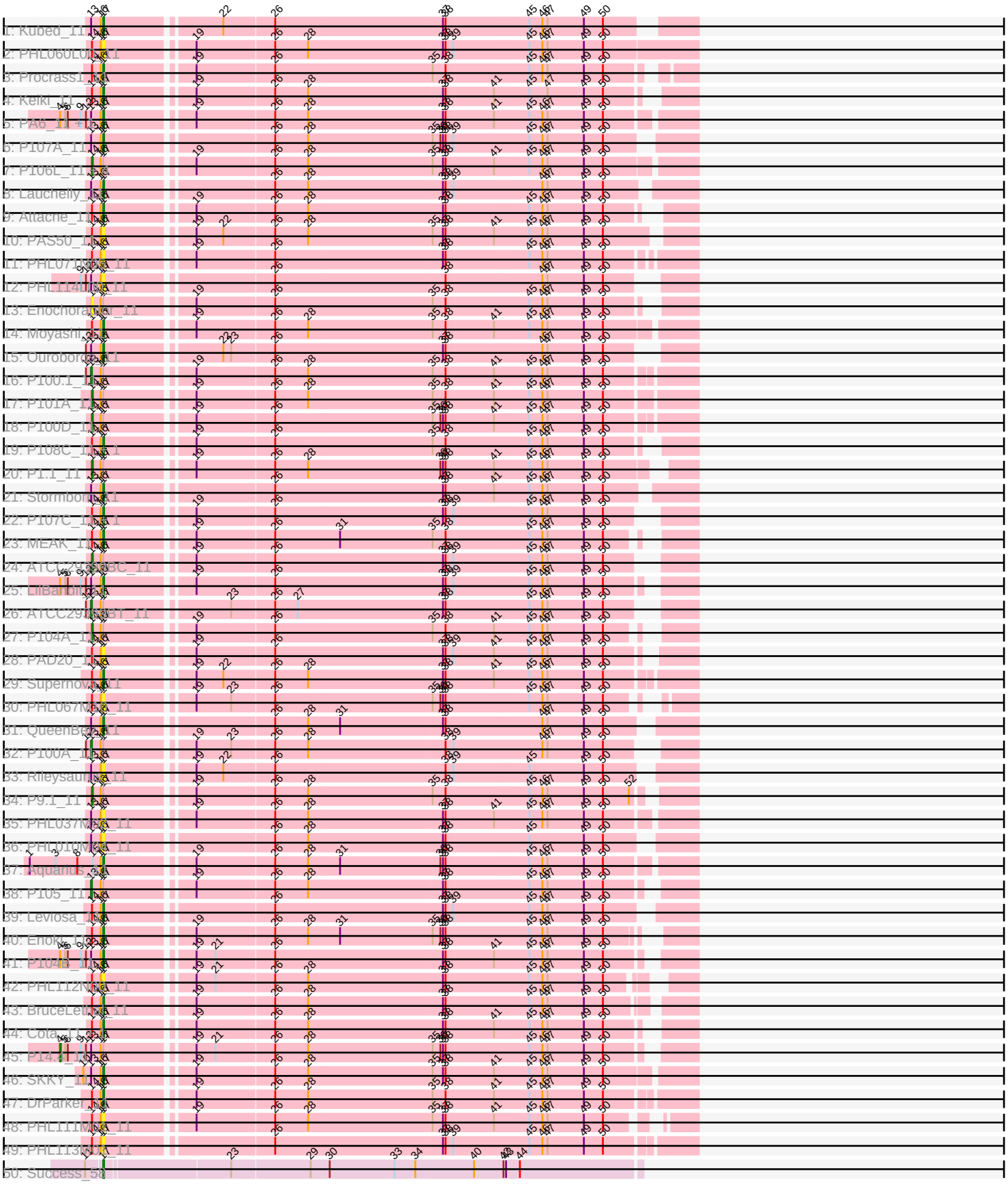
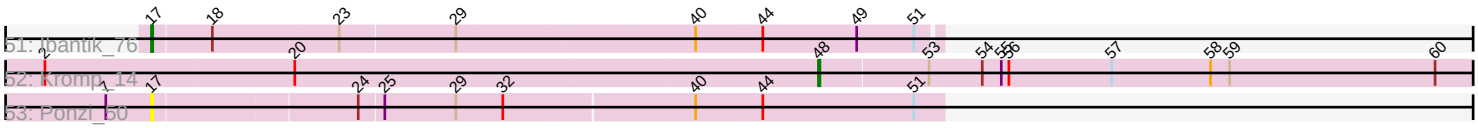
# Pham 194023



# Pham 194023


51: Jbantik_76
52: Kromp_14
53: Ponzi_50
17
18
23
29
40
44
49
51
2
20
48
53
54
55
56
57
58
59
60
1
17
24
25
29
32
40
44
51

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 194023 Report

This analysis was run 11/02/24 on database version 579.

