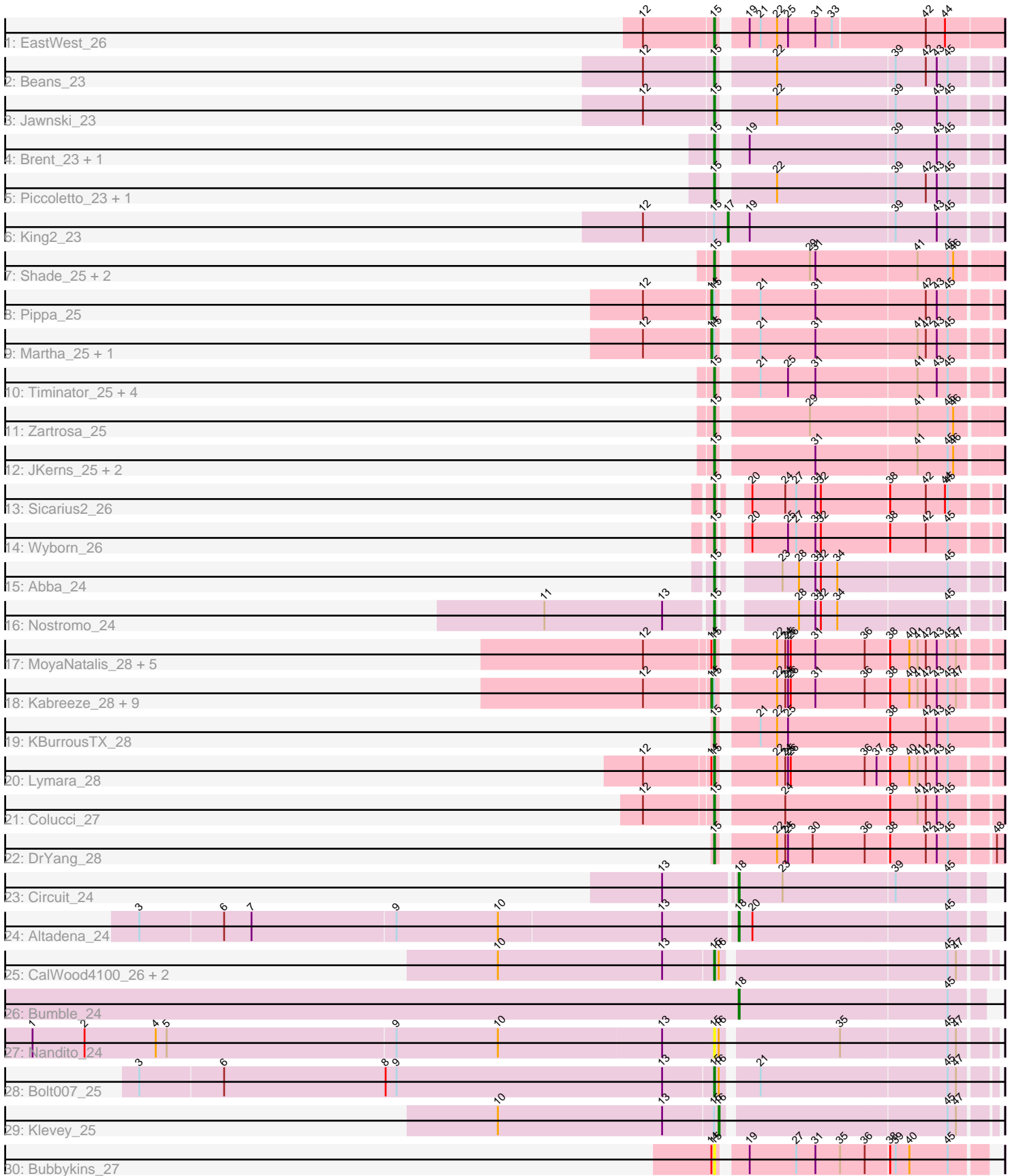


# Pham 303401



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 303401 Report

This analysis was run 06/08/26 on database version 649.

