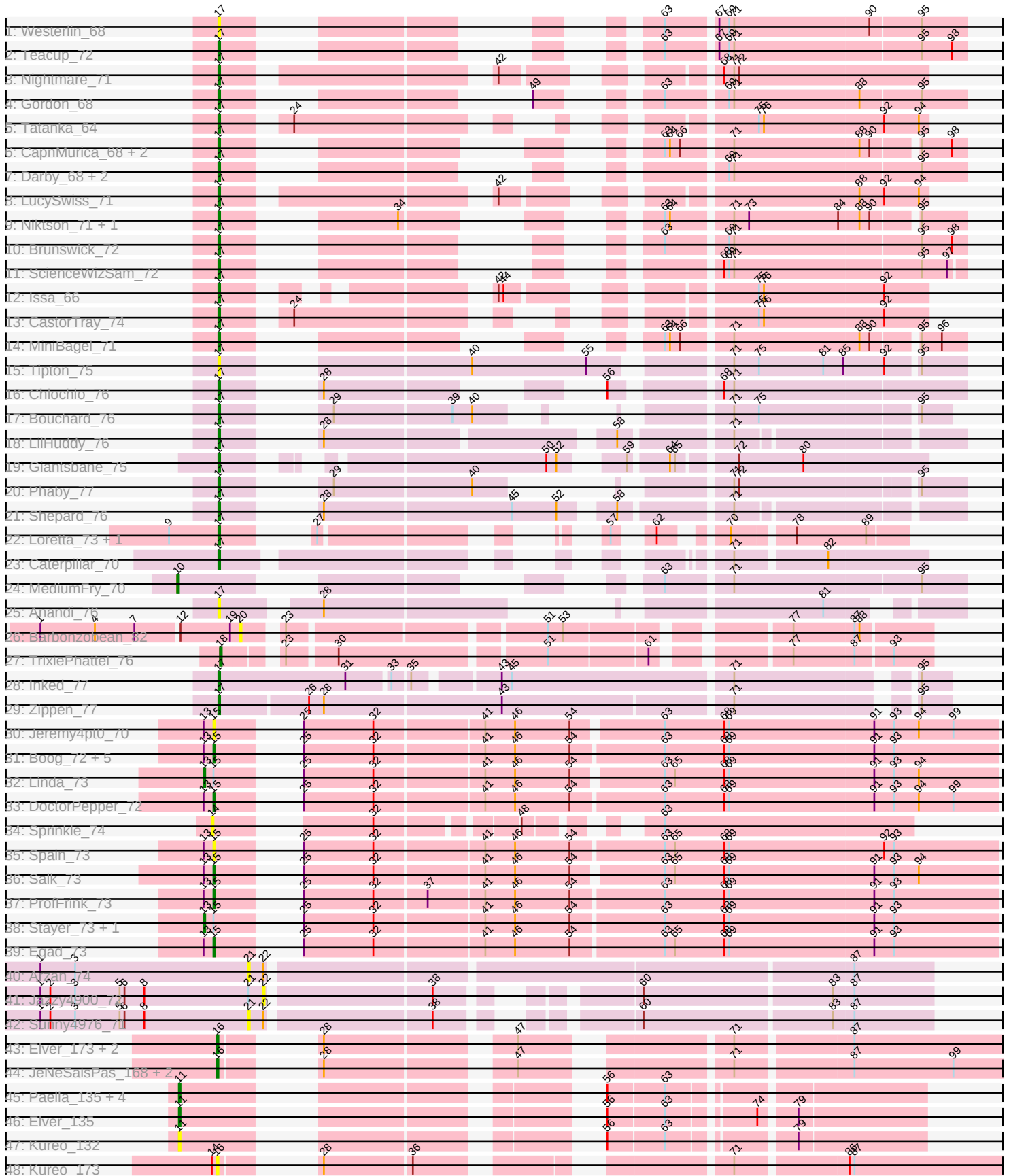


# Pham 274305



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 274305 Report

This analysis was run 02/07/26 on database version 634.

Pham number 274305 has 68 members, 19 are drafts.

