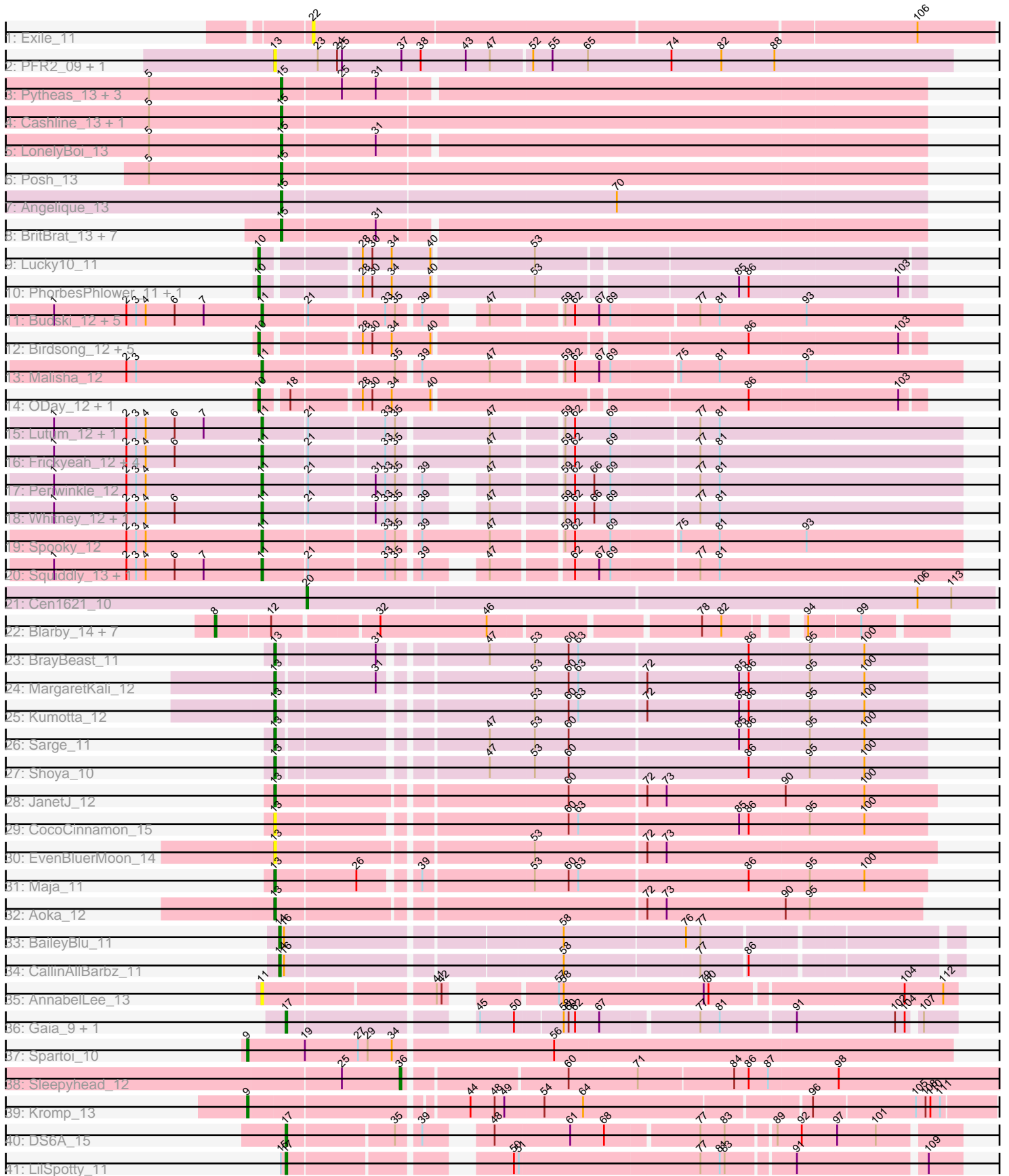


Pham 196473



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 196473 Report

This analysis was run 12/09/24 on database version 580.

Pham number 196473 has 80 members, 9 are drafts.

Phages represented in each track:

