

---

# KOPAIC CULTURES, ECONOMIES & LANDSCAPES (KOCECOLA) 2024 REPORT

Prof. Michael F. Lane, University of Maryland, Baltimore County (UMBC)

## INTRODUCTION & SUMMARY

From June 3<sup>rd</sup> through July 14<sup>th</sup>, 2024, Prof. Lane completed a second campaign of archaeological fieldwork at the settlement site of Aghia Marina Pyrgos (AMP) in the northeastern Kopaic Basin of Viotia Prefecture, mainland Greece, under the terms of a permit of collaboration with the Ephorate of Antiquities of Viotia (EAV), Dr. Alexandra Charami, Superintendent. The permitted program is titled Kopaic Cultures, Economies, and Landscapes (acronym KOCECOLA). His officially appointed collaborator was Dr. Evi Tsota of the EAV. Fieldwork supervisors under his direction were Mr. Robert Barry (UMBC), Mr. Bendik Bergendal (University of Bergen), Ms. Rachel Channell (independent), Dr. Kyle Jazwa (University of Maastricht), Ms. India Kelly (UMBC), Mr. Damian Koropeckyj (independent), Ms. Rowan May (York Archaeology), Dr. Christopher Nuttall (Swedish Institute at Athens), and Ms. Riia Timonen (University of Leiden). The following undergraduate and post-graduate students participated for fieldwork experience, training, or academic credit hours: Ms. Elliot Alvey (University of Virginia), Ms. Sofia Beroukli (National and Kapodistrian University of Athens [NKUA]), Ms. Katie Bjerkaas (UMBC), Ms. Brady Cavanagh (UMBC), Mr. Pratik Donthamshetty (University of Maastricht), Ms. Lucy Edwards (University of Oxford [Oxon]), Mr. Michael Fischer (UMBC), Ms. Elliot Francolla (Oxon), Mr. George Ftergiotis (NKUA), Mr. Christian Graf (University of Heidelberg), Ms. Elle Heywood (NKUA), Mr. Michael McCann (University of Tennessee, Knoxville), Mr. Alexander Robson (Oxon), Ms. Grace Saunders (University of Virginia), Mr. Rory Shields (Oxon), and Mr. William Smith (University of Manchester). Dr. Georgios Polymeris of the National Centre for Scientific Research “Demokritos” (Athens) was responsible for handling and analysis of samples from AMP for luminescence dating.

Fieldwork operations consisted principally of stratigraphic excavation of six sampling units (“trenches” below), adding two those begun in 2023. These were distributed among four sampling zones, as in 2023. Trench 6 and Trench 7 were located on the north side of the summit, where Prof. Lane and his team had discovered a Middle Bronze Age (MBA) settlement and subsequent infant cemetery during the previous phase of fieldwork under a different permit, the Mycenaean Northeast Kopais (MYNEKO) program (2016–2018), and where a Late Bronze Age (LBA) terrace and possible runoff drainage feature had been uncovered in Trench 6 during KOCECOLA in 2023, apparently built on a fill of lakebed sediment over the earlier cemetery and settlement. Trenches 8 and 9 were on the south side of the summit where both MYNEKO and last year’s KOCECOLA excavations had revealed buildings of LBA date, associated particularly with Late Helladic (LH) III B to C Early decorated pottery, apparently erected on the same massive lakebed fill observed in KOCECOLA Trench 6 and MYNEKO trenches 1 and 3. These contained evidence of the storage or manufacture (or both) of weights or whorls for textiles, decorated pottery for drinking, and furniture (judging from a surveying inlay). Trench 11 continued the excavation around a transitional MBA–LBA (“Shave Grave Period”) stone-lined cist grave, exposed where strip of the aforementioned fill had been removed and piled against the foundations of the medieval watchtower at the summit of the site (which gives the site its epithet *pyrgos* “tower”), presumably to shore the tower up while it was still in use. Its primary burial was looted. Trench 13 was located on the west slope of the site, where terrace walls, shards of coarse domestic pottery, and a roof tile had been observed during MYNEKO fieldwork; it was expected that the finds here would contrast with and supplement those on the summit, particularly the LBA remains. In 2024, samples for optically and thermally stimulated luminescence dating were taken from Trenches 6, 9, and 11, where stratigraphy was deepest and best defined, and samples for accelerator mass spectrometry (AMS) radiocarbon dating were taken from these trenches too, since stratification was deep enough there to ensure no contamination from topsoil charcoal (e.g., from recent wildfires).

## EXCAVATION & STRATIGRAPHY

### TRENCH 6 (3.5 × 4 M)

At the end of 2023, excavation in Trench 6 had reached the level of the LH IIIB construction. This phase was not represented in MYNEKO Trench 1, separated from it by a half-meter balk to the north. This consisted of multipart stone construction tentatively interpreted as the remains of a surface water runoff drain. In the northwestern corner of the trench, evidently outside the feature and below the terrace, was a mixed, chaotic, ashy destruction debris, from which were recovered shards of decorated pottery datable to the LH IIIB2 or the transition to the LH IIIC Early, as well as a hemispherical piece of worked ivory ca. 1.5 cm in diameter. This debris lay on a slump of plaster with no evidence of any other collapsed building material around it, suggesting to the excavators that it was a deliberate post-destruction dump from clearing the ruins of a building farther up the slope. Certainly, very little destruction debris if any was found on the limey surfaces between Walls BT, BU, BV, and BW that defined the conjectural drainage feature.

