



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 294748 Report

This analysis was run 04/18/26 on database version 643.

Pham number 294748 has 61 members, 17 are drafts.

Phages represented in each track:

- Track 1 : DarthPhader\_18
- Track 2 : Refuge\_20, Zimmer\_19
- Track 3 : Steamy\_18
- Track 4 : Jeeves\_16
- Track 5 : Sunhee\_15
- Track 6 : SororFago\_16
- Track 7 : Gail\_16
- Track 8 : Luchador\_18
- Track 9 : Chargerpower\_17
- Track 10 : Beemo\_18, Phaeder\_18, Ugenie5\_15, Fayely\_18, Ayanochan\_19, Phonnegut\_18, Sachima\_16, EdogawaKiddo\_16, ExplosioNervosa\_18, Pioneer\_18, Tubs\_18, Scherzo\_18, Lilleskat\_16, Qobbit\_18
- Track 11 : Maminiaina\_18, BogosyJay\_18, Elephantoon\_18, Darrell\_19
- Track 12 : EmyBug\_18, Alma\_18, Conquerage\_18, Eidsmoe\_18, Priya\_18, Spouty\_18
- Track 13 : Toaka\_16
- Track 14 : CogOmlette\_15, Rahalelujah\_16, WorldCup\_15, Bellris\_15, Minispark\_15
- Track 15 : Aliter\_18, Myxus\_18, Catalina\_18, HortumSL17\_18, PackMan\_18
- Track 16 : SheaKeira\_17, DreamTeam1\_17, Klodlith\_17, Charm\_17
- Track 17 : Keziacharles14\_16
- Track 18 : Arissanae\_16
- Track 19 : Celestialunch\_17, MegTheThird\_16
- Track 20 : Hanray\_17, RyeScarlet\_19, Onglai\_17, Horex\_17
- Track 21 : Jiawan\_17
- Track 22 : LoneWolf\_18
- Track 23 : Yecey3\_17
- Track 24 : Vanisoa\_16

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

The start number called the most often in the published annotations is 15, it was called in 35 of the 44 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alma\_18, Arissanae\_16, Ayanochan\_19, Beemo\_18, Bellris\_15, BogosyJay\_18, Celestiallunch\_17, Chargerpower\_17, Charm\_17, CogOmlette\_15, Conquerage\_18, Darrell\_19, DarthPhader\_18, DreamTeam1\_17, EdogawaKiddo\_16, Eidsmoe\_18, Elephantoon\_18, EmyBug\_18, ExplosioNervosa\_18, Fayely\_18, Hanray\_17, Halex\_17, Jiawan\_17, Keziacharles14\_16, Klodlith\_17, Lilleskat\_16, LoneWolf\_18, Luchador\_18, Maminiaina\_18, MegTheThird\_16, Minispark\_15, Onglai\_17, Phaeder\_18, Phonnegut\_18, Pioneer\_18, Priya\_18, Qobbit\_18, Rahalelujah\_16, Refuge\_20, RyeScarlet\_19, Sachima\_16, Scherzo\_18, SheaKeira\_17, Spouty\_18, Toaka\_16, Tubs\_18, Ugenie5\_15, Vanisoa\_16, WorldCup\_15, Yecey3\_17, Zimmer\_19,

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

- Aliter\_18, Catalina\_18, HortumSL17\_18, Myxus\_18, PackMan\_18, Steamy\_18,

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

- Gail\_16, Jeeves\_16, SororFago\_16, Sunhee\_15,

### Summary by start number:

Start 3:

- Found in 7 of 61 ( 11.5% ) of genes in pham
- Manual Annotations of this start: 1 of 44
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Steamy\_18 (A12),

Start 10:

- Found in 29 of 61 ( 47.5% ) of genes in pham
- Manual Annotations of this start: 5 of 44
- Called 17.2% of time when present
- Phage (with cluster) where this start called: Aliter\_18 (A9), Catalina\_18 (A9), HortumSL17\_18 (A9), Myxus\_18 (A9), PackMan\_18 (A9),

