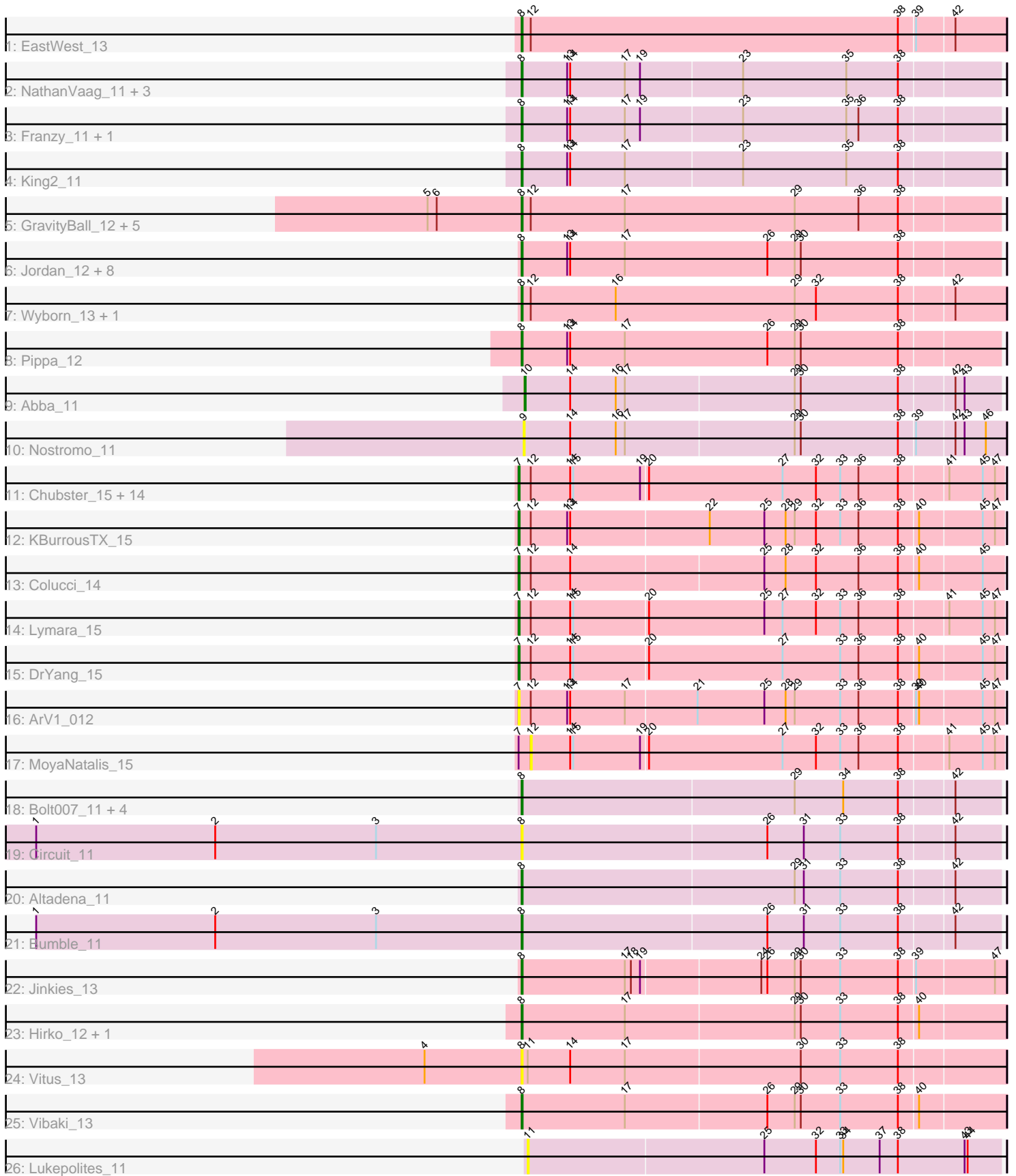


Pham 216165



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 216165 Report

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

Pham number 216165 has 63 members, 9 are drafts.

