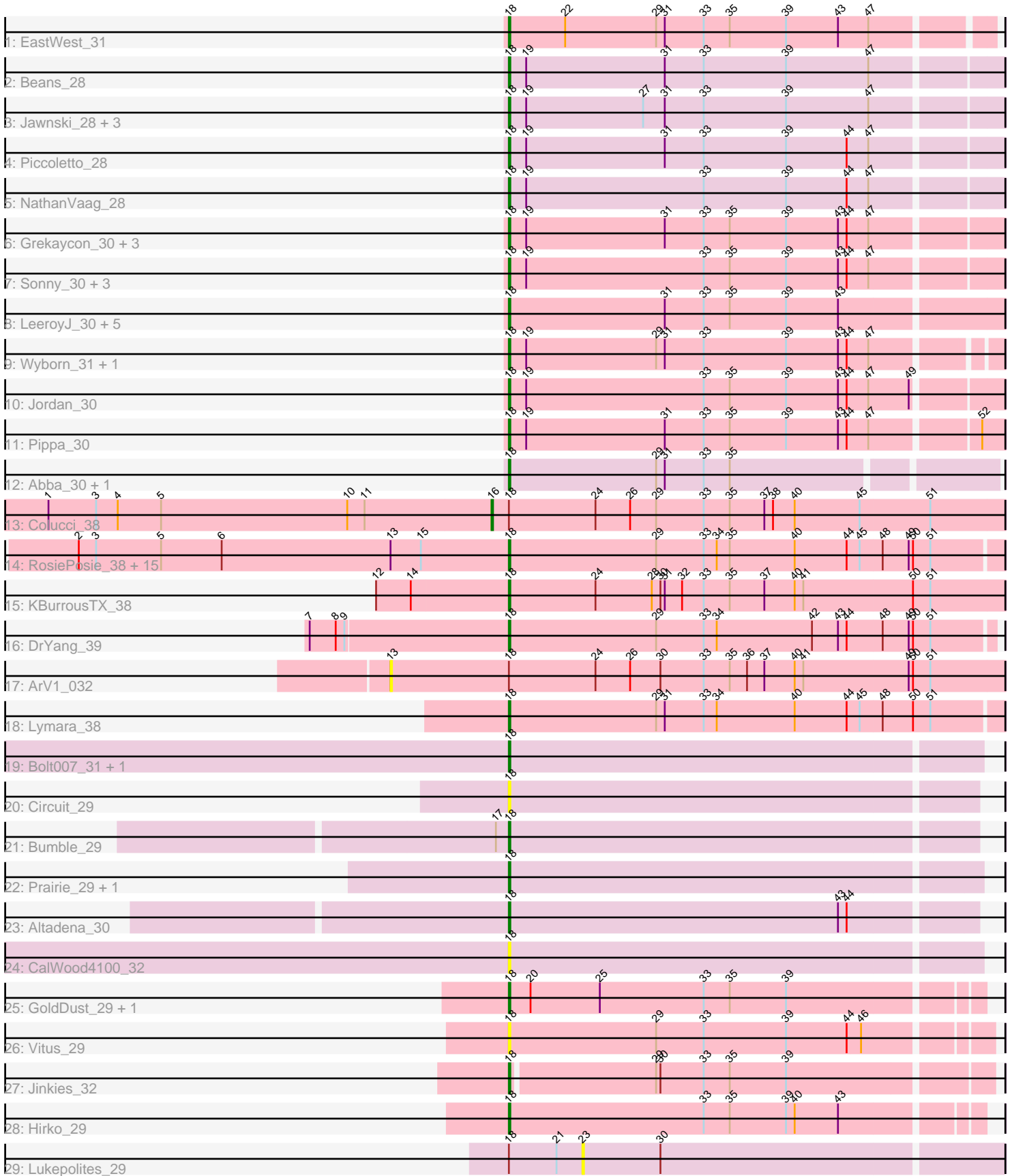


# Pham 216167



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 216167 Report

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

Pham number 216167 has 63 members, 9 are drafts.

