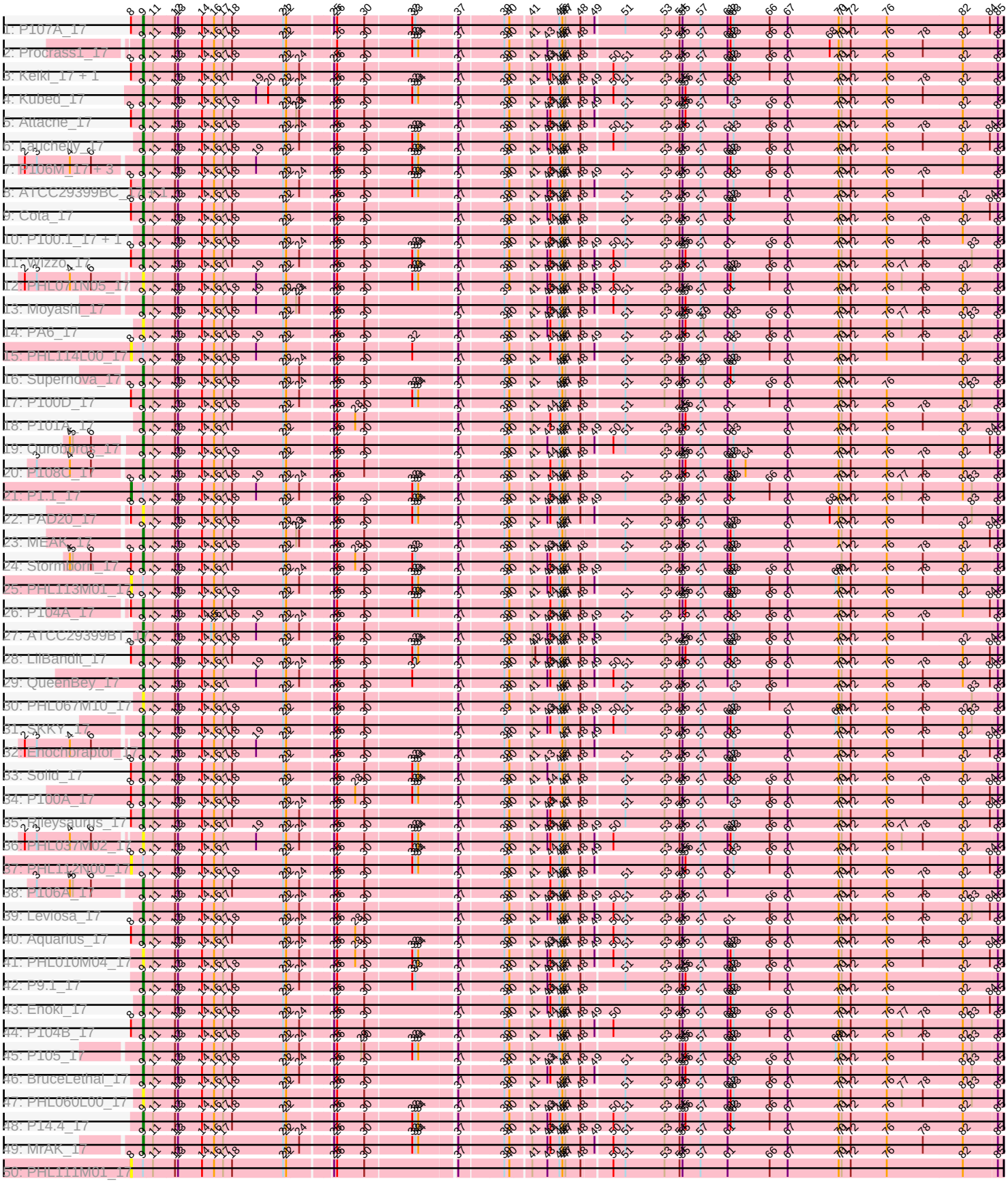
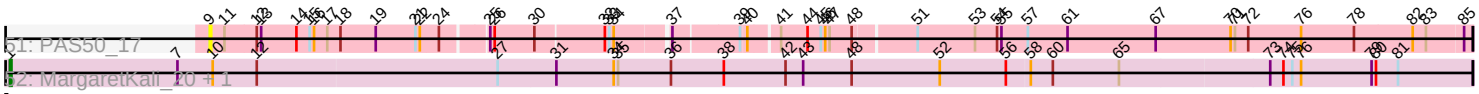
# Pham 345774



# Pham 345774



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 345774 Report

This analysis was run 11/14/26 on database version 672.

Pham number 345774 has 59 members, 12 are drafts.

Phages represented in each track:
- Track 1 : P107A_17
- Track 2 : Procrass1_17
- Track 3 : Keiki_17, Pirate_17
- Track 4 : Kubed_17
- Track 5 : Attacne_17
- Track 6 : Lauchelly_17
- Track 7 : P106M_17, P106C_17, P106L_17, P106I_17
- Track 8 : ATCC29399BC_17, P107C_17
- Track 9 : Cota_17
- Track 10 : P100.1_17, DrParker_17
- Track 11 : Wizzo_17
- Track 12 : PHL071N05_17
- Track 13 : Moyashi_17
- Track 14 : PA6_17
- Track 15 : PHL114L00_17
- Track 16 : Supernova_17
- Track 17 : P100D_17
- Track 18 : P101A_17
- Track 19 : Ouroboros_17
- Track 20 : P108C_17
- Track 21 : P1.1_17
- Track 22 : PAD20_17
- Track 23 : MEAK_17
- Track 24 : Stormborn_17
- Track 25 : PHL113M01_17
- Track 26 : P104A_17
- Track 27 : ATCC29399BT_17
- Track 28 : LilBandit_17
- Track 29 : QueenBey_17
- Track 30 : PHL067M10_17
- Track 31 : SKKY_17
- Track 32 : Enochoraptor_17
- Track 33 : Solid_17
- Track 34 : P100A_17
- Track 35 : Rileysaurus_17
- Track 36 : PHL037M02_17
- Track 37 : PHL112N00_17

• Track 38 : P106A_17
• Track 39 : Leviosa_17
• Track 40 : Aquarius_17
• Track 41 : PHL010M04_17
• Track 42 : P9.1_17
• Track 43 : Enoki_17
• Track 44 : P104B_17
• Track 45 : P105_17
• Track 46 : BruceLethal_17
• Track 47 : PHL060L00_17
• Track 48 : P14.4_17
• Track 49 : MrAK_17
• Track 50 : PHL111M01_17
• Track 51 : PAS50_17
• Track 52 : MargaretKali_20, Kumotta_20

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

The start number called the most often in the published annotations is 9, it was called in 44 of the 47 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• ATCC29399BC_17, ATCC29399BT_17, Aquarius_17, Attacne_17, BruceLethal_17, Cota_17, DrParker_17, Enochoraptor_17, Enoki_17, Keiki_17, Kubed_17, Lauchelly_17, Leviosa_17, LilBandit_17, MEAK_17, Moyashi_17, MrAK_17, Ouroboros_17, P100.1_17, P100A_17, P100D_17, P101A_17, P104A_17, P104B_17, P105_17, P106A_17, P106C_17, P106I_17, P106L_17, P106M_17, P107A_17, P107C_17, P108C_17, P14.4_17, P9.1_17, PA6_17, PAD20_17, PAS50_17, PHL010M04_17, PHL037M02_17, PHL060L00_17, PHL067M10_17, PHL071N05_17, Pirate_17, Procrass1_17, QueenBey_17, Rileysaurus_17, SKKY_17, Solid_17, Stormborn_17, Supernova_17, Wizzo_17,

Genes that have the "Most Annotated" start but do not call it:
• P1.1_17, PHL111M01_17, PHL112N00_17, PHL113M01_17, PHL114L00_17,

Genes that do not have the "Most Annotated" start:
• Kumotta_20, MargaretKali_20,

