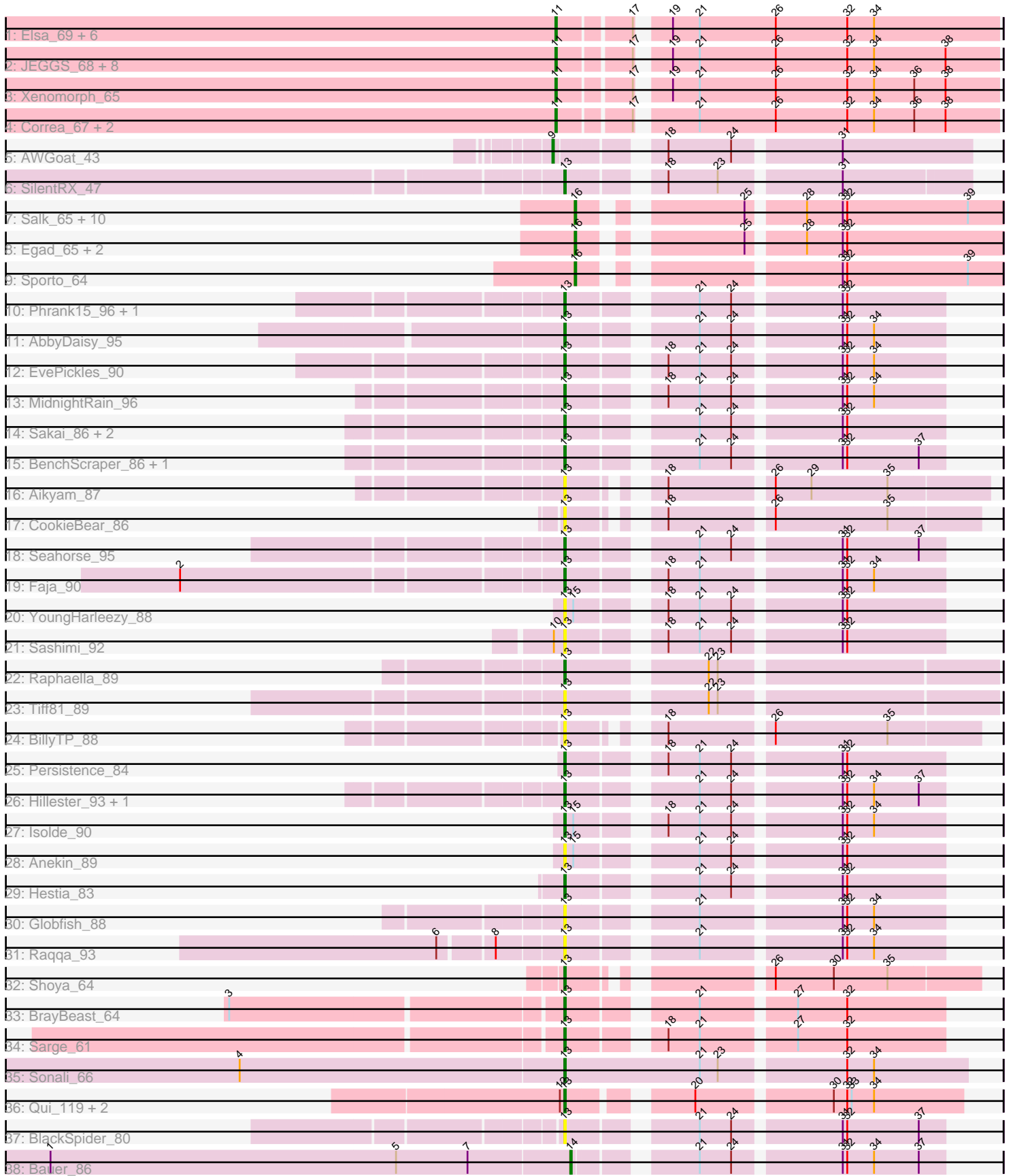


Pham 171427



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 171427 Report

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

Pham number 171427 has 73 members, 18 are drafts.