Pham number 194023 has 61 members, 15 are drafts.

Phages represented in each track:
- Track 1 : Kubed_11
- Track 2 : PHL060L00_11
- Track 3 : Procrass1_11
- Track 4 : Keiki_11
- Track 5 : PA6_11, Wizzo_11
- Track 6 : P107A_11
- Track 7 : P106L_11, P106M_11, P106C_11, P106A_11, P106I_11
- Track 8 : Lauchelly_11
- Track 9 : Attacne_11
- Track 10 : PAS50_11
- Track 11 : PHL071N05_11
- Track 12 : PHL114L00_11
- Track 13 : Enochoraptor_11
- Track 14 : Moyashi_11
- Track 15 : Ouroboros_11
- Track 16 : P100.1_11
- Track 17 : P101A_11
- Track 18 : P100D_11
- Track 19 : P108C_11, Pirate_11
- Track 20 : P1.1_11
- Track 21 : Stormborn_11
- Track 22 : P107C_11, Solid_11
- Track 23 : MEAK_11
- Track 24 : ATCC29399BC_11
- Track 25 : LilBandit_11
- Track 26 : ATCC29399BT_11
- Track 27 : P104A_11
- Track 28 : PAD20_11
- Track 29 : Supernova_11
- Track 30 : PHL067M10_11
- Track 31 : QueenBey_11
- Track 32 : P100A_11
- Track 33 : Rileysaurus_11
- Track 34 : P9.1_11
- Track 35 : PHL037M02_11
- Track 36 : PHL010M04_11
- Track 37 : Aquarius_11

• Track 38 : P105_11
• Track 39 : Leviosa_11
• Track 40 : Enoki_11
• Track 41 : P104B_11
• Track 42 : PHL112N00_11
• Track 43 : BruceLethal_11
• Track 44 : Cota_11, MrAK_11
• Track 45 : P14.4_11
• Track 46 : SKKY_11
• Track 47 : DrParker_11
• Track 48 : PHL111M01_11
• Track 49 : PHL113M01_11
• Track 50 : Success_58
• Track 51 : Ibantik_76
• Track 52 : Kromp_14
• Track 53 : Ponzi_50

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

The start number called the most often in the published annotations is 17, it was called in 29 of the 46 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Aquarius_11, Attacne_11, BruceLethal_11, Cota_11, DrParker_11, Enoki_11, Ibantik_76, Keiki_11, Kubed_11, Lauchelly_11, Leviosa_11, LilBandit_11, MEAK_11, Moyashi_11, MrAK_11, Ouroboros_11, P104B_11, P107A_11, P107C_11, P108C_11, PA6_11, PAD20_11, PAS50_11, PHL010M04_11, PHL037M02_11, PHL060L00_11, PHL067M10_11, PHL071N05_11, PHL111M01_11, PHL112N00_11, PHL113M01_11, PHL114L00_11, Pirate_11, Ponzi_50, Procrass1_11, QueenBey_11, Rileysaurus_11, SKKY_11, Solid_11, Stormborn_11, Success_58, Supernova_11, Wizzo_11,

Genes that have the "Most Annotated" start but do not call it:
• ATCC29399BC_11, ATCC29399BT_11, Enochoraptor_11, P1.1_11, P100.1_11, P100A_11, P100D_11, P101A_11, P104A_11, P105_11, P106A_11, P106C_11, P106I_11, P106L_11, P106M_11, P14.4_11, P9.1_11,

Genes that do not have the "Most Annotated" start:
• Kromp_14,

**Summary by start number:**

Start 4:
• Found in 5 of 61 ( 8.2% ) of genes in pham
• Manual Annotations of this start: 1 of 46
• Called 20.0% of time when present
• Phage (with cluster) where this start called: P14.4_11 (BU),

Start 13:
• Found in 20 of 61 ( 32.8% ) of genes in pham

• Manual Annotations of this start: 4 of 46
• Called 20.0% of time when present
• Phage (with cluster) where this start called: ATCC29399BT_11 (BU), P100.1_11 (BU), P100A_11 (BU), P105_11 (BU),

Start 14:
• Found in 36 of 61 ( 59.0% ) of genes in pham
• Manual Annotations of this start: 11 of 46
• Called 33.3% of time when present
• Phage (with cluster) where this start called: ATCC29399BC_11 (BU), Enochoraptor_11 (BU), P1.1_11 (BU), P100D_11 (BU), P101A_11 (BU), P104A_11 (BU), P106A_11 (BU), P106C_11 (BU), P106I_11 (BU), P106L_11 (BU), P106M_11 (BU), P9.1_11 (BU),

