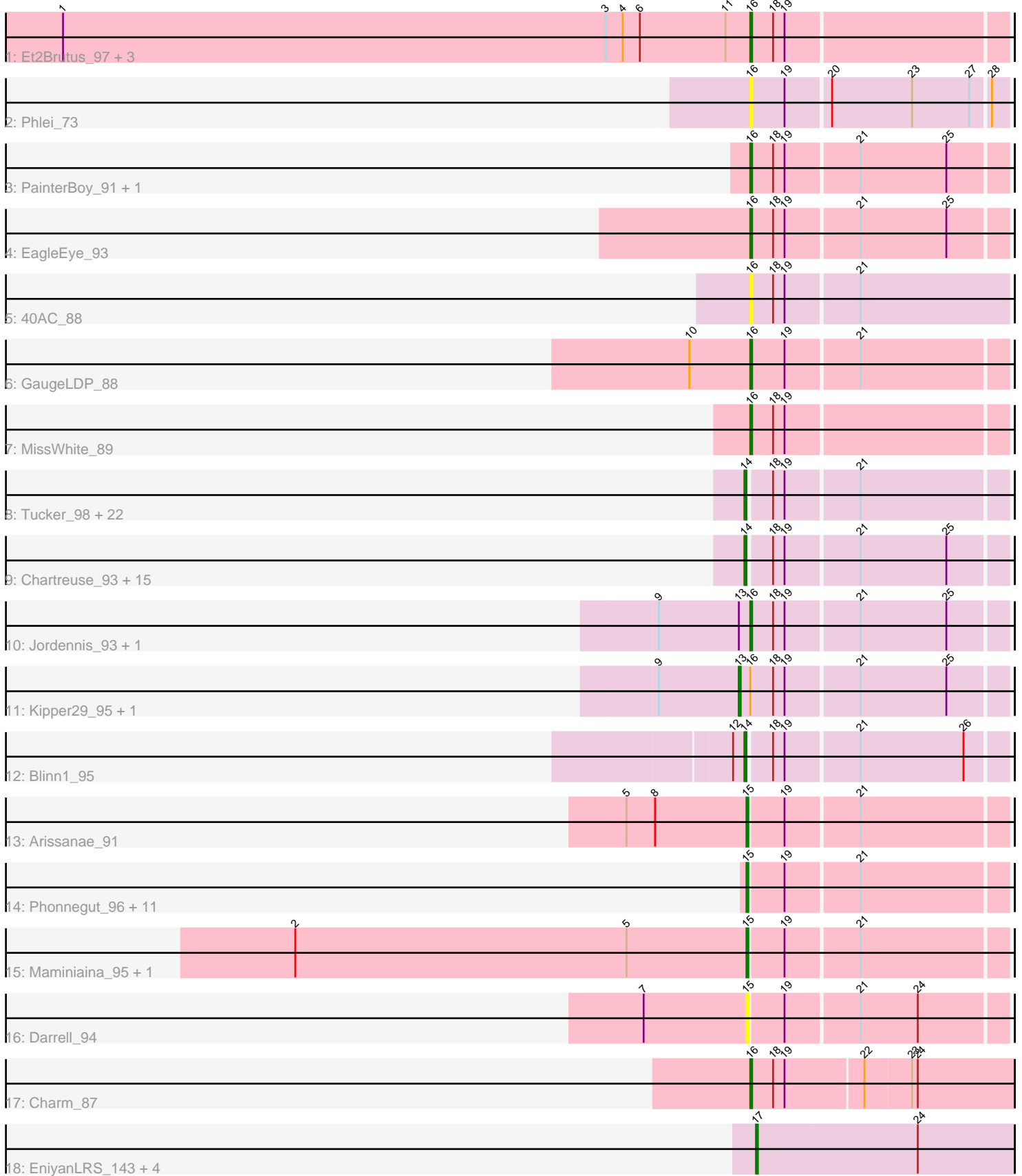


Pham 171414



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 171414 Report

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

Pham number 171414 has 77 members, 9 are drafts.