**Summary by start number:**

Start 1:
• Found in 2 of 59 ( 3.4% ) of genes in pham
• Manual Annotations of this start: 2 of 47
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Kumotta_20 (FB), MargaretKali_20 (FB),

Start 8:
• Found in 23 of 59 ( 39.0% ) of genes in pham
• Manual Annotations of this start: 1 of 47
• Called 21.7% of time when present

• Phage (with cluster) where this start called: P1.1_17 (BU), PHL111M01_17 (BU), PHL112N00_17 (BU), PHL113M01_17 (BU), PHL114L00_17 (BU),

Start 9:
• Found in 57 of 59 ( 96.6% ) of genes in pham
• Manual Annotations of this start: 44 of 47
• Called 91.2% of time when present
• Phage (with cluster) where this start called: ATCC29399BC_17 (BU), ATCC29399BT_17 (BU), Aquarius_17 (BU), Attacne_17 (BU), BruceLethal_17 (BU), Cota_17 (BU), DrParker_17 (BU), Enochoraptor_17 (BU), Enoki_17 (BU), Keiki_17 (BU), Kubed_17 (BU), Lauchelly_17 (BU), Leviosa_17 (BU), LilBandit_17 (BU), MEAK_17 (BU), Moyashi_17 (BU), MrAK_17 (BU), Ouroboros_17 (BU), P100.1_17 (BU), P100A_17 (BU), P100D_17 (BU), P101A_17 (BU), P104A_17 (BU), P104B_17 (BU), P105_17 (BU), P106A_17 (BU), P106C_17 (BU), P106I_17 (BU), P106L_17 (BU), P106M_17 (BU), P107A_17 (BU), P107C_17 (BU), P108C_17 (BU), P14.4_17 (BU), P9.1_17 (BU), PA6_17 (BU), PAD20_17 (BU), PAS50_17 (BU), PHL010M04_17 (BU), PHL037M02_17 (BU), PHL060L00_17 (BU), PHL067M10_17 (BU), PHL071N05_17 (BU), Pirate_17 (BU), Procrass1_17 (BU), QueenBey_17 (BU), Rileysaurus_17 (BU), SKKY_17 (BU), Solid_17 (BU), Stormborn_17 (BU), Supernova_17 (BU), Wizzo_17 (BU),

**Summary by clusters:**

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

Info for manual annotations of cluster BU:
•Start number 8 was manually annotated 1 time for cluster BU.
•Start number 9 was manually annotated 44 times for cluster BU.

Info for manual annotations of cluster FB:
•Start number 1 was manually annotated 2 times for cluster FB.

***Gene Information:***

Gene: ATCC29399BC_17 Start: 13409, Stop: 14227, Start Num: 9
Candidate Starts for ATCC29399BC_17:
(Start: 8 @13397 has 1 MA's), (Start: 9 @13409 has 44 MA's), (11, 13418), (12, 13439), (13, 13442), (14, 13466), (16, 13478), (17, 13487), (18, 13496), (21, 13547), (22, 13550), (24, 13562), (25, 13589), (26, 13592), (30, 13619), (32, 13664), (33, 13667), (34, 13670), (37, 13703), (39, 13745), (40, 13748), (41, 13766), (43, 13781), (44, 13784), (45, 13793), (46, 13796), (47, 13799), (48, 13814), (49, 13826), (51, 13853), (53, 13892), (54, 13907), (55, 13910), (57, 13928), (61, 13955), (63, 13961), (66, 13997), (67, 14015), (70, 14066), (71, 14069), (72, 14078), (76, 14114), (78, 14150), (85, 14222),

Gene: ATCC29399BT_17 Start: 13409, Stop: 14227, Start Num: 9
Candidate Starts for ATCC29399BT_17:
(Start: 9 @13409 has 44 MA's), (11, 13418), (12, 13439), (13, 13442), (14, 13466), (15, 13475), (16, 13478), (17, 13487), (18, 13496), (19, 13520), (21, 13547), (22, 13550), (24, 13562), (25, 13589), (26, 13592), (30, 13619), (37, 13703), (39, 13745), (40, 13748), (41, 13766), (43, 13781), (44, 13784), (45, 13793), (46, 13796), (47, 13799), (48, 13814), (49, 13826), (51, 13853), (53, 13892), (55, 13910), (57, 13928), (61, 13955), (63, 13961), (66, 13997), (67, 14015), (70, 14066), (71, 14069), (72, 14078), (76, 14114), (78, 14150), (85, 14222),

Gene: Aquarius_17 Start: 13432, Stop: 14250, Start Num: 9
Candidate Starts for Aquarius_17:
(Start: 8 @13420 has 1 MA's), (Start: 9 @13432 has 44 MA's), (11, 13441), (12, 13462), (13, 13465), (14, 13489), (16, 13501), (17, 13510), (18, 13519), (21, 13570), (22, 13573), (24, 13585), (25, 13612), (26, 13615), (28, 13633), (30, 13642), (37, 13726), (39, 13768), (40, 13771), (41, 13789), (45, 13816), (46, 13819), (47, 13822), (48, 13837), (49, 13849), (50, 13864), (51, 13876), (53, 13915), (54, 13930), (55, 13933), (57, 13951), (61, 13978), (66, 14020), (67, 14038), (70, 14089), (71, 14092), (72, 14101), (76, 14137), (78, 14173), (82, 14212), (85, 14245),

Gene: Attacne_17 Start: 13412, Stop: 14230, Start Num: 9
Candidate Starts for Attacne_17:
(Start: 8 @13400 has 1 MA's), (Start: 9 @13412 has 44 MA's), (11, 13421), (12, 13442), (13, 13445), (14, 13469), (16, 13481), (17, 13490), (18, 13499), (21, 13550), (22, 13553), (23, 13562), (24, 13565), (25, 13592), (26, 13595), (30, 13622), (37, 13706), (39, 13748), (40, 13751), (41, 13769), (43, 13784), (44, 13787), (45, 13796), (46, 13799), (47, 13802), (48, 13817), (49, 13829), (51, 13856), (53, 13895), (54, 13910), (55, 13913), (56, 13916), (57, 13931), (63, 13964), (66, 14000), (67, 14018), (70, 14069), (71, 14072), (72, 14081), (76, 14117), (82, 14192), (85, 14225),

Gene: BruceLethal_17 Start: 13419, Stop: 14237, Start Num: 9
Candidate Starts for BruceLethal_17:
(Start: 9 @13419 has 44 MA's), (11, 13428), (12, 13449), (13, 13452), (14, 13476), (16, 13488), (17, 13497), (18, 13506), (21, 13557), (22, 13560), (24, 13572), (25, 13599), (26, 13602), (30, 13629), (37, 13713), (39, 13755), (40, 13758), (41, 13776), (43, 13791), (44, 13794), (46, 13806), (47, 13809), (48, 13824), (49, 13836), (51, 13863), (53, 13902), (54, 13917), (55, 13920), (56, 13923), (57, 13938), (61, 13965), (63, 13971), (66, 14007), (67, 14025), (70, 14076), (71, 14079), (72, 14088), (76, 14124), (82, 14199), (83, 14208), (85, 14232),

Gene: Cota_17 Start: 13427, Stop: 14245, Start Num: 9
Candidate Starts for Cota_17:
(Start: 8 @13415 has 1 MA's), (Start: 9 @13427 has 44 MA's), (11, 13436), (12, 13457), (13, 13460), (14, 13484), (16, 13496), (17, 13505), (18, 13514), (21, 13565), (22, 13568), (25, 13607), (26, 13610), (30, 13637), (37, 13721), (39, 13763), (40, 13766), (41, 13784), (43, 13799), (44, 13802), (45, 13811), (46, 13814), (47, 13817), (48, 13832), (51, 13871), (53, 13910), (54, 13925), (55, 13928), (57, 13946), (61, 13973), (62, 13976), (63, 13979), (67, 14033), (70, 14084), (71, 14087), (72, 14096), (76, 14132), (82, 14207), (84, 14234), (85, 14240),