- Track 1 : Exile_11
- Track 2 : PFR2_09, PFR1_09
- Track 3 : Pytheas_13, Wrigley_13, Confidence_13, Jablanski_13
- Track 4 : Cashline_13, BeeGee_13
- Track 5 : LonelyBoi_13
- Track 6 : Posh_13
- Track 7 : Angelique_13
- Track 8 : BritBrat_13, EnalisNailo_13, Lilas_13, Floral_13, EMSquaredA_13, Bradissa_13, Marteena_13, Pollux_13
- Track 9 : Lucky10_11
- Track 10 : PhorbesPhlower_11, Morkie_11
- Track 11 : Budski_12, Holliday_12, LitninMcQueen_12, CheeseTouch_12, Kamaru_12, Phabuloso_12
- Track 12 : Birdsong_12, Crater_12, Apricot_12, Kuwabara_12, BearBQ_12, MortyNRick_12
- Track 13 : Malisha_12
- Track 14 : ODay_12, Ecliptus_12
- Track 15 : Lutum_12, Kenna_12
- Track 16 : Frickyeah_12, Asapag_12, Leroy_12, Horus_12, BENtherdunthat_12
- Track 17 : Periwinkle_12
- Track 18 : Whitney_12, Getalong_12
- Track 19 : Spooky_12
- Track 20 : Squiddly_13, Phistory_12
- Track 21 : Cen1621_10
- Track 22 : Blarby_14, Zapner_14, Che9d_13, Jabbawokkie_14, Yoshi_13, Demsculpinboyz_13, Soul22_13, Avani_13
- Track 23 : BrayBeast_11
- Track 24 : MargaretKali_12
- Track 25 : Kumotta_12
- Track 26 : Sarge_11
- Track 27 : Shoya_10
- Track 28 : JanetJ_12
- Track 29 : CocoCinnamon_15
- Track 30 : EvenBluerMoon_14
- Track 31 : Maja_11
- Track 32 : Aoka_12
- Track 33 : BaileyBlu_11

- Track 34 : CallinAllBarbz_11
- Track 35 : AnnabelLee_13
- Track 36 : Gaia_9, Nebkiss_9
- Track 37 : Spartoi_10
- Track 38 : Sleepyhead_12
- Track 39 : Kromp_13
- Track 40 : DS6A_15
- Track 41 : LilSpotty_11

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

The start number called the most often in the published annotations is 11, it was called in 19 of the 71 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AnnabelLee_13, Asapag_12, BENtherdunthat_12, Budski_12, CheeseTouch_12, Frickyeah_12, Getalong_12, Holliday_12, Horus_12, Kamaru_12, Kenna_12, Leroy_12, LitninMcQueen_12, Lutum_12, Malisha_12, Periwinkle_12, Phabuloso_12, Phistory_12, Spooky_12, Squiddly_13, Whitney_12,

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

-

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

- Angelique_13, Aoka_12, Apricot_12, Avani_13, BaileyBlu_11, BearBQ_12, BeeGee_13, Birdsong_12, Blarby_14, Bradissa_13, BrayBeast_11, BritBrat_13, CallinAllBarbz_11, Cashline_13, Cen1621_10, Che9d_13, CocoCinnamon_15, Confidence_13, Crater_12, DS6A_15, Demsculpinboyz_13, EMSquaredA_13, Ecliptus_12, EnalisNailo_13, EvenBluerMoon_14, Exile_11, Floral_13, Gaia_9, Jabbawokkie_14, Jablanski_13, JanetJ_12, Kromp_13, Kumotta_12, Kuwabara_12, LilSpotty_11, Lilas_13, LonelyBoi_13, Lucky10_11, Maja_11, MargaretKali_12, Marteena_13, Morkie_11, MortyNRick_12, Nebkiss_9, ODay_12, PFR1_09, PFR2_09, PhorbesPhlower_11, Pollux_13, Posh_13, Pytheas_13, Sarge_11, Shoya_10, Sleepyhead_12, Soul22_13, Spartoi_10, Wrigley_13, Yoshi_13, Zapner_14,

Summary by start number:

Start 8:

- Found in 8 of 80 (10.0%) of genes in pham
- Manual Annotations of this start: 7 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Avani_13 (F2), Blarby_14 (F), Che9d_13 (F2), Demsculpinboyz_13 (F2), Jabbawokkie_14 (F2), Soul22_13 (F2), Yoshi_13 (F2), Zapner_14 (F2),

Start 9:

- Found in 2 of 80 (2.5%) of genes in pham
- Manual Annotations of this start: 2 of 71
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Kromp_13 (singleton), Spartoi_10 (singleton),

Start 10:

- Found in 11 of 80 (13.8%) of genes in pham
- Manual Annotations of this start: 10 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Apricot_12 (DN3), BearBQ_12 (DN), Birdsong_12 (DN), Crater_12 (DN3), Ecliptus_12 (DN), Kuwabara_12 (DN4), Lucky10_11 (DH), Morkie_11 (DH), MortyNRick_12 (DN), ODay_12 (DN), PhorbesPhlower_11 (DH),

Start 11:

- Found in 21 of 80 (26.2%) of genes in pham
- Manual Annotations of this start: 19 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AnnabelLee_13 (FR), Asapag_12 (DN1), BENtherdunthat_12 (DN1), Budski_12 (DN), CheeseTouch_12 (DN1), Frickyeah_12 (DN1), Getalong_12 (DN1), Holliday_12 (DN1), Horus_12 (DN1), Kamaru_12 (DN1), Kenna_12 (DN1), Leroy_12 (DN1), LitninMcQueen_12 (DN1), Lutum_12 (DN1), Malisha_12 (DN), Periwinkle_12 (DN1), Phabuloso_12 (DN1), Phistory_12 (DN1), Spooky_12 (DN2), Squiddly_13 (DN2), Whitney_12 (DN1),