Phages represented in each track:

- Track 1 : Et2Brutus\_97, Salz\_93, Hutc2\_94, Jabith\_97
- Track 2 : Phlei\_73
- Track 3 : PainterBoy\_91, Lucyedi\_92
- Track 4 : EagleEye\_93
- Track 5 : 40AC\_88
- Track 6 : GaugeLDP\_88
- Track 7 : MissWhite\_89
- Track 8 : Tucker\_98, Yokurt\_97, Hexamo\_97, Hammer\_98, Zulu\_99, SuperCallie99\_92, Isiphiwo\_92, Artemis2UCLA\_97, Roksolana\_98, Gruunaga\_98, Rifter\_98, Lilbunny\_92, Blue7\_99, Indra\_100, Wiks\_97, ToneTone\_94, Koko\_99, Garak\_99, Zaka\_98, Helmet\_99, CloudWang3\_98, Gladiator\_94, Jeffabunny\_86
- Track 9 : Chartreuse\_93, Candra\_93, Newrala\_94, SuperAwesome\_95, VohminGhazi\_95, Neeharika16\_94, Hoot\_90, BABullseye\_88, EricB\_93, Priamo\_95, DaVinci\_93, Pmask\_94, Cookiedough\_95, Kazan\_96, McFly\_95, SmellyB\_95
- Track 10 : Jordennis\_93, JewelBug\_87
- Track 11 : Kipper29\_95, Dorothea\_92
- Track 12 : Blinn1\_95
- Track 13 : Arissanae\_91
- Track 14 : Phonnegut\_96, PackMan\_91, Myxus\_96, Pioneer\_96, Phaeder\_96, Catalina\_98, Ugenie5\_83, HortumSL17\_97, Tubs\_96, Beemo\_96, Aliter\_89, Scherzo\_94
- Track 15 : Maminaiaina\_95, BogosyJay\_95
- Track 16 : Darrell\_94
- Track 17 : Charm\_87
- Track 18 : EniyanLRS\_143, MaryV\_136, Wildcat\_150, Cosmo\_151, Azrael100\_143

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

The start number called the most often in the published annotations is 14, it was called in 35 of the 68 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Artemis2UCLA\_97, BABullseye\_88, Blinn1\_95, Blue7\_99, Candra\_93, Chartreuse\_93, CloudWang3\_98, Cookiedough\_95, DaVinci\_93, EricB\_93,

Garak\_99, Gladiator\_94, Gruunaga\_98, Hammer\_98, Helmet\_99, Hexamo\_97, Hoot\_90, Indra\_100, Isiphiwo\_92, Jeffabunny\_86, Kazan\_96, Koko\_99, Lilbunny\_92, McFly\_95, Neeharika16\_94, Newrala\_94, Pmask\_94, Priamo\_95, Rifter\_98, Roksolana\_98, SmellyB\_95, SuperAwesome\_95, SuperCallie99\_92, ToneTone\_94, Tucker\_98, VohminGhazi\_95, Wiks\_97, Yokurt\_97, Zaka\_98, Zulu\_99,

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

- 

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

- 40AC\_88, Aliter\_89, Arissanae\_91, Azrael100\_143, Beemo\_96, BogosyJay\_95, Catalina\_98, Charm\_87, Cosmo\_151, Darrell\_94, Dorothea\_92, EagleEye\_93, EniyanLRS\_143, Et2Brutus\_97, GaugeLDP\_88, HortumSL17\_97, Hutc2\_94, Jabith\_97, JewelBug\_87, Jordennis\_93, Kipper29\_95, Lucyedi\_92, Maminiaina\_95, MaryV\_136, MissWhite\_89, Myxus\_96, PackMan\_91, PainterBoy\_91, Phaeder\_96, Phlei\_73, Phonnegut\_96, Pioneer\_96, Salz\_93, Scherzo\_94, Tubs\_96, Ugenie5\_83, Wildcat\_150,

