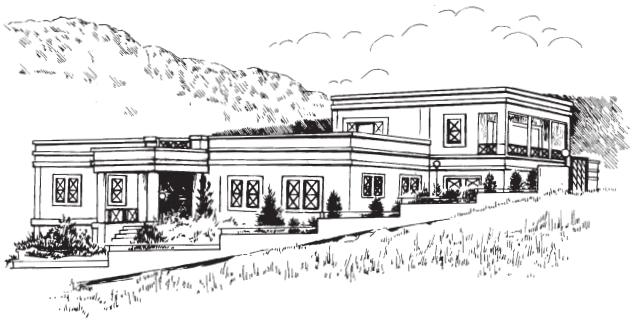
KENTRO

The Newsletter of the INSTAP Study Center for East Crete

Volume 29 (Fall 2026)



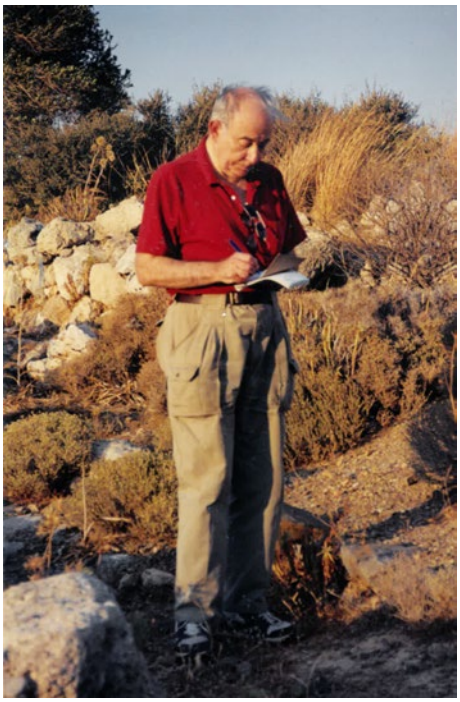
Malcolm Hewitt Wiener, Founder of INSTAP

July 3, 1935–October 12, 2026

Erin E. Hayes

Malcolm Hewitt Wiener, distinguished scholar of Aegean Bronze Age archaeology, who founded the Institute for Aegean Prehistory, died after a brief battle with mesothelioma on October 12, 2026, in New York. He was 91.

Malcolm Wiener was born in Qingdao, China on July 3, 1935, to Myron Wiener, an American originally from San Francisco, CA, and Ethel (Zimmerman) Wiener, an American born in China, whose family had long-standing business interests there. Malcolm's mother died shortly after his birth, and he was cared for by his father and his maternal grandparents. Anticipating the entrance of Japan into World War II, Malcolm was sent away from China in 1939 to live with his paternal grandparents and extended family in San Francisco. Reunited with his father after the war, he spent his teenage years in New York and Washington D.C. where he excelled as a competitive chess player. He received a bachelor's degree from Harvard College (*magna cum laude*, Phi Beta Kappa) in 1957, then he was commissioned in the U.S. Navy for three years. It was during this tour that he was introduced to the ancient civilizations of the Mediterranean via two three-day shore breaks: the first at Famagusta, Cyprus, from which he visited Enkomi and the Cyprus Archaeological Museum; and the second at Piraeus, Greece, from which he visited sites and museums in Athens, Corinth, and Mycenae.



Malcolm at Zakros in East Crete, summer of 2000. Photo E. Sackett.

After earning a J.D. from Harvard Law School in 1963, Malcolm had a career as a lawyer before turning to investment management in 1970. He and two partners formed the Millburn Corporation, which pioneered the development of highly innovative, algorithmic investment strategies.

Malcolm's interest in the Aegean Bronze Age continued to blossom alongside his work in law and finance. From 1968 to 1976 he acted as pro bono counsel for the Archaeological Institute of America (AIA). In the late 1980s, he served on the Executive Committee of the Governing Board of the AIA and volunteered for various AIA committees in other years. He was also appointed by the U.S. Department of State as an advisor for the 1970 UNESCO Convention on the Means of Prohibiting and Preventing the Illicit Import, Export, and Transfer of Ownership of Cultural Property.

Malcolm attended archaeological conferences from the late 1960s onward, and at the AIA meeting in St. Louis in 1973, he met Philip Betancourt, an encounter that would be crucial to the later formation of INSTAP. With his actions always guided by curiosity, Malcolm began the New York Aegean Bronze Age Colloquium (with Ellen Davis and Guenter Kopcke) in 1975 to give scholars the opportunity to both present and learn about new research. Over the years, Malcolm built an enormous network of colleagues in the field, and through them, as well as through his own experiences visiting Greece, he recognized the need for and potential of further exploration of Bronze Age sites. He thus formed the Institute for Aegean Prehistory in 1981, with Phil Betancourt at the helm. As INSTAP enabled an increasing number of archaeological projects around the Aegean, and especially in Crete, Malcolm established the INSTAP Study Center for East Crete, opening in 1997, to provide work and storage space, a library, a laboratory, and other support for excavation and survey teams. Then in 2001, INSTAP



Malcolm Wiener (third from left), founder of INSTAP, at the opening of the Malcolm H. Wiener Laboratory for Archaeological Science of the American School of Classical Studies at Athens, summer 2016. From left to right: Jonathan, Carolyn, Malcolm, Elizabeth, Thomas, and Kate Wiener, Panagiotakis Karkanas (director of the Wiener Lab), James Wright (then director of ASCSA), and Jane Buikstra (Regents Professor, Arizona State University). Photo H. Akriviadis; courtesy ASCSA.

Academic Press was formed to provide crucial publication opportunities for excavation and survey projects.

After years of attending conferences, reading widely, and critically evaluating evidence, Malcolm shared his own research for the first time in a paper delivered at the 1982 conference, "The Minoan Thalassocracy: Myth and Reality," at the Swedish Institute in Athens. Published in 1984, it was the introduction of his influential concept regarding the differing degrees of Minoan influence in the Aegean, "the Versailles Effect."

During the late 1970s and 1980s, as radiocarbon dating became a subject of emerging importance to the field, Malcolm confronted head-on the divisive issue of the absolute date of the Theran eruption. He evaluated the radiocarbon and archaeological evidence and consulted with his network of scholars in the field, eventually becoming a fierce proponent of the "low" chronology. His assessment has now been vindicated, with more precise tree-ring, radiocarbon, and ice-core evidence agreeing with a date for the Theran eruption in the mid- to late 16th century (Pearson et al. 2018, 2022; Şahoğlu et al. 2022).

Malcolm's scholarly work intensified after he retired from investing in 1997 and was able to concentrate on his true calling for Aegean prehistory. From 1984 through 2026, Malcolm published over 50 articles on many other aspects of Aegean Bronze Age archaeology and chronology, as well as civilizational collapse, now collected in *The Rise, Florescence, and Collapse of Aegean Bronze Age Civilizations*, due to be published in late 2026.

In recognition of his contributions to various fields, Malcolm received honorary degrees from seven institutions in the U.S. and Europe. He was also named member, fellow, or otherwise honored by 23 private and governmental entities of many nations. Among other honors, he earned lifetime fellowship in the Archaeological Institute of America (1975), Society of Antiquaries of London (1998), and American Academy of Arts and Sciences (1999); was presented with the Ring of Honour from the Academy of Sciences and Literature, Mainz (2000); was made a Foreign Corresponding Member of the Royal Swedish Academy of Letters, History, and Antiquities (2001) and of the Austrian Academy of Sciences (2004); was decorated as Knight (Chevalier) of the Order of Arts and Letters of France (2006); received the AIA Bandelier Award for Public Service to Archaeology (2013), the Gold Cross of the Order of Honour of Greece (2014), and the Athens Prize of the American School of Classical Studies at Athens (2017); and was made a Corresponding Member of the Academy of Athens (2018).

Malcolm had many interests outside of finance and archaeology. Foreign, public, and social policy were of vital importance to him. In 1987 Malcolm was elected to membership of the Council on Foreign Relations and he chaired the 1995 CFR Commission on Non-Lethal Weapons. He recognized early that it was necessary to coordinate research, training, and public engagement efforts in order to create effective policies to strengthen the social safety net, and so in 1989 he established the Malcolm Wiener Center for Social Policy at the Harvard Kennedy School. Largely through the Malcolm Hewitt Wiener Foundation, he supported a wide array of other organizations, including Harvard University, the Metropolitan Museum of Art, and the International Rescue Committee. He was a prolific art collector, with many works on loan to major museums in the U.S. and Europe.

Malcolm is survived by his wife, Carolyn Seely Wiener, daughters Kate Ford and Elizabeth Pouget, sons Jonathan and Thomas Wiener, and grandchildren Elliot and Carter Ford.

References

Pearson, C.L., P.W. Brewer, D. Brown, et al. 2018. "Annual Radiocarbon Record Indicates 16th Century BCE Date for the Thera Eruption," *Science Advances* 4 (8), eaar8241, https://www.science.org/doi/10.1126/sciadv.aar8241, accessed January 6, 2026.

Pearson, C.L., M. Sigl, A. Burke, et al. 2022. "Geochemical Ice-Core Constraints on the Timing and Climatic Impact of Aniakchak II (1628 BCE) and Thera (Minoan) Volcanic Eruptions," *PNAS Nexus* 1, pgac048, https://academic.oup.com/pnasnexus/article/1/2/pgac048/6575909, accessed January 6, 2026.

Şahoğlu, V., J.H. Sterba, T. Katz, et al. 2022. "Volcanic Ash, Victims, and Tsunami Debris from the Late Bronze Age Thera Eruption Discovered at Çeşme-Bağlararası (Turkey)," *PNAS* 19 (1), e2114213118, https://www.pnas.org/doi/full/10.1073/pnas.2114213118, accessed January 6, 2026.

Studying the Knossos Town Mosaic

The Earliest Map in Europe

Philip P. Betancourt, Stella Chrysoulaki, Susan C. Ferrence, Kostis Christakis, Alessandra Giumlia-Mair, Efi Tsitsa, Gabriella Lazoura, and Jeff Vanderpool

When Arthur Evans was excavating in 1902 at the palace of Knossos, he discovered over 150 fragments of a faience tile mosaic in a location he was calling the Loom Weight Basement (Evans 1901–1902; 1921–1935, I, 301–314). He would name his discovery the Town Mosaic. In the next century, this Minoan artwork would become one of the most famous objects from ancient Crete. Our new study of the mosaic is now unlocking many of its secrets. The evidence indicates that it is a pictorial map of the region where it was found, with possible hints of epic poetry as well as real or fanciful events. It gives us glimpses of Crete in the Middle Bronze Age.

The complex pictorial scene—with a shipwreck, dead bodies in the sea, three separate city gates, detailed houses, armed men marching, both wild and domesticated animals, and plants like myrtle and dittany—makes up a very diverse landscape. Analysis with X-ray fluorescence spectroscopy has identified the elements used as colorants in the faience material. The original colors were vibrant turquoise blue in both pale and darker tones, glossy white, and green with a hint of brown. To make the scene even livelier, the artists added small rectangles of shiny gold foil inside house windows to create the effect of lamps that were lit inside the buildings. This addition, first noticed by Stella Chrysoulaki in 1989, makes the image truly unique. If the sun shone on this scene or someone walked by the mosaic panel carrying a lamp, the many gold foil additions at different angles would have sparkled. The faience colors are now faded, but it remains an amazing artistic creation.

Unfortunately, the fragile mosaic was held together simply with clay, and it survives only in fragments. It did not survive the earthquakes that seem to have been followed by rain, which characterized the period we call Middle Minoan IIIA, about 1800–1750 B.C. This study offers the first comprehensive reconstruction.

The scene was part of a Minoan landscape tradition with several surviving parallels. A clay sealing showing a city with similar city gates has been found at Chania (Fig. 1). Related landscapes are known from wall paintings discovered on the islands of Thera (Doumas 1992, 28–34) and Keos (Morgan 2020). Similar details also occur on a Minoan silver rhyton from Mycenae (Koehl 2006, 138–139). The scene was part of an active Minoan tradition (Panagiotaki 2008).

The evidence for the reconstruction is very strong (Figs. 2, 3). Three gates mean three entrances to cities, and the scenes of



Figure 1. The Master Impression, a clay sealing found at Chania in western Crete with parallels for the city gates in the mosaic. Length 2.75 cm. Late Minoan I. CMS V, Suppl. 1A, no. 142. Image courtesy and © Heidelberg Corpus of Minoan and Mycenaean Seals.

animals and plants in the countryside must be explained as well. All known Minoan landscape images put the sea at the bottom of the picture field. This important component establishes the baseline for the image. Clairy Palyvou has shown that tiles with houses can be divided into two groups by the scale of their doors and windows (Palyvou 2005). The set with the smaller windows and doors, which would be more distant from the viewer, includes all the buildings made of large stone blocks. These buildings of ashlar masonry are an early feature of Minoan architecture, and in MM IIIA, when the practice had just begun, only one place in Crete already had several such buildings. That would be Knossos. If this location is the distant settlement in the landscape, and the sea is in the foreground, the remainder of the mosaic can be fitted into the topography perfectly. Two alternative reconstructions are proposed with different details whose exact placements are uncertain (Figs. 2, 3). Two of the three sets of city gates must be for the harbor town of Knossos because it flanked both sides of the Kairatos River where it empties into the Sea of Crete. The location now is two neighborhoods of Herakleion, Poros on the west side of the river and Katsambas on the east side. The riverbed was already dry during part of the year by the Middle Bronze Age (Bottema 1980; Moody 2000; Bottema and Sarpaki 2003). In the mosaic, this riverbed is illustrated with tiles showing both men and animals using

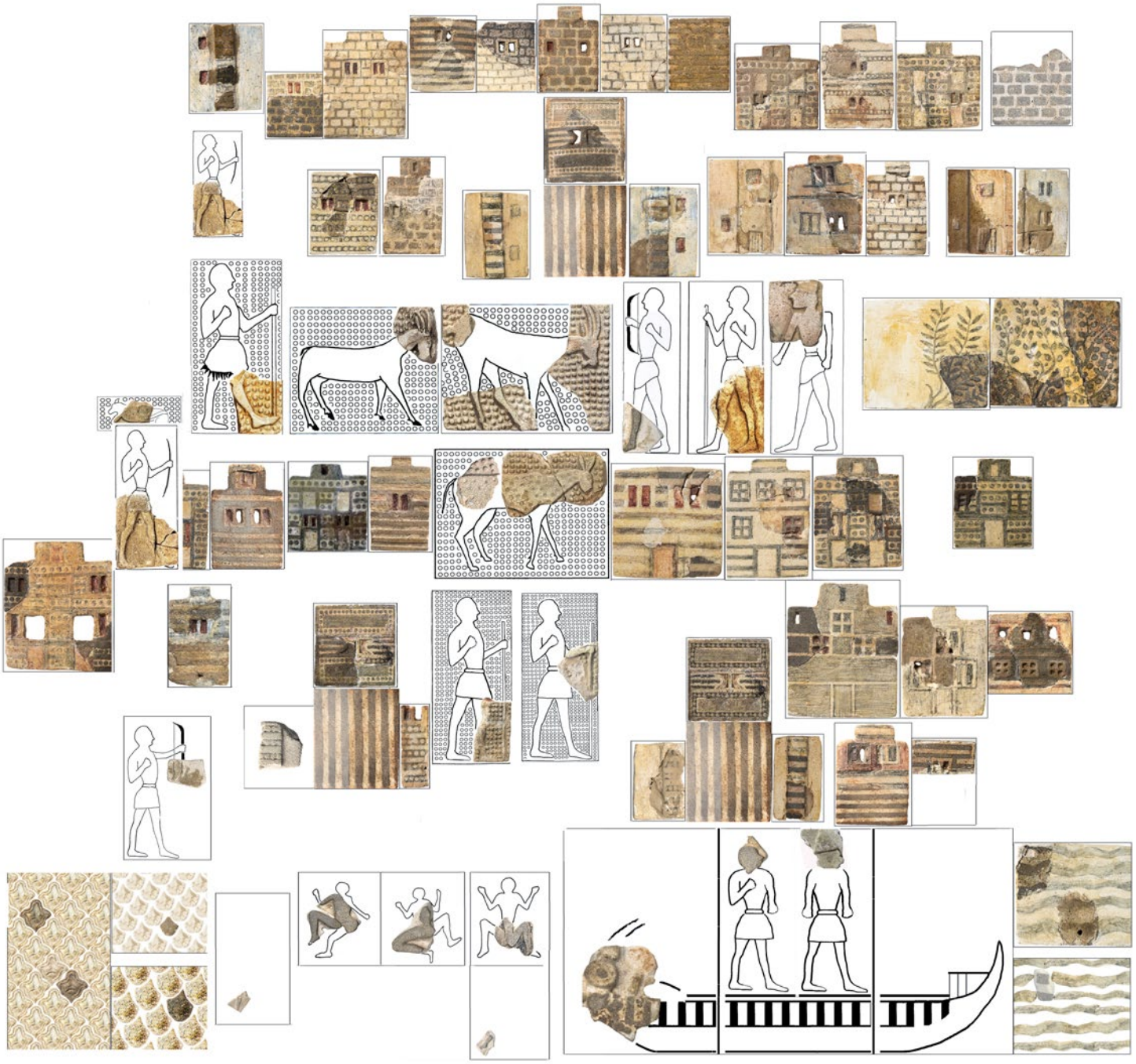


Figure 2. Reconstruction A of the Knossos Town Mosaic by the team studying the mosaic. Photos © and courtesy Herakleion Archaeological Museum, Hellenic Ministry of Culture, Organization of Cultural Resources Development (HOCReD). Scale ca. 1:3.

it as a passage between Knossos and the northern coast of Crete. The pebbly background of the riverbed sets it apart from other aspects of the landscape depicted in the mosaic.