Phages represented in each track:

- Track 1 : EastWest_13
- Track 2 : NathanVaag_11, Jawnski_11, Piccoletto_11, Beans_11
- Track 3 : Franzy_11, Brent_11
- Track 4 : King2_11
- Track 5 : GravityBall_12, LeeroyJ_12, StevieBAY_12, Timinator_12, BigDome_12, BarretLemon_12
- Track 6 : Jordan_12, Grekaycon_12, Shade_12, BossLady_12, Zartrosa_12, Martha_12, Sonny_12, TaeYoung_12, JKerns_12
- Track 7 : Wyborn_13, Sicarius2_13
- Track 8 : Pippa_12
- Track 9 : Abba_11
- Track 10 : Nostromo_11
- Track 11 : Chubster_15, RosiePosie_15, Chipper1996_150, EdgarPoe_15, Linus_15, Tophat_15, Mordred_15, HumptyDumpty_15, JayCookie_15, JaNo_15, Chocolat_15, Scavito_15, Conboy_15, PrincessTrina_15, Kabreeze_15
- Track 12 : KBurrousTX_15
- Track 13 : Colucci_14
- Track 14 : Lymara_15
- Track 15 : DrYang_15
- Track 16 : ArV1_012
- Track 17 : MoyaNatalis_15
- Track 18 : Bolt007_11, Lilmac1015_11, Prairie_11, Klevey_11, CalWood4100_11
- Track 19 : Circuit_11
- Track 20 : Altadena_11
- Track 21 : Bumble_11
- Track 22 : Jinkies_13
- Track 23 : Hirko_12, GoldDust_13
- Track 24 : Vitus_13
- Track 25 : Vibaki_13
- Track 26 : Lukepolites_11

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

The start number called the most often in the published annotations is 8, it was called in 34 of the 54 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Altadena_11, BarretLemon_12, Beans_11, BigDome_12, Bolt007_11, BossLady_12, Brent_11, Bumble_11, CalWood4100_11, Circuit_11, EastWest_13, Franzy_11, GoldDust_13, GravityBall_12, Grekaycon_12, Hirko_12, JKerns_12, Jawnski_11, Jinkies_13, Jordan_12, King2_11, Klevey_11, LeeroyJ_12, Lilmac1015_11, Martha_12, NathanVaag_11, Piccoletto_11, Pippa_12, Prairie_11, Shade_12, Sicarius2_13, Sonny_12, StevieBAY_12, TaeYoung_12, Timinator_12, Vibaki_13, Vitus_13, Wyborn_13, Zartrosa_12,

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

-

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

- Abba_11, ArV1_012, Chipper1996_150, Chocolat_15, Chubster_15, Colucci_14, Conboy_15, DrYang_15, EdgarPoe_15, HumptyDumpty_15, JaNo_15, JayCookie_15, KBurrousTX_15, Kabreeze_15, Linus_15, Lukepolites_11, Lymara_15, Mordred_15, MoyaNatalis_15, Nostromo_11, PrincessTrina_15, RosiePosie_15, Scavito_15, Tophat_15,

Summary by start number:

Start 7:

- Found in 21 of 63 (33.3%) of genes in pham
- Manual Annotations of this start: 19 of 54
- Called 95.2% of time when present
- Phage (with cluster) where this start called: ArV1_012 (AR), Chipper1996_150 (AR), Chocolat_15 (AR), Chubster_15 (AR), Colucci_14 (AR), Conboy_15 (AR), DrYang_15 (AR), EdgarPoe_15 (AR), HumptyDumpty_15 (AR), JaNo_15 (AR), JayCookie_15 (AR), KBurrousTX_15 (AR), Kabreeze_15 (AR), Linus_15 (AR), Lymara_15 (AR), Mordred_15 (AR), PrincessTrina_15 (AR), RosiePosie_15 (AR), Scavito_15 (AR), Tophat_15 (AR),

