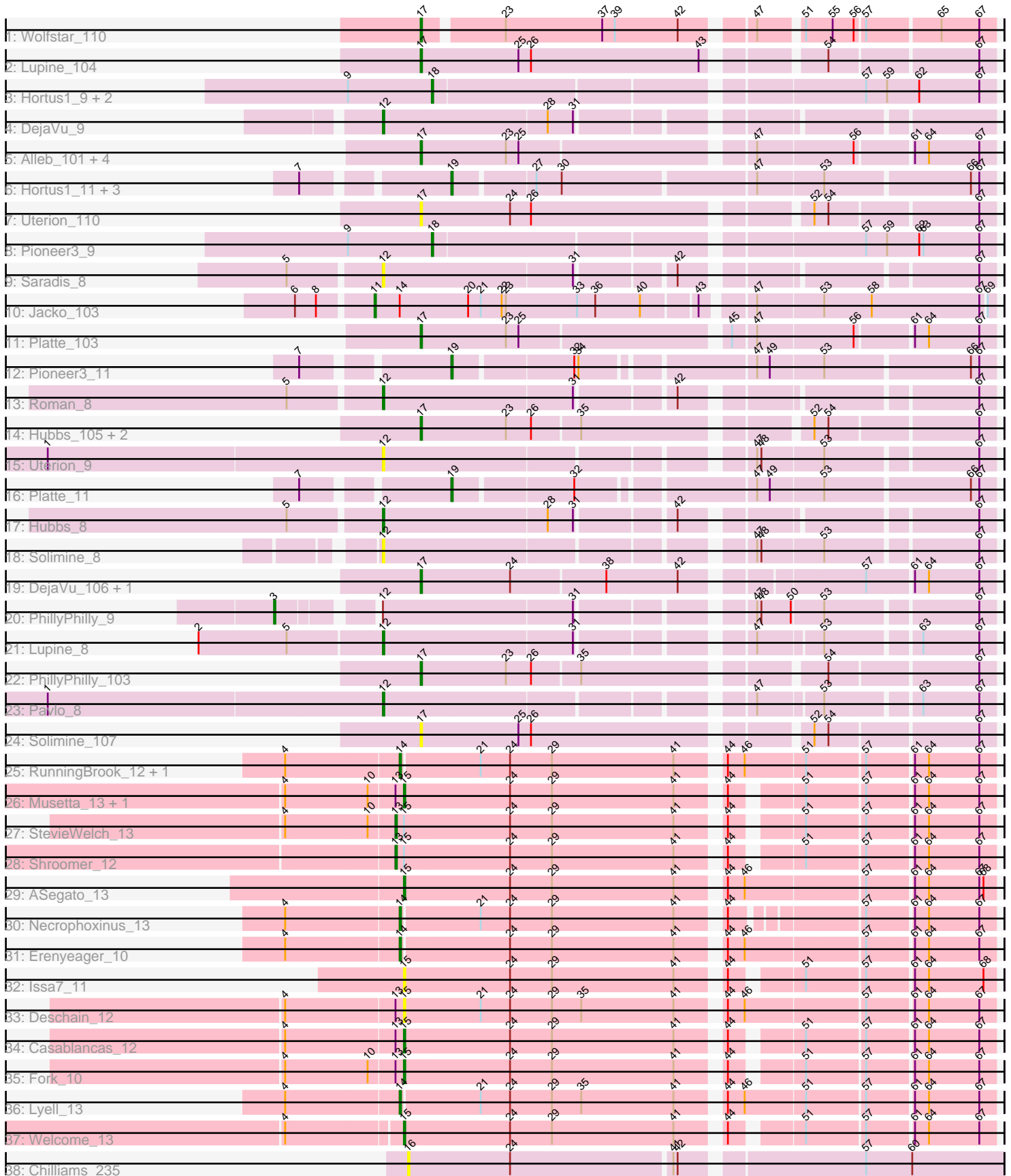


Pham 311669



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 311669 Report

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

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 311669 has 52 members, 9 are drafts.