These landscape features establish the main components of the scene. It emerges as a pictorial map of the region in north-central Crete where it was made, with the major urban center of the Minoan civilization and its harbor 5 km away, as well as the countryside. The image shows several square kilometers of the region, with space for men with spears, a shepherd and his goats (Fig. 4), and both wild and domesticated animals. The herder's unique fringed garment is an interesting artistic touch. Local Cretan vegetation is used as a background for the active human history that is illustrated. The artists who made this complex image were careful to include several details that make the scene very compelling.

A battle at the coast is very dramatic. Armed defenders march toward the sea. Soldiers with weapons have either spears or bows and arrows. Awkward bodies of attackers floating in the sea testify to the successful defense of the coastline (Fig. 5). This was

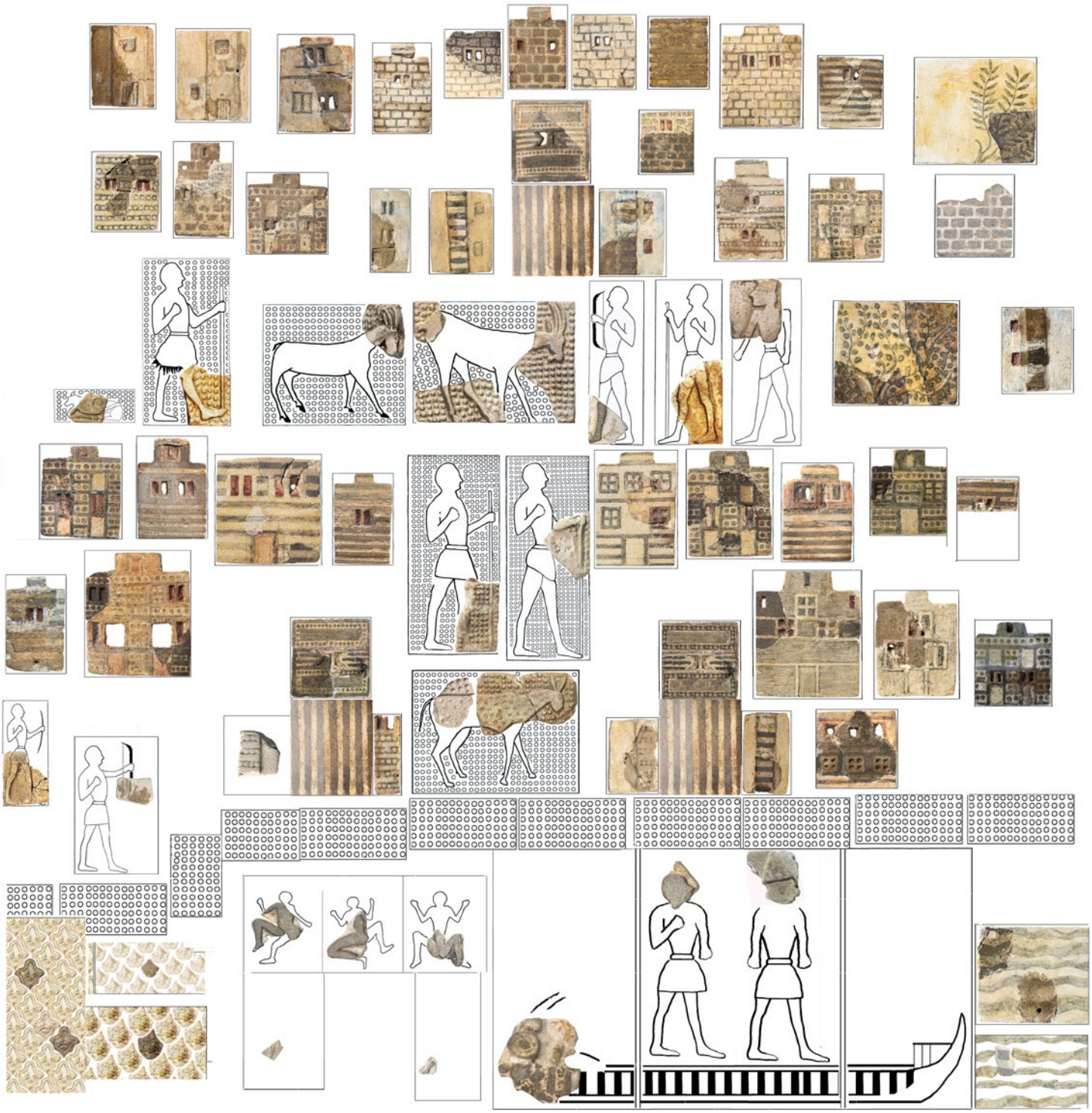


Figure 3. Reconstruction B of the Knossos Town Mosaic by the team studying the mosaic. Several uncertain details are restored in an alternative way. Photos © and courtesy Herakleion Archaeological Museum, Hellenic Ministry of Culture, Organization of Cultural Resources Development (HOCReD). Scale ca. 1:3.

not just a descriptive image. The violent conflict at the seacoast with armed men rushing to the defense of their homeland raises its artistic message above mere description.

Because the dramatic and violent portions of the scene contrast with the local images of wild animals in their natural habitat as well as peaceful herding and other activities, the result is a powerful story. The image would have been further enhanced by the addition of the flashes of light from the gold foil in the house windows whenever someone walked by with a lamp. This is truly a unique masterpiece.

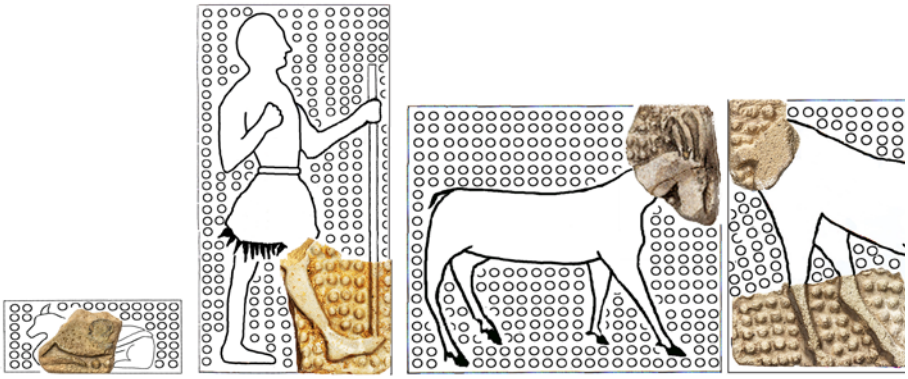


Figure 4. Restoration of tiles showing a herder, goats, and a dog. Length of largest fragment ca. 4 cm. Photos J. Vanderpool. Reconstructions S. Ferrence and P. Betancourt (dog) and P. Betancourt (herder and goats). Photos © and courtesy Herakleion Archaeological Museum, Hellenic Ministry of Culture, Organization of Cultural Resources Development (HOCReD).



Figure 5. Tile showing a drowning man. Photo J. Vanderpool. Restoration P. Betancourt. Photo © and courtesy Herakleion Archaeological Museum, Hellenic Ministry of Culture, Organization of Cultural Resources Development (HOCReD). Not to scale.

References

Bottema, S. 1980. "Palynological Investigations on Crete," *Review of Palaeobotany and Palynology* 31, pp. 193–217.

Bottema, S., and A. Sarpaki. 2003. "Environmental Change in Crete: A 9000-Year Record of Holocene Vegetation History and the Effect of the Santorini Eruption," *The Holocene* 13, pp. 733–749.

Doumas, C. 1992. *The Wall-Paintings of Thera*, Kapon Editions.

Evans, A.J. 1901–1902. "The Palace of Knossos: Provisional Report of the Excavations for the Year 1902," *BSA* 8, pp. 1–124.

———. 1921–1935. *The Palace of Knossos* I–IV, Macmillan and Co., Limited.

Koehl, R.B. 2006. *Aegean Bronze Age Rhyta* (*Prehistory Monographs* 19), INSTAP Academic Press.

Moody, J. 2000. "Holocene Climate Change in Crete: An Archaeologist's View," in *Landscape and Land Use in Postglacial Greece* (*Sheffield Studies in Aegean Archaeology* 3), P. Halstead and C. Frederick, eds., Sheffield Academic Press, pp. 52–61.

Morgan, L. 2020. *Keos* XI*: Wall Paintings and Social Context. The Northeast Bastion at Ayia Irini*, INSTAP Academic Press.

Palyvou, C. 2005. "Architecture in Aegean Bronze Age Art: Facades with No Interiors," in *Aegean Wall Painting: A Tribute to Mark Cameron* (*BSA* Studies 13), L. Morgan, ed., British School at Athens, pp. 185–197.

Panagiotaki, M. 2008. "The Technological Development of Aegean Vitrious Materials in the Bronze Age," in *Vitreous Materials in the Late Bronze Age Aegean* (*Sheffield Studies in Aegean Archaeology* 9), C.M. Jackson and E.C. Wager, eds., Oxbow Books, pp. 3–63.

PRESERVING THE PAST

CONSERVATION OF THE MINOAN ARCHITECTURE ON CHRYSSI ISLAND

Stephania Chlouveraki, Chrysa Sofianou, and Klio Zervaki

Introduction to the Excavations

Systematic surveys and excavations conducted on Chryssi Island (ca. 15 km off the southeastern coast of Crete) by the Ephorate of Antiquities of Lasithi from 2008 to 2025 have revealed that the island was exploited extensively for its natural resources since the Bronze Age, constituting an active extension of the sociopolitical and economic systems of the adjacent Cretan coast.

The most significant archaeological discoveries involve a Minoan settlement dedicated to the large-scale harvesting of murex shells and the subsequent production of purple dye. Beginning in



Figure 1. Aerial view of Building B.1 at Chryssi (north to left). Photo D. Faulmann.



Figure 2. View looking west at the characteristic rubble masonry in Building A.2 at Chryssi, 2025. Photo A. Geiton and L. Matzouneas.

the Middle Minoan (MM) II period, the site represents the earliest known industrial production of this highly prized commodity in the eastern Mediterranean (Brogan et al. 2025). Excavations have brought to light extensive architectural remains, notably Building B.1, which operated as a ground-floor workshop equipped with built hearths and benches (Fig. 1). Furthermore, Building Complexes A.2 and B.2 contained numerous rooms, open courtyards, built work benches, large basins, and stone tools, with B.2 also providing structural evidence of a second story (Fig. 2; Chalikias 2015; Brogan et al. 2019; Sofianou 2020).

Occupation on the island continued into historical times, evidenced by a Hellenistic defensive tower and Roman water reservoirs that saw continued use and repair through the Byzantine and Venetian periods (Chalikias 2013; Sofianou et al. 2026).

Post-Excavation Challenges and Environmental Context

The excavation of architectural remains creates an irreversible change in the site's environment, establishing a critical conservation challenge. Excavators and conservators share an ethical responsibility to stabilize these sites—in which buildings were built of stones, rubble, and earthen mortar—despite the logistical difficulties posed by remote locations and aggressive coastal conditions (Stanley-Price 1984).

Chryssi presents a harsh environment that threatens the survival of exposed stone-built remains. High-velocity winds induce severe mechanical erosion and aeolian abrasion, while extreme seasonal temperatures cause damaging thermal expansion and contraction cycles in ancient materials. Furthermore, climate-driven fluctuations in temperature and relative humidity accelerate the crystallization of soluble salts within porous stone and mortar matrices. Intensified, short-duration rainfall episodes occurring over the last decade as a result of global climate change create high-energy kinetic impacts and promote deep water infiltration, which fundamentally threatens the structural stability of the excavated architecture.

Multidisciplinary Methodology: Field Condition Survey and Architectural Documentation

To address these environmental challenges, a multidisciplinary team has been assembled to develop a conservation proposal, supported by the AEGEAS Nonprofit Civil Company. An extensive architectural documentation program conducted by D. Faulmann (INSTAP SCEC Publication Team illustrator) and architects D. Geiton and L. Matzouneas during the 2024 and 2025 field seasons recorded the current state of the ruins. This study provides critical scientific support by analyzing architectural features and systematically mapping the pathology of the exposed masonry.

A central methodological component involved generating high-resolution digital 3D photogrammetric models of the Minoan complexes and Roman cisterns, alongside a unified digital 3D site model created by Faulmann. This comprehensive spatial data accurately captures the precise location and relationship of the remains as well as the local topography and proximity to the coastline. These digital models are instrumental in designing effective strategies to manage rainwater and thus mitigate the destructive potential of rainfall.

Finally, pathology maps, combined with ongoing architectural survey drawings, establish an indispensable baseline. This analysis provides the necessary framework for the conservation team to design targeted compatible interventions.

Building Materials and Geological Terrain of Chryssi

To understand the original building materials, construction techniques, and behavior of the built structures under coastal environmental stress, a macroscopic field survey was conducted in September 2025 in close collaboration with K. Zervaki and the architects Geiton and Matzouneas. This survey mapped the architectural remains against the island's natural resources, demonstrating that the Minoan builders relied heavily on the immediate geological surroundings (Fig. 3).

The bedrock of Chryssi consists of a complex interplay of volcanic and sedimentary formations resulting from submarine volcanic activity, which was subsequently overlaid by marine deposits. The ancient structures incorporate field stones of all the local lithotypes including softer sedimentary rocks—such as sandstones, conglomerates, and distinct intertidal beachrocks—mixed with harder and more durable volcanic stones such as the characteristic green ophiolites, which are abundant on the island (Fig. 4).

The original structural integrity of the ancient rubble masonry relied on the use of local soil applied as an earth mortar within the joints. While it is highly likely that these walls were protected originally from the harsh coastal environment by a plaster finish, no substantial evidence of this survives today. Consequently, the earthen binder has largely washed away, leaving the structures fragile and structurally unstable.

Significant weathering features have been identified, including granular disintegration, alveolization, differential erosion, and fracturing (Vergès-Belmin 2008). Stone deterioration is increased by the intense marine environment, which accelerates the crystallization of soluble salts within the porous stone matrix. These vulnerable conditions necessitate a conservation strategy capable of addressing both material compatibility and the logistical challenges inherent to the island's remote location.

The Conservation Challenge: Recent Advances in Laboratory Research

To successfully address these preservation challenges, our proposal adopts a multidisciplinary framework. By integrating archaeological data with complementary analytical techniques and laboratory tests, the primary objective is to design restoration mortars that achieve physico-mechanical compatibility with the traditional building materials. Furthermore, the proposed interventions must remain resilient enough to withstand the continuous stress and degradation caused by the island's harsh coastal environmental conditions.

A crucial principle of modern architectural conservation, aligning with principles of ethical stewardship, is the reutilization and

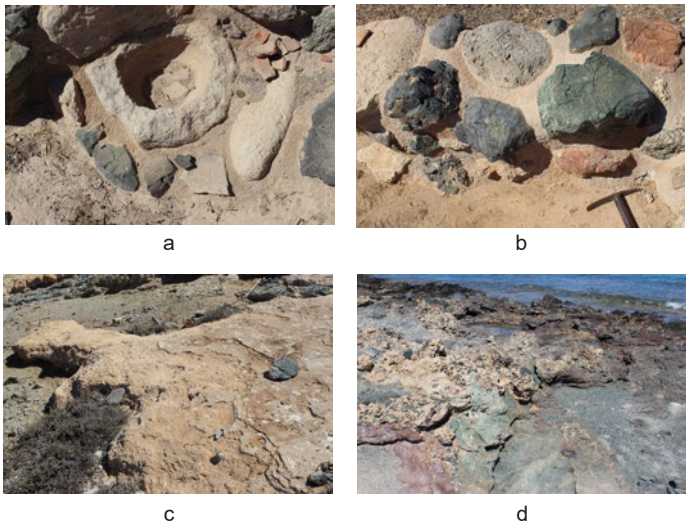


Figure 3. Characteristic building materials of the Minoan settlement (a, b) and the corresponding rock formations along the coast (c, d). Photos D. Geiton, L. Matzouneas, and S. Chlouveraki.



Figure 4. Igneous and sedimentary rocks incorporated into the rubble masonry of the Minoan settlement. Photos D. Geiton, L. Matzouneas, and S. Chlouveraki.

recycling of local materials, an approach initially introduced in East Crete by E. Toumbakari and successfully applied thereafter at several archaeological sites in this region (Toumbakari, Ntziouni, and Kasselouri-Rigopoulou 2010). In March 2026, a specialized study of the local soil was initiated at the Architectural Conservation Laboratory (ACL), Department of Conservation of Antiquities and Works of Art, University of West Attica, in collaboration with K. Chavaki. Soil samples recovered directly from the excavation debris on Chryssi were evaluated to determine their suitability as a substantial part of our new repointing mortars.

Macroscopic and Granulometric Characterization

Initial characterization of the soil and a supplementary quarry sand was conducted utilizing stereo-microscopy and granulometry. The quality, workability, and ultimate strength of a restoration mortar heavily depend on the geometry and grain size distribution of its aggregate framework.

