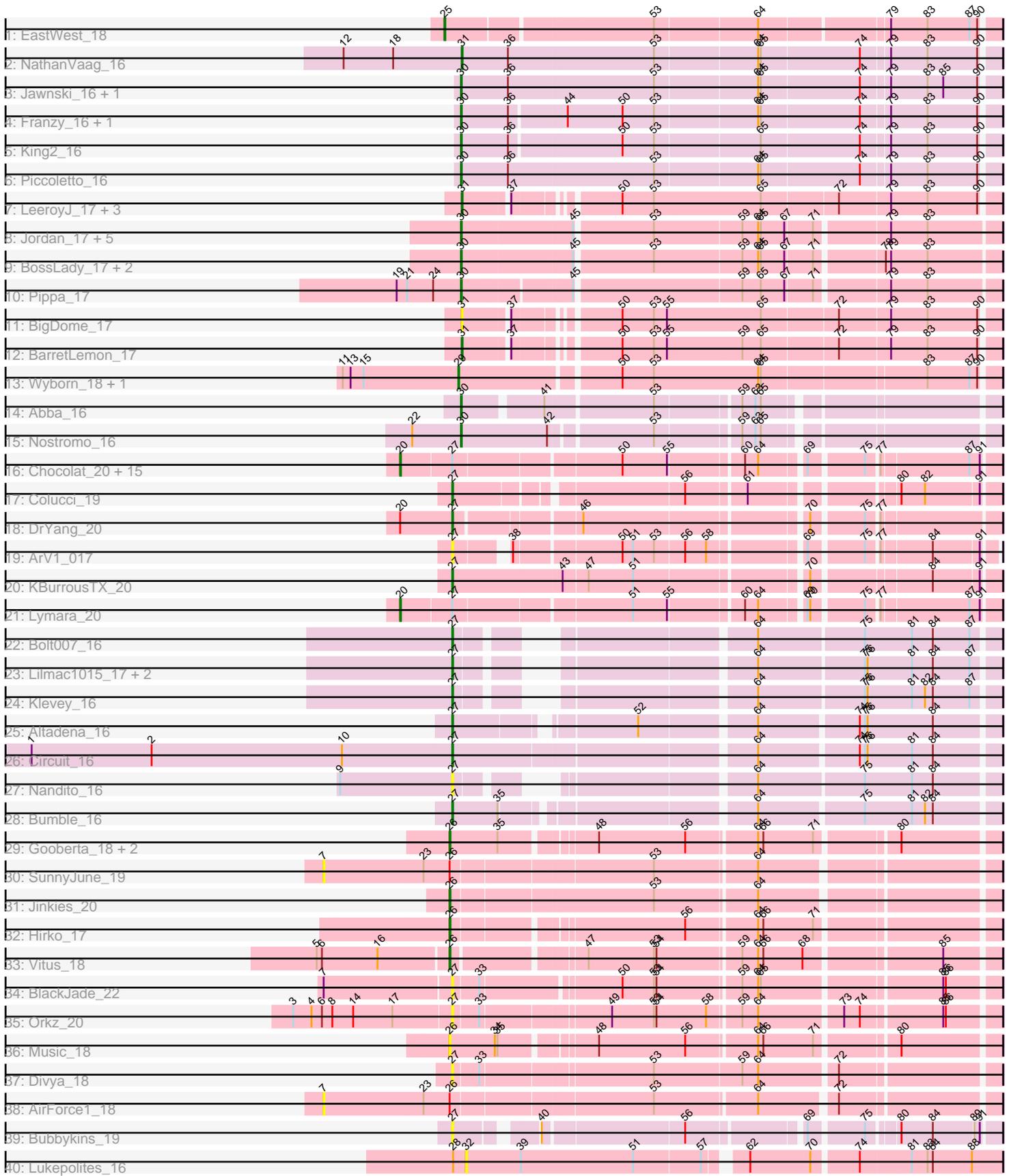


Pham 289366



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 289366 Report

This analysis was run 03/28/26 on database version 641.

Pham number 289366 has 72 members, 14 are drafts.