Start 8:

- Found in 39 of 63 (61.9%) of genes in pham
- Manual Annotations of this start: 34 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Altadena_11 (FH), BarretLemon_12 (AO2), Beans_11 (AO1), BigDome_12 (AO2), Bolt007_11 (FH), BossLady_12 (AO2), Brent_11 (AO1), Bumble_11 (FH), CalWood4100_11 (FH), Circuit_11 (FH), EastWest_13 (AO), Franzy_11 (AO1), GoldDust_13 (FL), GravityBall_12 (AO2), Grekaycon_12 (AO2), Hirko_12 (FL), JKerns_12 (AO2), Jawnski_11 (AO1), Jinkies_13 (FL), Jordan_12 (AO2), King2_11 (AO1), Klevey_11 (FH), LeeroyJ_12 (AO2), Lilmac1015_11 (FH), Martha_12 (AO2), NathanVaag_11 (AO1), Piccoletto_11 (AO1), Pippa_12 (AO2), Prairie_11 (FH), Shade_12 (AO2), Sicarius2_13 (AO2), Sonny_12 (AO2), StevieBAY_12 (AO2), TaeYoung_12 (AO2), Timinator_12 (AO2), Vibaki_13 (FL), Vitus_13 (FL), Wyborn_13 (AO2), Zartrosa_12 (AO2),

Start 9:

- 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: Nostromo_11 (AO3),

Start 10:

- 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: Abba_11 (AO3),

Start 11:

- Found in 2 of 63 (3.2%) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Lukepolites_11 (singleton),

Start 12:

- Found in 30 of 63 (47.6%) of genes in pham
- No Manual Annotations of this start.
- Called 3.3% of time when present
- Phage (with cluster) where this start called: MoyaNatalis_15 (AR),

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 8 was manually annotated 1 time for cluster AO.

Info for manual annotations of cluster AO1:

- Start number 8 was manually annotated 7 times for cluster AO1.

Info for manual annotations of cluster AO2:

- Start number 8 was manually annotated 17 times for cluster AO2.

Info for manual annotations of cluster AO3:

- Start number 10 was manually annotated 1 time for cluster AO3.

Info for manual annotations of cluster AR:

- Start number 7 was manually annotated 19 times for cluster AR.

Info for manual annotations of cluster FH:

- Start number 8 was manually annotated 6 times for cluster FH.

Info for manual annotations of cluster FL:

- Start number 8 was manually annotated 3 times for cluster FL.

Gene Information:

Gene: Abba_11 Start: 9301, Stop: 9762, Start Num: 10

Candidate Starts for Abba_11:

(Start: 10 @9301 has 1 MA's), (14, 9346), (16, 9391), (17, 9400), (29, 9565), (30, 9571), (38, 9667), (42, 9718), (43, 9727),

Gene: Altadena_11 Start: 8980, Stop: 9444, Start Num: 8

Candidate Starts for Altadena_11:

(Start: 8 @8980 has 34 MA's), (29, 9247), (31, 9256), (33, 9292), (38, 9349), (42, 9400),

Gene: ArV1_012 Start: 9861, Stop: 10331, Start Num: 7

Candidate Starts for ArV1_012:

(Start: 7 @9861 has 19 MA's), (12, 9873), (13, 9909), (14, 9912), (17, 9966), (21, 10035), (25, 10101), (28, 10122), (29, 10131), (33, 10176), (36, 10194), (38, 10233), (39, 10248), (40, 10251), (45, 10311), (47, 10323),

Gene: BarretLemon_12 Start: 9514, Stop: 9981, Start Num: 8

Candidate Starts for BarretLemon_12:

(5, 9421), (6, 9430), (Start: 8 @9514 has 34 MA's), (12, 9523), (17, 9616), (29, 9784), (36, 9847), (38, 9886),

Gene: Beans_11 Start: 9204, Stop: 9668, Start Num: 8

Candidate Starts for Beans_11:

(Start: 8 @9204 has 34 MA's), (13, 9249), (14, 9252), (17, 9306), (19, 9321), (23, 9420), (35, 9522), (38, 9573),

Gene: BigDome_12 Start: 9502, Stop: 9969, Start Num: 8

Candidate Starts for BigDome_12:

(5, 9409), (6, 9418), (Start: 8 @9502 has 34 MA's), (12, 9511), (17, 9604), (29, 9772), (36, 9835), (38, 9874),

Gene: Bolt007_11 Start: 8922, Stop: 9386, Start Num: 8

Candidate Starts for Bolt007_11:

(Start: 8 @8922 has 34 MA's), (29, 9189), (34, 9237), (38, 9291), (42, 9342),

Gene: BossLady_12 Start: 9517, Stop: 9984, Start Num: 8

Candidate Starts for BossLady_12:

(Start: 8 @9517 has 34 MA's), (13, 9562), (14, 9565), (17, 9619), (26, 9760), (29, 9787), (30, 9793), (38, 9889),

Gene: Brent_11 Start: 9186, Stop: 9650, Start Num: 8

Candidate Starts for Brent_11:

(Start: 8 @9186 has 34 MA's), (13, 9231), (14, 9234), (17, 9288), (19, 9303), (23, 9402), (35, 9504), (36, 9516), (38, 9555),

Gene: Bumble_11 Start: 8987, Stop: 9451, Start Num: 8

Candidate Starts for Bumble_11:

(1, 8507), (2, 8684), (3, 8843), (Start: 8 @8987 has 34 MA's), (26, 9227), (31, 9263), (33, 9299), (38, 9356), (42, 9407),

Gene: CalWood4100_11 Start: 8905, Stop: 9369, Start Num: 8

Candidate Starts for CalWood4100_11:

(Start: 8 @8905 has 34 MA's), (29, 9172), (34, 9220), (38, 9274), (42, 9325),

Gene: Chipper1996_150 Start: 11510, Stop: 11980, Start Num: 7

Candidate Starts for Chipper1996_150:

(Start: 7 @11510 has 19 MA's), (12, 11522), (14, 11561), (15, 11564), (19, 11630), (20, 11636), (27, 11768), (32, 11801), (33, 11825), (36, 11843), (38, 11882), (41, 11927), (45, 11960), (47, 11972),

Gene: Chocolat_15 Start: 11511, Stop: 11981, Start Num: 7

Candidate Starts for Chocolat_15:

(Start: 7 @11511 has 19 MA's), (12, 11523), (14, 11562), (15, 11565), (19, 11631), (20, 11637), (27, 11769), (32, 11802), (33, 11826), (36, 11844), (38, 11883), (41, 11928), (45, 11961), (47, 11973),

Gene: Chubster_15 Start: 11281, Stop: 11751, Start Num: 7

Candidate Starts for Chubster_15:

(Start: 7 @11281 has 19 MA's), (12, 11293), (14, 11332), (15, 11335), (19, 11401), (20, 11407), (27, 11539), (32, 11572), (33, 11596), (36, 11614), (38, 11653), (41, 11698), (45, 11731), (47, 11743),

Gene: Circuit_11 Start: 8973, Stop: 9437, Start Num: 8

Candidate Starts for Circuit_11:

(1, 8493), (2, 8670), (3, 8829), (Start: 8 @8973 has 34 MA's), (26, 9213), (31, 9249), (33, 9285), (38, 9342), (42, 9393),

Gene: Colucci_14 Start: 11015, Stop: 11482, Start Num: 7

Candidate Starts for Colucci_14:

(Start: 7 @11015 has 19 MA's), (12, 11027), (14, 11066), (25, 11252), (28, 11273), (32, 11303), (36, 11345), (38, 11384), (40, 11402), (45, 11462),

Gene: Conboy_15 Start: 11509, Stop: 11979, Start Num: 7

Candidate Starts for Conboy_15:

(Start: 7 @11509 has 19 MA's), (12, 11521), (14, 11560), (15, 11563), (19, 11629), (20, 11635), (27, 11767), (32, 11800), (33, 11824), (36, 11842), (38, 11881), (41, 11926), (45, 11959), (47, 11971),

Gene: DrYang_15 Start: 11464, Stop: 11934, Start Num: 7

Candidate Starts for DrYang_15:

(Start: 7 @11464 has 19 MA's), (12, 11476), (14, 11515), (15, 11518), (20, 11590), (27, 11722), (33, 11779), (36, 11797), (38, 11836), (40, 11854), (45, 11914), (47, 11926),

Gene: EastWest_13 Start: 9545, Stop: 10018, Start Num: 8

Candidate Starts for EastWest_13:

(Start: 8 @9545 has 34 MA's), (12, 9554), (38, 9917), (39, 9932), (42, 9968),

Gene: EdgarPoe_15 Start: 11509, Stop: 11979, Start Num: 7

Candidate Starts for EdgarPoe_15:

(Start: 7 @11509 has 19 MA's), (12, 11521), (14, 11560), (15, 11563), (19, 11629), (20, 11635), (27, 11767), (32, 11800), (33, 11824), (36, 11842), (38, 11881), (41, 11926), (45, 11959), (47, 11971),

Gene: Franzy_11 Start: 9186, Stop: 9650, Start Num: 8

Candidate Starts for Franzy_11:

(Start: 8 @9186 has 34 MA's), (13, 9231), (14, 9234), (17, 9288), (19, 9303), (23, 9402), (35, 9504), (36, 9516), (38, 9555),

Gene: GoldDust_13 Start: 11102, Stop: 11572, Start Num: 8

Candidate Starts for GoldDust_13:

(Start: 8 @11102 has 34 MA's), (17, 11204), (29, 11369), (30, 11375), (33, 11414), (38, 11471), (40, 11489),

Gene: GravityBall_12 Start: 9513, Stop: 9980, Start Num: 8

Candidate Starts for GravityBall_12:

(5, 9420), (6, 9429), (Start: 8 @9513 has 34 MA's), (12, 9522), (17, 9615), (29, 9783), (36, 9846), (38, 9885),

Gene: Grekaycon_12 Start: 9526, Stop: 9993, Start Num: 8

Candidate Starts for Grekaycon_12:

(Start: 8 @9526 has 34 MA's), (13, 9571), (14, 9574), (17, 9628), (26, 9769), (29, 9796), (30, 9802), (38, 9898),

Gene: Hirko_12 Start: 10525, Stop: 10995, Start Num: 8

Candidate Starts for Hirko_12:

(Start: 8 @10525 has 34 MA's), (17, 10627), (29, 10792), (30, 10798), (33, 10837), (38, 10894), (40, 10912),

Gene: HumptyDumpty_15 Start: 11508, Stop: 11978, Start Num: 7

Candidate Starts for HumptyDumpty_15:

(Start: 7 @11508 has 19 MA's), (12, 11520), (14, 11559), (15, 11562), (19, 11628), (20, 11634), (27, 11766), (32, 11799), (33, 11823), (36, 11841), (38, 11880), (41, 11925), (45, 11958), (47, 11970),

Gene: JKerns_12 Start: 9553, Stop: 10020, Start Num: 8

Candidate Starts for JKerns_12:

(Start: 8 @9553 has 34 MA's), (13, 9598), (14, 9601), (17, 9655), (26, 9796), (29, 9823), (30, 9829), (38, 9925),

Gene: JaNo_15 Start: 11508, Stop: 11978, Start Num: 7

Candidate Starts for JaNo_15:

(Start: 7 @11508 has 19 MA's), (12, 11520), (14, 11559), (15, 11562), (19, 11628), (20, 11634), (27, 11766), (32, 11799), (33, 11823), (36, 11841), (38, 11880), (41, 11925), (45, 11958), (47, 11970),