Resumed excavation in 2024 mainly bore out the interpretation of the main LH IIIB construction in Trench 6 as a runoff drain (Figure 1). To start, what had been perceived as a two adjoining rows of stone making up the Wall BV turned out to be both clearly separate from each other by about 15 cm and only one course thick. Hence, they sit in relation to each other as Wall BT does to Wall BU, forming a narrow channel that could have received runoff both from the area in the middle of the trench enclosed by Walls BU, BV, and BW and from the area in the southwestern corner of the trench, above Wall BV, BT too being only one course thick. Furthermore, a slightly inclined “pavement” of boulders (context 6026) was uncovered in the central area between the walls, the stone possibly taken of the ruins of an underlying earlier building unearthed at the end of the season (Wall BZ; see above), which could have functioned as a baffle to slow down and spread out evenly sheet runoff from the direction of the southeastern corner of the trench. However, the drain hole, which presumably exists in Wall BW just before it intersects Wall BT, has not yet been discovered. It may well still be found, given that courses of BW have yet to be removed and that the entire enclosed area is full of patchy layers of compact limey silt fill that may have been laid down to mitigate erosion or repair eroded substrate, which themselves may eventually have eroded to fill in the drain hole sought, making it difficult to perceive from above.

With the removal of Walls BT, BV, and BX, it was discovered that Walls BU and BW appear to be built on the remains of earlier walls in exactly or every nearly the same position and alignment (Figure 2). These lower courses of BU and BW are sealed by context 6029, which has been identified through stratigraphy and by its color, texture, and consistency with the massive lakebed fill covering the earlier settlement and infants’ cemetery in this sampling area, on which the LH IIIB buildings in MYNEKO Trenches 2 and 4 were erected. Likewise, Wall BZ, discovered beneath 6026 (above), is sealed likewise. Therefore, the corresponding buildings should date to earlier than LH IIB. Between two courses of the lower part of Wall BW (context 6028) were found a nearly complete painted, yellowish terracotta figurine portraying a seated naked female body with her hands on her thighs, her face pinched to nearly to form a beak and thus reminiscent of certain Cypriot “naked goddess” type, although an exact parallel has not been discovered (Figure 3). Because the portion of Wall BW that yielded the figurine is fraught with evergreen oak roots and given that the lower right leg was found in 6029, it is likely that this figure was brought up from below as opposed to be tossed into the fill between the wall courses. If this be the case, then the figurine probably belongs to one of the expected underlying infants’ burials. Context 6029, context 6030, a lens of plaster-like material overlying 6029 in its southeastern corner, and context 6035, a reddish silty deposit underlying 6029 in its southwestern corner, contained likely grave goods, such as glass-paste beads (Figure 4) and obsidian blades, while 6035 furthermore contained both animal (likely pig) and human (likely juvenile) bones. Since these artifacts were scattered and the associated human and non-human bones were both disarticulated and badly broken, it is assumed that they represent burials disturbed by the razing that preceded the deposition of the massive fill.

### TRENCH 7 (4 × 4 M)

Trench 7 is an excavation unit newly opened this year. It was laid out to capture both sides of what appeared in MYNEKO 2018 magnetometry results to be a continuation on the north side of the summit of Wall A, a feature first identified in MYNEKO Trench 2. This objective was accomplished, there being a North–South wall bisecting the trench, with open areas to the West and East. However, the investigators concluded that the dividing feature was not Wall A continued. Although it was parallel to Wall A, it is not quite aligned with it (Figure 5), being better aligned with Wall J in Trenches 2 and 9 (see below). The wall in Trench 7 was therefore provisionally named CB, and the topmost

preserved course was designated context **7006**. Moreover, it is much thicker than Walls A and J to the extent they have been excavated at least, to the extent they have been exposed, being between 1.4 and 1.6 meters wide. Given its location immediately below a gravelly, potsherd-laden interface (context **7005**), essentially the top of the subsoil, investigators concluded for the time being that it dates to the LH IIIC rebuilding, as do Walls A and J. The layers sealing 7006 to the west and east respectively, contexts **7007** and **7008**, appear on first blush to represent an outside and inside respectively. Context 7007 was a slightly hard silty clay, whereas 7008, although consisting of the same sedimentary matrix, contained fragments of plaster and mud brick. While there is some evidence of fallen masonry embedded in 7008, there is little evidence of a massive superstructure above the extant course, so the wall may have been thick but low. No datable material has been recovered either side.

### TRENCH 8 (4 × 3.5 M)

Trench 8 was also a new excavation unit in 2024. It was laid out to the east of MYNEKO Trenches 2 and 4, separated from them by a half-meter balk, with the aim of investigating further what had previously been identified in these excavation units as an architecturally interior area in the LH IIIB building phase and an exterior area in the LH IIIC rebuilding phase. It was also presumed to be approximately bisected by LH IIIC Wall A. In this season, it was excavated to about the same level to which Trench 7 was, right below the subsoil interface (ca. 167 m asl), context **8005**. Notwithstanding, neither Wall A nor provisional Wall CB (see above) crossed through this excavation unit, although traces of the latter may be evident in stones in the southwestern and northeastern corners of the trench (Figure 6). Hence, the stretch between these traces may represent a gap of nearly five meters in Wall CB, possibly a gateway. Particularly noteworthy are concentrations of potsherds both in the gap and against the possible butt-ends of Wall CB (contexts **8006**, **8007**, and **8008**). Some of these appear to be coarse-ware storage vessels, while others are fragments of monochrome skyphoi with reserve bases or rim bands (Figure 7). The latter are tentatively dated to the Early Geometric Period and add to the evidence already discovered in T2 and T9 that the ruins of the LH IIIC buildings were visited regularly in that period for drinking, involving only some slight architectural intervention, perhaps to for permanent storage of ceremonial vessels.

### TRENCH 9 (3.5 × 4 M)

By the end of 2023, Trench 9, half a meter to the south of MYNEKO Trench 2, had reached the level of the LH IIIC consolidation of the LH IIIB2–C Early transition's destruction, reflected in cut **9009** and its fills, including mixed burnt building material **9007**. Of considerable importance, between the lower topsoil (**9003**) and an underlying slump of plaster presumably from the collapse of the LH IIIC building after abandonment (**9006**) were fragments of a small monochrome krater and skyphoi with reserve bases and rim bands, apparently dated to the Early Geometric Period. Given their stratigraphic position with respect to finds in Trench 2 to the north, it seems that they are to be associated with Walls L and N, around which monochrome skyphoi and coarse-ware pithos fragments were found during MYNEKO, possibly the remains of a storage shed for drinking vessels built in the ruins of the LH IIIC building (see Trench 8 above). Wall J, however, against whose upper courses Walls J and N abut, belongs stratigraphically to the LH IIIC Early construction.