Gene: DrParker_17 Start: 13450, Stop: 14268, Start Num: 9
Candidate Starts for DrParker_17:
(Start: 9 @13450 has 44 MA's), (11, 13459), (12, 13480), (13, 13483), (14, 13507), (16, 13519), (17, 13528), (18, 13537), (21, 13588), (22, 13591), (25, 13630), (26, 13633), (30, 13660), (37, 13744), (39, 13786), (40, 13789), (41, 13807), (44, 13825), (45, 13834), (46, 13837), (47, 13840), (48, 13855), (51, 13894), (53, 13933), (54, 13948), (55, 13951), (57, 13969), (61, 13996), (67, 14056), (70, 14107), (71, 14110), (72, 14119), (76, 14155), (78, 14191), (82, 14230), (85, 14263),

Gene: Enochoraptor_17 Start: 13421, Stop: 14239, Start Num: 9
Candidate Starts for Enochoraptor_17:
(2, 13313), (3, 13325), (4, 13358), (6, 13379), (Start: 9 @13421 has 44 MA's), (11, 13430), (12, 13451), (13, 13454), (14, 13478), (16, 13490), (17, 13499), (18, 13508), (19, 13532), (21, 13559), (22, 13562), (25, 13601), (26, 13604), (30, 13631), (37, 13715), (39, 13757), (40, 13760), (41, 13778), (46, 13808), (47, 13811), (48, 13826), (49, 13838), (53, 13904), (54, 13919), (55, 13922), (57, 13940), (61, 13967), (63, 13973), (67, 14027), (70, 14078), (71, 14081), (72, 14090), (76, 14126), (78, 14162), (82, 14201), (84, 14228), (85, 14234),

Gene: Enoki_17 Start: 13406, Stop: 14224, Start Num: 9
Candidate Starts for Enoki_17:
(Start: 9 @13406 has 44 MA's), (11, 13415), (12, 13436), (13, 13439), (14, 13463), (16, 13475), (17, 13484), (18, 13493), (21, 13544), (22, 13547), (25, 13586), (26, 13589), (30, 13616), (37, 13700), (39, 13742), (40, 13745), (41, 13763), (43, 13778), (44, 13781), (45, 13790), (46, 13793), (47, 13796), (48, 13811), (53, 13889), (54, 13904), (55, 13907), (57, 13925), (61, 13952), (62, 13955), (63, 13958), (67, 14012), (70, 14063), (71, 14066), (72, 14075), (76, 14111), (82, 14186), (84, 14213), (85, 14219),

Gene: Keiki_17 Start: 13426, Stop: 14244, Start Num: 9
Candidate Starts for Keiki_17:
(Start: 8 @13414 has 1 MA's), (Start: 9 @13426 has 44 MA's), (11, 13435), (12, 13456), (13, 13459), (14, 13483), (16, 13495), (17, 13504), (18, 13513), (21, 13564), (22, 13567), (24, 13579), (25, 13606), (26, 13609), (30, 13636), (37, 13720), (39, 13762), (40, 13765), (41, 13783), (43, 13798), (44, 13801), (45, 13810), (46, 13813), (47, 13816), (48, 13831), (50, 13858), (51, 13870), (53, 13909), (54, 13924), (55, 13927), (57, 13945), (61, 13972), (62, 13975), (63, 13978), (66, 14014), (67, 14032), (70, 14083), (71, 14086), (72, 14095), (76, 14131), (82, 14206), (85, 14239),

Gene: Kubed_17 Start: 13415, Stop: 14233, Start Num: 9
Candidate Starts for Kubed_17:
(Start: 9 @13415 has 44 MA's), (11, 13424), (12, 13445), (13, 13448), (14, 13472), (16, 13484), (17, 13493), (19, 13526), (20, 13538), (21, 13553), (22, 13556), (24, 13568), (25, 13595), (26, 13598), (30, 13625), (32, 13670), (33, 13673), (34, 13676), (37, 13709), (39, 13751), (40, 13754), (41, 13772), (44, 13790), (45, 13799), (46, 13802), (47, 13805), (48, 13820), (49, 13832), (50, 13847), (51, 13859), (53, 13898), (54, 13913), (55, 13916), (56, 13919), (57, 13934), (61, 13961), (63, 13967), (67, 14021), (70, 14072), (71, 14075), (72, 14084), (76, 14120), (78, 14156), (82, 14195), (85, 14228),

Gene: Kumotta_20 Start: 16172, Stop: 17158, Start Num: 1
Candidate Starts for Kumotta_20:
(Start: 1 @16172 has 2 MA's), (7, 16286), (10, 16310), (12, 16340), (27, 16502), (31, 16541), (34, 16580), (35, 16583), (36, 16619), (38, 16655), (42, 16697), (43, 16709), (48, 16742), (52, 16802), (56, 16847), (58, 16862), (60, 16877), (65, 16922), (73, 17021), (74, 17030), (75, 17036), (76, 17042), (79, 17090), (80, 17093), (81, 17108),

Gene: Lauchelly_17 Start: 13430, Stop: 14248, Start Num: 9
Candidate Starts for Lauchelly_17:
(Start: 9 @13430 has 44 MA's), (11, 13439), (12, 13460), (13, 13463), (14, 13487), (16, 13499), (17, 13508), (18, 13517), (21, 13568), (22, 13571), (24, 13583), (25, 13610), (26, 13613), (30, 13640), (32, 13685), (33, 13688), (34, 13691), (37, 13724), (39, 13766), (40, 13769), (41, 13787), (43, 13802), (44, 13805), (45, 13814), (46, 13817), (47, 13820), (48, 13835), (50, 13862), (51, 13874), (53, 13913), (54, 13928), (55, 13931), (57, 13949), (61, 13976), (63, 13982), (66, 14018), (67, 14036), (70, 14087), (71, 14090), (72, 14099), (76, 14135), (78, 14171), (82, 14210), (84, 14237), (85, 14243),

Gene: Leviosa_17 Start: 13441, Stop: 14259, Start Num: 9
Candidate Starts for Leviosa_17:
(Start: 9 @13441 has 44 MA's), (11, 13450), (12, 13471), (13, 13474), (14, 13498), (16, 13510), (17, 13519), (21, 13579), (22, 13582), (24, 13594), (25, 13621), (26, 13624), (30, 13651), (37, 13735), (39, 13777), (40, 13780), (41, 13798), (43, 13813), (44, 13816), (45, 13825), (46, 13828), (47, 13831), (48, 13846), (49, 13858), (50, 13873), (51, 13885), (53, 13924), (54, 13939), (55, 13942), (57, 13960), (66, 14029), (67, 14047), (70, 14098), (71, 14101), (72, 14110), (76, 14146), (78, 14182), (82, 14221), (83, 14230), (84, 14248), (85, 14254),

Gene: LilBandit_17 Start: 13425, Stop: 14243, Start Num: 9

Candidate Starts for LilBandit_17:
(Start: 8 @13413 has 1 MA's), (Start: 9 @13425 has 44 MA's), (11, 13434), (12, 13455), (13, 13458), (14, 13482), (16, 13494), (17, 13503), (18, 13512), (21, 13563), (22, 13566), (25, 13605), (26, 13608), (30, 13635), (32, 13680), (33, 13683), (34, 13686), (37, 13719), (39, 13761), (40, 13764), (41, 13782), (42, 13785), (43, 13797), (44, 13800), (45, 13809), (46, 13812), (47, 13815), (48, 13830), (49, 13842), (53, 13908), (54, 13923), (55, 13926), (56, 13929), (57, 13944), (61, 13971), (62, 13974), (63, 13977), (66, 14013), (67, 14031), (70, 14082), (71, 14085), (72, 14094), (76, 14130), (82, 14205), (84, 14232), (85, 14238),

