's),

Gene: QueenB2\_82 Start: 47950, Stop: 47813, Start Num: 35  
Candidate Starts for QueenB2\_82:  
(Start: 35 @47950 has 81 MA's),

Gene: QueenBeesly\_85 Start: 48657, Stop: 48520, Start Num: 35  
Candidate Starts for QueenBeesly\_85:  
(Start: 35 @48657 has 81 MA's),

Gene: Rachaly\_82 Start: 47782, Stop: 47645, Start Num: 35  
Candidate Starts for Rachaly\_82:  
(4, 48076), (7, 47998), (23, 47830), (Start: 31 @47791 has 7 MA's), (Start: 35 @47782 has 81 MA's),

Gene: Rahalelujah\_88 Start: 48358, Stop: 48230, Start Num: 35  
Candidate Starts for Rahalelujah\_88:  
(Start: 31 @48367 has 7 MA's), (Start: 35 @48358 has 81 MA's),

Gene: RedRock\_85 Start: 48903, Stop: 48769, Start Num: 35  
Candidate Starts for RedRock\_85:  
(Start: 31 @48912 has 7 MA's), (Start: 35 @48903 has 81 MA's), (37, 48876), (38, 48819),

Gene: Relief\_81 Start: 48039, Stop: 47893, Start Num: 36  
Candidate Starts for Relief\_81:  
(Start: 28 @48063 has 1 MA's), (Start: 36 @48039 has 30 MA's),

Gene: Retro23\_85 Start: 48378, Stop: 48244, Start Num: 35  
Candidate Starts for Retro23\_85:  
(23, 48426), (Start: 31 @48387 has 7 MA's), (Start: 35 @48378 has 81 MA's),

Gene: SaturnRing\_86 Start: 47517, Stop: 47374, Start Num: 36  
Candidate Starts for SaturnRing\_86:  
(5, 47769), (6, 47742), (9, 47700), (19, 47595), (21, 47586), (25, 47568), (Start: 28 @47544 has 1 MA's), (Start: 36 @47517 has 30 MA's),



Gene: Scherzo\_87 Start: 48864, Stop: 48730, Start Num: 35  
Candidate Starts for Scherzo\_87:  
(23, 48912), (Start: 31 @48873 has 7 MA's), (Start: 35 @48864 has 81 MA's),

Gene: SemperFi\_85 Start: 48545, Stop: 48408, Start Num: 35  
Candidate Starts for SemperFi\_85:  
(Start: 35 @48545 has 81 MA's),

Gene: SheaKeira\_84 Start: 48104, Stop: 47970, Start Num: 35  
Candidate Starts for SheaKeira\_84:  
(12, 48224), (18, 48179), (23, 48152), (Start: 31 @48113 has 7 MA's), (Start: 35 @48104 has 81 MA's),

Gene: SheldonCooper\_82 Start: 48480, Stop: 48334, Start Num: 36  
Candidate Starts for SheldonCooper\_82:  
(Start: 28 @48504 has 1 MA's), (Start: 36 @48480 has 30 MA's),

Gene: Skipitt\_81 Start: 48036, Stop: 47890, Start Num: 36  
Candidate Starts for Skipitt\_81:  
(Start: 28 @48060 has 1 MA's), (Start: 36 @48036 has 30 MA's),

Gene: Smeagan\_88 Start: 49090, Stop: 48956, Start Num: 35  
Candidate Starts for Smeagan\_88:  
(27, 49126), (Start: 35 @49090 has 81 MA's),

Gene: SnapTap\_85 Start: 48516, Stop: 48379, Start Num: 35  
Candidate Starts for SnapTap\_85:  
(Start: 35 @48516 has 81 MA's),

Gene: SororFago\_84 Start: 47898, Stop: 47755, Start Num: 35  
Candidate Starts for SororFago\_84:  
(Start: 35 @47898 has 81 MA's),

Gene: Stink\_82 Start: 48266, Stop: 48120, Start Num: 36  
Candidate Starts for Stink\_82:  
(Start: 28 @48290 has 1 MA's), (Start: 36 @48266 has 30 MA's), (38, 48173),

Gene: SweetiePie\_85 Start: 48649, Stop: 48512, Start Num: 35  
Candidate Starts for SweetiePie\_85:  
(Start: 35 @48649 has 81 MA's),

Gene: SwirlSquare\_88 Start: 47074, Stop: 46937, Start Num: 31  
Candidate Starts for SwirlSquare\_88:  
(Start: 31 @47074 has 7 MA's), (38, 46987),

Gene: TarsusIV\_84 Start: 48539, Stop: 48402, Start Num: 35  
Candidate Starts for TarsusIV\_84:  
(23, 48587), (Start: 31 @48548 has 7 MA's), (Start: 35 @48539 has 81 MA's),

Gene: Thonko\_95 Start: 65603, Stop: 65454, Start Num: 33  
Candidate Starts for Thonko\_95:  
(Start: 33 @65603 has 1 MA's),

Gene: Timshel\_79 Start: 49897, Stop: 49745, Start Num: 26  
Candidate Starts for Timshel\_79:  
(8, 50053), (10, 49984), (Start: 26 @49897 has 1 MA's), (Start: 29 @49876 has 2 MA's),

Gene: Toaka\_87 Start: 48704, Stop: 48573, Start Num: 34  
Candidate Starts for Toaka\_87:  
(15, 48803), (Start: 34 @48704 has 2 MA's),

Gene: Turbido\_86 Start: 48811, Stop: 48677, Start Num: 35  
Candidate Starts for Turbido\_86:  
(27, 48847), (Start: 35 @48811 has 81 MA's),

Gene: TygerBlood\_82 Start: 48042, Stop: 47896, Start Num: 36  
Candidate Starts for TygerBlood\_82:  
(Start: 28 @48066 has 1 MA's), (Start: 36 @48042 has 30 MA's),

Gene: Ugenie5\_76 Start: 46308, Stop: 46174, Start Num: 35  
Candidate Starts for Ugenie5\_76:  
(23, 46356), (Start: 31 @46317 has 7 MA's), (Start: 35 @46308 has 81 MA's),

Gene: Updawg\_86 Start: 48341, Stop: 48207, Start Num: 35  
Candidate Starts for Updawg\_86:  
(Start: 31 @48350 has 7 MA's), (Start: 35 @48341 has 81 MA's), (38, 48257),

Gene: VA6\_85 Start: 48439, Stop: 48305, Start Num: 35  
Candidate Starts for VA6\_85:  
(27, 48475), (Start: 35 @48439 has 81 MA's),

Gene: Vanisoa\_84 Start: 49036, Stop: 48905, Start Num: 35  
Candidate Starts for Vanisoa\_84:  
(14, 49141), (18, 49111), (Start: 31 @49045 has 7 MA's), (Start: 35 @49036 has 81 MA's),

Gene: WeiHuaDA\_87 Start: 49366, Stop: 49232, Start Num: 35  
Candidate Starts for WeiHuaDA\_87:  
(Start: 31 @49375 has 7 MA's), (Start: 35 @49366 has 81 MA's), (38, 49282),

Gene: XianYue\_84 Start: 48596, Stop: 48459, Start Num: 35  
Candidate Starts for XianYue\_84:  
(27, 48632), (Start: 35 @48596 has 81 MA's),