The 2024 effort commenced with the very difficult stratigraphy of the multiple different fills of cuts 9009 and **9016**, the latter of eventually recognized as a continuation of the former. The fills (contexts 9007, **9014**, **9015**, **9017**, and **9018**) consisted of more or less consolidated burnt building materials, including white plaster or stucco and some intact or largely intact mud bricks. Complicating the picture initially was how cut 9009 = 9016 descended so deeply into the burnt and compacted remains of LH IIIB building that it penetrated the entirety of the collapsed upper story and exposed pottery emerging from the ground floor (Figure 8).

The remainder of the season in Trench 9 was spent carefully peeling away the remains of the collapsed upper story of the LH IIIB building, including ascertaining the stratigraphy of the walls exposed in the trench. What had been in 2023 tentatively labeled Wall BR and then identified instead as a spill of stone was restored its title of Wall BR, running from west to east almost diagonally across the trench. It is deeply seated, and Walls A and J lie higher than it. Thus, it belongs to the LH IIIB building, and its northern counterpart appears to be Wall AA in MYNEKO Trench 2, with which it enclosed a space on two sides. Like Wall AA, Wall BR has some massive foundation stones that would have required several persons to manage during construction. It appears to have fallen outward to the South, where tumbled stone lies amid decomposed stucco (context **9044**) on a sandy loam surface (**9045**). An interior wall too, presumably AA, collapsed southward, downslope, as evident in a layer of compacted but nonetheless distinct fallen courses of

mudbrick with facing plaster (context **9023**). This covered a thick layer of lime stucco (**9047**), likely from the fallen roof, which had crushed in place several large unpainted coarse-ware pithoi and one undecorated shallow basin, amid which were the shards of a small, rounded, undecorated alabastron datable to the LH IIIA–B and a Group B deep bowl dated to the LH IIIB2. Context 9047 immediately overlay an uneven silty lay with larger and smaller concentrations of charcoal throughout, which was interpreted as the burnt remains of both upper-story and lower-story roof timbers combined, lying on the ground floor below. It was through this layer and overlying stucco that the neck of at least one upright amphora or pithos emerged. Excavation ceased upon reaching this burnt layer, resuming in 2025 after given it a context number (Figure 9).

The most significant finds in the ruins of the upper story of the LH IIIB building were shells of *Hexaplex* and ever more of *Spondylus* mollusks that, alongside the pithoi and basin, suggest purple and red dye production. It should be recalled that here and more so in the northern part of the same space on the upper floor, exposed in Trench 2 (context 257), were stone whorls or weights that might be involved in the comprehensive industry of thread and cloth production. Production of such dyes involves the indirect application of heat. MYNEKO concluded that the catastrophic fire had broken out on the ground floor. Hence, it is not out of the question that fire for production of the dye took place below, whereas the storage of the dye and its application to thread and cloth took place above.

### TRENCH 11 (4 × 4 M)

By the end of the 2023 season, Cist ε, the grave that is the focus of the Trench 11 excavations, had been completely emptied of the debris of burial looting and materials robbing, as well as the remains of their original fills, including one primary burial (context **11008**) and a secondary burial (**11009**), the latter in a shallow pit in the grave's bottom. One of the enigmas remaining from 2023 is why the secondary burial was accompanied with ca. MH III – LH I (“transitional Mycenaean”) fine burnished wares, as was expected of a grave otherwise dated to this period, yet it was mixed with distinctly EH II Urfirnis potsherds, including elements of a “sauceboat.”

The first task in 2024 was to remove the cist's stone lining slabs (context **11013**). This accomplished, several rubble fills packed around the outside of the slabs had to be excavated that were stratigraphically later than the slabs but only became clear to excavators after the slabs' removal. Then the job was to begin excavating the surfaces into which the grave was cut (cut **11019**). Just as in the excavation Cist ε itself, the stratigraphy was complicated by the evidence on its south side of both looting of the grave, possibly within living memory, and robbing of the site for building material, which exposed the grave during the Middle Ages and furthermore presumably removed the slab stones on that side. It was clear, at least, that the grave was cut into consolidated rubble from a prior settlement, there being at least one wall (Wall CA) and possibly two running from west to east cross the southwestern corner of the trench, similar but not identical to how infant burials were found on top of or between the lowest extant courses of walls of abandoned parts of the settlement in MYNEKO Trenches 1 and 3. The rubble fill in Trench 11 contained copious domestic debris, including potsherds, stone tools, and animal bones, more so than in the relatively clean contexts in Trenches 1 and 3, and a few of the potsherds in the mix were also of EH Urfirnis wares. In addition, there were fragments of EH type roof tiles. It was also clear that there was layer of cobbles against the eastern edge of the cist (context **11021**) that covered another secondary burial (**11022**). This secondary burial was much more neatly arranged than that represented by 11009 (above), with the major components of the axial and appendicular skeleton laid crosswise over each other in a pit about 60 to 80 cm in diameter (**11023**) and the remains of the skull placed on top (Figure 10). Burial goods included two small ca. MH III – LH I fine gray burnished single-handled cups (Figure 11). The top of the cranium also bore traces of what appeared to be burnt resin, which could be the residue of incense. This material was sampled and conserved for later chemical analysis.

This secondary burial appears to have been inserted to the east after the construction of Cist ε, an observation that is underscored by how it appears to cut down through the very truncated remains of a tumulus that once sat over the grave (context **11029**). Not only was the top of this tumulus shaved away during the medieval robbing episode, evidently removing the capstone of the grave in the process, but also almost all its southern and much of its western and eastern edges were likewise erased. The tumulus is most evident where a passage was dug down through it to the west (context **11035**), such that access could be had to the cist, possibly through removal of a slab stone on its southern side (Figure 12). Hence, a likely scenario is that the secondary burial discovered in the bottom of Cist ε was the original burial in the cist. Then, at some point, the grave was entered through a passage into the south side, the human remains pushed into a shallow pit in the northeastern corner, and a new interment made. The side slab stone was replaced, if

and as need be, and the passage filled up. Finally, remains were brought from another grave and deposited under a cobble pavement at the eastern end of the cist, disturbing the edge of the tumulus. It may be significant that both burials inside the cist are of chromosomal phenotype XY, whereas that of the secondary burial outside the cist is of XX phenotype.