Phages represented in each track:

- Track 1 : EastWest\_18
- Track 2 : NathanVaag\_16
- Track 3 : Jawnski\_16, Beans\_16
- Track 4 : Franzy\_16, Brent\_16
- Track 5 : King2\_16
- Track 6 : Piccoletto\_16
- Track 7 : LeeroyJ\_17, StevieBAY\_17, Timinator\_17, GravityBall\_17
- Track 8 : Jordan\_17, Shade\_17, Zartrosa\_17, Sonny\_17, TaeYoung\_17, JKerns\_17
- Track 9 : BossLady\_17, Martha\_17, Grekaycon\_17
- Track 10 : Pippa\_17
- Track 11 : BigDome\_17
- Track 12 : BarretLemon\_17
- Track 13 : Wyborn\_18, Sicarius2\_18
- Track 14 : Abba\_16
- Track 15 : Nostromo\_16
- Track 16 : Chocolat\_20, Kabreeze\_20, Scavito\_20, Conboy\_20, Chipper1996\_200, PrincessTrina\_20, JaNo\_20, RosiePosie\_20, HumptyDumpty\_20, Chubster\_20, MoyaNatalis\_20, Mordred\_20, Tophat\_20, Linus\_20, JayCookie\_20, EdgarPoe\_20
- Track 17 : Colucci\_19
- Track 18 : DrYang\_20
- Track 19 : ArV1\_017
- Track 20 : KBurrousTX\_20
- Track 21 : Lymara\_20
- Track 22 : Bolt007\_16
- Track 23 : Lilmac1015\_17, Prairie\_16, CalWood4100\_17
- Track 24 : Klevey\_16
- Track 25 : Altadena\_16
- Track 26 : Circuit\_16
- Track 27 : Nandito\_16
- Track 28 : Bumble\_16
- Track 29 : Gooberta\_18, GoldDust\_18, Vibaki\_18
- Track 30 : SunnyJune\_19
- Track 31 : Jinkies\_20
- Track 32 : Hirko\_17
- Track 33 : Vitus\_18
- Track 34 : BlackJade\_22
- Track 35 : Orkz\_20

- Track 36 : Music\_18
- Track 37 : Divya\_18
- Track 38 : AirForce1\_18
- Track 39 : Bubbykins\_19
- Track 40 : Lukepolites\_16

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

The start number called the most often in the published annotations is 30, it was called in 18 of the 58 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abba\_16, Beans\_16, BossLady\_17, Brent\_16, Franzy\_16, Grekaycon\_17, JKerns\_17, Jawnski\_16, Jordan\_17, King2\_16, Martha\_17, Nostromo\_16, Piccoletto\_16, Pippa\_17, Shade\_17, Sonny\_17, TaeYoung\_17, Zartrosa\_17,

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

- 

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

- AirForce1\_18, Altadena\_16, ArV1\_017, BarretLemon\_17, BigDome\_17, BlackJade\_22, Bolt007\_16, Bubbykins\_19, Bumble\_16, CalWood4100\_17, Chipper1996\_200, Chocolat\_20, Chubster\_20, Circuit\_16, Colucci\_19, Conboy\_20, Divya\_18, DrYang\_20, EastWest\_18, EdgarPoe\_20, GoldDust\_18, Gooberta\_18, GravityBall\_17, Hirko\_17, HumptyDumpty\_20, JaNo\_20, JayCookie\_20, Jinkies\_20, KBurrousTX\_20, Kabreeze\_20, Klevey\_16, LeeroyJ\_17, Lilmac1015\_17, Linus\_20, Lukepolites\_16, Lymara\_20, Mordred\_20, MoyaNatalis\_20, Music\_18, Nandito\_16, NathanVaag\_16, Orkz\_20, Prairie\_16, PrincessTrina\_20, RosiePosie\_20, Scavito\_20, Sicarius2\_18, StevieBAY\_17, SunnyJune\_19, Timinator\_17, Tophat\_20, Vibaki\_18, Vitus\_18, Wyborn\_18,

**Summary by start number:**

Start 7:

- Found in 3 of 72 ( 4.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 66.7% of time when present
- Phage (with cluster) where this start called: AirForce1\_18 (FL), SunnyJune\_19 (FL),

Start 20:

- Found in 18 of 72 ( 25.0% ) of genes in pham
- Manual Annotations of this start: 16 of 58
- Called 94.4% of time when present
- Phage (with cluster) where this start called: Chipper1996\_200 (AR), Chocolat\_20 (AR), Chubster\_20 (AR), Conboy\_20 (AR), EdgarPoe\_20 (AR), HumptyDumpty\_20 (AR), JaNo\_20 (AR), JayCookie\_20 (AR), Kabreeze\_20 (AR), Linus\_20 (AR), Lymara\_20 (AR), Mordred\_20 (AR), MoyaNatalis\_20 (AR), PrincessTrina\_20 (AR), RosiePosie\_20 (AR), Scavito\_20 (AR), Tophat\_20 (AR),

Start 25:

- Found in 1 of 72 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: EastWest\_18 (AO),