Phages represented in each track:

- Track 1 : Westerlin\_68
- Track 2 : Teacup\_72
- Track 3 : Nightmare\_71
- Track 4 : Gordon\_68
- Track 5 : Tatanka\_64
- Track 6 : CapnMurica\_68, Dinallo\_66, Tenno\_70
- Track 7 : Darby\_68, Trustiboi\_69, DevitoJr\_70
- Track 8 : LucySwiss\_71
- Track 9 : Niktson\_71, ElephantMan\_71
- Track 10 : Brunswick\_72
- Track 11 : ScienceWizSam\_72
- Track 12 : Issa\_66
- Track 13 : CastorTray\_74
- Track 14 : MiniBagel\_71
- Track 15 : Tipton\_75
- Track 16 : Chlocho\_76
- Track 17 : Bouchard\_76
- Track 18 : LilHuddy\_76
- Track 19 : Giantsbane\_75
- Track 20 : Phaby\_77
- Track 21 : Shepard\_76
- Track 22 : Loretta\_73, Ingrid\_77
- Track 23 : Caterpillar\_70
- Track 24 : MediumFry\_70
- Track 25 : Anandi\_76
- Track 26 : Barbonzobean\_82
- Track 27 : TrixiePhattel\_76
- Track 28 : Inked\_77
- Track 29 : Zippen\_77
- Track 30 : Jeremy4pt0\_70
- Track 31 : Boog\_72, MrAaronian\_73, Djungelskog\_72, Sloopyjoe\_73, BronxBay\_73, StarLord\_73
- Track 32 : Linda\_73
- Track 33 : DoctorPepper\_72
- Track 34 : Sprinkle\_74
- Track 35 : Spain\_73
- Track 36 : Salk\_73

- Track 37 : ProfFrink\_73
- Track 38 : Stayer\_73, Michelle\_73
- Track 39 : Egad\_73
- Track 40 : Arzan\_74
- Track 41 : Jazzy4900\_72
- Track 42 : Sunny4976\_71
- Track 43 : Elver\_173, Gandionco\_171, Marianna39\_171
- Track 44 : JeNeSaisPas\_168, Paella\_174, Qui\_174
- Track 45 : Paella\_135, Gandionco\_131, JeNeSaisPas\_129, Marianna39\_132, Qui\_135
- Track 46 : Elver\_135
- Track 47 : Kureo\_132
- Track 48 : Kureo\_173

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

The start number called the most often in the published annotations is 17, it was called in 28 of the 49 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Anandi\_76, Bouchard\_76, Brunswick\_72, CapnMurica\_68, CastorTray\_74, Caterpillar\_70, Chlochlö\_76, Darby\_68, DevitoJr\_70, Dinallo\_66, ElephantMan\_71, Giantsbane\_75, Gordon\_68, Ingrid\_77, Inked\_77, Issa\_66, LilHuddy\_76, Loretta\_73, LucySwiss\_71, MiniBagel\_71, Nightmare\_71, Niktson\_71, Phaby\_77, ScienceWizSam\_72, Shepard\_76, Tatanka\_64, Teacup\_72, Tenno\_70, Tipton\_75, Trustiboi\_69, Westerlin\_68, Zippen\_77,

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

- 

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

- Arzan\_74, Barbonzobean\_82, Boog\_72, BronxBay\_73, Djungelskog\_72, DoctorPepper\_72, Egad\_73, Elver\_135, Elver\_173, Gandionco\_131, Gandionco\_171, Jazzy4900\_72, JeNeSaisPas\_129, JeNeSaisPas\_168, Jeremy4pt0\_70, Kureo\_132, Kureo\_173, Linda\_73, Marianna39\_132, Marianna39\_171, MediumFry\_70, Michelle\_73, MrAaronian\_73, Paella\_135, Paella\_174, ProfFrink\_73, Qui\_135, Qui\_174, Salk\_73, Sloopyjoe\_73, Spain\_73, Sprinkle\_74, StarLord\_73, Stayer\_73, Sunny4976\_71, TrixiePhattel\_76,

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

Start 10:

- Found in 1 of 68 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 49
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MediumFry\_70 (AU4),

Start 11:

- Found in 7 of 68 ( 10.3% ) of genes in pham
- Manual Annotations of this start: 3 of 49

