



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 308975 Report

This analysis was run 06/27/26 on database version 652.

Pham number 308975 has 34 members, 7 are drafts.

Phages represented in each track:

- Track 1 : Kovu\_54
- Track 2 : Nostromo\_44
- Track 3 : GramZayde\_48
- Track 4 : Colusalem\_47, Amelia\_46, HannahPhantana\_47, Damocles\_50
- Track 5 : Bible12\_50
- Track 6 : Pineda\_48
- Track 7 : Daob\_48
- Track 8 : Bedetta\_51
- Track 9 : OtsoOtso\_47, Cote\_48, Polka\_46
- Track 10 : Jerole\_47
- Track 11 : Coral\_46
- Track 12 : Sarge\_54
- Track 13 : AirForce1\_4
- Track 14 : Bauer\_73
- Track 15 : Skitty\_48, Merpity\_55, MrSmee\_54
- Track 16 : Skyerus\_46, Raya\_51
- Track 17 : Papyrus\_93, MontyDev\_95
- Track 18 : Yelo\_90
- Track 19 : Riparian\_95
- Track 20 : Nilo\_96, Zenon\_95
- Track 21 : Send513\_92
- Track 22 : Weiss13\_93, Rope\_92
- Track 23 : Candle\_89

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

The start number called the most often in the published annotations is 8, it was called in 12 of the 27 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Amelia\_46, Colusalem\_47, Coral\_46, Cote\_48, Damocles\_50, Daob\_48, HannahPhantana\_47, Kovu\_54, Merpity\_55, MrSmee\_54, OtsoOtso\_47, Pineda\_48, Polka\_46, Raya\_51, Skitty\_48, Skyerus\_46,

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

- Bedetta\_51, Bibble12\_50, GramZayde\_48, Jerole\_47,

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

- AirForce1\_4, Bauer\_73, Candle\_89, MontyDev\_95, Nilo\_96, Nostromo\_44, Papyrus\_93, Riparian\_95, Rope\_92, Sarge\_54, Send513\_92, Weiss13\_93, Yelo\_90, Zenon\_95,

### Summary by start number:

Start 8:

- Found in 20 of 34 ( 58.8% ) of genes in pham
- Manual Annotations of this start: 12 of 27
- Called 80.0% of time when present
- Phage (with cluster) where this start called: Amelia\_46 (AS2), Colusalem\_47 (AS2), Coral\_46 (AS2), Cote\_48 (AS2), Damocles\_50 (AS2), Daob\_48 (AS2), HannahPhantana\_47 (AS2), Kovu\_54 (AL), Merpity\_55 (FQ1), MrSmee\_54 (FQ1), OtsoOtso\_47 (AS2), Pineda\_48 (AS2), Polka\_46 (AS2), Raya\_51 (FQ2), Skitty\_48 (FQ1), Skyerus\_46 (FQ2),

Start 9:

- Found in 1 of 34 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 1 of 27
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AirForce1\_4 (FL),

Start 10:

- Found in 1 of 34 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 1 of 27
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bauer\_73 (FN),

Start 11:

- Found in 1 of 34 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 1 of 27
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sarge\_54 (FB),

Start 12:

- Found in 11 of 34 ( 32.4% ) of genes in pham
- Manual Annotations of this start: 11 of 27
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Candle\_89 (R), MontyDev\_95 (R), Nilo\_96 (R), Nostromo\_44 (AO3), Papyrus\_93 (R), Riparian\_95 (R), Rope\_92 (R), Send513\_92 (R), Weiss13\_93 (R), Yelo\_90 (R), Zenon\_95 (R),

Start 13:

- Found in 14 of 34 ( 41.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 21.4% of time when present
- Phage (with cluster) where this start called: Bedetta\_51 (AS2), Bibble12\_50 (AS2), GramZayde\_48 (AS2),

Start 14:

- Found in 18 of 34 ( 52.9% ) of genes in pham
- Manual Annotations of this start: 1 of 27
- Called 5.6% of time when present
- Phage (with cluster) where this start called: Jerole\_47 (AS2),

### **Summary by clusters:**

There are 9 clusters represented in this pham: AS2, AL, FB, R, AO3, FQ2, FQ1, FL, FN,

Info for manual annotations of cluster AL:

- Start number 8 was manually annotated 1 time for cluster AL.

