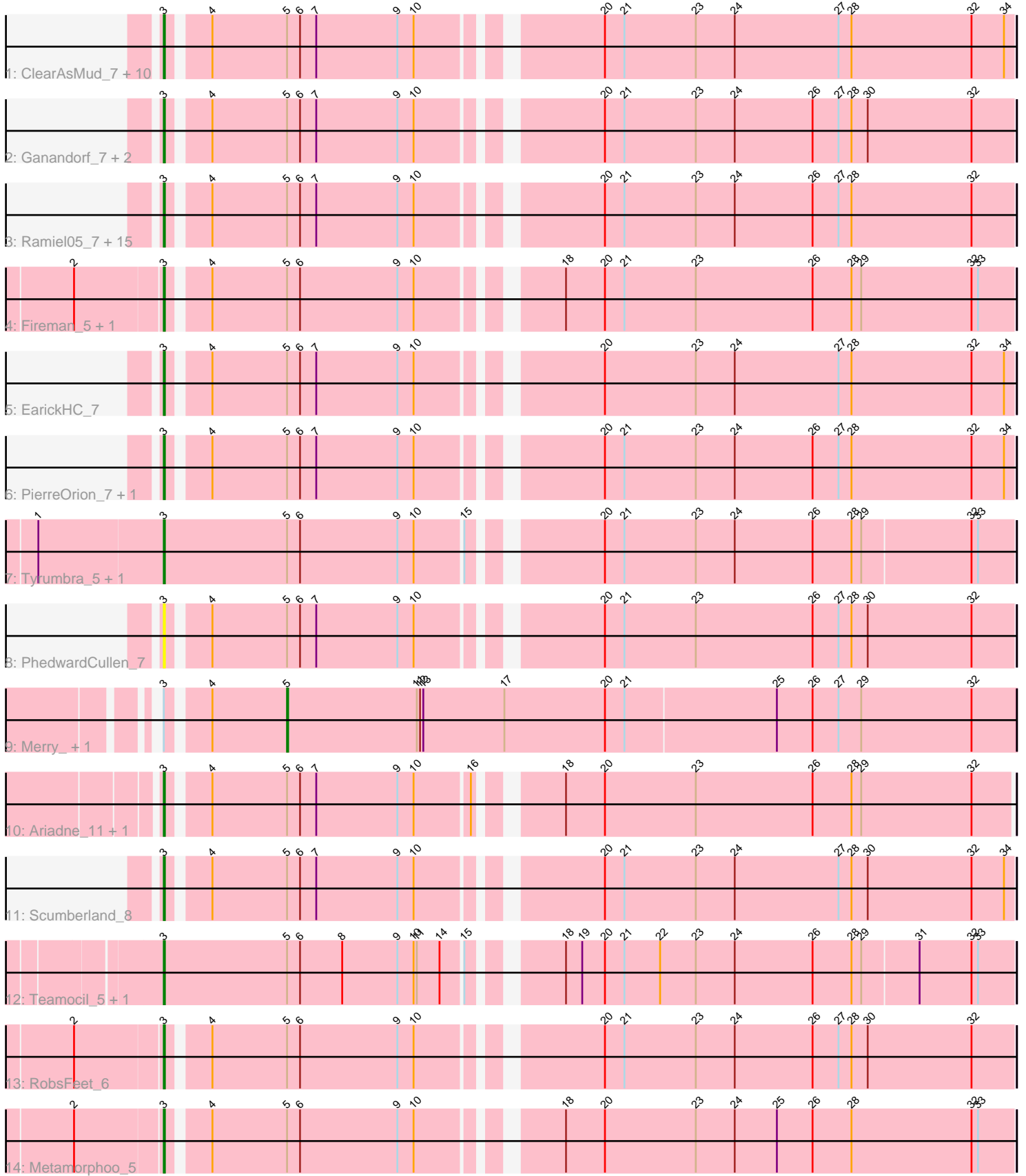


Pham 216272



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 216272 Report

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

Pham number 216272 has 47 members, 5 are drafts.