- Called 100.0% of time when present
- Phage (with cluster) where this start called: Elver\_135 (FK), Gandionco\_131 (FK), JeNeSaisPas\_129 (FK), Kureo\_132 (FK), Marianna39\_132 (FK), Paella\_135 (FK), Qui\_135 (FK),

#### Start 13:

- Found in 15 of 68 ( 22.1% ) of genes in pham
- Manual Annotations of this start: 3 of 49
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Linda\_73 (AW), Michelle\_73 (AW), Stayer\_73 (AW),

#### Start 14:

- Found in 2 of 68 ( 2.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Sprinkle\_74 (AW),

#### Start 15:

- Found in 15 of 68 ( 22.1% ) of genes in pham
- Manual Annotations of this start: 10 of 49
- Called 80.0% of time when present
- Phage (with cluster) where this start called: Boog\_72 (AW), BronxBay\_73 (AW), Djungelskog\_72 (AW), DoctorPepper\_72 (AW), Egad\_73 (AW), Jeremy4pt0\_70 (AW), MrAaronian\_73 (AW), ProfFrink\_73 (AW), Salk\_73 (AW), Sloopyjoe\_73 (AW), Spain\_73 (AW), StarLord\_73 (AW),

#### Start 16:

- Found in 7 of 68 ( 10.3% ) of genes in pham
- Manual Annotations of this start: 3 of 49
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Elver\_173 (FK), Gandionco\_171 (FK), JeNeSaisPas\_168 (FK), Kureo\_173 (FK), Marianna39\_171 (FK), Paella\_174 (FK), Qui\_174 (FK),

#### Start 17:

- Found in 32 of 68 ( 47.1% ) of genes in pham
- Manual Annotations of this start: 28 of 49
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anandi\_76 (AU4), Bouchard\_76 (AU2), Brunswick\_72 (AU1), CapnMurica\_68 (AU1), CastorTray\_74 (AU1), Caterpillar\_70 (AU4), Chlöchlo\_76 (AU2), Darby\_68 (AU1), DevitoJr\_70 (AU1), Dinallo\_66 (AU1), ElephantMan\_71 (AU1), Giantsbane\_75 (AU2), Gordon\_68 (AU1), Ingrid\_77 (AU3), Inked\_77 (AU7), Issa\_66 (AU1), LilHuddy\_76 (AU2), Loretta\_73 (AU3), LucySwiss\_71 (AU1), MiniBagel\_71 (AU1), Nightmare\_71 (AU1), Niktson\_71 (AU1), Phaby\_77 (AU2), ScienceWizSam\_72 (AU1), Shepard\_76 (AU2), Tatanka\_64 (AU1), Teacup\_72 (AU1), Tenno\_70 (AU1), Tipton\_75 (AU2), Trustiboi\_69 (AU1), Westerlin\_68 (AU1), Zippen\_77 (AU7),

#### Start 18:

- Found in 1 of 68 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 49
- Called 100.0% of time when present

- Phage (with cluster) where this start called: TrixiePhattel\_76 (AU6),

Start 20:

- Found in 1 of 68 ( 1.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Barbonzobean\_82 (AU6),

Start 21:

- Found in 3 of 68 ( 4.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Arzan\_74 (FI), Sunny4976\_71 (FI),

Start 22:

- Found in 3 of 68 ( 4.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Jazzy4900\_72 (FI),

### **Summary by clusters:**

There are 9 clusters represented in this pham: AW, AU1, AU3, AU2, AU4, AU7, AU6, FI, FK,

Info for manual annotations of cluster AU1:

- Start number 17 was manually annotated 17 times for cluster AU1.

Info for manual annotations of cluster AU2:

- Start number 17 was manually annotated 6 times for cluster AU2.

Info for manual annotations of cluster AU3:

- Start number 17 was manually annotated 2 times for cluster AU3.

Info for manual annotations of cluster AU4:

- Start number 10 was manually annotated 1 time for cluster AU4.
- Start number 17 was manually annotated 1 time for cluster AU4.

Info for manual annotations of cluster AU6:

- Start number 18 was manually annotated 1 time for cluster AU6.

Info for manual annotations of cluster AU7:

- Start number 17 was manually annotated 2 times for cluster AU7.

Info for manual annotations of cluster AW:

- Start number 13 was manually annotated 3 times for cluster AW.
- Start number 15 was manually annotated 10 times for cluster AW.