#### Start 26:

- Found in 9 of 72 ( 12.5% ) of genes in pham
- Manual Annotations of this start: 5 of 58
- Called 77.8% of time when present
- Phage (with cluster) where this start called: GoldDust\_18 (FL), Gooberta\_18 (FL), Hirko\_17 (FL), Jinkies\_20 (FL), Music\_18 (FL), Vibaki\_18 (FL), Vitus\_18 (FL),

#### Start 27:

- Found in 34 of 72 ( 47.2% ) of genes in pham
- Manual Annotations of this start: 10 of 58
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Altadena\_16 (FH), ArV1\_017 (AR), BlackJade\_22 (FL), Bolt007\_16 (FH), Bubbykins\_19 (UNK), Bumble\_16 (FH), CalWood4100\_17 (FH), Circuit\_16 (FH), Colucci\_19 (AR), Divya\_18 (FL), DrYang\_20 (AR), KBurrousTX\_20 (AR), Klevey\_16 (FH), Lilmac1015\_17 (FH), Nandito\_16 (FH), Orkz\_20 (FL), Prairie\_16 (FH),

#### Start 29:

- Found in 2 of 72 ( 2.8% ) of genes in pham
- Manual Annotations of this start: 2 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sicarius2\_18 (AO2), Wyborn\_18 (AO2),

#### Start 30:

- Found in 18 of 72 ( 25.0% ) of genes in pham
- Manual Annotations of this start: 18 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abba\_16 (AO3), Beans\_16 (AO1), BossLady\_17 (AO2), Brent\_16 (AO1), Franzy\_16 (AO1), Grekaycon\_17 (AO2), JKerns\_17 (AO2), Jawnski\_16 (AO1), Jordan\_17 (AO2), King2\_16 (AO1), Martha\_17 (AO2), Nostromo\_16 (AO3), Piccoletto\_16 (AO1), Pippa\_17 (AO2), Shade\_17 (AO2), Sonny\_17 (AO2), TaeYoung\_17 (AO2), Zartrosa\_17 (AO2),

#### Start 31:

- Found in 7 of 72 ( 9.7% ) of genes in pham
- Manual Annotations of this start: 6 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BarretLemon\_17 (AO2), BigDome\_17 (AO2), GravityBall\_17 (AO2), LeeroyJ\_17 (AO2), NathanVaag\_16 (AO1), StevieBAY\_17 (AO2), Timinator\_17 (AO2),

#### Start 32:

- Found in 1 of 72 ( 1.4% ) 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\_16 (singleton),

### Summary by clusters:

There are 9 clusters represented in this pham: singleton, AO, AR, AO3, AO2, AO1, FH, UNK, FL,

Info for manual annotations of cluster AO:

- Start number 25 was manually annotated 1 time for cluster AO.

Info for manual annotations of cluster AO1:

- Start number 30 was manually annotated 6 times for cluster AO1.
- Start number 31 was manually annotated 1 time for cluster AO1.

Info for manual annotations of cluster AO2:

- Start number 29 was manually annotated 2 times for cluster AO2.
- Start number 30 was manually annotated 10 times for cluster AO2.
- Start number 31 was manually annotated 5 times for cluster AO2.

Info for manual annotations of cluster AO3:

- Start number 30 was manually annotated 2 times for cluster AO3.

Info for manual annotations of cluster AR:

- Start number 20 was manually annotated 16 times for cluster AR.
- Start number 27 was manually annotated 3 times for cluster AR.

Info for manual annotations of cluster FH:

- Start number 27 was manually annotated 7 times for cluster FH.

Info for manual annotations of cluster FL:

- Start number 26 was manually annotated 5 times for cluster FL.

### ***Gene Information:***

Gene: Abba\_16 Start: 12747, Stop: 13298, Start Num: 30

Candidate Starts for Abba\_16:

(Start: 30 @12747 has 18 MA's), (41, 12828), (53, 12945), (59, 13035), (63, 13050), (65, 13056),

Gene: AirForce1\_18 Start: 12516, Stop: 13238, Start Num: 7

Candidate Starts for AirForce1\_18:

(7, 12516), (23, 12630), (Start: 26 @12657 has 5 MA's), (53, 12876), (64, 12987), (72, 13068),

Gene: Altadena\_16 Start: 12369, Stop: 12935, Start Num: 27

Candidate Starts for Altadena\_16:

(Start: 27 @12369 has 10 MA's), (52, 12549), (64, 12672), (74, 12780), (75, 12786), (76, 12789), (84, 12864),

Gene: ArV1\_017 Start: 13308, Stop: 13847, Start Num: 27

Candidate Starts for ArV1\_017:

(Start: 27 @13308 has 10 MA's), (38, 13356), (50, 13470), (51, 13482), (53, 13506), (56, 13539), (58, 13563), (69, 13659), (75, 13716), (77, 13728), (84, 13782), (91, 13833),