### Summary by start number:

Start 13:

- Found in 4 of 77 ( 5.2% ) of genes in pham
- Manual Annotations of this start: 1 of 68
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Dorothea\_92 (A6), Kipper29\_95 (A6),

Start 14:

- Found in 40 of 77 ( 51.9% ) of genes in pham
- Manual Annotations of this start: 35 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Artemis2UCLA\_97 (A6), BABullseye\_88 (A6), Blinn1\_95 (A6), Blue7\_99 (A6), Candra\_93 (A6), Chartreuse\_93 (A6), CloudWang3\_98 (A6), Cookiedough\_95 (A6), DaVinci\_93 (A6), EricB\_93 (A6), Garak\_99 (A6), Gladiator\_94 (A6), Gruunaga\_98 (A6), Hammer\_98 (A6), Helmet\_99 (A6), Hexamo\_97 (A6), Hoot\_90 (A6), Indra\_100 (A6), Isiphiwo\_92 (A6), Jeffabunny\_86 (A6), Kazan\_96 (A6), Koko\_99 (A6), Lilbunny\_92 (A6), McFly\_95 (A6), Neeharika16\_94 (A6), Newrala\_94 (A6), Pmask\_94 (A6), Priamo\_95 (A6), Rifter\_98 (A6), Roksolana\_98 (A6), SmellyB\_95 (A6), SuperAwesome\_95 (A6), SuperCallie99\_92 (A6), ToneTone\_94 (A6), Tucker\_98 (A6), VohminGhazi\_95 (A6), Wiks\_97 (A6), Yokurt\_97 (A6), Zaka\_98 (A6), Zulu\_99 (A6),

Start 15:

- Found in 16 of 77 ( 20.8% ) of genes in pham
- Manual Annotations of this start: 15 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aliter\_89 (A9), Arissanae\_91 (A9), Beemo\_96 (A9), BogosyJay\_95 (A9), Catalina\_98 (A9), Darrell\_94 (A9), HortumSL17\_97 (A9), Maminiaina\_95 (A9), Myxus\_96 (A9), PackMan\_91 (A9), Phaeder\_96 (A9), Phonnegut\_96 (A9), Pioneer\_96 (A9), Scherzo\_94 (A9), Tubs\_96 (A9), Ugenie5\_83 (A9),

Start 16:

- Found in 16 of 77 ( 20.8% ) of genes in pham

- Manual Annotations of this start: 12 of 68
- Called 87.5% of time when present
- Phage (with cluster) where this start called: 40AC\_88 (A17), Charm\_87 (A9), EagleEye\_93 (A16), Et2Brutus\_97 (A11), GaugeLDP\_88 (A2), Hutc2\_94 (A11), Jabith\_97 (A11), JewelBug\_87 (A6), Jordennis\_93 (A6), Lucyedi\_92 (A16), MissWhite\_89 (A2), PainterBoy\_91 (A16), Phlei\_73 (A13), Salz\_93 (A11),

Start 17:

- Found in 5 of 77 ( 6.5% ) of genes in pham
- Manual Annotations of this start: 5 of 68
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Azrael100\_143 (V), Cosmo\_151 (V), EniyanLRS\_143 (V), MaryV\_136 (V), Wildcat\_150 (V),

### **Summary by clusters:**

There are 8 clusters represented in this pham: A17, A16, A11, A13, A6, A2, V, A9,

Info for manual annotations of cluster A11:

- Start number 16 was manually annotated 4 times for cluster A11.

Info for manual annotations of cluster A16:

- Start number 16 was manually annotated 3 times for cluster A16.

Info for manual annotations of cluster A2:

- Start number 16 was manually annotated 2 times for cluster A2.

Info for manual annotations of cluster A6:

- Start number 13 was manually annotated 1 time for cluster A6.
- Start number 14 was manually annotated 35 times for cluster A6.
- Start number 16 was manually annotated 2 times for cluster A6.