Info for manual annotations of cluster FK:

- Start number 11 was manually annotated 3 times for cluster FK.
- Start number 16 was manually annotated 3 times for cluster FK.

**Gene Information:**

Gene: Anandi\_76 Start: 48145, Stop: 48471, Start Num: 17

Candidate Starts for Anandi\_76:

(Start: 17 @48145 has 28 MA's), (28, 48193), (81, 48406),

Gene: Arzan\_74 Start: 46947, Stop: 47339, Start Num: 21

Candidate Starts for Arzan\_74:

(1, 46821), (3, 46842), (21, 46947), (22, 46956), (87, 47292),

Gene: Barbonzobean\_82 Start: 47363, Stop: 47725, Start Num: 20

Candidate Starts for Barbonzobean\_82:

(1, 47246), (4, 47279), (7, 47303), (12, 47327), (19, 47357), (20, 47363), (23, 47381), (51, 47522), (53, 47531), (77, 47645), (87, 47681), (88, 47684),

Gene: Boog\_72 Start: 45439, Stop: 45873, Start Num: 15

Candidate Starts for Boog\_72:

(Start: 13 @45433 has 3 MA's), (Start: 15 @45439 has 10 MA's), (25, 45463), (32, 45505), (41, 45568), (46, 45586), (54, 45619), (63, 45673), (68, 45709), (69, 45712), (91, 45799), (93, 45811),

Gene: Bouchard\_76 Start: 48019, Stop: 48327, Start Num: 17

Candidate Starts for Bouchard\_76:

(Start: 17 @48019 has 28 MA's), (29, 48049), (39, 48118), (40, 48130), (71, 48205), (75, 48220), (95, 48310),

Gene: BronxBay\_73 Start: 45711, Stop: 46145, Start Num: 15

Candidate Starts for BronxBay\_73:

(Start: 13 @45705 has 3 MA's), (Start: 15 @45711 has 10 MA's), (25, 45735), (32, 45777), (41, 45840), (46, 45858), (54, 45891), (63, 45945), (68, 45981), (69, 45984), (91, 46071), (93, 46083),

Gene: Brunswick\_72 Start: 47263, Stop: 47580, Start Num: 17

Candidate Starts for Brunswick\_72:

(Start: 17 @47263 has 28 MA's), (63, 47407), (69, 47440), (71, 47443), (95, 47554), (98, 47572),

Gene: CapnMurica\_68 Start: 47980, Stop: 48297, Start Num: 17

Candidate Starts for CapnMurica\_68:

(Start: 17 @47980 has 28 MA's), (63, 48130), (64, 48133), (66, 48139), (71, 48166), (88, 48241), (90, 48247), (95, 48271), (98, 48289),

Gene: CastorTray\_74 Start: 48014, Stop: 48340, Start Num: 17

Candidate Starts for CastorTray\_74:

(Start: 17 @48014 has 28 MA's), (24, 48044), (75, 48239), (76, 48242), (92, 48314),

Gene: Caterpillar\_70 Start: 46858, Stop: 47175, Start Num: 17

Candidate Starts for Caterpillar\_70:

(Start: 17 @46858 has 28 MA's), (71, 47065), (82, 47116),

Gene: Chlochlo\_76 Start: 47546, Stop: 47869, Start Num: 17

Candidate Starts for Chlochlo\_76:

(Start: 17 @47546 has 28 MA's), (28, 47570), (56, 47672), (68, 47726), (71, 47732),

Gene: Darby\_68 Start: 47007, Stop: 47324, Start Num: 17  
Candidate Starts for Darby\_68:  
(Start: 17 @47007 has 28 MA's), (69, 47184), (71, 47187), (95, 47298),

Gene: DevitoJr\_70 Start: 47392, Stop: 47709, Start Num: 17  
Candidate Starts for DevitoJr\_70:  
(Start: 17 @47392 has 28 MA's), (69, 47569), (71, 47572), (95, 47683),

Gene: Dinallo\_66 Start: 48272, Stop: 48589, Start Num: 17  
Candidate Starts for Dinallo\_66:  
(Start: 17 @48272 has 28 MA's), (63, 48422), (64, 48425), (66, 48431), (71, 48458), (88, 48533), (90, 48539), (95, 48563), (98, 48581),