Hence, the reason for the admixture of characteristically EH II material in the secondary burial in Cist  $\epsilon$  is due to the material already existing in the surrounding fill. EH is nowhere else attested on the site, either on the surface or in excavation. It thus seems likely that some special purpose building occupied the summit of AMP, now partly covered with the medieval watchtower, and that its site was selected later for burials important enough to have the remains of other persons dedicated at them.

## TRENCH 13 (4 × 4 M)

Trench 13 is the first trench opened in the western slope sampling area, starting in 2024. It was laid out over Wall Q, thought when mapped on the surface to be a terrace wall on the western slope of AMP, perhaps bearing domestic units on either side or both, given especially that a higher proportion of undecorated or coarse-ware pottery (or both) had been found on the surface of the unit than elsewhere.

Trench 13 has so far proved to be a mess of stones (Figure 13). It is not, however, a mess without patterns or interest. Wall Q indeed bisects the trench diagonally from southwest to northeast, the first course designated context **13005**. However, because it slopes gradually uphill in this direction across the trench and into the adjacent area where it is visible on the surface, it is not obviously a terrace wall, which one might expect to be more level so as to retain earth consistently. Be this as it may, several courses of stone have fallen away to the west and north (**13007**, **13008**, **13009**, and **13010**), so the lower stone layers of this wall were clearly considerably high in some places. That they might have stood as high as is typical of the lower half of the ground story of a building is a reconstruction supported by the presence of stuccoed floors in the southeastern corner of the trench, on which were found metal slag (tentatively identified with lead), a laterite hammerstone, and a deep medium-band cup with a vertical handle (tentatively dated to the LH IIIB2/C Early), evidently elements of a workshop. There may be an interior wall, not yet named, enclosing this space on its north side.

## SCIENTIFIC CHRONOMETRY

### LUMINESCENCE DATING

Dr. Polymeris installed of “Demokritos” took samples for optically and thermally stimulated luminescence (OSL/TL) dating from three contexts visible in the profiles of each Trench 6, Trench 9, and Trench 11. Contexts **6003** (interface between topsoil and Wall BW), **6012** (gravelly interface of topsoil with the first silty layer in the possible drainage feature), and **6029** (supposed massive lakebed fill containing disturbed human remains) were sampled in Trench 6, contexts **9007** (fill of cut 9009 + 9016), **9023** (limey plaster layer, perhaps exterior wall stucco), and **9047** (fallen plaster with chunks of mud brick associated with the LH IIIB/C Early destruction) in Trench 9, and **11006** (interface of topsoil with the surface into which Cist  $\epsilon$  appears to have been cut) and **11025** (earlier fill into which Cist  $\epsilon$  is cut on its North side) in Trench 11. Results are expected in January 2025.

### RADIOCARBON DATING

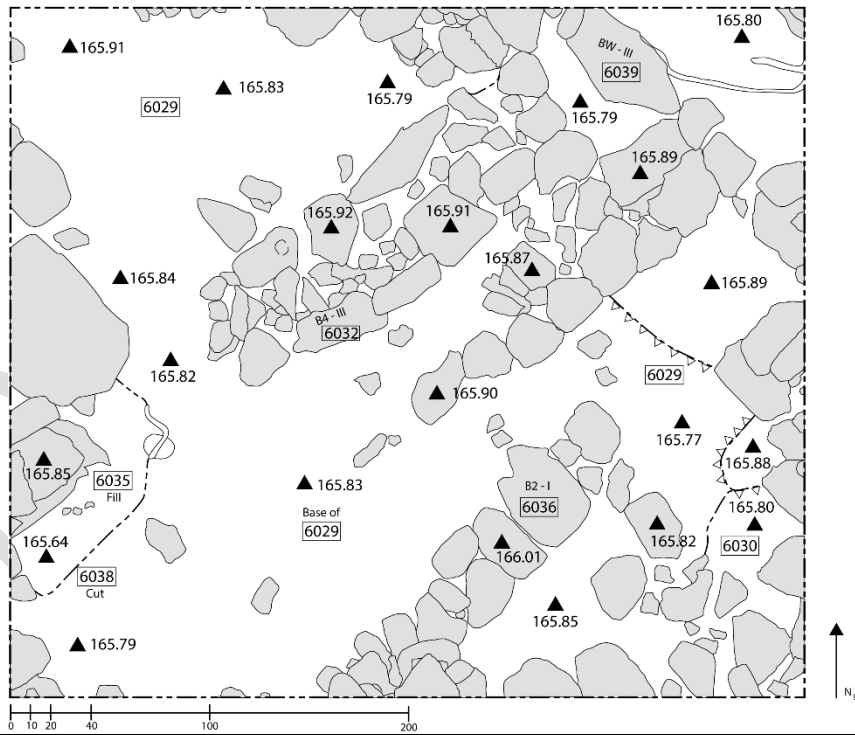
Samples of charcoal were taken for AMS radiocarbon dating from Trenches 6, 9, and 11, the three trenches so deep that no contamination with charcoal from the topsoil through disturbance seemed likely. These were contexts **6026**, **6029** (OSL/TL above), **6030**, **6031**, **6034**, **6035**, **9021**, **9023** (OSL/TL too), **9025**, **9047** (OSL/TL), **11021** and **11022**. These are expected to be cleared for export for analysis overseas in January 2025. Furthermore, at least five liters of the matrix of every sedimentary context was floated and wet-sieved, the *whole* of each context containing human remains. Once sorting of each context’s fine and coarse fractions of each are finished in January 2025, more samples of charcoal are expected to be obtained that are useful for chronometric analysis.