Phages represented in each track:

- Track 1 : Elsa\_69, Mooshroom\_70, Arcadia\_69, GoCrazy\_66, Kardesai\_69, Nason\_69, KeaneyLin\_65
- Track 2 : JEGGS\_68, NapoleonB\_70, Circum\_70, Benllo\_69, Dynamite\_69, Hankly\_68, Mudcat\_65, Heisenberger\_68, BenitoAntonio\_67
- Track 3 : Xenomorph\_65
- Track 4 : Correa\_67, Cheesy\_69, Tribby\_72
- Track 5 : AWGoat\_43
- Track 6 : SilentRX\_47
- Track 7 : Salk\_65, Stayer\_65, Linda\_65, BronxBay\_65, StarLord\_65, Michelle\_65, Shiba\_64, MrAaronian\_65, Sloopyjoe\_65, DoctorPepper\_65, Djungelskog\_64
- Track 8 : Egad\_65, Raunak\_66, ProfFrink\_66
- Track 9 : Sporto\_64
- Track 10 : Phrank15\_96, Zucker\_89
- Track 11 : AbbyDaisy\_95
- Track 12 : EvePickles\_90
- Track 13 : MidnightRain\_96
- Track 14 : Sakai\_86, Auxilium\_87, Gorpy\_87
- Track 15 : BenchScraper\_86, Richie\_92
- Track 16 : Aikyam\_87
- Track 17 : CookieBear\_86
- Track 18 : Seahorse\_95
- Track 19 : Faja\_90
- Track 20 : YoungHarleezy\_88
- Track 21 : Sashimi\_92
- Track 22 : Raphaella\_89
- Track 23 : Tiff81\_89
- Track 24 : BillyTP\_88
- Track 25 : Persistence\_84
- Track 26 : Hillester\_93, RadFad\_94
- Track 27 : Isolde\_90
- Track 28 : Anekin\_89
- Track 29 : Hestia\_83
- Track 30 : Globfish\_88
- Track 31 : Raqqa\_93
- Track 32 : Shoya\_64
- Track 33 : BrayBeast\_64
- Track 34 : Sarge\_61

- Track 35 : Sonali\_66
- Track 36 : Qui\_119, Elver\_118, Paella\_119
- Track 37 : BlackSpider\_80
- Track 38 : Bauer\_86

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

The start number called the most often in the published annotations is 13, it was called in 22 of the 55 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AbbyDaisy\_95, Aikyam\_87, Anekin\_89, Auxilium\_87, BenchScraper\_86, BillyTP\_88, BlackSpider\_80, BrayBeast\_64, CookieBear\_86, Elver\_118, EvePickles\_90, Faja\_90, Globfish\_88, Gorpy\_87, Hestia\_83, Hillester\_93, Isolde\_90, MidnightRain\_96, Paella\_119, Persistence\_84, Phrank15\_96, Qui\_119, RadFad\_94, Raphaella\_89, Raqqa\_93, Richie\_92, Sakai\_86, Sarge\_61, Sashimi\_92, Seahorse\_95, Shoya\_64, SilentRX\_47, Sonali\_66, Tiff81\_89, YoungHarleezy\_88, Zucker\_89,

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

- 

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

- AWGoat\_43, Arcadia\_69, Bauer\_86, BenitoAntonio\_67, Benllo\_69, BronxBay\_65, Cheesy\_69, Circum\_70, Correa\_67, Djungelskog\_64, DoctorPepper\_65, Dynamite\_69, Egad\_65, Elsa\_69, GoCrazy\_66, Hankly\_68, Heisenberger\_68, JEGGS\_68, Kardesai\_69, KeaneyLin\_65, Linda\_65, Michelle\_65, Mooshroom\_70, MrAaronian\_65, Mudcat\_65, NapoleonB\_70, Nason\_69, ProfFrink\_66, Raunak\_66, Salk\_65, Shiba\_64, Sloopyjoe\_65, Sporto\_64, StarLord\_65, Stayer\_65, Tribby\_72, Xenomorph\_65,

### **Summary by start number:**

Start 9:

- Found in 1 of 73 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AWGoat\_43 (AP4),

Start 11:

- Found in 20 of 73 ( 27.4% ) of genes in pham
- Manual Annotations of this start: 19 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arcadia\_69 (AM), BenitoAntonio\_67 (AM), Benllo\_69 (AM), Cheesy\_69 (AM), Circum\_70 (AM), Correa\_67 (AM), Dynamite\_69 (AM), Elsa\_69 (AM), GoCrazy\_66 (AM), Hankly\_68 (AM), Heisenberger\_68 (AM), JEGGS\_68 (AM), Kardesai\_69 (AM), KeaneyLin\_65 (AM), Mooshroom\_70 (AM), Mudcat\_65 (AM), NapoleonB\_70 (AM), Nason\_69 (AM), Tribby\_72 (AM), Xenomorph\_65 (AM),

#### Start 13:

- Found in 36 of 73 ( 49.3% ) of genes in pham
- Manual Annotations of this start: 22 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AbbyDaisy\_95 (AY), Aikyam\_87 (AY), Anekin\_89 (AY), Auxilium\_87 (AY), BenchScraper\_86 (AY), BillyTP\_88 (AY), BlackSpider\_80 (FN), BrayBeast\_64 (FB), CookieBear\_86 (AY), Elver\_118 (FK), EvePickles\_90 (AY), Faja\_90 (AY), Globfish\_88 (AY), Gorpy\_87 (AY), Hestia\_83 (AY), Hillester\_93 (AY), Isolde\_90 (AY), MidnightRain\_96 (AY), Paella\_119 (FK), Persistence\_84 (AY), Phrank15\_96 (AY), Qui\_119 (FK), RadFad\_94 (AY), Raphaella\_89 (AY), Raqqa\_93 (AY), Richie\_92 (AY), Sakai\_86 (AY), Sarge\_61 (FB), Sashimi\_92 (AY), Seahorse\_95 (AY), Shoya\_64 (FB), SilentRX\_47 (AP4), Sonali\_66 (FG), Tiff81\_89 (AY), YoungHarleezy\_88 (AY), Zucker\_89 (FN),

#### Start 14:

- Found in 1 of 73 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 1 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bauer\_86 (FN),

#### Start 16:

- Found in 15 of 73 ( 20.5% ) of genes in pham
- Manual Annotations of this start: 12 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BronxBay\_65 (AW), Djungelskog\_64 (AW), DoctorPepper\_65 (AW), Egad\_65 (AW), Linda\_65 (AW), Michelle\_65 (AW), MrAaronian\_65 (AW), ProfFrink\_66 (AW), Raunak\_66 (AW), Salk\_65 (AW), Shiba\_64 (AW), Sloopyjoe\_65 (AW), Sporto\_64 (AW), StarLord\_65 (AW), Stayer\_65 (AW),

### Summary by clusters:

There are 8 clusters represented in this pham: AM, AP4, FB, AW, FG, AY, FK, FN,

Info for manual annotations of cluster AM:

- Start number 11 was manually annotated 19 times for cluster AM.

Info for manual annotations of cluster AP4:

- Start number 9 was manually annotated 1 time for cluster AP4.
- Start number 13 was manually annotated 1 time for cluster AP4.

Info for manual annotations of cluster AW:

- Start number 16 was manually annotated 12 times for cluster AW.

Info for manual annotations of cluster AY:

- Start number 13 was manually annotated 14 times for cluster AY.

Info for manual annotations of cluster FB:

- Start number 13 was manually annotated 3 times for cluster FB.

Info for manual annotations of cluster FG:

- Start number 13 was manually annotated 1 time for cluster FG.

Info for manual annotations of cluster FK:

- Start number 13 was manually annotated 2 times for cluster FK.

Info for manual annotations of cluster FN:

- Start number 13 was manually annotated 1 time for cluster FN.
- Start number 14 was manually annotated 1 time for cluster FN.