Phages represented in each track:

- Track 1 : ClearAsMud\_7, Pulchra\_8, Phrancesco\_8, Piperis\_7, KaiHaiDragon\_7, Selwyn23\_8, Honeyfin\_8, Yeti\_7, Cranjis\_7, Glorp\_7, Quhwah\_8
- Track 2 : Ganandorf\_7, Busephilis\_8, NoodlelyBoi\_7
- Track 3 : Ramiel05\_7, Kowalski\_7, Shotgun\_7, Antares\_8, BrazzalePHS\_7, PiperSansNom\_8, LittleFortune\_8, Paschalis\_7, Jollipop\_7, CrazyRich\_7, Jefe\_8, Phorgeous\_7, Onika\_7, Hermeonysus\_7, SirFrank\_7, Savannah\_7
- Track 4 : Fireman\_5, Shrubaron\_5
- Track 5 : EarickHC\_7
- Track 6 : PierreOrion\_7, Crisis\_7
- Track 7 : Tyumbra\_5, Jayden\_6
- Track 8 : PhedwardCullen\_7
- Track 9 : Merry\_, Sunny\_
- Track 10 : Ariadne\_11, Smarties\_11
- Track 11 : Scumberland\_8
- Track 12 : Teamocil\_5, Gina\_5
- Track 13 : RobsFeet\_6
- Track 14 : Metamorphoo\_5

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

The start number called the most often in the published annotations is 3, it was called in 40 of the 42 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Antares\_8, Ariadne\_11, BrazzalePHS\_7, Busephilis\_8, ClearAsMud\_7, Cranjis\_7, CrazyRich\_7, Crisis\_7, EarickHC\_7, Fireman\_5, Ganandorf\_7, Gina\_5, Glorp\_7, Hermeonysus\_7, Honeyfin\_8, Jayden\_6, Jefe\_8, Jollipop\_7, KaiHaiDragon\_7, Kowalski\_7, LittleFortune\_8, Metamorphoo\_5, NoodlelyBoi\_7, Onika\_7, Paschalis\_7, PhedwardCullen\_7, Phorgeous\_7, Phrancesco\_8, PierreOrion\_7, PiperSansNom\_8, Piperis\_7, Pulchra\_8, Quhwah\_8, Ramiel05\_7, RobsFeet\_6, Savannah\_7, Scumberland\_8, Selwyn23\_8, Shotgun\_7, Shrubaron\_5, SirFrank\_7, Smarties\_11, Teamocil\_5, Tyumbra\_5, Yeti\_7,

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

- Merry\_, Sunny\_

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

- 

### Summary by start number:

Start 3:

- Found in 47 of 47 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 40 of 42
- Called 95.7% of time when present
- Phage (with cluster) where this start called: Antares\_8 (EC), Ariadne\_11 (EC), BrazzalePHS\_7 (EC), Busephilis\_8 (EC), ClearAsMud\_7 (EC), Cranjis\_7 (EC), CrazyRich\_7 (EC), Crisis\_7 (EC), EarickHC\_7 (EC), Fireman\_5 (EC), Ganandorf\_7 (EC), Gina\_5 (EC), Glorp\_7 (EC), Hermeonysus\_7 (EC), Honeyfin\_8 (EC), Jayden\_6 (EC), Jefe\_8 (EC), Jollipop\_7 (EC), KaiHaiDragon\_7 (EC), Kowalski\_7 (EC), LittleFortune\_8 (EC), Metamorphoo\_5 (EC), NoodlelyBoi\_7 (EC), Onika\_7 (EC), Paschalis\_7 (EC), PhedwardCullen\_7 (EC), Phorgeous\_7 (EC), Phrancesco\_8 (EC), PierreOrion\_7 (EC), PiperSansNom\_8 (EC), Piperis\_7 (EC), Pulchra\_8 (EC), Quhwah\_8 (EC), Ramiel05\_7 (EC), RobsFeet\_6 (EC), Savannah\_7 (EC), Scumberland\_8 (EC), Selwyn23\_8 (EC), Shotgun\_7 (EC), Shrubaron\_5 (EC), SirFrank\_7 (EC), Smarties\_11 (EC), Teamocil\_5 (EC), Tyrumbra\_5 (EC), Yeti\_7 (EC),

