



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 171613 Report

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

Pham number 171613 has 39 members, 13 are drafts.

Phages represented in each track:

- Track 1 : Auxilium\_5, Richie\_5, BillyTP\_5, Raphaella\_5, CookieBear\_5
- Track 2 : BenchScraper\_5
- Track 3 : Persistence\_4
- Track 4 : EvePickles\_5
- Track 5 : Faja\_5
- Track 6 : Globfish\_5
- Track 7 : Gorpy\_5, Sakai\_5
- Track 8 : Isolde\_5
- Track 9 : MidnightRain\_5, RadFad\_5, Aikyam\_5, Hillester\_5
- Track 10 : Hestia\_4
- Track 11 : Tiff81\_6
- Track 12 : Sashimi\_6
- Track 13 : Seahorse\_6
- Track 14 : YoungHarleezy\_5
- Track 15 : Dubu\_4
- Track 16 : Rowa\_4
- Track 17 : Nesbitt\_4
- Track 18 : AbbeyMikolon\_4
- Track 19 : Eileen\_4, Peas\_4
- Track 20 : GlobiWarming\_4
- Track 21 : Constance\_4, PeggyLeg03\_4, Judy\_4
- Track 22 : ChuckDuck\_4
- Track 23 : Bridgette\_4
- Track 24 : Karkharias\_4
- Track 25 : Pucara\_4
- Track 26 : Hum25\_4
- Track 27 : Kromp\_4
- Track 28 : Sleepyhead\_4

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

The start number called the most often in the published annotations is 13, it was called in 19 of the 26 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aikyam\_5, Auxilium\_5, BenchScraper\_5, BillyTP\_5, Bridgette\_4, ChuckDuck\_4, Constance\_4, CookieBear\_5, Eileen\_4, EvePickles\_5, Faja\_5, Globfish\_5, GlobiWarming\_4, Gorpy\_5, Hestia\_4, Hillester\_5, Isolde\_5, Judy\_4, Karkharias\_4, MidnightRain\_5, Peas\_4, PeggyLeg03\_4, Persistence\_4, Pucara\_4, RadFad\_5, Raphaella\_5, Richie\_5, Sakai\_5, Sashimi\_6, Tiff81\_6, YoungHarleezy\_5,

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

- Seahorse\_6,

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

- AbbeyMikolon\_4, Dubu\_4, Hum25\_4, Kromp\_4, Nesbitt\_4, Rowa\_4, Sleepyhead\_4,

### Summary by start number:

Start 9:

- Found in 2 of 39 ( 5.1% ) of genes in pham
- Manual Annotations of this start: 2 of 26
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AbbeyMikolon\_4 (BL), Nesbitt\_4 (BL),

Start 10:

- Found in 4 of 39 ( 10.3% ) of genes in pham
- Manual Annotations of this start: 3 of 26
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hum25\_4 (FQ), Kromp\_4 (singleton), Rowa\_4 (BL), Seahorse\_6 (AY),

Start 12:

- Found in 2 of 39 ( 5.1% ) of genes in pham
- Manual Annotations of this start: 1 of 26
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Sleepyhead\_4 (singleton),

Start 13:

- Found in 32 of 39 ( 82.1% ) of genes in pham
- Manual Annotations of this start: 19 of 26
- Called 96.9% of time when present
- Phage (with cluster) where this start called: Aikyam\_5 (AY), Auxilium\_5 (AY), BenchScraper\_5 (AY), BillyTP\_5 (AY), Bridgette\_4 (FA), ChuckDuck\_4 (FA), Constance\_4 (FA), CookieBear\_5 (AY), Eileen\_4 (FA), EvePickles\_5 (AY), Faja\_5 (AY), Globfish\_5 (AY), GlobiWarming\_4 (FA), Gorpy\_5 (AY), Hestia\_4 (AY), Hillester\_5 (AY), Isolde\_5 (AY), Judy\_4 (FA), Karkharias\_4 (FA), MidnightRain\_5 (AY), Peas\_4 (FA), PeggyLeg03\_4 (FA), Persistence\_4 (AY), Pucara\_4 (FA), RadFad\_5 (AY), Raphaella\_5 (AY), Richie\_5 (AY), Sakai\_5 (AY), Sashimi\_6 (AY), Tiff81\_6 (AY), YoungHarleezy\_5 (AY),

Start 14:

- Found in 1 of 39 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 1 of 26
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dubu\_4 (BJ),

## Summary by clusters:

There are 6 clusters represented in this pham: FQ, singleton, BL, BJ, FA, AY,

Info for manual annotations of cluster AY:

- Start number 10 was manually annotated 1 time for cluster AY.
- Start number 13 was manually annotated 12 times for cluster AY.