Start 13:

- Found in 12 of 80 (15.0%) of genes in pham
- Manual Annotations of this start: 8 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aoka_12 (FO), BrayBeast_11 (FB), CocoCinnamon_15 (FO), EvenBluerMoon_14 (FO), JanetJ_12 (FO), Kumotta_12 (FB), Maja_11 (FO), MargaretKali_12 (FB), PFR1_09 (BX), PFR2_09 (BX), Sarge_11 (FB), Shoya_10 (FB),

Start 14:

- Found in 2 of 80 (2.5%) of genes in pham
- Manual Annotations of this start: 2 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BaileyBlu_11 (FP), CallinAllBarbz_11 (FP),

Start 15:

- Found in 18 of 80 (22.5%) of genes in pham
- Manual Annotations of this start: 17 of 71
- Called 94.4% of time when present
- Phage (with cluster) where this start called: Angelique_13 (CY1), BeeGee_13 (CY), Bradissa_13 (CY1), BritBrat_13 (CY2), Cashline_13 (CY), Confidence_13 (CY1), EMSquaredA_13 (CY1), EnalisNailo_13 (CY1), Floral_13 (CY1), Jablanski_13 (CY), Lilas_13 (CY1), LonelyBoi_13 (CY), Marteena_13 (CY1), Pollux_13 (CY1), Posh_13 (CY), Pytheas_13 (CY), Wrigley_13 (CY),

Start 17:

- Found in 4 of 80 (5.0%) of genes in pham
- Manual Annotations of this start: 4 of 71
- Called 100.0% of time when present

- Phage (with cluster) where this start called: DS6A_15 (singleton), Gaia_9 (X), LilSpotty_11 (singleton), Nebkiss_9 (X),

Start 20:

- Found in 1 of 80 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cen1621_10 (EH),

Start 22:

- Found in 1 of 80 (1.2%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Exile_11 (AZ),

Start 36:

- Found in 1 of 80 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 71
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sleepyhead_12 (singleton),

Summary by clusters:

There are 20 clusters represented in this pham: DN, CY2, CY1, EH, DH, F, FR, FB, singleton, FP, DN4, CY, DN1, DN3, DN2, F2, X, AZ, BX, FO,

Info for manual annotations of cluster CY:

- Start number 15 was manually annotated 7 times for cluster CY.

Info for manual annotations of cluster CY1:

- Start number 15 was manually annotated 9 times for cluster CY1.

Info for manual annotations of cluster CY2:

- Start number 15 was manually annotated 1 time for cluster CY2.

Info for manual annotations of cluster DH:

- Start number 10 was manually annotated 3 times for cluster DH.

Info for manual annotations of cluster DN:

- Start number 10 was manually annotated 4 times for cluster DN.
- Start number 11 was manually annotated 2 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 11 was manually annotated 15 times for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 11 was manually annotated 2 times for cluster DN2.

Info for manual annotations of cluster DN3:

- Start number 10 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DN4:

- Start number 10 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster EH:

- Start number 20 was manually annotated 1 time for cluster EH.

Info for manual annotations of cluster F2:

- Start number 8 was manually annotated 7 times for cluster F2.

Info for manual annotations of cluster FB:

- Start number 13 was manually annotated 5 times for cluster FB.

Info for manual annotations of cluster FO:

- Start number 13 was manually annotated 3 times for cluster FO.

Info for manual annotations of cluster FP:

- Start number 14 was manually annotated 2 times for cluster FP.

Info for manual annotations of cluster X:

- Start number 17 was manually annotated 2 times for cluster X.

Gene Information:

Gene: Angelique_13 Start: 8261, Stop: 8653, Start Num: 15

Candidate Starts for Angelique_13:

(Start: 15 @8261 has 17 MA's), (70, 8465),

Gene: AnnabelLee_13 Start: 7727, Stop: 8119, Start Num: 11

Candidate Starts for AnnabelLee_13:

(Start: 11 @7727 has 19 MA's), (41, 7826), (42, 7829), (57, 7880), (58, 7883), (79, 7970), (80, 7973), (104, 8087), (112, 8111),

Gene: Aoka_12 Start: 8710, Stop: 9090, Start Num: 13

Candidate Starts for Aoka_12:

(Start: 13 @8710 has 8 MA's), (72, 8923), (73, 8935), (90, 9007), (95, 9022),

Gene: Apricot_12 Start: 7390, Stop: 7773, Start Num: 10

Candidate Starts for Apricot_12:

(Start: 10 @7390 has 10 MA's), (28, 7444), (30, 7450), (34, 7462), (40, 7486), (86, 7669), (103, 7759),

Gene: Asapag_12 Start: 7041, Stop: 7451, Start Num: 11

Candidate Starts for Asapag_12:

(1, 6912), (2, 6957), (3, 6963), (4, 6969), (6, 6987), (Start: 11 @7041 has 19 MA's), (21, 7068), (33, 7113), (35, 7119), (47, 7173), (59, 7212), (62, 7218), (69, 7239), (77, 7290), (81, 7302),

Gene: Avani_13 Start: 7213, Stop: 7617, Start Num: 8

Candidate Starts for Avani_13:

(Start: 8 @7213 has 7 MA's), (12, 7246), (32, 7306), (46, 7372), (78, 7492), (82, 7504), (94, 7540), (99, 7570),

Gene: BENtherdunthat_12 Start: 7041, Stop: 7451, Start Num: 11

Candidate Starts for BENtherdunthat_12:

(1, 6912), (2, 6957), (3, 6963), (4, 6969), (6, 6987), (Start: 11 @7041 has 19 MA's), (21, 7068), (33, 7113), (35, 7119), (47, 7173), (59, 7212), (62, 7218), (69, 7239), (77, 7290), (81, 7302),

Gene: BaileyBlu_11 Start: 6789, Stop: 7178, Start Num: 14

Candidate Starts for BaileyBlu_11:

(Start: 14 @6789 has 2 MA's), (16, 6792), (58, 6951), (76, 7023), (77, 7032),

Gene: BearBQ_12 Start: 7390, Stop: 7773, Start Num: 10

Candidate Starts for BearBQ_12:

(Start: 10 @7390 has 10 MA's), (28, 7444), (30, 7450), (34, 7462), (40, 7486), (86, 7669), (103, 7759),

Gene: BeeGee_13 Start: 8263, Stop: 8649, Start Num: 15

Candidate Starts for BeeGee_13:

(5, 8182), (Start: 15 @8263 has 17 MA's),

Gene: Birdsong_12 Start: 7390, Stop: 7773, Start Num: 10

Candidate Starts for Birdsong_12:

(Start: 10 @7390 has 10 MA's), (28, 7444), (30, 7450), (34, 7462), (40, 7486), (86, 7669), (103, 7759),

Gene: Blarby_14 Start: 7737, Stop: 8141, Start Num: 8

Candidate Starts for Blarby_14:

(Start: 8 @7737 has 7 MA's), (12, 7770), (32, 7830), (46, 7896), (78, 8016), (82, 8028), (94, 8064), (99, 8094),

Gene: Bradissa_13 Start: 8267, Stop: 8653, Start Num: 15

Candidate Starts for Bradissa_13:

(Start: 15 @8267 has 17 MA's), (31, 8324),

Gene: BrayBeast_11 Start: 7602, Stop: 7979, Start Num: 13

Candidate Starts for BrayBeast_11:

(Start: 13 @7602 has 8 MA's), (31, 7659), (47, 7716), (53, 7743), (60, 7764), (63, 7770), (86, 7872), (95, 7908), (100, 7941),

Gene: BritBrat_13 Start: 8269, Stop: 8655, Start Num: 15

Candidate Starts for BritBrat_13:

(Start: 15 @8269 has 17 MA's), (31, 8326),

Gene: Budski_12 Start: 7046, Stop: 7438, Start Num: 11

Candidate Starts for Budski_12:

(1, 6917), (2, 6962), (3, 6968), (4, 6974), (6, 6992), (7, 7010), (Start: 11 @7046 has 19 MA's), (21, 7073), (33, 7118), (35, 7124), (39, 7136), (47, 7160), (59, 7199), (62, 7205), (67, 7220), (69, 7226), (77, 7277), (81, 7289), (93, 7343),

Gene: CallinAllBarbz_11 Start: 6799, Stop: 7188, Start Num: 14

Candidate Starts for CallinAllBarbz_11:

(Start: 14 @6799 has 2 MA's), (16, 6802), (58, 6961), (77, 7042), (86, 7069),

Gene: Cashline_13 Start: 8116, Stop: 8508, Start Num: 15

Candidate Starts for Cashline_13:

(5, 8035), (Start: 15 @8116 has 17 MA's),

Gene: Cen1621_10 Start: 7355, Stop: 7771, Start Num: 20

Candidate Starts for Cen1621_10:

(Start: 20 @7355 has 1 MA's), (106, 7724), (113, 7745),

Gene: Che9d_13 Start: 7222, Stop: 7626, Start Num: 8

Candidate Starts for Che9d_13:

(Start: 8 @7222 has 7 MA's), (12, 7255), (32, 7315), (46, 7381), (78, 7501), (82, 7513), (94, 7549), (99, 7579),

Gene: CheeseTouch_12 Start: 7046, Stop: 7438, Start Num: 11

Candidate Starts for CheeseTouch_12:

(1, 6917), (2, 6962), (3, 6968), (4, 6974), (6, 6992), (7, 7010), (Start: 11 @7046 has 19 MA's), (21, 7073), (33, 7118), (35, 7124), (39, 7136), (47, 7160), (59, 7199), (62, 7205), (67, 7220), (69, 7226), (77, 7277), (81, 7289), (93, 7343),