Start 5:

- Found in 47 of 47 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 2 of 42
- Called 4.3% of time when present
- Phage (with cluster) where this start called: Merry\_ (EC), Sunny\_ (EC),

### Summary by clusters:

There is one cluster represented in this pham: EC

Info for manual annotations of cluster EC:

- Start number 3 was manually annotated 40 times for cluster EC.
- Start number 5 was manually annotated 2 times for cluster EC.

### Gene Information:

Gene: Antares\_8 Start: 3682, Stop: 4422, Start Num: 3

Candidate Starts for Antares\_8:

(Start: 3 @3682 has 40 MA's), (4, 3715), (Start: 5 @3784 has 2 MA's), (6, 3796), (7, 3811), (9, 3886), (10, 3901), (20, 4045), (21, 4063), (23, 4129), (24, 4165), (26, 4237), (27, 4261), (28, 4273), (32, 4384),

Gene: Ariadne\_11 Start: 4460, Stop: 5197, Start Num: 3

Candidate Starts for Ariadne\_11:

(Start: 3 @4460 has 40 MA's), (4, 4493), (Start: 5 @4562 has 2 MA's), (6, 4574), (7, 4589), (9, 4664), (10, 4679), (16, 4727), (18, 4787), (20, 4823), (23, 4907), (26, 5015), (28, 5051), (29, 5060), (32, 5162),

Gene: BrazzalePHS\_7 Start: 3470, Stop: 4210, Start Num: 3

Candidate Starts for BrazzalePHS\_7:

(Start: 3 @3470 has 40 MA's), (4, 3503), (Start: 5 @3572 has 2 MA's), (6, 3584), (7, 3599), (9, 3674), (10, 3689), (20, 3833), (21, 3851), (23, 3917), (24, 3953), (26, 4025), (27, 4049), (28, 4061), (32, 4172),

Gene: Busephilis\_8 Start: 3691, Stop: 4431, Start Num: 3

Candidate Starts for Busephilis\_8:

(Start: 3 @3691 has 40 MA's), (4, 3724), (Start: 5 @3793 has 2 MA's), (6, 3805), (7, 3820), (9, 3895), (10, 3910), (20, 4054), (21, 4072), (23, 4138), (24, 4174), (26, 4246), (27, 4270), (28, 4282), (30, 4297), (32, 4393),

Gene: ClearAsMud\_7 Start: 3748, Stop: 4488, Start Num: 3

Candidate Starts for ClearAsMud\_7:

(Start: 3 @3748 has 40 MA's), (4, 3781), (Start: 5 @3850 has 2 MA's), (6, 3862), (7, 3877), (9, 3952), (10, 3967), (20, 4111), (21, 4129), (23, 4195), (24, 4231), (27, 4327), (28, 4339), (32, 4450), (34, 4480),

Gene: Cranjis\_7 Start: 3479, Stop: 4219, Start Num: 3

Candidate Starts for Cranjis\_7:

(Start: 3 @3479 has 40 MA's), (4, 3512), (Start: 5 @3581 has 2 MA's), (6, 3593), (7, 3608), (9, 3683), (10, 3698), (20, 3842), (21, 3860), (23, 3926), (24, 3962), (27, 4058), (28, 4070), (32, 4181), (34, 4211),

Gene: CrazyRich\_7 Start: 3470, Stop: 4210, Start Num: 3

Candidate Starts for CrazyRich\_7:

(Start: 3 @3470 has 40 MA's), (4, 3503), (Start: 5 @3572 has 2 MA's), (6, 3584), (7, 3599), (9, 3674), (10, 3689), (20, 3833), (21, 3851), (23, 3917), (24, 3953), (26, 4025), (27, 4049), (28, 4061), (32, 4172),

Gene: Crisis\_7 Start: 3479, Stop: 4219, Start Num: 3

Candidate Starts for Crisis\_7:

(Start: 3 @3479 has 40 MA's), (4, 3512), (Start: 5 @3581 has 2 MA's), (6, 3593), (7, 3608), (9, 3683), (10, 3698), (20, 3842), (21, 3860), (23, 3926), (24, 3962), (26, 4034), (27, 4058), (28, 4070), (32, 4181), (34, 4211),

Gene: EarickHC\_7 Start: 3479, Stop: 4219, Start Num: 3

Candidate Starts for EarickHC\_7:

(Start: 3 @3479 has 40 MA's), (4, 3512), (Start: 5 @3581 has 2 MA's), (6, 3593), (7, 3608), (9, 3683), (10, 3698), (20, 3842), (23, 3926), (24, 3962), (27, 4058), (28, 4070), (32, 4181), (34, 4211),

Gene: Fireman\_5 Start: 2970, Stop: 3710, Start Num: 3

Candidate Starts for Fireman\_5:

(2, 2892), (Start: 3 @2970 has 40 MA's), (4, 3003), (Start: 5 @3072 has 2 MA's), (6, 3084), (9, 3174), (10, 3189), (18, 3297), (20, 3333), (21, 3351), (23, 3417), (26, 3525), (28, 3561), (29, 3570), (32, 3672), (33, 3678),

Gene: Ganandorf\_7 Start: 3698, Stop: 4438, Start Num: 3

Candidate Starts for Ganandorf\_7:

(Start: 3 @3698 has 40 MA's), (4, 3731), (Start: 5 @3800 has 2 MA's), (6, 3812), (7, 3827), (9, 3902), (10, 3917), (20, 4061), (21, 4079), (23, 4145), (24, 4181), (26, 4253), (27, 4277), (28, 4289), (30, 4304), (32, 4400),

Gene: Gina\_5 Start: 2600, Stop: 3349, Start Num: 3

Candidate Starts for Gina\_5:

(Start: 3 @2600 has 40 MA's), (Start: 5 @2714 has 2 MA's), (6, 2726), (8, 2765), (9, 2816), (10, 2831), (11, 2834), (14, 2855), (15, 2873), (18, 2939), (19, 2954), (20, 2975), (21, 2993), (22, 3026), (23, 3059), (24, 3095), (26, 3167), (28, 3203), (29, 3212), (31, 3263), (32, 3311), (33, 3317),

Gene: Glorp\_7 Start: 3479, Stop: 4219, Start Num: 3

Candidate Starts for Glorp\_7:

(Start: 3 @3479 has 40 MA's), (4, 3512), (Start: 5 @3581 has 2 MA's), (6, 3593), (7, 3608), (9, 3683), (10, 3698), (20, 3842), (21, 3860), (23, 3926), (24, 3962), (27, 4058), (28, 4070), (32, 4181), (34, 4211),

Gene: Hermeonysus\_7 Start: 3470, Stop: 4210, Start Num: 3

Candidate Starts for Hermeonysus\_7:

(Start: 3 @3470 has 40 MA's), (4, 3503), (Start: 5 @3572 has 2 MA's), (6, 3584), (7, 3599), (9, 3674), (10, 3689), (20, 3833), (21, 3851), (23, 3917), (24, 3953), (26, 4025), (27, 4049), (28, 4061), (32, 4172),

Gene: Honeyfin\_8 Start: 3688, Stop: 4428, Start Num: 3

Candidate Starts for Honeyfin\_8:

(Start: 3 @3688 has 40 MA's), (4, 3721), (Start: 5 @3790 has 2 MA's), (6, 3802), (7, 3817), (9, 3892), (10, 3907), (20, 4051), (21, 4069), (23, 4135), (24, 4171), (27, 4267), (28, 4279), (32, 4390), (34, 4420),

Gene: Jayden\_6 Start: 3181, Stop: 3930, Start Num: 3

Candidate Starts for Jayden\_6:

(1, 3067), (Start: 3 @3181 has 40 MA's), (Start: 5 @3295 has 2 MA's), (6, 3307), (9, 3397), (10, 3412), (15, 3454), (20, 3556), (21, 3574), (23, 3640), (24, 3676), (26, 3748), (28, 3784), (29, 3793), (32, 3892), (33, 3898),

Gene: Jefe\_8 Start: 3682, Stop: 4422, Start Num: 3

Candidate Starts for Jefe\_8:

(Start: 3 @3682 has 40 MA's), (4, 3715), (Start: 5 @3784 has 2 MA's), (6, 3796), (7, 3811), (9, 3886), (10, 3901), (20, 4045), (21, 4063), (23, 4129), (24, 4165), (26, 4237), (27, 4261), (28, 4273), (32, 4384),

Gene: Jollipop\_7 Start: 3470, Stop: 4210, Start Num: 3

Candidate Starts for Jollipop\_7:

(Start: 3 @3470 has 40 MA's), (4, 3503), (Start: 5 @3572 has 2 MA's), (6, 3584), (7, 3599), (9, 3674), (10, 3689), (20, 3833), (21, 3851), (23, 3917), (24, 3953), (26, 4025), (27, 4049), (28, 4061), (32, 4172),

Gene: KaiHaiDragon\_7 Start: 3479, Stop: 4219, Start Num: 3

Candidate Starts for KaiHaiDragon\_7:

(Start: 3 @3479 has 40 MA's), (4, 3512), (Start: 5 @3581 has 2 MA's), (6, 3593), (7, 3608), (9, 3683), (10, 3698), (20, 3842), (21, 3860), (23, 3926), (24, 3962), (27, 4058), (28, 4070), (32, 4181), (34, 4211),

Gene: Kowalski\_7 Start: 3470, Stop: 4210, Start Num: 3

Candidate Starts for Kowalski\_7:

(Start: 3 @3470 has 40 MA's), (4, 3503), (Start: 5 @3572 has 2 MA's), (6, 3584), (7, 3599), (9, 3674), (10, 3689), (20, 3833), (21, 3851), (23, 3917), (24, 3953), (26, 4025), (27, 4049), (28, 4061), (32, 4172),

Gene: LittleFortune\_8 Start: 3688, Stop: 4428, Start Num: 3

Candidate Starts for LittleFortune\_8:

(Start: 3 @3688 has 40 MA's), (4, 3721), (Start: 5 @3790 has 2 MA's), (6, 3802), (7, 3817), (9, 3892), (10, 3907), (20, 4051), (21, 4069), (23, 4135), (24, 4171), (26, 4243), (27, 4267), (28, 4279), (32, 4390),

Gene: Merry\_ Start: 3722, Stop: 4393, Start Num: 5

Candidate Starts for Merry\_:

(Start: 3 @3620 has 40 MA's), (4, 3653), (Start: 5 @3722 has 2 MA's), (11, 3842), (12, 3845), (13, 3848), (17, 3923), (20, 4016), (21, 4034), (25, 4172), (26, 4205), (27, 4229), (29, 4250), (32, 4352),

Gene: Metamorphoo\_5 Start: 2863, Stop: 3603, Start Num: 3

Candidate Starts for Metamorphoo\_5:

(2, 2785), (Start: 3 @2863 has 40 MA's), (4, 2896), (Start: 5 @2965 has 2 MA's), (6, 2977), (9, 3067), (10, 3082), (18, 3190), (20, 3226), (23, 3310), (24, 3346), (25, 3385), (26, 3418), (28, 3454), (32, 3565), (33, 3571),

Gene: NoodlelyBoi\_7 Start: 3482, Stop: 4222, Start Num: 3

Candidate Starts for NoodlelyBoi\_7:

(Start: 3 @3482 has 40 MA's), (4, 3515), (Start: 5 @3584 has 2 MA's), (6, 3596), (7, 3611), (9, 3686), (10, 3701), (20, 3845), (21, 3863), (23, 3929), (24, 3965), (26, 4037), (27, 4061), (28, 4073), (30, 4088), (32, 4184),

Gene: Onika\_7 Start: 3470, Stop: 4210, Start Num: 3

Candidate Starts for Onika\_7:

(Start: 3 @3470 has 40 MA's), (4, 3503), (Start: 5 @3572 has 2 MA's), (6, 3584), (7, 3599), (9, 3674), (10, 3689), (20, 3833), (21, 3851), (23, 3917), (24, 3953), (26, 4025), (27, 4049), (28, 4061), (32, 4172),

Gene: Paschalis\_7 Start: 3479, Stop: 4219, Start Num: 3

Candidate Starts for Paschalis\_7:

(Start: 3 @3479 has 40 MA's), (4, 3512), (Start: 5 @3581 has 2 MA's), (6, 3593), (7, 3608), (9, 3683), (10, 3698), (20, 3842), (21, 3860), (23, 3926), (24, 3962), (26, 4034), (27, 4058), (28, 4070), (32, 4181),

Gene: PhedwardCullen\_7 Start: 3479, Stop: 4219, Start Num: 3

Candidate Starts for PhedwardCullen\_7:

(Start: 3 @3479 has 40 MA's), (4, 3512), (Start: 5 @3581 has 2 MA's), (6, 3593), (7, 3608), (9, 3683), (10, 3698), (20, 3842), (21, 3860), (23, 3926), (26, 4034), (27, 4058), (28, 4070), (30, 4085), (32, 4181),

Gene: Phorgeous\_7 Start: 3479, Stop: 4219, Start Num: 3

Candidate Starts for Phorgeous\_7:

(Start: 3 @3479 has 40 MA's), (4, 3512), (Start: 5 @3581 has 2 MA's), (6, 3593), (7, 3608), (9, 3683), (10, 3698), (20, 3842), (21, 3860), (23, 3926), (24, 3962), (26, 4034), (27, 4058), (28, 4070), (32, 4181),

Gene: Phrancesco\_8 Start: 3697, Stop: 4437, Start Num: 3

Candidate Starts for Phrancesco\_8:

(Start: 3 @3697 has 40 MA's), (4, 3730), (Start: 5 @3799 has 2 MA's), (6, 3811), (7, 3826), (9, 3901), (10, 3916), (20, 4060), (21, 4078), (23, 4144), (24, 4180), (27, 4276), (28, 4288), (32, 4399), (34, 4429),

Gene: PierreOrion\_7 Start: 3479, Stop: 4219, Start Num: 3

Candidate Starts for PierreOrion\_7:

(Start: 3 @3479 has 40 MA's), (4, 3512), (Start: 5 @3581 has 2 MA's), (6, 3593), (7, 3608), (9, 3683), (10, 3698), (20, 3842), (21, 3860), (23, 3926), (24, 3962), (26, 4034), (27, 4058), (28, 4070), (32, 4181), (34, 4211),

Gene: PiperSansNom\_8 Start: 3783, Stop: 4523, Start Num: 3

Candidate Starts for PiperSansNom\_8:

(Start: 3 @3783 has 40 MA's), (4, 3816), (Start: 5 @3885 has 2 MA's), (6, 3897), (7, 3912), (9, 3987), (10, 4002), (20, 4146), (21, 4164), (23, 4230), (24, 4266), (26, 4338), (27, 4362), (28, 4374), (32, 4485),