Start 13:

- Found in 1 of 61 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 44
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gail\_16 (A14),

Start 14:

- Found in 3 of 61 ( 4.9% ) of genes in pham
- Manual Annotations of this start: 2 of 44
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jeeves\_16 (A14), SororFago\_16 (A14), Sunhee\_15 (A14),

Start 15:

- Found in 57 of 61 ( 93.4% ) of genes in pham
- Manual Annotations of this start: 35 of 44
- Called 89.5% of time when present
- Phage (with cluster) where this start called: Alma\_18 (A9), Arissanae\_16 (A9), Ayanochan\_19 (A9), Beemo\_18 (A9), Bellris\_15 (A9), BogosyJay\_18 (A9), Celestiallunch\_17 (A9), Chargerpower\_17 (A22), Charm\_17 (A9), CogOmlette\_15 (A9), Conquerage\_18 (A9), Darrell\_19 (A9), DarthPhader\_18 (A12), DreamTeam1\_17

(A9), EdogawaKiddo\_16 (A9), Eidsmoe\_18 (A9), Elephantoon\_18 (A9), EmyBug\_18 (A9), ExplosioNervosa\_18 (A9), Fayely\_18 (A9), Hanray\_17 (A9), Horex\_17 (A9), Jiawan\_17 (A9), Keziacharles14\_16 (A9), Klodlith\_17 (A9), Lilleskat\_16 (A9), LoneWolf\_18 (A9), Luchador\_18 (A14), Maminaiaina\_18 (A9), MegTheThird\_16 (A9), Minispark\_15 (A9), Onglai\_17 (A9), Phaeder\_18 (A9), Phonnegut\_18 (A9), Pioneer\_18 (A9), Priya\_18 (A9), Qobbit\_18 (A9), Rahalelujah\_16 (A9), Refuge\_20 (A12), RyeScarlet\_19 (A9), Sachima\_16 (A9), Scherzo\_18 (A9), SheaKeira\_17 (A9), Spouty\_18 (A9), Toaka\_16 (A9), Tubs\_18 (A9), Ugenie5\_15 (A9), Vanisoa\_16 (A9), WorldCup\_15 (A9), Yecey3\_17 (A9), Zimmer\_19 (A12),

### **Summary by clusters:**

There are 4 clusters represented in this pham: A9, A14, A22, A12,

Info for manual annotations of cluster A12:

- Start number 3 was manually annotated 1 time for cluster A12.
- Start number 15 was manually annotated 3 times for cluster A12.

Info for manual annotations of cluster A14:

- Start number 13 was manually annotated 1 time for cluster A14.
- Start number 14 was manually annotated 2 times for cluster A14.
- Start number 15 was manually annotated 1 time for cluster A14.

Info for manual annotations of cluster A22:

- Start number 15 was manually annotated 1 time for cluster A22.

Info for manual annotations of cluster A9:

- Start number 10 was manually annotated 5 times for cluster A9.
- Start number 15 was manually annotated 30 times for cluster A9.

### **Gene Information:**

Gene: Aliter\_18 Start: 13817, Stop: 14065, Start Num: 10

Candidate Starts for Aliter\_18:

(Start: 10 @13817 has 5 MA's), (Start: 15 @13841 has 35 MA's), (17, 13880), (21, 13931), (22, 13943), (23, 13991), (24, 14021),

Gene: Alma\_18 Start: 13920, Stop: 14144, Start Num: 15

Candidate Starts for Alma\_18:

(Start: 15 @13920 has 35 MA's), (17, 13959), (21, 14010), (22, 14022), (23, 14070), (24, 14100),

Gene: Arissanae\_16 Start: 12012, Stop: 12230, Start Num: 15

Candidate Starts for Arissanae\_16:

(Start: 15 @12012 has 35 MA's), (17, 12051),

Gene: Ayanochan\_19 Start: 13946, Stop: 14170, Start Num: 15

Candidate Starts for Ayanochan\_19:

(Start: 10 @13922 has 5 MA's), (Start: 15 @13946 has 35 MA's), (17, 13985), (21, 14036), (22, 14048), (23, 14096), (24, 14126),