Info for manual annotations of cluster AO3:

- Start number 12 was manually annotated 1 time for cluster AO3.

Info for manual annotations of cluster AS2:

- Start number 8 was manually annotated 9 times for cluster AS2.
- Start number 14 was manually annotated 1 time for cluster AS2.

Info for manual annotations of cluster FB:

- Start number 11 was manually annotated 1 time for cluster FB.

Info for manual annotations of cluster FL:

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

Info for manual annotations of cluster FN:

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

Info for manual annotations of cluster FQ1:

- Start number 8 was manually annotated 2 times for cluster FQ1.

Info for manual annotations of cluster R:

- Start number 12 was manually annotated 10 times for cluster R.

### **Gene Information:**

Gene: AirForce1\_4 Start: 2243, Stop: 2926, Start Num: 9

Candidate Starts for AirForce1\_4:

(Start: 9 @2243 has 1 MA's), (17, 2291), (24, 2360), (31, 2426), (36, 2468), (40, 2498), (41, 2504), (45, 2549), (48, 2567), (49, 2570), (52, 2594), (56, 2636), (57, 2642), (61, 2762), (62, 2789), (64, 2864), (66, 2882),

Gene: Amelia\_46 Start: 29931, Stop: 30581, Start Num: 8

Candidate Starts for Amelia\_46:

(1, 29559), (4, 29736), (5, 29742), (Start: 8 @29931 has 12 MA's), (13, 29946), (Start: 14 @29949 has 1 MA's), (15, 29952), (17, 29979), (23, 30039), (27, 30060), (28, 30081), (30, 30090), (33, 30102), (35, 30129), (37, 30138), (48, 30234), (50, 30240), (53, 30270), (58, 30321), (61, 30429), (66, 30549),

Gene: Bauer\_73 Start: 40976, Stop: 41665, Start Num: 10

Candidate Starts for Bauer\_73:

(3, 40748), (Start: 10 @40976 has 1 MA's), (18, 41021), (38, 41180), (44, 41240), (46, 41279), (48, 41294), (51, 41318), (61, 41489), (62, 41516), (63, 41594), (64, 41603), (66, 41621), (68, 41654),

Gene: Bedetta\_51 Start: 30113, Stop: 30748, Start Num: 13

Candidate Starts for Bedetta\_51:

(4, 29903), (5, 29909), (Start: 8 @30098 has 12 MA's), (13, 30113), (Start: 14 @30116 has 1 MA's), (15, 30119), (17, 30146), (23, 30206), (27, 30227), (28, 30248), (30, 30257), (33, 30269), (35, 30296), (37, 30305), (48, 30401), (50, 30407), (53, 30437), (58, 30488), (61, 30596), (66, 30716),

Gene: Bible12\_50 Start: 29941, Stop: 30576, Start Num: 13

Candidate Starts for Bible12\_50:

(4, 29731), (5, 29737), (Start: 8 @29926 has 12 MA's), (13, 29941), (Start: 14 @29944 has 1 MA's), (15, 29947), (17, 29974), (23, 30034), (27, 30055), (28, 30076), (30, 30085), (33, 30097), (35, 30124), (37, 30133), (48, 30229), (50, 30235), (53, 30265), (58, 30316), (61, 30424), (66, 30544),

Gene: Candle\_89 Start: 69025, Stop: 69693, Start Num: 12

Candidate Starts for Candle\_89:

(Start: 12 @69025 has 11 MA's), (20, 69097), (22, 69112), (26, 69160), (29, 69193), (32, 69208), (39, 69256), (43, 69310), (47, 69349), (52, 69379), (59, 69463),

Gene: Colusalem\_47 Start: 29908, Stop: 30558, Start Num: 8

Candidate Starts for Colusalem\_47:

(1, 29536), (4, 29713), (5, 29719), (Start: 8 @29908 has 12 MA's), (13, 29923), (Start: 14 @29926 has 1 MA's), (15, 29929), (17, 29956), (23, 30016), (27, 30037), (28, 30058), (30, 30067), (33, 30079), (35, 30106), (37, 30115), (48, 30211), (50, 30217), (53, 30247), (58, 30298), (61, 30406), (66, 30526),