Start 17:
• Found in 60 of 61 ( 98.4% ) of genes in pham
• Manual Annotations of this start: 29 of 46
• Called 71.7% of time when present
• Phage (with cluster) where this start called: Aquarius_11 (BU), Attacne_11 (BU), BruceLethal_11 (BU), Cota_11 (BU), DrParker_11 (BU), Enoki_11 (BU), Ibantik_76 (singleton), Keiki_11 (BU), Kubed_11 (BU), Lauchelly_11 (BU), Leviosa_11 (BU), LilBandit_11 (BU), MEAK_11 (BU), Moyashi_11 (BU), MrAK_11 (BU), Ouroboros_11 (BU), P104B_11 (BU), P107A_11 (BU), P107C_11 (BU), P108C_11 (BU), PA6_11 (BU), PAD20_11 (BU), PAS50_11 (BU), PHL010M04_11 (BU), PHL037M02_11 (BU), PHL060L00_11 (BU), PHL067M10_11 (BU), PHL071N05_11 (BU), PHL111M01_11 (BU), PHL112N00_11 (BU), PHL113M01_11 (BU), PHL114L00_11 (BU), Pirate_11 (BU), Ponzi_50 (singleton), Procrass1_11 (BU), QueenBey_11 (BU), Rileysaurus_11 (BU), SKKY_11 (BU), Solid_11 (BU), Stormborn_11 (BU), Success_58 (singleton), Supernova_11 (BU), Wizzo_11 (BU),

Start 48:
• Found in 1 of 61 ( 1.6% ) of genes in pham
• Manual Annotations of this start: 1 of 46
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Kromp_14 (singleton),

**Summary by clusters:**

There are 2 clusters represented in this pham: BU, singleton,

Info for manual annotations of cluster BU:
•Start number 4 was manually annotated 1 time for cluster BU.
•Start number 13 was manually annotated 4 times for cluster BU.
•Start number 14 was manually annotated 11 times for cluster BU.
•Start number 17 was manually annotated 27 times for cluster BU.

***Gene Information:***

Gene: ATCC29399BC_11 Start: 7150, Stop: 7785, Start Num: 14
Candidate Starts for ATCC29399BC_11:

(Start: 14 @7150 has 11 MA's), (16, 7159), (Start: 17 @7162 has 29 MA's), (19, 7255), (26, 7342), (37, 7531), (38, 7534), (39, 7543), (45, 7627), (46, 7642), (47, 7648), (49, 7690), (50, 7708),

Gene: ATCC29399BT_11 Start: 7147, Stop: 7782, Start Num: 13
Candidate Starts for ATCC29399BT_11:
(12, 7141), (Start: 13 @7147 has 4 MA's), (16, 7156), (Start: 17 @7159 has 29 MA's), (23, 7291), (26, 7339), (27, 7363), (37, 7528), (38, 7531), (45, 7624), (46, 7639), (47, 7645), (49, 7687), (50, 7705),

Gene: Aquarius_11 Start: 7160, Stop: 7801, Start Num: 17
Candidate Starts for Aquarius_11:
(1, 7076), (3, 7106), (8, 7130), (15, 7148), (16, 7157), (Start: 17 @7160 has 29 MA's), (19, 7253), (26, 7340), (28, 7376), (31, 7412), (36, 7526), (37, 7529), (38, 7532), (45, 7625), (46, 7640), (47, 7646), (49, 7688), (50, 7706),

Gene: Attacne_11 Start: 7163, Stop: 7786, Start Num: 17
Candidate Starts for Attacne_11:
(Start: 14 @7151 has 11 MA's), (16, 7160), (Start: 17 @7163 has 29 MA's), (19, 7256), (26, 7343), (28, 7379), (37, 7532), (38, 7535), (45, 7628), (46, 7643), (47, 7649), (49, 7691), (50, 7709),

Gene: BruceLethal_11 Start: 7160, Stop: 7792, Start Num: 17
Candidate Starts for BruceLethal_11:
(Start: 14 @7148 has 11 MA's), (16, 7157), (Start: 17 @7160 has 29 MA's), (19, 7253), (26, 7340), (28, 7376), (37, 7529), (38, 7532), (45, 7625), (46, 7640), (47, 7646), (49, 7688), (50, 7706),

Gene: Cota_11 Start: 7170, Stop: 7796, Start Num: 17
Candidate Starts for Cota_11:
(Start: 14 @7158 has 11 MA's), (16, 7167), (Start: 17 @7170 has 29 MA's), (19, 7263), (26, 7350), (28, 7386), (37, 7539), (38, 7542), (41, 7596), (45, 7635), (46, 7650), (47, 7656), (49, 7698), (50, 7716),