### **Gene Information:**

Gene: AWGoat\_43 Start: 36435, Stop: 36184, Start Num: 9

Candidate Starts for AWGoat\_43:

(Start: 9 @36435 has 1 MA's), (18, 36378), (24, 36336), (31, 36270),

Gene: AbbyDaisy\_95 Start: 52716, Stop: 52943, Start Num: 13

Candidate Starts for AbbyDaisy\_95:

(Start: 13 @52716 has 22 MA's), (21, 52788), (24, 52809), (31, 52875), (32, 52878), (34, 52896),

Gene: Aikyam\_87 Start: 47697, Stop: 47942, Start Num: 13

Candidate Starts for Aikyam\_87:

(Start: 13 @47697 has 22 MA's), (18, 47739), (26, 47802), (29, 47826), (35, 47877),

Gene: Anekin\_89 Start: 49928, Stop: 50155, Start Num: 13

Candidate Starts for Anekin\_89:

(Start: 13 @49928 has 22 MA's), (15, 49934), (21, 50000), (24, 50021), (31, 50087), (32, 50090),

Gene: Arcadia\_69 Start: 43472, Stop: 43750, Start Num: 11

Candidate Starts for Arcadia\_69:

(Start: 11 @43472 has 19 MA's), (17, 43517), (19, 43532), (21, 43550), (26, 43601), (32, 43649), (34, 43667),

Gene: Auxilium\_87 Start: 46996, Stop: 47223, Start Num: 13

Candidate Starts for Auxilium\_87:

(Start: 13 @46996 has 22 MA's), (21, 47068), (24, 47089), (31, 47155), (32, 47158),

Gene: Bauer\_86 Start: 46271, Stop: 46492, Start Num: 14

Candidate Starts for Bauer\_86:

(1, 45926), (5, 46157), (7, 46205), (Start: 14 @46271 has 1 MA's), (21, 46337), (24, 46358), (31, 46424), (32, 46427), (34, 46445), (37, 46475),

Gene: BenchScraper\_86 Start: 47947, Stop: 48174, Start Num: 13

Candidate Starts for BenchScraper\_86:

(Start: 13 @47947 has 22 MA's), (21, 48019), (24, 48040), (31, 48106), (32, 48109), (37, 48157),

Gene: BenitoAntonio\_67 Start: 42507, Stop: 42785, Start Num: 11

Candidate Starts for BenitoAntonio\_67:

(Start: 11 @42507 has 19 MA's), (17, 42552), (19, 42567), (21, 42585), (26, 42636), (32, 42684), (34, 42702), (38, 42750),

Gene: Benllo\_69 Start: 43185, Stop: 43463, Start Num: 11

Candidate Starts for Benllo\_69:

(Start: 11 @43185 has 19 MA's), (17, 43230), (19, 43245), (21, 43263), (26, 43314), (32, 43362), (34, 43380), (38, 43428),

Gene: BillyTP\_88 Start: 50050, Stop: 50289, Start Num: 13  
Candidate Starts for BillyTP\_88:  
(Start: 13 @50050 has 22 MA's), (18, 50092), (26, 50155), (35, 50230),

Gene: BlackSpider\_80 Start: 47304, Stop: 47531, Start Num: 13  
Candidate Starts for BlackSpider\_80:  
(Start: 13 @47304 has 22 MA's), (21, 47376), (24, 47397), (31, 47463), (32, 47466), (37, 47514),

Gene: BrayBeast\_64 Start: 36058, Stop: 36285, Start Num: 13  
Candidate Starts for BrayBeast\_64:  
(3, 35845), (Start: 13 @36058 has 22 MA's), (21, 36130), (27, 36187), (32, 36220),

Gene: BronxBay\_65 Start: 42499, Stop: 42750, Start Num: 16  
Candidate Starts for BronxBay\_65:  
(Start: 16 @42499 has 12 MA's), (25, 42586), (28, 42619), (31, 42643), (32, 42646), (39, 42727),

Gene: Cheesy\_69 Start: 42699, Stop: 42977, Start Num: 11  
Candidate Starts for Cheesy\_69:  
(Start: 11 @42699 has 19 MA's), (17, 42744), (21, 42777), (26, 42828), (32, 42876), (34, 42894), (36, 42921), (38, 42942),