Gene: Djungelskog\_72 Start: 45713, Stop: 46147, Start Num: 15  
Candidate Starts for Djungelskog\_72:  
(Start: 13 @45707 has 3 MA's), (Start: 15 @45713 has 10 MA's), (25, 45737), (32, 45779), (41, 45842), (46, 45860), (54, 45893), (63, 45947), (68, 45983), (69, 45986), (91, 46073), (93, 46085),

Gene: DoctorPepper\_72 Start: 45415, Stop: 45849, Start Num: 15  
Candidate Starts for DoctorPepper\_72:  
(Start: 13 @45409 has 3 MA's), (Start: 15 @45415 has 10 MA's), (25, 45439), (32, 45481), (41, 45544), (46, 45562), (54, 45595), (63, 45649), (68, 45685), (69, 45688), (91, 45775), (93, 45787), (94, 45802), (99, 45823),

Gene: Egad\_73 Start: 45689, Stop: 46123, Start Num: 15  
Candidate Starts for Egad\_73:  
(Start: 13 @45683 has 3 MA's), (Start: 15 @45689 has 10 MA's), (25, 45713), (32, 45755), (41, 45818), (46, 45836), (54, 45869), (63, 45923), (65, 45929), (68, 45959), (69, 45962), (91, 46049), (93, 46061),

Gene: ElephantMan\_71 Start: 47893, Stop: 48210, Start Num: 17  
Candidate Starts for ElephantMan\_71:  
(Start: 17 @47893 has 28 MA's), (34, 47962), (63, 48043), (64, 48046), (71, 48079), (73, 48088), (84, 48142), (88, 48154), (90, 48160), (95, 48184),

Gene: Elver\_173 Start: 85588, Stop: 85980, Start Num: 16  
Candidate Starts for Elver\_173:  
(Start: 16 @85588 has 3 MA's), (28, 85612), (47, 85711), (71, 85813), (87, 85879),

Gene: Elver\_135 Start: 71797, Stop: 72144, Start Num: 11  
Candidate Starts for Elver\_135:  
(Start: 11 @71797 has 3 MA's), (56, 71974), (63, 72007), (74, 72052), (79, 72070),

Gene: Gandionco\_171 Start: 84981, Stop: 85373, Start Num: 16  
Candidate Starts for Gandionco\_171:  
(Start: 16 @84981 has 3 MA's), (28, 85005), (47, 85104), (71, 85206), (87, 85272),

Gene: Gandionco\_131 Start: 70615, Stop: 70962, Start Num: 11  
Candidate Starts for Gandionco\_131:  
(Start: 11 @70615 has 3 MA's), (56, 70792), (63, 70825),

Gene: Giantsbane\_75 Start: 46546, Stop: 46899, Start Num: 17  
Candidate Starts for Giantsbane\_75:

(Start: 17 @46546 has 28 MA's), (50, 46702), (52, 46708), (59, 46732), (64, 46753), (65, 46756), (72, 46786), (80, 46825),

Gene: Gordon\_68 Start: 47880, Stop: 48197, Start Num: 17

Candidate Starts for Gordon\_68:

(Start: 17 @47880 has 28 MA's), (49, 47982), (63, 48024), (69, 48057), (71, 48060), (88, 48135), (95, 48171),

Gene: Ingrid\_77 Start: 47844, Stop: 48110, Start Num: 17

Candidate Starts for Ingrid\_77:

(9, 47814), (Start: 17 @47844 has 28 MA's), (27, 47868), (57, 47973), (62, 47985), (70, 48012), (78, 48045), (89, 48087),

Gene: Inked\_77 Start: 48470, Stop: 48871, Start Num: 17

Candidate Starts for Inked\_77:

(Start: 17 @48470 has 28 MA's), (31, 48545), (33, 48569), (35, 48578), (43, 48623), (45, 48629), (71, 48758), (95, 48854),

Gene: Issa\_66 Start: 47054, Stop: 47380, Start Num: 17

Candidate Starts for Issa\_66:

(Start: 17 @47054 has 28 MA's), (42, 47165), (44, 47168), (75, 47279), (76, 47282), (92, 47354),

Gene: Jazzy4900\_72 Start: 47820, Stop: 48170, Start Num: 22

Candidate Starts for Jazzy4900\_72:

(1, 47685), (2, 47691), (3, 47706), (5, 47733), (6, 47736), (8, 47748), (21, 47811), (22, 47820), (38, 47913), (60, 48000), (83, 48111), (87, 48123),

Gene: JeNeSaisPas\_168 Start: 85709, Stop: 86101, Start Num: 16

Candidate Starts for JeNeSaisPas\_168:

(Start: 16 @85709 has 3 MA's), (28, 85733), (47, 85832), (71, 85934), (87, 86000), (99, 86060),

Gene: JeNeSaisPas\_129 Start: 71211, Stop: 71558, Start Num: 11

Candidate Starts for JeNeSaisPas\_129:

(Start: 11 @71211 has 3 MA's), (56, 71388), (63, 71421),

Gene: Jeremy4pt0\_70 Start: 45410, Stop: 45841, Start Num: 15

Candidate Starts for Jeremy4pt0\_70:

(Start: 13 @45404 has 3 MA's), (Start: 15 @45410 has 10 MA's), (25, 45434), (32, 45476), (41, 45539), (46, 45557), (54, 45590), (63, 45641), (68, 45677), (69, 45680), (91, 45767), (93, 45779), (94, 45794), (99, 45815),

Gene: Kureo\_132 Start: 70811, Stop: 71158, Start Num: 11

Candidate Starts for Kureo\_132:

(Start: 11 @70811 has 3 MA's), (56, 70988), (63, 71021), (79, 71084),

Gene: Kureo\_173 Start: 85163, Stop: 85549, Start Num: 16

Candidate Starts for Kureo\_173:

(14, 85160), (Start: 16 @85163 has 3 MA's), (28, 85187), (36, 85238), (71, 85385), (86, 85448), (87, 85451),

Gene: LilHuddy\_76 Start: 47672, Stop: 48037, Start Num: 17

Candidate Starts for LilHuddy\_76:

(Start: 17 @47672 has 28 MA's), (28, 47696), (58, 47852), (71, 47912),

Gene: Linda\_73 Start: 45702, Stop: 46139, Start Num: 13

Candidate Starts for Linda\_73:

(Start: 13 @45702 has 3 MA's), (Start: 15 @45708 has 10 MA's), (25, 45732), (32, 45774), (41, 45837), (46, 45855), (54, 45888), (63, 45939), (65, 45945), (68, 45975), (69, 45978), (91, 46065), (93, 46077), (94, 46092),

Gene: Loretta\_73 Start: 47844, Stop: 48110, Start Num: 17

Candidate Starts for Loretta\_73:

(9, 47814), (Start: 17 @47844 has 28 MA's), (27, 47868), (57, 47973), (62, 47985), (70, 48012), (78, 48045), (89, 48087),

Gene: LucySwiss\_71 Start: 46999, Stop: 47349, Start Num: 17

Candidate Starts for LucySwiss\_71:

(Start: 17 @46999 has 28 MA's), (42, 47134), (88, 47308), (92, 47323), (94, 47344),

Gene: Marianna39\_171 Start: 85586, Stop: 85978, Start Num: 16

Candidate Starts for Marianna39\_171:

(Start: 16 @85586 has 3 MA's), (28, 85610), (47, 85709), (71, 85811), (87, 85877),

Gene: Marianna39\_132 Start: 71220, Stop: 71567, Start Num: 11

Candidate Starts for Marianna39\_132:

(Start: 11 @71220 has 3 MA's), (56, 71397), (63, 71430),

Gene: MediumFry\_70 Start: 47193, Stop: 47540, Start Num: 10

Candidate Starts for MediumFry\_70:

(Start: 10 @47193 has 1 MA's), (63, 47367), (71, 47403), (95, 47514),

Gene: Michelle\_73 Start: 45704, Stop: 46144, Start Num: 13

Candidate Starts for Michelle\_73:

(Start: 13 @45704 has 3 MA's), (Start: 15 @45710 has 10 MA's), (25, 45734), (32, 45776), (41, 45839), (46, 45857), (54, 45890), (63, 45944), (68, 45980), (69, 45983), (91, 46070), (93, 46082),