**Fig. 1.** Trench 6 looking east, 6 June 2024. Wall BV right foreground, Wall BT left foreground, Wall BU left background (behind BT with the “channel” between them), and Wall BW middle background (photo R.E. May).

**AMP - T6 Final State Plan (2024)**



**Fig. 2.** Trench 6 state plan, 14 July 2024 (B.E. Cavanagh after R.L. Channell).

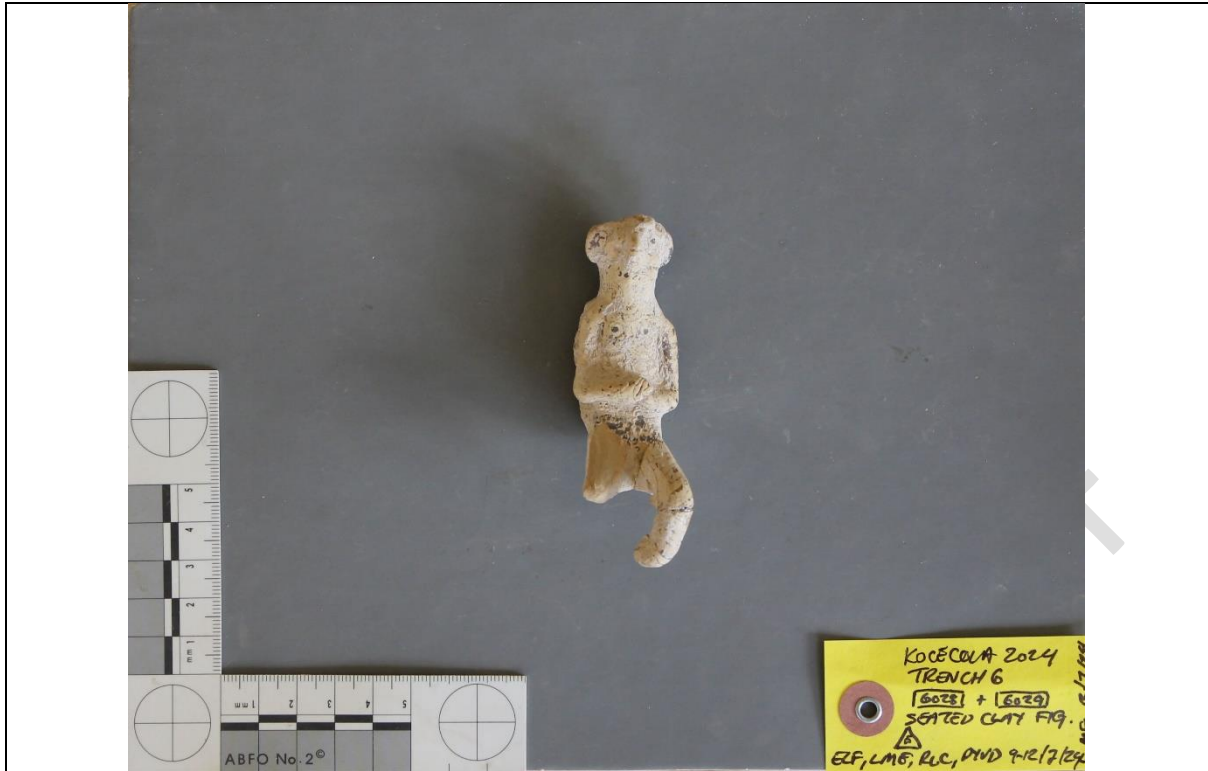


Fig. 3. Seated terracotta “naked goddess” figurine from context 6029 (right leg from 6023) (photo M.F. Lane).