Gene: Circum\_70 Start: 43275, Stop: 43553, Start Num: 11  
Candidate Starts for Circum\_70:  
(Start: 11 @43275 has 19 MA's), (17, 43320), (19, 43335), (21, 43353), (26, 43404), (32, 43452), (34, 43470), (38, 43518),

Gene: CookieBear\_86 Start: 49258, Stop: 49497, Start Num: 13  
Candidate Starts for CookieBear\_86:  
(Start: 13 @49258 has 22 MA's), (18, 49300), (26, 49363), (35, 49438),

Gene: Correa\_67 Start: 42273, Stop: 42551, Start Num: 11  
Candidate Starts for Correa\_67:  
(Start: 11 @42273 has 19 MA's), (17, 42318), (21, 42351), (26, 42402), (32, 42450), (34, 42468), (36, 42495), (38, 42516),

Gene: Djungelskog\_64 Start: 42498, Stop: 42749, Start Num: 16  
Candidate Starts for Djungelskog\_64:  
(Start: 16 @42498 has 12 MA's), (25, 42585), (28, 42618), (31, 42642), (32, 42645), (39, 42726),

Gene: DoctorPepper\_65 Start: 42203, Stop: 42454, Start Num: 16  
Candidate Starts for DoctorPepper\_65:  
(Start: 16 @42203 has 12 MA's), (25, 42290), (28, 42323), (31, 42347), (32, 42350), (39, 42431),

Gene: Dynamite\_69 Start: 43288, Stop: 43566, Start Num: 11  
Candidate Starts for Dynamite\_69:  
(Start: 11 @43288 has 19 MA's), (17, 43333), (19, 43348), (21, 43366), (26, 43417), (32, 43465), (34, 43483), (38, 43531),

Gene: Egad\_65 Start: 42494, Stop: 42745, Start Num: 16  
Candidate Starts for Egad\_65:  
(Start: 16 @42494 has 12 MA's), (25, 42581), (28, 42614), (31, 42638), (32, 42641),

Gene: Elsa\_69 Start: 43472, Stop: 43750, Start Num: 11  
Candidate Starts for Elsa\_69:  
(Start: 11 @43472 has 19 MA's), (17, 43517), (19, 43532), (21, 43550), (26, 43601), (32, 43649), (34, 43667),

Gene: Elver\_118 Start: 65771, Stop: 66007, Start Num: 13  
Candidate Starts for Elver\_118:  
(12, 65768), (Start: 13 @65771 has 22 MA's), (20, 65837), (30, 65921), (32, 65930), (33, 65933), (34, 65948),

Gene: EvePickles\_90 Start: 50663, Stop: 50890, Start Num: 13  
Candidate Starts for EvePickles\_90:  
(Start: 13 @50663 has 22 MA's), (18, 50714), (21, 50735), (24, 50756), (31, 50822), (32, 50825), (34, 50843),

Gene: Faja\_90 Start: 49924, Stop: 50151, Start Num: 13  
Candidate Starts for Faja\_90:  
(2, 49681), (Start: 13 @49924 has 22 MA's), (18, 49975), (21, 49996), (31, 50083), (32, 50086), (34, 50104),

Gene: Globfish\_88 Start: 48667, Stop: 48894, Start Num: 13  
Candidate Starts for Globfish\_88:  
(Start: 13 @48667 has 22 MA's), (21, 48739), (31, 48826), (32, 48829), (34, 48847),

Gene: GoCrazy\_66 Start: 42732, Stop: 43010, Start Num: 11  
Candidate Starts for GoCrazy\_66:  
(Start: 11 @42732 has 19 MA's), (17, 42777), (19, 42792), (21, 42810), (26, 42861), (32, 42909), (34, 42927),

Gene: Gorpy\_87 Start: 50675, Stop: 50902, Start Num: 13  
Candidate Starts for Gorpy\_87:  
(Start: 13 @50675 has 22 MA's), (21, 50747), (24, 50768), (31, 50834), (32, 50837),