Gene: DrParker_11 Start: 7185, Stop: 7826, Start Num: 17
Candidate Starts for DrParker_11:
(Start: 14 @7173 has 11 MA's), (16, 7182), (Start: 17 @7185 has 29 MA's), (19, 7278), (26, 7365), (28, 7401), (35, 7542), (38, 7557), (41, 7611), (45, 7650), (46, 7665), (47, 7671), (49, 7713), (50, 7731),

Gene: Enochoraptor_11 Start: 7162, Stop: 7800, Start Num: 14
Candidate Starts for Enochoraptor_11:
(Start: 14 @7162 has 11 MA's), (16, 7171), (Start: 17 @7174 has 29 MA's), (19, 7267), (26, 7354), (35, 7531), (38, 7546), (45, 7639), (46, 7654), (47, 7660), (49, 7702), (50, 7720),

Gene: Enoki_11 Start: 7161, Stop: 7781, Start Num: 17
Candidate Starts for Enoki_11:
(Start: 14 @7149 has 11 MA's), (16, 7158), (Start: 17 @7161 has 29 MA's), (19, 7254), (26, 7341), (28, 7377), (31, 7413), (35, 7518), (36, 7527), (37, 7530), (38, 7533), (45, 7626), (46, 7641), (47, 7647), (49, 7689), (50, 7707),

Gene: Ibantik_76 Start: 35791, Stop: 36390, Start Num: 17
Candidate Starts for Ibantik_76:
(Start: 17 @35791 has 29 MA's), (18, 35836), (23, 35935), (29, 36022), (40, 36205), (44, 36256), (49, 36328), (51, 36373),

Gene: Keiki_11 Start: 7170, Stop: 7796, Start Num: 17

Candidate Starts for Keiki_11:
(Start: 14 @7158 has 11 MA's), (16, 7167), (Start: 17 @7170 has 29 MA's), (19, 7263), (26, 7350), (28, 7386), (37, 7539), (38, 7542), (41, 7596), (45, 7635), (47, 7656), (49, 7698), (50, 7716),

Gene: Kromp_14 Start: 9809, Stop: 10375, Start Num: 48
Candidate Starts for Kromp_14:
(2, 9206), (20, 9401), (Start: 48 @9809 has 1 MA's), (53, 9893), (54, 9935), (55, 9950), (56, 9956), (57, 10037), (58, 10115), (59, 10130), (60, 10292),

Gene: Kubed_11 Start: 7161, Stop: 7790, Start Num: 17
Candidate Starts for Kubed_11:
(Start: 13 @7149 has 4 MA's), (16, 7158), (Start: 17 @7161 has 29 MA's), (22, 7284), (26, 7341), (37, 7530), (38, 7533), (45, 7626), (46, 7641), (47, 7647), (49, 7689), (50, 7707),

Gene: Lauchelly_11 Start: 7156, Stop: 7794, Start Num: 17
Candidate Starts for Lauchelly_11:
(Start: 13 @7144 has 4 MA's), (16, 7153), (Start: 17 @7156 has 29 MA's), (26, 7336), (28, 7372), (37, 7525), (38, 7528), (39, 7537), (46, 7636), (47, 7642), (49, 7684), (50, 7702),

Gene: Leviosa_11 Start: 7181, Stop: 7813, Start Num: 17
Candidate Starts for Leviosa_11:
(Start: 14 @7169 has 11 MA's), (16, 7178), (Start: 17 @7181 has 29 MA's), (26, 7361), (37, 7550), (38, 7553), (39, 7562), (45, 7646), (46, 7661), (47, 7667), (49, 7709), (50, 7727),

Gene: LilBandit_11 Start: 7167, Stop: 7796, Start Num: 17
Candidate Starts for LilBandit_11:
(Start: 4 @7119 has 1 MA's), (5, 7125), (6, 7128), (9, 7143), (12, 7149), (Start: 13 @7155 has 4 MA's), (16, 7164), (Start: 17 @7167 has 29 MA's), (19, 7260), (26, 7347), (37, 7536), (38, 7539), (39, 7548), (45, 7632), (46, 7647), (47, 7653), (49, 7695), (50, 7713),

Gene: MEAK_11 Start: 7162, Stop: 7782, Start Num: 17
Candidate Starts for MEAK_11:
(Start: 14 @7150 has 11 MA's), (16, 7159), (Start: 17 @7162 has 29 MA's), (19, 7255), (26, 7342), (31, 7414), (35, 7519), (38, 7534), (45, 7627), (46, 7642), (47, 7648), (49, 7690), (50, 7708),

Gene: Moyashi_11 Start: 7180, Stop: 7824, Start Num: 17
Candidate Starts for Moyashi_11:
(Start: 14 @7168 has 11 MA's), (16, 7177), (Start: 17 @7180 has 29 MA's), (19, 7273), (26, 7360), (28, 7396), (35, 7537), (38, 7552), (41, 7606), (45, 7645), (46, 7660), (47, 7666), (49, 7708), (50, 7726),