Dry sieve analysis of the quarry sand characterized this material as a coarse sand with 99.5% passing through a 4 mm sieve and 96.2% retained above 63 μm. The bulk of the material (54.1%) is concentrated in the 1–2 mm range. Macroscopically, these grains are highly angular with rough surfaces, typical of mechanical crushing, providing an exceptionally stable mechanical skeleton for the mortar.

Following the removal of large stone fragments over 4 mm in size, the local soil from excavation debris was characterized as a fine sand. The soil exhibits a heavy shift toward finer classes, with 66.6% of its mass concentrated between 125 and 500 μm, and a significant 10.3% retained in the pan as ultra-fine dust (<63 μm). Macroscopically, the grains show signs of natural weathering, appearing semi-rounded to rounded with smoother surfaces.

While the local soil lacks the coarse skeleton to be used autonomously, mixing it with the angular quarry sand creates an optimum mix of aggregates. The fine soil grains effectively fill the voids left by the larger sand particles, maximizing density, reducing free porosity, and preventing shrinkage cracks during setting.

Mixture Preparation and Experimental Compositions

Utilizing this optimally graded aggregate combination, experimental mortar specimens were prepared. The formulations relied on local soil to provide necessary cohesion, workability, and historical compatibility, while quarry sand provided the structural skeleton of the mortar.

Initially, two experimental mortar specimens were prepared in accordance with the British Standard for testing cement strength (BS EN 196-1:1995) (Table 1). To ensure optimal workability, the correct water content was determined using the flow table test method as specified in standard BS EN 12350-5:2000. The specimens were cured in a climate chamber at 21°C with relative humidity of 85% for seven days, followed by exposure to the ambient laboratory environment for an additional three weeks.

Components	Composition 1	Composition 2	Composition 3
Quarry sand (0–4 mm)	50%	50%	50%
Chryssi soil (0–4 mm)	38%	40%	36%
White Portland cement	12%	10%	7%
Natural hydraulic lime 3.5	0%	0%	7%

Table 1. Compositional synthesis of experimental mortars (by dry weight).

Preliminary Mechanical Evaluation and Mixture Optimization

The physical and mechanical properties of the first two batches of specimens were measured at 28 days (with 90-day evaluations to take place). Composition 1 (12% cement) yielded a highly elevated compressive strength of 18.59 MPa but an exceptionally low flexural strength of 0.264 MPa. Composition 2 (10% cement) yielded a compressive strength of 11.7 MPa and a flexural strength of 0.7 MPa. While the compressive strengths are high, the disproportionately low flexural strengths indicate that these specific cement-stabilized mortars possess very low elasticity. In the context of archaeological conservation, low elasticity is highly detrimental. Historic masonry requires mortars with sufficient flexibility and vapor permeability to accommodate structural micro-movements and environmental thermal expansion without cracking.

Responding dynamically to these 28-day diagnostic results, the research team adjusted the formulation strategy to prioritize mechanical compatibility. Composition 3 was prepared, stabilizing the aggregates with a balanced combination of 7% natural hydraulic lime (NHL 3.5) and 7% white cement. This revised mixture is expected to yield lower, more appropriate compressive strength values while demonstrating slightly improved elasticity. These specimens are currently undergoing their scheduled curing process.

Conclusion

The conservation of the architectural remains on the island of Chryssi demands a meticulous, science-driven methodology that actively upholds the ethical principles of international heritage charters. By combining rigorous field documentation with advanced physical and mechanical laboratory analyses, we are moving steadily toward the optimal design of highly compatible, tailored conservation mortars that sustainably recycle the site's own building materials. Through this multidisciplinary synergy, we can effectively stabilize the vulnerable Minoan masonry, preserving the cultural heritage of Chryssi for future generations. The conservation study will expand eventually to include the Hellenistic and Byzantine remains on the island, which introduce new attributes due to the use of lime mortars often rich in crushed brick, calling for a different set of analyses and mortar design.

Acknowledgments

The multidisciplinary team conducting the conservation study was invited to participate by the director of excavations, Chrysa Sofianou, emerita director of the Ephorate of Antiquities of Lasithi, and Thomas Brogan, director of the INSTAP Study Center for East Crete. The conservation proposal is funded by the AEGEAS Nonprofit Civil Company. The authors gratefully acknowledge the support and collaborative spirit of all participants.

References

Brogan, T.M., D. Mylona, V. Apostolakou, P.P. Betancourt, and C. Sofianou. 2019. "A Bronze Age Fishing Village on Chryssi," in *Exploring a* Terra Incognita *on Crete: Recent Research on Bronze Age Habitation in the Southern Ierapetra Isthmus*, K. Chalikias and E. Oddo, eds., INSTAP Academic Press, pp. 97–109.

Brogan, T.M., D. Mylona, C. Sofianou, et al. 2025. "Bronze Age Purple Dye Production on Chryssi Island," in *PORPHYRA: The Materiality of Purple Dye Production and Use in Cyprus and the Aegean from Prehistory to the Late Roman Period* (*AEGIS* 30), D. Mylona, T.M. Brogan, M. Eaby, and M. Iacovou, eds., Presses universitaires de Louvain, pp. 21–40.

Chalikias, K. 2013. *Living on the Margin: Chryssi Island and the Settlement Patterns of the Ierapetra Area (Crete)* (*BAR-IS* 2549), BAR Publishing.

———. 2015. "Chryssi Island: New Evidence on the Bronze Age Settlement Patterns of the Ierapetra Area," in *Minoan Archaeology: Perspectives of the 21st Century. Proceedings of the International PhD and Post-Doc Conference at Heidelberg, 23–27 March 2011* (*AEGIS* 8), S. Cappel, U. Günkel-Maschek, and D. Panagiotopoulos, eds., Presses universitaires de Louvain, pp. 37–51.

Sofianou, C. 2020. "Neopalatial Building B.2 on Chryssi Island," *Kentro: The Newsletter of the INSTAP Study Center for East Crete* 23, pp. 3–5.

Sofianou, C., M. Eaby, K. Chalikias, T.M. Brogan, and V. Apostolakou. 2026. "Discontinuity on Chryssi Island from the Minoan to Hellenistic Period," *Πεπραγμένα ΙΓ΄ Διεθνούς Κρητολογικού Συνεδρίου* A, G. Moschovi, I. Lydaki, and K. Kopaka, eds., Society of Cretan Historical Studies and Hellenic Ministry of Culture, https://13-iccs.gr/assets/156_A1_SOFIANOU-EABY-CHALIKIAS-BROGAN-APOSTOLAKOU.pdf, accessed Oct. 13, 2026.

Stanley-Price, N. 1984. "Conservation on Excavations and the 1956 UNESCO Recommendation," in *Conservation on Archaeological Excavations: With Particular Reference to the Mediterranean Area*, N. Stanley-Price, ed., ICCROM, pp. 145–152.

Toumbakari, E., A. Ntziouni, and V. Kasselouri-Rigopoulou. 2010. "Cement-Stabilized Earth Mortars for Application in Archaeological Sites and Prehistoric Monuments," *2nd Historic Mortars Conference HMC2010 and RILEM TC 203-RHM Final Workshop, 22–24 September 2010, Prague, Czech Republic*, J. Válek, C. Groot, and J.J. Hughes, RILEM Publications SARL, pp. 1209–1217.

Vergès-Belmin, V. 2008. *ICOMOS-ISCS: Illustrated Glossary on Stone Deterioration Patterns* (*Monuments and Sites* XV), ICOMOS International Scientific Committee for Stone.

(Re)Studying a Legacy Assemblage
The Human Remains from Myrtos Pyrgos

Sotiria Kiorpe, Sevi Triantaphyllou, and Gerald Cadogan

Over the past three decades, the study of Minoan Crete has undergone significant development, driven by new research questions, advances in archaeological methodology, and the increasing application of scientific analytical techniques (Cappel, Günkel-Maschek, and Panagiotopoulos 2015; Haysom 2026). One such development has been the use of bioarchaeological approaches in the study of human skeletal remains. Through the integration of archaeological, osteological, and taphonomic evidence, researchers try to contextualize data ranging from funerary behavior, agency, and the role of the dead in the communities of the living (Crevecoeur, Schmitt, and Schoep 2015; Triantaphyllou 2016; Schmidt and Dederix 2021; Kiorpe 2023; Kiorpe and Triantaphyllou 2023) to major social shifts and their consequences (Nafplioti 2008) and evidence of interpersonal violence and sacrifice (McGeorge 2008, 2015). It is within this intellectual and methodological milieu that the osteological material from Myrtos Pyrgos is being reexamined. Our primary goal is to produce an up-to-date publication that will follow modern standards and will facilitate future research and broader regional syntheses.

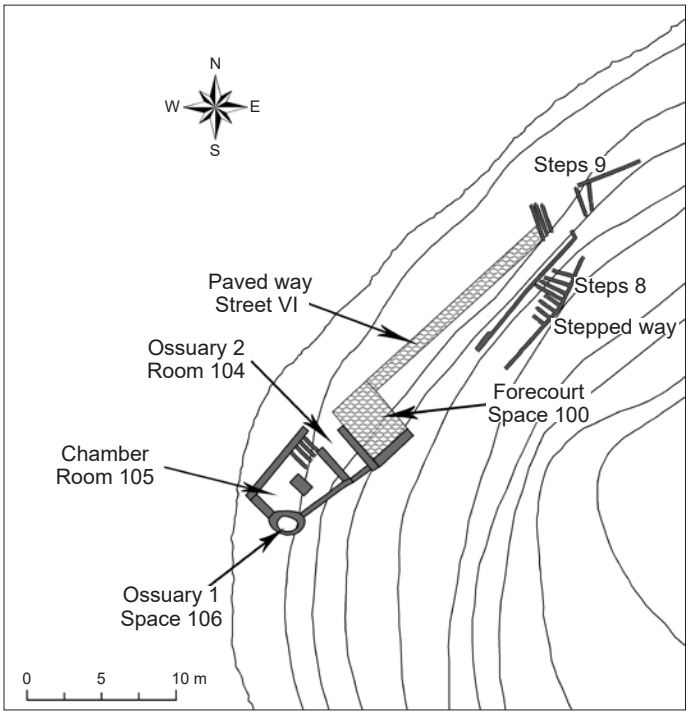


Figure 1. Plan of the tomb at Myrtos Pyrgos. Image P. Hacigüzeller and D. Smyth.

The Myrtos Pyrgos tomb (Fig. 1) was excavated during the 1971–1973 seasons by the British School at Athens under the direction of Gerald Cadogan (2011). The tomb consists of a main chamber flanked by two ossuaries: an ovoid space to the southwest (Ossuary 1) and a rectangular room to the east (Ossuary 2). This mortuary complex was built near the settlement and was used continuously from the late Prepalatial (EM III–MM IA) until the Neopalatial period (MM III–LM I). Commingled human skeletal remains have been found in the ossuaries, while both intact and partially articulated skeletons have been excavated in the main chamber. Jonathan Musgrave studied the material in the 1970s and again in the early 2000s. In accordance with his era, he focused primarily on cranial remains and on the 10 primary burials excavated in the main chamber (Musgrave 2015). In addition, Argyro Nafplioti applied strontium isotopes to a limited number of samples from the assemblage with evidence for potential intra-island residential mobility (Nafplioti 2007, 2015).

A new study of the material was initiated in the fall of 2025, with partial funding from the Mediterranean Archaeological Trust, employing current approaches in bioarchaeology and funerary archaeology (Fig. 2). Through the contextual analysis of taphonomic, osteological, and archaeological evidence, the project aims to reconstruct burial practices and attitudes toward the dead during the Protopalatial and Neopalatial periods. The study considers several aspects, including the demographic composition



Figure 2. Sotiria Kiorpe, Gerald Cadogan, and Sevi Triantaphyllou (left to right) with some of the human remains from the tomb of Myrtos Pyrgos during their study season at INSTAP SCEC, spring 2026. Photo K. Hall.

of the population interred within the mortuary complex, the preservation and taphonomic factors affecting post-burial deposition, and pathological lesions and activity-related skeletal markers observed in the remains. This project represents the first comprehensive analysis of the osteological assemblage derived from all the mortuary contexts. To date, more than 3,000 diagnostic bone fragments recovered from the ossuaries have been recorded, and the study of the skeletons from the main chamber is still ongoing. Despite being at a preliminary stage, this new study has already produced the following key findings.

Demography

The presence of adult individuals of both sexes and various age groups, as well as non-adult individuals, was documented in both ossuary contexts, although at very low rates. Regarding the minimum number of individuals deposited (MNI), Ossuary 1 clearly surpasses its counterpart with 42 individuals versus 14 people in Ossuary 2 (Tables 1, 2).

Preservation and Taphonomy

The preservation of the material was assessed as relatively good with bone completeness ranging from fragmentary to partial. A limited number of taphonomic alterations was observed on the bone surfaces (e.g., root marks, discoloration), and a considerable number of epiphyses, as well as articulated teeth, were preserved in the assemblage. Elements from all anatomical groups, including both the appendicular and cranial skeleton, were identified in both ossuaries, suggesting that the selection of human remains was random and not guided by specific patterns or cultural beliefs. Not all anatomical groups are equally represented, however. An initial examination of the bone representation index (BRI) indicates an overall underrepresentation of skeletal elements relative

Ossuary 1	Male	Female	Indeterminate	Total
Neonate, birth–1 year	0	0	2	2
Infant, 1–5 years	0	0	2	2
Child, 6–12 years	0	0	1	1
Adolescent, 12–18 years	0	0	1	1
Young adult, 20–35 years	4	2	0	6
Middle adult, 35–50 years	4	1	1	6
Middle or old adult	0	1	1	2
Old adult, 50+ years	0	0	2	2
Adult, >18 years	6	8	6	20
Total	14	12	16	42

Table 1. Demography of Ossuary 1.

Ossuary 2	Male	Female	Indeterminate	Total
Neonate, birth–1 year	0	0	1	1
Infant, 1–5 years	0	0	2	2
Child, 6–12 years	0	0	0	0
Adolescent, 12–18 years	0	0	0	0
Young adult, 20–35 years	0	1	2	3
Middle adult, 35–50 years	1	1	0	2
Middle or old adult	2	0	0	2
Old adult, 50+ years	0	0	1	1
Adult, >18 years	0	3	0	3
Total	3	5	6	14

Table 2. Demography of Ossuary 2.

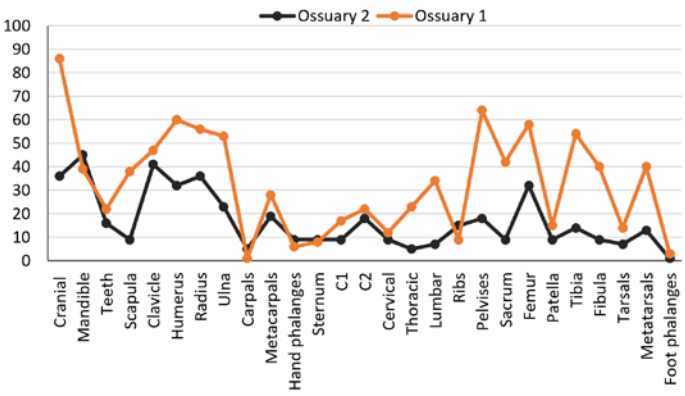


Figure 3. Bone representation index as percentage, adults only.

to the minimum number of individuals in both contexts (Tables 1, 2; Fig. 3). Cranial bones and most long bones show higher representation, whereas teeth, scapulae, the sternum, thoracic elements, and the small bones of the hands and feet are poorly represented. Similarly, non-adult remains are significantly underrepresented. Juveniles are primarily represented by isolated long bone shafts, cranial fragments, teeth, mandibular fragments, and, in a limited number of cases, unfused vertebral and rib elements and foot bones. Only one infant from Ossuary 2 is relatively well represented, with several elements of both the cranial and appendicular skeleton preserved (Fig. 4). The frequent occurrence of the hyoid bone or of the first cervical vertebra attached to skulls suggests that the manipulation of the deceased occurred relatively soon after death before the decomposition of soft tissues was complete. Furthermore, the preservation of epiphyses, pelvises, and other fragile elements may indicate that the remains were not subjected to multiple episodes of disturbance or manipulation by the living. As the analysis of both the material and its archaeological context is still at a preliminary stage, however, no firm conclusions can yet be drawn regarding the formation processes, the stages, or the timing of bone clearances resulting either from a single event or multiple episodes.