Pham number 303401 has 57 members, 4 are drafts.

Phages represented in each track:

- Track 1 : EastWest\_26
- Track 2 : Beans\_23
- Track 3 : Jawnski\_23
- Track 4 : Brent\_23, Franzy\_23
- Track 5 : Piccoletto\_23, NathanVaag\_23
- Track 6 : King2\_23
- Track 7 : Shade\_25, Grekaycon\_25, TaeYoung\_25
- Track 8 : Pippa\_25
- Track 9 : Martha\_25, BossLady\_25
- Track 10 : Timinator\_25, BarretLemon\_25, LeeroyJ\_25, GravityBall\_25, StevieBAY\_25
- Track 11 : Zartrosa\_25
- Track 12 : JKerns\_25, Sonny\_25, Jordan\_25
- Track 13 : Sicarius2\_26
- Track 14 : Wyborn\_26
- Track 15 : Abba\_24
- Track 16 : Nostromo\_24
- Track 17 : MoyaNatalis\_28, JaNo\_28, Mordred\_28, Tophat\_28, Linus\_28, JayCookie\_28
- Track 18 : Kabreeze\_28, Chocolat\_28, Scavito\_28, Conboy\_28, Chipper1996\_280, PrincessTrina\_28, RosiePosie\_28, Chubster\_28, EdgarPoe\_28, HumptyDumpty\_28
- Track 19 : KBurrousTX\_28
- Track 20 : Lymara\_28
- Track 21 : Colucci\_27
- Track 22 : DrYang\_28
- Track 23 : Circuit\_24
- Track 24 : Altadena\_24
- Track 25 : CalWood4100\_26, Prairie\_24, Lilmac1015\_26
- Track 26 : Bumble\_24
- Track 27 : Nandito\_24
- Track 28 : Bolt007\_25
- Track 29 : Klevey\_25
- Track 30 : Bubbykins\_27

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

The start number called the most often in the published annotations is 15, it was called in 35 of the 53 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abba\_24, BarretLemon\_25, Beans\_23, Bolt007\_25, Brent\_23, Bubbykins\_27, CalWood4100\_26, Colucci\_27, DrYang\_28, EastWest\_26, Franzy\_23, GravityBall\_25, Grekaycon\_25, JKerns\_25, JaNo\_28, Jawnski\_23, JayCookie\_28, Jordan\_25, KBurrousTX\_28, LeeroyJ\_25, Lilmac1015\_26, Linus\_28, Lymara\_28, Mordred\_28, MoyaNatalis\_28, Nandito\_24, NathanVaag\_23, Nostromo\_24, Piccoletto\_23, Prairie\_24, Shade\_25, Sicarius2\_26, Sonny\_25, StevieBAY\_25, TaeYoung\_25, Timinator\_25, Tophat\_28, Wyborn\_26, Zartrosa\_25,

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

- BossLady\_25, Chipper1996\_280, Chocolat\_28, Chubster\_28, Conboy\_28, EdgarPoe\_28, HumptyDumpty\_28, Kabreeze\_28, King2\_23, Klevey\_25, Martha\_25, Pippa\_25, PrincessTrina\_28, RosiePosie\_28, Scavito\_28,

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

- Altadena\_24, Bumble\_24, Circuit\_24,

### Summary by start number:

Start 14:

- Found in 21 of 57 ( 36.8% ) of genes in pham
- Manual Annotations of this start: 13 of 53
- Called 61.9% of time when present
- Phage (with cluster) where this start called: BossLady\_25 (AO2), Chipper1996\_280 (AR), Chocolat\_28 (AR), Chubster\_28 (AR), Conboy\_28 (AR), EdgarPoe\_28 (AR), HumptyDumpty\_28 (AR), Kabreeze\_28 (AR), Martha\_25 (AO2), Pippa\_25 (AO2), PrincessTrina\_28 (AR), RosiePosie\_28 (AR), Scavito\_28 (AR),