Gene: MrAK_11 Start: 7192, Stop: 7836, Start Num: 17
Candidate Starts for MrAK_11:
(Start: 14 @7180 has 11 MA's), (16, 7189), (Start: 17 @7192 has 29 MA's), (19, 7285), (26, 7372), (28, 7408), (37, 7561), (38, 7564), (41, 7618), (45, 7657), (46, 7672), (47, 7678), (49, 7720), (50, 7738),

Gene: Ouroboros_11 Start: 7164, Stop: 7787, Start Num: 17
Candidate Starts for Ouroboros_11:
(12, 7146), (Start: 13 @7152 has 4 MA's), (16, 7161), (Start: 17 @7164 has 29 MA's), (22, 7287), (23, 7296), (26, 7344), (37, 7533), (38, 7536), (46, 7644), (47, 7650), (49, 7692), (50, 7710),

Gene: P1.1_11 Start: 7152, Stop: 7793, Start Num: 14

Candidate Starts for P1.1_11:
(Start: 14 @7152 has 11 MA's), (16, 7161), (Start: 17 @7164 has 29 MA's), (19, 7257), (26, 7344), (28, 7380), (36, 7530), (37, 7533), (38, 7536), (41, 7590), (45, 7629), (46, 7644), (47, 7650), (49, 7692), (50, 7710),

Gene: P100.1_11 Start: 7148, Stop: 7801, Start Num: 13
Candidate Starts for P100.1_11:
(12, 7142), (Start: 13 @7148 has 4 MA's), (16, 7157), (Start: 17 @7160 has 29 MA's), (19, 7253), (26, 7340), (28, 7376), (35, 7517), (38, 7532), (41, 7586), (45, 7625), (46, 7640), (47, 7646), (49, 7688), (50, 7706),

Gene: P100A_11 Start: 7160, Stop: 7795, Start Num: 13
Candidate Starts for P100A_11:
(12, 7154), (Start: 13 @7160 has 4 MA's), (16, 7169), (Start: 17 @7172 has 29 MA's), (19, 7265), (23, 7304), (26, 7352), (28, 7388), (38, 7544), (39, 7553), (46, 7652), (47, 7658), (49, 7700), (50, 7718),

Gene: P100D_11 Start: 7145, Stop: 7798, Start Num: 14
Candidate Starts for P100D_11:
(Start: 14 @7145 has 11 MA's), (16, 7154), (Start: 17 @7157 has 29 MA's), (19, 7250), (26, 7337), (35, 7514), (36, 7523), (37, 7526), (38, 7529), (41, 7583), (45, 7622), (46, 7637), (47, 7643), (49, 7685), (50, 7703),

Gene: P101A_11 Start: 7152, Stop: 7808, Start Num: 14
Candidate Starts for P101A_11:
(Start: 14 @7152 has 11 MA's), (16, 7161), (Start: 17 @7164 has 29 MA's), (19, 7257), (26, 7344), (28, 7380), (35, 7521), (38, 7536), (41, 7590), (45, 7629), (46, 7644), (47, 7650), (49, 7692), (50, 7710),

Gene: P104A_11 Start: 7149, Stop: 7781, Start Num: 14
Candidate Starts for P104A_11:
(Start: 14 @7149 has 11 MA's), (16, 7158), (Start: 17 @7161 has 29 MA's), (19, 7254), (26, 7341), (35, 7518), (38, 7533), (41, 7587), (45, 7626), (46, 7641), (47, 7647), (49, 7689), (50, 7707),

Gene: P104B_11 Start: 7169, Stop: 7798, Start Num: 17
Candidate Starts for P104B_11:
(Start: 4 @7121 has 1 MA's), (5, 7127), (6, 7130), (9, 7145), (12, 7151), (Start: 13 @7157 has 4 MA's), (16, 7166), (Start: 17 @7169 has 29 MA's), (19, 7262), (21, 7283), (26, 7349), (37, 7538), (38, 7541), (41, 7595), (45, 7634), (46, 7649), (47, 7655), (49, 7697), (50, 7715),

Gene: P105_11 Start: 7140, Stop: 7781, Start Num: 13
Candidate Starts for P105_11:
(Start: 13 @7140 has 4 MA's), (16, 7149), (Start: 17 @7152 has 29 MA's), (19, 7245), (26, 7332), (28, 7368), (37, 7521), (38, 7524), (45, 7617), (46, 7632), (47, 7638), (49, 7680), (50, 7698),