Info for manual annotations of cluster A9:

- Start number 15 was manually annotated 15 times for cluster A9.
- Start number 16 was manually annotated 1 time for cluster A9.

Info for manual annotations of cluster V:

- Start number 17 was manually annotated 5 times for cluster V.

### **Gene Information:**

Gene: 40AC\_88 Start: 50616, Stop: 50485, Start Num: 16

Candidate Starts for 40AC\_88:

(Start: 16 @50616 has 12 MA's), (18, 50604), (19, 50598), (21, 50562),

Gene: Aliter\_89 Start: 47662, Stop: 47534, Start Num: 15

Candidate Starts for Aliter\_89:

(Start: 15 @47662 has 15 MA's), (19, 47644), (21, 47608),

Gene: Arissanae\_91 Start: 50357, Stop: 50229, Start Num: 15  
Candidate Starts for Arissanae\_91:  
(5, 50420), (8, 50405), (Start: 15 @50357 has 15 MA's), (19, 50339), (21, 50303),

Gene: Artemis2UCLA\_97 Start: 49085, Stop: 48957, Start Num: 14  
Candidate Starts for Artemis2UCLA\_97:  
(Start: 14 @49085 has 35 MA's), (18, 49073), (19, 49067), (21, 49031),

Gene: Azrael100\_143 Start: 69290, Stop: 69156, Start Num: 17  
Candidate Starts for Azrael100\_143:  
(Start: 17 @69290 has 5 MA's), (24, 69206),

Gene: BABullseye\_88 Start: 47223, Stop: 47095, Start Num: 14  
Candidate Starts for BABullseye\_88:  
(Start: 14 @47223 has 35 MA's), (18, 47211), (19, 47205), (21, 47169), (25, 47124),

Gene: Beemo\_96 Start: 50495, Stop: 50367, Start Num: 15  
Candidate Starts for Beemo\_96:  
(Start: 15 @50495 has 15 MA's), (19, 50477), (21, 50441),

Gene: Blinn1\_95 Start: 48852, Stop: 48724, Start Num: 14  
Candidate Starts for Blinn1\_95:  
(12, 48858), (Start: 14 @48852 has 35 MA's), (18, 48840), (19, 48834), (21, 48798), (26, 48744),

Gene: Blue7\_99 Start: 49319, Stop: 49191, Start Num: 14  
Candidate Starts for Blue7\_99:  
(Start: 14 @49319 has 35 MA's), (18, 49307), (19, 49301), (21, 49265),

Gene: BogosyJay\_95 Start: 50497, Stop: 50369, Start Num: 15  
Candidate Starts for BogosyJay\_95:  
(2, 50734), (5, 50560), (Start: 15 @50497 has 15 MA's), (19, 50479), (21, 50443),

Gene: Candra\_93 Start: 48931, Stop: 48803, Start Num: 14  
Candidate Starts for Candra\_93:  
(Start: 14 @48931 has 35 MA's), (18, 48919), (19, 48913), (21, 48877), (25, 48832),

Gene: Catalina\_98 Start: 50609, Stop: 50481, Start Num: 15  
Candidate Starts for Catalina\_98:  
(Start: 15 @50609 has 15 MA's), (19, 50591), (21, 50555),

Gene: Charm\_87 Start: 49003, Stop: 48869, Start Num: 16  
Candidate Starts for Charm\_87:  
(Start: 16 @49003 has 12 MA's), (18, 48991), (19, 48985), (22, 48946), (23, 48922), (24, 48919),

Gene: Chartreuse\_93 Start: 48232, Stop: 48104, Start Num: 14  
Candidate Starts for Chartreuse\_93:  
(Start: 14 @48232 has 35 MA's), (18, 48220), (19, 48214), (21, 48178), (25, 48133),