Phages represented in each track:

- Track 1 : EastWest\_31
- Track 2 : Beans\_28
- Track 3 : Jawnski\_28, Brent\_28, Franzy\_28, King2\_28
- Track 4 : Piccoletto\_28
- Track 5 : NathanVaag\_28
- Track 6 : Grekaycon\_30, BossLady\_30, Martha\_30, TaeYoung\_30
- Track 7 : Sonny\_30, Shade\_30, Zartrosa\_30, JKerns\_30
- Track 8 : LeeroyJ\_30, Timinator\_30, BigDome\_30, GravityBall\_30, StevieBAY\_30, BarretLemon\_30
- Track 9 : Wyborn\_31, Sicarius2\_31
- Track 10 : Jordan\_30
- Track 11 : Pippa\_30
- Track 12 : Abba\_30, Nostromo\_30
- Track 13 : Colucci\_38
- Track 14 : RosiePosie\_38, Conboy\_38, Linus\_38, EdgarPoe\_38, Tophat\_38, HumptyDumpty\_38, JayCookie\_38, MoyaNatalis\_38, Chubster\_38, Chocolat\_38, JaNo\_38, Scavito\_38, Kabreeze\_38, Mordred\_38, PrincessTrina\_38, Chipper1996\_380
- Track 15 : KBurrousTX\_38
- Track 16 : DrYang\_39
- Track 17 : ArV1\_032
- Track 18 : Lymara\_38
- Track 19 : Bolt007\_31, Lilmac1015\_32
- Track 20 : Circuit\_29
- Track 21 : Bumble\_29
- Track 22 : Prairie\_29, Klevey\_31
- Track 23 : Altadena\_30
- Track 24 : CalWood4100\_32
- Track 25 : GoldDust\_29, Vibaki\_29
- Track 26 : Vitus\_29
- Track 27 : Jinkies\_32
- Track 28 : Hirko\_29
- Track 29 : Lukepolites\_29

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

The start number called the most often in the published annotations is 18, it was called in 53 of the 54 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abba\_30, Altadena\_30, BarretLemon\_30, Beans\_28, BigDome\_30, Bolt007\_31, BossLady\_30, Brent\_28, Bumble\_29, CalWood4100\_32, Chipper1996\_380, Chocolat\_38, Chubster\_38, Circuit\_29, Conboy\_38, DrYang\_39, EastWest\_31, EdgarPoe\_38, Franzy\_28, GoldDust\_29, GravityBall\_30, Grekaycon\_30, Hirko\_29, HumptyDumpty\_38, JKerns\_30, JaNo\_38, Jawnski\_28, JayCookie\_38, Jinkies\_32, Jordan\_30, KBurrousTX\_38, Kabreeze\_38, King2\_28, Klevey\_31, LeeroyJ\_30, Lilmac1015\_32, Linus\_38, Lymara\_38, Martha\_30, Mordred\_38, MoyaNatalis\_38, NathanVaag\_28, Nostromo\_30, Piccoletto\_28, Pippa\_30, Prairie\_29, PrincessTrina\_38, RosiePosie\_38, Scavito\_38, Shade\_30, Sicarius2\_31, Sonny\_30, StevieBAY\_30, TaeYoung\_30, Timinator\_30, Tophat\_38, Vibaki\_29, Vitus\_29, Wyborn\_31, Zartrosa\_30,

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

- ArV1\_032, Colucci\_38, Lukepolites\_29,

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

- 

### Summary by start number:

Start 13:

- Found in 17 of 63 ( 27.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 5.9% of time when present
- Phage (with cluster) where this start called: ArV1\_032 (AR),

Start 16:

- Found in 1 of 63 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Colucci\_38 (AR),

Start 18:

- Found in 63 of 63 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 53 of 54
- Called 95.2% of time when present
- Phage (with cluster) where this start called: Abba\_30 (AO3), Altadena\_30 (FH), BarretLemon\_30 (AO2), Beans\_28 (AO1), BigDome\_30 (AO2), Bolt007\_31 (FH), BossLady\_30 (AO2), Brent\_28 (AO1), Bumble\_29 (FH), CalWood4100\_32 (FH), Chipper1996\_380 (AR), Chocolat\_38 (AR), Chubster\_38 (AR), Circuit\_29 (FH), Conboy\_38 (AR), DrYang\_39 (AR), EastWest\_31 (AO), EdgarPoe\_38 (AR), Franzy\_28 (AO1), GoldDust\_29 (FL), GravityBall\_30 (AO2), Grekaycon\_30 (AO2), Hirko\_29 (FL), HumptyDumpty\_38 (AR), JKerns\_30 (AO2), JaNo\_38 (AR), Jawnski\_28 (AO1), JayCookie\_38 (AR), Jinkies\_32 (FL), Jordan\_30 (AO2), KBurrousTX\_38 (AR), Kabreeze\_38 (AR), King2\_28 (AO1), Klevey\_31 (FH), LeeroyJ\_30 (AO2), Lilmac1015\_32 (FH), Linus\_38 (AR), Lymara\_38 (AR), Martha\_30 (AO2), Mordred\_38 (AR), MoyaNatalis\_38 (AR), NathanVaag\_28 (AO1), Nostromo\_30 (AO3), Piccoletto\_28 (AO1), Pippa\_30 (AO2), Prairie\_29 (FH),

PrincessTrina\_38 (AR), RosiePosie\_38 (AR), Scavito\_38 (AR), Shade\_30 (AO2), Sicarius2\_31 (AO2), Sonny\_30 (AO2), StevieBAY\_30 (AO2), TaeYoung\_30 (AO2), Timinator\_30 (AO2), Tophat\_38 (AR), Vibaki\_29 (FL), Vitus\_29 (FL), Wyborn\_31 (AO2), Zartrosa\_30 (AO2),

Start 23:

- Found in 1 of 63 ( 1.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lukepolites\_29 (singleton),

### **Summary by clusters:**

There are 8 clusters represented in this pham: singleton, AO, AR, AO3, AO2, AO1, FH, FL,

Info for manual annotations of cluster AO:

- Start number 18 was manually annotated 1 time for cluster AO.

Info for manual annotations of cluster AO1:

- Start number 18 was manually annotated 7 times for cluster AO1.

Info for manual annotations of cluster AO2:

- Start number 18 was manually annotated 17 times for cluster AO2.

Info for manual annotations of cluster AO3:

- Start number 18 was manually annotated 1 time for cluster AO3.

Info for manual annotations of cluster AR:

- Start number 16 was manually annotated 1 time for cluster AR.
- Start number 18 was manually annotated 18 times for cluster AR.

Info for manual annotations of cluster FH:

- Start number 18 was manually annotated 6 times for cluster FH.

Info for manual annotations of cluster FL:

- Start number 18 was manually annotated 3 times for cluster FL.

### **Gene Information:**

Gene: Abba\_30 Start: 25231, Stop: 25557, Start Num: 18

Candidate Starts for Abba\_30:

(Start: 18 @25231 has 53 MA's), (29, 25333), (31, 25339), (33, 25366), (35, 25384),

Gene: Altadena\_30 Start: 23925, Stop: 24242, Start Num: 18

Candidate Starts for Altadena\_30:

(Start: 18 @23925 has 53 MA's), (43, 24153), (44, 24159),

Gene: ArV1\_032 Start: 28698, Stop: 29120, Start Num: 13

Candidate Starts for ArV1\_032:

(13, 28698), (Start: 18 @28779 has 53 MA's), (24, 28839), (26, 28863), (30, 28884), (33, 28914), (35, 28932), (36, 28944), (37, 28956), (40, 28977), (41, 28983), (49, 29055), (50, 29058), (51, 29070),

Gene: BarretLemon\_30 Start: 25731, Stop: 26066, Start Num: 18

Candidate Starts for BarretLemon\_30:

(Start: 18 @25731 has 53 MA's), (31, 25839), (33, 25866), (35, 25884), (39, 25923), (43, 25959),