Gene: MEAK_17 Start: 13415, Stop: 14233, Start Num: 9
Candidate Starts for MEAK_17:
(Start: 9 @13415 has 44 MA's), (11, 13424), (12, 13445), (13, 13448), (14, 13472), (16, 13484), (17, 13493), (18, 13502), (21, 13553), (22, 13556), (23, 13565), (24, 13568), (25, 13595), (26, 13598), (30, 13625), (37, 13709), (39, 13751), (40, 13754), (41, 13772), (45, 13799), (46, 13802), (47, 13805), (51, 13859), (53, 13898), (54, 13913), (55, 13916), (57, 13934), (61, 13961), (62, 13964), (63, 13967), (67, 14021), (70, 14072), (71, 14075), (72, 14084), (76, 14120), (82, 14195), (84, 14222), (85, 14228),

Gene: MargaretKali_20 Start: 15807, Stop: 16793, Start Num: 1
Candidate Starts for MargaretKali_20:
(Start: 1 @15807 has 2 MA's), (7, 15921), (10, 15945), (12, 15975), (27, 16137), (31, 16176), (34, 16215), (35, 16218), (36, 16254), (38, 16290), (42, 16332), (43, 16344), (48, 16377), (52, 16437), (56, 16482), (58, 16497), (60, 16512), (65, 16557), (73, 16656), (74, 16665), (75, 16671), (76, 16677), (79, 16725), (80, 16728), (81, 16743),

Gene: Moyashi_17 Start: 13451, Stop: 14269, Start Num: 9
Candidate Starts for Moyashi_17:
(Start: 9 @13451 has 44 MA's), (11, 13460), (12, 13481), (13, 13484), (14, 13508), (16, 13520), (17, 13529), (18, 13538), (19, 13562), (21, 13589), (22, 13592), (23, 13601), (24, 13604), (25, 13631), (26, 13634), (30, 13661), (37, 13745), (39, 13787), (41, 13808), (43, 13823), (44, 13826), (45, 13835), (46, 13838), (47, 13841), (48, 13856), (49, 13868), (50, 13883), (51, 13895), (53, 13934), (54, 13949), (55, 13952), (56, 13955), (57, 13970), (61, 13997), (67, 14057), (70, 14108), (71, 14111), (72, 14120), (76, 14156), (78, 14192), (82, 14231), (85, 14264),

Gene: MrAK_17 Start: 13462, Stop: 14280, Start Num: 9
Candidate Starts for MrAK_17:
(Start: 9 @13462 has 44 MA's), (11, 13471), (12, 13492), (13, 13495), (14, 13519), (16, 13531), (17, 13540), (21, 13600), (22, 13603), (24, 13615), (25, 13642), (26, 13645), (30, 13672), (32, 13717), (33, 13720), (34, 13723), (37, 13756), (39, 13798), (40, 13801), (41, 13819), (43, 13834), (44, 13837), (45, 13846), (46, 13849), (47, 13852), (48, 13867), (49, 13879), (50, 13894), (51, 13906), (53, 13945), (54, 13960), (55, 13963), (57, 13981), (61, 14008), (67, 14068), (70, 14119), (71, 14122), (72, 14131), (76, 14167), (78, 14203), (82, 14242), (85, 14275),

Gene: Ouroboros_17 Start: 13416, Stop: 14234, Start Num: 9
Candidate Starts for Ouroboros_17:
(4, 13350), (5, 13353), (6, 13371), (Start: 9 @13416 has 44 MA's), (11, 13425), (12, 13446), (13, 13449), (14, 13473), (16, 13485), (17, 13494), (21, 13554), (22, 13557), (25, 13596), (26, 13599), (30, 13626), (37, 13710), (39, 13752), (40, 13755), (41, 13773), (43, 13788), (45, 13800), (46, 13803), (47, 13806), (48, 13821), (49, 13833), (50, 13848), (51, 13860), (53, 13899), (54, 13914), (55, 13917), (57, 13935), (61, 13962), (63, 13968), (67, 14022), (70, 14073), (71, 14076), (72, 14085), (76, 14121), (82, 14196), (84, 14223), (85, 14229),

Gene: P1.1_17 Start: 13407, Stop: 14237, Start Num: 8
Candidate Starts for P1.1_17:

(Start: 8 @13407 has 1 MA's), (Start: 9 @13419 has 44 MA's), (11, 13428), (12, 13449), (13, 13452), (14, 13476), (16, 13488), (17, 13497), (18, 13506), (19, 13530), (21, 13557), (22, 13560), (24, 13572), (25, 13599), (26, 13602), (32, 13674), (33, 13677), (34, 13680), (37, 13713), (39, 13755), (40, 13758), (41, 13776), (44, 13794), (45, 13803), (46, 13806), (47, 13809), (48, 13824), (51, 13863), (53, 13902), (54, 13917), (55, 13920), (57, 13938), (61, 13965), (62, 13968), (63, 13971), (66, 14007), (67, 14025), (70, 14076), (71, 14079), (72, 14088), (76, 14124), (77, 14139), (78, 14160), (82, 14199), (83, 14208), (85, 14232),

Gene: P100.1_17 Start: 13423, Stop: 14241, Start Num: 9
Candidate Starts for P100.1_17:
(Start: 9 @13423 has 44 MA's), (11, 13432), (12, 13453), (13, 13456), (14, 13480), (16, 13492), (17, 13501), (18, 13510), (21, 13561), (22, 13564), (25, 13603), (26, 13606), (30, 13633), (37, 13717), (39, 13759), (40, 13762), (41, 13780), (44, 13798), (45, 13807), (46, 13810), (47, 13813), (48, 13828), (51, 13867), (53, 13906), (54, 13921), (55, 13924), (57, 13942), (61, 13969), (67, 14029), (70, 14080), (71, 14083), (72, 14092), (76, 14128), (78, 14164), (82, 14203), (85, 14236),

Gene: P100A_17 Start: 13433, Stop: 14251, Start Num: 9
Candidate Starts for P100A_17:
(Start: 8 @13421 has 1 MA's), (Start: 9 @13433 has 44 MA's), (11, 13442), (12, 13463), (13, 13466), (14, 13490), (16, 13502), (17, 13511), (18, 13520), (21, 13571), (22, 13574), (25, 13613), (26, 13616), (28, 13634), (30, 13643), (32, 13688), (33, 13691), (34, 13694), (37, 13727), (39, 13769), (40, 13772), (41, 13790), (44, 13808), (46, 13820), (47, 13823), (48, 13838), (51, 13877), (53, 13916), (54, 13931), (55, 13934), (57, 13952), (61, 13979), (63, 13985), (66, 14021), (67, 14039), (70, 14090), (71, 14093), (72, 14102), (76, 14138), (78, 14174), (82, 14213), (84, 14240), (85, 14246),

Gene: P100D_17 Start: 13422, Stop: 14240, Start Num: 9
Candidate Starts for P100D_17:
(Start: 8 @13410 has 1 MA's), (Start: 9 @13422 has 44 MA's), (11, 13431), (12, 13452), (13, 13455), (14, 13479), (16, 13491), (17, 13500), (18, 13509), (21, 13560), (22, 13563), (24, 13575), (25, 13602), (26, 13605), (30, 13632), (32, 13677), (33, 13680), (34, 13683), (37, 13716), (39, 13758), (40, 13761), (41, 13779), (45, 13806), (46, 13809), (47, 13812), (48, 13827), (51, 13866), (53, 13905), (54, 13920), (55, 13923), (57, 13941), (61, 13968), (66, 14010), (67, 14028), (70, 14079), (71, 14082), (72, 14091), (76, 14127), (82, 14202), (83, 14211), (85, 14235),