Gene: CloudWang3\_98 Start: 49614, Stop: 49486, Start Num: 14  
Candidate Starts for CloudWang3\_98:  
(Start: 14 @49614 has 35 MA's), (18, 49602), (19, 49596), (21, 49560),

Gene: Cookiedough\_95 Start: 49542, Stop: 49414, Start Num: 14

Candidate Starts for Cookiedough\_95:

(Start: 14 @49542 has 35 MA's), (18, 49530), (19, 49524), (21, 49488), (25, 49443),

Gene: Cosmo\_151 Start: 69454, Stop: 69320, Start Num: 17

Candidate Starts for Cosmo\_151:

(Start: 17 @69454 has 5 MA's), (24, 69370),

Gene: DaVinci\_93 Start: 48286, Stop: 48158, Start Num: 14

Candidate Starts for DaVinci\_93:

(Start: 14 @48286 has 35 MA's), (18, 48274), (19, 48268), (21, 48232), (25, 48187),

Gene: Darrell\_94 Start: 49660, Stop: 49532, Start Num: 15

Candidate Starts for Darrell\_94:

(7, 49714), (Start: 15 @49660 has 15 MA's), (19, 49642), (21, 49606), (24, 49576),

Gene: Dorothea\_92 Start: 49540, Stop: 49406, Start Num: 13

Candidate Starts for Dorothea\_92:

(9, 49582), (Start: 13 @49540 has 1 MA's), (Start: 16 @49534 has 12 MA's), (18, 49522), (19, 49516), (21, 49480), (25, 49435),

Gene: EagleEye\_93 Start: 50325, Stop: 50197, Start Num: 16

Candidate Starts for EagleEye\_93:

(Start: 16 @50325 has 12 MA's), (18, 50313), (19, 50307), (21, 50271), (25, 50226),

Gene: EniyanLRS\_143 Start: 69783, Stop: 69649, Start Num: 17

Candidate Starts for EniyanLRS\_143:

(Start: 17 @69783 has 5 MA's), (24, 69699),

Gene: EricB\_93 Start: 48431, Stop: 48303, Start Num: 14

Candidate Starts for EricB\_93:

(Start: 14 @48431 has 35 MA's), (18, 48419), (19, 48413), (21, 48377), (25, 48332),

Gene: Et2Brutus\_97 Start: 49951, Stop: 49823, Start Num: 16

Candidate Starts for Et2Brutus\_97:

(1, 50311), (3, 50026), (4, 50017), (6, 50008), (11, 49963), (Start: 16 @49951 has 12 MA's), (18, 49939), (19, 49933),

Gene: Garak\_99 Start: 49559, Stop: 49431, Start Num: 14

Candidate Starts for Garak\_99:

(Start: 14 @49559 has 35 MA's), (18, 49547), (19, 49541), (21, 49505),

Gene: GaugeLDP\_88 Start: 50406, Stop: 50278, Start Num: 16

Candidate Starts for GaugeLDP\_88:

(10, 50436), (Start: 16 @50406 has 12 MA's), (19, 50388), (21, 50352),

Gene: Gladiator\_94 Start: 49279, Stop: 49151, Start Num: 14

Candidate Starts for Gladiator\_94:

(Start: 14 @49279 has 35 MA's), (18, 49267), (19, 49261), (21, 49225),

Gene: Gruunaga\_98 Start: 49235, Stop: 49107, Start Num: 14

Candidate Starts for Gruunaga\_98:

(Start: 14 @49235 has 35 MA's), (18, 49223), (19, 49217), (21, 49181),

Gene: Hammer\_98 Start: 48932, Stop: 48804, Start Num: 14  
Candidate Starts for Hammer\_98:  
(Start: 14 @48932 has 35 MA's), (18, 48920), (19, 48914), (21, 48878),

Gene: Helmet\_99 Start: 49559, Stop: 49431, Start Num: 14  
Candidate Starts for Helmet\_99:  
(Start: 14 @49559 has 35 MA's), (18, 49547), (19, 49541), (21, 49505),

