

# Pham 216224



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 216224 Report

This analysis was run 02/22/25 on database version 588.

Pham number 216224 has 55 members, 3 are drafts.

Phages represented in each track:

- Track 1 : Papez\_9, Kenmech\_10, TheloniousMonk\_9, LilBib\_8
- Track 2 : Norz\_9, Monet\_9
- Track 3 : Squee\_8, Gwendoluna\_9, KBG\_9, Solon\_8, Graduation\_10, Nerujay\_9
- Track 4 : Hermia\_10, Buttons\_9, SpikeBT\_9, Edtherson\_9, Treddle\_9
- Track 5 : QTRlifeCrisis\_8, Zeuska\_8
- Track 6 : BillKnuckles\_9, DD5\_9
- Track 7 : Blubba\_240, Colt\_243, Cane17\_242
- Track 8 : Henry\_39, Gator\_36
- Track 9 : Myrale\_38, ABCat\_37, Tuco\_39, DrDrey\_39, ShamWow\_38, Dusk\_37, BilboSwaggins\_38, BadStone\_37
- Track 10 : Daikon\_37
- Track 11 : Pumpkin\_40, Marshmallow\_38, Toto\_38, Teaspoon\_39, Balomoji\_37
- Track 12 : Harella\_37
- Track 13 : Glexan\_36
- Track 14 : StAnnes\_29, Hamulus\_31, Soul22\_35, Kingsley\_29
- Track 15 : Ovechkin\_31
- Track 16 : Mozy\_32
- Track 17 : MisterCuddles\_32, Girr\_32, Ruby\_32
- Track 18 : Mozy\_92
- Track 19 : Zucker\_50
- Track 20 : GMA4\_67
- Track 21 : LilSpotty\_83

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

The start number called the most often in the published annotations is 19, it was called in 21 of the 52 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- BillKnuckles\_9, Buttons\_9, DD5\_9, Edtherson\_9, Graduation\_10, Gwendoluna\_9, Hermia\_10, KBG\_9, Kenmech\_10, LilBib\_8, Monet\_9, Nerujay\_9, Norz\_9, Papez\_9, QTRlifeCrisis\_8, Solon\_8, SpikeBT\_9, Squee\_8, TheloniousMonk\_9, Treddle\_9, Zeuska\_8,

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

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

- ABCat\_37, BadStone\_37, Balomoji\_37, BilboSwaggins\_38, Blubba\_240, Cane17\_242, Colt\_243, Daikon\_37, DrDrey\_39, Dusk\_37, GMA4\_67, Gator\_36, Girr\_32, Glexan\_36, Hamulus\_31, Harella\_37, Henry\_39, Kingsley\_29, LilSpotty\_83, Marshmallow\_38, MisterCuddles\_32, Mozy\_32, Mozy\_92, Myrale\_38, Ovechkin\_31, Pumpkin\_40, Ruby\_32, ShamWow\_38, Soul22\_35, StAnnes\_29, Teaspoon\_39, Toto\_38, Tucu\_39, Zucker\_50,

### Summary by start number:

Start 4:

- Found in 5 of 55 ( 9.1% ) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Ovechkin\_31 (F1),

Start 6:

- Found in 5 of 55 ( 9.1% ) of genes in pham
- Manual Annotations of this start: 4 of 52
- Called 80.0% of time when present
- Phage (with cluster) where this start called: Hamulus\_31 (F1), Kingsley\_29 (F1), Soul22\_35 (F2), StAnnes\_29 (F1),

Start 7:

- Found in 1 of 55 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mozy\_92 (F1),

Start 8:

- Found in 3 of 55 ( 5.5% ) of genes in pham
- Manual Annotations of this start: 3 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Girr\_32 (F1), MisterCuddles\_32 (F1), Ruby\_32 (F1),

Start 9:

- Found in 1 of 55 ( 1.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GMA4\_67 (singleton),

Start 12:

- Found in 3 of 55 ( 5.5% ) of genes in pham
- Manual Annotations of this start: 3 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Blubba\_240 (C1), Cane17\_242 (C1), Colt\_243 (C1),

Start 13:

- Found in 1 of 55 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LilSpotty\_83 (singleton),

#### Start 16:

- Found in 4 of 55 ( 7.3% ) of genes in pham
- Manual Annotations of this start: 2 of 52
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Gator\_36 (E), Henry\_39 (E),

#### Start 19:

- Found in 21 of 55 ( 38.2% ) of genes in pham
- Manual Annotations of this start: 21 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BillKnuckles\_9 (A1), Buttons\_9 (A1), DD5\_9 (A1), Edtherson\_9 (A1), Graduation\_10 (A1), Gwendoluna\_9 (A1), Hermia\_10 (A1), KBG\_9 (A1), Kenmech\_10 (A1), LilBib\_8 (A1), Monet\_9 (A1), Nerujay\_9 (A1), Norz\_9 (A1), Papez\_9 (A1), QTRlifeCrisis\_8 (A1), Solon\_8 (A1), SpikeBT\_9 (A1), Squee\_8 (A1), TheloniousMonk\_9 (A1), Treddle\_9 (A1), Zeuska\_8 (A1),

#### Start 20:

- Found in 4 of 55 ( 7.3% ) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Glexan\_36 (E),

#### Start 21:

- Found in 13 of 55 ( 23.6% ) of genes in pham
- Manual Annotations of this start: 7 of 52
- Called 61.5% of time when present
- Phage (with cluster) where this start called: ABCat\_37 (E), BadStone\_37 (E), BilboSwaggins\_38 (E), DrDrey\_39 (E), Dusk\_37 (E), Myrale\_38 (E), ShamWow\_38 (E), Tuco\_39 (E),

#### Start 23:

- Found in 2 of 55 ( 3.6% ) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Mozy\_32 (F1),

#### Start 26:

- Found in 1 of 55 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 1 of 52
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Zucker\_50 (FN),

#### Start 27:

- Found in 18 of 55 ( 32.7% ) of genes in pham
- Manual Annotations of this start: 6 of 52
- Called 38.9% of time when present
- Phage (with cluster) where this start called: Balomoji\_37 (E), Daikon\_37 (E), Harella\_37 (E), Marshmallow\_38 (E), Pumpkin\_40 (E), Teaspoon\_39 (E), Toto\_38

(E),

**Summary by clusters:**

There are 7 clusters represented in this pham: F1, singleton, E, F2, A1, C1, FN,

Info for manual annotations of cluster A1:

- Start number 19 was manually annotated 21 times for cluster A1.

Info for manual annotations of cluster C1:

- Start number 12 was manually annotated 3 times for cluster C1.

Info for manual annotations of cluster E:

- Start number 16 was manually annotated 2 times for cluster E.
- Start number 20 was manually annotated 1 time for cluster E.
- Start number 21 was manually annotated 7 times for cluster E.
- Start number 27 was manually annotated 6 times for cluster E.

Info for manual annotations of cluster F1:

- Start number 4 was manually annotated 1 time for cluster F1.
- Start number 6 was manually annotated 3 times for cluster F1.
- Start number 7 was manually annotated 1 time for cluster F1.
- Start number 8 was manually annotated 3 times for cluster F1.
- Start number 23 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster F2:

- Start number 6 was manually annotated 1 time for cluster F2.

Info for manual annotations of cluster FN:

- Start number 26 was manually annotated 1 time for cluster FN.