Gene: P101A_17 Start: 13431, Stop: 14249, Start Num: 9
Candidate Starts for P101A_17:
(Start: 9 @13431 has 44 MA's), (11, 13440), (12, 13461), (13, 13464), (14, 13488), (16, 13500), (17, 13509), (18, 13518), (21, 13569), (22, 13572), (25, 13611), (26, 13614), (28, 13632), (30, 13641), (37, 13725), (39, 13767), (40, 13770), (41, 13788), (44, 13806), (45, 13815), (46, 13818), (47, 13821), (48, 13836), (51, 13875), (54, 13929), (55, 13932), (56, 13935), (57, 13950), (61, 13977), (67, 14037), (70, 14088), (71, 14091), (72, 14100), (76, 14136), (78, 14172), (82, 14211), (85, 14244),

Gene: P104A_17 Start: 13409, Stop: 14227, Start Num: 9
Candidate Starts for P104A_17:
(Start: 8 @13397 has 1 MA's), (Start: 9 @13409 has 44 MA's), (11, 13418), (12, 13439), (13, 13442), (14, 13466), (16, 13478), (17, 13487), (18, 13496), (21, 13547), (22, 13550), (25, 13589), (26, 13592), (30, 13619), (32, 13664), (33, 13667), (34, 13670), (37, 13703), (39, 13745), (40, 13748), (41, 13766), (44, 13784), (45, 13793), (46, 13796), (47, 13799), (48, 13814), (51, 13853), (53, 13892), (54, 13907), (55, 13910), (56, 13913), (57, 13928), (61, 13955), (62, 13958), (63, 13961), (66, 13997), (67, 14015), (70, 14066), (71, 14069), (72, 14078), (76, 14114), (82, 14189), (84, 14216), (85, 14222),

Gene: P104B_17 Start: 13428, Stop: 14246, Start Num: 9
Candidate Starts for P104B_17:

(Start: 8 @13416 has 1 MA's), (Start: 9 @13428 has 44 MA's), (11, 13437), (12, 13458), (13, 13461), (14, 13485), (16, 13497), (17, 13506), (18, 13515), (21, 13566), (22, 13569), (24, 13581), (25, 13608), (26, 13611), (30, 13638), (37, 13722), (39, 13764), (40, 13767), (41, 13785), (44, 13803), (45, 13812), (46, 13815), (47, 13818), (48, 13833), (49, 13845), (50, 13860), (53, 13911), (54, 13926), (55, 13929), (57, 13947), (61, 13974), (62, 13977), (63, 13980), (66, 14016), (67, 14034), (70, 14085), (71, 14088), (72, 14097), (76, 14133), (77, 14148), (78, 14169), (82, 14208), (83, 14217), (85, 14241),

Gene: P105_17 Start: 13332, Stop: 14150, Start Num: 9
Candidate Starts for P105_17:
(Start: 9 @13332 has 44 MA's), (11, 13341), (12, 13362), (13, 13365), (14, 13389), (16, 13401), (17, 13410), (18, 13419), (21, 13470), (22, 13473), (24, 13485), (25, 13512), (26, 13515), (29, 13539), (30, 13542), (32, 13587), (33, 13590), (34, 13593), (37, 13626), (39, 13668), (40, 13671), (41, 13689), (45, 13716), (46, 13719), (47, 13722), (48, 13737), (53, 13815), (54, 13830), (55, 13833), (56, 13836), (57, 13851), (61, 13878), (62, 13881), (63, 13884), (67, 13938), (69, 13986), (70, 13989), (71, 13992), (72, 14001), (76, 14037), (78, 14073), (82, 14112), (83, 14121), (85, 14145),

Gene: P106A_17 Start: 13456, Stop: 14274, Start Num: 9
Candidate Starts for P106A_17:
(3, 13357), (4, 13390), (5, 13393), (6, 13411), (Start: 9 @13456 has 44 MA's), (11, 13465), (12, 13486), (13, 13489), (14, 13513), (16, 13525), (17, 13534), (18, 13543), (21, 13594), (22, 13597), (24, 13609), (25, 13636), (26, 13639), (30, 13666), (37, 13750), (39, 13792), (40, 13795), (41, 13813), (44, 13831), (45, 13840), (46, 13843), (47, 13846), (48, 13861), (51, 13900), (53, 13939), (54, 13954), (55, 13957), (57, 13975), (61, 14002), (67, 14062), (70, 14113), (71, 14116), (72, 14125), (76, 14161), (78, 14197), (82, 14236), (85, 14269),

Gene: P106C_17 Start: 13456, Stop: 14274, Start Num: 9
Candidate Starts for P106C_17:
(2, 13345), (3, 13357), (4, 13390), (6, 13411), (Start: 9 @13456 has 44 MA's), (11, 13465), (12, 13486), (13, 13489), (14, 13513), (16, 13525), (17, 13534), (18, 13543), (19, 13567), (21, 13594), (22, 13597), (25, 13636), (26, 13639), (30, 13666), (32, 13711), (33, 13714), (34, 13717), (37, 13750), (39, 13792), (40, 13795), (41, 13813), (44, 13831), (45, 13840), (46, 13843), (47, 13846), (48, 13861), (53, 13939), (54, 13954), (55, 13957), (57, 13975), (61, 14002), (62, 14005), (63, 14008), (66, 14044), (67, 14062), (70, 14113), (71, 14116), (72, 14125), (76, 14161), (82, 14236), (85, 14269),

Gene: P106I_17 Start: 13456, Stop: 14274, Start Num: 9
Candidate Starts for P106I_17:
(2, 13345), (3, 13357), (4, 13390), (6, 13411), (Start: 9 @13456 has 44 MA's), (11, 13465), (12, 13486), (13, 13489), (14, 13513), (16, 13525), (17, 13534), (18, 13543), (19, 13567), (21, 13594), (22, 13597), (25, 13636), (26, 13639), (30, 13666), (32, 13711), (33, 13714), (34, 13717), (37, 13750), (39, 13792), (40, 13795), (41, 13813), (44, 13831), (45, 13840), (46, 13843), (47, 13846), (48, 13861), (53, 13939), (54, 13954), (55, 13957), (57, 13975), (61, 14002), (62, 14005), (63, 14008), (66, 14044), (67, 14062), (70, 14113), (71, 14116), (72, 14125), (76, 14161), (82, 14236), (85, 14269),

Gene: P106L_17 Start: 13456, Stop: 14274, Start Num: 9
Candidate Starts for P106L_17:
(2, 13345), (3, 13357), (4, 13390), (6, 13411), (Start: 9 @13456 has 44 MA's), (11, 13465), (12, 13486), (13, 13489), (14, 13513), (16, 13525), (17, 13534), (18, 13543), (19, 13567), (21, 13594), (22, 13597), (25, 13636), (26, 13639), (30, 13666), (32, 13711), (33, 13714), (34, 13717), (37, 13750), (39, 13792), (40, 13795), (41, 13813), (44, 13831), (45, 13840), (46, 13843), (47, 13846), (48, 13861), (53, 13939), (54, 13954), (55, 13957), (57, 13975), (61, 14002), (62, 14005), (63, 14008), (66, 14044), (67, 14062), (70, 14113), (71, 14116), (72, 14125), (76, 14161), (82, 14236), (85, 14269),

Gene: P106M_17 Start: 13456, Stop: 14274, Start Num: 9

Candidate Starts for P106M_17:
(2, 13345), (3, 13357), (4, 13390), (6, 13411), (Start: 9 @13456 has 44 MA's), (11, 13465), (12, 13486), (13, 13489), (14, 13513), (16, 13525), (17, 13534), (18, 13543), (19, 13567), (21, 13594), (22, 13597), (25, 13636), (26, 13639), (30, 13666), (32, 13711), (33, 13714), (34, 13717), (37, 13750), (39, 13792), (40, 13795), (41, 13813), (44, 13831), (45, 13840), (46, 13843), (47, 13846), (48, 13861), (53, 13939), (54, 13954), (55, 13957), (57, 13975), (61, 14002), (62, 14005), (63, 14008), (66, 14044), (67, 14062), (70, 14113), (71, 14116), (72, 14125), (76, 14161), (82, 14236), (85, 14269),