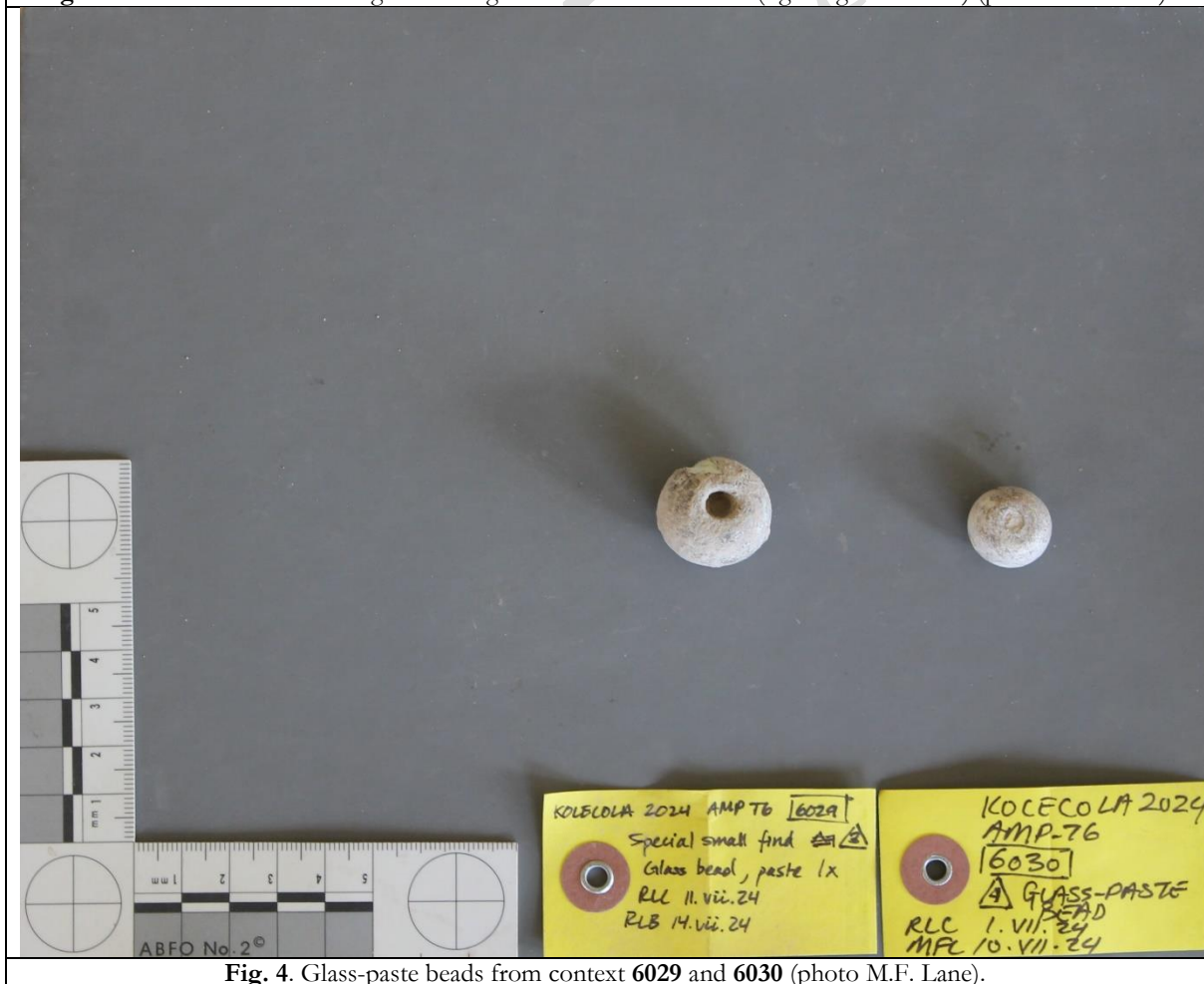


Fig. 4. Glass-paste beads from context 6029 and 6030 (photo M.F. Lane).

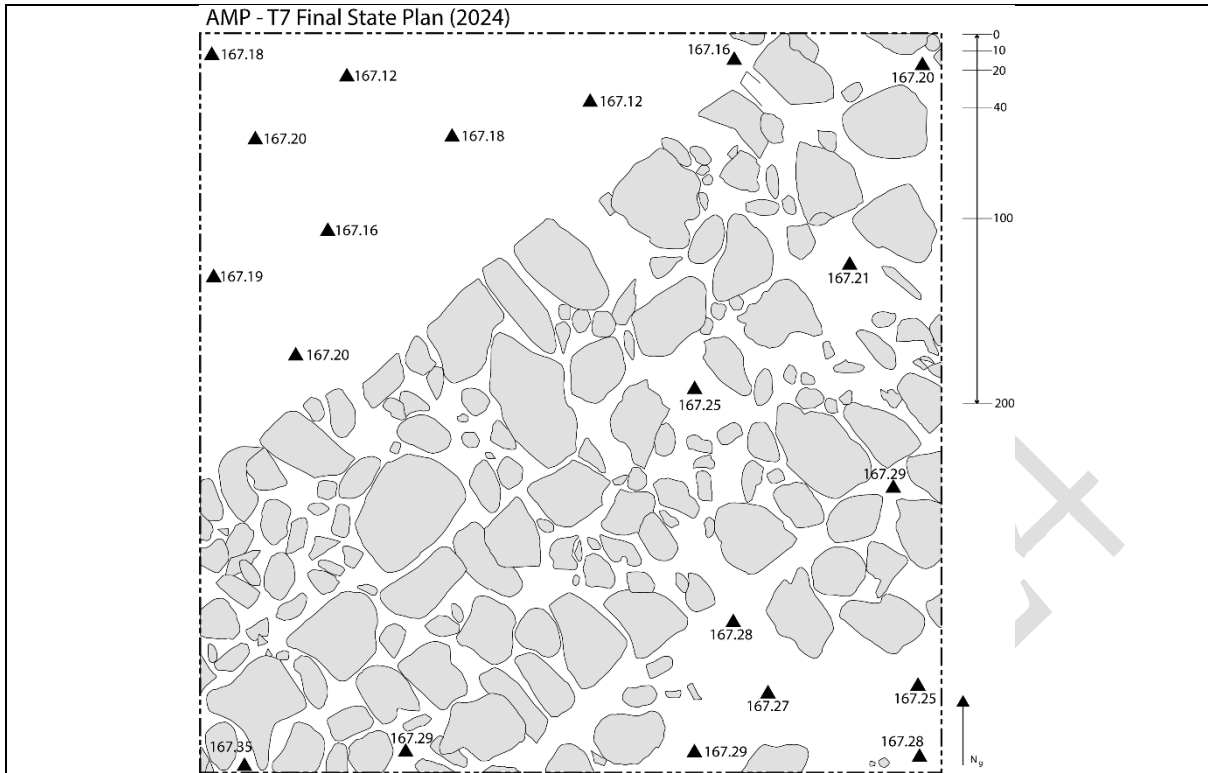


Fig. 5. Trench 7 state plan, 14 July 2024 (B.E. Cavanagh after R.L. Barry).