Start 15:

- Found in 54 of 57 ( 94.7% ) of genes in pham
- Manual Annotations of this start: 35 of 53
- Called 72.2% of time when present
- Phage (with cluster) where this start called: Abba\_24 (AO3), BarretLemon\_25 (AO2), Beans\_23 (AO1), Bolt007\_25 (FH), Brent\_23 (AO1), Bubbykins\_27 (UNK), CalWood4100\_26 (FH), Colucci\_27 (AR), DrYang\_28 (AR), EastWest\_26 (AO), Franzy\_23 (AO1), GravityBall\_25 (AO2), Grekaycon\_25 (AO2), JKerns\_25 (AO2), JaNo\_28 (AR), Jawnski\_23 (AO1), JayCookie\_28 (AR), Jordan\_25 (AO2), KBurrousTX\_28 (AR), LeeroyJ\_25 (AO2), Lilmac1015\_26 (FH), Linus\_28 (AR), Lymara\_28 (AR), Mordred\_28 (AR), MoyaNatalis\_28 (AR), Nandito\_24 (FH), NathanVaag\_23 (AO1), Nostromo\_24 (AO3), Piccoletto\_23 (AO1), Prairie\_24 (FH), Shade\_25 (AO2), Sicarius2\_26 (AO2), Sonny\_25 (AO2), StevieBAY\_25 (AO2), TaeYoung\_25 (AO2), Timinator\_25 (AO2), Tophat\_28 (AR), Wyborn\_26 (AO2), Zartrosa\_25 (AO2),

Start 16:

- Found in 6 of 57 ( 10.5% ) of genes in pham
- Manual Annotations of this start: 1 of 53
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Klevey\_25 (FH),

Start 17:

- Found in 1 of 57 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 1 of 53
- Called 100.0% of time when present
- Phage (with cluster) where this start called: King2\_23 (AO1),

Start 18:

- Found in 3 of 57 ( 5.3% ) of genes in pham
- Manual Annotations of this start: 3 of 53
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Altadena\_24 (FH), Bumble\_24 (FH), Circuit\_24 (FH),

**Summary by clusters:**

There are 7 clusters represented in this pham: AO, AR, AO3, AO2, AO1, FH, UNK,

Info for manual annotations of cluster AO:

- Start number 15 was manually annotated 1 time for cluster AO.

Info for manual annotations of cluster AO1:

- Start number 15 was manually annotated 6 times for cluster AO1.
- Start number 17 was manually annotated 1 time for cluster AO1.

Info for manual annotations of cluster AO2:

- Start number 14 was manually annotated 3 times for cluster AO2.
- Start number 15 was manually annotated 14 times for cluster AO2.

Info for manual annotations of cluster AO3:

- Start number 15 was manually annotated 2 times for cluster AO3.

Info for manual annotations of cluster AR:

- Start number 14 was manually annotated 10 times for cluster AR.
- Start number 15 was manually annotated 9 times for cluster AR.

Info for manual annotations of cluster FH:

- Start number 15 was manually annotated 3 times for cluster FH.
- Start number 16 was manually annotated 1 time for cluster FH.
- Start number 18 was manually annotated 3 times for cluster FH.

**Gene Information:**

Gene: Abba\_24 Start: 22694, Stop: 22966, Start Num: 15

Candidate Starts for Abba\_24:

(Start: 15 @22694 has 35 MA's), (23, 22742), (28, 22760), (31, 22778), (32, 22784), (34, 22802), (45, 22919),

Gene: Altadena\_24 Start: 21892, Stop: 22152, Start Num: 18

Candidate Starts for Altadena\_24:

(3, 21250), (6, 21340), (7, 21370), (9, 21526), (10, 21637), (13, 21814), (Start: 18 @21892 has 3 MA's), (20, 21907), (45, 22117),