Gene: Hankly\_68 Start: 42356, Stop: 42634, Start Num: 11  
Candidate Starts for Hankly\_68:  
(Start: 11 @42356 has 19 MA's), (17, 42401), (19, 42416), (21, 42434), (26, 42485), (32, 42533), (34, 42551), (38, 42599),

Gene: Heisenberger\_68 Start: 42694, Stop: 42972, Start Num: 11  
Candidate Starts for Heisenberger\_68:  
(Start: 11 @42694 has 19 MA's), (17, 42739), (19, 42754), (21, 42772), (26, 42823), (32, 42871), (34, 42889), (38, 42937),

Gene: Hestia\_83 Start: 47282, Stop: 47509, Start Num: 13  
Candidate Starts for Hestia\_83:  
(Start: 13 @47282 has 22 MA's), (21, 47354), (24, 47375), (31, 47441), (32, 47444),

Gene: Hillester\_93 Start: 49669, Stop: 49896, Start Num: 13  
Candidate Starts for Hillester\_93:  
(Start: 13 @49669 has 22 MA's), (21, 49741), (24, 49762), (31, 49828), (32, 49831), (34, 49849), (37, 49879),

Gene: Isolde\_90 Start: 50517, Stop: 50744, Start Num: 13

Candidate Starts for Isolde\_90:

(Start: 13 @50517 has 22 MA's), (15, 50523), (18, 50568), (21, 50589), (24, 50610), (31, 50676), (32, 50679), (34, 50697),

Gene: JEGGS\_68 Start: 42773, Stop: 43051, Start Num: 11

Candidate Starts for JEGGS\_68:

(Start: 11 @42773 has 19 MA's), (17, 42818), (19, 42833), (21, 42851), (26, 42902), (32, 42950), (34, 42968), (38, 43016),

Gene: Kardesai\_69 Start: 43082, Stop: 43360, Start Num: 11

Candidate Starts for Kardesai\_69:

(Start: 11 @43082 has 19 MA's), (17, 43127), (19, 43142), (21, 43160), (26, 43211), (32, 43259), (34, 43277),

Gene: KeaneyLin\_65 Start: 42732, Stop: 43010, Start Num: 11

Candidate Starts for KeaneyLin\_65:

(Start: 11 @42732 has 19 MA's), (17, 42777), (19, 42792), (21, 42810), (26, 42861), (32, 42909), (34, 42927),

Gene: Linda\_65 Start: 42496, Stop: 42747, Start Num: 16

Candidate Starts for Linda\_65:

(Start: 16 @42496 has 12 MA's), (25, 42583), (28, 42616), (31, 42640), (32, 42643), (39, 42724),

Gene: Michelle\_65 Start: 42498, Stop: 42749, Start Num: 16

Candidate Starts for Michelle\_65:

(Start: 16 @42498 has 12 MA's), (25, 42585), (28, 42618), (31, 42642), (32, 42645), (39, 42726),

Gene: MidnightRain\_96 Start: 51168, Stop: 51395, Start Num: 13

Candidate Starts for MidnightRain\_96:

(Start: 13 @51168 has 22 MA's), (18, 51219), (21, 51240), (24, 51261), (31, 51327), (32, 51330), (34, 51348),

Gene: Mooshroom\_70 Start: 43082, Stop: 43360, Start Num: 11

Candidate Starts for Mooshroom\_70:

(Start: 11 @43082 has 19 MA's), (17, 43127), (19, 43142), (21, 43160), (26, 43211), (32, 43259), (34, 43277),

Gene: MrAaronian\_65 Start: 42498, Stop: 42749, Start Num: 16

Candidate Starts for MrAaronian\_65:

(Start: 16 @42498 has 12 MA's), (25, 42585), (28, 42618), (31, 42642), (32, 42645), (39, 42726),

Gene: Mudcat\_65 Start: 44131, Stop: 44409, Start Num: 11

Candidate Starts for Mudcat\_65:

(Start: 11 @44131 has 19 MA's), (17, 44176), (19, 44191), (21, 44209), (26, 44260), (32, 44308), (34, 44326), (38, 44374),