Gene: BarretLemon\_17 Start: 12966, Stop: 13523, Start Num: 31

Candidate Starts for BarretLemon\_17:

(Start: 31 @12966 has 6 MA's), (37, 13011), (50, 13110), (53, 13146), (55, 13161), (59, 13242), (65, 13263), (72, 13347), (79, 13404), (83, 13446), (90, 13503),

Gene: Beans\_16 Start: 12640, Stop: 13233, Start Num: 30

Candidate Starts for Beans\_16:

(Start: 30 @12640 has 18 MA's), (36, 12691), (53, 12856), (64, 12970), (65, 12973), (74, 13084), (79, 13114), (83, 13156), (85, 13174), (90, 13213),

Gene: BigDome\_17 Start: 12954, Stop: 13511, Start Num: 31

Candidate Starts for BigDome\_17:

(Start: 31 @12954 has 6 MA's), (37, 12999), (50, 13098), (53, 13134), (55, 13149), (65, 13251), (72, 13335), (79, 13392), (83, 13434), (90, 13491),

Gene: BlackJade\_22 Start: 14610, Stop: 15185, Start Num: 27

Candidate Starts for BlackJade\_22:

(7, 14469), (Start: 27 @14610 has 10 MA's), (33, 14637), (50, 14784), (53, 14820), (54, 14823), (59, 14913), (64, 14931), (65, 14934), (85, 15126), (86, 15129),

Gene: Bolt007\_16 Start: 12245, Stop: 12781, Start Num: 27

Candidate Starts for Bolt007\_16:

(Start: 27 @12245 has 10 MA's), (64, 12515), (75, 12632), (81, 12686), (84, 12710), (87, 12752),

Gene: BossLady\_17 Start: 12960, Stop: 13541, Start Num: 30

Candidate Starts for BossLady\_17:

(Start: 30 @12960 has 18 MA's), (45, 13080), (53, 13164), (59, 13263), (64, 13281), (65, 13284), (67, 13311), (71, 13341), (78, 13413), (79, 13419), (83, 13461),

Gene: Brent\_16 Start: 12623, Stop: 13210, Start Num: 30

Candidate Starts for Brent\_16:

(Start: 30 @12623 has 18 MA's), (36, 12674), (44, 12734), (50, 12797), (53, 12833), (64, 12947), (65, 12950), (74, 13061), (79, 13091), (83, 13133), (90, 13190),

Gene: Bubbykins\_19 Start: 14513, Stop: 15055, Start Num: 27

Candidate Starts for Bubbykins\_19:

(Start: 27 @14513 has 10 MA's), (40, 14588), (56, 14741), (69, 14861), (75, 14918), (80, 14948), (84, 14984), (89, 15029), (91, 15035),

Gene: Bumble\_16 Start: 12365, Stop: 12937, Start Num: 27

Candidate Starts for Bumble\_16:

(Start: 27 @12365 has 10 MA's), (35, 12416), (64, 12674), (75, 12788), (81, 12842), (82, 12857), (84, 12866),

Gene: CalWood4100\_17 Start: 12225, Stop: 12761, Start Num: 27

Candidate Starts for CalWood4100\_17:

(Start: 27 @12225 has 10 MA's), (64, 12495), (75, 12612), (76, 12615), (81, 12666), (84, 12690), (87, 12732),

Gene: Chipper1996\_200 Start: 14908, Stop: 15531, Start Num: 20

Candidate Starts for Chipper1996\_200:

(Start: 20 @14908 has 16 MA's), (Start: 27 @14965 has 10 MA's), (50, 15145), (55, 15196), (60, 15274), (64, 15289), (69, 15334), (75, 15391), (77, 15403), (87, 15499), (91, 15511),

Gene: Chocolat\_20 Start: 14909, Stop: 15532, Start Num: 20

Candidate Starts for Chocolat\_20:

(Start: 20 @14909 has 16 MA's), (Start: 27 @14966 has 10 MA's), (50, 15146), (55, 15197), (60, 15275), (64, 15290), (69, 15335), (75, 15392), (77, 15404), (87, 15500), (91, 15512),

Gene: Chubster\_20 Start: 14679, Stop: 15302, Start Num: 20

Candidate Starts for Chubster\_20:

(Start: 20 @14679 has 16 MA's), (Start: 27 @14736 has 10 MA's), (50, 14916), (55, 14967), (60, 15045), (64, 15060), (69, 15105), (75, 15162), (77, 15174), (87, 15270), (91, 15282),

Gene: Circuit\_16 Start: 12357, Stop: 12947, Start Num: 27

Candidate Starts for Circuit\_16:

(1, 11874), (2, 12012), (10, 12231), (Start: 27 @12357 has 10 MA's), (64, 12684), (74, 12792), (75, 12798), (76, 12801), (81, 12852), (84, 12876),

Gene: Colucci\_19 Start: 14456, Stop: 15007, Start Num: 27

Candidate Starts for Colucci\_19:

(Start: 27 @14456 has 10 MA's), (56, 14693), (61, 14756), (80, 14900), (82, 14927), (91, 14987),

Gene: Conboy\_20 Start: 14907, Stop: 15530, Start Num: 20

Candidate Starts for Conboy\_20:

(Start: 20 @14907 has 16 MA's), (Start: 27 @14964 has 10 MA's), (50, 15144), (55, 15195), (60, 15273), (64, 15288), (69, 15333), (75, 15390), (77, 15402), (87, 15498), (91, 15510),

Gene: Divya\_18 Start: 12931, Stop: 13515, Start Num: 27

Candidate Starts for Divya\_18:

(Start: 27 @12931 has 10 MA's), (33, 12958), (53, 13144), (59, 13243), (64, 13261), (72, 13345),

Gene: DrYang\_20 Start: 14938, Stop: 15498, Start Num: 27

Candidate Starts for DrYang\_20:

(Start: 20 @14878 has 16 MA's), (Start: 27 @14938 has 10 MA's), (46, 15067), (70, 15304), (75, 15358), (77, 15370),

Gene: EastWest\_18 Start: 12936, Stop: 13532, Start Num: 25

Candidate Starts for EastWest\_18:

(Start: 25 @12936 has 1 MA's), (53, 13161), (64, 13275), (79, 13413), (83, 13455), (87, 13503), (90, 13512),

Gene: EdgarPoe\_20 Start: 14907, Stop: 15530, Start Num: 20

Candidate Starts for EdgarPoe\_20:

(Start: 20 @14907 has 16 MA's), (Start: 27 @14964 has 10 MA's), (50, 15144), (55, 15195), (60, 15273), (64, 15288), (69, 15333), (75, 15390), (77, 15402), (87, 15498), (91, 15510),

Gene: Franzy\_16 Start: 12623, Stop: 13210, Start Num: 30

Candidate Starts for Franzy\_16:

(Start: 30 @12623 has 18 MA's), (36, 12674), (44, 12734), (50, 12797), (53, 12833), (64, 12947), (65, 12950), (74, 13061), (79, 13091), (83, 13133), (90, 13190),

Gene: GoldDust\_18 Start: 14535, Stop: 15113, Start Num: 26

Candidate Starts for GoldDust\_18:

(Start: 26 @14535 has 5 MA's), (35, 14589), (48, 14685), (56, 14784), (64, 14859), (66, 14865), (71, 14922), (80, 15006),

Gene: Gooberta\_18 Start: 14534, Stop: 15112, Start Num: 26

Candidate Starts for Gooberta\_18:

(Start: 26 @14534 has 5 MA's), (35, 14588), (48, 14684), (56, 14783), (64, 14858), (66, 14864), (71, 14921), (80, 15005),

Gene: GravityBall\_17 Start: 12965, Stop: 13522, Start Num: 31

Candidate Starts for GravityBall\_17:

(Start: 31 @12965 has 6 MA's), (37, 13010), (50, 13109), (53, 13145), (65, 13262), (72, 13346), (79, 13403), (83, 13445), (90, 13502),

Gene: Grekaycon\_17 Start: 12969, Stop: 13550, Start Num: 30

Candidate Starts for Grekaycon\_17:

(Start: 30 @12969 has 18 MA's), (45, 13089), (53, 13173), (59, 13272), (64, 13290), (65, 13293), (67, 13320), (71, 13350), (78, 13422), (79, 13428), (83, 13470),

Gene: Hirko\_17 Start: 13972, Stop: 14544, Start Num: 26

Candidate Starts for Hirko\_17:

(Start: 26 @13972 has 5 MA's), (56, 14215), (64, 14290), (66, 14296), (71, 14353),

Gene: HumptyDumpty\_20 Start: 14906, Stop: 15529, Start Num: 20

Candidate Starts for HumptyDumpty\_20:

(Start: 20 @14906 has 16 MA's), (Start: 27 @14963 has 10 MA's), (50, 15143), (55, 15194), (60, 15272), (64, 15287), (69, 15332), (75, 15389), (77, 15401), (87, 15497), (91, 15509),

Gene: JKerns\_17 Start: 12996, Stop: 13577, Start Num: 30

Candidate Starts for JKerns\_17:

(Start: 30 @12996 has 18 MA's), (45, 13116), (53, 13200), (59, 13299), (64, 13317), (65, 13320), (67, 13347), (71, 13377), (79, 13455), (83, 13497),