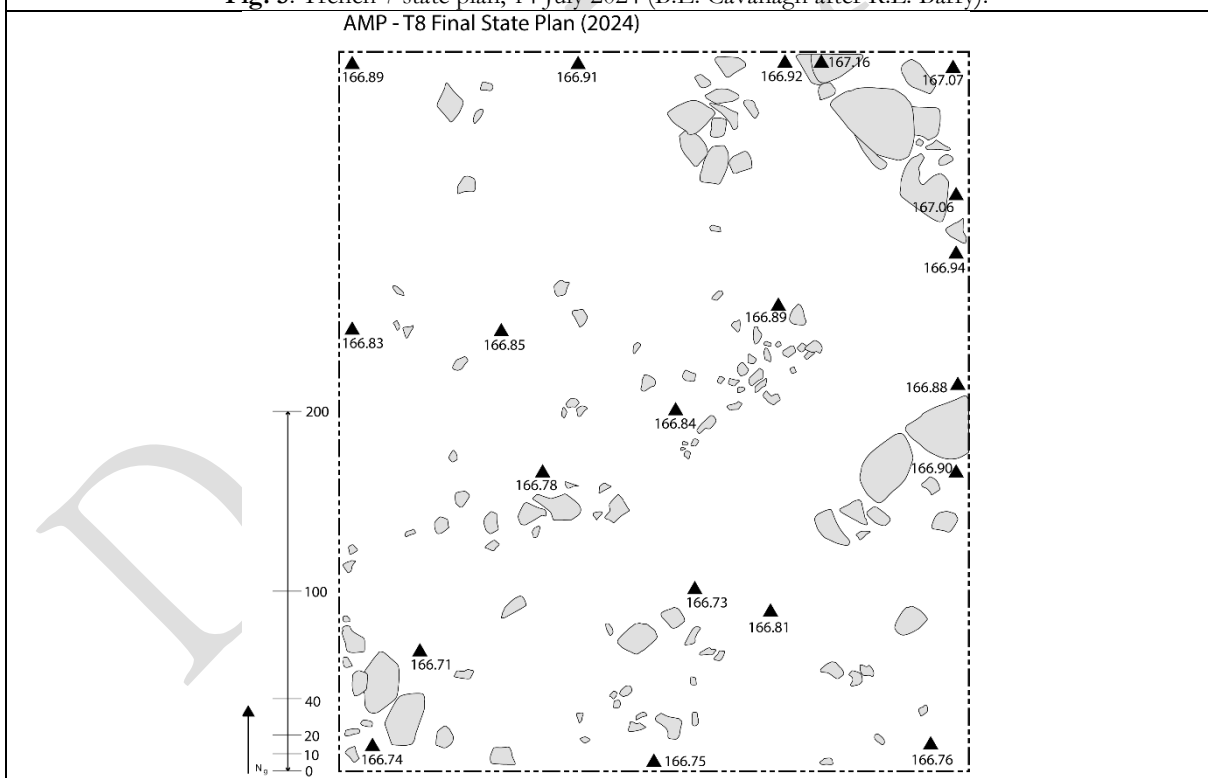


Fig. 6. Trench 8 state plan, 14 July 2024 (B.E. Cavanagh after B.N. Bergendal).





**Fig. 7.** Provisionally dated Early Geometric skyphos shards *in situ* in Trench 8, possibly beside anta in Wall CA (photo B.N. Bergendal)



**Fig. 8.** Neck of large amphora or pithos protruding through bottom of cut 9009 = 9016 (photo C. Nutall)



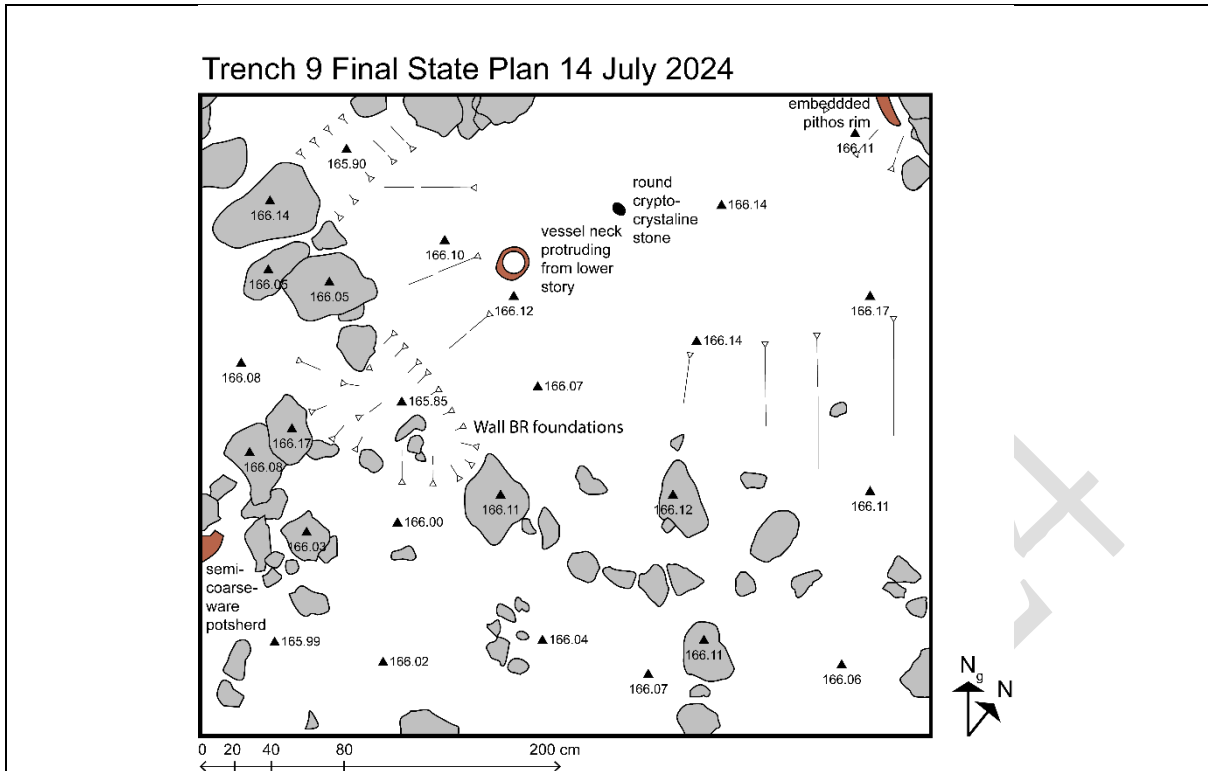


Fig. 9. Trench 9 state plan, 14 July 2024 (M.F. Lane)



Fig. 10. Secondary burial (“Ozzie”) on east side of Cist ε (context 11021), partially excavated (photo D.V. Koropecjy).



Fig. 11. Fine gray burnished cups from secondary burial, context 11021 (photo M.F. Lane).