Gene: P107A_17 Start: 13430, Stop: 14248, Start Num: 9
Candidate Starts for P107A_17:
(Start: 8 @13418 has 1 MA's), (Start: 9 @13430 has 44 MA's), (11, 13439), (12, 13460), (13, 13463), (14, 13487), (16, 13499), (17, 13508), (18, 13517), (21, 13568), (22, 13571), (25, 13610), (26, 13613), (30, 13640), (32, 13685), (33, 13688), (37, 13724), (39, 13766), (40, 13769), (41, 13787), (45, 13814), (46, 13817), (47, 13820), (48, 13835), (49, 13847), (51, 13874), (53, 13913), (54, 13928), (55, 13931), (57, 13949), (61, 13976), (62, 13979), (63, 13982), (66, 14018), (67, 14036), (70, 14087), (71, 14090), (72, 14099), (76, 14135), (82, 14210), (84, 14237), (85, 14243),

Gene: P107C_17 Start: 13409, Stop: 14227, Start Num: 9
Candidate Starts for P107C_17:
(Start: 8 @13397 has 1 MA's), (Start: 9 @13409 has 44 MA's), (11, 13418), (12, 13439), (13, 13442), (14, 13466), (16, 13478), (17, 13487), (18, 13496), (21, 13547), (22, 13550), (24, 13562), (25, 13589), (26, 13592), (30, 13619), (32, 13664), (33, 13667), (34, 13670), (37, 13703), (39, 13745), (40, 13748), (41, 13766), (43, 13781), (44, 13784), (45, 13793), (46, 13796), (47, 13799), (48, 13814), (49, 13826), (51, 13853), (53, 13892), (54, 13907), (55, 13910), (57, 13928), (61, 13955), (63, 13961), (66, 13997), (67, 14015), (70, 14066), (71, 14069), (72, 14078), (76, 14114), (78, 14150), (85, 14222),

Gene: P108C_17 Start: 13417, Stop: 14235, Start Num: 9
Candidate Starts for P108C_17:
(3, 13318), (4, 13351), (6, 13372), (Start: 9 @13417 has 44 MA's), (11, 13426), (12, 13447), (13, 13450), (14, 13474), (16, 13486), (17, 13495), (18, 13504), (21, 13555), (22, 13558), (25, 13597), (26, 13600), (30, 13627), (37, 13711), (39, 13753), (40, 13756), (41, 13774), (44, 13792), (45, 13801), (46, 13804), (47, 13807), (48, 13822), (53, 13900), (54, 13915), (55, 13918), (56, 13921), (57, 13936), (61, 13963), (62, 13966), (63, 13969), (64, 13981), (67, 14023), (70, 14074), (71, 14077), (72, 14086), (76, 14122), (78, 14158), (82, 14197), (85, 14230),

Gene: P14.4_17 Start: 13421, Stop: 14239, Start Num: 9
Candidate Starts for P14.4_17:
(Start: 9 @13421 has 44 MA's), (11, 13430), (12, 13451), (13, 13454), (14, 13478), (16, 13490), (17, 13499), (18, 13508), (21, 13559), (22, 13562), (25, 13601), (26, 13604), (30, 13631), (32, 13676), (33, 13679), (34, 13682), (37, 13715), (39, 13757), (40, 13760), (41, 13778), (43, 13793), (44, 13796), (45, 13805), (46, 13808), (47, 13811), (48, 13826), (50, 13853), (51, 13865), (53, 13904), (54, 13919), (55, 13922), (56, 13925), (57, 13940), (61, 13967), (62, 13970), (63, 13973), (66, 14009), (67, 14027), (70, 14078), (71, 14081), (72, 14090), (76, 14126), (82, 14201), (85, 14234),

Gene: P9.1_17 Start: 13416, Stop: 14234, Start Num: 9
Candidate Starts for P9.1_17:
(Start: 9 @13416 has 44 MA's), (11, 13425), (12, 13446), (13, 13449), (14, 13473), (16, 13485), (17, 13494), (18, 13503), (21, 13554), (22, 13557), (24, 13569), (25, 13596), (26, 13599), (30, 13626), (32, 13671), (33, 13674), (37, 13710), (39, 13752), (40, 13755), (41, 13773), (43, 13788), (44, 13791), (45, 13800), (46, 13803), (47, 13806), (48, 13821), (51, 13860), (53, 13899), (54, 13914), (55, 13917), (56, 13920), (57, 13935), (61, 13962), (62, 13965), (63, 13968), (66, 14004), (67, 14022), (70, 14073), (71, 14076), (72, 14085), (76, 14121), (82, 14196), (85, 14229),

Gene: PA6_17 Start: 13444, Stop: 14262, Start Num: 9
Candidate Starts for PA6_17:
(Start: 9 @13444 has 44 MA's), (11, 13453), (12, 13474), (13, 13477), (14, 13501), (16, 13513), (17, 13522), (18, 13531), (21, 13582), (22, 13585), (25, 13624), (26, 13627), (30, 13654), (37, 13738), (39, 13780), (40, 13783), (41, 13801), (43, 13816), (44, 13819), (45, 13828), (46, 13831), (47, 13834), (48, 13849), (51, 13888), (53, 13927), (54, 13942), (55, 13945), (56, 13948), (57, 13963), (59, 13966), (61, 13990), (63, 13996), (66, 14032), (67, 14050), (70, 14101), (71, 14104), (72, 14113), (76, 14149), (77, 14164), (78, 14185), (82, 14224), (83, 14233), (85, 14257),

Gene: PAD20_17 Start: 13413, Stop: 14231, Start Num: 9
Candidate Starts for PAD20_17:
(Start: 8 @13401 has 1 MA's), (Start: 9 @13413 has 44 MA's), (11, 13422), (12, 13443), (13, 13446), (14, 13470), (16, 13482), (17, 13491), (18, 13500), (21, 13551), (22, 13554), (25, 13593), (26, 13596), (30, 13623), (32, 13668), (33, 13671), (34, 13674), (37, 13707), (39, 13749), (40, 13752), (41, 13770), (43, 13785), (44, 13788), (45, 13797), (46, 13800), (47, 13803), (48, 13818), (49, 13830), (53, 13896), (54, 13911), (55, 13914), (57, 13932), (61, 13959), (67, 14019), (68, 14061), (70, 14070), (71, 14073), (72, 14082), (76, 14118), (78, 14154), (83, 14202), (85, 14226),

Gene: PAS50_17 Start: 13421, Stop: 14239, Start Num: 9
Candidate Starts for PAS50_17:
(Start: 9 @13421 has 44 MA's), (11, 13430), (12, 13451), (13, 13454), (14, 13478), (15, 13487), (16, 13490), (17, 13499), (18, 13508), (19, 13532), (21, 13559), (22, 13562), (24, 13574), (25, 13601), (26, 13604), (30, 13631), (32, 13676), (33, 13679), (34, 13682), (37, 13715), (39, 13757), (40, 13760), (41, 13778), (44, 13796), (45, 13805), (46, 13808), (47, 13811), (48, 13826), (51, 13865), (53, 13904), (54, 13919), (55, 13922), (57, 13940), (61, 13967), (67, 14027), (70, 14078), (71, 14081), (72, 14090), (76, 14126), (78, 14162), (82, 14201), (83, 14210), (85, 14234),

Gene: PHL010M04_17 Start: 13417, Stop: 14235, Start Num: 9
Candidate Starts for PHL010M04_17:
(Start: 9 @13417 has 44 MA's), (11, 13426), (12, 13447), (13, 13450), (14, 13474), (16, 13486), (17, 13495), (21, 13555), (22, 13558), (24, 13570), (25, 13597), (26, 13600), (28, 13618), (30, 13627), (32, 13672), (33, 13675), (34, 13678), (37, 13711), (39, 13753), (40, 13756), (41, 13774), (43, 13789), (44, 13792), (45, 13801), (46, 13804), (47, 13807), (48, 13822), (49, 13834), (50, 13849), (51, 13861), (53, 13900), (54, 13915), (55, 13918), (57, 13936), (61, 13963), (62, 13966), (63, 13969), (66, 14005), (67, 14023), (70, 14074), (71, 14077), (72, 14086), (76, 14122), (78, 14158), (82, 14197), (84, 14224), (85, 14230),