Gene: Beemo\_18 Start: 13947, Stop: 14171, Start Num: 15

Candidate Starts for Beemo\_18:

(Start: 10 @13923 has 5 MA's), (Start: 15 @13947 has 35 MA's), (17, 13986), (21, 14037), (22, 14049), (23, 14097), (24, 14127),

Gene: Bellris\_15 Start: 11982, Stop: 12200, Start Num: 15

Candidate Starts for Bellris\_15:

(Start: 3 @11913 has 1 MA's), (9, 11937), (Start: 10 @11958 has 5 MA's), (Start: 15 @11982 has 35 MA's), (17, 12021),

Gene: BogosyJay\_18 Start: 13667, Stop: 13891, Start Num: 15

Candidate Starts for BogosyJay\_18:

(Start: 15 @13667 has 35 MA's), (21, 13757), (22, 13769), (23, 13817), (24, 13847),

Gene: Catalina\_18 Start: 13890, Stop: 14138, Start Num: 10

Candidate Starts for Catalina\_18:

(Start: 10 @13890 has 5 MA's), (Start: 15 @13914 has 35 MA's), (17, 13953), (21, 14004), (22, 14016), (23, 14064), (24, 14094),

Gene: Celestiallunch\_17 Start: 12071, Stop: 12307, Start Num: 15

Candidate Starts for Celestiallunch\_17:

(Start: 15 @12071 has 35 MA's), (18, 12131), (19, 12134),

Gene: Chargerpower\_17 Start: 12361, Stop: 12588, Start Num: 15

Candidate Starts for Chargerpower\_17:

(6, 12304), (Start: 10 @12337 has 5 MA's), (Start: 15 @12361 has 35 MA's), (17, 12400),

Gene: Charm\_17 Start: 12095, Stop: 12319, Start Num: 15

Candidate Starts for Charm\_17:

(Start: 15 @12095 has 35 MA's), (17, 12134),

Gene: CogOmlette\_15 Start: 11982, Stop: 12200, Start Num: 15

Candidate Starts for CogOmlette\_15:

(Start: 3 @11913 has 1 MA's), (9, 11937), (Start: 10 @11958 has 5 MA's), (Start: 15 @11982 has 35 MA's), (17, 12021),

Gene: Conquerage\_18 Start: 13943, Stop: 14167, Start Num: 15

Candidate Starts for Conquerage\_18:

(Start: 15 @13943 has 35 MA's), (17, 13982), (21, 14033), (22, 14045), (23, 14093), (24, 14123),

Gene: Darrell\_19 Start: 14104, Stop: 14328, Start Num: 15

Candidate Starts for Darrell\_19:

(Start: 15 @14104 has 35 MA's), (21, 14194), (22, 14206), (23, 14254), (24, 14284),

Gene: DarthPhader\_18 Start: 14100, Stop: 14303, Start Num: 15

Candidate Starts for DarthPhader\_18:

(Start: 10 @14076 has 5 MA's), (11, 14079), (Start: 15 @14100 has 35 MA's), (16, 14130),

Gene: DreamTeam1\_17 Start: 12095, Stop: 12319, Start Num: 15

Candidate Starts for DreamTeam1\_17:

(Start: 15 @12095 has 35 MA's), (17, 12134),

Gene: EdogawaKiddo\_16 Start: 13913, Stop: 14137, Start Num: 15

Candidate Starts for EdogawaKiddo\_16:

(Start: 10 @13889 has 5 MA's), (Start: 15 @13913 has 35 MA's), (17, 13952), (21, 14003), (22, 14015), (23, 14063), (24, 14093),

Gene: Eidsmoe\_18 Start: 13943, Stop: 14167, Start Num: 15

Candidate Starts for Eidsmoe\_18:

(Start: 15 @13943 has 35 MA's), (17, 13982), (21, 14033), (22, 14045), (23, 14093), (24, 14123),