Gene: MiniBagel\_71 Start: 47984, Stop: 48301, Start Num: 17

Candidate Starts for MiniBagel\_71:

(Start: 17 @47984 has 28 MA's), (63, 48134), (64, 48137), (66, 48143), (71, 48170), (88, 48245), (90, 48251), (95, 48275), (96, 48287),

Gene: MrAaronian\_73 Start: 45710, Stop: 46144, Start Num: 15

Candidate Starts for MrAaronian\_73:

(Start: 13 @45704 has 3 MA's), (Start: 15 @45710 has 10 MA's), (25, 45734), (32, 45776), (41, 45839), (46, 45857), (54, 45890), (63, 45944), (68, 45980), (69, 45983), (91, 46070), (93, 46082),

Gene: Nightmare\_71 Start: 48297, Stop: 48647, Start Num: 17

Candidate Starts for Nightmare\_71:

(Start: 17 @48297 has 28 MA's), (42, 48432), (68, 48525), (71, 48531), (72, 48534),

Gene: Niktson\_71 Start: 47893, Stop: 48210, Start Num: 17

Candidate Starts for Niktson\_71:

(Start: 17 @47893 has 28 MA's), (34, 47962), (63, 48043), (64, 48046), (71, 48079), (73, 48088), (84, 48142), (88, 48154), (90, 48160), (95, 48184),

Gene: Paella\_174 Start: 86462, Stop: 86854, Start Num: 16

Candidate Starts for Paella\_174:

(Start: 16 @86462 has 3 MA's), (28, 86486), (47, 86585), (71, 86687), (87, 86753), (99, 86813),

Gene: Paella\_135 Start: 72360, Stop: 72707, Start Num: 11

Candidate Starts for Paella\_135:

(Start: 11 @72360 has 3 MA's), (56, 72537), (63, 72570),

Gene: Phaby\_77 Start: 48203, Stop: 48517, Start Num: 17

Candidate Starts for Phaby\_77:

(Start: 17 @48203 has 28 MA's), (29, 48233), (40, 48314), (71, 48386), (72, 48389), (95, 48491),

Gene: ProfFrink\_73 Start: 45688, Stop: 46122, Start Num: 15

Candidate Starts for ProfFrink\_73:

(Start: 13 @45682 has 3 MA's), (Start: 15 @45688 has 10 MA's), (25, 45712), (32, 45754), (37, 45784), (41, 45817), (46, 45835), (54, 45868), (63, 45922), (68, 45958), (69, 45961), (91, 46048), (93, 46060),

Gene: Qui\_174 Start: 86460, Stop: 86852, Start Num: 16

Candidate Starts for Qui\_174:

(Start: 16 @86460 has 3 MA's), (28, 86484), (47, 86583), (71, 86685), (87, 86751), (99, 86811),

Gene: Qui\_135 Start: 72360, Stop: 72707, Start Num: 11

Candidate Starts for Qui\_135:

(Start: 11 @72360 has 3 MA's), (56, 72537), (63, 72570),

Gene: Salk\_73 Start: 45708, Stop: 46139, Start Num: 15

Candidate Starts for Salk\_73:

(Start: 13 @45702 has 3 MA's), (Start: 15 @45708 has 10 MA's), (25, 45732), (32, 45774), (41, 45837), (46, 45855), (54, 45888), (63, 45939), (65, 45945), (68, 45975), (69, 45978), (91, 46065), (93, 46077), (94, 46092),

Gene: ScienceWizSam\_72 Start: 47594, Stop: 47908, Start Num: 17

Candidate Starts for ScienceWizSam\_72:

(Start: 17 @47594 has 28 MA's), (68, 47768), (69, 47771), (71, 47774), (95, 47885), (97, 47900),

Gene: Shepard\_76 Start: 47525, Stop: 47896, Start Num: 17

Candidate Starts for Shepard\_76:

(Start: 17 @47525 has 28 MA's), (28, 47549), (45, 47660), (52, 47687), (58, 47711), (71, 47771),

Gene: Sloopyjoe\_73 Start: 45712, Stop: 46146, Start Num: 15

Candidate Starts for Sloopyjoe\_73:

(Start: 13 @45706 has 3 MA's), (Start: 15 @45712 has 10 MA's), (25, 45736), (32, 45778), (41, 45841), (46, 45859), (54, 45892), (63, 45946), (68, 45982), (69, 45985), (91, 46072), (93, 46084),