Phages represented in each track:

- Track 1 : Wolfstar\_110
- Track 2 : Lupine\_104
- Track 3 : Hortus1\_9, OlinDD\_9, Alleb\_10
- Track 4 : DejaVu\_9
- Track 5 : Alleb\_101, OlinDD\_104, Tandem\_104, Pioneer3\_104, Hortus1\_104
- Track 6 : Hortus1\_11, OlinDD\_11, Tandem\_11, Alleb\_12
- Track 7 : Uterion\_110
- Track 8 : Pioneer3\_9
- Track 9 : Saradis\_8
- Track 10 : Jacko\_103
- Track 11 : Platte\_103
- Track 12 : Pioneer3\_11
- Track 13 : Roman\_8
- Track 14 : Hubbs\_105, Pavlo\_106, Roman\_107
- Track 15 : Uterion\_9
- Track 16 : Platte\_11
- Track 17 : Hubbs\_8
- Track 18 : Solimine\_8
- Track 19 : DejaVu\_106, Saradis\_107
- Track 20 : PhillyPhilly\_9
- Track 21 : Lupine\_8
- Track 22 : PhillyPhilly\_103
- Track 23 : Pavlo\_8
- Track 24 : Solimine\_107
- Track 25 : RunningBrook\_12, DustyDino\_13
- Track 26 : Musetta\_13, Yuma\_13
- Track 27 : StevieWelch\_13
- Track 28 : Shroomer\_12
- Track 29 : ASegato\_13
- Track 30 : Necrophoxinus\_13
- Track 31 : Erenyeager\_10
- Track 32 : Issa7\_11
- Track 33 : Deschain\_12

- Track 34 : Casablanacas\_12
- Track 35 : Fork\_10
- Track 36 : Lyell\_13
- Track 37 : Welcome\_13
- Track 38 : Chilliamps\_235

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

The start number called the most often in the published annotations is 17, it was called in 13 of the 43 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alleb\_101, DejaVu\_106, Hortus1\_104, Hubbs\_105, Lupine\_104, OlinDD\_104, Pavlo\_106, PhillyPhilly\_103, Pioneer3\_104, Platte\_103, Roman\_107, Saradis\_107, Solimine\_107, Tandem\_104, Uterion\_110, Wolfstar\_110,

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

- 

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

- ASegato\_13, Alleb\_10, Alleb\_12, Casablanacas\_12, Chilliamps\_235, DejaVu\_9, Deschain\_12, DustyDino\_13, Erenyeager\_10, Fork\_10, Hortus1\_11, Hortus1\_9, Hubbs\_8, Issa7\_11, Jacko\_103, Lupine\_8, Lyell\_13, Musetta\_13, Necrophoxinus\_13, OlinDD\_11, OlinDD\_9, Pavlo\_8, PhillyPhilly\_9, Pioneer3\_11, Pioneer3\_9, Platte\_11, Roman\_8, RunningBrook\_12, Saradis\_8, Shroomer\_12, Solimine\_8, StevieWelch\_13, Tandem\_11, Uterion\_9, Welcome\_13, Yuma\_13,

**Summary by start number:**

Start 3:

- Found in 1 of 52 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 1 of 43
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PhillyPhilly\_9 (ED1),

Start 11:

- Found in 1 of 52 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 1 of 43
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jacko\_103 (ED1),

Start 12:

- Found in 9 of 52 ( 17.3% ) of genes in pham
- Manual Annotations of this start: 5 of 43
- Called 88.9% of time when present
- Phage (with cluster) where this start called: DejaVu\_9 (ED1), Hubbs\_8 (ED1), Lupine\_8 (ED1), Pavlo\_8 (ED1), Roman\_8 (ED1), Saradis\_8 (ED1), Solimine\_8 (ED1), Uterion\_9 (ED1),

Start 13:

- Found in 7 of 52 ( 13.5% ) of genes in pham
- Manual Annotations of this start: 2 of 43
- Called 28.6% of time when present
- Phage (with cluster) where this start called: Shroomer\_12 (ED2), StevieWelch\_13 (ED2),