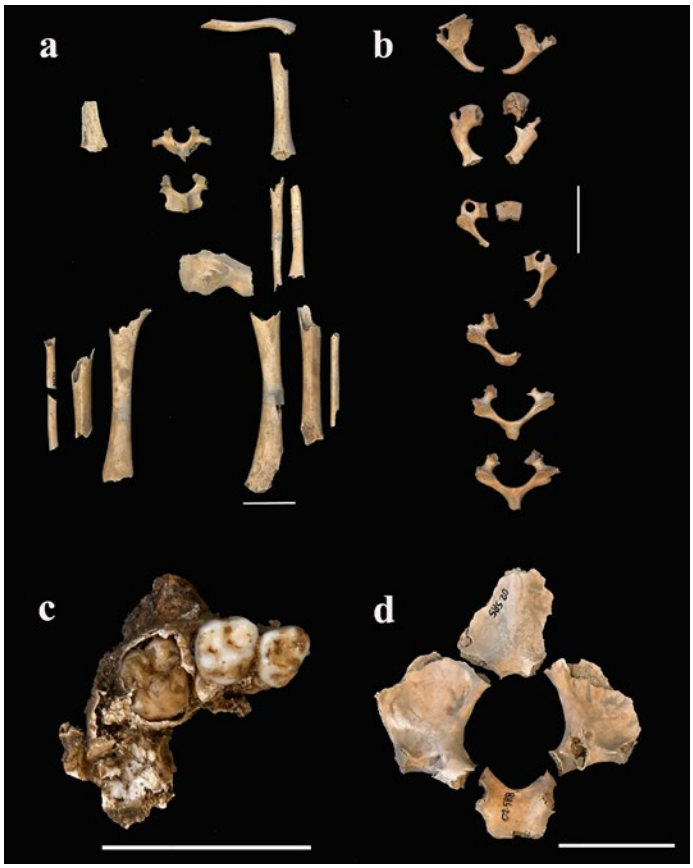


Figure 4. Ossuary 2, postcranial and cranial remains attributed to an infant of approximately 2.5–3 years old: (a) postcranial elements excavated in groups AC and AG; (b) cervical and thoracic vertebrae, group AF; (c) part of the right maxilla with two deciduous molars and an unerupted and developing permanent first molar, group AF; (d) unfused occipital fragments, endocranial view, group AF. Each white scale line is 3 cm. Photos S. Kiorpe.

Pathologies and Activities

Overall, the inhabitants of Myrtos Pyrgos appear to have enjoyed relatively good living standards, as evidenced by the high

proportion of individuals who reached middle adulthood. Nevertheless, a wide range of pathological conditions has been identified in the studied assemblage. These include indicators of physiological stress—such as cribra orbitalia, porotic hyperostosis, enamel hypoplasia, and periosteal new bone formation—as well as traumatic injuries (fractures of long bones and hand bones and thoracic and cranial trauma). Degenerative conditions are also well represented, including osteoarthritis and spinal pathologies such as diffuse idiopathic skeletal hyperostosis (DISH) and Schmorl's nodes. Dental diseases are common, and they include caries, calculus, dental abscess, and antemortem tooth loss. Furthermore, the study of mechanical stress markers shows high levels of physical demands for the population under study (Fig. 5).

More than 50 years after its excavation, the Myrtos Pyrgos tomb continues to yield new information about life and death in Minoan Crete. The ongoing study of its human remains is providing fresh insights into burial practices, demography, health, and the treatment of the dead, particularly during the Neopalatial period, for which evidence remains relatively scarce. Future analytical work will help refine our understanding of diet, mobility, and social differentiation within the community.

Acknowledgments

The authors wish to extend their gratitude to the INSTAP Study Center for East Crete and especially Kathy Hall for assistance during the entire year of study.

References

Cadogan, G. 2011. "A Power House of the Dead: The Functions and Long Life of the Tomb at Myrtos-Pyrgos," in *Prehistoric Crete: Regional and Diachronic Studies on Mortuary Systems*, J.M.A. Murphy, ed., INSTAP Academic Press, pp. 103–117.

Cappel, S., U. Günkel-Maschek, and D. Panagiotopoulos, eds. 2015. *Minoan Archaeology: Perspectives for the 21st Century. Proceedings of the International PhD and Post-Doc Conference at Heidelberg, 23–27 March 2011* (*AEGIS* 8), Presses universitaires de Louvain.

Crevecoeur, I., A. Schmitt, and I. Schoep. 2015. "An Archaeothanatological Approach to the Study of Minoan Funerary Practices: Case-Studies from the Early and Middle Minoan Cemetery at Sissi, Crete," *JFA* 40, pp. 283–299.

Haysom, M. 2026. "Minoan Studies," *CR* 76, pp. 1–6.

Kiorpe, S. 2023. "Mortuary Practices in Eastern Crete in the 3rd and Early 2nd Millennia BC: A Bioarchaeological Analysis of the Human Skeletal Remains from the Kephala Petras Cemetery at Siteia," Ph.D. diss., Aristotle University of Thessaloniki.

Kiorpe, S., and S. Triantaphyllou. 2023. "From Excavating Bones to Reconstruct Funerary Practices: Contextualizing Skeletal Evidence for the Post-Funerary Treatment of the Dead at the Pre- and Protopalatial Petras Cemetery (2900–1700 BCE), Siteia, Crete," *JAS: Reports* 48, 103896. https://doi.org/10.1016/j.jasrep.2023.103896, accessed October 12, 2026.



Figure 5. Selection of skeletal pathological lesions: (a) thoracic vertebra (O2.177) with arthritic lesions (porosity and contour change) at the superior apophyseal joints; (b) Schmorl's node on the inferior endplate of lumbar vertebra (O2.179); (c) right humerus (GII.02) with rugose and developed crest at the musculus pectoralis major insertion site; (d) right rib (O2.138) with misaligned callus after fracture at the area of the tubercle (articular facet); (e) degenerative changes (expansion of contour, flattened and remodeled arthritic surface) at the left mandibular fossa indicative of arthritis of the temporomandibular joint (O2.528). Each white scale line is 3 cm. Photos S. Kiorpe.

McGeorge, P.J.P. 2008. "The Human Remains," in "Excavations in the Hagios Charalambos Cave: A Preliminary Report," by P.P. Betancourt, C. Davaras, and E. Stravopodi, *Hesperia* 77, pp. 578–594

———. 2015. "The Earliest Archaeological Evidence for a Mycenaean Greek Ritual Form of Human Sacrifice," *Pasiphae* 9, pp. 43–52.

Musgrave, J.H. 2015. "Myrtos-Pyrgos: A Snapshot of Dental and Skeletal Health in Bronze Age Crete," in *The Great Islands: Studies of Crete and Cyprus Presented to Gerald Cadogan*, C.F. Macdonald, E. Hatzaki, and S. Andreou, eds., Kapon Editions, pp. 82–89.

Nafplioti, A. 2007. "Population Bio-Cultural History in the South Aegean During the Bronze Age," Ph.D. diss., University of Southampton.

———. 2008. "'Mycenaean' Political Domination of Knossos Following the Late Minoan IB Destructions on Crete: Negative Evidence from Strontium Isotope Ratio Analysis ($^{87}Sr/^{86}Sr$)," *JAS* 35, pp. 2307–2317, https://www.sciencedirect.com/science/article/abs/pii/S0305440308000484, accessed October 13, 2026.

———. 2015. "Evidence for Residential Mobility at Myrtos-Pyrgos?" in *The Great Islands: Studies of Crete and Cyprus Presented to Gerald Cadogan*, C.F. Macdonald, E. Hatzaki, and S. Andreou, eds., Kapon Editions, pp. 90–93.

Schmitt, A., and S. Déderix. 2021. "Too Many Secondary Burials in Minoan Crete?" *JAnthArch* 64, 101354, https://doi.org/10.1016/j.jaa.2021.101354, accessed October 13, 2026.

Triantaphyllou, S. 2016. "Staging the Manipulation of the Dead in Pre- and Protopalatial Crete, Greece (3rd–Early 2nd Mill. BCE): From Body Wholes to Fragmented Body Parts," *JAS: Reports* 10, pp. 769–779, https://www.sciencedirect.com/science/article/abs/pii/S2352409X16302450, accessed October 13, 2026.

East Cretan Peak Sanctuaries Project
Petsophas Pottery Study, April 2026

Alan Peatfield, Rachel Dewan, Carl Knappett, Christine Morris, and Mnemosyne Rice

Introduction

Alan Peatfield and Christine Morris

When Costis Davaras invited us to undertake the study and publication of the material from his East Cretan peak sanctuaries excavations, carried out in the early 1970s, he was very keen that the work should be conducted in collaboration with the INSTAP Study Center for East Crete (SCEC). This was a recognition of the long and productive relationship that he had with American colleagues. I am pleased therefore to describe here progress in that collaboration as we continue with the East Cretan Peak Sanctuaries Project (ECPSP). As we move forward with the ongoing study made possible by the permission and support of the Ephorate of Antiquities of Lasithi, we have discussed the preparation of book-length manuscripts for submission to INSTAP Academic Press. We are currently preparing a volume on the pottery from Davaras's excavations at Petsophas, thus adding to the body of scholarship about the site from the earlier British excavations (Myres 1902–1903; Rutkowski 1991).

The study team over our two seasons in October 2025 and April 2026 comprised Alan Peatfield, Christine Morris, Rachel Dewan (who was in continual contact with Carl Knappett), and Mnemosyne Rice, with practical assistance from Mike Armato.

The focus of our recent work at the Study Center has been the pottery from Davaras's Petsophas excavations in 1971 (the first excavations at the site after John Myres's work in 1903): a total of 25 crates. After washing and cleaning the pottery, it had been stored in a museum storeroom, but separately from the figurines and small finds. While the project has had ongoing access to the figurines, access to the pottery was restricted, partly because of the difficulties of space for strewing that amount of material. In 2024 Chrysa Sofianou, then director of the local ephoreia, suggested that we ask Tom Brogan, director of the Study Center, if we could strew the material there. He agreed, and in October 2025 and April 2026 we were able to undertake two study seasons.

Pottery is the least understood of peak sanctuary material. We were able to develop some methodologies with the Atsipades Korakias pottery (Peatfield 1994); this will be an opportunity to test them further. We invited Knappett and Dewan to collaborate on the study of the Petsophas pottery. There is an obvious relationship between the peak sanctuary pottery and that of Palaikastro as the closest major settlement. Their expert knowledge of the Palaikastro ceramics allows some important questions to be addressed relevant to the material and the broader history and social relations of Petsophas.

Among the key research questions are:

1. What is the date range of the Petsophas pottery? The standard date understood for the peak sanctuary is Protopalatial (to judge from the Kamares polychrome painted figurines) and into early Neopalatial, as inferred from some figurines and non-ceramic finds, including metals and stone libation tables (of which there are more than 30). Study of the pottery will establish a firmer chronology.
2. What is the range of ceramic shapes from Petsophas? What do they suggest about the ritual activities on the site, beyond the well-known phenomenon of the offering of large quantities of clay figurines? How does this compare with the pottery from other peak sanctuaries?

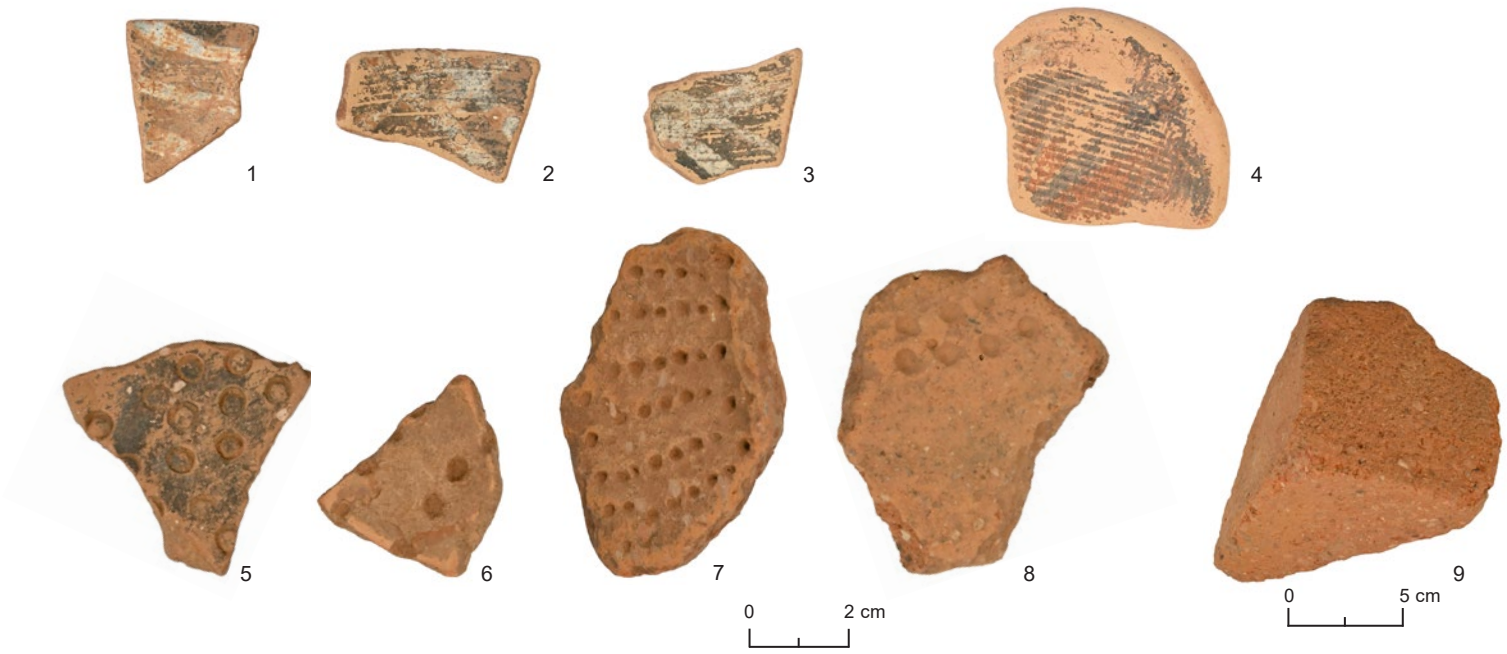


Figure 1. Pottery from Petsophas: (1–3) white-on-dark sherds with pendant festoons; (4) base of a MM IIB white-on-dark cup; (5–8) fragments of tripod flaring bowls; (9) corner of offering stand. Photos R. Dewan.

3. What is the relationship between the ceramic fabrics of the figurines and that of the pottery? As early as 1903 Myres made significant observations about different fabrics. Close to 120 years of excavation at Palaikastro enables a systematic study.

Study Report 2026

Rachel Dewan, Carl Knappett, and Mnemosyne Rice

A legacy project of this kind comes with unique challenges, and the greatest of these for the Petsophas material was the lack of stratigraphical information and excavation notes and labels to help reconstruct findspots or layers. To begin the study process, the ceramic material was strewn and sorted in order to understand the types of objects present in the assemblage, the quantities of various items, and the overall condition of the corpus. We briefly note here that interspersed within the crates of pottery were fragments of figurines, mainly depicting animals (especially bovids), and some ceramic models. Perhaps the most exciting of these was a clay human foot wearing a sandal, which at 7 cm long would have belonged to a relatively large male figurine. This piece is now under more detailed study.

In April, we studied more than 20,000 individual sherds over the course of three weeks. To make sense of the vast number of objects, we chose to strew all ceramic sherds, then selected representative pieces for cataloging. In order to gather as much data as possible in the absence of stratigraphy, we counted and weighed all material, from the largest pithos fragment to the tiniest non-diagnostic sherd.

The majority of the pottery is datable to Middle Minoan (MM) II, though some pieces can be attributed to MM I and MM III, and a few are as late as Late Minoan I. The corpus includes a variety of shapes including cups, tumblers, bridge-spouted jars, tripod cooking pots, pithoi, baking trays and stands, and miniature vessels, among others, as well as some fine examples of white-on-dark pottery characteristic of the Protopalatial period (Fig. 1:1–3). Among these is a MM IIB cup base with floral decoration on the exterior (Fig. 1:4). We have a very limited amount of polychrome pottery, provisionally dated to MM I. Pending confirmation through petrographic analysis (kindly performed by Eleni Nodarou), the majority of the pottery appears to be made of local Palaikastro fabrics.

Some recognizably East Cretan forms were also present in the assemblage, including fragments of a vessel known as a "tripod flaring bowl." The interiors of these wide dishes contain small circular impressions. Their exact functions are unknown, but they are a common feature of ceramic deposits in East Crete (Fig. 1:5–8).

Larger tripod vessels were also present in the form of numerous tripod legs; 1,122 individual pieces weighing 50.8 kg are an intriguing aspect of the Petsophas assemblage given the lack of evidence for cooking at peak sanctuaries. Another unusual find is a thick corner fragment of what may have been a ceramic stand with circular fenestrations (Fig. 1:9).

As our work continues on the Petsophas pottery, we hope that it will contribute to the growing scholarship on Minoan peak sanctuaries and expand our understanding of the rituals and activities conducted at this fascinating site.

Acknowledgments

We would like to extend our great appreciation to the INSTAP Study Center for East Crete and its staff for hosting us throughout this pottery study, especially Tom Brogan and Eleanor Huffman. We warmly acknowledge the Archaeological Museum of Hagios Nikolaos for storing the material, the Ephorate of Antiquities of Lasithi for granting study permits, and the assistance of colleagues Chrysa Sofianou, Vaso Zographaki, and Klio Zervaki. We thank the Irish Institute of Hellenic Studies at Athens, especially assistant directors Jenny Tsafou and Marilena Pateraki, for administrative support with permit applications.

References

Myres, J.L. 1902–1903. "The Sanctuary-Site of Petsofa," in "Excavations at Palaikastro, II," by R.C. Bosanquet, R.M. Dawkins, M.N. Tod, W.L. Duckworth, and J.L. Myres, *BSA* 9, pp. 356–387.

Peatfield, A. 1994. "The Atsipadhes Korakias Peak Sanctuary Project," *Classics Ireland* 1, pp. 90–95.