Gene: Spain\_73 Start: 45710, Stop: 46144, Start Num: 15

Candidate Starts for Spain\_73:

(Start: 13 @45704 has 3 MA's), (Start: 15 @45710 has 10 MA's), (25, 45734), (32, 45776), (41, 45839), (46, 45857), (54, 45890), (63, 45944), (65, 45950), (68, 45980), (69, 45983), (92, 46076), (93, 46082),

Gene: Sprinkle\_74 Start: 46402, Stop: 46740, Start Num: 14

Candidate Starts for Sprinkle\_74:

(14, 46402), (32, 46468), (48, 46540), (63, 46591),

Gene: StarLord\_73 Start: 45705, Stop: 46139, Start Num: 15

Candidate Starts for StarLord\_73:

(Start: 13 @45699 has 3 MA's), (Start: 15 @45705 has 10 MA's), (25, 45729), (32, 45771), (41, 45834), (46, 45852), (54, 45885), (63, 45939), (68, 45975), (69, 45978), (91, 46065), (93, 46077),

Gene: Stayer\_73 Start: 45702, Stop: 46142, Start Num: 13

Candidate Starts for Stayer\_73:

(Start: 13 @45702 has 3 MA's), (Start: 15 @45708 has 10 MA's), (25, 45732), (32, 45774), (41, 45837), (46, 45855), (54, 45888), (63, 45942), (68, 45978), (69, 45981), (91, 46068), (93, 46080),

Gene: Sunny4976\_71 Start: 47811, Stop: 48170, Start Num: 21

Candidate Starts for Sunny4976\_71:

(1, 47685), (2, 47691), (3, 47706), (5, 47733), (6, 47736), (8, 47748), (21, 47811), (22, 47820), (38, 47913), (60, 48000), (83, 48111), (87, 48123),

Gene: Tatanka\_64 Start: 47501, Stop: 47827, Start Num: 17

Candidate Starts for Tatanka\_64:

(Start: 17 @47501 has 28 MA's), (24, 47531), (75, 47726), (76, 47729), (92, 47801), (94, 47822),

Gene: Teacup\_72 Start: 47933, Stop: 48250, Start Num: 17

Candidate Starts for Teacup\_72:

(Start: 17 @47933 has 28 MA's), (63, 48077), (67, 48104), (69, 48110), (71, 48113), (95, 48224), (98, 48242),

Gene: Tenno\_70 Start: 48017, Stop: 48334, Start Num: 17

Candidate Starts for Tenno\_70:

(Start: 17 @48017 has 28 MA's), (63, 48167), (64, 48170), (66, 48176), (71, 48203), (88, 48278), (90, 48284), (95, 48308), (98, 48326),

Gene: Tipton\_75 Start: 48040, Stop: 48423, Start Num: 17

Candidate Starts for Tipton\_75:

(Start: 17 @48040 has 28 MA's), (40, 48151), (55, 48220), (71, 48289), (75, 48304), (81, 48343), (85, 48355), (92, 48379), (95, 48397),

Gene: TrixiePhattel\_76 Start: 45610, Stop: 45984, Start Num: 18

Candidate Starts for TrixiePhattel\_76:

(Start: 18 @45610 has 1 MA's), (23, 45637), (30, 45664), (51, 45781), (61, 45838), (77, 45904), (87, 45940), (93, 45961),

Gene: Trustiboi\_69 Start: 47616, Stop: 47933, Start Num: 17

Candidate Starts for Trustiboi\_69:

(Start: 17 @47616 has 28 MA's), (69, 47793), (71, 47796), (95, 47907),

Gene: Westerlin\_68 Start: 48703, Stop: 49020, Start Num: 17

Candidate Starts for Westerlin\_68:

(Start: 17 @48703 has 28 MA's), (63, 48847), (67, 48874), (69, 48880), (71, 48883), (90, 48964), (95, 48994),

Gene: Zippen\_77 Start: 48335, Stop: 48745, Start Num: 17

Candidate Starts for Zippen\_77:

(Start: 17 @48335 has 28 MA's), (26, 48386), (28, 48395), (43, 48500), (71, 48632), (95, 48728),