Gene: Elephantoon\_18 Start: 13530, Stop: 13757, Start Num: 15

Candidate Starts for Elephantoon\_18:

(Start: 15 @13530 has 35 MA's), (21, 13620), (22, 13632), (23, 13680), (24, 13710),

Gene: EmyBug\_18 Start: 13943, Stop: 14167, Start Num: 15

Candidate Starts for EmyBug\_18:

(Start: 15 @13943 has 35 MA's), (17, 13982), (21, 14033), (22, 14045), (23, 14093), (24, 14123),

Gene: ExplosioNervosa\_18 Start: 13946, Stop: 14170, Start Num: 15

Candidate Starts for ExplosioNervosa\_18:

(Start: 10 @13922 has 5 MA's), (Start: 15 @13946 has 35 MA's), (17, 13985), (21, 14036), (22, 14048), (23, 14096), (24, 14126),

Gene: Fayely\_18 Start: 13946, Stop: 14170, Start Num: 15

Candidate Starts for Fayely\_18:

(Start: 10 @13922 has 5 MA's), (Start: 15 @13946 has 35 MA's), (17, 13985), (21, 14036), (22, 14048), (23, 14096), (24, 14126),

Gene: Gail\_16 Start: 12246, Stop: 12479, Start Num: 13

Candidate Starts for Gail\_16:

(Start: 13 @12246 has 1 MA's), (17, 12288),

Gene: Hanray\_17 Start: 13917, Stop: 14141, Start Num: 15

Candidate Starts for Hanray\_17:

(4, 13851), (Start: 15 @13917 has 35 MA's), (17, 13956), (21, 14007), (22, 14019), (23, 14067), (24, 14097),

Gene: Horex\_17 Start: 13917, Stop: 14141, Start Num: 15

Candidate Starts for Horex\_17:

(4, 13851), (Start: 15 @13917 has 35 MA's), (17, 13956), (21, 14007), (22, 14019), (23, 14067), (24, 14097),

Gene: HortumSL17\_18 Start: 13889, Stop: 14137, Start Num: 10

Candidate Starts for HortumSL17\_18:

(Start: 10 @13889 has 5 MA's), (Start: 15 @13913 has 35 MA's), (17, 13952), (21, 14003), (22, 14015), (23, 14063), (24, 14093),

Gene: Jeeves\_16 Start: 12289, Stop: 12522, Start Num: 14

Candidate Starts for Jeeves\_16:

(Start: 10 @12262 has 5 MA's), (Start: 14 @12289 has 2 MA's), (17, 12331),

Gene: Jiawan\_17 Start: 13949, Stop: 14173, Start Num: 15

Candidate Starts for Jiawan\_17:

(Start: 10 @13925 has 5 MA's), (Start: 15 @13949 has 35 MA's), (17, 13988), (21, 14039), (22, 14051), (24, 14129),

Gene: Keziacharles14\_16 Start: 12056, Stop: 12274, Start Num: 15  
Candidate Starts for Keziacharles14\_16:  
(Start: 15 @12056 has 35 MA's), (17, 12095),

Gene: Klodlith\_17 Start: 12095, Stop: 12319, Start Num: 15  
Candidate Starts for Klodlith\_17:  
(Start: 15 @12095 has 35 MA's), (17, 12134),

Gene: Lilleskat\_16 Start: 13913, Stop: 14137, Start Num: 15  
Candidate Starts for Lilleskat\_16:  
(Start: 10 @13889 has 5 MA's), (Start: 15 @13913 has 35 MA's), (17, 13952), (21, 14003), (22, 14015),  
(23, 14063), (24, 14093),

Gene: LoneWolf\_18 Start: 13722, Stop: 13946, Start Num: 15  
Candidate Starts for LoneWolf\_18:  
(Start: 15 @13722 has 35 MA's), (19, 13785), (21, 13812), (22, 13824), (23, 13872), (24, 13902),

Gene: Luchador\_18 Start: 13500, Stop: 13706, Start Num: 15  
Candidate Starts for Luchador\_18:  
(1, 13191), (Start: 15 @13500 has 35 MA's), (17, 13539),