Rutkowski, B. 1991. *Petsophas: A Cretan Peak Sanctuary* (*Studies and Monographs in Mediterranean Archaeology and Civilization* I.1), Art and Archaeology.

Work by Study Center Labs

Aegean Odyssey: 2026 Summer Work Projects

Lily A. Bonga

Over a period of three and a half months (late April through July) my work trips ranged both geographically around the Aegean region and chronologically through the different artifacts drawn and studied. Yet, surprisingly, all the projects and trips were related to one another.

Beginning in late April until mid-May, I worked with Susan Ferrence (INSTAP Academic Press) on several aspects of the Neolithic excavation in the Pelekita Cave to prepare for publication, including finalizing different plans and sections. In the evenings, I drew Byzantine vessels and kiln fragments from Loutres near Mochlos for Natalia Poulou (University of Thessaloniki).

In May, I began my summer travel season, which utilized three different ports in Attica (Piraeus, Rafina, and Laurion), with stops in Athens to complete the required in-person steps in residence permit renewal. Between "island hopping" I was fortunate to see old friends and colleagues at the 21st International Aegean Conference "NESTOR: Celebrating the Work of Wise Jack Davis," including lectures with some of the illustrations that I had just made.

My first stop was the island of Kea (Tzia) in mid-May through the beginning of June. For over a decade now, I have been assisting Natalie Abell (University of Michigan) with her different research projects at the Bronze Age site of Hagia Eirene in her capacity as the site director of record. This year I continued to draw either in the storeroom in Korissia or in the archaeological museum in Ioulia the metallurgically related artifacts (a project begun by the late Myrto Georgakopoulou), which included crucibles, pipes, pieces and tools of different metals, and both sherds and vases with mend holes and lead or copper clamps (some still preserved; Fig. 1). I drew around 300 objects, nearly all requiring multiple views. Around the corner from the storeroom in the



Figure 1. Illustrating sherds with mend holes in the Korissia storeroom. Photo N. Abell.

port, there was a car with similar repair holes and plastic zip ties (Fig. 2). Same concept, different eras and materials.

Looking northward across the sea from Korissia was Karystos, Euboea, and my next destination, the Gourimadi Archaeological Project (GAP). Directed by Žarko Tankosić (University of Bergen) and co-directed by Fanis Mavridis (Ephorate for Paleoanthropology and Speleology, Southern Greece) and Paschalis Zafeiriadis (Norwegian Institute at Athens), they have been excavating a Late Neolithic (LN) and Early Bronze Age (EBA) site (Fig. 3).

Gourimadi means "Big Rock" in the local Arvanitic language. The site lies on the outskirts of the Katsaronio plain on a hill now dotted with modern wind turbines. The prehistoric habitation extended over the hill, which has excellent defensive properties and a key position in the local landscape, with unobstructed views of both the surrounding plains as well as across the southern Aegean Sea to the neighboring regions of eastern Attica and the northern Cyclades, including Kea. I was looking directly across the water to the island from which I had just come, which caused me to contemplate prehistoric populations that made the same journey.

I contributed my Neolithic ceramic expertise (my doctoral dissertation was "Late Neolithic Pottery from Mainland Greece, ca. 5,300–4,300 B.C.," Temple University, 2013) by helping Mavridis with the drawings, dating, and catalog entries of the LN Ib–IIa and occasional EBA sherds, progressing almost halfway through the material of the previous eight years of excavation. The radiocarbon dates, peculiar round architecture, abundance of obsidian from Melos, and different ceramic types suggest that Gourimadi will be one of the most important Neolithic sites in Greece for understanding the later period of the Neolithic (after 4800 B.C.), particularly in the Cyclades.

My third summer project took me to the island of Patmos for a new three-year *synergasia* led by Eleni Farmakidou for the Ephorate of Antiquities of the Dodecanese and Alex Knodell, Anne McCabe, and Bruce Hartzler for the American School of Classical Studies at Athens. Known as The Landscapes of Patmos Project, fieldwork this year focused on the northern part of the island. I drew the newly collected survey pottery, which dated to multiple periods.



Figure 2. Car parked around the corner from the Korissia storeroom, with repair holes and fragment of a zip tie. Photo L. Bonga.

As I have also done over the past three years for the Small Cycladic Islands Project (SCIP; also led by Knodell), the illustrations were made according to the project conventions (profiles drawn on the left on A4-sized velum). I was also able to help the team with a few days of fieldwalking, and I thoroughly enjoyed documenting and experiencing the landscape firsthand (Fig. 4). The Monastery of St. John the Theologian, visible from every part of the island, brought me back to the period where I began the summer.

Acknowledgment

Many thanks to the project directors for approving the use of the included photos.



Figure 3. Excavation of Gourimadi on Euboea with Kea on the distant horizon at left. Photo L. Bonga.



Figure 4. All female field-walking team on Patmos, from left to right: Yusi Liu, Vivienne Colbert (foreground), Ilektra Irakleidi (background), Michaela Jellsy, and Allison Grenda. Photo L. Bonga.

Photography of Anavlochos Artifacts

Jeff Vanderpool and Florence Gaignerot-Driessen

As part of the mission of the INSTAP Study Center for East Crete, technical support such as professional photography of sites and artifacts is offered to archaeological projects all around the Aegean region and also right in the center's back yard. Just a few kilometers west lies the massif of Anavlochos, which overlooks the village of Vrachasi, and it was mainly occupied during the Early Iron Age. Florence Gaignerot-Driessen has directed excavations at the site since 2017 under the auspices of the French School at Athens. These have revealed a large settlement and three cultic places: an Early Iron Age cult building with a bench; a Late Minoan IIIC cultic deposit of terracotta zoomorphic statuettes and figurines; and a second one that consisted of hundreds of terracotta female figurines dating from the Protogeometric to Classical periods (Gaignerot-Driessen 2018, 2025). In the necropolis, located at the foot of the settlement, a series of tumuli, which is unparalleled on Crete, was brought to light. These tumuli yielded intact burials containing cremated human remains and many ceramic, metal, and some ivory and faience objects (Gaignerot-Driessen 2025). Our photography project this summer focused on the reconstruction of an assemblage recovered from the central burial of one of the tumuli (Figs. 1–3).



Figure 1. Jeff Vanderpool and Florence Gaignerot-Driessen collaborated on the photography of pottery excavated from the necropolis of Anavlochos. Photo P. Saridaki.

References

Gaignerot-Driessen, F. 2018. "Ladies of Anavlochos: Six Centuries of Female Devotion on a Cretan Mountain," *Kentro: The Newsletter of the INSTAP Study Center for East Crete* 21, pp. 9–11.

———. 2025. "At the Dawn of the Cretan Cities: Recent Excavations at Anavlochos, Lasithi (2017–[2020]2022)," in *Αρχαιολογικές Συμβολές* Ε′: *Κρήτη*, I.D. Fappas and I.G. Lorentzaou, eds., Μουσείο Κυκλαδικής Τέχνης, pp. 89–114.



Figure 2. Jeff Vanderpool photographing ceramics excavated from the necropolis of Anavlochos. Photo F. Gaignerot-Driessen.



Figure 3. Florence Gaignerot-Driessen arranges artifacts excavated from the necropolis of Anavlochos. Photo J. Vanderpool.

Update from the Publication Team

Dimitra Mylona, faunal specialist of the INSTAP Publication Team, holds a sample for the faunal collection of the Study Center. Reference animal skeletons are crucial for zooarchaeological work, and this cattle skull will be used for the study of bucrania, serving as a reference for the reconstruction and conservation of crushed cattle skulls. Photo A. Stamatakis.



Fellows and Interns

A Fresh Look at Marine Style Pottery

Jacob M. Engstrom

Over a period of five weeks in October and November 2025, I was fortunate to hold the Richard Seager Fellowship at the INSTAP Study Center for East Crete. This fellowship supported my ongoing doctoral research and other work concerning aspects of pottery production and consumption in Neopalatial Crete. My project, "Marine Style: A Contextual Approach to Pottery Production, Distribution, Consumption, and Style in the Late Bronze Age Aegean," takes Late Minoan (LM) IB and Late Helladic (LH) IIA Marine Style pottery as a unit of study through which to analyze the production, distribution, and consumption of a pottery style throughout the 15th century B.C. Aegean. In addition to adopting a particular style as a unit for holistic analysis, my research investigates processes of stylistic change and adoption at interregional and transcultural scales. A deep contextual study of Marine Style pottery on Crete, which is currently in progress, forms the prerequisite to a comparative, interregional analysis of patterns in production, distribution, use, and deposition that will illustrate similarities and variations in practice related to a shared body of material culture across the Aegean.

The high quality of Marine Style pottery (Fig. 1), its elaborate marine life decoration, and visual and indexical links (Shapland



Figure 1. The Poros Ewer, an outstanding example of Marine Style pottery. © and courtesy Herakleion Archaeological Museum, Hellenic Ministry of Culture, Organization of Cultural Resources Development (HOCReD).

2022) to other media have led to its association with elite and/or palatial groups in Minoan society (e.g., Hood 2011, 172–173). Yet there has been little scholarship concerned with comparative study of use contexts, functional ranges, associated ceramic assemblages, and depositional patterns for this distinctive class of pottery within and between Cretan sites (Mountjoy 1985 being a partial exception). Beyond Crete, previous elemental analyses (Mountjoy, Jones, and Cherry 1978; Mountjoy and Ponting 2000) indicate production of Marine Style pottery on Kythera and the Greek mainland, which was consumed by communities in these areas, the Cyclades, and elsewhere in the Aegean (Fig. 2). Supplemental analyses using updated methodologies are needed, but these results raise important questions about the selective adoption and adaptation of material culture, styles, and associated behaviors through transcultural interactions within the 15th century B.C. Aegean. My doctoral project aims to address these issues by establishing an improved understanding of the nature and locales of Marine Style pottery production within and beyond Crete; identifying consumption patterns at intra-site, inter-site, and interregional scales; assessing stylistic and semiotic relationships between Marine Style pottery and other media; and investigating processes of Marine Style's stylistic development and ultimate death sometime after the end of LM IB (Hatzaki 2011).

The appearance of Marine Style pottery in LM IB—with its origin probably in the Knossos area—forms part of a significant shift in movable material culture and a newfound artistic investment in pottery production during the final Neopalatial period. This was a time when interaction networks and dynamics throughout the Aegean were shifting in the aftermath of the Theran eruption, and Crete was likely experiencing related sociocultural, economic, and perhaps political and environmental strain (e.g., Driessen and Macdonald 1997; Christakis 2008; Driessen 2019; Hatzaki 2020; cf. Warren 2012). It would seem paradoxical that a period of such instability should give rise to what Mervyn Popham (1967, 339) rightly called "an artistic achievement which is perhaps the greatest in Cretan pottery." These finely painted vases, which Philip Betancourt (1985, 140–148) has designated as the "Special Palatial Tradition" and Walter Müller (1997, 17) termed simply "Feine Keramik," were until recently considered representative of LM IB, but are in fact exceptional in LM IB deposits (papers in Brogan and Hallager, eds., 2011). As an idiom within this new

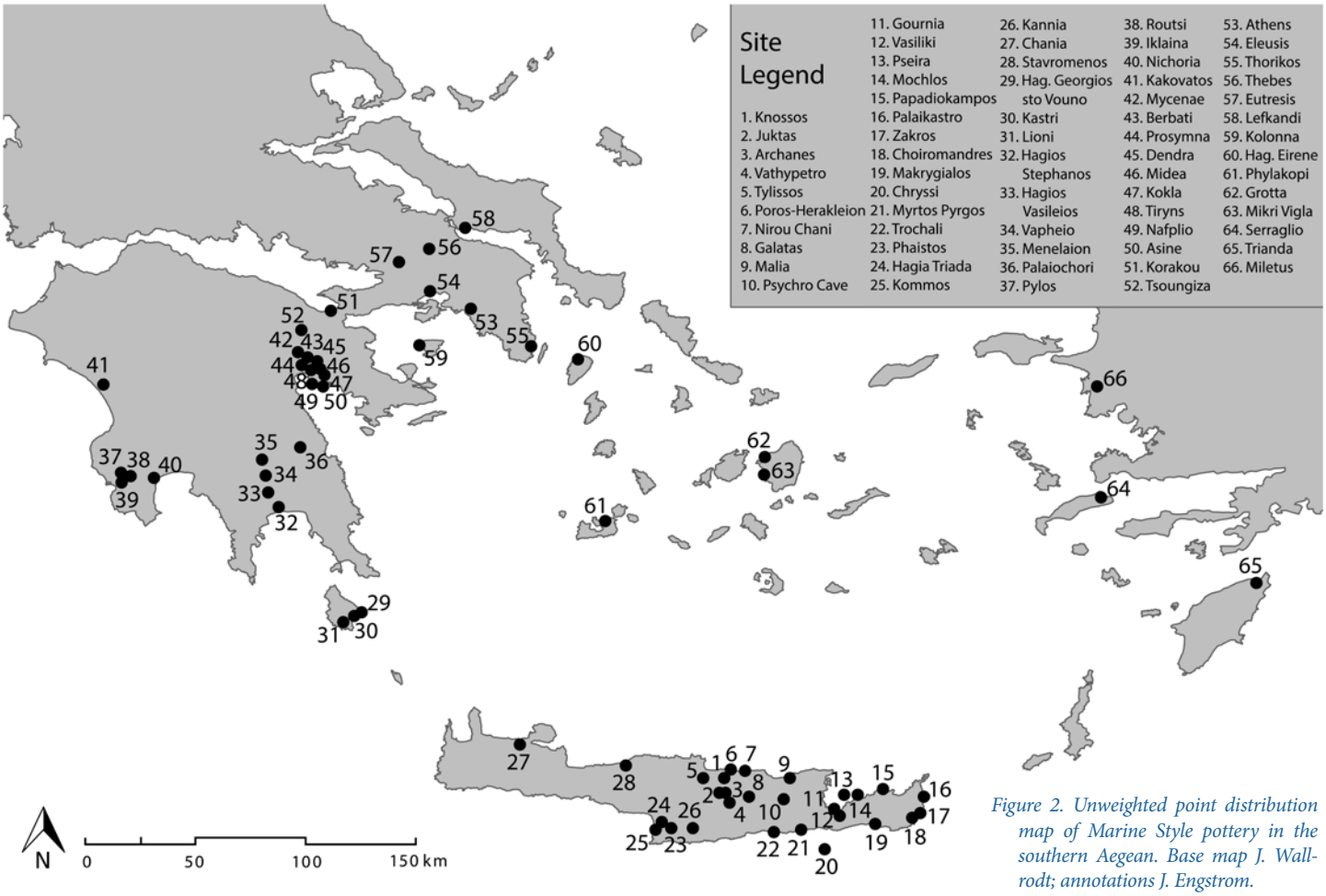


Figure 2. Unweighted point distribution map of Marine Style pottery in the southern Aegean. Base map J. Wallrodt; annotations J. Engstrom.

fine ceramic tradition of LM IB, Marine Style has been considered "perhaps the highest achievement of Minoan ceramic production of all periods" (Dimopoulou 1999, 222). The phenomenon of these vessels' production during this period, the subsequent stylization of marine and other motifs from LM II onward, and their patterns of distribution and consumption are therefore deserving of analysis from social and behavioral perspectives. Such analysis may afford insights into aspects of social display and consumption practices and their changes during the final Neopalatial period.

The elaborate decoration of this LM IB fine ware, particularly in the Marine and Floral Styles, is often associated with a sense of "mobility" and "naturalism" long considered characteristic of Minoan art. The evident visual appeal of this class of pottery to modern eyes has inspired a strong focus on stylistic analysis and the most concentrated efforts on the attribution of artifacts to particular artisans or workshops in the history of Aegean Bronze Age archaeology (e.g., Betancourt 1973; 1977a; 1977b; Mountjoy 1977; 1984, 168; Müller 1997). This focus on Marine Style pots as art objects unfortunately has had the unintended effect of limiting other kinds of analysis, including substantial study of contextual associations, consumption patterns, and depositional processes.

The resulting rich record of publications, illustrations, and corpora—especially by Penelope Mountjoy (1984) and Walter Müller (1997)— however, has laid solid foundations on which to build further studies and ask new questions. At the same time, advances in the theorization of social networks and transcultural interactions in archaeology and related advancements in understanding processes of Minoanization in the Aegean have put us in a much-improved position to approach this distinctive set of material culture as a pan-Aegean phenomenon situated within greatly varied local and regional contexts. We now have a much greater understanding of the roles local communities played in the selection and integration of Minoan material and visual culture, as well as the social construction of meaning in material culture through practice and semiotic ideology. The study of Marine Style pottery can both be integrated into our current understanding of these processes and contribute to the exploration of novel aspects through a focus on style and consumption behaviors.

While at the Study Center, I made significant progress in my research on this topic. I continued to develop my database through recording Marine Style pottery and associated contexts from Pseira, Mochlos, Papadiokampos, and Chryssi as well as completing a catalog of all known Marine Style pottery and associated contexts at Knossos and Palaikastro. I also refined aspects of the theoretical and methodological approaches informing my analysis and interpretation. Since my time at the Study Center, I have completed this cataloging work for all sites in the Aegean with published Marine Style pottery, thus forming the essential dataset for my multiscalar analysis of patterns in production, distribution, and consumption. In addition to this research, in October 2025, I completed the processing of sherd material from the Neopalatial chamber tomb (Poros Tomb 1999) at Poseidonos and Zakrou streets in the neighborhood of Poros in Herakleion for a ceramic fabric study undertaken together with Thomas Brogan and Eleni Nodarou as part of the publication project directed by Nota Dimopoulou focused on the Poros cemetery.