Gene: NapoleonB\_70 Start: 43288, Stop: 43566, Start Num: 11

Candidate Starts for NapoleonB\_70:

(Start: 11 @43288 has 19 MA's), (17, 43333), (19, 43348), (21, 43366), (26, 43417), (32, 43465), (34, 43483), (38, 43531),

Gene: Nason\_69 Start: 43472, Stop: 43750, Start Num: 11

Candidate Starts for Nason\_69:



(Start: 11 @43472 has 19 MA's), (17, 43517), (19, 43532), (21, 43550), (26, 43601), (32, 43649), (34, 43667),

Gene: Paella\_119 Start: 66359, Stop: 66595, Start Num: 13

Candidate Starts for Paella\_119:

(12, 66356), (Start: 13 @66359 has 22 MA's), (20, 66425), (30, 66509), (32, 66518), (33, 66521), (34, 66536),

Gene: Persistence\_84 Start: 47327, Stop: 47554, Start Num: 13

Candidate Starts for Persistence\_84:

(Start: 13 @47327 has 22 MA's), (18, 47378), (21, 47399), (24, 47420), (31, 47486), (32, 47489),

Gene: Phrank15\_96 Start: 50347, Stop: 50574, Start Num: 13

Candidate Starts for Phrank15\_96:

(Start: 13 @50347 has 22 MA's), (21, 50419), (24, 50440), (31, 50506), (32, 50509),

Gene: ProfFrink\_66 Start: 42493, Stop: 42744, Start Num: 16

Candidate Starts for ProfFrink\_66:

(Start: 16 @42493 has 12 MA's), (25, 42580), (28, 42613), (31, 42637), (32, 42640),

Gene: Qui\_119 Start: 66359, Stop: 66595, Start Num: 13

Candidate Starts for Qui\_119:

(12, 66356), (Start: 13 @66359 has 22 MA's), (20, 66425), (30, 66509), (32, 66518), (33, 66521), (34, 66536),

Gene: RadFad\_94 Start: 49669, Stop: 49896, Start Num: 13

Candidate Starts for RadFad\_94:

(Start: 13 @49669 has 22 MA's), (21, 49741), (24, 49762), (31, 49828), (32, 49831), (34, 49849), (37, 49879),

Gene: Raphaella\_89 Start: 48624, Stop: 48887, Start Num: 13

Candidate Starts for Raphaella\_89:

(Start: 13 @48624 has 22 MA's), (22, 48705), (23, 48711),

Gene: Raqqa\_93 Start: 50720, Stop: 50947, Start Num: 13

Candidate Starts for Raqqa\_93:

(6, 50645), (8, 50678), (Start: 13 @50720 has 22 MA's), (21, 50792), (31, 50879), (32, 50882), (34, 50900),

Gene: Raunak\_66 Start: 42154, Stop: 42405, Start Num: 16

Candidate Starts for Raunak\_66:

(Start: 16 @42154 has 12 MA's), (25, 42241), (28, 42274), (31, 42298), (32, 42301),

Gene: Richie\_92 Start: 50519, Stop: 50746, Start Num: 13

Candidate Starts for Richie\_92:

(Start: 13 @50519 has 22 MA's), (21, 50591), (24, 50612), (31, 50678), (32, 50681), (37, 50729),

Gene: Sakai\_86 Start: 49386, Stop: 49613, Start Num: 13

Candidate Starts for Sakai\_86:

(Start: 13 @49386 has 22 MA's), (21, 49458), (24, 49479), (31, 49545), (32, 49548),

Gene: Salk\_65 Start: 42496, Stop: 42747, Start Num: 16

Candidate Starts for Salk\_65:

(Start: 16 @42496 has 12 MA's), (25, 42583), (28, 42616), (31, 42640), (32, 42643), (39, 42724),

Gene: Sarge\_61 Start: 33816, Stop: 34043, Start Num: 13

Candidate Starts for Sarge\_61:

(Start: 13 @33816 has 22 MA's), (18, 33867), (21, 33888), (27, 33945), (32, 33978),