Gene: PHL037M02_17 Start: 13423, Stop: 14241, Start Num: 9
Candidate Starts for PHL037M02_17:
(2, 13315), (3, 13327), (4, 13360), (6, 13381), (Start: 9 @13423 has 44 MA's), (11, 13432), (12, 13453), (13, 13456), (14, 13480), (16, 13492), (17, 13501), (19, 13534), (21, 13561), (22, 13564), (24, 13576), (25, 13603), (26, 13606), (30, 13633), (32, 13678), (33, 13681), (34, 13684), (37, 13717), (39, 13759), (40, 13762), (41, 13780), (43, 13795), (44, 13798), (45, 13807), (46, 13810), (47, 13813), (48, 13828), (49, 13840), (50, 13855), (53, 13906), (54, 13921), (55, 13924), (57, 13942), (61, 13969), (62, 13972), (63, 13975), (66, 14011), (67, 14029), (70, 14080), (71, 14083), (72, 14092), (76, 14128), (77, 14143), (78, 14164), (82, 14203), (85, 14236),

Gene: PHL060L00_17 Start: 13431, Stop: 14249, Start Num: 9
Candidate Starts for PHL060L00_17:
(Start: 9 @13431 has 44 MA's), (11, 13440), (12, 13461), (13, 13464), (14, 13488), (16, 13500), (17, 13509), (18, 13518), (21, 13569), (22, 13572), (25, 13611), (26, 13614), (30, 13641), (37, 13725), (39, 13767), (40, 13770), (41, 13788), (45, 13815), (46, 13818), (47, 13821), (48, 13836), (51, 13875), (53, 13914), (54, 13929), (55, 13932), (57, 13950), (61, 13977), (62, 13980), (63, 13983), (66, 14019), (67,

14037), (70, 14088), (71, 14091), (72, 14100), (76, 14136), (77, 14151), (78, 14172), (82, 14211), (83, 14220), (85, 14244),

Gene: PHL067M10_17 Start: 13395, Stop: 14213, Start Num: 9
Candidate Starts for PHL067M10_17:
(Start: 9 @13395 has 44 MA's), (11, 13404), (12, 13425), (13, 13428), (14, 13452), (16, 13464), (17, 13473), (21, 13533), (22, 13536), (25, 13575), (26, 13578), (30, 13605), (37, 13689), (39, 13731), (40, 13734), (41, 13752), (45, 13779), (46, 13782), (47, 13785), (48, 13800), (51, 13839), (53, 13878), (54, 13893), (55, 13896), (57, 13914), (63, 13947), (66, 13983), (70, 14052), (71, 14055), (72, 14064), (76, 14100), (78, 14136), (83, 14184), (85, 14208),

Gene: PHL071N05_17 Start: 13420, Stop: 14238, Start Num: 9
Candidate Starts for PHL071N05_17:
(2, 13312), (3, 13324), (4, 13357), (6, 13378), (Start: 9 @13420 has 44 MA's), (11, 13429), (12, 13450), (13, 13453), (14, 13477), (16, 13489), (17, 13498), (19, 13531), (21, 13558), (22, 13561), (25, 13600), (26, 13603), (30, 13630), (32, 13675), (33, 13678), (34, 13681), (37, 13714), (39, 13756), (40, 13759), (41, 13777), (43, 13792), (44, 13795), (45, 13804), (46, 13807), (47, 13810), (48, 13825), (49, 13837), (50, 13852), (53, 13903), (54, 13918), (55, 13921), (57, 13939), (61, 13966), (62, 13969), (63, 13972), (66, 14008), (67, 14026), (70, 14077), (71, 14080), (72, 14089), (76, 14125), (77, 14140), (78, 14161), (82, 14200), (85, 14233),

Gene: PHL111M01_17 Start: 13406, Stop: 14236, Start Num: 8
Candidate Starts for PHL111M01_17:
(Start: 8 @13406 has 1 MA's), (Start: 9 @13418 has 44 MA's), (11, 13427), (12, 13448), (13, 13451), (14, 13475), (16, 13487), (17, 13496), (18, 13505), (21, 13556), (22, 13559), (25, 13598), (26, 13601), (30, 13628), (37, 13712), (39, 13754), (40, 13757), (41, 13775), (43, 13790), (45, 13802), (46, 13805), (47, 13808), (48, 13823), (50, 13850), (51, 13862), (53, 13901), (54, 13916), (55, 13919), (57, 13937), (61, 13964), (66, 14006), (67, 14024), (70, 14075), (71, 14078), (72, 14087), (76, 14123), (82, 14198), (85, 14231),

Gene: PHL112N00_17 Start: 13404, Stop: 14234, Start Num: 8
Candidate Starts for PHL112N00_17:
(Start: 8 @13404 has 1 MA's), (Start: 9 @13416 has 44 MA's), (11, 13425), (12, 13446), (13, 13449), (14, 13473), (16, 13485), (17, 13494), (21, 13554), (22, 13557), (25, 13596), (26, 13599), (30, 13626), (32, 13671), (33, 13674), (34, 13677), (37, 13710), (39, 13752), (40, 13755), (41, 13773), (44, 13791), (45, 13800), (46, 13803), (47, 13806), (48, 13821), (49, 13833), (53, 13899), (54, 13914), (55, 13917), (56, 13920), (57, 13935), (61, 13962), (63, 13968), (66, 14004), (67, 14022), (70, 14073), (71, 14076), (72, 14085), (76, 14121), (82, 14196), (84, 14223), (85, 14229),

Gene: PHL113M01_17 Start: 13425, Stop: 14255, Start Num: 8
Candidate Starts for PHL113M01_17:
(Start: 8 @13425 has 1 MA's), (Start: 9 @13437 has 44 MA's), (11, 13446), (12, 13467), (13, 13470), (14, 13494), (16, 13506), (17, 13515), (21, 13575), (22, 13578), (24, 13590), (25, 13617), (26, 13620), (30, 13647), (32, 13692), (33, 13695), (34, 13698), (37, 13731), (39, 13773), (40, 13776), (41, 13794), (43, 13809), (44, 13812), (45, 13821), (46, 13824), (47, 13827), (48, 13842), (49, 13854), (53, 13920), (54, 13935), (55, 13938), (57, 13956), (61, 13983), (62, 13986), (63, 13989), (66, 14025), (67, 14043), (69, 14091), (70, 14094), (71, 14097), (72, 14106), (76, 14142), (78, 14178), (82, 14217), (85, 14250),

Gene: PHL114L00_17 Start: 13406, Stop: 14236, Start Num: 8
Candidate Starts for PHL114L00_17:
(Start: 8 @13406 has 1 MA's), (Start: 9 @13418 has 44 MA's), (11, 13427), (12, 13448), (13, 13451), (14, 13475), (16, 13487), (17, 13496), (18, 13505), (19, 13529), (21, 13556), (22, 13559), (25, 13598), (26, 13601), (30, 13628), (32, 13673), (37, 13712), (39, 13754), (40, 13757), (41, 13775), (44, 13793),

(45, 13802), (46, 13805), (47, 13808), (48, 13823), (49, 13835), (51, 13862), (53, 13901), (54, 13916), (55, 13919), (57, 13937), (61, 13964), (63, 13970), (66, 14006), (67, 14024), (70, 14075), (71, 14078), (72, 14087), (76, 14123), (78, 14159), (82, 14198), (85, 14231),