#### Start 14:

- Found in 6 of 52 ( 11.5% ) of genes in pham
- Manual Annotations of this start: 5 of 43
- Called 83.3% of time when present
- Phage (with cluster) where this start called: DustyDino\_13 (ED2), Erenyeager\_10 (ED2), Lyell\_13 (ED2), Necrophoxinus\_13 (ED2), RunningBrook\_12 (ED2),

#### Start 15:

- Found in 10 of 52 ( 19.2% ) of genes in pham
- Manual Annotations of this start: 6 of 43
- Called 80.0% of time when present
- Phage (with cluster) where this start called: ASegato\_13 (ED2), Casablanacas\_12 (ED2), Deschain\_12 (ED2), Fork\_10 (ED2), Issa7\_11 (ED2), Musetta\_13 (ED2), Welcome\_13 (ED2), Yuma\_13 (ED2),

#### Start 16:

- Found in 1 of 52 ( 1.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chilliams\_235 (FC),

#### Start 17:

- Found in 16 of 52 ( 30.8% ) of genes in pham
- Manual Annotations of this start: 13 of 43
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alleb\_101 (ED1), DejaVu\_106 (ED1), Hortus1\_104 (ED1), Hubbs\_105 (ED1), Lupine\_104 (ED1), OlinDD\_104 (ED1), Pavlo\_106 (ED1), PhillyPhilly\_103 (ED1), Pioneer3\_104 (ED1), Platte\_103 (ED1), Roman\_107 (ED1), Saradis\_107 (ED1), Solimine\_107 (ED1), Tandem\_104 (ED1), Uterion\_110 (ED1), Wolfstar\_110 (ED),

#### Start 18:

- Found in 4 of 52 ( 7.7% ) of genes in pham
- Manual Annotations of this start: 4 of 43
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alleb\_10 (ED1), Hortus1\_9 (ED1), OlinDD\_9 (ED1), Pioneer3\_9 (ED1),

#### Start 19:

- Found in 6 of 52 ( 11.5% ) of genes in pham
- Manual Annotations of this start: 6 of 43
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alleb\_12 (ED1), Hortus1\_11 (ED1), OlinDD\_11 (ED1), Pioneer3\_11 (ED1), Platte\_11 (ED1), Tandem\_11 (ED1),

### **Summary by clusters:**

There are 4 clusters represented in this pham: ED2, ED, ED1, FC,

Info for manual annotations of cluster ED:

- Start number 17 was manually annotated 1 time for cluster ED.

Info for manual annotations of cluster ED1:

- Start number 3 was manually annotated 1 time for cluster ED1.
- Start number 11 was manually annotated 1 time for cluster ED1.
- Start number 12 was manually annotated 5 times for cluster ED1.
- Start number 17 was manually annotated 12 times for cluster ED1.
- Start number 18 was manually annotated 4 times for cluster ED1.
- Start number 19 was manually annotated 6 times for cluster ED1.

Info for manual annotations of cluster ED2:

- Start number 13 was manually annotated 2 times for cluster ED2.
- Start number 14 was manually annotated 5 times for cluster ED2.
- Start number 15 was manually annotated 6 times for cluster ED2.

### **Gene Information:**

Gene: ASegato\_13 Start: 4659, Stop: 5057, Start Num: 15

Candidate Starts for ASegato\_13:

(Start: 15 @4659 has 6 MA's), (24, 4734), (29, 4764), (41, 4851), (44, 4878), (46, 4890), (57, 4971), (61, 5001), (64, 5010), (67, 5046), (68, 5049),

Gene: Alleb\_101 Start: 56509, Stop: 56129, Start Num: 17

Candidate Starts for Alleb\_101:

(Start: 17 @56509 has 13 MA's), (23, 56449), (25, 56440), (47, 56287), (56, 56221), (61, 56185), (64, 56176), (67, 56140),

Gene: Alleb\_12 Start: 4351, Stop: 4713, Start Num: 19

Candidate Starts for Alleb\_12:

(7, 4258), (Start: 19 @4351 has 6 MA's), (27, 4405), (30, 4423), (47, 4555), (53, 4600), (66, 4696), (67, 4702),

Gene: Alleb\_10 Start: 3636, Stop: 4010, Start Num: 18

Candidate Starts for Alleb\_10:

(9, 3576), (Start: 18 @3636 has 4 MA's), (57, 3921), (59, 3936), (62, 3957), (67, 3999),

Gene: Casablancas\_12 Start: 4232, Stop: 4618, Start Num: 15

Candidate Starts for Casablancas\_12:

(4, 4151), (Start: 13 @4226 has 2 MA's), (Start: 15 @4232 has 6 MA's), (24, 4307), (29, 4337), (41, 4424), (44, 4451), (51, 4493), (57, 4532), (61, 4562), (64, 4571), (67, 4607),

Gene: Chilliams\_235 Start: 150972, Stop: 151376, Start Num: 16

Candidate Starts for Chilliams\_235:

(16, 150972), (24, 151044), (41, 151155), (42, 151158), (57, 151278), (60, 151311),

Gene: DejaVu\_9 Start: 3447, Stop: 3833, Start Num: 12

Candidate Starts for DejaVu\_9:

(Start: 12 @3447 has 5 MA's), (28, 3561), (31, 3579),

Gene: DejaVu\_106 Start: 56615, Stop: 56235, Start Num: 17

Candidate Starts for DejaVu\_106:

(Start: 17 @56615 has 13 MA's), (24, 56552), (38, 56486), (42, 56435), (57, 56321), (61, 56291), (64, 56282), (67, 56246),

Gene: Deschain\_12 Start: 4576, Stop: 4974, Start Num: 15

Candidate Starts for Deschain\_12:

(4, 4495), (Start: 13 @4570 has 2 MA's), (Start: 15 @4576 has 6 MA's), (21, 4630), (24, 4651), (29, 4681), (35, 4702), (41, 4768), (44, 4795), (46, 4807), (57, 4888), (61, 4918), (64, 4927), (67, 4963),

Gene: DustyDino\_13 Start: 4681, Stop: 5079, Start Num: 14

Candidate Starts for DustyDino\_13:

(4, 4603), (Start: 14 @4681 has 5 MA's), (21, 4735), (24, 4756), (29, 4786), (41, 4873), (44, 4900), (46, 4912), (51, 4954), (57, 4993), (61, 5023), (64, 5032), (67, 5068),

Gene: Erenyeager\_10 Start: 4052, Stop: 4450, Start Num: 14

Candidate Starts for Erenyeager\_10:

(4, 3974), (Start: 14 @4052 has 5 MA's), (24, 4127), (29, 4157), (41, 4244), (44, 4271), (46, 4283), (57, 4364), (61, 4394), (64, 4403), (67, 4439),

Gene: Fork\_10 Start: 3946, Stop: 4332, Start Num: 15

Candidate Starts for Fork\_10:

(4, 3865), (10, 3922), (Start: 13 @3940 has 2 MA's), (Start: 15 @3946 has 6 MA's), (24, 4021), (29, 4051), (41, 4138), (44, 4165), (51, 4207), (57, 4246), (61, 4276), (64, 4285), (67, 4321),

Gene: Hortus1\_9 Start: 3590, Stop: 3964, Start Num: 18

Candidate Starts for Hortus1\_9:

(9, 3530), (Start: 18 @3590 has 4 MA's), (57, 3875), (59, 3890), (62, 3911), (67, 3953),

Gene: Hortus1\_11 Start: 4305, Stop: 4667, Start Num: 19

Candidate Starts for Hortus1\_11:

(7, 4212), (Start: 19 @4305 has 6 MA's), (27, 4359), (30, 4377), (47, 4509), (53, 4554), (66, 4650), (67, 4656),

Gene: Hortus1\_104 Start: 57265, Stop: 56885, Start Num: 17

Candidate Starts for Hortus1\_104:

(Start: 17 @57265 has 13 MA's), (23, 57205), (25, 57196), (47, 57043), (56, 56977), (61, 56941), (64, 56932), (67, 56896),

Gene: Hubbs\_105 Start: 56879, Stop: 56505, Start Num: 17

Candidate Starts for Hubbs\_105:

(Start: 17 @56879 has 13 MA's), (23, 56819), (26, 56801), (35, 56768), (52, 56624), (54, 56615), (67, 56516),

Gene: Hubbs\_8 Start: 3631, Stop: 4017, Start Num: 12

Candidate Starts for Hubbs\_8:

(5, 3574), (Start: 12 @3631 has 5 MA's), (28, 3745), (31, 3763), (42, 3826), (67, 4006),

Gene: Issa7\_11 Start: 3876, Stop: 4262, Start Num: 15

Candidate Starts for Issa7\_11:

(Start: 15 @3876 has 6 MA's), (24, 3951), (29, 3981), (41, 4068), (44, 4095), (51, 4137), (57, 4176), (61, 4206), (64, 4215), (68, 4254),

Gene: Jacko\_103 Start: 55408, Stop: 54995, Start Num: 11

Candidate Starts for Jacko\_103:

(6, 55459), (8, 55444), (Start: 11 @55408 has 1 MA's), (Start: 14 @55390 has 5 MA's), (20, 55342), (21, 55333), (22, 55318), (23, 55315), (33, 55264), (36, 55252), (40, 55222), (43, 55186), (47, 55156), (53, 55111), (58, 55078), (67, 55003), (69, 55000),

Gene: Lupine\_104 Start: 56423, Stop: 56046, Start Num: 17

Candidate Starts for Lupine\_104:

(Start: 17 @56423 has 13 MA's), (25, 56354), (26, 56345), (43, 56225), (54, 56156), (67, 56057),

Gene: Lupine\_8 Start: 3428, Stop: 3817, Start Num: 12

Candidate Starts for Lupine\_8:

(2, 3308), (5, 3371), (Start: 12 @3428 has 5 MA's), (31, 3560), (47, 3665), (53, 3707), (63, 3767), (67, 3806),

Gene: Lyell\_13 Start: 4396, Stop: 4794, Start Num: 14

Candidate Starts for Lyell\_13:

(4, 4318), (Start: 14 @4396 has 5 MA's), (21, 4450), (24, 4471), (29, 4501), (35, 4522), (41, 4588), (44, 4615), (46, 4627), (51, 4669), (57, 4708), (61, 4738), (64, 4747), (67, 4783),

Gene: Musetta\_13 Start: 4656, Stop: 5042, Start Num: 15

Candidate Starts for Musetta\_13:

(4, 4575), (10, 4632), (Start: 13 @4650 has 2 MA's), (Start: 15 @4656 has 6 MA's), (24, 4731), (29, 4761), (41, 4848), (44, 4875), (51, 4917), (57, 4956), (61, 4986), (64, 4995), (67, 5031),

Gene: Necrophoxinus\_13 Start: 4772, Stop: 5158, Start Num: 14

Candidate Starts for Necrophoxinus\_13:

(4, 4694), (Start: 14 @4772 has 5 MA's), (21, 4826), (24, 4847), (29, 4877), (41, 4964), (44, 4991), (57, 5072), (61, 5102), (64, 5111), (67, 5147),

Gene: OlinDD\_11 Start: 4304, Stop: 4666, Start Num: 19

Candidate Starts for OlinDD\_11:

(7, 4211), (Start: 19 @4304 has 6 MA's), (27, 4358), (30, 4376), (47, 4508), (53, 4553), (66, 4649), (67, 4655),

Gene: OlinDD\_104 Start: 57270, Stop: 56890, Start Num: 17

Candidate Starts for OlinDD\_104:

(Start: 17 @57270 has 13 MA's), (23, 57210), (25, 57201), (47, 57048), (56, 56982), (61, 56946), (64, 56937), (67, 56901),

Gene: OlinDD\_9 Start: 3589, Stop: 3963, Start Num: 18

Candidate Starts for OlinDD\_9:

(9, 3529), (Start: 18 @3589 has 4 MA's), (57, 3874), (59, 3889), (62, 3910), (67, 3952),

Gene: Pavlo\_106 Start: 57274, Stop: 56900, Start Num: 17

Candidate Starts for Pavlo\_106:

(Start: 17 @57274 has 13 MA's), (23, 57214), (26, 57196), (35, 57163), (52, 57019), (54, 57010), (67, 56911),

Gene: Pavlo\_8 Start: 3702, Stop: 4091, Start Num: 12

Candidate Starts for Pavlo\_8:

(1, 3465), (Start: 12 @3702 has 5 MA's), (47, 3939), (53, 3981), (63, 4041), (67, 4080),

Gene: PhillyPhilly\_9 Start: 3491, Stop: 3940, Start Num: 3

Candidate Starts for PhillyPhilly\_9:

(Start: 3 @3491 has 1 MA's), (Start: 12 @3548 has 5 MA's), (31, 3680), (47, 3785), (48, 3788), (50, 3809), (53, 3830), (67, 3929),

Gene: PhillyPhilly\_103 Start: 56263, Stop: 55889, Start Num: 17

Candidate Starts for PhillyPhilly\_103:

(Start: 17 @56263 has 13 MA's), (23, 56203), (26, 56185), (35, 56152), (54, 55999), (67, 55900),

Gene: Pioneer3\_9 Start: 3622, Stop: 3996, Start Num: 18

Candidate Starts for Pioneer3\_9:

(9, 3562), (Start: 18 @3622 has 4 MA's), (57, 3907), (59, 3922), (62, 3943), (63, 3946), (67, 3985),

Gene: Pioneer3\_11 Start: 4337, Stop: 4690, Start Num: 19

Candidate Starts for Pioneer3\_11:

(7, 4244), (Start: 19 @4337 has 6 MA's), (32, 4418), (34, 4421), (47, 4532), (49, 4541), (53, 4577), (66, 4673), (67, 4679),

Gene: Pioneer3\_104 Start: 57068, Stop: 56688, Start Num: 17

Candidate Starts for Pioneer3\_104:

(Start: 17 @57068 has 13 MA's), (23, 57008), (25, 56999), (47, 56846), (56, 56780), (61, 56744), (64, 56735), (67, 56699),

Gene: Platte\_103 Start: 56852, Stop: 56472, Start Num: 17

Candidate Starts for Platte\_103:

(Start: 17 @56852 has 13 MA's), (23, 56792), (25, 56783), (45, 56645), (47, 56630), (56, 56564), (61, 56528), (64, 56519), (67, 56483),

Gene: Platte\_11 Start: 4138, Stop: 4491, Start Num: 19

Candidate Starts for Platte\_11:

(7, 4045), (Start: 19 @4138 has 6 MA's), (32, 4219), (47, 4333), (49, 4342), (53, 4378), (66, 4474), (67, 4480),

Gene: Roman\_8 Start: 3340, Stop: 3726, Start Num: 12

Candidate Starts for Roman\_8:

(5, 3283), (Start: 12 @3340 has 5 MA's), (31, 3472), (42, 3535), (67, 3715),

Gene: Roman\_107 Start: 57323, Stop: 56949, Start Num: 17

Candidate Starts for Roman\_107:

(Start: 17 @57323 has 13 MA's), (23, 57263), (26, 57245), (35, 57212), (52, 57068), (54, 57059), (67, 56960),

Gene: RunningBrook\_12 Start: 4681, Stop: 5079, Start Num: 14

Candidate Starts for RunningBrook\_12:

(4, 4603), (Start: 14 @4681 has 5 MA's), (21, 4735), (24, 4756), (29, 4786), (41, 4873), (44, 4900), (46, 4912), (51, 4954), (57, 4993), (61, 5023), (64, 5032), (67, 5068),

Gene: Saradis\_8 Start: 3395, Stop: 3781, Start Num: 12

Candidate Starts for Saradis\_8:

(5, 3338), (Start: 12 @3395 has 5 MA's), (31, 3527), (42, 3590), (67, 3770),

Gene: Saradis\_107 Start: 56290, Stop: 55910, Start Num: 17

Candidate Starts for Saradis\_107:

(Start: 17 @56290 has 13 MA's), (24, 56227), (38, 56161), (42, 56110), (57, 55996), (61, 55966), (64, 55957), (67, 55921),

Gene: Shroomer\_12 Start: 3999, Stop: 4391, Start Num: 13

Candidate Starts for Shroomer\_12:

(Start: 13 @3999 has 2 MA's), (Start: 15 @4005 has 6 MA's), (24, 4080), (29, 4110), (41, 4197), (44, 4224), (51, 4266), (57, 4305), (61, 4335), (64, 4344), (67, 4380),

Gene: Solimine\_8 Start: 3460, Stop: 3852, Start Num: 12

Candidate Starts for Solimine\_8:

(Start: 12 @3460 has 5 MA's), (47, 3697), (48, 3700), (53, 3742), (67, 3841),

Gene: Solimine\_107 Start: 57198, Stop: 56821, Start Num: 17

Candidate Starts for Solimine\_107:

(Start: 17 @57198 has 13 MA's), (25, 57129), (26, 57120), (52, 56940), (54, 56931), (67, 56832),

Gene: StevieWelch\_13 Start: 4567, Stop: 4959, Start Num: 13

Candidate Starts for StevieWelch\_13:

(4, 4492), (10, 4549), (Start: 13 @4567 has 2 MA's), (Start: 15 @4573 has 6 MA's), (24, 4648), (29, 4678), (41, 4765), (44, 4792), (51, 4834), (57, 4873), (61, 4903), (64, 4912), (67, 4948),

Gene: Tandem\_104 Start: 57148, Stop: 56768, Start Num: 17

Candidate Starts for Tandem\_104:

(Start: 17 @57148 has 13 MA's), (23, 57088), (25, 57079), (47, 56926), (56, 56860), (61, 56824), (64, 56815), (67, 56779),

Gene: Tandem\_11 Start: 4242, Stop: 4604, Start Num: 19

Candidate Starts for Tandem\_11:

(7, 4149), (Start: 19 @4242 has 6 MA's), (27, 4296), (30, 4314), (47, 4446), (53, 4491), (66, 4587), (67, 4593),

Gene: Uterion\_110 Start: 56720, Stop: 56343, Start Num: 17

Candidate Starts for Uterion\_110:

(Start: 17 @56720 has 13 MA's), (24, 56657), (26, 56642), (52, 56462), (54, 56453), (67, 56354),

Gene: Uterion\_9 Start: 3842, Stop: 4234, Start Num: 12

Candidate Starts for Uterion\_9:

(1, 3605), (Start: 12 @3842 has 5 MA's), (47, 4079), (48, 4082), (53, 4124), (67, 4223),

Gene: Welcome\_13 Start: 4652, Stop: 5038, Start Num: 15

Candidate Starts for Welcome\_13:

(4, 4574), (Start: 15 @4652 has 6 MA's), (24, 4727), (29, 4757), (41, 4844), (44, 4871), (51, 4913), (57, 4952), (61, 4982), (64, 4991), (67, 5027),

Gene: Wolfstar\_110 Start: 58799, Stop: 58431, Start Num: 17

Candidate Starts for Wolfstar\_110:

(Start: 17 @58799 has 13 MA's), (23, 58748), (37, 58679), (39, 58670), (42, 58625), (47, 58583), (51, 58556), (55, 58538), (56, 58523), (57, 58517), (65, 58469), (67, 58442),

Gene: Yuma\_13 Start: 4555, Stop: 4941, Start Num: 15

Candidate Starts for Yuma\_13:

(4, 4474), (10, 4531), (Start: 13 @4549 has 2 MA's), (Start: 15 @4555 has 6 MA's), (24, 4630), (29, 4660), (41, 4747), (44, 4774), (51, 4816), (57, 4855), (61, 4885), (64, 4894), (67, 4930),