Gene: Sashimi\_92 Start: 49657, Stop: 49884, Start Num: 13

Candidate Starts for Sashimi\_92:

(10, 49651), (Start: 13 @49657 has 22 MA's), (18, 49708), (21, 49729), (24, 49750), (31, 49816), (32, 49819),

Gene: Seahorse\_95 Start: 54032, Stop: 54259, Start Num: 13

Candidate Starts for Seahorse\_95:

(Start: 13 @54032 has 22 MA's), (21, 54104), (24, 54125), (31, 54191), (32, 54194), (37, 54242),

Gene: Shiba\_64 Start: 42154, Stop: 42405, Start Num: 16

Candidate Starts for Shiba\_64:

(Start: 16 @42154 has 12 MA's), (25, 42241), (28, 42274), (31, 42298), (32, 42301), (39, 42382),

Gene: Shoya\_64 Start: 35887, Stop: 36126, Start Num: 13

Candidate Starts for Shoya\_64:

(Start: 13 @35887 has 22 MA's), (26, 35992), (30, 36031), (35, 36067),

Gene: SilentRX\_47 Start: 38442, Stop: 38200, Start Num: 13

Candidate Starts for SilentRX\_47:

(Start: 13 @38442 has 22 MA's), (18, 38391), (23, 38358), (31, 38283),

Gene: Sloopyjoe\_65 Start: 42500, Stop: 42751, Start Num: 16

Candidate Starts for Sloopyjoe\_65:

(Start: 16 @42500 has 12 MA's), (25, 42587), (28, 42620), (31, 42644), (32, 42647), (39, 42728),

Gene: Sonali\_66 Start: 45518, Stop: 45778, Start Num: 13

Candidate Starts for Sonali\_66:

(4, 45302), (Start: 13 @45518 has 22 MA's), (21, 45608), (23, 45620), (32, 45698), (34, 45716),

Gene: Sporto\_64 Start: 43615, Stop: 43866, Start Num: 16

Candidate Starts for Sporto\_64:

(Start: 16 @43615 has 12 MA's), (31, 43759), (32, 43762), (39, 43843),

Gene: StarLord\_65 Start: 42493, Stop: 42744, Start Num: 16

Candidate Starts for StarLord\_65:

(Start: 16 @42493 has 12 MA's), (25, 42580), (28, 42613), (31, 42637), (32, 42640), (39, 42721),

Gene: Stayer\_65 Start: 42496, Stop: 42747, Start Num: 16

Candidate Starts for Stayer\_65:

(Start: 16 @42496 has 12 MA's), (25, 42583), (28, 42616), (31, 42640), (32, 42643), (39, 42724),

Gene: Tiff81\_89 Start: 47744, Stop: 48007, Start Num: 13

Candidate Starts for Tiff81\_89:

(Start: 13 @47744 has 22 MA's), (22, 47825), (23, 47831),

Gene: Tribby\_72 Start: 43659, Stop: 43937, Start Num: 11

Candidate Starts for Tribby\_72:

(Start: 11 @43659 has 19 MA's), (17, 43704), (21, 43737), (26, 43788), (32, 43836), (34, 43854), (36, 43881), (38, 43902),

Gene: Xenomorph\_65 Start: 43143, Stop: 43421, Start Num: 11

Candidate Starts for Xenomorph\_65:

(Start: 11 @43143 has 19 MA's), (17, 43188), (19, 43203), (21, 43221), (26, 43272), (32, 43320), (34, 43338), (36, 43365), (38, 43386),

Gene: YoungHarleezy\_88 Start: 50145, Stop: 50372, Start Num: 13

Candidate Starts for YoungHarleezy\_88:

(Start: 13 @50145 has 22 MA's), (15, 50151), (18, 50196), (21, 50217), (24, 50238), (31, 50304), (32, 50307),

Gene: Zucker\_89 Start: 50629, Stop: 50856, Start Num: 13

Candidate Starts for Zucker\_89:

(Start: 13 @50629 has 22 MA's), (21, 50701), (24, 50722), (31, 50788), (32, 50791),