Gene: Coral\_46 Start: 29799, Stop: 30449, Start Num: 8

Candidate Starts for Coral\_46:

(4, 29604), (5, 29610), (Start: 8 @29799 has 12 MA's), (13, 29814), (Start: 14 @29817 has 1 MA's), (15, 29820), (17, 29847), (23, 29907), (27, 29928), (28, 29949), (30, 29958), (33, 29970), (35, 29997), (37, 30006), (48, 30102), (50, 30108), (53, 30138), (58, 30189), (61, 30297), (66, 30417),

Gene: Cote\_48 Start: 30276, Stop: 30926, Start Num: 8

Candidate Starts for Cote\_48:

(Start: 8 @30276 has 12 MA's), (13, 30291), (Start: 14 @30294 has 1 MA's), (15, 30297), (17, 30324), (23, 30384), (27, 30405), (28, 30426), (30, 30435), (33, 30447), (35, 30474), (37, 30483), (48, 30579), (50, 30585), (53, 30615), (58, 30666), (61, 30774), (66, 30894),

Gene: Damocles\_50 Start: 30067, Stop: 30717, Start Num: 8

Candidate Starts for Damocles\_50:

(1, 29695), (4, 29872), (5, 29878), (Start: 8 @30067 has 12 MA's), (13, 30082), (Start: 14 @30085 has 1 MA's), (15, 30088), (17, 30115), (23, 30175), (27, 30196), (28, 30217), (30, 30226), (33, 30238), (35, 30265), (37, 30274), (48, 30370), (50, 30376), (53, 30406), (58, 30457), (61, 30565), (66, 30685),

Gene: Daob\_48 Start: 30284, Stop: 30934, Start Num: 8

Candidate Starts for Daob\_48:

(4, 30089), (5, 30095), (Start: 8 @30284 has 12 MA's), (13, 30299), (Start: 14 @30302 has 1 MA's), (15, 30305), (17, 30332), (19, 30347), (23, 30392), (27, 30413), (28, 30434), (30, 30443), (33, 30455), (35, 30482), (37, 30491), (48, 30587), (50, 30593), (53, 30623), (58, 30674), (61, 30782), (66, 30902),

Gene: GramZayde\_48 Start: 30127, Stop: 30762, Start Num: 13

Candidate Starts for GramZayde\_48:

(Start: 8 @30112 has 12 MA's), (13, 30127), (Start: 14 @30130 has 1 MA's), (15, 30133), (17, 30160), (23, 30220), (27, 30241), (28, 30262), (30, 30271), (33, 30283), (35, 30310), (37, 30319), (48, 30415), (50, 30421), (53, 30451), (58, 30502), (61, 30610), (66, 30730),

Gene: HannahPhantana\_47 Start: 29926, Stop: 30576, Start Num: 8

Candidate Starts for HannahPhantana\_47:

(1, 29554), (4, 29731), (5, 29737), (Start: 8 @29926 has 12 MA's), (13, 29941), (Start: 14 @29944 has 1 MA's), (15, 29947), (17, 29974), (23, 30034), (27, 30055), (28, 30076), (30, 30085), (33, 30097), (35, 30124), (37, 30133), (48, 30229), (50, 30235), (53, 30265), (58, 30316), (61, 30424), (66, 30544),

Gene: Jerole\_47 Start: 30068, Stop: 30700, Start Num: 14

Candidate Starts for Jerole\_47:

(1, 29678), (4, 29855), (5, 29861), (Start: 8 @30050 has 12 MA's), (13, 30065), (Start: 14 @30068 has 1 MA's), (15, 30071), (17, 30098), (23, 30158), (27, 30179), (28, 30200), (30, 30209), (33, 30221), (35, 30248), (37, 30257), (48, 30353), (50, 30359), (53, 30389), (58, 30440), (61, 30548), (66, 30668),

Gene: Kovu\_54 Start: 31604, Stop: 32269, Start Num: 8

Candidate Starts for Kovu\_54:

(Start: 8 @31604 has 12 MA's), (Start: 14 @31625 has 1 MA's), (17, 31655), (19, 31670), (27, 31736), (28, 31757), (31, 31769), (35, 31805), (40, 31841), (50, 31916), (55, 31967), (56, 31979), (57, 31985), (60, 32102), (61, 32105), (64, 32207),

Gene: Merpity\_55 Start: 31657, Stop: 32364, Start Num: 8

Candidate Starts for Merpity\_55:

(7, 31609), (Start: 8 @31657 has 12 MA's), (Start: 14 @31684 has 1 MA's), (17, 31714), (18, 31717), (25, 31792), (31, 31843), (36, 31885), (41, 31921), (44, 31951), (46, 31990), (48, 32005), (60, 32197), (61, 32200), (62, 32227), (63, 32293), (64, 32302), (66, 32320), (67, 32347),

Gene: MontyDev\_95 Start: 68890, Stop: 69558, Start Num: 12

Candidate Starts for MontyDev\_95:

(Start: 12 @68890 has 11 MA's), (16, 68908), (20, 68962), (22, 68977), (26, 69025), (29, 69058), (32, 69073), (39, 69121), (43, 69175), (47, 69214), (52, 69244), (59, 69328),

Gene: MrSmee\_54 Start: 31631, Stop: 32338, Start Num: 8

Candidate Starts for MrSmee\_54:

(7, 31583), (Start: 8 @31631 has 12 MA's), (Start: 14 @31658 has 1 MA's), (17, 31688), (18, 31691), (25, 31766), (31, 31817), (36, 31859), (41, 31895), (44, 31925), (46, 31964), (48, 31979), (60, 32171), (61, 32174), (62, 32201), (63, 32267), (64, 32276), (66, 32294), (67, 32321),

Gene: Nilo\_96 Start: 69390, Stop: 70058, Start Num: 12

Candidate Starts for Nilo\_96:

(Start: 12 @69390 has 11 MA's), (20, 69462), (22, 69477), (26, 69525), (29, 69558), (32, 69573), (39, 69621), (43, 69675), (47, 69714), (59, 69828),

Gene: Nostromo\_44 Start: 33725, Stop: 34474, Start Num: 12

Candidate Starts for Nostromo\_44:

(Start: 12 @33725 has 11 MA's), (17, 33764), (25, 33881), (34, 33956), (36, 33977), (42, 34034), (57, 34172), (60, 34289), (61, 34292), (64, 34400),

Gene: OtsoOtso\_47 Start: 29780, Stop: 30430, Start Num: 8

Candidate Starts for OtsoOtso\_47:

(Start: 8 @29780 has 12 MA's), (13, 29795), (Start: 14 @29798 has 1 MA's), (15, 29801), (17, 29828), (23, 29888), (27, 29909), (28, 29930), (30, 29939), (33, 29951), (35, 29978), (37, 29987), (48, 30083), (50, 30089), (53, 30119), (58, 30170), (61, 30278), (66, 30398),

Gene: Papyrus\_93 Start: 68323, Stop: 68991, Start Num: 12

Candidate Starts for Papyrus\_93:

(Start: 12 @68323 has 11 MA's), (16, 68341), (20, 68395), (22, 68410), (26, 68458), (29, 68491), (32, 68506), (39, 68554), (43, 68608), (47, 68647), (52, 68677), (59, 68761),

Gene: Pineda\_48 Start: 30096, Stop: 30746, Start Num: 8

Candidate Starts for Pineda\_48:

(4, 29901), (5, 29907), (Start: 8 @30096 has 12 MA's), (13, 30111), (Start: 14 @30114 has 1 MA's), (15, 30117), (17, 30144), (23, 30204), (27, 30225), (28, 30246), (30, 30255), (33, 30267), (35, 30294), (37, 30303), (48, 30399), (50, 30405), (53, 30435), (58, 30486), (61, 30594), (66, 30714),

Gene: Polka\_46 Start: 29780, Stop: 30430, Start Num: 8

Candidate Starts for Polka\_46:

(Start: 8 @29780 has 12 MA's), (13, 29795), (Start: 14 @29798 has 1 MA's), (15, 29801), (17, 29828), (23, 29888), (27, 29909), (28, 29930), (30, 29939), (33, 29951), (35, 29978), (37, 29987), (48, 30083), (50, 30089), (53, 30119), (58, 30170), (61, 30278), (66, 30398),

Gene: Raya\_51 Start: 30393, Stop: 31100, Start Num: 8

Candidate Starts for Raya\_51:

(Start: 8 @30393 has 12 MA's), (17, 30450), (18, 30453), (25, 30528), (31, 30579), (36, 30621), (41, 30657), (44, 30687), (46, 30726), (48, 30741), (60, 30933), (61, 30936), (62, 30963), (63, 31029), (64, 31038), (66, 31056), (67, 31083),

Gene: Riparian\_95 Start: 68835, Stop: 69503, Start Num: 12

Candidate Starts for Riparian\_95:

(Start: 12 @68835 has 11 MA's), (20, 68907), (22, 68922), (26, 68970), (29, 69003), (32, 69018), (39, 69066), (43, 69120), (47, 69159), (59, 69273),

Gene: Rope\_92 Start: 68642, Stop: 69310, Start Num: 12

Candidate Starts for Rope\_92:

(Start: 12 @68642 has 11 MA's), (20, 68714), (22, 68729), (26, 68777), (29, 68810), (32, 68825), (39, 68873), (43, 68927), (47, 68966), (52, 68996), (59, 69080),

Gene: Sarge\_54 Start: 30991, Stop: 31644, Start Num: 11

Candidate Starts for Sarge\_54:

(2, 30751), (6, 30874), (Start: 11 @30991 has 1 MA's), (17, 31030), (19, 31045), (21, 31069), (36, 31186), (40, 31216), (49, 31288), (52, 31312), (54, 31339), (61, 31480), (64, 31582),

Gene: Send513\_92 Start: 69180, Stop: 69848, Start Num: 12

Candidate Starts for Send513\_92:

(Start: 12 @69180 has 11 MA's), (20, 69252), (22, 69267), (26, 69315), (32, 69363), (39, 69411), (43, 69465), (47, 69504), (59, 69618),

Gene: Skitty\_48 Start: 29473, Stop: 30180, Start Num: 8

Candidate Starts for Skitty\_48:

(7, 29425), (Start: 8 @29473 has 12 MA's), (Start: 14 @29500 has 1 MA's), (17, 29530), (18, 29533), (25, 29608), (31, 29659), (36, 29701), (41, 29737), (44, 29767), (46, 29806), (48, 29821), (60, 30013), (61, 30016), (62, 30043), (63, 30109), (64, 30118), (66, 30136), (67, 30163),

Gene: Skyerus\_46 Start: 28511, Stop: 29218, Start Num: 8

Candidate Starts for Skyerus\_46:

(Start: 8 @28511 has 12 MA's), (17, 28568), (18, 28571), (25, 28646), (31, 28697), (36, 28739), (41, 28775), (44, 28805), (46, 28844), (48, 28859), (60, 29051), (61, 29054), (62, 29081), (63, 29147), (64, 29156), (66, 29174), (67, 29201),

Gene: Weiss13\_93 Start: 69072, Stop: 69740, Start Num: 12

Candidate Starts for Weiss13\_93:

(Start: 12 @69072 has 11 MA's), (20, 69144), (22, 69159), (26, 69207), (29, 69240), (32, 69255), (39, 69303), (43, 69357), (47, 69396), (52, 69426), (59, 69510),

Gene: Yelo\_90 Start: 69071, Stop: 69751, Start Num: 12

Candidate Starts for Yelo\_90:

(Start: 12 @69071 has 11 MA's), (20, 69143), (22, 69158), (26, 69206), (29, 69239), (32, 69254), (39, 69302), (43, 69356), (47, 69395), (59, 69509), (65, 69710),

Gene: Zenon\_95 Start: 69366, Stop: 70034, Start Num: 12

Candidate Starts for Zenon\_95:

(Start: 12 @69366 has 11 MA's), (20, 69438), (22, 69453), (26, 69501), (29, 69534), (32, 69549), (39, 69597), (43, 69651), (47, 69690), (59, 69804),