Gene: Hexamo\_97 Start: 49100, Stop: 48972, Start Num: 14  
Candidate Starts for Hexamo\_97:  
(Start: 14 @49100 has 35 MA's), (18, 49088), (19, 49082), (21, 49046),

Gene: Hoot\_90 Start: 46748, Stop: 46620, Start Num: 14  
Candidate Starts for Hoot\_90:  
(Start: 14 @46748 has 35 MA's), (18, 46736), (19, 46730), (21, 46694), (25, 46649),

Gene: HortumSL17\_97 Start: 50607, Stop: 50479, Start Num: 15  
Candidate Starts for HortumSL17\_97:  
(Start: 15 @50607 has 15 MA's), (19, 50589), (21, 50553),

Gene: Hutc2\_94 Start: 48841, Stop: 48713, Start Num: 16  
Candidate Starts for Hutc2\_94:  
(1, 49201), (3, 48916), (4, 48907), (6, 48898), (11, 48853), (Start: 16 @48841 has 12 MA's), (18, 48829), (19, 48823),

Gene: Indra\_100 Start: 49560, Stop: 49432, Start Num: 14  
Candidate Starts for Indra\_100:  
(Start: 14 @49560 has 35 MA's), (18, 49548), (19, 49542), (21, 49506),

Gene: Isiphiwo\_92 Start: 48650, Stop: 48522, Start Num: 14  
Candidate Starts for Isiphiwo\_92:  
(Start: 14 @48650 has 35 MA's), (18, 48638), (19, 48632), (21, 48596),

Gene: Jabith\_97 Start: 50149, Stop: 50021, Start Num: 16  
Candidate Starts for Jabith\_97:  
(1, 50509), (3, 50224), (4, 50215), (6, 50206), (11, 50161), (Start: 16 @50149 has 12 MA's), (18, 50137), (19, 50131),

Gene: Jeffabunny\_86 Start: 45703, Stop: 45575, Start Num: 14  
Candidate Starts for Jeffabunny\_86:  
(Start: 14 @45703 has 35 MA's), (18, 45691), (19, 45685), (21, 45649),

Gene: JewelBug\_87 Start: 47227, Stop: 47099, Start Num: 16  
Candidate Starts for JewelBug\_87:  
(9, 47275), (Start: 13 @47233 has 1 MA's), (Start: 16 @47227 has 12 MA's), (18, 47215), (19, 47209), (21, 47173), (25, 47128),

Gene: Jordennis\_93 Start: 49131, Stop: 49003, Start Num: 16  
Candidate Starts for Jordennis\_93:  
(9, 49179), (Start: 13 @49137 has 1 MA's), (Start: 16 @49131 has 12 MA's), (18, 49119), (19, 49113), (21, 49077), (25, 49032),

Gene: Kazan\_96 Start: 48901, Stop: 48773, Start Num: 14

Candidate Starts for Kazan\_96:

(Start: 14 @48901 has 35 MA's), (18, 48889), (19, 48883), (21, 48847), (25, 48802),

Gene: Kipper29\_95 Start: 48912, Stop: 48778, Start Num: 13

Candidate Starts for Kipper29\_95:

(9, 48954), (Start: 13 @48912 has 1 MA's), (Start: 16 @48906 has 12 MA's), (18, 48894), (19, 48888), (21, 48852), (25, 48807),

Gene: Koko\_99 Start: 49949, Stop: 49821, Start Num: 14

Candidate Starts for Koko\_99:

(Start: 14 @49949 has 35 MA's), (18, 49937), (19, 49931), (21, 49895),

Gene: Lilbunny\_92 Start: 47807, Stop: 47679, Start Num: 14

Candidate Starts for Lilbunny\_92:

(Start: 14 @47807 has 35 MA's), (18, 47795), (19, 47789), (21, 47753),

Gene: Lucyedi\_92 Start: 50524, Stop: 50396, Start Num: 16

Candidate Starts for Lucyedi\_92:

(Start: 16 @50524 has 12 MA's), (18, 50512), (19, 50506), (21, 50470), (25, 50425),

Gene: Maminiaina\_95 Start: 50479, Stop: 50351, Start Num: 15

Candidate Starts for Maminiaina\_95:

(2, 50716), (5, 50542), (Start: 15 @50479 has 15 MA's), (19, 50461), (21, 50425),

Gene: MaryV\_136 Start: 67629, Stop: 67495, Start Num: 17

Candidate Starts for MaryV\_136:

(Start: 17 @67629 has 5 MA's), (24, 67545),

Gene: McFly\_95 Start: 49240, Stop: 49112, Start Num: 14

Candidate Starts for McFly\_95:

(Start: 14 @49240 has 35 MA's), (18, 49228), (19, 49222), (21, 49186), (25, 49141),

Gene: MissWhite\_89 Start: 47475, Stop: 47347, Start Num: 16

Candidate Starts for MissWhite\_89:

(Start: 16 @47475 has 12 MA's), (18, 47463), (19, 47457),

Gene: Myxus\_96 Start: 50607, Stop: 50479, Start Num: 15

Candidate Starts for Myxus\_96:

(Start: 15 @50607 has 15 MA's), (19, 50589), (21, 50553),

Gene: Neeharika16\_94 Start: 48993, Stop: 48865, Start Num: 14

Candidate Starts for Neeharika16\_94:

(Start: 14 @48993 has 35 MA's), (18, 48981), (19, 48975), (21, 48939), (25, 48894),

Gene: Newrala\_94 Start: 49339, Stop: 49211, Start Num: 14

Candidate Starts for Newrala\_94:

(Start: 14 @49339 has 35 MA's), (18, 49327), (19, 49321), (21, 49285), (25, 49240),

Gene: PackMan\_91 Start: 48521, Stop: 48393, Start Num: 15

Candidate Starts for PackMan\_91:

(Start: 15 @48521 has 15 MA's), (19, 48503), (21, 48467),

Gene: PainterBoy\_91 Start: 50235, Stop: 50107, Start Num: 16



Candidate Starts for PainterBoy\_91:

(Start: 16 @50235 has 12 MA's), (18, 50223), (19, 50217), (21, 50181), (25, 50136),

Gene: Phaeder\_96 Start: 50482, Stop: 50354, Start Num: 15

Candidate Starts for Phaeder\_96:

(Start: 15 @50482 has 15 MA's), (19, 50464), (21, 50428),

Gene: Phlei\_73 Start: 46291, Stop: 46163, Start Num: 16

Candidate Starts for Phlei\_73:

(Start: 16 @46291 has 12 MA's), (19, 46273), (20, 46252), (23, 46210), (27, 46180), (28, 46171),

Gene: Phonnegut\_96 Start: 50494, Stop: 50366, Start Num: 15

Candidate Starts for Phonnegut\_96:

(Start: 15 @50494 has 15 MA's), (19, 50476), (21, 50440),

Gene: Pioneer\_96 Start: 50494, Stop: 50366, Start Num: 15

Candidate Starts for Pioneer\_96:

(Start: 15 @50494 has 15 MA's), (19, 50476), (21, 50440),

Gene: Pmask\_94 Start: 49540, Stop: 49412, Start Num: 14

Candidate Starts for Pmask\_94:

(Start: 14 @49540 has 35 MA's), (18, 49528), (19, 49522), (21, 49486), (25, 49441),

Gene: Priamo\_95 Start: 48583, Stop: 48455, Start Num: 14

Candidate Starts for Priamo\_95:

(Start: 14 @48583 has 35 MA's), (18, 48571), (19, 48565), (21, 48529), (25, 48484),

Gene: Rifter\_98 Start: 48727, Stop: 48599, Start Num: 14

Candidate Starts for Rifter\_98:

(Start: 14 @48727 has 35 MA's), (18, 48715), (19, 48709), (21, 48673),

Gene: Roksolana\_98 Start: 49443, Stop: 49315, Start Num: 14

Candidate Starts for Roksolana\_98:

(Start: 14 @49443 has 35 MA's), (18, 49431), (19, 49425), (21, 49389),

Gene: Salz\_93 Start: 48763, Stop: 48635, Start Num: 16

Candidate Starts for Salz\_93:

(1, 49123), (3, 48838), (4, 48829), (6, 48820), (11, 48775), (Start: 16 @48763 has 12 MA's), (18, 48751), (19, 48745),

Gene: Scherzo\_94 Start: 50525, Stop: 50397, Start Num: 15

Candidate Starts for Scherzo\_94:

(Start: 15 @50525 has 15 MA's), (19, 50507), (21, 50471),

Gene: SmellyB\_95 Start: 48895, Stop: 48767, Start Num: 14

Candidate Starts for SmellyB\_95:

(Start: 14 @48895 has 35 MA's), (18, 48883), (19, 48877), (21, 48841), (25, 48796),

Gene: SuperAwesome\_95 Start: 49579, Stop: 49451, Start Num: 14

Candidate Starts for SuperAwesome\_95:

(Start: 14 @49579 has 35 MA's), (18, 49567), (19, 49561), (21, 49525), (25, 49480),

Gene: SuperCallie99\_92 Start: 49151, Stop: 49023, Start Num: 14

Candidate Starts for SuperCallie99\_92:  
(Start: 14 @49151 has 35 MA's), (18, 49139), (19, 49133), (21, 49097),

Gene: ToneTone\_94 Start: 49110, Stop: 48982, Start Num: 14  
Candidate Starts for ToneTone\_94:  
(Start: 14 @49110 has 35 MA's), (18, 49098), (19, 49092), (21, 49056),

Gene: Tubs\_96 Start: 50482, Stop: 50354, Start Num: 15  
Candidate Starts for Tubs\_96:  
(Start: 15 @50482 has 15 MA's), (19, 50464), (21, 50428),

Gene: Tucker\_98 Start: 49313, Stop: 49185, Start Num: 14  
Candidate Starts for Tucker\_98:  
(Start: 14 @49313 has 35 MA's), (18, 49301), (19, 49295), (21, 49259),

Gene: Ugenie5\_83 Start: 47969, Stop: 47841, Start Num: 15  
Candidate Starts for Ugenie5\_83:  
(Start: 15 @47969 has 15 MA's), (19, 47951), (21, 47915),

Gene: VohminGhazi\_95 Start: 48896, Stop: 48768, Start Num: 14  
Candidate Starts for VohminGhazi\_95:  
(Start: 14 @48896 has 35 MA's), (18, 48884), (19, 48878), (21, 48842), (25, 48797),

Gene: Wiks\_97 Start: 49190, Stop: 49062, Start Num: 14  
Candidate Starts for Wiks\_97:  
(Start: 14 @49190 has 35 MA's), (18, 49178), (19, 49172), (21, 49136),

Gene: Wildcat\_150 Start: 69522, Stop: 69388, Start Num: 17  
Candidate Starts for Wildcat\_150:  
(Start: 17 @69522 has 5 MA's), (24, 69438),

Gene: Yokurt\_97 Start: 49190, Stop: 49062, Start Num: 14  
Candidate Starts for Yokurt\_97:  
(Start: 14 @49190 has 35 MA's), (18, 49178), (19, 49172), (21, 49136),

Gene: Zaka\_98 Start: 49190, Stop: 49062, Start Num: 14  
Candidate Starts for Zaka\_98:  
(Start: 14 @49190 has 35 MA's), (18, 49178), (19, 49172), (21, 49136),

Gene: Zulu\_99 Start: 49567, Stop: 49439, Start Num: 14  
Candidate Starts for Zulu\_99:  
(Start: 14 @49567 has 35 MA's), (18, 49555), (19, 49549), (21, 49513),