Acknowledgments

I am grateful to INSTAP for its support of my research and to all the staff and scholars at the Study Center for creating the friendly, scholarly environment that makes it such an excellent and productive place to work. I especially thank Thomas Brogan, Eleanor Huffman, Eleni Nodarou, and Elizabeth Shank for facilitating my research there and beyond. Many thanks as always are due to my advisor, Eleni Hatzaki, and the other members of my doctoral committee in Cincinnati: Jack Davis and Kathleen Lynch. The support of the Richard Seager Fellowship and the time it enabled me to spend in Pacheia Ammos remains invaluable.

References

Betancourt, P.P. 1973. "The Polyp Workshop: A Stylistic Group from LM IB," *AJA* 77, pp. 333–334.

———. 1977a. "Further Observations on the Marine Style," *AJA* 81, p. 561.

———. 1977b. "Marine-Life Pottery from the Aegean," *Archaeology* 30, pp. 38–43.

———. 1985. *The History of Minoan Pottery*, Princeton University Press.

Brogan, T.M., and E. Hallager, eds. 2011. *LM IB Pottery: Relative Chronology and Regional Differences. Acts of a Workshop Held at the Danish Institute at Athens in Collaboration with the INSTAP Study Center for East Crete, 27–29 June 2007* (*Monographs of the Danish Institute at Athens* 11), Aarhus University Press.

Christakis, K.S. 2008. *The Politics of Storage: Storage and Sociopolitical Complexity in Neopalatial Crete* (*Prehistory Monographs* 25), INSTAP Academic Press.

Dimopoulou, N. 1999. "The Marine Style Ewer from Poros," in *Meletemata: Studies in Aegean Archaeology Presented to Malcolm H. Wiener as He Enters His 65th Year* (*Aegaeum* 20), vol. I, P.P. Betancourt, V. Karageorghis, R. Laffineur, and W.-D. Niemeier, eds., Université de Liège, pp. 217–226.

Driessen, J. 2019. "The Santorini Eruption: An Archaeological Investigation of Its Distal Impacts on Minoan Crete," *Quaternary International* 499, pp. 195–204.

Driessen, J., and C.F. Macdonald. 1997. *The Troubled Island: Minoan Crete Before and After the Santorini Eruption* (*Aegaeum* 17), Université de Liège and University of Texas at Austin.

Hatzaki, E. 2011. "From LM IB Marine Style to LM II Marine Motifs: Stratigraphy, Chronology and the Social Context of a Ceramic Transformation. A Response to Maria Andreadaki-Vlazaki," in Brogan and Hallager, eds., 2011, pp. 75–87.

———. 2020. "The Turn of the Labyrinth: Cultural Transformations as Social Change in Late Bronze Age Crete," in *Oikos: Archaeological Approaches to House Societies in the Bronze Age Aegean* (*AEGIS* 19), M. Relaki and J. Driessen, eds., Presses universitaires de Louvain, pp. 225–235.

Hood, S. 2011. "Knossos Royal Road: North, LM IB Deposits," in Brogan and Hallager, eds., 2011, pp. 153–174.

Mountjoy, P.A. 1977. "Attributions in the LM IB Marine Style," *AJA* 81, pp. 557–560.

———. 1984. "The Marine Style Pottery of LM IB/LH IIA: Towards a Corpus," *BSA* 79, pp. 161–219.

———. 1985. "Ritual Associations for LM IB Marine Style Vases," in *L'Iconographie minoenne: Actes de la table ronde d'Athènes, 21–22 avril 1983* (*BCH* Suppl. 11), P. Darcque and J.-C. Poursat, eds., École française d'Athènes, pp. 231–242.

Mountjoy, P.A., R.E. Jones, and J.F. Cherry. 1978. "Provenance Studies of the LMIB/LHIIA Marine Style," *BSA* 73, pp. 143–171.

Mountjoy, P.A., and M.J. Ponting. 2000. "The Minoan Thalassocracy Reconsidered: Provenance Studies of LH II A/LM I B Pottery from Phylakopi, Ay. Irini and Athens," *BSA* 95, pp. 141–184.

Müller, W. 1997. *Kretische Tongefässe mit Meeresdekor: Entwicklung und Stellung innerhalb der Feinen Keramik von Spätminoisch I B auf Kreta* (*AF* 19), Gebruder Mann.

Popham, M.R. 1967. "Late Minoan Pottery, a Summary," *BSA* 62, pp. 337–351.

Shapland, A. 2022. *Human-Animal Relations in Bronze Age Crete: A History Through Objects*, Cambridge University Press.

Warren, P.M. 2012. "The Apogee of Minoan Civilization: The Final Neopalatial Period," in *Philistor: Studies in Honor of Costis Davaras* (*Prehistory Monographs* 36), E. Mantzourani and P.P. Betancourt, eds., INSTAP Academic Press, pp. 255–272.

Three Vessel Types Used for Cooking at Protopalatial Phaistos

Irene Sandei

This research was conducted thanks to the 2025 Harriet Boyd Hawes Fellowship, which enabled a one-month research stay at the INSTAP Study Center for East Crete.

The study is part of my broader doctoral project on the cooking wares of Middle Minoan IB–IIB from the Phaistos palace and residential quarters. It is a functional and diachronic approach, and it focuses on three cooking shapes attested at Protopalatial Phaistos: tripod cooking trays, cooking dishes, and basins. The main goal is to clarify their use and to define, as far as possible, the social contexts in which they operated.

The study adopts four complementary approaches: (1) morphological, (2) functional, (3) use-wear, and (4) contextual analysis. The first three aim to reconstruct vessel use, heat interaction, and cooking techniques, while contextual analysis examines archaeological contexts and associated assemblages. Together, these perspectives allow cooking wares to be understood as functional tools and as elements embedded in broader social practices, highlighting differences between palatial and residential traditions.

Morphology of the Open Vessels and Their Distribution at Phaistos

Protopalatial cooking wares at Phaistos are generally made of a semi-fine or semi-coarse red or buff fabric, with variations in inclusion size and density that allow for the distinctions among semi-fine, semi-coarse, and coarse fabrics. As noted by Doro Levi and Filippo Carinci (1988), these wares can be divided into closed and open forms. Closed vessels—such as tripod and flat-bottomed cooking pots, cooking jars, side-spouted jars, and stamnoid jars—are characterized by deeper bodies and narrower openings, making them suitable for wet cooking. Open vessels—tripod cooking trays, cooking dishes, and basins—feature wider, flatter surfaces and broader openings favoring dry-cooking techniques (Henrickson and McDonald 1983).

Tripod cooking trays are typically made from semi-fine reddish clay, sometimes with a slipped and burnished interior. They are characterized by three elongated legs, a wide circular plate with low



Figure 1. Tripod cooking tray (F1900) from the Phaistos palace (Room LXIV). Photos © Ephorate of Antiquities of Herakleion, Hellenic Ministry of Culture, Organization of Cultural Resources Development (HOCReD); courtesy Italian Archaeological School at Athens (SAIA) Archive. Photos I. Sandei.

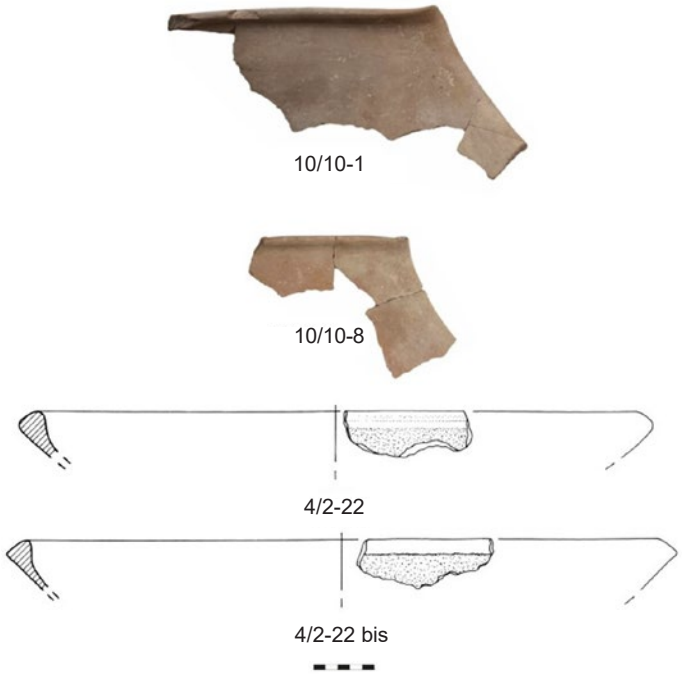


Figure 2. Cooking dishes from the Phaistos palace (Rooms IL, LVIII). Photos © Ephorate of Antiquities of Herakleion, Hellenic Ministry of Culture, Organization of Cultural Resources Development (HOCReD); courtesy Italian Archaeological School at Athens (SAIA) Archive. Photos I. Sandei; drawings G. Merlatti.

raised walls, and two horizontal handles placed on or just above the rim (Fig. 1; Betancourt 1980; Levi and Carinci 1988; Caloi 2013).

Cooking dishes—previously termed "baking plates" by Levi and Carinci (1988)—are now more cautiously interpreted because their exact function remains uncertain (Caloi 2013). They are large, elliptical vessels with shallow profiles and thickened rims forming a broad lip (Fig. 2). They differ from trays in lacking supports and legs and having thinner bases. They are also made of red semi-fine clay, often with a slipped interior, and a rough exterior (Speziale 1994–1995; Caloi 2013).

Basins represent a more varied category, generally made of semi-fine red fabrics, and they sometimes show burnished interiors, suggesting use in food preparation (Fig. 3). Morphologically, basins can be divided into conical (Type 1) and hemispherical (Type 2), with three subcategories: simple (Types 1a and 2a), handled (Types 1b and 2b), and with both handles and a spout (Type 1c).

These vessel types are often found together in the same deposits at Phaistos, particularly in the Southwest Building of the Palace, the area south of the House South of the Ramp, in the Quarter to the West of Court I, and at the Acropoli Mediana. In primary contexts, they are attested within House LXXXIV–LXXXV and XCIV–XCV in the Quarter to the West of Court I, dated to MM IIB. Room XCIV yielded the largest quantity of pottery, with 50 vessels out of a total of 67 recovered ceramic objects from the entire house, including 28 cooking vessels, among which two tripod cooking trays and one cooking dish are recorded. Additional concentrations were identified in Room LXXXV, where 11 cooking dishes were found, and in Room XCV, which yielded a single basin. Overall, the cooking ceramics recovered within the house show a clear predominance of closed vessels (36 out of a total of 52), suggesting a preference for the use of wet-cooking methods.

As noted by A. Speziale (1994–1995, 2001), this residential unit appears to have fulfilled complex functions comparable to those attributed to the palace. It is characterized by the recovery of a substantial quantity of cooking wares, the majority of which were stored within Room XCIV. This has led to the interpretation of this space as a storage area for vessels intended for use elsewhere. The sheer volume of ceramics, together with the considerable capacity of some of these vessels, suggests that their use was not limited to the needs of a single household. As argued by Speziale (2001), such quantities would have been disproportionate for domestic consumption alone, supporting the hypothesis that the entire quarter was involved in the organization of communal or ceremonial activities, likely conducted in ways comparable to those taking place within the palace.

At the Acropoli Mediana, in Rooms CV and CVI a total of four basins dated to MM IIB were recovered (Baldacci 2017), and a more balanced distribution between open and closed vessels can be observed. The absence of tripod cooking trays and cooking dishes, however, suggests that wet-cooking methods were also more prevalent in this area.

Parallels for these vessels are concentrated in the Mesara Plain, especially at Hagia Triada, Kommos, and Kamilari. These

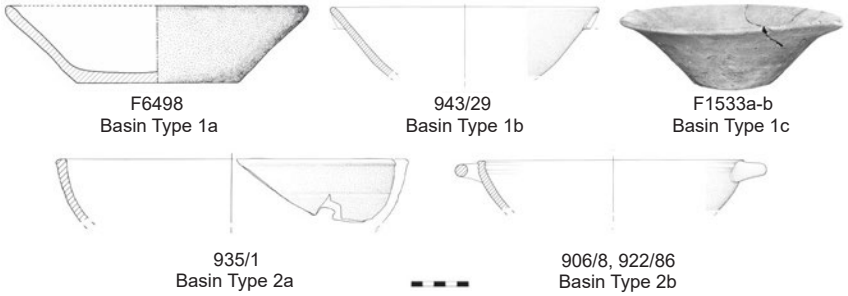


Figure 3. Basins from the Acropoli Mediana complex: Type 1a from Room CVI and Types 1b, 2a, and 2b from Rooms CVI–CVII. Basin Type 1c from the palace, Room LVIIIc. Photo © Ephorate of Antiquities of Herakleion, Hellenic Ministry of Culture, Organization of Cultural Resources Development (HOCReD); courtesy Italian Archaeological School at Athens (SAIA) Archive. Photo I. Sandei; drawings G. Merlatti.

settlements are near Phaistos, where, as already noted by Levi and Carinci (1988) and Aleydis Van de Moortel (2006), there is a shared repertoire of ceramic styles, evident especially in decorated pottery, and forms. Similar vessels also occur in other regions of Crete, particularly in the east-central area, indicating wider circulation and adoption of these cooking vessels (Van de Moortel 2006).

Functionality of the Open Vessels

The morphology of tripod cooking trays and cooking dishes facilitated rapid evaporation and efficient heat distribution, making them suitable for high-temperature dry-cooking techniques such as baking, roasting, or frying. Their broad, flat surfaces promote even heat distribution, while the low rims prevent spillage without restricting airflow.

Tripod cooking trays show a strong relationship with heat. Their legs and handles allowed easy manipulation during cooking and provided stability, enabling placement directly above or close to the coals. This is supported by use-wear evidence on tripod cooking trays and cooking dishes, including soot deposits on external surfaces—especially the underside and legs—and charred residues on internal surfaces (Fig. 4:a, b). Traces of attrition include chips, pits, and spalling externally and abrasions, chips, and pits internally (Fig. 5:a, b).

Several tripod cooking trays and cooking dishes exhibit burnished surfaces, which improved waterproofing and reduced food adhesion.

Basins, by contrast, are associated with wet-cooking practices that could result in varying consistencies depending on the use of a lid. Their morphology promotes heat transfer from the base upward, while the wide opening facilitates evaporation and access for stirring. These features suggest their use for boiling or reducing semi-liquids, including soups and sauces.

Horizontal handles and spouts improved manipulation and pouring, further supporting their use for liquids. Basins could be placed on supports above embers rather than directly within them, reducing thermal stress and allowing better heat control. This is supported by use-wear analyzed on Types 1a, 1b, and 2a (Fig. 4:c), specifically by soot deposits on the external surfaces, particularly under the base and around the rim, and charred deposits internally in the same areas. Traces of attrition (pits, spalling, and abrasions) are concentrated on both surfaces, mainly in the central body (Fig. 5:c).

Conclusions

The combined morphological, technological, and use-wear evidence provides a better understanding of the role of tripod

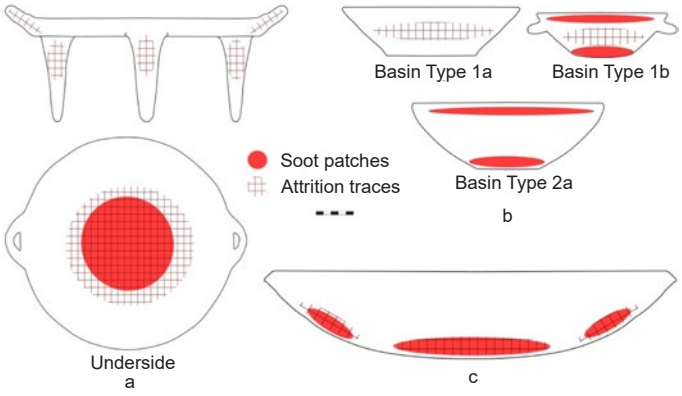


Figure 4. Soot and traces of attrition on external surfaces: (a) tripod cooking trays, (b) basin Types 1a, 1b, and 2a, and (c) cooking dishes. Red areas indicate soot, and traces of attrition are represented by a grid pattern. Image I. Sandei.

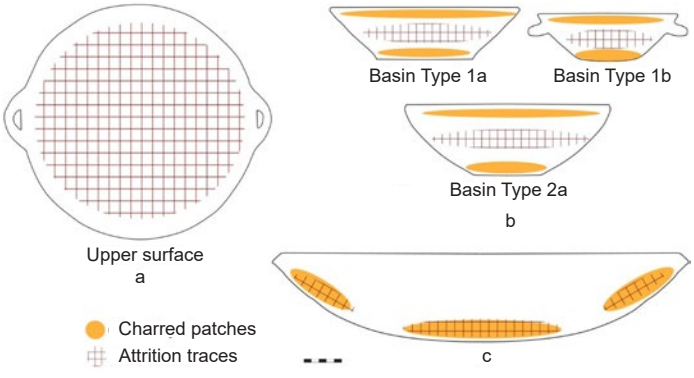


Figure 5. Charred deposits and traces of attrition on interior surfaces: (a) tripod cooking trays, (b) basin Types 1a, 1b, and 2a, and (c) cooking dishes. Yellow areas indicate charred deposits, and traces of attrition are represented by a grid pattern. Image I. Sandei.

cooking trays, cooking dishes, and basins within the culinary practices of Protopalatial Phaistos.