Gene: P106A_11 Start: 7168, Stop: 7824, Start Num: 14
Candidate Starts for P106A_11:
(Start: 14 @7168 has 11 MA's), (16, 7177), (Start: 17 @7180 has 29 MA's), (19, 7273), (26, 7360), (28, 7396), (35, 7537), (37, 7549), (38, 7552), (41, 7606), (45, 7645), (46, 7660), (47, 7666), (49, 7708), (50, 7726),

Gene: P106C_11 Start: 7168, Stop: 7824, Start Num: 14
Candidate Starts for P106C_11:

(Start: 14 @7168 has 11 MA's), (16, 7177), (Start: 17 @7180 has 29 MA's), (19, 7273), (26, 7360), (28, 7396), (35, 7537), (37, 7549), (38, 7552), (41, 7606), (45, 7645), (46, 7660), (47, 7666), (49, 7708), (50, 7726),

Gene: P106I_11 Start: 7168, Stop: 7824, Start Num: 14
Candidate Starts for P106I_11:
(Start: 14 @7168 has 11 MA's), (16, 7177), (Start: 17 @7180 has 29 MA's), (19, 7273), (26, 7360), (28, 7396), (35, 7537), (37, 7549), (38, 7552), (41, 7606), (45, 7645), (46, 7660), (47, 7666), (49, 7708), (50, 7726),

Gene: P106L_11 Start: 7168, Stop: 7824, Start Num: 14
Candidate Starts for P106L_11:
(Start: 14 @7168 has 11 MA's), (16, 7177), (Start: 17 @7180 has 29 MA's), (19, 7273), (26, 7360), (28, 7396), (35, 7537), (37, 7549), (38, 7552), (41, 7606), (45, 7645), (46, 7660), (47, 7666), (49, 7708), (50, 7726),

Gene: P106M_11 Start: 7168, Stop: 7824, Start Num: 14
Candidate Starts for P106M_11:
(Start: 14 @7168 has 11 MA's), (16, 7177), (Start: 17 @7180 has 29 MA's), (19, 7273), (26, 7360), (28, 7396), (35, 7537), (37, 7549), (38, 7552), (41, 7606), (45, 7645), (46, 7660), (47, 7666), (49, 7708), (50, 7726),

Gene: P107A_11 Start: 7168, Stop: 7800, Start Num: 17
Candidate Starts for P107A_11:
(Start: 13 @7156 has 4 MA's), (16, 7165), (Start: 17 @7168 has 29 MA's), (26, 7348), (28, 7384), (35, 7525), (36, 7534), (37, 7537), (38, 7540), (39, 7549), (45, 7633), (46, 7648), (47, 7654), (49, 7696), (50, 7714),

Gene: P107C_11 Start: 7162, Stop: 7785, Start Num: 17
Candidate Starts for P107C_11:
(Start: 14 @7150 has 11 MA's), (16, 7159), (Start: 17 @7162 has 29 MA's), (19, 7255), (26, 7342), (37, 7531), (38, 7534), (39, 7543), (45, 7627), (46, 7642), (47, 7648), (49, 7690), (50, 7708),

Gene: P108C_11 Start: 7167, Stop: 7793, Start Num: 17
Candidate Starts for P108C_11:
(Start: 14 @7155 has 11 MA's), (16, 7164), (Start: 17 @7167 has 29 MA's), (19, 7260), (26, 7347), (35, 7524), (38, 7539), (45, 7632), (46, 7647), (47, 7653), (49, 7695), (50, 7713),

Gene: P14.4_11 Start: 7116, Stop: 7793, Start Num: 4
Candidate Starts for P14.4_11:
(Start: 4 @7116 has 1 MA's), (5, 7122), (6, 7125), (9, 7140), (12, 7146), (Start: 13 @7152 has 4 MA's), (16, 7161), (Start: 17 @7164 has 29 MA's), (19, 7257), (21, 7278), (26, 7344), (28, 7380), (35, 7521), (36, 7530), (37, 7533), (38, 7536), (45, 7629), (46, 7644), (47, 7650), (49, 7692), (50, 7710),

Gene: P9.1_11 Start: 7144, Stop: 7788, Start Num: 14
Candidate Starts for P9.1_11:
(Start: 14 @7144 has 11 MA's), (16, 7153), (Start: 17 @7156 has 29 MA's), (19, 7249), (26, 7336), (28, 7372), (35, 7513), (38, 7528), (45, 7621), (46, 7636), (47, 7642), (49, 7684), (50, 7702), (52, 7732),

Gene: PA6_11 Start: 7172, Stop: 7813, Start Num: 17
Candidate Starts for PA6_11:

(Start: 4 @7124 has 1 MA's), (5, 7130), (6, 7133), (9, 7148), (12, 7154), (Start: 13 @7160 has 4 MA's), (16, 7169), (Start: 17 @7172 has 29 MA's), (19, 7265), (26, 7352), (28, 7388), (37, 7541), (38, 7544), (41, 7598), (45, 7637), (46, 7652), (47, 7658), (49, 7700), (50, 7718),