Gene: Pirate_17 Start: 13411, Stop: 14229, Start Num: 9
Candidate Starts for Pirate_17:
(Start: 8 @13399 has 1 MA's), (Start: 9 @13411 has 44 MA's), (11, 13420), (12, 13441), (13, 13444), (14, 13468), (16, 13480), (17, 13489), (18, 13498), (21, 13549), (22, 13552), (24, 13564), (25, 13591), (26, 13594), (30, 13621), (37, 13705), (39, 13747), (40, 13750), (41, 13768), (43, 13783), (44, 13786), (45, 13795), (46, 13798), (47, 13801), (48, 13816), (50, 13843), (51, 13855), (53, 13894), (54, 13909), (55, 13912), (57, 13930), (61, 13957), (62, 13960), (63, 13963), (66, 13999), (67, 14017), (70, 14068), (71, 14071), (72, 14080), (76, 14116), (82, 14191), (85, 14224),

Gene: Procrass1_17 Start: 13418, Stop: 14236, Start Num: 9
Candidate Starts for Procrass1_17:
(Start: 9 @13418 has 44 MA's), (11, 13427), (12, 13448), (13, 13451), (14, 13475), (16, 13487), (17, 13496), (18, 13505), (21, 13556), (22, 13559), (26, 13601), (30, 13628), (32, 13673), (33, 13676), (34, 13679), (37, 13712), (39, 13754), (40, 13757), (41, 13775), (43, 13790), (45, 13802), (46, 13805), (47, 13808), (48, 13823), (53, 13901), (54, 13916), (55, 13919), (57, 13937), (61, 13964), (62, 13967), (63, 13970), (66, 14006), (67, 14024), (68, 14066), (70, 14075), (71, 14078), (72, 14087), (76, 14123), (78, 14159), (82, 14198), (85, 14231),

Gene: QueenBey_17 Start: 13418, Stop: 14236, Start Num: 9
Candidate Starts for QueenBey_17:
(Start: 9 @13418 has 44 MA's), (11, 13427), (12, 13448), (13, 13451), (14, 13475), (16, 13487), (17, 13496), (19, 13529), (21, 13556), (22, 13559), (24, 13571), (25, 13598), (26, 13601), (30, 13628), (32, 13673), (37, 13712), (39, 13754), (40, 13757), (41, 13775), (43, 13790), (44, 13793), (45, 13802), (46, 13805), (47, 13808), (48, 13823), (49, 13835), (50, 13850), (51, 13862), (53, 13901), (54, 13916), (55, 13919), (57, 13937), (61, 13964), (63, 13970), (66, 14006), (67, 14024), (70, 14075), (71, 14078), (72, 14087), (76, 14123), (78, 14159), (82, 14198), (84, 14225), (85, 14231),

Gene: Rileysaurus_17 Start: 13415, Stop: 14233, Start Num: 9
Candidate Starts for Rileysaurus_17:
(Start: 8 @13403 has 1 MA's), (Start: 9 @13415 has 44 MA's), (11, 13424), (12, 13445), (13, 13448), (14, 13472), (16, 13484), (17, 13493), (18, 13502), (21, 13553), (22, 13556), (24, 13568), (25, 13595), (26, 13598), (30, 13625), (37, 13709), (39, 13751), (40, 13754), (41, 13772), (43, 13787), (44, 13790), (46, 13802), (47, 13805), (48, 13820), (51, 13859), (53, 13898), (54, 13913), (55, 13916), (57, 13934), (63, 13967), (66, 14003), (67, 14021), (70, 14072), (71, 14075), (72, 14084), (76, 14120), (82, 14195), (84, 14222), (85, 14228),

Gene: SKKY_17 Start: 13456, Stop: 14274, Start Num: 9
Candidate Starts for SKKY_17:
(Start: 9 @13456 has 44 MA's), (11, 13465), (12, 13486), (13, 13489), (14, 13513), (16, 13525), (17, 13534), (18, 13543), (21, 13594), (22, 13597), (25, 13636), (26, 13639), (30, 13666), (37, 13750), (39, 13792), (41, 13813), (43, 13828), (44, 13831), (45, 13840), (46, 13843), (47, 13846), (48, 13861), (49, 13873), (50, 13888), (51, 13900), (53, 13939), (54, 13954), (55, 13957), (57, 13975), (61, 14002), (62, 14005), (63, 14008), (67, 14062), (69, 14110), (70, 14113), (71, 14116), (72, 14125), (76, 14161), (78, 14197), (82, 14236), (83, 14245), (85, 14269),

Gene: Solid_17 Start: 13409, Stop: 14227, Start Num: 9
Candidate Starts for Solid_17:
(Start: 8 @13397 has 1 MA's), (Start: 9 @13409 has 44 MA's), (11, 13418), (12, 13439), (13, 13442), (14, 13466), (16, 13478), (17, 13487), (18, 13496), (21, 13547), (22, 13550), (25, 13589), (26, 13592),

(30, 13619), (32, 13664), (33, 13667), (34, 13670), (37, 13703), (39, 13745), (40, 13748), (41, 13766), (43, 13781), (45, 13793), (46, 13796), (47, 13799), (48, 13814), (51, 13853), (53, 13892), (54, 13907), (55, 13910), (57, 13928), (61, 13955), (62, 13958), (63, 13961), (67, 14015), (70, 14066), (71, 14069), (72, 14078), (76, 14114), (82, 14189), (85, 14222),

Gene: Stormborn_17 Start: 13437, Stop: 14255, Start Num: 9
Candidate Starts for Stormborn_17:
(4, 13365), (5, 13368), (6, 13386), (Start: 8 @13425 has 1 MA's), (Start: 9 @13437 has 44 MA's), (11, 13446), (12, 13467), (13, 13470), (14, 13494), (16, 13506), (17, 13515), (18, 13524), (21, 13575), (22, 13578), (25, 13617), (26, 13620), (28, 13638), (30, 13647), (32, 13692), (33, 13695), (37, 13731), (39, 13773), (40, 13776), (41, 13794), (43, 13809), (44, 13812), (45, 13821), (46, 13824), (47, 13827), (48, 13842), (51, 13881), (53, 13920), (54, 13935), (55, 13938), (57, 13956), (61, 13983), (62, 13986), (63, 13989), (67, 14043), (71, 14097), (72, 14106), (76, 14142), (78, 14178), (82, 14217), (85, 14250),

Gene: Supernova_17 Start: 13428, Stop: 14246, Start Num: 9
Candidate Starts for Supernova_17:
(Start: 9 @13428 has 44 MA's), (11, 13437), (12, 13458), (13, 13461), (14, 13485), (16, 13497), (17, 13506), (18, 13515), (21, 13566), (22, 13569), (24, 13581), (25, 13608), (26, 13611), (30, 13638), (37, 13722), (39, 13764), (40, 13767), (41, 13785), (45, 13812), (46, 13815), (47, 13818), (48, 13833), (51, 13872), (53, 13911), (54, 13926), (55, 13929), (57, 13947), (59, 13950), (61, 13974), (62, 13977), (63, 13980), (67, 14034), (70, 14085), (71, 14088), (72, 14097), (82, 14208), (85, 14241),

Gene: Wizzo_17 Start: 13442, Stop: 14260, Start Num: 9
Candidate Starts for Wizzo_17:
(Start: 8 @13430 has 1 MA's), (Start: 9 @13442 has 44 MA's), (11, 13451), (12, 13472), (13, 13475), (14, 13499), (16, 13511), (17, 13520), (18, 13529), (21, 13580), (22, 13583), (24, 13595), (25, 13622), (26, 13625), (30, 13652), (32, 13697), (33, 13700), (34, 13703), (37, 13736), (39, 13778), (40, 13781), (41, 13799), (43, 13814), (44, 13817), (45, 13826), (46, 13829), (47, 13832), (48, 13847), (49, 13859), (50, 13874), (51, 13886), (53, 13925), (54, 13940), (55, 13943), (56, 13946), (57, 13961), (61, 13988), (66, 14030), (67, 14048), (70, 14099), (71, 14102), (72, 14111), (76, 14147), (78, 14183), (83, 14231), (85, 14255),