Info for manual annotations of cluster BJ:

- Start number 14 was manually annotated 1 time for cluster BJ.

Info for manual annotations of cluster BL:

- Start number 9 was manually annotated 2 times for cluster BL.
- Start number 10 was manually annotated 1 time for cluster BL.

Info for manual annotations of cluster FA:

- Start number 13 was manually annotated 7 times for cluster FA.

## Gene Information:

Gene: AbbeyMikolon\_4 Start: 3796, Stop: 4842, Start Num: 9

Candidate Starts for AbbeyMikolon\_4:

(Start: 9 @3796 has 2 MA's), (27, 3976), (37, 4033), (41, 4069), (45, 4108), (58, 4216), (59, 4222), (61, 4231), (62, 4234), (64, 4249), (72, 4309), (74, 4330), (76, 4345), (77, 4348), (83, 4444), (85, 4453), (90, 4507), (93, 4549), (94, 4558), (95, 4576), (96, 4585), (98, 4594), (99, 4615), (100, 4624), (101, 4630), (105, 4651), (107, 4696), (115, 4735),

Gene: Aikyam\_5 Start: 3608, Stop: 4822, Start Num: 13

Candidate Starts for Aikyam\_5:

(Start: 13 @3608 has 19 MA's), (19, 3644), (21, 3665), (22, 3668), (23, 3686), (31, 3746), (33, 3758), (34, 3767), (35, 3773), (45, 3854), (57, 3956), (74, 4073), (76, 4088), (82, 4184), (84, 4190), (88, 4232), (90, 4262), (97, 4343), (99, 4361), (104, 4376), (126, 4664), (130, 4760),

Gene: Auxilium\_5 Start: 3615, Stop: 4829, Start Num: 13

Candidate Starts for Auxilium\_5:

(Start: 13 @3615 has 19 MA's), (17, 3633), (19, 3651), (20, 3660), (33, 3765), (34, 3774), (45, 3861), (47, 3885), (54, 3918), (57, 3963), (71, 4056), (75, 4089), (76, 4095), (80, 4131), (97, 4350), (99, 4368), (112, 4491), (120, 4602), (123, 4626), (126, 4671),

Gene: BenchScraper\_5 Start: 3615, Stop: 4829, Start Num: 13

Candidate Starts for BenchScraper\_5:

(Start: 13 @3615 has 19 MA's), (17, 3633), (19, 3651), (20, 3660), (33, 3765), (34, 3774), (45, 3861), (47, 3885), (54, 3918), (57, 3963), (71, 4056), (75, 4089), (76, 4095), (80, 4131), (97, 4350), (99, 4368), (112, 4491), (120, 4602), (122, 4623), (126, 4671),

Gene: BillyTP\_5 Start: 3609, Stop: 4823, Start Num: 13

Candidate Starts for BillyTP\_5:

(Start: 13 @3609 has 19 MA's), (17, 3627), (19, 3645), (20, 3654), (33, 3759), (34, 3768), (45, 3855), (47, 3879), (54, 3912), (57, 3957), (71, 4050), (75, 4083), (76, 4089), (80, 4125), (97, 4344), (99, 4362), (112, 4485), (120, 4596), (123, 4620), (126, 4665),

Gene: Bridgette\_4 Start: 3744, Stop: 4985, Start Num: 13

Candidate Starts for Bridgette\_4:

(Start: 13 @3744 has 19 MA's), (19, 3780), (58, 4098), (65, 4137), (68, 4149), (71, 4185), (75, 4218), (76, 4224), (99, 4497), (113, 4662), (126, 4833), (127, 4854), (129, 4896), (130, 4923), (131, 4947),

Gene: ChuckDuck\_4 Start: 3747, Stop: 4946, Start Num: 13

Candidate Starts for ChuckDuck\_4:

(Start: 13 @3747 has 19 MA's), (19, 3783), (24, 3837), (40, 3942), (45, 3993), (50, 4038), (71, 4188), (75, 4221), (76, 4227), (97, 4482), (99, 4500), (113, 4623), (126, 4794), (127, 4815), (129, 4857), (130, 4884), (131, 4908),