Gene: CocoCinnamon_15 Start: 8936, Stop: 9316, Start Num: 13

Candidate Starts for CocoCinnamon_15:

(Start: 13 @8936 has 8 MA's), (60, 9101), (63, 9107), (85, 9203), (86, 9209), (95, 9245), (100, 9278),

Gene: Confidence_13 Start: 8263, Stop: 8649, Start Num: 15

Candidate Starts for Confidence_13:

(5, 8182), (Start: 15 @8263 has 17 MA's), (25, 8299), (31, 8320),

Gene: Crater_12 Start: 7390, Stop: 7773, Start Num: 10

Candidate Starts for Crater_12:

(Start: 10 @7390 has 10 MA's), (28, 7444), (30, 7450), (34, 7462), (40, 7486), (86, 7669), (103, 7759),

Gene: DS6A_15 Start: 10364, Stop: 10735, Start Num: 17

Candidate Starts for DS6A_15:

(Start: 17 @10364 has 4 MA's), (35, 10427), (39, 10439), (48, 10466), (61, 10511), (68, 10532), (77, 10586), (83, 10601), (89, 10628), (92, 10643), (97, 10664), (101, 10688),

Gene: Demsculpinboyz_13 Start: 7213, Stop: 7617, Start Num: 8

Candidate Starts for Demsculpinboyz_13:

(Start: 8 @7213 has 7 MA's), (12, 7246), (32, 7306), (46, 7372), (78, 7492), (82, 7504), (94, 7540), (99, 7570),

Gene: EMSquaredA_13 Start: 8269, Stop: 8655, Start Num: 15

Candidate Starts for EMSquaredA_13:

(Start: 15 @8269 has 17 MA's), (31, 8326),

Gene: Ecliptus_12 Start: 7118, Stop: 7501, Start Num: 10

Candidate Starts for Ecliptus_12:

(Start: 10 @7118 has 10 MA's), (18, 7133), (28, 7172), (30, 7178), (34, 7190), (40, 7214), (86, 7397), (103, 7487),

Gene: EnalisNailo_13 Start: 8269, Stop: 8655, Start Num: 15

Candidate Starts for EnalisNailo_13:

(Start: 15 @8269 has 17 MA's), (31, 8326),

Gene: EvenBluerMoon_14 Start: 8744, Stop: 9133, Start Num: 13

Candidate Starts for EvenBluerMoon_14:

(Start: 13 @8744 has 8 MA's), (53, 8891), (72, 8957), (73, 8969),

Gene: Exile_11 Start: 8927, Stop: 9337, Start Num: 22

Candidate Starts for Exile_11:

(22, 8927), (106, 9290),

Gene: Floral_13 Start: 8269, Stop: 8655, Start Num: 15

Candidate Starts for Floral_13:

(Start: 15 @8269 has 17 MA's), (31, 8326),

Gene: Frickyeah_12 Start: 7041, Stop: 7451, Start Num: 11

Candidate Starts for Frickyeah_12:

(1, 6912), (2, 6957), (3, 6963), (4, 6969), (6, 6987), (Start: 11 @7041 has 19 MA's), (21, 7068), (33, 7113), (35, 7119), (47, 7173), (59, 7212), (62, 7218), (69, 7239), (77, 7290), (81, 7302),

Gene: Gaia_9 Start: 7642, Stop: 8013, Start Num: 17

Candidate Starts for Gaia_9:

(Start: 17 @7642 has 4 MA's), (45, 7738), (50, 7759), (58, 7786), (60, 7789), (62, 7792), (67, 7807), (77, 7864), (81, 7876), (91, 7921), (102, 7981), (104, 7987), (107, 7993),

Gene: Getalong_12 Start: 7041, Stop: 7433, Start Num: 11

Candidate Starts for Getalong_12:

(1, 6912), (2, 6957), (3, 6963), (4, 6969), (6, 6987), (Start: 11 @7041 has 19 MA's), (21, 7068), (31, 7107), (33, 7113), (35, 7119), (39, 7131), (47, 7155), (59, 7194), (62, 7200), (66, 7212), (69, 7221), (77, 7272), (81, 7284),

Gene: Holliday_12 Start: 7046, Stop: 7438, Start Num: 11

Candidate Starts for Holliday_12:

(1, 6917), (2, 6962), (3, 6968), (4, 6974), (6, 6992), (7, 7010), (Start: 11 @7046 has 19 MA's), (21, 7073), (33, 7118), (35, 7124), (39, 7136), (47, 7160), (59, 7199), (62, 7205), (67, 7220), (69, 7226), (77, 7277), (81, 7289), (93, 7343),

Gene: Horus_12 Start: 7041, Stop: 7451, Start Num: 11

Candidate Starts for Horus_12:

(1, 6912), (2, 6957), (3, 6963), (4, 6969), (6, 6987), (Start: 11 @7041 has 19 MA's), (21, 7068), (33, 7113), (35, 7119), (47, 7173), (59, 7212), (62, 7218), (69, 7239), (77, 7290), (81, 7302),

Gene: Jabbawokkie_14 Start: 7736, Stop: 8140, Start Num: 8

Candidate Starts for Jabbawokkie_14:

(Start: 8 @7736 has 7 MA's), (12, 7769), (32, 7829), (46, 7895), (78, 8015), (82, 8027), (94, 8063), (99, 8093),

Gene: Jablanski_13 Start: 8116, Stop: 8502, Start Num: 15

Candidate Starts for Jablanski_13:

(5, 8035), (Start: 15 @8116 has 17 MA's), (25, 8152), (31, 8173),

Gene: JanetJ_12 Start: 8526, Stop: 8915, Start Num: 13

Candidate Starts for JanetJ_12:

(Start: 13 @8526 has 8 MA's), (60, 8694), (72, 8739), (73, 8751), (90, 8823), (100, 8871),

Gene: Kamaru_12 Start: 7046, Stop: 7438, Start Num: 11

Candidate Starts for Kamaru_12:

(1, 6917), (2, 6962), (3, 6968), (4, 6974), (6, 6992), (7, 7010), (Start: 11 @7046 has 19 MA's), (21, 7073), (33, 7118), (35, 7124), (39, 7136), (47, 7160), (59, 7199), (62, 7205), (67, 7220), (69, 7226), (77, 7277), (81, 7289), (93, 7343),

Gene: Kenna_12 Start: 7041, Stop: 7451, Start Num: 11

Candidate Starts for Kenna_12:

(1, 6912), (2, 6957), (3, 6963), (4, 6969), (6, 6987), (7, 7005), (Start: 11 @7041 has 19 MA's), (21, 7068), (33, 7113), (35, 7119), (47, 7173), (59, 7212), (62, 7218), (69, 7239), (77, 7290), (81, 7302),

Gene: Kromp_13 Start: 9303, Stop: 9734, Start Num: 9

Candidate Starts for Kromp_13:

(Start: 9 @9303 has 2 MA's), (44, 9426), (48, 9441), (49, 9447), (54, 9471), (64, 9495), (96, 9627), (105, 9687), (108, 9693), (110, 9696), (111, 9702),

Gene: Kumotta_12 Start: 8443, Stop: 8820, Start Num: 13

Candidate Starts for Kumotta_12:

(Start: 13 @8443 has 8 MA's), (53, 8584), (60, 8605), (63, 8611), (72, 8650), (85, 8707), (86, 8713), (95, 8749), (100, 8782),

Gene: Kuwabara_12 Start: 7390, Stop: 7773, Start Num: 10

Candidate Starts for Kuwabara_12:

(Start: 10 @7390 has 10 MA's), (28, 7444), (30, 7450), (34, 7462), (40, 7486), (86, 7669), (103, 7759),

Gene: Leroy_12 Start: 7042, Stop: 7452, Start Num: 11

Candidate Starts for Leroy_12:

(1, 6913), (2, 6958), (3, 6964), (4, 6970), (6, 6988), (Start: 11 @7042 has 19 MA's), (21, 7069), (33, 7114), (35, 7120), (47, 7174), (59, 7213), (62, 7219), (69, 7240), (77, 7291), (81, 7303),

Gene: LilSpotty_11 Start: 7105, Stop: 7479, Start Num: 17

Candidate Starts for LilSpotty_11:

(Start: 15 @7102 has 17 MA's), (Start: 17 @7105 has 4 MA's), (50, 7219), (51, 7222), (77, 7330), (81, 7342), (83, 7345), (91, 7384), (109, 7459),

Gene: Lilas_13 Start: 8269, Stop: 8655, Start Num: 15

Candidate Starts for Lilas_13:

(Start: 15 @8269 has 17 MA's), (31, 8326),

Gene: LitninMcQueen_12 Start: 7046, Stop: 7438, Start Num: 11

Candidate Starts for LitninMcQueen_12:

(1, 6917), (2, 6962), (3, 6968), (4, 6974), (6, 6992), (7, 7010), (Start: 11 @7046 has 19 MA's), (21, 7073), (33, 7118), (35, 7124), (39, 7136), (47, 7160), (59, 7199), (62, 7205), (67, 7220), (69, 7226), (77, 7277), (81, 7289), (93, 7343),

Gene: LonelyBoi_13 Start: 8116, Stop: 8502, Start Num: 15

Candidate Starts for LonelyBoi_13:

(5, 8035), (Start: 15 @8116 has 17 MA's), (31, 8173),

Gene: Lucky10_11 Start: 6599, Stop: 6982, Start Num: 10

Candidate Starts for Lucky10_11:

(Start: 10 @6599 has 10 MA's), (28, 6653), (30, 6659), (34, 6671), (40, 6695), (53, 6755),