Gene: BarretLemon\_25 Start: 22825, Stop: 23112, Start Num: 15

Candidate Starts for BarretLemon\_25:

(Start: 15 @22825 has 35 MA's), (21, 22861), (25, 22891), (31, 22921), (41, 23029), (43, 23050), (45, 23062),

Gene: Beans\_23 Start: 22491, Stop: 22778, Start Num: 15

Candidate Starts for Beans\_23:

(12, 22416), (Start: 15 @22491 has 35 MA's), (22, 22545), (39, 22671), (42, 22704), (43, 22716), (45, 22728),

Gene: Bolt007\_25 Start: 20917, Stop: 21198, Start Num: 15

Candidate Starts for Bolt007\_25:

(3, 20293), (6, 20383), (8, 20560), (9, 20572), (13, 20863), (Start: 15 @20917 has 35 MA's), (Start: 16 @20920 has 1 MA's), (21, 20953), (45, 21154), (47, 21163),

Gene: BossLady\_25 Start: 22799, Stop: 23089, Start Num: 14

Candidate Starts for BossLady\_25:

(12, 22727), (Start: 14 @22799 has 13 MA's), (Start: 15 @22802 has 35 MA's), (21, 22838), (31, 22898), (41, 23006), (42, 23015), (43, 23027), (45, 23039),

Gene: Brent\_23 Start: 22473, Stop: 22760, Start Num: 15

Candidate Starts for Brent\_23:

(Start: 15 @22473 has 35 MA's), (19, 22497), (39, 22653), (43, 22698), (45, 22710),

Gene: Bubbykins\_27 Start: 23094, Stop: 23369, Start Num: 15

Candidate Starts for Bubbykins\_27:

(Start: 14 @23091 has 13 MA's), (Start: 15 @23094 has 35 MA's), (19, 23118), (27, 23169), (31, 23190), (35, 23217), (36, 23244), (38, 23268), (39, 23274), (40, 23289), (45, 23331),

Gene: Bumble\_24 Start: 21766, Stop: 22026, Start Num: 18

Candidate Starts for Bumble\_24:

(Start: 18 @21766 has 3 MA's), (45, 21991),

Gene: CalWood4100\_26 Start: 20907, Stop: 21188, Start Num: 15

Candidate Starts for CalWood4100\_26:

(10, 20673), (13, 20853), (Start: 15 @20907 has 35 MA's), (Start: 16 @20910 has 1 MA's), (45, 21144), (47, 21153),

Gene: Chipper1996\_280 Start: 25644, Stop: 25934, Start Num: 14

Candidate Starts for Chipper1996\_280:

(12, 25575), (Start: 14 @25644 has 13 MA's), (Start: 15 @25647 has 35 MA's), (22, 25701), (24, 25710), (25, 25713), (26, 25716), (31, 25743), (36, 25797), (38, 25821), (40, 25842), (41, 25851), (42, 25860), (43, 25872), (45, 25884), (47, 25893),

Gene: Chocolat\_28 Start: 25644, Stop: 25934, Start Num: 14

Candidate Starts for Chocolat\_28:

(12, 25575), (Start: 14 @25644 has 13 MA's), (Start: 15 @25647 has 35 MA's), (22, 25701), (24, 25710), (25, 25713), (26, 25716), (31, 25743), (36, 25797), (38, 25821), (40, 25842), (41, 25851), (42, 25860), (43, 25872), (45, 25884), (47, 25893),

Gene: Chubster\_28 Start: 25415, Stop: 25705, Start Num: 14

Candidate Starts for Chubster\_28:

(12, 25346), (Start: 14 @25415 has 13 MA's), (Start: 15 @25418 has 35 MA's), (22, 25472), (24, 25481), (25, 25484), (26, 25487), (31, 25514), (36, 25568), (38, 25592), (40, 25613), (41, 25622), (42, 25631), (43, 25643), (45, 25655), (47, 25664),