Gene: PAD20_11 Start: 7164, Stop: 7793, Start Num: 17
Candidate Starts for PAD20_11:
(Start: 14 @7152 has 11 MA's), (16, 7161), (Start: 17 @7164 has 29 MA's), (19, 7257), (26, 7344), (37, 7533), (38, 7536), (39, 7545), (41, 7590), (45, 7629), (46, 7644), (47, 7650), (49, 7692), (50, 7710),

Gene: PAS50_11 Start: 7161, Stop: 7799, Start Num: 17
Candidate Starts for PAS50_11:
(Start: 14 @7149 has 11 MA's), (16, 7158), (Start: 17 @7161 has 29 MA's), (19, 7254), (22, 7284), (26, 7341), (28, 7377), (35, 7518), (37, 7530), (38, 7533), (41, 7587), (45, 7626), (46, 7641), (47, 7647), (49, 7689), (50, 7707),

Gene: PHL010M04_11 Start: 7155, Stop: 7787, Start Num: 17
Candidate Starts for PHL010M04_11:
(Start: 13 @7143 has 4 MA's), (16, 7152), (Start: 17 @7155 has 29 MA's), (26, 7335), (28, 7371), (37, 7524), (38, 7527), (45, 7620), (49, 7683), (50, 7701),

Gene: PHL037M02_11 Start: 7161, Stop: 7802, Start Num: 17
Candidate Starts for PHL037M02_11:
(Start: 13 @7149 has 4 MA's), (16, 7158), (Start: 17 @7161 has 29 MA's), (19, 7254), (26, 7341), (28, 7377), (37, 7530), (38, 7533), (41, 7587), (45, 7626), (46, 7641), (47, 7647), (49, 7689), (50, 7707),

Gene: PHL060L00_11 Start: 7151, Stop: 7804, Start Num: 17
Candidate Starts for PHL060L00_11:
(Start: 14 @7139 has 11 MA's), (16, 7148), (Start: 17 @7151 has 29 MA's), (19, 7244), (26, 7331), (28, 7367), (37, 7520), (38, 7523), (39, 7532), (45, 7616), (46, 7631), (47, 7637), (49, 7679), (50, 7697),

Gene: PHL067M10_11 Start: 7157, Stop: 7771, Start Num: 17
Candidate Starts for PHL067M10_11:
(Start: 14 @7145 has 11 MA's), (16, 7154), (Start: 17 @7157 has 29 MA's), (19, 7250), (23, 7289), (26, 7337), (35, 7514), (36, 7523), (37, 7526), (38, 7529), (45, 7622), (46, 7637), (47, 7643), (49, 7685), (50, 7703),

Gene: PHL071N05_11 Start: 7159, Stop: 7797, Start Num: 17
Candidate Starts for PHL071N05_11:
(Start: 14 @7147 has 11 MA's), (16, 7156), (Start: 17 @7159 has 29 MA's), (19, 7252), (26, 7339), (37, 7528), (38, 7531), (45, 7624), (46, 7639), (47, 7645), (49, 7687), (50, 7705),

Gene: PHL111M01_11 Start: 7168, Stop: 7788, Start Num: 17
Candidate Starts for PHL111M01_11:
(Start: 14 @7156 has 11 MA's), (16, 7165), (Start: 17 @7168 has 29 MA's), (19, 7261), (26, 7348), (28, 7384), (35, 7525), (37, 7537), (38, 7540), (41, 7594), (45, 7633), (46, 7648), (47, 7654), (49, 7696), (50, 7714),

Gene: PHL112N00_11 Start: 7164, Stop: 7784, Start Num: 17
Candidate Starts for PHL112N00_11:
(Start: 14 @7152 has 11 MA's), (16, 7161), (Start: 17 @7164 has 29 MA's), (19, 7257), (21, 7278), (26, 7344), (28, 7380), (37, 7533), (38, 7536), (45, 7629), (46, 7644), (47, 7650), (49, 7692), (50,

7710),

Gene: PHL113M01_11 Start: 7172, Stop: 7813, Start Num: 17
Candidate Starts for PHL113M01_11:
(Start: 14 @7160 has 11 MA's), (16, 7169), (Start: 17 @7172 has 29 MA's), (26, 7352), (37, 7541), (38, 7544), (39, 7553), (45, 7637), (46, 7652), (47, 7658), (49, 7700), (50, 7718),

Gene: PHL114L00_11 Start: 7168, Stop: 7791, Start Num: 17
Candidate Starts for PHL114L00_11:
(9, 7144), (12, 7150), (Start: 13 @7156 has 4 MA's), (16, 7165), (Start: 17 @7168 has 29 MA's), (26, 7348), (38, 7540), (46, 7648), (47, 7654), (49, 7696), (50, 7714),