Gene: Lutum_12 Start: 7041, Stop: 7451, Start Num: 11

Candidate Starts for Lutum_12:

(1, 6912), (2, 6957), (3, 6963), (4, 6969), (6, 6987), (7, 7005), (Start: 11 @7041 has 19 MA's), (21, 7068), (33, 7113), (35, 7119), (47, 7173), (59, 7212), (62, 7218), (69, 7239), (77, 7290), (81, 7302),

Gene: Maja_11 Start: 8064, Stop: 8444, Start Num: 13

Candidate Starts for Maja_11:

(Start: 13 @8064 has 8 MA's), (26, 8112), (39, 8142), (53, 8208), (60, 8229), (63, 8235), (86, 8337), (95, 8373), (100, 8406),

Gene: Malisha_12 Start: 8091, Stop: 8501, Start Num: 11

Candidate Starts for Malisha_12:

(2, 8007), (3, 8013), (Start: 11 @8091 has 19 MA's), (35, 8169), (39, 8181), (47, 8223), (59, 8262), (62, 8268), (67, 8283), (69, 8289), (75, 8328), (81, 8352), (93, 8406),

Gene: MargaretKali_12 Start: 8078, Stop: 8455, Start Num: 13

Candidate Starts for MargaretKali_12:

(Start: 13 @8078 has 8 MA's), (31, 8135), (53, 8219), (60, 8240), (63, 8246), (72, 8285), (85, 8342), (86, 8348), (95, 8384), (100, 8417),

Gene: Marteena_13 Start: 8269, Stop: 8655, Start Num: 15

Candidate Starts for Marteena_13:

(Start: 15 @8269 has 17 MA's), (31, 8326),

Gene: Morkie_11 Start: 6561, Stop: 6944, Start Num: 10

Candidate Starts for Morkie_11:

(Start: 10 @6561 has 10 MA's), (28, 6615), (30, 6621), (34, 6633), (40, 6657), (53, 6717), (85, 6834), (86, 6840), (103, 6930),

Gene: MortyNRick_12 Start: 7390, Stop: 7773, Start Num: 10

Candidate Starts for MortyNRick_12:

(Start: 10 @7390 has 10 MA's), (28, 7444), (30, 7450), (34, 7462), (40, 7486), (86, 7669), (103, 7759),

Gene: Nebkiss_9 Start: 7643, Stop: 8014, Start Num: 17

Candidate Starts for Nebkiss_9:

(Start: 17 @7643 has 4 MA's), (45, 7739), (50, 7760), (58, 7787), (60, 7790), (62, 7793), (67, 7808), (77, 7865), (81, 7877), (91, 7922), (102, 7982), (104, 7988), (107, 7994),

Gene: ODay_12 Start: 7116, Stop: 7499, Start Num: 10

Candidate Starts for ODay_12:

(Start: 10 @7116 has 10 MA's), (18, 7131), (28, 7170), (30, 7176), (34, 7188), (40, 7212), (86, 7395), (103, 7485),

Gene: PFR1_09 Start: 7693, Stop: 8106, Start Num: 13

Candidate Starts for PFR1_09:

(Start: 13 @7693 has 8 MA's), (23, 7720), (24, 7732), (25, 7735), (37, 7771), (38, 7783), (43, 7810), (47, 7825), (52, 7849), (55, 7861), (65, 7882), (74, 7933), (82, 7963), (88, 7996),

Gene: PFR2_09 Start: 7693, Stop: 8106, Start Num: 13

Candidate Starts for PFR2_09:

(Start: 13 @7693 has 8 MA's), (23, 7720), (24, 7732), (25, 7735), (37, 7771), (38, 7783), (43, 7810), (47, 7825), (52, 7849), (55, 7861), (65, 7882), (74, 7933), (82, 7963), (88, 7996),

Gene: Periwinkle_12 Start: 7041, Stop: 7433, Start Num: 11

Candidate Starts for Periwinkle_12:

(1, 6912), (2, 6957), (3, 6963), (4, 6969), (Start: 11 @7041 has 19 MA's), (21, 7068), (31, 7107), (33, 7113), (35, 7119), (39, 7131), (47, 7155), (59, 7194), (62, 7200), (66, 7212), (69, 7221), (77, 7272), (81, 7284),

Gene: Phabuloso_12 Start: 7046, Stop: 7438, Start Num: 11

Candidate Starts for Phabuloso_12:

(1, 6917), (2, 6962), (3, 6968), (4, 6974), (6, 6992), (7, 7010), (Start: 11 @7046 has 19 MA's), (21, 7073), (33, 7118), (35, 7124), (39, 7136), (47, 7160), (59, 7199), (62, 7205), (67, 7220), (69, 7226), (77, 7277), (81, 7289), (93, 7343),

Gene: Phistory_12 Start: 7030, Stop: 7422, Start Num: 11

Candidate Starts for Phistory_12:

(1, 6901), (2, 6946), (3, 6952), (4, 6958), (6, 6976), (7, 6994), (Start: 11 @7030 has 19 MA's), (21, 7057), (33, 7102), (35, 7108), (39, 7120), (47, 7144), (62, 7189), (67, 7204), (69, 7210), (77, 7261), (81, 7273),

Gene: PhorbesPhlower_11 Start: 6561, Stop: 6944, Start Num: 10

Candidate Starts for PhorbesPhlower_11:

(Start: 10 @6561 has 10 MA's), (28, 6615), (30, 6621), (34, 6633), (40, 6657), (53, 6717), (85, 6834), (86, 6840), (103, 6930),

Gene: Pollux_13 Start: 8269, Stop: 8655, Start Num: 15

Candidate Starts for Pollux_13:

(Start: 15 @8269 has 17 MA's), (31, 8326),

Gene: Posh_13 Start: 8263, Stop: 8655, Start Num: 15

Candidate Starts for Posh_13:

(5, 8182), (Start: 15 @8263 has 17 MA's),

Gene: Pytheas_13 Start: 8116, Stop: 8502, Start Num: 15

Candidate Starts for Pytheas_13:

(5, 8035), (Start: 15 @8116 has 17 MA's), (25, 8152), (31, 8173),

Gene: Sarge_11 Start: 7513, Stop: 7890, Start Num: 13

Candidate Starts for Sarge_11:

(Start: 13 @7513 has 8 MA's), (47, 7627), (53, 7654), (60, 7675), (85, 7777), (86, 7783), (95, 7819), (100, 7852),

Gene: Shoya_10 Start: 7149, Stop: 7526, Start Num: 13

Candidate Starts for Shoya_10:

(Start: 13 @7149 has 8 MA's), (47, 7263), (53, 7290), (60, 7311), (86, 7419), (95, 7455), (100, 7488),

Gene: Sleepyhead_12 Start: 7869, Stop: 8279, Start Num: 36

Candidate Starts for Sleepyhead_12:

(25, 7833), (Start: 36 @7869 has 1 MA's), (60, 7962), (71, 8004), (84, 8061), (86, 8070), (87, 8082), (98, 8124),

Gene: Soul22_13 Start: 7212, Stop: 7616, Start Num: 8

Candidate Starts for Soul22_13:

(Start: 8 @7212 has 7 MA's), (12, 7245), (32, 7305), (46, 7371), (78, 7491), (82, 7503), (94, 7539), (99, 7569),

Gene: Spartoi_10 Start: 6599, Stop: 7030, Start Num: 9

Candidate Starts for Spartoi_10:

(Start: 9 @6599 has 2 MA's), (19, 6635), (27, 6668), (29, 6674), (34, 6689), (56, 6785),

Gene: Spooky_12 Start: 7039, Stop: 7449, Start Num: 11

Candidate Starts for Spooky_12:

(2, 6955), (3, 6961), (4, 6967), (Start: 11 @7039 has 19 MA's), (33, 7111), (35, 7117), (39, 7129), (47, 7171), (59, 7210), (62, 7216), (69, 7237), (75, 7276), (81, 7300), (93, 7354),

Gene: Squiddly_13 Start: 7726, Stop: 8118, Start Num: 11

Candidate Starts for Squiddly_13:

(1, 7597), (2, 7642), (3, 7648), (4, 7654), (6, 7672), (7, 7690), (Start: 11 @7726 has 19 MA's), (21, 7753), (33, 7798), (35, 7804), (39, 7816), (47, 7840), (62, 7885), (67, 7900), (69, 7906), (77, 7957), (81, 7969),

Gene: Whitney_12 Start: 7041, Stop: 7433, Start Num: 11

Candidate Starts for Whitney_12:

(1, 6912), (2, 6957), (3, 6963), (4, 6969), (6, 6987), (Start: 11 @7041 has 19 MA's), (21, 7068), (31, 7107), (33, 7113), (35, 7119), (39, 7131), (47, 7155), (59, 7194), (62, 7200), (66, 7212), (69, 7221), (77, 7272), (81, 7284),

Gene: Wrigley_13 Start: 8113, Stop: 8499, Start Num: 15

Candidate Starts for Wrigley_13:

(5, 8032), (Start: 15 @8113 has 17 MA's), (25, 8149), (31, 8170),

Gene: Yoshi_13 Start: 7212, Stop: 7616, Start Num: 8

Candidate Starts for Yoshi_13:

(Start: 8 @7212 has 7 MA's), (12, 7245), (32, 7305), (46, 7371), (78, 7491), (82, 7503), (94, 7539), (99, 7569),

Gene: Zapner_14 Start: 7737, Stop: 8141, Start Num: 8

Candidate Starts for Zapner_14:

(Start: 8 @7737 has 7 MA's), (12, 7770), (32, 7830), (46, 7896), (78, 8016), (82, 8028), (94, 8064), (99, 8094),