Gene: Jawnski_11 Start: 9199, Stop: 9663, Start Num: 8

Candidate Starts for Jawnski_11:

(Start: 8 @9199 has 34 MA's), (13, 9244), (14, 9247), (17, 9301), (19, 9316), (23, 9415), (35, 9517), (38, 9568),

Gene: JayCookie_15 Start: 11511, Stop: 11981, Start Num: 7

Candidate Starts for JayCookie_15:

(Start: 7 @11511 has 19 MA's), (12, 11523), (14, 11562), (15, 11565), (19, 11631), (20, 11637), (27, 11769), (32, 11802), (33, 11826), (36, 11844), (38, 11883), (41, 11928), (45, 11961), (47, 11973),

Gene: Jinkies_13 Start: 9830, Stop: 10297, Start Num: 8

Candidate Starts for Jinkies_13:

(Start: 8 @9830 has 34 MA's), (17, 9932), (18, 9938), (19, 9947), (24, 10061), (26, 10067), (29, 10094), (30, 10100), (33, 10139), (38, 10196), (39, 10211), (47, 10286),

Gene: Jordan_12 Start: 9523, Stop: 9990, Start Num: 8

Candidate Starts for Jordan_12:

(Start: 8 @9523 has 34 MA's), (13, 9568), (14, 9571), (17, 9625), (26, 9766), (29, 9793), (30, 9799), (38, 9895),

Gene: KBurrousTX_15 Start: 11282, Stop: 11752, Start Num: 7

Candidate Starts for KBurrousTX_15:

(Start: 7 @11282 has 19 MA's), (12, 11294), (13, 11330), (14, 11333), (22, 11468), (25, 11522), (28, 11543), (29, 11552), (32, 11573), (33, 11597), (36, 11615), (38, 11654), (40, 11672), (45, 11732), (47,

11744),

Gene: Kabreeze_15 Start: 11508, Stop: 11978, Start Num: 7

Candidate Starts for Kabreeze_15:

(Start: 7 @11508 has 19 MA's), (12, 11520), (14, 11559), (15, 11562), (19, 11628), (20, 11634), (27, 11766), (32, 11799), (33, 11823), (36, 11841), (38, 11880), (41, 11925), (45, 11958), (47, 11970),

Gene: King2_11 Start: 9188, Stop: 9652, Start Num: 8

Candidate Starts for King2_11:

(Start: 8 @9188 has 34 MA's), (13, 9233), (14, 9236), (17, 9290), (23, 9404), (35, 9506), (38, 9557),

Gene: Klevey_11 Start: 8915, Stop: 9379, Start Num: 8

Candidate Starts for Klevey_11:

(Start: 8 @8915 has 34 MA's), (29, 9182), (34, 9230), (38, 9284), (42, 9335),

Gene: LeeroyJ_12 Start: 9513, Stop: 9980, Start Num: 8

Candidate Starts for LeeroyJ_12:

(5, 9420), (6, 9429), (Start: 8 @9513 has 34 MA's), (12, 9522), (17, 9615), (29, 9783), (36, 9846), (38, 9885),

Gene: Lilmac1015_11 Start: 8905, Stop: 9369, Start Num: 8

Candidate Starts for Lilmac1015_11:

(Start: 8 @8905 has 34 MA's), (29, 9172), (34, 9220), (38, 9274), (42, 9325),

Gene: Linus_15 Start: 11508, Stop: 11978, Start Num: 7

Candidate Starts for Linus_15:

(Start: 7 @11508 has 19 MA's), (12, 11520), (14, 11559), (15, 11562), (19, 11628), (20, 11634), (27, 11766), (32, 11799), (33, 11823), (36, 11841), (38, 11880), (41, 11925), (45, 11958), (47, 11970),

Gene: Lukepolites_11 Start: 9217, Stop: 9681, Start Num: 11

Candidate Starts for Lukepolites_11:

(11, 9217), (25, 9448), (32, 9499), (33, 9523), (34, 9526), (37, 9562), (38, 9580), (43, 9646), (44, 9649),

Gene: Lymara_15 Start: 11510, Stop: 11980, Start Num: 7

Candidate Starts for Lymara_15:

(Start: 7 @11510 has 19 MA's), (12, 11522), (14, 11561), (15, 11564), (20, 11636), (25, 11750), (27, 11768), (32, 11801), (33, 11825), (36, 11843), (38, 11882), (41, 11927), (45, 11960), (47, 11972),

Gene: Martha_12 Start: 9464, Stop: 9931, Start Num: 8

Candidate Starts for Martha_12:

(Start: 8 @9464 has 34 MA's), (13, 9509), (14, 9512), (17, 9566), (26, 9707), (29, 9734), (30, 9740), (38, 9836),

Gene: Mordred_15 Start: 11508, Stop: 11978, Start Num: 7

Candidate Starts for Mordred_15:

(Start: 7 @11508 has 19 MA's), (12, 11520), (14, 11559), (15, 11562), (19, 11628), (20, 11634), (27, 11766), (32, 11799), (33, 11823), (36, 11841), (38, 11880), (41, 11925), (45, 11958), (47, 11970),

Gene: MoyaNatalis_15 Start: 11523, Stop: 11981, Start Num: 12

Candidate Starts for MoyaNatalis_15:

(Start: 7 @11511 has 19 MA's), (12, 11523), (14, 11562), (15, 11565), (19, 11631), (20, 11637), (27, 11769), (32, 11802), (33, 11826), (36, 11844), (38, 11883), (41, 11928), (45, 11961), (47, 11973),

Gene: NathanVaag_11 Start: 9192, Stop: 9656, Start Num: 8

Candidate Starts for NathanVaag_11:

(Start: 8 @9192 has 34 MA's), (13, 9237), (14, 9240), (17, 9294), (19, 9309), (23, 9408), (35, 9510), (38, 9561),

Gene: Nostromo_11 Start: 9503, Stop: 9970, Start Num: 9

Candidate Starts for Nostromo_11:

(9, 9503), (14, 9548), (16, 9593), (17, 9602), (29, 9767), (30, 9773), (38, 9869), (39, 9884), (42, 9920), (43, 9929), (46, 9950),

Gene: Piccoletto_11 Start: 9193, Stop: 9657, Start Num: 8

Candidate Starts for Piccoletto_11:

(Start: 8 @9193 has 34 MA's), (13, 9238), (14, 9241), (17, 9295), (19, 9310), (23, 9409), (35, 9511), (38, 9562),

Gene: Pippa_12 Start: 9563, Stop: 10030, Start Num: 8

Candidate Starts for Pippa_12:

(Start: 8 @9563 has 34 MA's), (13, 9608), (14, 9611), (17, 9665), (26, 9806), (29, 9833), (30, 9839), (38, 9935),

Gene: Prairie_11 Start: 8912, Stop: 9376, Start Num: 8

Candidate Starts for Prairie_11:

(Start: 8 @8912 has 34 MA's), (29, 9179), (34, 9227), (38, 9281), (42, 9332),

Gene: PrincessTrina_15 Start: 11511, Stop: 11981, Start Num: 7

Candidate Starts for PrincessTrina_15:

(Start: 7 @11511 has 19 MA's), (12, 11523), (14, 11562), (15, 11565), (19, 11631), (20, 11637), (27, 11769), (32, 11802), (33, 11826), (36, 11844), (38, 11883), (41, 11928), (45, 11961), (47, 11973),

Gene: RosiePosie_15 Start: 11511, Stop: 11981, Start Num: 7

Candidate Starts for RosiePosie_15:

(Start: 7 @11511 has 19 MA's), (12, 11523), (14, 11562), (15, 11565), (19, 11631), (20, 11637), (27, 11769), (32, 11802), (33, 11826), (36, 11844), (38, 11883), (41, 11928), (45, 11961), (47, 11973),