Gene: Piperis\_7 Start: 3479, Stop: 4219, Start Num: 3

Candidate Starts for Piperis\_7:

(Start: 3 @3479 has 40 MA's), (4, 3512), (Start: 5 @3581 has 2 MA's), (6, 3593), (7, 3608), (9, 3683), (10, 3698), (20, 3842), (21, 3860), (23, 3926), (24, 3962), (27, 4058), (28, 4070), (32, 4181), (34, 4211),

Gene: Pulchra\_8 Start: 3709, Stop: 4449, Start Num: 3

Candidate Starts for Pulchra\_8:

(Start: 3 @3709 has 40 MA's), (4, 3742), (Start: 5 @3811 has 2 MA's), (6, 3823), (7, 3838), (9, 3913), (10, 3928), (20, 4072), (21, 4090), (23, 4156), (24, 4192), (27, 4288), (28, 4300), (32, 4411), (34, 4441),

Gene: Quhwah\_8 Start: 3691, Stop: 4431, Start Num: 3

Candidate Starts for Quhwah\_8:

(Start: 3 @3691 has 40 MA's), (4, 3724), (Start: 5 @3793 has 2 MA's), (6, 3805), (7, 3820), (9, 3895), (10, 3910), (20, 4054), (21, 4072), (23, 4138), (24, 4174), (27, 4270), (28, 4282), (32, 4393), (34, 4423),

Gene: Ramiel05\_7 Start: 3470, Stop: 4210, Start Num: 3

Candidate Starts for Ramiel05\_7:

(Start: 3 @3470 has 40 MA's), (4, 3503), (Start: 5 @3572 has 2 MA's), (6, 3584), (7, 3599), (9, 3674), (10, 3689), (20, 3833), (21, 3851), (23, 3917), (24, 3953), (26, 4025), (27, 4049), (28, 4061), (32, 4172),

Gene: RobsFeet\_6 Start: 2970, Stop: 3710, Start Num: 3

Candidate Starts for RobsFeet\_6:

(2, 2892), (Start: 3 @2970 has 40 MA's), (4, 3003), (Start: 5 @3072 has 2 MA's), (6, 3084), (9, 3174), (10, 3189), (20, 3333), (21, 3351), (23, 3417), (24, 3453), (26, 3525), (27, 3549), (28, 3561), (30, 3576), (32, 3672),

Gene: Savannah\_7 Start: 3494, Stop: 4234, Start Num: 3

Candidate Starts for Savannah\_7:

(Start: 3 @3494 has 40 MA's), (4, 3527), (Start: 5 @3596 has 2 MA's), (6, 3608), (7, 3623), (9, 3698), (10, 3713), (20, 3857), (21, 3875), (23, 3941), (24, 3977), (26, 4049), (27, 4073), (28, 4085), (32, 4196),

Gene: Scumberland\_8 Start: 3697, Stop: 4437, Start Num: 3

Candidate Starts for Scumberland\_8:

(Start: 3 @3697 has 40 MA's), (4, 3730), (Start: 5 @3799 has 2 MA's), (6, 3811), (7, 3826), (9, 3901), (10, 3916), (20, 4060), (21, 4078), (23, 4144), (24, 4180), (27, 4276), (28, 4288), (30, 4303), (32, 4399), (34, 4429),

Gene: Selwyn23\_8 Start: 3709, Stop: 4449, Start Num: 3

Candidate Starts for Selwyn23\_8:

(Start: 3 @3709 has 40 MA's), (4, 3742), (Start: 5 @3811 has 2 MA's), (6, 3823), (7, 3838), (9, 3913), (10, 3928), (20, 4072), (21, 4090), (23, 4156), (24, 4192), (27, 4288), (28, 4300), (32, 4411), (34, 4441),