Gene: Beans\_28 Start: 25436, Stop: 25768, Start Num: 18

Candidate Starts for Beans\_28:

(Start: 18 @25436 has 53 MA's), (19, 25448), (31, 25544), (33, 25571), (39, 25628), (47, 25685),

Gene: BigDome\_30 Start: 25723, Stop: 26058, Start Num: 18

Candidate Starts for BigDome\_30:

(Start: 18 @25723 has 53 MA's), (31, 25831), (33, 25858), (35, 25876), (39, 25915), (43, 25951),

Gene: Bolt007\_31 Start: 22989, Stop: 23309, Start Num: 18

Candidate Starts for Bolt007\_31:

(Start: 18 @22989 has 53 MA's),

Gene: BossLady\_30 Start: 25711, Stop: 26043, Start Num: 18

Candidate Starts for BossLady\_30:

(Start: 18 @25711 has 53 MA's), (19, 25723), (31, 25819), (33, 25846), (35, 25864), (39, 25903), (43, 25939), (44, 25945), (47, 25960),

Gene: Brent\_28 Start: 25398, Stop: 25730, Start Num: 18

Candidate Starts for Brent\_28:

(Start: 18 @25398 has 53 MA's), (19, 25410), (27, 25491), (31, 25506), (33, 25533), (39, 25590), (47, 25647),

Gene: Bumble\_29 Start: 23719, Stop: 24036, Start Num: 18

Candidate Starts for Bumble\_29:

(17, 23710), (Start: 18 @23719 has 53 MA's),

Gene: CalWood4100\_32 Start: 22982, Stop: 23302, Start Num: 18

Candidate Starts for CalWood4100\_32:

(Start: 18 @22982 has 53 MA's),

Gene: Chipper1996\_380 Start: 30497, Stop: 30835, Start Num: 18

Candidate Starts for Chipper1996\_380:

(2, 30200), (3, 30212), (5, 30257), (6, 30299), (13, 30416), (15, 30437), (Start: 18 @30497 has 53 MA's), (29, 30599), (33, 30632), (34, 30641), (35, 30650), (40, 30695), (44, 30731), (45, 30740), (48, 30755), (49, 30773), (50, 30776), (51, 30788),

Gene: Chocolat\_38 Start: 30497, Stop: 30835, Start Num: 18

Candidate Starts for Chocolat\_38:

(2, 30200), (3, 30212), (5, 30257), (6, 30299), (13, 30416), (15, 30437), (Start: 18 @30497 has 53 MA's), (29, 30599), (33, 30632), (34, 30641), (35, 30650), (40, 30695), (44, 30731), (45, 30740), (48, 30755), (49, 30773), (50, 30776), (51, 30788),

Gene: Chubster\_38 Start: 30269, Stop: 30607, Start Num: 18

Candidate Starts for Chubster\_38:

(2, 29972), (3, 29984), (5, 30029), (6, 30071), (13, 30188), (15, 30209), (Start: 18 @30269 has 53 MA's), (29, 30371), (33, 30404), (34, 30413), (35, 30422), (40, 30467), (44, 30503), (45, 30512), (48,

30527), (49, 30545), (50, 30548), (51, 30560),

Gene: Circuit\_29 Start: 24572, Stop: 24889, Start Num: 18

Candidate Starts for Circuit\_29:

(Start: 18 @24572 has 53 MA's),

Gene: Colucci\_38 Start: 30063, Stop: 30416, Start Num: 16

Candidate Starts for Colucci\_38:

(1, 29757), (3, 29790), (4, 29805), (5, 29835), (10, 29964), (11, 29976), (Start: 16 @30063 has 1 MA's), (Start: 18 @30075 has 53 MA's), (24, 30135), (26, 30159), (29, 30177), (33, 30210), (35, 30228), (37, 30252), (38, 30258), (40, 30273), (45, 30318), (51, 30366),

Gene: Conboy\_38 Start: 30496, Stop: 30834, Start Num: 18

Candidate Starts for Conboy\_38:

(2, 30199), (3, 30211), (5, 30256), (6, 30298), (13, 30415), (15, 30436), (Start: 18 @30496 has 53 MA's), (29, 30598), (33, 30631), (34, 30640), (35, 30649), (40, 30694), (44, 30730), (45, 30739), (48, 30754), (49, 30772), (50, 30775), (51, 30787),

Gene: DrYang\_39 Start: 31833, Stop: 32165, Start Num: 18

Candidate Starts for DrYang\_39:

(7, 31698), (8, 31716), (9, 31722), (Start: 18 @31833 has 53 MA's), (29, 31935), (33, 31968), (34, 31977), (42, 32043), (43, 32061), (44, 32067), (48, 32091), (49, 32109), (50, 32112), (51, 32124),

Gene: EastWest\_31 Start: 25558, Stop: 25881, Start Num: 18

Candidate Starts for EastWest\_31:

(Start: 18 @25558 has 53 MA's), (22, 25597), (29, 25660), (31, 25666), (33, 25693), (35, 25711), (39, 25750), (43, 25786), (47, 25807),

Gene: EdgarPoe\_38 Start: 30496, Stop: 30834, Start Num: 18

Candidate Starts for EdgarPoe\_38:

(2, 30199), (3, 30211), (5, 30256), (6, 30298), (13, 30415), (15, 30436), (Start: 18 @30496 has 53 MA's), (29, 30598), (33, 30631), (34, 30640), (35, 30649), (40, 30694), (44, 30730), (45, 30739), (48, 30754), (49, 30772), (50, 30775), (51, 30787),

Gene: Franzy\_28 Start: 25397, Stop: 25729, Start Num: 18

Candidate Starts for Franzy\_28:

(Start: 18 @25397 has 53 MA's), (19, 25409), (27, 25490), (31, 25505), (33, 25532), (39, 25589), (47, 25646),

Gene: GoldDust\_29 Start: 26909, Stop: 27226, Start Num: 18

Candidate Starts for GoldDust\_29:

(Start: 18 @26909 has 53 MA's), (20, 26924), (25, 26972), (33, 27044), (35, 27062), (39, 27101),

Gene: GravityBall\_30 Start: 25730, Stop: 26065, Start Num: 18

Candidate Starts for GravityBall\_30:

(Start: 18 @25730 has 53 MA's), (31, 25838), (33, 25865), (35, 25883), (39, 25922), (43, 25958),

Gene: Grekaycon\_30 Start: 25657, Stop: 25989, Start Num: 18

Candidate Starts for Grekaycon\_30:

(Start: 18 @25657 has 53 MA's), (19, 25669), (31, 25765), (33, 25792), (35, 25810), (39, 25849), (43, 25885), (44, 25891), (47, 25906),

Gene: Hirko\_29 Start: 27270, Stop: 27587, Start Num: 18

Candidate Starts for Hirko\_29:

(Start: 18 @27270 has 53 MA's), (33, 27405), (35, 27423), (39, 27462), (40, 27468), (43, 27498),

Gene: HumptyDumpty\_38 Start: 30495, Stop: 30833, Start Num: 18

Candidate Starts for HumptyDumpty\_38:

(2, 30198), (3, 30210), (5, 30255), (6, 30297), (13, 30414), (15, 30435), (Start: 18 @30495 has 53 MA's), (29, 30597), (33, 30630), (34, 30639), (35, 30648), (40, 30693), (44, 30729), (45, 30738), (48, 30753), (49, 30771), (50, 30774), (51, 30786),

Gene: JKerns\_30 Start: 25684, Stop: 26016, Start Num: 18

Candidate Starts for JKerns\_30:

(Start: 18 @25684 has 53 MA's), (19, 25696), (33, 25819), (35, 25837), (39, 25876), (43, 25912), (44, 25918), (47, 25933),

Gene: JaNo\_38 Start: 30495, Stop: 30833, Start Num: 18

Candidate Starts for JaNo\_38:

(2, 30198), (3, 30210), (5, 30255), (6, 30297), (13, 30414), (15, 30435), (Start: 18 @30495 has 53 MA's), (29, 30597), (33, 30630), (34, 30639), (35, 30648), (40, 30693), (44, 30729), (45, 30738), (48, 30753), (49, 30771), (50, 30774), (51, 30786),

Gene: Jawnski\_28 Start: 25407, Stop: 25739, Start Num: 18

Candidate Starts for Jawnski\_28:

(Start: 18 @25407 has 53 MA's), (19, 25419), (27, 25500), (31, 25515), (33, 25542), (39, 25599), (47, 25656),

Gene: JayCookie\_38 Start: 30499, Stop: 30837, Start Num: 18

Candidate Starts for JayCookie\_38:

(2, 30202), (3, 30214), (5, 30259), (6, 30301), (13, 30418), (15, 30439), (Start: 18 @30499 has 53 MA's), (29, 30601), (33, 30634), (34, 30643), (35, 30652), (40, 30697), (44, 30733), (45, 30742), (48, 30757), (49, 30775), (50, 30778), (51, 30790),

Gene: Jinkies\_32 Start: 25039, Stop: 25359, Start Num: 18

Candidate Starts for Jinkies\_32:

(Start: 18 @25039 has 53 MA's), (29, 25135), (30, 25138), (33, 25168), (35, 25186), (39, 25225),

Gene: Jordan\_30 Start: 25654, Stop: 25986, Start Num: 18

Candidate Starts for Jordan\_30:

(Start: 18 @25654 has 53 MA's), (19, 25666), (33, 25789), (35, 25807), (39, 25846), (43, 25882), (44, 25888), (47, 25903), (49, 25930),

Gene: KBurrousTX\_38 Start: 31594, Stop: 31935, Start Num: 18

Candidate Starts for KBurrousTX\_38:

(12, 31504), (14, 31528), (Start: 18 @31594 has 53 MA's), (24, 31654), (28, 31693), (30, 31699), (31, 31702), (32, 31714), (33, 31729), (35, 31747), (37, 31771), (40, 31792), (41, 31798), (50, 31873), (51, 31885),

Gene: Kabreeze\_38 Start: 30495, Stop: 30833, Start Num: 18

Candidate Starts for Kabreeze\_38:

(2, 30198), (3, 30210), (5, 30255), (6, 30297), (13, 30414), (15, 30435), (Start: 18 @30495 has 53 MA's), (29, 30597), (33, 30630), (34, 30639), (35, 30648), (40, 30693), (44, 30729), (45, 30738), (48, 30753), (49, 30771), (50, 30774), (51, 30786),

Gene: King2\_28 Start: 25394, Stop: 25726, Start Num: 18

Candidate Starts for King2\_28:

(Start: 18 @25394 has 53 MA's), (19, 25406), (27, 25487), (31, 25502), (33, 25529), (39, 25586), (47, 25643),

Gene: Klevey\_31 Start: 22992, Stop: 23312, Start Num: 18

Candidate Starts for Klevey\_31:

(Start: 18 @22992 has 53 MA's),

Gene: LeeroyJ\_30 Start: 25730, Stop: 26065, Start Num: 18

Candidate Starts for LeeroyJ\_30:

(Start: 18 @25730 has 53 MA's), (31, 25838), (33, 25865), (35, 25883), (39, 25922), (43, 25958),

Gene: Lilmac1015\_32 Start: 22982, Stop: 23302, Start Num: 18

Candidate Starts for Lilmac1015\_32:

(Start: 18 @22982 has 53 MA's),

Gene: Linus\_38 Start: 30496, Stop: 30834, Start Num: 18

Candidate Starts for Linus\_38:

(2, 30199), (3, 30211), (5, 30256), (6, 30298), (13, 30415), (15, 30436), (Start: 18 @30496 has 53 MA's), (29, 30598), (33, 30631), (34, 30640), (35, 30649), (40, 30694), (44, 30730), (45, 30739), (48, 30754), (49, 30772), (50, 30775), (51, 30787),

Gene: Lukepolites\_29 Start: 24238, Stop: 24522, Start Num: 23

Candidate Starts for Lukepolites\_29:

(Start: 18 @24187 has 53 MA's), (21, 24220), (23, 24238), (30, 24292),

Gene: Lymara\_38 Start: 30314, Stop: 30652, Start Num: 18

Candidate Starts for Lymara\_38:

(Start: 18 @30314 has 53 MA's), (29, 30416), (31, 30422), (33, 30449), (34, 30458), (40, 30512), (44, 30548), (45, 30557), (48, 30572), (50, 30593), (51, 30605),

Gene: Martha\_30 Start: 25658, Stop: 25990, Start Num: 18

Candidate Starts for Martha\_30:

(Start: 18 @25658 has 53 MA's), (19, 25670), (31, 25766), (33, 25793), (35, 25811), (39, 25850), (43, 25886), (44, 25892), (47, 25907),

Gene: Mordred\_38 Start: 30495, Stop: 30833, Start Num: 18

Candidate Starts for Mordred\_38:

(2, 30198), (3, 30210), (5, 30255), (6, 30297), (13, 30414), (15, 30435), (Start: 18 @30495 has 53 MA's), (29, 30597), (33, 30630), (34, 30639), (35, 30648), (40, 30693), (44, 30729), (45, 30738), (48, 30753), (49, 30771), (50, 30774), (51, 30786),

Gene: MoyaNatalis\_38 Start: 30499, Stop: 30837, Start Num: 18

Candidate Starts for MoyaNatalis\_38:

(2, 30202), (3, 30214), (5, 30259), (6, 30301), (13, 30418), (15, 30439), (Start: 18 @30499 has 53 MA's), (29, 30601), (33, 30634), (34, 30643), (35, 30652), (40, 30697), (44, 30733), (45, 30742), (48, 30757), (49, 30775), (50, 30778), (51, 30790),

Gene: NathanVaag\_28 Start: 25410, Stop: 25742, Start Num: 18

Candidate Starts for NathanVaag\_28:

(Start: 18 @25410 has 53 MA's), (19, 25422), (33, 25545), (39, 25602), (44, 25644), (47, 25659),

Gene: Nostromo\_30 Start: 24685, Stop: 25011, Start Num: 18



Candidate Starts for Nostromo\_30:

(Start: 18 @24685 has 53 MA's), (29, 24787), (31, 24793), (33, 24820), (35, 24838),

Gene: Piccoletto\_28 Start: 25412, Stop: 25744, Start Num: 18

Candidate Starts for Piccoletto\_28:

(Start: 18 @25412 has 53 MA's), (19, 25424), (31, 25520), (33, 25547), (39, 25604), (44, 25646), (47, 25661),

Gene: Pippa\_30 Start: 25783, Stop: 26115, Start Num: 18

Candidate Starts for Pippa\_30:

(Start: 18 @25783 has 53 MA's), (19, 25795), (31, 25891), (33, 25918), (35, 25936), (39, 25975), (43, 26011), (44, 26017), (47, 26032), (52, 26101),

Gene: Prairie\_29 Start: 23013, Stop: 23333, Start Num: 18

Candidate Starts for Prairie\_29:

(Start: 18 @23013 has 53 MA's),

Gene: PrincessTrina\_38 Start: 30499, Stop: 30837, Start Num: 18

Candidate Starts for PrincessTrina\_38:

(2, 30202), (3, 30214), (5, 30259), (6, 30301), (13, 30418), (15, 30439), (Start: 18 @30499 has 53 MA's), (29, 30601), (33, 30634), (34, 30643), (35, 30652), (40, 30697), (44, 30733), (45, 30742), (48, 30757), (49, 30775), (50, 30778), (51, 30790),

Gene: RosiePosie\_38 Start: 30498, Stop: 30836, Start Num: 18

Candidate Starts for RosiePosie\_38:

(2, 30201), (3, 30213), (5, 30258), (6, 30300), (13, 30417), (15, 30438), (Start: 18 @30498 has 53 MA's), (29, 30600), (33, 30633), (34, 30642), (35, 30651), (40, 30696), (44, 30732), (45, 30741), (48, 30756), (49, 30774), (50, 30777), (51, 30789),