Gene: Circuit\_24 Start: 21828, Stop: 22088, Start Num: 18

Candidate Starts for Circuit\_24:

(13, 21753), (Start: 18 @21828 has 3 MA's), (23, 21876), (39, 21996), (45, 22053),

Gene: Colucci\_27 Start: 25113, Stop: 25400, Start Num: 15

Candidate Starts for Colucci\_27:

(12, 25041), (Start: 15 @25113 has 35 MA's), (24, 25176), (38, 25287), (41, 25317), (42, 25326), (43, 25338), (45, 25350),

Gene: Conboy\_28 Start: 25643, Stop: 25933, Start Num: 14

Candidate Starts for Conboy\_28:

(12, 25574), (Start: 14 @25643 has 13 MA's), (Start: 15 @25646 has 35 MA's), (22, 25700), (24, 25709), (25, 25712), (26, 25715), (31, 25742), (36, 25796), (38, 25820), (40, 25841), (41, 25850), (42, 25859), (43, 25871), (45, 25883), (47, 25892),

Gene: DrYang\_28 Start: 26738, Stop: 27025, Start Num: 15

Candidate Starts for DrYang\_28:

(Start: 15 @26738 has 35 MA's), (22, 26792), (24, 26801), (25, 26804), (30, 26831), (36, 26888), (38, 26912), (42, 26951), (43, 26963), (45, 26975), (48, 27017),

Gene: EastWest\_26 Start: 22751, Stop: 23047, Start Num: 15

Candidate Starts for EastWest\_26:

(12, 22676), (Start: 15 @22751 has 35 MA's), (19, 22775), (21, 22787), (22, 22805), (25, 22817), (31, 22847), (33, 22865), (42, 22964), (44, 22985),

Gene: EdgarPoe\_28 Start: 25643, Stop: 25933, Start Num: 14

Candidate Starts for EdgarPoe\_28:

(12, 25574), (Start: 14 @25643 has 13 MA's), (Start: 15 @25646 has 35 MA's), (22, 25700), (24, 25709), (25, 25712), (26, 25715), (31, 25742), (36, 25796), (38, 25820), (40, 25841), (41, 25850), (42, 25859), (43, 25871), (45, 25883), (47, 25892),

Gene: Franzy\_23 Start: 22472, Stop: 22759, Start Num: 15

Candidate Starts for Franzy\_23:

(Start: 15 @22472 has 35 MA's), (19, 22496), (39, 22652), (43, 22697), (45, 22709),

Gene: GravityBall\_25 Start: 22824, Stop: 23111, Start Num: 15

Candidate Starts for GravityBall\_25:

(Start: 15 @22824 has 35 MA's), (21, 22860), (25, 22890), (31, 22920), (41, 23028), (43, 23049), (45, 23061),

Gene: Grekaycon\_25 Start: 22811, Stop: 23101, Start Num: 15

Candidate Starts for Grekaycon\_25:

(Start: 15 @22811 has 35 MA's), (29, 22901), (31, 22907), (41, 23015), (45, 23048), (46, 23054),

Gene: HumptyDumpty\_28 Start: 25642, Stop: 25932, Start Num: 14

Candidate Starts for HumptyDumpty\_28:

(12, 25573), (Start: 14 @25642 has 13 MA's), (Start: 15 @25645 has 35 MA's), (22, 25699), (24, 25708), (25, 25711), (26, 25714), (31, 25741), (36, 25795), (38, 25819), (40, 25840), (41, 25849), (42, 25858), (43, 25870), (45, 25882), (47, 25891),

Gene: JKerns\_25 Start: 22838, Stop: 23128, Start Num: 15

Candidate Starts for JKerns\_25:

(Start: 15 @22838 has 35 MA's), (31, 22934), (41, 23042), (45, 23075), (46, 23081),

Gene: JaNo\_28 Start: 25645, Stop: 25932, Start Num: 15

Candidate Starts for JaNo\_28:

(12, 25573), (Start: 14 @25642 has 13 MA's), (Start: 15 @25645 has 35 MA's), (22, 25699), (24, 25708), (25, 25711), (26, 25714), (31, 25741), (36, 25795), (38, 25819), (40, 25840), (41, 25849), (42, 25858), (43, 25870), (45, 25882), (47, 25891),

Gene: Jawnski\_23 Start: 22486, Stop: 22773, Start Num: 15

Candidate Starts for Jawnski\_23:

(12, 22411), (Start: 15 @22486 has 35 MA's), (22, 22540), (39, 22666), (43, 22711), (45, 22723),

Gene: JayCookie\_28 Start: 25648, Stop: 25935, Start Num: 15

Candidate Starts for JayCookie\_28:

(12, 25576), (Start: 14 @25645 has 13 MA's), (Start: 15 @25648 has 35 MA's), (22, 25702), (24, 25711), (25, 25714), (26, 25717), (31, 25744), (36, 25798), (38, 25822), (40, 25843), (41, 25852), (42, 25861), (43, 25873), (45, 25885), (47, 25894),

Gene: Jordan\_25 Start: 22808, Stop: 23098, Start Num: 15

Candidate Starts for Jordan\_25:

(Start: 15 @22808 has 35 MA's), (31, 22904), (41, 23012), (45, 23045), (46, 23051),

Gene: KBurrousTX\_28 Start: 26559, Stop: 26852, Start Num: 15

Candidate Starts for KBurrousTX\_28:

(Start: 15 @26559 has 35 MA's), (21, 26595), (22, 26613), (25, 26625), (38, 26733), (42, 26772), (43, 26784), (45, 26796),

Gene: Kabreeze\_28 Start: 25642, Stop: 25932, Start Num: 14

Candidate Starts for Kabreeze\_28:

(12, 25573), (Start: 14 @25642 has 13 MA's), (Start: 15 @25645 has 35 MA's), (22, 25699), (24, 25708), (25, 25711), (26, 25714), (31, 25741), (36, 25795), (38, 25819), (40, 25840), (41, 25849), (42, 25858), (43, 25870), (45, 25882), (47, 25891),

Gene: King2\_23 Start: 22491, Stop: 22778, Start Num: 17

Candidate Starts for King2\_23:

(12, 22401), (Start: 15 @22476 has 35 MA's), (Start: 17 @22491 has 1 MA's), (19, 22515), (39, 22671), (43, 22716), (45, 22728),

Gene: Klevey\_25 Start: 20920, Stop: 21198, Start Num: 16

Candidate Starts for Klevey\_25:

(10, 20683), (13, 20863), (Start: 15 @20917 has 35 MA's), (Start: 16 @20920 has 1 MA's), (45, 21154), (47, 21163),

Gene: LeeroyJ\_25 Start: 22824, Stop: 23111, Start Num: 15

Candidate Starts for LeeroyJ\_25:

(Start: 15 @22824 has 35 MA's), (21, 22860), (25, 22890), (31, 22920), (41, 23028), (43, 23049), (45, 23061),

Gene: Lilmac1015\_26 Start: 20907, Stop: 21188, Start Num: 15

Candidate Starts for Lilmac1015\_26:

(10, 20673), (13, 20853), (Start: 15 @20907 has 35 MA's), (Start: 16 @20910 has 1 MA's), (45, 21144), (47, 21153),

Gene: Linus\_28 Start: 25645, Stop: 25932, Start Num: 15

Candidate Starts for Linus\_28:

(12, 25573), (Start: 14 @25642 has 13 MA's), (Start: 15 @25645 has 35 MA's), (22, 25699), (24, 25708), (25, 25711), (26, 25714), (31, 25741), (36, 25795), (38, 25819), (40, 25840), (41, 25849), (42, 25858), (43, 25870), (45, 25882), (47, 25891),

Gene: Lymara\_28 Start: 25643, Stop: 25930, Start Num: 15

Candidate Starts for Lymara\_28:

(12, 25571), (Start: 14 @25640 has 13 MA's), (Start: 15 @25643 has 35 MA's), (22, 25697), (24, 25706), (25, 25709), (26, 25712), (36, 25793), (37, 25805), (38, 25817), (40, 25838), (41, 25847), (42, 25856), (43, 25868), (45, 25880),

Gene: Martha\_25 Start: 22746, Stop: 23036, Start Num: 14

Candidate Starts for Martha\_25:

(12, 22674), (Start: 14 @22746 has 13 MA's), (Start: 15 @22749 has 35 MA's), (21, 22785), (31, 22845), (41, 22953), (42, 22962), (43, 22974), (45, 22986),

Gene: Mordred\_28 Start: 25645, Stop: 25932, Start Num: 15

Candidate Starts for Mordred\_28:

(12, 25573), (Start: 14 @25642 has 13 MA's), (Start: 15 @25645 has 35 MA's), (22, 25699), (24, 25708), (25, 25711), (26, 25714), (31, 25741), (36, 25795), (38, 25819), (40, 25840), (41, 25849), (42, 25858), (43, 25870), (45, 25882), (47, 25891),

Gene: MoyaNatalis\_28 Start: 25648, Stop: 25935, Start Num: 15

Candidate Starts for MoyaNatalis\_28:

(12, 25576), (Start: 14 @25645 has 13 MA's), (Start: 15 @25648 has 35 MA's), (22, 25702), (24, 25711), (25, 25714), (26, 25717), (31, 25744), (36, 25798), (38, 25822), (40, 25843), (41, 25852), (42, 25861), (43, 25873), (45, 25885), (47, 25894),

Gene: Nandito\_24 Start: 19902, Stop: 20183, Start Num: 15

Candidate Starts for Nandito\_24:

(1, 19161), (2, 19218), (4, 19296), (5, 19308), (9, 19557), (10, 19668), (13, 19845), (Start: 15 @19902 has 35 MA's), (Start: 16 @19905 has 1 MA's), (35, 20025), (45, 20139), (47, 20148),

Gene: NathanVaag\_23 Start: 22467, Stop: 22754, Start Num: 15

Candidate Starts for NathanVaag\_23:

(Start: 15 @22467 has 35 MA's), (22, 22521), (39, 22647), (42, 22680), (43, 22692), (45, 22704),

Gene: Nostromo\_24 Start: 22545, Stop: 22817, Start Num: 15

Candidate Starts for Nostromo\_24:

(11, 22365), (13, 22494), (Start: 15 @22545 has 35 MA's), (28, 22611), (31, 22629), (32, 22635), (34, 22653), (45, 22770),

Gene: Piccoletto\_23 Start: 22466, Stop: 22753, Start Num: 15

Candidate Starts for Piccoletto\_23:

(Start: 15 @22466 has 35 MA's), (22, 22520), (39, 22646), (42, 22679), (43, 22691), (45, 22703),

Gene: Pippa\_25 Start: 22844, Stop: 23134, Start Num: 14

Candidate Starts for Pippa\_25:

(12, 22772), (Start: 14 @22844 has 13 MA's), (Start: 15 @22847 has 35 MA's), (21, 22883), (31, 22943), (42, 23060), (43, 23072), (45, 23084),

Gene: Prairie\_24 Start: 20935, Stop: 21216, Start Num: 15

Candidate Starts for Prairie\_24:

(10, 20701), (13, 20881), (Start: 15 @20935 has 35 MA's), (Start: 16 @20938 has 1 MA's), (45, 21172), (47, 21181),

Gene: PrincessTrina\_28 Start: 25645, Stop: 25935, Start Num: 14

Candidate Starts for PrincessTrina\_28:

(12, 25576), (Start: 14 @25645 has 13 MA's), (Start: 15 @25648 has 35 MA's), (22, 25702), (24, 25711), (25, 25714), (26, 25717), (31, 25744), (36, 25798), (38, 25822), (40, 25843), (41, 25852), (42, 25861), (43, 25873), (45, 25885), (47, 25894),