Gene: Shotgun\_7 Start: 3470, Stop: 4210, Start Num: 3

Candidate Starts for Shotgun\_7:

(Start: 3 @3470 has 40 MA's), (4, 3503), (Start: 5 @3572 has 2 MA's), (6, 3584), (7, 3599), (9, 3674), (10, 3689), (20, 3833), (21, 3851), (23, 3917), (24, 3953), (26, 4025), (27, 4049), (28, 4061), (32, 4172),

Gene: Shrubaron\_5 Start: 2863, Stop: 3603, Start Num: 3

Candidate Starts for Shrubaron\_5:

(2, 2785), (Start: 3 @2863 has 40 MA's), (4, 2896), (Start: 5 @2965 has 2 MA's), (6, 2977), (9, 3067), (10, 3082), (18, 3190), (20, 3226), (21, 3244), (23, 3310), (26, 3418), (28, 3454), (29, 3463), (32, 3565), (33, 3571),

Gene: SirFrank\_7 Start: 3530, Stop: 4270, Start Num: 3

Candidate Starts for SirFrank\_7:

(Start: 3 @3530 has 40 MA's), (4, 3563), (Start: 5 @3632 has 2 MA's), (6, 3644), (7, 3659), (9, 3734), (10, 3749), (20, 3893), (21, 3911), (23, 3977), (24, 4013), (26, 4085), (27, 4109), (28, 4121), (32, 4232),

Gene: Smarties\_11 Start: 4460, Stop: 5197, Start Num: 3

Candidate Starts for Smarties\_11:

(Start: 3 @4460 has 40 MA's), (4, 4493), (Start: 5 @4562 has 2 MA's), (6, 4574), (7, 4589), (9, 4664), (10, 4679), (16, 4727), (18, 4787), (20, 4823), (23, 4907), (26, 5015), (28, 5051), (29, 5060), (32, 5162),

Gene: Sunny\_ Start: 3722, Stop: 4393, Start Num: 5

Candidate Starts for Sunny\_:

(Start: 3 @3620 has 40 MA's), (4, 3653), (Start: 5 @3722 has 2 MA's), (11, 3842), (12, 3845), (13, 3848), (17, 3923), (20, 4016), (21, 4034), (25, 4172), (26, 4205), (27, 4229), (29, 4250), (32, 4352),

Gene: Teamocil\_5 Start: 2600, Stop: 3349, Start Num: 3

Candidate Starts for Teamocil\_5:

(Start: 3 @2600 has 40 MA's), (Start: 5 @2714 has 2 MA's), (6, 2726), (8, 2765), (9, 2816), (10, 2831), (11, 2834), (14, 2855), (15, 2873), (18, 2939), (19, 2954), (20, 2975), (21, 2993), (22, 3026), (23, 3059), (24, 3095), (26, 3167), (28, 3203), (29, 3212), (31, 3263), (32, 3311), (33, 3317),

Gene: Tyrumbra\_5 Start: 2866, Stop: 3615, Start Num: 3

Candidate Starts for Tyrumbra\_5:

(1, 2752), (Start: 3 @2866 has 40 MA's), (Start: 5 @2980 has 2 MA's), (6, 2992), (9, 3082), (10, 3097), (15, 3139), (20, 3241), (21, 3259), (23, 3325), (24, 3361), (26, 3433), (28, 3469), (29, 3478), (32, 3577), (33, 3583),

Gene: Yeti\_7 Start: 3479, Stop: 4219, Start Num: 3

Candidate Starts for Yeti\_7:

(Start: 3 @3479 has 40 MA's), (4, 3512), (Start: 5 @3581 has 2 MA's), (6, 3593), (7, 3608), (9, 3683), (10, 3698), (20, 3842), (21, 3860), (23, 3926), (24, 3962), (27, 4058), (28, 4070), (32, 4181), (34, 4211),