Gene: Constance\_4 Start: 3745, Stop: 4986, Start Num: 13

Candidate Starts for Constance\_4:

(Start: 13 @3745 has 19 MA's), (19, 3781), (28, 3865), (58, 4099), (65, 4138), (68, 4150), (71, 4186), (75, 4219), (76, 4225), (99, 4498), (113, 4663), (126, 4834), (127, 4855), (129, 4897), (130, 4924), (131, 4948),

Gene: CookieBear\_5 Start: 3615, Stop: 4829, Start Num: 13

Candidate Starts for CookieBear\_5:

(Start: 13 @3615 has 19 MA's), (17, 3633), (19, 3651), (20, 3660), (33, 3765), (34, 3774), (45, 3861), (47, 3885), (54, 3918), (57, 3963), (71, 4056), (75, 4089), (76, 4095), (80, 4131), (97, 4350), (99, 4368), (112, 4491), (120, 4602), (123, 4626), (126, 4671),

Gene: Dubu\_4 Start: 3635, Stop: 4543, Start Num: 14

Candidate Starts for Dubu\_4:

(11, 3629), (Start: 14 @3635 has 1 MA's), (26, 3743), (40, 3833), (51, 3923), (60, 3995), (65, 4022), (70, 4040), (72, 4076), (75, 4106), (77, 4115), (83, 4211), (90, 4274), (97, 4355), (99, 4373), (101, 4388), (105, 4409), (118, 4460),

Gene: Eileen\_4 Start: 3747, Stop: 4946, Start Num: 13

Candidate Starts for Eileen\_4:

(Start: 13 @3747 has 19 MA's), (19, 3783), (28, 3867), (38, 3924), (50, 4038), (71, 4188), (75, 4221), (76, 4227), (97, 4482), (99, 4500), (113, 4623), (126, 4794), (127, 4815), (129, 4857), (130, 4884), (131, 4908),

Gene: EvePickles\_5 Start: 3615, Stop: 4829, Start Num: 13

Candidate Starts for EvePickles\_5:

(Start: 13 @3615 has 19 MA's), (17, 3633), (19, 3651), (20, 3660), (33, 3765), (34, 3774), (45, 3861), (47, 3885), (54, 3918), (57, 3963), (71, 4056), (75, 4089), (76, 4095), (80, 4131), (97, 4350), (99, 4368), (112, 4491), (120, 4602), (126, 4671),

Gene: Faja\_5 Start: 3608, Stop: 4822, Start Num: 13

Candidate Starts for Faja\_5:

(Start: 13 @3608 has 19 MA's), (19, 3644), (21, 3665), (22, 3668), (23, 3686), (31, 3746), (33, 3758), (34, 3767), (35, 3773), (45, 3854), (57, 3956), (74, 4073), (76, 4088), (82, 4184), (84, 4190), (88, 4232), (90, 4262), (99, 4361), (104, 4376), (126, 4664), (130, 4760),

Gene: Globfish\_5 Start: 3615, Stop: 4829, Start Num: 13

Candidate Starts for Globfish\_5:

(Start: 13 @3615 has 19 MA's), (17, 3633), (19, 3651), (20, 3660), (33, 3765), (34, 3774), (45, 3861), (47, 3885), (54, 3918), (57, 3963), (71, 4056), (75, 4089), (76, 4095), (80, 4131), (88, 4239), (97, 4350), (99, 4368), (120, 4602), (126, 4671), (128, 4722),

Gene: GlobiWarming\_4 Start: 3741, Stop: 4940, Start Num: 13

Candidate Starts for GlobiWarming\_4:

(Start: 13 @3741 has 19 MA's), (19, 3777), (22, 3801), (24, 3831), (40, 3936), (50, 4032), (71, 4182), (75, 4215), (76, 4221), (97, 4476), (99, 4494), (126, 4788), (127, 4809), (129, 4851), (130, 4878), (131, 4902),

Gene: Gorpy\_5 Start: 3609, Stop: 4823, Start Num: 13

Candidate Starts for Gorpy\_5:

(Start: 13 @3609 has 19 MA's), (19, 3645), (21, 3666), (22, 3669), (23, 3687), (31, 3747), (33, 3759), (34, 3768), (35, 3774), (45, 3855), (57, 3957), (71, 4050), (75, 4083), (76, 4089), (92, 4287), (97, 4344), (99, 4362), (104, 4377), (110, 4467), (112, 4485), (120, 4596), (126, 4665), (128, 4716),

Gene: Hestia\_4 Start: 3687, Stop: 4901, Start Num: 13

Candidate Starts for Hestia\_4:

(Start: 13 @3687 has 19 MA's), (17, 3705), (19, 3723), (20, 3732), (33, 3837), (34, 3846), (45, 3933), (47, 3957), (54, 3990), (57, 4035), (71, 4128), (75, 4161), (76, 4167), (88, 4311), (97, 4422), (99, 4440), (112, 4563), (120, 4674), (126, 4743),

Gene: Hillester\_5 Start: 3608, Stop: 4822, Start Num: 13

Candidate Starts for Hillester\_5:

(Start: 13 @3608 has 19 MA's), (19, 3644), (21, 3665), (22, 3668), (23, 3686), (31, 3746), (33, 3758), (34, 3767), (35, 3773), (45, 3854), (57, 3956), (74, 4073), (76, 4088), (82, 4184), (84, 4190), (88, 4232), (90, 4262), (97, 4343), (99, 4361), (104, 4376), (126, 4664), (130, 4760),

Gene: Hum25\_4 Start: 3433, Stop: 4440, Start Num: 10

Candidate Starts for Hum25\_4:

(Start: 10 @3433 has 3 MA's), (Start: 12 @3436 has 1 MA's), (15, 3445), (18, 3475), (22, 3502), (32, 3586), (33, 3589), (39, 3625), (40, 3634), (44, 3679), (49, 3727), (53, 3742), (55, 3757), (59, 3802), (69, 3850), (70, 3853), (71, 3883), (73, 3904), (76, 3922), (78, 3952), (90, 4087), (95, 4159), (96, 4168), (102, 4228), (107, 4279), (110, 4312), (118, 4360),

Gene: Isolde\_5 Start: 3614, Stop: 4828, Start Num: 13

Candidate Starts for Isolde\_5:

(Start: 13 @3614 has 19 MA's), (19, 3650), (20, 3659), (21, 3671), (22, 3674), (23, 3692), (25, 3710), (31, 3752), (33, 3764), (34, 3773), (35, 3779), (45, 3860), (57, 3962), (76, 4094), (82, 4190), (87, 4235), (90, 4268), (96, 4346), (97, 4349), (99, 4367), (108, 4442), (117, 4520), (120, 4601), (126, 4670),

Gene: Judy\_4 Start: 3744, Stop: 4985, Start Num: 13

Candidate Starts for Judy\_4:

(Start: 13 @3744 has 19 MA's), (19, 3780), (28, 3864), (58, 4098), (65, 4137), (68, 4149), (71, 4185), (75, 4218), (76, 4224), (99, 4497), (113, 4662), (126, 4833), (127, 4854), (129, 4896), (130, 4923), (131, 4947),

Gene: Karkharias\_4 Start: 3747, Stop: 4946, Start Num: 13

Candidate Starts for Karkharias\_4:

(7, 3627), (8, 3675), (Start: 13 @3747 has 19 MA's), (19, 3783), (24, 3837), (40, 3942), (50, 4038), (71, 4188), (75, 4221), (76, 4227), (97, 4482), (99, 4500), (113, 4623), (126, 4794), (127, 4815), (129, 4857), (130, 4884), (131, 4908),

Gene: Kromp\_4 Start: 3866, Stop: 4882, Start Num: 10

Candidate Starts for Kromp\_4:

(Start: 10 @3866 has 3 MA's), (19, 3908), (30, 4010), (33, 4025), (37, 4046), (41, 4082), (56, 4199), (60, 4241), (64, 4262), (65, 4268), (71, 4316), (72, 4322), (74, 4343), (77, 4361), (81, 4406), (99, 4619), (100, 4628), (118, 4799), (121, 4877),

Gene: MidnightRain\_5 Start: 3608, Stop: 4822, Start Num: 13

Candidate Starts for MidnightRain\_5:

(Start: 13 @3608 has 19 MA's), (19, 3644), (21, 3665), (22, 3668), (23, 3686), (31, 3746), (33, 3758), (34, 3767), (35, 3773), (45, 3854), (57, 3956), (74, 4073), (76, 4088), (82, 4184), (84, 4190), (88, 4232), (90, 4262), (97, 4343), (99, 4361), (104, 4376), (126, 4664), (130, 4760),

Gene: Nesbitt\_4 Start: 3796, Stop: 4842, Start Num: 9

Candidate Starts for Nesbitt\_4:

(Start: 9 @3796 has 2 MA's), (27, 3976), (37, 4033), (41, 4069), (45, 4108), (58, 4216), (59, 4222), (61, 4231), (62, 4234), (64, 4249), (72, 4309), (74, 4330), (76, 4345), (77, 4348), (83, 4444), (85, 4453), (90, 4507), (93, 4549), (94, 4558), (95, 4576), (98, 4594), (99, 4615), (100, 4624), (101, 4630), (105, 4651), (107, 4696),

Gene: Peas\_4 Start: 3747, Stop: 4946, Start Num: 13

Candidate Starts for Peas\_4:

(Start: 13 @3747 has 19 MA's), (19, 3783), (28, 3867), (38, 3924), (50, 4038), (71, 4188), (75, 4221), (76, 4227), (97, 4482), (99, 4500), (113, 4623), (126, 4794), (127, 4815), (129, 4857), (130, 4884), (131, 4908),

Gene: PeggyLeg03\_4 Start: 3745, Stop: 4986, Start Num: 13

Candidate Starts for PeggyLeg03\_4:

(Start: 13 @3745 has 19 MA's), (19, 3781), (28, 3865), (58, 4099), (65, 4138), (68, 4150), (71, 4186), (75, 4219), (76, 4225), (99, 4498), (113, 4663), (126, 4834), (127, 4855), (129, 4897), (130, 4924), (131, 4948),

Gene: Persistence\_4 Start: 3686, Stop: 4900, Start Num: 13

Candidate Starts for Persistence\_4:

(Start: 13 @3686 has 19 MA's), (17, 3704), (19, 3722), (21, 3743), (22, 3746), (23, 3764), (31, 3824), (33, 3836), (34, 3845), (35, 3851), (42, 3908), (45, 3932), (57, 4034), (60, 4052), (70, 4097), (76, 4166), (82, 4262), (88, 4310), (90, 4340), (96, 4418), (97, 4421), (99, 4439), (104, 4454), (124, 4715), (126, 4742), (127, 4763),

Gene: Pucara\_4 Start: 3749, Stop: 4948, Start Num: 13

Candidate Starts for Pucara\_4:

(1, 2786), (2, 2807), (3, 2867), (4, 3005), (5, 3176), (6, 3539), (8, 3680), (Start: 13 @3749 has 19 MA's), (19, 3785), (24, 3839), (40, 3944), (45, 3995), (50, 4040), (71, 4190), (75, 4223), (76, 4229), (97, 4484), (99, 4502), (113, 4625), (126, 4796), (127, 4817), (129, 4859), (130, 4886), (131, 4910),

Gene: RadFad\_5 Start: 3608, Stop: 4822, Start Num: 13

Candidate Starts for RadFad\_5:

(Start: 13 @3608 has 19 MA's), (19, 3644), (21, 3665), (22, 3668), (23, 3686), (31, 3746), (33, 3758), (34, 3767), (35, 3773), (45, 3854), (57, 3956), (74, 4073), (76, 4088), (82, 4184), (84, 4190), (88, 4232), (90, 4262), (97, 4343), (99, 4361), (104, 4376), (126, 4664), (130, 4760),

Gene: Raphaella\_5 Start: 3615, Stop: 4829, Start Num: 13

Candidate Starts for Raphaella\_5:

(Start: 13 @3615 has 19 MA's), (17, 3633), (19, 3651), (20, 3660), (33, 3765), (34, 3774), (45, 3861), (47, 3885), (54, 3918), (57, 3963), (71, 4056), (75, 4089), (76, 4095), (80, 4131), (97, 4350), (99, 4368), (112, 4491), (120, 4602), (123, 4626), (126, 4671),

Gene: Richie\_5 Start: 3615, Stop: 4829, Start Num: 13

Candidate Starts for Richie\_5:

(Start: 13 @3615 has 19 MA's), (17, 3633), (19, 3651), (20, 3660), (33, 3765), (34, 3774), (45, 3861), (47, 3885), (54, 3918), (57, 3963), (71, 4056), (75, 4089), (76, 4095), (80, 4131), (97, 4350), (99, 4368), (112, 4491), (120, 4602), (123, 4626), (126, 4671),

Gene: Rowa\_4 Start: 3720, Stop: 4694, Start Num: 10

Candidate Starts for Rowa\_4:

(Start: 10 @3720 has 3 MA's), (16, 3738), (18, 3759), (19, 3762), (24, 3816), (33, 3879), (40, 3924), (41, 3936), (43, 3966), (45, 3975), (47, 3999), (48, 4005), (57, 4077), (63, 4107), (64, 4116), (72, 4176), (74, 4197), (75, 4206), (76, 4212), (83, 4311), (85, 4320), (90, 4374), (96, 4452), (99, 4473), (103, 4500), (111, 4563), (116, 4593), (118, 4611),

Gene: Sakai\_5 Start: 3609, Stop: 4823, Start Num: 13

Candidate Starts for Sakai\_5:

(Start: 13 @3609 has 19 MA's), (19, 3645), (21, 3666), (22, 3669), (23, 3687), (31, 3747), (33, 3759), (34, 3768), (35, 3774), (45, 3855), (57, 3957), (71, 4050), (75, 4083), (76, 4089), (92, 4287), (97, 4344), (99, 4362), (104, 4377), (110, 4467), (112, 4485), (120, 4596), (126, 4665), (128, 4716),

Gene: Sashimi\_6 Start: 3777, Stop: 4991, Start Num: 13

Candidate Starts for Sashimi\_6:

(Start: 13 @3777 has 19 MA's), (17, 3795), (19, 3813), (20, 3822), (33, 3927), (34, 3936), (45, 4023), (47, 4047), (54, 4080), (57, 4125), (71, 4218), (75, 4251), (76, 4257), (80, 4293), (88, 4401), (90, 4431), (97, 4512), (99, 4530), (112, 4653), (120, 4764), (126, 4833),

Gene: Seahorse\_6 Start: 3775, Stop: 4995, Start Num: 10

Candidate Starts for Seahorse\_6:

(Start: 10 @3775 has 3 MA's), (Start: 13 @3781 has 19 MA's), (17, 3799), (19, 3817), (23, 3859), (24, 3871), (29, 3910), (30, 3916), (34, 3940), (42, 4003), (45, 4027), (54, 4084), (57, 4129), (60, 4147), (74, 4246), (75, 4255), (76, 4261), (77, 4264), (84, 4363), (86, 4378), (88, 4405), (94, 4486), (97, 4516), (99, 4534), (105, 4552), (110, 4639), (114, 4666), (117, 4687), (124, 4810), (126, 4837),

Gene: Sleepyhead\_4 Start: 3350, Stop: 4345, Start Num: 12

Candidate Starts for Sleepyhead\_4:

(Start: 12 @3350 has 1 MA's), (33, 3512), (36, 3530), (52, 3656), (66, 3755), (67, 3758), (69, 3767), (72, 3806), (76, 3839), (79, 3872), (89, 3977), (91, 4010), (96, 4073), (102, 4124), (106, 4175), (109, 4211), (119, 4280),

Gene: Tiff81\_6 Start: 3773, Stop: 4987, Start Num: 13

Candidate Starts for Tiff81\_6:

(Start: 13 @3773 has 19 MA's), (17, 3791), (19, 3809), (20, 3818), (23, 3851), (31, 3911), (33, 3923), (34, 3932), (42, 3995), (45, 4019), (70, 4184), (76, 4253), (82, 4349), (84, 4355), (88, 4397), (90, 4427), (97, 4508), (99, 4526), (114, 4658), (120, 4760), (125, 4817), (126, 4829),

Gene: YoungHarleezy\_5 Start: 3613, Stop: 4827, Start Num: 13

Candidate Starts for YoungHarleezy\_5:

(Start: 13 @3613 has 19 MA's), (19, 3649), (20, 3658), (23, 3691), (31, 3751), (33, 3763), (34, 3772), (42, 3835), (45, 3859), (46, 3871), (70, 4024), (76, 4093), (82, 4189), (84, 4195), (88, 4237), (90, 4267), (97, 4348), (99, 4366), (114, 4498), (120, 4600), (126, 4669),