Gene: Maminiaina\_18 Start: 13646, Stop: 13870, Start Num: 15  
Candidate Starts for Maminiaina\_18:  
(Start: 15 @13646 has 35 MA's), (21, 13736), (22, 13748), (23, 13796), (24, 13826),

Gene: MegTheThird\_16 Start: 12071, Stop: 12307, Start Num: 15  
Candidate Starts for MegTheThird\_16:  
(Start: 15 @12071 has 35 MA's), (18, 12131), (19, 12134),

Gene: Minispark\_15 Start: 11982, Stop: 12200, Start Num: 15  
Candidate Starts for Minispark\_15:  
(Start: 3 @11913 has 1 MA's), (9, 11937), (Start: 10 @11958 has 5 MA's), (Start: 15 @11982 has 35 MA's), (17, 12021),

Gene: Myxus\_18 Start: 13889, Stop: 14137, Start Num: 10  
Candidate Starts for Myxus\_18:  
(Start: 10 @13889 has 5 MA's), (Start: 15 @13913 has 35 MA's), (17, 13952), (21, 14003), (22, 14015),  
(23, 14063), (24, 14093),

Gene: Onglai\_17 Start: 12247, Stop: 12471, Start Num: 15  
Candidate Starts for Onglai\_17:  
(4, 12181), (Start: 15 @12247 has 35 MA's), (17, 12286), (21, 12337), (22, 12349), (23, 12397), (24, 12427),

Gene: PackMan\_18 Start: 13889, Stop: 14137, Start Num: 10  
Candidate Starts for PackMan\_18:  
(Start: 10 @13889 has 5 MA's), (Start: 15 @13913 has 35 MA's), (17, 13952), (21, 14003), (22, 14015),  
(23, 14063), (24, 14093),

Gene: Phaeder\_18 Start: 13913, Stop: 14137, Start Num: 15  
Candidate Starts for Phaeder\_18:  
(Start: 10 @13889 has 5 MA's), (Start: 15 @13913 has 35 MA's), (17, 13952), (21, 14003), (22, 14015),  
(23, 14063), (24, 14093),

Gene: Phonnegut\_18 Start: 13946, Stop: 14170, Start Num: 15

Candidate Starts for Phonnegut\_18:

(Start: 10 @13922 has 5 MA's), (Start: 15 @13946 has 35 MA's), (17, 13985), (21, 14036), (22, 14048), (23, 14096), (24, 14126),

Gene: Pioneer\_18 Start: 13946, Stop: 14170, Start Num: 15

Candidate Starts for Pioneer\_18:

(Start: 10 @13922 has 5 MA's), (Start: 15 @13946 has 35 MA's), (17, 13985), (21, 14036), (22, 14048), (23, 14096), (24, 14126),

Gene: Priya\_18 Start: 13944, Stop: 14168, Start Num: 15

Candidate Starts for Priya\_18:

(Start: 15 @13944 has 35 MA's), (17, 13983), (21, 14034), (22, 14046), (23, 14094), (24, 14124),

Gene: Qobbit\_18 Start: 13943, Stop: 14167, Start Num: 15

Candidate Starts for Qobbit\_18:

(Start: 10 @13919 has 5 MA's), (Start: 15 @13943 has 35 MA's), (17, 13982), (21, 14033), (22, 14045), (23, 14093), (24, 14123),

Gene: Rahalelujah\_16 Start: 11982, Stop: 12200, Start Num: 15

Candidate Starts for Rahalelujah\_16:

(Start: 3 @11913 has 1 MA's), (9, 11937), (Start: 10 @11958 has 5 MA's), (Start: 15 @11982 has 35 MA's), (17, 12021),

Gene: Refuge\_20 Start: 15497, Stop: 15685, Start Num: 15

Candidate Starts for Refuge\_20:

(2, 15428), (11, 15473), (Start: 15 @15497 has 35 MA's), (16, 15527),

Gene: RyeScarlet\_19 Start: 13917, Stop: 14141, Start Num: 15

Candidate Starts for RyeScarlet\_19:

(4, 13851), (Start: 15 @13917 has 35 MA's), (17, 13956), (21, 14007), (22, 14019), (23, 14067), (24, 14097),

Gene: Sachima\_16 Start: 13913, Stop: 14137, Start Num: 15

Candidate Starts for Sachima\_16:

(Start: 10 @13889 has 5 MA's), (Start: 15 @13913 has 35 MA's), (17, 13952), (21, 14003), (22, 14015), (23, 14063), (24, 14093),

Gene: Scherzo\_18 Start: 13946, Stop: 14170, Start Num: 15

Candidate Starts for Scherzo\_18:

(Start: 10 @13922 has 5 MA's), (Start: 15 @13946 has 35 MA's), (17, 13985), (21, 14036), (22, 14048), (23, 14096), (24, 14126),

Gene: SheaKeira\_17 Start: 12121, Stop: 12345, Start Num: 15

Candidate Starts for SheaKeira\_17:

(Start: 15 @12121 has 35 MA's), (17, 12160),

Gene: SororFago\_16 Start: 12265, Stop: 12498, Start Num: 14

Candidate Starts for SororFago\_16:

(Start: 3 @12196 has 1 MA's), (8, 12211), (12, 12250), (Start: 14 @12265 has 2 MA's), (17, 12307),

Gene: Spouty\_18 Start: 13943, Stop: 14167, Start Num: 15

Candidate Starts for Spouty\_18:

(Start: 15 @13943 has 35 MA's), (17, 13982), (21, 14033), (22, 14045), (23, 14093), (24, 14123),

Gene: Steamy\_18 Start: 13652, Stop: 13915, Start Num: 3

Candidate Starts for Steamy\_18:

(2, 13625), (Start: 3 @13652 has 1 MA's), (5, 13658), (7, 13664), (Start: 15 @13727 has 35 MA's), (16, 13757),

Gene: Sunhee\_15 Start: 12301, Stop: 12534, Start Num: 14

Candidate Starts for Sunhee\_15:

(Start: 14 @12301 has 2 MA's), (17, 12343),

Gene: Toaka\_16 Start: 12274, Stop: 12492, Start Num: 15

Candidate Starts for Toaka\_16:

(Start: 15 @12274 has 35 MA's), (17, 12313), (20, 12358),

Gene: Tubs\_18 Start: 13913, Stop: 14137, Start Num: 15

Candidate Starts for Tubs\_18:

(Start: 10 @13889 has 5 MA's), (Start: 15 @13913 has 35 MA's), (17, 13952), (21, 14003), (22, 14015), (23, 14063), (24, 14093),

Gene: Ugenie5\_15 Start: 13946, Stop: 14170, Start Num: 15

Candidate Starts for Ugenie5\_15:

(Start: 10 @13922 has 5 MA's), (Start: 15 @13946 has 35 MA's), (17, 13985), (21, 14036), (22, 14048), (23, 14096), (24, 14126),

Gene: Vanisoa\_16 Start: 12000, Stop: 12218, Start Num: 15

Candidate Starts for Vanisoa\_16:

(Start: 10 @11976 has 5 MA's), (Start: 15 @12000 has 35 MA's), (17, 12039),

Gene: WorldCup\_15 Start: 11982, Stop: 12200, Start Num: 15

Candidate Starts for WorldCup\_15:

(Start: 3 @11913 has 1 MA's), (9, 11937), (Start: 10 @11958 has 5 MA's), (Start: 15 @11982 has 35 MA's), (17, 12021),

Gene: Yecey3\_17 Start: 12045, Stop: 12260, Start Num: 15

Candidate Starts for Yecey3\_17:

(8, 11994), (Start: 15 @12045 has 35 MA's), (17, 12084), (20, 12129), (24, 12216),

Gene: Zimmer\_19 Start: 14756, Stop: 14941, Start Num: 15

Candidate Starts for Zimmer\_19:

(2, 14687), (11, 14732), (Start: 15 @14756 has 35 MA's), (16, 14786),