Gene: RosiePosie\_28 Start: 25645, Stop: 25935, Start Num: 14

Candidate Starts for RosiePosie\_28:

(12, 25576), (Start: 14 @25645 has 13 MA's), (Start: 15 @25648 has 35 MA's), (22, 25702), (24, 25711), (25, 25714), (26, 25717), (31, 25744), (36, 25798), (38, 25822), (40, 25843), (41, 25852), (42, 25861), (43, 25873), (45, 25885), (47, 25894),

Gene: Scavito\_28 Start: 25642, Stop: 25932, Start Num: 14

Candidate Starts for Scavito\_28:

(12, 25573), (Start: 14 @25642 has 13 MA's), (Start: 15 @25645 has 35 MA's), (22, 25699), (24, 25708), (25, 25711), (26, 25714), (31, 25741), (36, 25795), (38, 25819), (40, 25840), (41, 25849), (42, 25858), (43, 25870), (45, 25882), (47, 25891),

Gene: Shade\_25 Start: 22787, Stop: 23077, Start Num: 15

Candidate Starts for Shade\_25:

(Start: 15 @22787 has 35 MA's), (29, 22877), (31, 22883), (41, 22991), (45, 23024), (46, 23030),

Gene: Sicarius2\_26 Start: 23226, Stop: 23498, Start Num: 15

Candidate Starts for Sicarius2\_26:

(Start: 15 @23226 has 35 MA's), (20, 23241), (24, 23277), (27, 23289), (31, 23310), (32, 23316), (38, 23388), (42, 23427), (44, 23448), (45, 23451),

Gene: Sonny\_25 Start: 22808, Stop: 23098, Start Num: 15

Candidate Starts for Sonny\_25:

(Start: 15 @22808 has 35 MA's), (31, 22904), (41, 23012), (45, 23045), (46, 23051),

Gene: StevieBAY\_25 Start: 22824, Stop: 23111, Start Num: 15

Candidate Starts for StevieBAY\_25:

(Start: 15 @22824 has 35 MA's), (21, 22860), (25, 22890), (31, 22920), (41, 23028), (43, 23049), (45, 23061),

Gene: TaeYoung\_25 Start: 22812, Stop: 23102, Start Num: 15

Candidate Starts for TaeYoung\_25:

(Start: 15 @22812 has 35 MA's), (29, 22902), (31, 22908), (41, 23016), (45, 23049), (46, 23055),

Gene: Timinator\_25 Start: 22824, Stop: 23111, Start Num: 15

Candidate Starts for Timinator\_25:

(Start: 15 @22824 has 35 MA's), (21, 22860), (25, 22890), (31, 22920), (41, 23028), (43, 23049), (45, 23061),

Gene: Tophat\_28 Start: 25647, Stop: 25934, Start Num: 15

Candidate Starts for Tophat\_28:

(12, 25575), (Start: 14 @25644 has 13 MA's), (Start: 15 @25647 has 35 MA's), (22, 25701), (24, 25710), (25, 25713), (26, 25716), (31, 25743), (36, 25797), (38, 25821), (40, 25842), (41, 25851), (42, 25860), (43, 25872), (45, 25884), (47, 25893),

Gene: Wyborn\_26 Start: 23201, Stop: 23473, Start Num: 15

Candidate Starts for Wyborn\_26:

(Start: 15 @23201 has 35 MA's), (20, 23216), (25, 23255), (27, 23264), (31, 23285), (32, 23291), (38, 23363), (42, 23402), (45, 23426),

Gene: Zartrosa\_25 Start: 22811, Stop: 23101, Start Num: 15

Candidate Starts for Zartrosa\_25:

(Start: 15 @22811 has 35 MA's), (29, 22901), (41, 23015), (45, 23048), (46, 23054),