**Gene Information:**

Gene: ABCat\_37 Start: 34121, Stop: 33534, Start Num: 21

Candidate Starts for ABCat\_37:

(Start: 21 @34121 has 7 MA's), (Start: 27 @34055 has 6 MA's), (33, 34013), (48, 33926), (55, 33848), (56, 33845), (60, 33809),

Gene: BadStone\_37 Start: 34121, Stop: 33534, Start Num: 21

Candidate Starts for BadStone\_37:

(Start: 21 @34121 has 7 MA's), (Start: 27 @34055 has 6 MA's), (33, 34013), (48, 33926), (55, 33848), (56, 33845), (60, 33809),

Gene: Balomoji\_37 Start: 33789, Stop: 33268, Start Num: 27

Candidate Starts for Balomoji\_37:

(Start: 21 @33855 has 7 MA's), (Start: 27 @33789 has 6 MA's), (33, 33747), (48, 33660), (55, 33582), (56, 33579), (60, 33543),

Gene: BilboSwaggins\_38 Start: 34129, Stop: 33542, Start Num: 21

Candidate Starts for BilboSwaggins\_38:

(Start: 21 @34129 has 7 MA's), (Start: 27 @34063 has 6 MA's), (33, 34021), (48, 33934), (55, 33856), (56, 33853), (60, 33817),

Gene: BillKnuckles\_9 Start: 4709, Stop: 5290, Start Num: 19

Candidate Starts for BillKnuckles\_9:

(Start: 19 @4709 has 21 MA's), (28, 4811), (31, 4832), (42, 4880), (68, 5159),

Gene: Blubba\_240 Start: 148292, Stop: 148846, Start Num: 12

Candidate Starts for Blubba\_240:

(10, 148286), (Start: 12 @148292 has 3 MA's), (18, 148340), (25, 148403), (47, 148559), (51, 148631), (53, 148643), (66, 148721),

Gene: Buttons\_9 Start: 4220, Stop: 4798, Start Num: 19

Candidate Starts for Buttons\_9:

(Start: 19 @4220 has 21 MA's), (32, 4346), (68, 4679),

Gene: Cane17\_242 Start: 148701, Stop: 149255, Start Num: 12

Candidate Starts for Cane17\_242:

(10, 148695), (Start: 12 @148701 has 3 MA's), (18, 148749), (25, 148812), (47, 148968), (51, 149040), (53, 149052), (66, 149130),

Gene: Colt\_243 Start: 147893, Stop: 148447, Start Num: 12

Candidate Starts for Colt\_243:

(10, 147887), (Start: 12 @147893 has 3 MA's), (18, 147941), (25, 148004), (47, 148160), (51, 148232), (53, 148244), (66, 148322),

Gene: DD5\_9 Start: 4751, Stop: 5332, Start Num: 19

Candidate Starts for DD5\_9:

(Start: 19 @4751 has 21 MA's), (28, 4853), (31, 4874), (42, 4922), (68, 5201),

Gene: Daikon\_37 Start: 33801, Stop: 33280, Start Num: 27

Candidate Starts for Daikon\_37:

(22, 33867), (Start: 27 @33801 has 6 MA's), (33, 33759), (48, 33672), (55, 33594), (56, 33591), (60, 33555),

Gene: DrDrey\_39 Start: 34621, Stop: 34034, Start Num: 21

Candidate Starts for DrDrey\_39:

(Start: 21 @34621 has 7 MA's), (Start: 27 @34555 has 6 MA's), (33, 34513), (48, 34426), (55, 34348), (56, 34345), (60, 34309),

Gene: Dusk\_37 Start: 33781, Stop: 33194, Start Num: 21

Candidate Starts for Dusk\_37:

(Start: 21 @33781 has 7 MA's), (Start: 27 @33715 has 6 MA's), (33, 33673), (48, 33586), (55, 33508), (56, 33505), (60, 33469),

Gene: Edtherson\_9 Start: 4530, Stop: 5108, Start Num: 19

Candidate Starts for Edtherson\_9:

(Start: 19 @4530 has 21 MA's), (32, 4656), (68, 4989),

Gene: GMA4\_67 Start: 43840, Stop: 44490, Start Num: 9

Candidate Starts for GMA4\_67:

(9, 43840), (14, 43870), (36, 44059), (38, 44065), (45, 44122), (65, 44284),

Gene: Gator\_36 Start: 33782, Stop: 33150, Start Num: 16  
Candidate Starts for Gator\_36:  
(Start: 16 @33782 has 2 MA's), (Start: 20 @33743 has 1 MA's), (22, 33737), (Start: 27 @33671 has 6 MA's), (33, 33629), (48, 33542), (55, 33464), (56, 33461), (60, 33425),

Gene: Girr\_32 Start: 27712, Stop: 28464, Start Num: 8  
Candidate Starts for Girr\_32:  
(Start: 8 @27712 has 3 MA's), (11, 27775), (17, 27823), (24, 27871), (38, 27982), (39, 27991), (51, 28117), (70, 28384),

Gene: Glexan\_36 Start: 33731, Stop: 33138, Start Num: 20  
Candidate Starts for Glexan\_36:  
(Start: 16 @33770 has 2 MA's), (Start: 20 @33731 has 1 MA's), (22, 33725), (Start: 27 @33659 has 6 MA's), (33, 33617), (48, 33530), (55, 33452), (56, 33449), (60, 33413),

Gene: Graduation\_10 Start: 4816, Stop: 5397, Start Num: 19  
Candidate Starts for Graduation\_10:  
(Start: 19 @4816 has 21 MA's), (28, 4918), (31, 4939), (42, 4987), (68, 5266),

Gene: Gwendoluna\_9 Start: 4700, Stop: 5281, Start Num: 19  
Candidate Starts for Gwendoluna\_9:  
(Start: 19 @4700 has 21 MA's), (28, 4802), (31, 4823), (42, 4871), (68, 5150),

Gene: Hamulus\_31 Start: 27654, Stop: 28418, Start Num: 6  
Candidate Starts for Hamulus\_31:  
(Start: 4 @27627 has 1 MA's), (Start: 6 @27654 has 4 MA's), (11, 27729), (17, 27777), (24, 27825), (38, 27936), (39, 27945), (51, 28071), (70, 28338),

Gene: Harella\_37 Start: 34175, Stop: 33654, Start Num: 27  
Candidate Starts for Harella\_37:  
(Start: 16 @34286 has 2 MA's), (Start: 20 @34247 has 1 MA's), (22, 34241), (Start: 27 @34175 has 6 MA's), (33, 34133), (48, 34046), (55, 33968), (56, 33965), (60, 33929),

Gene: Henry\_39 Start: 34174, Stop: 33542, Start Num: 16  
Candidate Starts for Henry\_39:  
(Start: 16 @34174 has 2 MA's), (Start: 20 @34135 has 1 MA's), (22, 34129), (Start: 27 @34063 has 6 MA's), (33, 34021), (48, 33934), (55, 33856), (56, 33853), (60, 33817),

Gene: Hermia\_10 Start: 4783, Stop: 5361, Start Num: 19  
Candidate Starts for Hermia\_10:  
(Start: 19 @4783 has 21 MA's), (32, 4909), (68, 5242),

Gene: KBG\_9 Start: 4959, Stop: 5540, Start Num: 19  
Candidate Starts for KBG\_9:  
(Start: 19 @4959 has 21 MA's), (28, 5061), (31, 5082), (42, 5130), (68, 5409),

Gene: Kenmech\_10 Start: 4617, Stop: 5195, Start Num: 19  
Candidate Starts for Kenmech\_10:  
(Start: 19 @4617 has 21 MA's), (32, 4743), (68, 5076),

Gene: Kingsley\_29 Start: 26483, Stop: 27247, Start Num: 6  
Candidate Starts for Kingsley\_29:

(Start: 4 @26456 has 1 MA's), (Start: 6 @26483 has 4 MA's), (11, 26558), (17, 26606), (24, 26654), (38, 26765), (39, 26774), (51, 26900), (70, 27167),

Gene: LilBib\_8 Start: 4381, Stop: 4959, Start Num: 19

Candidate Starts for LilBib\_8:

(Start: 19 @4381 has 21 MA's), (32, 4507), (68, 4840),

Gene: LilSpotty\_83 Start: 48505, Stop: 49212, Start Num: 13

Candidate Starts for LilSpotty\_83:

(Start: 13 @48505 has 1 MA's), (29, 48661), (44, 48739), (45, 48757), (49, 48781), (54, 48865), (56, 48877), (57, 48886), (62, 48922), (69, 49051), (71, 49180),

Gene: Marshmallow\_38 Start: 34061, Stop: 33540, Start Num: 27

Candidate Starts for Marshmallow\_38:

(Start: 21 @34127 has 7 MA's), (Start: 27 @34061 has 6 MA's), (33, 34019), (48, 33932), (55, 33854), (56, 33851), (60, 33815),

Gene: MisterCuddles\_32 Start: 27712, Stop: 28464, Start Num: 8

Candidate Starts for MisterCuddles\_32:

(Start: 8 @27712 has 3 MA's), (11, 27775), (17, 27823), (24, 27871), (38, 27982), (39, 27991), (51, 28117), (70, 28384),

Gene: Monet\_9 Start: 4498, Stop: 5076, Start Num: 19

Candidate Starts for Monet\_9:

(Start: 19 @4498 has 21 MA's), (32, 4624), (68, 4957),

Gene: Mozy\_32 Start: 27800, Stop: 28405, Start Num: 23

Candidate Starts for Mozy\_32:

(11, 27716), (Start: 23 @27800 has 1 MA's), (30, 27872), (34, 27896), (35, 27902), (40, 27932), (43, 27953), (45, 27974), (52, 28061),

Gene: Mozy\_92 Start: 49652, Stop: 50401, Start Num: 7

Candidate Starts for Mozy\_92:

(5, 49640), (Start: 7 @49652 has 1 MA's), (Start: 23 @49799 has 1 MA's), (37, 49931), (41, 49946), (46, 49991), (64, 50144),

Gene: Myrale\_38 Start: 33992, Stop: 33405, Start Num: 21

Candidate Starts for Myrale\_38:

(Start: 21 @33992 has 7 MA's), (Start: 27 @33926 has 6 MA's), (33, 33884), (48, 33797), (55, 33719), (56, 33716), (60, 33680),

Gene: Nerujay\_9 Start: 4453, Stop: 5034, Start Num: 19

Candidate Starts for Nerujay\_9:

(Start: 19 @4453 has 21 MA's), (28, 4555), (31, 4576), (42, 4624), (68, 4903),

Gene: Norz\_9 Start: 4534, Stop: 5112, Start Num: 19

Candidate Starts for Norz\_9:

(Start: 19 @4534 has 21 MA's), (32, 4660), (68, 4993),

Gene: Ovechkin\_31 Start: 27645, Stop: 28436, Start Num: 4

Candidate Starts for Ovechkin\_31:

(Start: 4 @27645 has 1 MA's), (Start: 6 @27672 has 4 MA's), (11, 27747), (17, 27795), (24, 27843), (38, 27954), (39, 27963), (51, 28089), (70, 28356),



Gene: Papez\_9 Start: 5271, Stop: 5849, Start Num: 19

Candidate Starts for Papez\_9:

(Start: 19 @5271 has 21 MA's), (32, 5397), (68, 5730),

Gene: Pumpkin\_40 Start: 34140, Stop: 33619, Start Num: 27

Candidate Starts for Pumpkin\_40:

(Start: 21 @34206 has 7 MA's), (Start: 27 @34140 has 6 MA's), (33, 34098), (48, 34011), (55, 33933), (56, 33930), (60, 33894),

Gene: QTRlifeCrisis\_8 Start: 4494, Stop: 5075, Start Num: 19

Candidate Starts for QTRlifeCrisis\_8:

(Start: 19 @4494 has 21 MA's), (28, 4596), (31, 4617), (42, 4665), (68, 4944),

Gene: Ruby\_32 Start: 27712, Stop: 28464, Start Num: 8

Candidate Starts for Ruby\_32:

(Start: 8 @27712 has 3 MA's), (11, 27775), (17, 27823), (24, 27871), (38, 27982), (39, 27991), (51, 28117), (70, 28384),

Gene: ShamWow\_38 Start: 34129, Stop: 33542, Start Num: 21

Candidate Starts for ShamWow\_38:

(Start: 21 @34129 has 7 MA's), (Start: 27 @34063 has 6 MA's), (33, 34021), (48, 33934), (55, 33856), (56, 33853), (60, 33817),

Gene: Solon\_8 Start: 4653, Stop: 5234, Start Num: 19

Candidate Starts for Solon\_8:

(Start: 19 @4653 has 21 MA's), (28, 4755), (31, 4776), (42, 4824), (68, 5103),

Gene: Soul22\_35 Start: 27040, Stop: 27804, Start Num: 6

Candidate Starts for Soul22\_35:

(Start: 4 @27013 has 1 MA's), (Start: 6 @27040 has 4 MA's), (11, 27115), (17, 27163), (24, 27211), (38, 27322), (39, 27331), (51, 27457), (70, 27724),

Gene: SpikeBT\_9 Start: 4433, Stop: 5011, Start Num: 19

Candidate Starts for SpikeBT\_9:

(Start: 19 @4433 has 21 MA's), (32, 4559), (68, 4892),

Gene: Squee\_8 Start: 4160, Stop: 4741, Start Num: 19

Candidate Starts for Squee\_8:

(Start: 19 @4160 has 21 MA's), (28, 4262), (31, 4283), (42, 4331), (68, 4610),

Gene: StAnnes\_29 Start: 27239, Stop: 28003, Start Num: 6

Candidate Starts for StAnnes\_29:

(Start: 4 @27212 has 1 MA's), (Start: 6 @27239 has 4 MA's), (11, 27314), (17, 27362), (24, 27410), (38, 27521), (39, 27530), (51, 27656), (70, 27923),

Gene: Teaspoon\_39 Start: 34016, Stop: 33495, Start Num: 27

Candidate Starts for Teaspoon\_39:

(Start: 21 @34082 has 7 MA's), (Start: 27 @34016 has 6 MA's), (33, 33974), (48, 33887), (55, 33809), (56, 33806), (60, 33770),

Gene: TheloniousMonk\_9 Start: 4484, Stop: 5062, Start Num: 19

Candidate Starts for TheloniousMonk\_9:

(Start: 19 @4484 has 21 MA's), (32, 4610), (68, 4943),

Gene: Toto\_38 Start: 34063, Stop: 33542, Start Num: 27

Candidate Starts for Toto\_38:

(Start: 21 @34129 has 7 MA's), (Start: 27 @34063 has 6 MA's), (33, 34021), (48, 33934), (55, 33856), (56, 33853), (60, 33817),

Gene: Treddle\_9 Start: 4499, Stop: 5077, Start Num: 19

Candidate Starts for Treddle\_9:

(Start: 19 @4499 has 21 MA's), (32, 4625), (68, 4958),

Gene: Tuco\_39 Start: 34637, Stop: 34050, Start Num: 21

Candidate Starts for Tuco\_39:

(Start: 21 @34637 has 7 MA's), (Start: 27 @34571 has 6 MA's), (33, 34529), (48, 34442), (55, 34364), (56, 34361), (60, 34325),

Gene: Zeuska\_8 Start: 4378, Stop: 4959, Start Num: 19

Candidate Starts for Zeuska\_8:

(Start: 19 @4378 has 21 MA's), (28, 4480), (31, 4501), (42, 4549), (68, 4828),

Gene: Zucker\_50 Start: 32261, Stop: 32884, Start Num: 26

Candidate Starts for Zucker\_50:

(1, 31859), (2, 31883), (3, 31901), (15, 32147), (25, 32249), (Start: 26 @32261 has 1 MA's), (38, 32354), (47, 32432), (50, 32501), (58, 32579), (59, 32588), (61, 32594), (63, 32597), (65, 32633), (67, 32708),