Tripod cooking trays and cooking dishes show strong functional convergence associated with dry-cooking practices. Their morphology makes them suitable for griddling, roasting, or frying, while use-wear traces indicate direct or very close exposure to heat. Tripod cooking trays, with their legs and handles, allowed dynamic handling, enabling control over the heat. Cooking dishes share similar functional principles but suggest a more static mode of use.

By contrast, basins are associated with wet-cooking practices and the preparation of liquid or semi-liquid foods. Their morphology promotes controlled evaporation and easy access to the contents, making them suitable for boiling, simmering, or reducing liquids. Use-wear traces suggest a more indirect exposure to heat, likely using supports allowing better thermal regulation. Handles and spouts further point to frequent manipulation and pouring, suggesting an active role in both preparation and possibly serving.

Considered together, these vessels appear functionally complementary within a structured culinary system in which different cooking techniques were combined. Tripod cooking trays and cooking dishes were used for dry cooking, producing solid foods, whereas basins were employed for wet cooking, producing both wet- and semi-dry dishes. This complementarity implies an integrated operational sequence, with vessels used either sequentially or simultaneously.

The analysis of find contexts reinforces this interpretation. The frequent co-occurrence of tripod cooking trays, cooking dishes, and basins—especially in the Southwest Building of the Palace and in the Quarter to the West of Court I—indicates areas where different cooking techniques were carried out together. In these contexts, the predominance of forms associated with wet cooking methods suggests that this method was more widespread, while dry cooking appears only in specific areas of Phaistos (see above).

The copresence of both methods particularly in the palace area and closely connected areas, especially the Quarter to the West of Court I, may reflect specific forms of commensality and social practice. The increasing variability of vessel forms from MM IIA through MM IIB (Fig. 6) indicates a progressive diversification of culinary practices.

When considered as a whole, the Protopalatial cooking wares from Phaistos demonstrate a remarkable combination of morphological stability and functional refinement, reflecting both practical and ergonomic considerations. Throughout the Protopalatial period, closed vessels—primarily adapted for wet cooking—remain prevalent. The development of cooking wares outlines a trajectory from a predominance of closed vessels in MM IB, through a phase of diversification in MM IIA, marked by an increased presence of open vessels, to a more spatially structured and functionally differentiated culinary landscape in MM IIB.

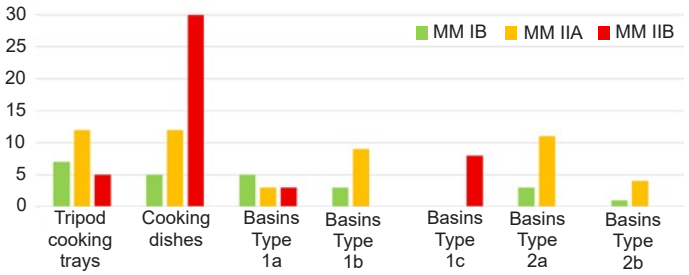


Figure 6. Development of tripod cooking trays, cooking dishes, and basins in Middle Minoan IB, IIA, and IIB.

Overall, the evidence suggests that Protopalatial culinary practice at Phaistos combined continuity with adaptive innovation: established vessel forms remained effective, while modifications addressed evolving practical and organizational needs. This balance reflects a coherent and versatile culinary system capable of accommodating different preparation techniques without abandoning established traditions.

References

Baldacci, G. 2017. *L'edificio protopalaziale dell'Acropoli Mediana di Festòs (Vani CV–CVII)* (*Antichistica* 10; *Archeologia* 2), Edizioni Ca' Foscari.

Betancourt, P.P. 1980. *Cooking Vessels from Minoan Kommòs: A Preliminary Report* (*UCLAPap* 7), Institute of Archaeology, University of California Los Angeles.

Caloi, I. 2013. *Festòs protopalaziale: Il quartiere ad ovest del Piazzale* I. *Strutture e ritrovamenti delle terrazze mediana e superiore* (*Antichistica* 3; *Archeologia* 1), Edizioni Ca' Foscari.

Henrickson, E.F., and M.M.A. McDonald. 1983. "Ceramic Form and Function: An Ethnographic Search and an Archaeological Application," *American Anthropologist* 85, pp. 630–643.

Levi, D., and F.M. Carinci. 1988. *Festòs e la civiltà minoica* II.2: *L'arte Festia nell'età protopalazial. Ceramic ed altri materiali* (*Incunabula Graeca* 77), Institute for Mycenaean and Aegeo-Anatolian Studies.

Speziale, A. 1994–1995. *Materiali ceramici dalla casa LXXXI–LXXXXV, XCIV–XCV dell'abitato di Festos*, Tesi di specializzazione, Scuola Archeologica Italiana ad Atene.

———. 2001. "Il MM II: La casa LXXXI–LXXXV, XCIV–XCV," in *I cento anni dello scavo di Festòs: Giornate lincee (Roma, 13–14 dicembre 2000)* (*Atti dei convegni Lincei* 173), L. Beschi, A. Di Vita, V. La Rosa, G. Pugliese Caratelli, and G. Rizza, eds., Accademia Nazionale dei Lincei, pp. 157–167.

Van de Moortel, A. 2006. "Middle Minoan IA and Protopalatial Pottery," in *Kommos* V: *The Monumental Buildings at Kommos*, J.W. Shaw and M.C. Shaw, eds., Princeton University Press, pp. 264–377.

A Cartoonist in East Crete

Glynnis Fawkes

The Harriet Boyd Hawes Fellowship allowed me to spend two weeks in the library of the INSTAP Study Center for East Crete to research local Minoan sites and artifacts for a proposed graphic novel about young artisans for an audience of middle schoolers and young adults (Fig. 1). With this project I want to explore what it might have been like to grow up in the nearby ancient towns—for example, Mochlos, Gournia, and Vronda—at different times during the Bronze Age (Fig. 2). How did potters and painters teach their students to create Late Minoan (LM) IA, LM IB, and LM IIIC pottery? How did painters speak about motifs that changed over time? How did artists make a living in good times and in times of upheaval, and what other activities occupied their time? What caused them to hurry a painted decoration and what allowed them to take their time? I imagine a series of stories about how artisans worked when they were thriving and how they were affected by disasters like the LM IA Theran volcanic eruption or by the tragic end of the Bronze Age.

There must have been arguments and negotiations, especially between generations: "Go out and dig more clay so we can expand production and export our wares!" "Not another earthquake?! What's that towering cloud on the horizon?" "No one is ordering new jugs anymore; no one appreciates my spirals!" "In my day we made pithoi to impress our guests and relations." "How will we move the workshop to the mountain?" If each imagined scene centers on pottery, there also must be human relationships, mentorships, and loved ones.

Most mornings I hiked to local sites, including those above the modern village of Kavousi: Vronda, Kastro, and Azoria, all three of which were partially excavated by Harriet Boyd Hawes. I drove to nearby Chalasmenos, Gournia, and the museum in Ierapetra. I hiked to understand the connection between land and archaeology, to sweat, and to take in views and the scent of herbs and goats (Fig. 3).

During afternoons in the library, I read about and made sketches of architecture and pottery from sites in the area to gain a sense of the buildings and the ceramic shapes and decorations that define each period (Fig. 4). My experience working as an archaeological illustrator for 20 years—mostly at Kenchreai near Corinth, and before that, a season at Kommos and a season at Malia and Knossos—gives me a tactile connection to the material. How can a small piece of pottery excite the possibilities of storytelling? I want to imagine what it was like to live and make a living in this place over time.

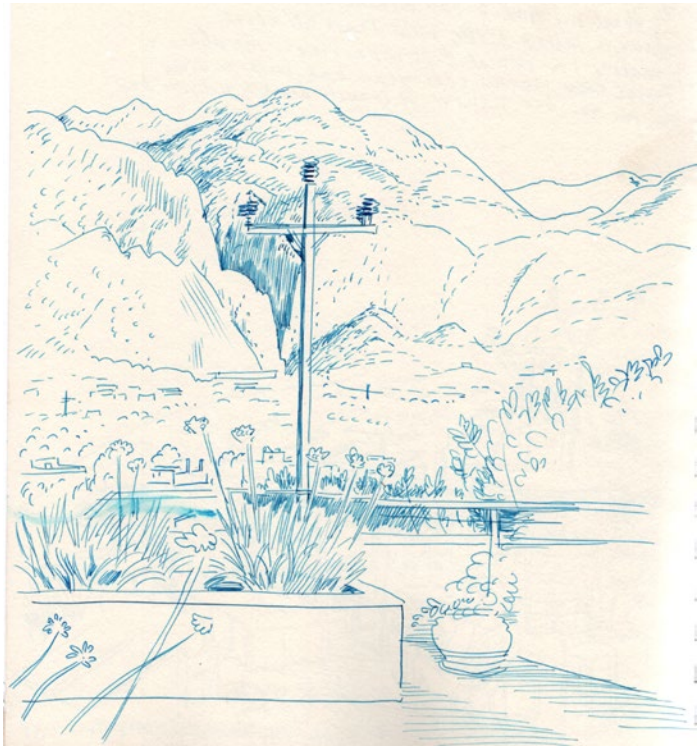


Figure 1. View of the Cha Gorge from the window of the SCEC library. Sketch by author.

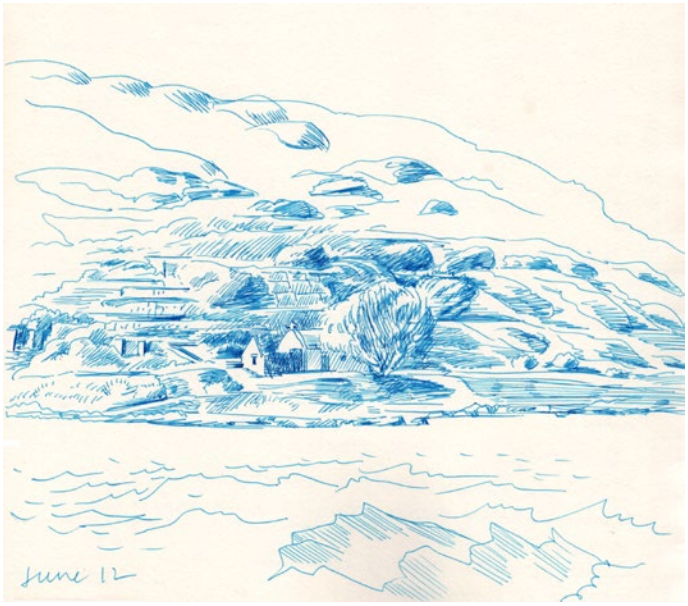


Figure 2. View of Mochlos island looking northeast. Sketch by author.

At sites where Harriet Boyd Hawes worked, I took reference photos in order to draft a short biographical comic based on the memoirs she published in *Archaeology* magazine in 1965. I envision this comic as part of the book about ancient craftsmen, and a way to show how we know what we know and how excavation methods have changed. Although Vronda and Kastro are signposted on the main road through Kavousi, it was not easy to find them. I attempted on different days to get to Kastro using two different hiking apps, plus guidebooks and Google maps, and only on my last day did I finally find the right path off the E4 spur from Kavousi to Thrypti. I was very glad for the metal signs installed at both sites by the Study Center that not only allowed me to recognize the sites from a distance but also gave context and information about the archaeology. How did young Harriet manage to organize teams to excavate these impressive sites so high above the sea?

While in Crete I stayed in Mochlos and parked every evening near the excavated Minoan artisans' workshops. Again, the didactic signs installed by the Study Center made my visits especially enjoyable. What would it have been like to grow up on this shore, and to make the pottery that defines (for us) distinct ceramic phases? Georgios Doudalis's tour of Mochlos for his students and others from the Study Center gave some clues (Fig. 5). I am especially interested in the House of the Theran Refugee because I am currently inking my graphic novel about, well, Theran refugees. My characters do not end up in Mochlos (they become fresco painters at Knossos), but they could have if I had known about this house when I began the story. Maybe there will be a sequel!

On the weekend I drove to Palaikastro, hiked to Petsophas, and also visited Itanos, Vai, and Zakros where I spent the night looking eastward over what felt like the edge of the world, despite knowing of the palace's cosmopolitan connections. I hiked the Gorge of the Dead, which is the eastern end of the E4 trail in Crete and which continues in Cyprus where I will travel in the fall on a Fulbright fellowship.



Figure 3. Self portrait in the Mesonas Gorge.

Meeting people who work in Crete deepened my understanding. I am grateful for conversations with Eleanor Huffman, Tom Brogan, Jeffrey Soles, Georgios Doudalis, Tom Strasser, Melissa Eaby, Lauren Wilson, Giulia Salvadori, Luke Kaiser (who showed me Mochlos material), Jan Driessen (whose articles I read on the plane home), Angus Smith, Kathy Hall, Doug Faulmann, and many others. I barely touched the surface of what I'll need to know to embark on this project, but the Hawes Fellowship helped me to gain a sense of the field and a determination to return. I am so grateful for the chance to stir up ideas for stories around this material and for my new appreciation for the archaeologists whose work upon which I will rely.

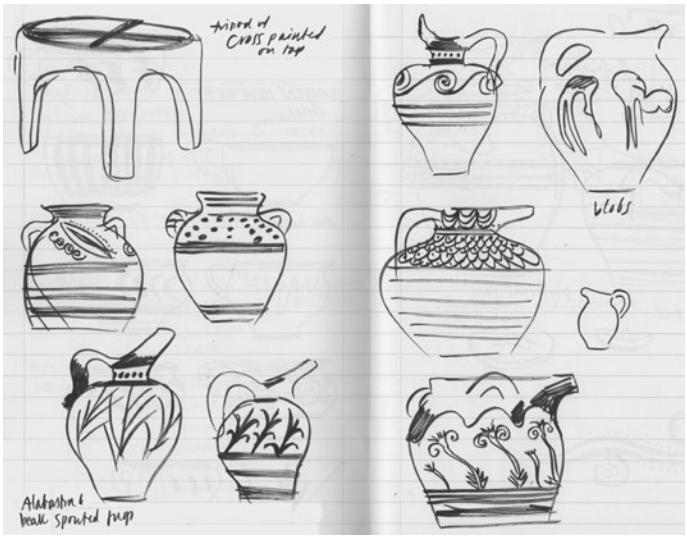


Figure 4. Sketches of pottery from Mochlos to become familiar with vessel shapes. Drawings by author.

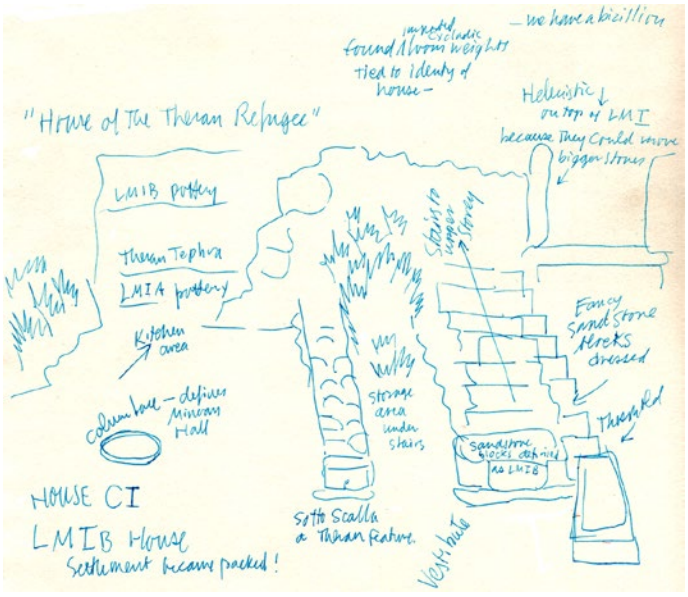


Figure 5. Sketch from tour of Mochlos given by Georgios Doudalis including the House of the Theran Refugee. Drawing by author.

A Sherd Nerd's Full-Circle Love Story

Katy Lamb

Back in 2018, I participated in the pottery study season of the Mochlos Archaeological Project at the INSTAP Study Center for East Crete. I was a recent graduate of Wilfrid Laurier University in Ontario, Canada, and I had just completed an internship at the Canadian Institute of Archaeology in Athens, Greece. I was contemplating my next step in my academic career and felt that the Study Center was the place to do it. While sorting pottery in the stoa, we also searched for joins to create vessel profiles, and they would be sent to the conservation lab for assembly treatments. This was where I first experienced archaeological conservation and saw firsthand the career I could have. I began planning my next steps.

Almost a decade later, with more schooling completed, I was lucky enough to be accepted as the 2026 William D.E. Coulson Conservation Intern. Four weeks of working on various Bronze Age materials (Fig. 1)—from glass and ceramics to bones and metals—further extended my conservation knowledge and professional skills. My experience at the Study Center helped enhance my careful manual dexterity and attention to detail while working with complex and vulnerable cultural heritage materials.

During the internship I also had the chance to familiarize myself with lab equipment used to understand, examine, and investigate the story hidden within the artifacts. Equipment such as a handheld pXRF (Bruker Tracer 5i; see also below, p. 46) for elemental analysis and a cabinet-type X-ray unit (Faxiton HP 4385A) for studying the internal features of artifacts are invaluable tools that provide different views and perspectives of artifacts and help determine the best course of conservation treatment.