Gene: Scavito\_38 Start: 30496, Stop: 30834, Start Num: 18

Candidate Starts for Scavito\_38:

(2, 30199), (3, 30211), (5, 30256), (6, 30298), (13, 30415), (15, 30436), (Start: 18 @30496 has 53 MA's), (29, 30598), (33, 30631), (34, 30640), (35, 30649), (40, 30694), (44, 30730), (45, 30739), (48, 30754), (49, 30772), (50, 30775), (51, 30787),

Gene: Shade\_30 Start: 25624, Stop: 25956, Start Num: 18

Candidate Starts for Shade\_30:

(Start: 18 @25624 has 53 MA's), (19, 25636), (33, 25759), (35, 25777), (39, 25816), (43, 25852), (44, 25858), (47, 25873),

Gene: Sicarius2\_31 Start: 25280, Stop: 25606, Start Num: 18

Candidate Starts for Sicarius2\_31:

(Start: 18 @25280 has 53 MA's), (19, 25292), (29, 25382), (31, 25388), (33, 25415), (39, 25472), (43, 25508), (44, 25514), (47, 25529),

Gene: Sonny\_30 Start: 25654, Stop: 25986, Start Num: 18

Candidate Starts for Sonny\_30:

(Start: 18 @25654 has 53 MA's), (19, 25666), (33, 25789), (35, 25807), (39, 25846), (43, 25882), (44, 25888), (47, 25903),

Gene: StevieBAY\_30 Start: 25730, Stop: 26065, Start Num: 18

Candidate Starts for StevieBAY\_30:

(Start: 18 @25730 has 53 MA's), (31, 25838), (33, 25865), (35, 25883), (39, 25922), (43, 25958),

Gene: TaeYoung\_30 Start: 25658, Stop: 25990, Start Num: 18

Candidate Starts for TaeYoung\_30:

(Start: 18 @25658 has 53 MA's), (19, 25670), (31, 25766), (33, 25793), (35, 25811), (39, 25850), (43, 25886), (44, 25892), (47, 25907),

Gene: Timinator\_30 Start: 25730, Stop: 26065, Start Num: 18

Candidate Starts for Timinator\_30:

(Start: 18 @25730 has 53 MA's), (31, 25838), (33, 25865), (35, 25883), (39, 25922), (43, 25958),

Gene: Tophat\_38 Start: 30497, Stop: 30835, Start Num: 18

Candidate Starts for Tophat\_38:

(2, 30200), (3, 30212), (5, 30257), (6, 30299), (13, 30416), (15, 30437), (Start: 18 @30497 has 53 MA's), (29, 30599), (33, 30632), (34, 30641), (35, 30650), (40, 30695), (44, 30731), (45, 30740), (48, 30755), (49, 30773), (50, 30776), (51, 30788),

Gene: Vibaki\_29 Start: 26784, Stop: 27101, Start Num: 18

Candidate Starts for Vibaki\_29:

(Start: 18 @26784 has 53 MA's), (20, 26799), (25, 26847), (33, 26919), (35, 26937), (39, 26976),

Gene: Vitus\_29 Start: 23602, Stop: 23925, Start Num: 18

Candidate Starts for Vitus\_29:

(Start: 18 @23602 has 53 MA's), (29, 23704), (33, 23737), (39, 23794), (44, 23836), (46, 23845),

Gene: Wyborn\_31 Start: 25978, Stop: 26304, Start Num: 18

Candidate Starts for Wyborn\_31:

(Start: 18 @25978 has 53 MA's), (19, 25990), (29, 26080), (31, 26086), (33, 26113), (39, 26170), (43, 26206), (44, 26212), (47, 26227),

Gene: Zartrosa\_30 Start: 25648, Stop: 25980, Start Num: 18

Candidate Starts for Zartrosa\_30:

(Start: 18 @25648 has 53 MA's), (19, 25660), (33, 25783), (35, 25801), (39, 25840), (43, 25876), (44, 25882), (47, 25897),