Gene: JaNo\_20 Start: 14906, Stop: 15529, Start Num: 20

Candidate Starts for JaNo\_20:

(Start: 20 @14906 has 16 MA's), (Start: 27 @14963 has 10 MA's), (50, 15143), (55, 15194), (60, 15272), (64, 15287), (69, 15332), (75, 15389), (77, 15401), (87, 15497), (91, 15509),

Gene: Jawnski\_16 Start: 12635, Stop: 13228, Start Num: 30

Candidate Starts for Jawnski\_16:

(Start: 30 @12635 has 18 MA's), (36, 12686), (53, 12851), (64, 12965), (65, 12968), (74, 13079), (79, 13109), (83, 13151), (85, 13169), (90, 13208),

Gene: JayCookie\_20 Start: 14909, Stop: 15532, Start Num: 20

Candidate Starts for JayCookie\_20:

(Start: 20 @14909 has 16 MA's), (Start: 27 @14966 has 10 MA's), (50, 15146), (55, 15197), (60, 15275), (64, 15290), (69, 15335), (75, 15392), (77, 15404), (87, 15500), (91, 15512),

Gene: Jinkies\_20 Start: 15297, Stop: 15881, Start Num: 26

Candidate Starts for Jinkies\_20:

(Start: 26 @15297 has 5 MA's), (53, 15519), (64, 15630),

Gene: Jordan\_17 Start: 12966, Stop: 13547, Start Num: 30

Candidate Starts for Jordan\_17:

(Start: 30 @12966 has 18 MA's), (45, 13086), (53, 13170), (59, 13269), (64, 13287), (65, 13290), (67, 13317), (71, 13347), (79, 13425), (83, 13467),

Gene: KBurrousTX\_20 Start: 14758, Stop: 15333, Start Num: 27

Candidate Starts for KBurrousTX\_20:

(Start: 27 @14758 has 10 MA's), (43, 14881), (47, 14908), (51, 14959), (70, 15139), (84, 15262), (91, 15313),

Gene: Kabreeze\_20 Start: 14906, Stop: 15529, Start Num: 20

Candidate Starts for Kabreeze\_20:

(Start: 20 @14906 has 16 MA's), (Start: 27 @14963 has 10 MA's), (50, 15143), (55, 15194), (60, 15272), (64, 15287), (69, 15332), (75, 15389), (77, 15401), (87, 15497), (91, 15509),

Gene: King2\_16 Start: 12625, Stop: 13212, Start Num: 30

Candidate Starts for King2\_16:

(Start: 30 @12625 has 18 MA's), (36, 12676), (50, 12799), (53, 12835), (65, 12952), (74, 13063), (79, 13093), (83, 13135), (90, 13192),

Gene: Klevey\_16 Start: 12235, Stop: 12771, Start Num: 27

Candidate Starts for Klevey\_16:

(Start: 27 @12235 has 10 MA's), (64, 12505), (75, 12622), (76, 12625), (81, 12676), (82, 12691), (84, 12700), (87, 12742),

Gene: LeeroyJ\_17 Start: 12965, Stop: 13522, Start Num: 31

Candidate Starts for LeeroyJ\_17:

(Start: 31 @12965 has 6 MA's), (37, 13010), (50, 13109), (53, 13145), (65, 13262), (72, 13346), (79, 13403), (83, 13445), (90, 13502),

Gene: Lilmac1015\_17 Start: 12225, Stop: 12761, Start Num: 27

Candidate Starts for Lilmac1015\_17:

(Start: 27 @12225 has 10 MA's), (64, 12495), (75, 12612), (76, 12615), (81, 12666), (84, 12690), (87, 12732),

Gene: Linus\_20 Start: 14906, Stop: 15529, Start Num: 20

Candidate Starts for Linus\_20:

(Start: 20 @14906 has 16 MA's), (Start: 27 @14963 has 10 MA's), (50, 15143), (55, 15194), (60, 15272), (64, 15287), (69, 15332), (75, 15389), (77, 15401), (87, 15497), (91, 15509),

Gene: Lukepolites\_16 Start: 12548, Stop: 13129, Start Num: 32

Candidate Starts for Lukepolites\_16:

(28, 12533), (32, 12548), (39, 12611), (51, 12740), (57, 12815), (62, 12851), (70, 12920), (74, 12968), (81, 13025), (83, 13043), (84, 13049), (88, 13094),

Gene: Lymara\_20 Start: 14907, Stop: 15530, Start Num: 20

Candidate Starts for Lymara\_20:

(Start: 20 @14907 has 16 MA's), (Start: 27 @14964 has 10 MA's), (51, 15156), (55, 15195), (60, 15273), (64, 15288), (69, 15333), (70, 15336), (75, 15390), (77, 15402), (87, 15498), (91, 15510),

Gene: Martha\_17 Start: 12907, Stop: 13488, Start Num: 30

Candidate Starts for Martha\_17:

(Start: 30 @12907 has 18 MA's), (45, 13027), (53, 13111), (59, 13210), (64, 13228), (65, 13231), (67, 13258), (71, 13288), (78, 13360), (79, 13366), (83, 13408),

Gene: Mordred\_20 Start: 14906, Stop: 15529, Start Num: 20

Candidate Starts for Mordred\_20:

(Start: 20 @14906 has 16 MA's), (Start: 27 @14963 has 10 MA's), (50, 15143), (55, 15194), (60, 15272), (64, 15287), (69, 15332), (75, 15389), (77, 15401), (87, 15497), (91, 15509),

Gene: MoyaNatalis\_20 Start: 14909, Stop: 15532, Start Num: 20

Candidate Starts for MoyaNatalis\_20:

(Start: 20 @14909 has 16 MA's), (Start: 27 @14966 has 10 MA's), (50, 15146), (55, 15197), (60, 15275), (64, 15290), (69, 15335), (75, 15392), (77, 15404), (87, 15500), (91, 15512),

Gene: Music\_18 Start: 14404, Stop: 14982, Start Num: 26

Candidate Starts for Music\_18:

(Start: 26 @14404 has 5 MA's), (34, 14455), (35, 14458), (48, 14554), (56, 14653), (64, 14728), (66, 14734), (71, 14791), (80, 14875),

Gene: Nandito\_16 Start: 12328, Stop: 12861, Start Num: 27

Candidate Starts for Nandito\_16:

(9, 12199), (Start: 27 @12328 has 10 MA's), (64, 12595), (75, 12712), (81, 12766), (84, 12790),

Gene: NathanVaag\_16 Start: 12628, Stop: 13221, Start Num: 31

Candidate Starts for NathanVaag\_16:

(12, 12493), (18, 12550), (Start: 31 @12628 has 6 MA's), (36, 12679), (53, 12844), (64, 12958), (65, 12961), (74, 13072), (79, 13102), (83, 13144), (90, 13201),

Gene: Nostromo\_16 Start: 12952, Stop: 13509, Start Num: 30

Candidate Starts for Nostromo\_16:

(22, 12898), (Start: 30 @12952 has 18 MA's), (42, 13048), (53, 13156), (59, 13246), (63, 13261), (65, 13267),

Gene: Orkz\_20 Start: 13023, Stop: 13601, Start Num: 27

Candidate Starts for Orkz\_20:

(3, 12846), (4, 12867), (6, 12879), (8, 12891), (14, 12915), (17, 12960), (Start: 27 @13023 has 10 MA's), (33, 13050), (49, 13188), (53, 13236), (54, 13239), (58, 13296), (59, 13329), (64, 13347), (73, 13437), (74, 13455), (85, 13542), (86, 13545),

Gene: Piccoletto\_16 Start: 12628, Stop: 13221, Start Num: 30

Candidate Starts for Piccoletto\_16:

(Start: 30 @12628 has 18 MA's), (36, 12679), (53, 12844), (64, 12958), (65, 12961), (74, 13072), (79, 13102), (83, 13144), (90, 13201),

Gene: Pippa\_17 Start: 13004, Stop: 13579, Start Num: 30

Candidate Starts for Pippa\_17:

(19, 12932), (21, 12944), (24, 12974), (Start: 30 @13004 has 18 MA's), (45, 13118), (59, 13301), (65, 13322), (67, 13349), (71, 13379), (79, 13457), (83, 13499),

Gene: Prairie\_16 Start: 12232, Stop: 12768, Start Num: 27

Candidate Starts for Prairie\_16:

(Start: 27 @12232 has 10 MA's), (64, 12502), (75, 12619), (76, 12622), (81, 12673), (84, 12697), (87, 12739),

Gene: PrincessTrina\_20 Start: 14909, Stop: 15532, Start Num: 20

Candidate Starts for PrincessTrina\_20:

(Start: 20 @14909 has 16 MA's), (Start: 27 @14966 has 10 MA's), (50, 15146), (55, 15197), (60, 15275), (64, 15290), (69, 15335), (75, 15392), (77, 15404), (87, 15500), (91, 15512),

Gene: RosiePosie\_20 Start: 14909, Stop: 15532, Start Num: 20

Candidate Starts for RosiePosie\_20:

(Start: 20 @14909 has 16 MA's), (Start: 27 @14966 has 10 MA's), (50, 15146), (55, 15197), (60, 15275), (64, 15290), (69, 15335), (75, 15392), (77, 15404), (87, 15500), (91, 15512),

Gene: Scavito\_20 Start: 14906, Stop: 15529, Start Num: 20

Candidate Starts for Scavito\_20:

(Start: 20 @14906 has 16 MA's), (Start: 27 @14963 has 10 MA's), (50, 15143), (55, 15194), (60, 15272), (64, 15287), (69, 15332), (75, 15389), (77, 15401), (87, 15497), (91, 15509),

Gene: Shade\_17 Start: 12945, Stop: 13526, Start Num: 30

Candidate Starts for Shade\_17:

(Start: 30 @12945 has 18 MA's), (45, 13065), (53, 13149), (59, 13248), (64, 13266), (65, 13269), (67, 13296), (71, 13326), (79, 13404), (83, 13446),

Gene: Sicarius2\_18 Start: 13443, Stop: 14027, Start Num: 29

Candidate Starts for Sicarius2\_18:

(11, 13314), (13, 13323), (15, 13338), (Start: 29 @13443 has 2 MA's), (50, 13614), (53, 13650), (64, 13767), (65, 13770), (83, 13950), (87, 13998), (90, 14007),

Gene: Sonny\_17 Start: 12966, Stop: 13547, Start Num: 30

Candidate Starts for Sonny\_17:

(Start: 30 @12966 has 18 MA's), (45, 13086), (53, 13170), (59, 13269), (64, 13287), (65, 13290), (67, 13317), (71, 13347), (79, 13425), (83, 13467),

Gene: StevieBAY\_17 Start: 12965, Stop: 13522, Start Num: 31

Candidate Starts for StevieBAY\_17:

(Start: 31 @12965 has 6 MA's), (37, 13010), (50, 13109), (53, 13145), (65, 13262), (72, 13346), (79, 13403), (83, 13445), (90, 13502),

Gene: SunnyJune\_19 Start: 14298, Stop: 15020, Start Num: 7

Candidate Starts for SunnyJune\_19:

(7, 14298), (23, 14412), (Start: 26 @14439 has 5 MA's), (53, 14658), (64, 14769),

Gene: TaeYoung\_17 Start: 12970, Stop: 13551, Start Num: 30

Candidate Starts for TaeYoung\_17:

(Start: 30 @12970 has 18 MA's), (45, 13090), (53, 13174), (59, 13273), (64, 13291), (65, 13294), (67, 13321), (71, 13351), (79, 13429), (83, 13471),

Gene: Timinator\_17 Start: 12965, Stop: 13522, Start Num: 31

Candidate Starts for Timinator\_17:

(Start: 31 @12965 has 6 MA's), (37, 13010), (50, 13109), (53, 13145), (65, 13262), (72, 13346), (79, 13403), (83, 13445), (90, 13502),

Gene: Tophat\_20 Start: 14908, Stop: 15531, Start Num: 20

Candidate Starts for Tophat\_20:

(Start: 20 @14908 has 16 MA's), (Start: 27 @14965 has 10 MA's), (50, 15145), (55, 15196), (60, 15274), (64, 15289), (69, 15334), (75, 15391), (77, 15403), (87, 15499), (91, 15511),

Gene: Vibaki\_18 Start: 14416, Stop: 14994, Start Num: 26

Candidate Starts for Vibaki\_18:

(Start: 26 @14416 has 5 MA's), (35, 14470), (48, 14566), (56, 14665), (64, 14740), (66, 14746), (71, 14803), (80, 14887),

Gene: Vitus\_18 Start: 14206, Stop: 14781, Start Num: 26

Candidate Starts for Vitus\_18:

(5, 14062), (6, 14068), (16, 14131), (Start: 26 @14206 has 5 MA's), (47, 14341), (53, 14416), (54, 14419), (59, 14509), (64, 14527), (66, 14533), (68, 14578), (85, 14722),

Gene: Wyborn\_18 Start: 13304, Stop: 13888, Start Num: 29

Candidate Starts for Wyborn\_18:

(11, 13175), (13, 13184), (15, 13199), (Start: 29 @13304 has 2 MA's), (50, 13475), (53, 13511), (64, 13628), (65, 13631), (83, 13811), (87, 13859), (90, 13868),

Gene: Zartrosa\_17 Start: 12969, Stop: 13550, Start Num: 30

Candidate Starts for Zartrosa\_17:

(Start: 30 @12969 has 18 MA's), (45, 13089), (53, 13173), (59, 13272), (64, 13290), (65, 13293), (67, 13320), (71, 13350), (79, 13428), (83, 13470),