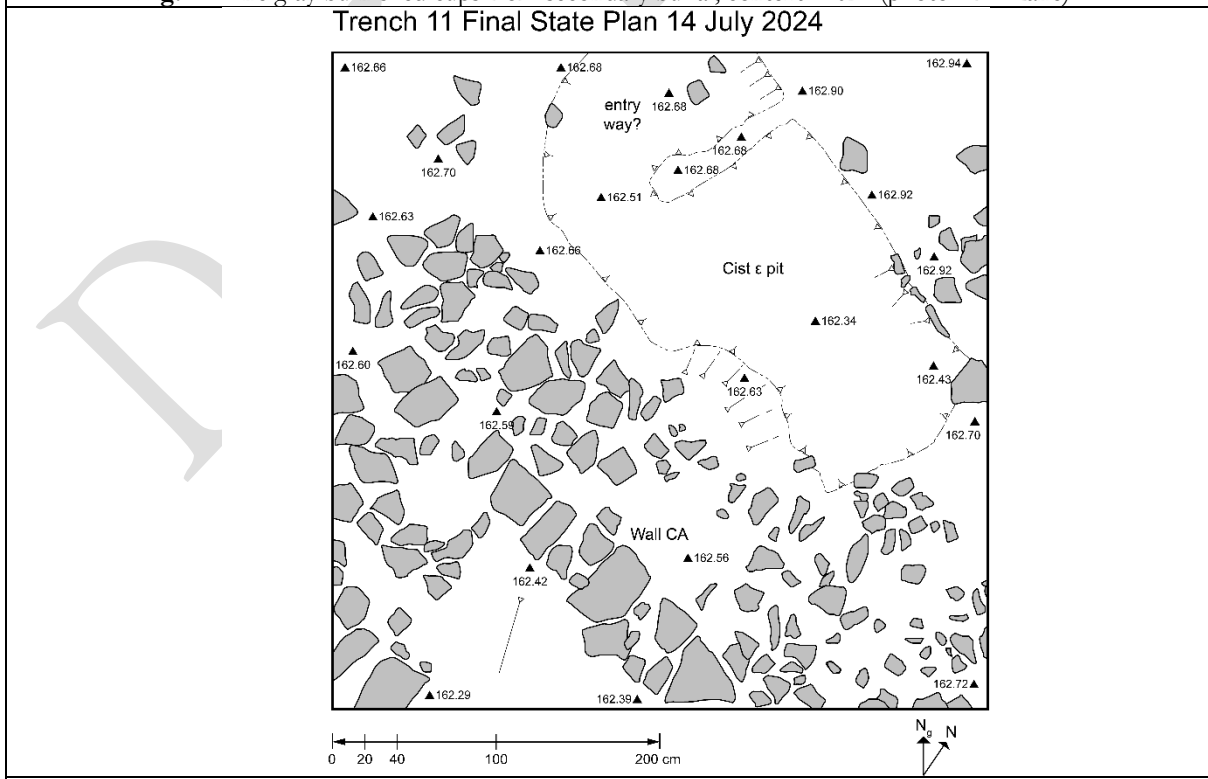


Fig. 12. Trench 11 state plan, 14 July 2024 (M.F. Lane after K.A. Jazwa).

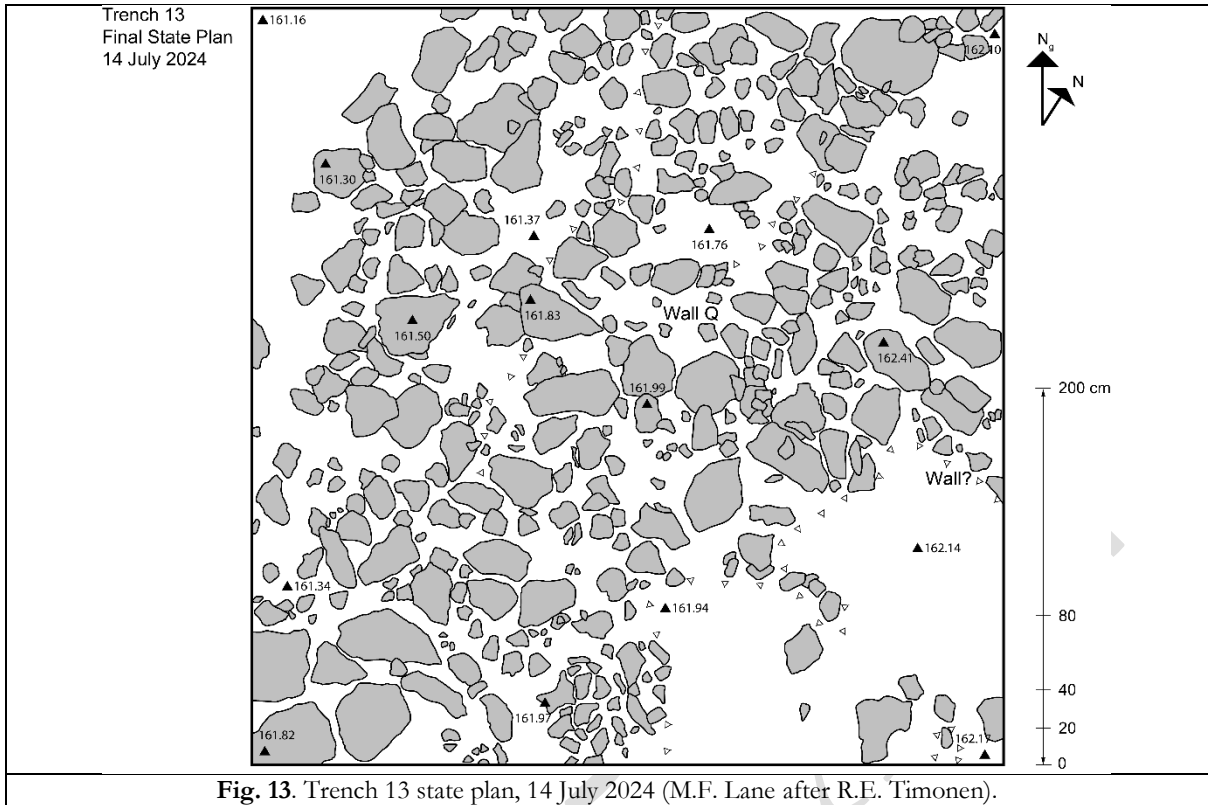


Fig. 13. Trench 13 state plan, 14 July 2024 (M.F. Lane after R.E. Timonen).

Draft 15