Gene: Scavito_15 Start: 11508, Stop: 11978, Start Num: 7

Candidate Starts for Scavito_15:

(Start: 7 @11508 has 19 MA's), (12, 11520), (14, 11559), (15, 11562), (19, 11628), (20, 11634), (27, 11766), (32, 11799), (33, 11823), (36, 11841), (38, 11880), (41, 11925), (45, 11958), (47, 11970),

Gene: Shade_12 Start: 9502, Stop: 9969, Start Num: 8

Candidate Starts for Shade_12:

(Start: 8 @9502 has 34 MA's), (13, 9547), (14, 9550), (17, 9604), (26, 9745), (29, 9772), (30, 9778), (38, 9874),

Gene: Sicarius2_13 Start: 10002, Stop: 10475, Start Num: 8

Candidate Starts for Sicarius2_13:

(Start: 8 @10002 has 34 MA's), (12, 10011), (16, 10095), (29, 10272), (32, 10293), (38, 10374), (42, 10425),

Gene: Sonny_12 Start: 9523, Stop: 9990, Start Num: 8

Candidate Starts for Sonny_12:

(Start: 8 @9523 has 34 MA's), (13, 9568), (14, 9571), (17, 9625), (26, 9766), (29, 9793), (30, 9799), (38, 9895),

Gene: StevieBAY_12 Start: 9513, Stop: 9980, Start Num: 8

Candidate Starts for StevieBAY_12:

(5, 9420), (6, 9429), (Start: 8 @9513 has 34 MA's), (12, 9522), (17, 9615), (29, 9783), (36, 9846), (38, 9885),

Gene: TaeYoung_12 Start: 9527, Stop: 9994, Start Num: 8

Candidate Starts for TaeYoung_12:

(Start: 8 @9527 has 34 MA's), (13, 9572), (14, 9575), (17, 9629), (26, 9770), (29, 9797), (30, 9803), (38, 9899),

Gene: Timinator_12 Start: 9513, Stop: 9980, Start Num: 8

Candidate Starts for Timinator_12:

(5, 9420), (6, 9429), (Start: 8 @9513 has 34 MA's), (12, 9522), (17, 9615), (29, 9783), (36, 9846), (38, 9885),

Gene: Tophat_15 Start: 11510, Stop: 11980, Start Num: 7

Candidate Starts for Tophat_15:

(Start: 7 @11510 has 19 MA's), (12, 11522), (14, 11561), (15, 11564), (19, 11630), (20, 11636), (27, 11768), (32, 11801), (33, 11825), (36, 11843), (38, 11882), (41, 11927), (45, 11960), (47, 11972),

Gene: Vibaki_13 Start: 10981, Stop: 11451, Start Num: 8

Candidate Starts for Vibaki_13:

(Start: 8 @10981 has 34 MA's), (17, 11083), (26, 11221), (29, 11248), (30, 11254), (33, 11293), (38, 11350), (40, 11368),

Gene: Vitus_13 Start: 10783, Stop: 11253, Start Num: 8

Candidate Starts for Vitus_13:

(4, 10687), (Start: 8 @10783 has 34 MA's), (11, 10789), (14, 10831), (17, 10885), (30, 11056), (33, 11095), (38, 11152),

Gene: Wyborn_13 Start: 9863, Stop: 10336, Start Num: 8

Candidate Starts for Wyborn_13:

(Start: 8 @9863 has 34 MA's), (12, 9872), (16, 9956), (29, 10133), (32, 10154), (38, 10235), (42, 10286),

Gene: Zartrosa_12 Start: 9526, Stop: 9993, Start Num: 8

Candidate Starts for Zartrosa_12:

(Start: 8 @9526 has 34 MA's), (13, 9571), (14, 9574), (17, 9628), (26, 9769), (29, 9796), (30, 9802), (38, 9898),