Gene: Pirate_11 Start: 7156, Stop: 7782, Start Num: 17
Candidate Starts for Pirate_11:
(Start: 14 @7144 has 11 MA's), (16, 7153), (Start: 17 @7156 has 29 MA's), (19, 7249), (26, 7336), (35, 7513), (38, 7528), (45, 7621), (46, 7636), (47, 7642), (49, 7684), (50, 7702),

Gene: Ponzi_50 Start: 29147, Stop: 29737, Start Num: 17
Candidate Starts for Ponzi_50:
(7, 29111), (Start: 17 @29147 has 29 MA's), (24, 29300), (25, 29318), (29, 29372), (32, 29408), (40, 29546), (44, 29597), (51, 29714),

Gene: Procrass1_11 Start: 7169, Stop: 7795, Start Num: 17
Candidate Starts for Procrass1_11:
(Start: 14 @7157 has 11 MA's), (16, 7166), (Start: 17 @7169 has 29 MA's), (19, 7262), (26, 7349), (35, 7526), (38, 7541), (45, 7634), (46, 7649), (47, 7655), (49, 7697), (50, 7715),

Gene: QueenBey_11 Start: 7157, Stop: 7789, Start Num: 17
Candidate Starts for QueenBey_11:
(Start: 13 @7145 has 4 MA's), (16, 7154), (Start: 17 @7157 has 29 MA's), (26, 7337), (28, 7373), (31, 7409), (37, 7526), (38, 7529), (46, 7637), (47, 7643), (49, 7685), (50, 7703),

Gene: Rileysaurus_11 Start: 7153, Stop: 7785, Start Num: 17
Candidate Starts for Rileysaurus_11:
(Start: 13 @7141 has 4 MA's), (16, 7150), (Start: 17 @7153 has 29 MA's), (19, 7246), (22, 7276), (26, 7333), (38, 7525), (39, 7534), (45, 7618), (49, 7681), (50, 7699),

Gene: SKKY_11 Start: 7186, Stop: 7830, Start Num: 17
Candidate Starts for SKKY_11:
(10, 7165), (Start: 13 @7174 has 4 MA's), (16, 7183), (Start: 17 @7186 has 29 MA's), (19, 7279), (26, 7366), (28, 7402), (35, 7543), (37, 7555), (38, 7558), (41, 7612), (45, 7651), (46, 7666), (47, 7672), (49, 7714), (50, 7732),

Gene: Solid_11 Start: 7163, Stop: 7783, Start Num: 17
Candidate Starts for Solid_11:
(Start: 14 @7151 has 11 MA's), (16, 7160), (Start: 17 @7163 has 29 MA's), (19, 7256), (26, 7343), (37, 7532), (38, 7535), (39, 7544), (45, 7628), (46, 7643), (47, 7649), (49, 7691), (50, 7709),

Gene: Stormborn_11 Start: 7159, Stop: 7797, Start Num: 17
Candidate Starts for Stormborn_11:
(Start: 13 @7147 has 4 MA's), (16, 7156), (Start: 17 @7159 has 29 MA's), (26, 7339), (37, 7528), (38, 7531), (41, 7585), (45, 7624), (46, 7639), (47, 7645), (49, 7687), (50, 7705),

Gene: Success_58 Start: 32224, Stop: 32814, Start Num: 17
Candidate Starts for Success_58:
(11, 32206), (Start: 17 @32224 has 29 MA's), (23, 32362), (29, 32449), (30, 32470), (33, 32542), (34, 32563), (40, 32629), (42, 32662), (43, 32665), (44, 32680),

Gene: Supernova_11 Start: 7163, Stop: 7804, Start Num: 17
Candidate Starts for Supernova_11:
(Start: 14 @7151 has 11 MA's), (16, 7160), (Start: 17 @7163 has 29 MA's), (19, 7256), (22, 7286), (26, 7343), (28, 7379), (37, 7532), (38, 7535), (41, 7589), (45, 7628), (46, 7643), (47, 7649), (49, 7691), (50, 7709),

Gene: Wizzo_11 Start: 7174, Stop: 7815, Start Num: 17
Candidate Starts for Wizzo_11:
(Start: 4 @7126 has 1 MA's), (5, 7132), (6, 7135), (9, 7150), (12, 7156), (Start: 13 @7162 has 4 MA's), (16, 7171), (Start: 17 @7174 has 29 MA's), (19, 7267), (26, 7354), (28, 7390), (37, 7543), (38, 7546), (41, 7600), (45, 7639), (46, 7654), (47, 7660), (49, 7702), (50, 7720),