My stay in the small fishing village of Mochlos consisted of afternoon swims (to the archaeological site on the nearby islet), fresh seafood dinners, walks along the harbor, and chats with locals. Hearing their stories and participating with the community made me grateful to be welcomed back to the coastal town. My weekends included driving the winding roads through mountain villages, adventuring to different archaeological sites, and exploring museums in numerous towns, ending the days relaxing by the beach with every day different from the last.

As the weeks passed and projects wrapped up, I found myself contemplating the time from when I spent my summer on Crete in 2018 to this past summer, and I could not have been more appreciative for this internship. In my professional conservation journey, it has strengthened not only my technical skills and methodology but also deepened my love for the fields of archaeology and conservation, confirming my decision of career choices. Without INSTAP SCEC and the generosity and excitement of its staff in sharing their knowledge and developing future generations of scholars, students, and visitors, I would not be able to confidently say: I LOVE MY JOB!



Figure 1. Katy Lamb sorting pottery in 2026 from Middle Minoan II levels in Building Complex B.2 at Chryssi. Photo K. Hall.

Congratulations



Giulia Paglione, Department of Classics, University of Cincinnati, is the 2026 recipient of the INSTAP SCEC Richard Seager Fellowship. Giulia's doctoral dissertation is entitled "Cult and Craft at the Palace of Minos: A Multidisciplinary Approach to the Archaeological and Textual Evidence from the West Central Insula." She is working on her project at the Study Center this fall. Look for an article by her in the fall 2027 issue of *Kentro*.

Petrographic Analysis of Pottery from the Hittite City of Šapinuwa (Ortaköy/Çorum) in Central Anatolia

Yasemin Akıncı

The ancient Hittite city of Šapinuwa lies within the modern district of Ortaköy, approximately 53 km southeast of Çorum, Türkiye. Excavations at the site were conducted under the direction of Aygül Süel from 1990 to 2020, and they have continued under the direction of Önder İpek since 2021. The cuneiform documents and archaeological data recovered during these uninterrupted, long-term excavations demonstrate that Šapinuwa was a major administrative, commercial, religious, and military center during the Middle Hittite Period (1520/00–1360/50 B.C.; Süel and Süel 2011, 2013).

Covering approximately 9 km², the site is investigated mainly in two areas: Ağılönü and Tepelerarası (Fig. 1). Monumental buildings, workshops, a stone-paved road, and numerous votive pits indicate that Ağılönü was a sacred precinct. Production in its workshops was probably connected with the objects and materials required for rituals performed at the site (Süel 2015).

Tepelerarası formed the civic and administrative heart of the city. Building A contained an archive of more than 3,500 cuneiform tablets, making Šapinuwa the second-largest Hittite epigraphic center after Boğazköy/Hattuša. Building B, with more than 70 large storage jars (pithoi), appears to have functioned as an official storehouse, while the smaller Buildings C and D have been identified as sanctuaries (Süel and Süel 2011, 2013).

Area G at Tepelerarası contained a specialized industrial quarter. Workshop I was a sunken open-air facility cut into the natural ground. After the workshop went out of use, it was deliberately filled with construction debris and secondary deposits containing marlstone molds, obsidian production waste, bronze objects, animal bones, and pottery (Süel 2017; Süel et al. 2025).

Research and Methodology

My doctoral research examines the pottery from the fill of Workshop I through typological study and thin-section petrography. Nearly 4,000 diagnostic sherds were classified, and 108 representative samples were selected for petrographic analysis. The project aims not only to define vessel forms but also to investigate

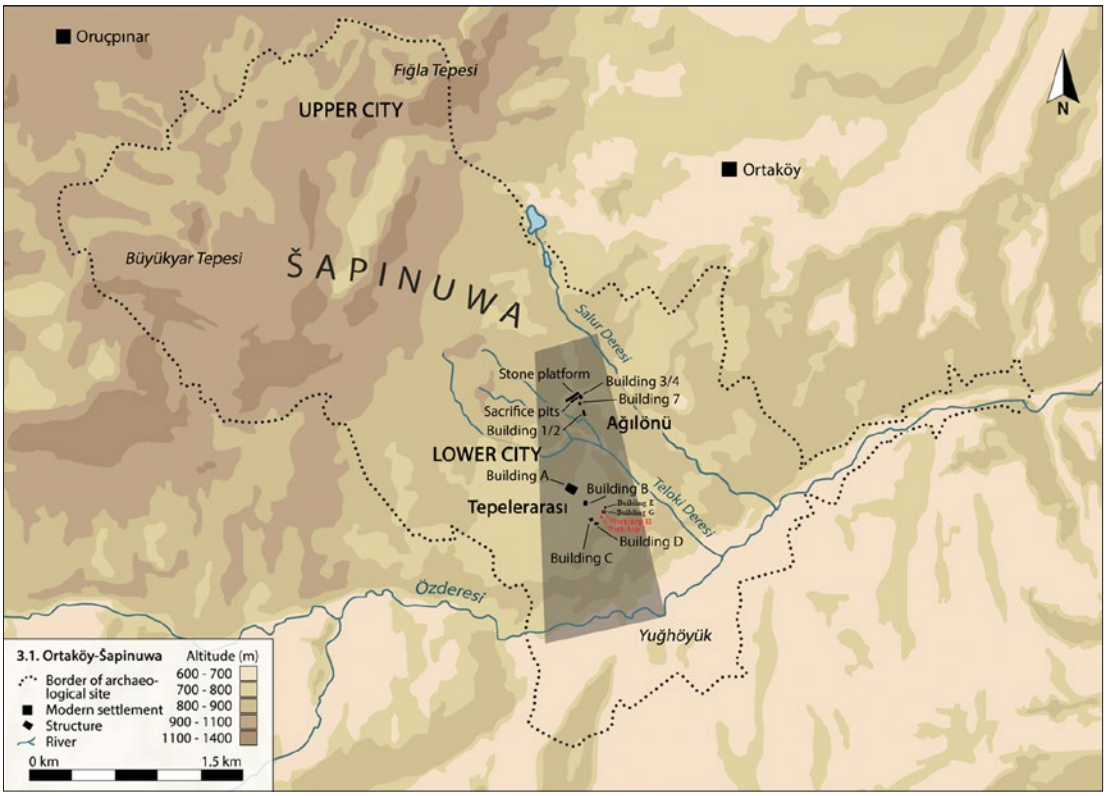


Figure 1. Map of Šapinuwa. Workshops I and II in red. After Süel 2017, fig. 2.

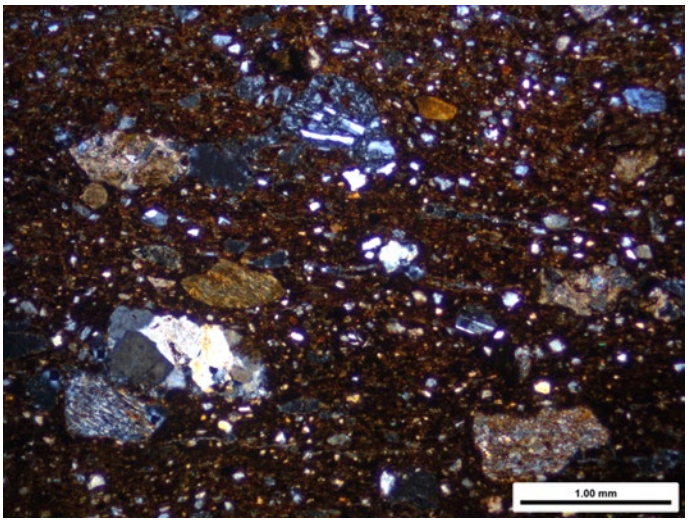


Figure 2. Photomicrograph using cross-polarized light of sample OR09-15 in PG-1 showing a mixed ophiolitic assemblage and abundant clay pellets in the matrix. Image Y. Akıncı.

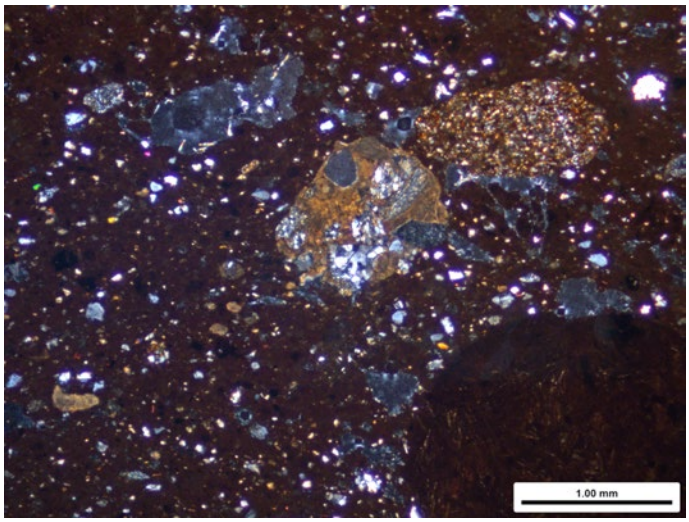


Figure 3. Photomicrograph using cross-polarized light of sample OR 02-08 in PG-2 characterized by volcanic and sedimentary inclusions. Image Y. Akıncı.

clay preparation, manufacturing choices, raw-material sources, and the diversity of local pottery production.

Preliminary Petrographic Results

Petrographic analysis identified eight fabric groups, and several individual samples could not be assigned to a group. The fabrics range from coarse and semi-coarse to semi-fine, reflecting variation in both raw-material selection and clay preparation. Clay pellets occur frequently in the coarse, semi-coarse, and semi-fine fabrics, while clay striations and mottling are also observed in some samples.

Petrographic Group 1 (PG-1) is the largest group (Fig. 2). Its fabric is characterized by a mixed ophiolitic assemblage comprising sedimentary, volcanic, and metamorphic components, including sandstone, claystone, limestone, quartz, feldspar, mica, serpentinite, radiolarian quartz, and chert. Microfossils and shell fragments are also present in some samples, and abundant clay pellets occur within the matrix.

Petrographic Group 2 (PG-2) is dominated by volcanic and sedimentary components (Fig. 3). Basalt is the most common volcanic rock, accompanied by sandstone, mudstone, limestone, quartz, plagioclase, and frequent microfossils. Metamorphic inclusions occur rarely.

Petrographic Group 3 (PG-3) is characterized by an acidic composition dominated by quartz and alkali feldspar (Fig. 4). The group has a coarse fabric and is represented exclusively by bowls and small pots.

Petrographic Group 4 (PG-4) consists of fine, well-refined fabrics. The presence of micro-quartz grains distinguishes this group from Red Lustrous Wheel-made Ware (RLWm). The group includes bowls, pitchers, and libation arms.

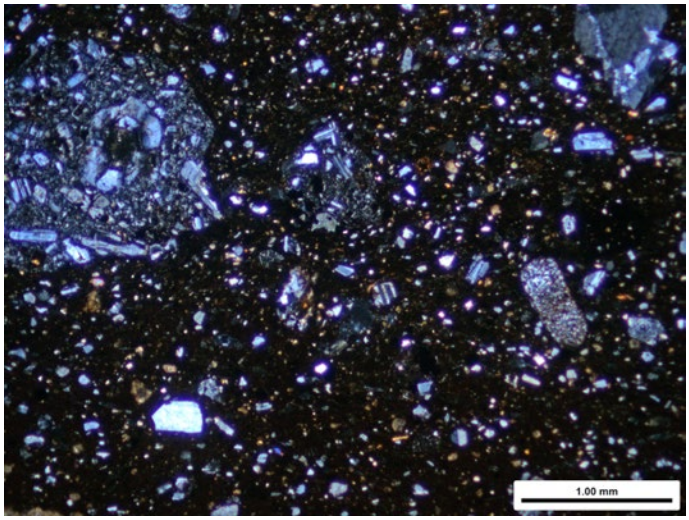


Figure 4. Photomicrograph using cross-polarized light of sample OR15-61 in PG-3 characterized by volcanic inclusions. Image by Y. Akıncı.

The form defined as a libation arm or arm-shaped vessel actually belongs to the vessel repertoire produced in RLWm. Recovered in large quantities across the eastern Mediterranean from central Anatolia, Cilicia, Cyprus, and the Levant, this form is considered to have served a ritual purpose. It is also known that local imitations of this form exist, and the artifact belonging to PG-4 represents one of these imitations (for further details on arm-shaped vessels, see Fischer 1963; Müller-Karpe 1988; Mielke 2006, 2022; Schoop 2011; Fantoni 2021; Alper and Czichon 2025).

Petrographic Group 5 (PG-5) corresponds to RLWm. Its fabric is considerably finer than that of PG-4, and all the analyzed examples are libation arms. RLWm is a widely distributed Late Bronze Age ceramic tradition found across the eastern Mediterranean,

including Cyprus, Egypt, and the Levant, as well as in southern and central Anatolia, where its presence at Hittite and Cilician settlements reflects Anatolia's broader connections with the eastern Mediterranean; the ware is generally wheelmade from very fine clay—although coarser variants also occur—and it is distinguished by its uniformly red fabric, self-slipped surface, and characteristic lustrous appearance produced through polishing (Eriksson 1993). Recent research indicates that the production center of this ware was in Cilicia in southern Anatolia (Kozal and Kibaroğlu 2017; Kibaroğlu et al. 2019).

Petrographic Group 6 (PG-6) comprises white-slipped vessels whose fabrics are clearly distinguishable from those of the other groups under both plane-polarized and cross-polarized light. The group includes libation arms and pitchers. Comparable petrographic variability among white-slipped vessels also has been documented at other Hittite sites. Further instrumental analyses thus are required to assess whether some of the Šapinuwa examples may have been produced from non-local raw materials (Mielke and Kibaroğlu 2023; Kibaroğlu, Kozal, and Mielke 2024).

Petrographic Group 7 (PG-7) is represented by two serpentinite-rich samples: a large pot and a large bowl. Their composition may indicate the deliberate selection of clay derived from, or associated with, a serpentinite-rich source.

Petrographic Group 8 (PG-8) is characterized by a unimodal fabric in which the inclusions are relatively uniform in size and evenly distributed throughout the matrix. Both samples assigned to this group are red-slipped bowls.

Several individual samples could not be assigned to these groups. A muscovite-rich jug has a distinctive sparkle visible even without a microscope. A pellet-rich hybrid plate combines features of collared and flat plates, and it may represent a local Šapinuwa form. A phyllite-rich collared plate suggests that potters selected a heat-resistant raw material for a vessel used in direct contact with fire. Other isolated samples are distinguished by abundant metamorphic rock or micritic limestone, and they may point to the use of additional local clay sources.

Conclusion

The ophiolitic mélange that characterizes the geology around Šapinuwa is clearly reflected in the thin sections. The petrographic results suggest that the city's potters relied mainly on local resources while drawing on more than one source of raw material. These different clay sources may point to several workshops operating within the city, each following its own technological recipe. It is highly likely that many of these clays were collected from deposits in the immediate surroundings of Šapinuwa. The low optical activity observed in most samples indicates firing at relatively high temperatures, although a small number of vessels were fired at lower temperatures. The analysis does not reveal a rigid system in which vessel forms were always made from a single clay type. Instead, the potters appear to have adjusted their pastes according to the intended function and morphology of each vessel, either by adding inclusions or by refining the clay. This flexibility shows that Šapinuwa's craftspeople understood how different recipes could shape the performance of a vessel and deliberately adapted their materials to meet specific needs.

Acknowledgments

I would like to express my gratitude to Prof. Dr. Aygül Süel for kindly allowing me to study this material, and to Assoc. Prof. Dr. Önder İpek, director of Ortaköy-Şapinuva. I am deeply grateful to my supervisor, Assoc. Prof. Dr. Levent Keskin, for his guidance. I would also like to thank Prof. Dr. Vasıf Şahoğlu for his kind support and encouragement. Special thanks to Assoc. Prof. Dr. Semra Zehra Karakaş for her continuous support and for laying the foundations of my petrographic knowledge. I also thank Prof. Dr. Dirk Paul Mielke and Dr. G. Mustafa Kibaroğlu for their valuable guidance and expertise. I am also grateful to Assist. Prof. Dr. Müge Bulu Akar for bringing this internship opportunity to my attention, and to Dr. William Gilstrap for encouraging and supporting me in applying to the program. Additionally, my sincere thanks go to the INSTAP SCEC selection committee for choosing me as the 2026 petrography intern. Finally, I am deeply grateful to Dr. Eleni Nodarou for illuminating my journey in learning and gaining experience in petrography; she not only enhanced my understanding of the material but also taught me to swim through complex analytical details, rather than drowning in them.

References

Alper, N., and R.M. Czichon. 2025. "Kol Biçimli Kapların Tütsü Kabı Olarak Kullanımı," *Seramik Araştırmaları Dergisi (SRMKA, The Journal of Ceramic Research)* 7, pp. 21–42, https://doi.org/10.55061/srmka.1729142, accessed October 16, 2026.

Ericsson, K.O. 1993. *Red Lustrous Wheel-Made Ware* (*Studies in Mediterranean Archaeology* 103), Paul Åströms Förlag.

Fantoni, C. 2021. "The Arm-Shaped Vessels in Anatolia and the Eastern Mediterranean During the LBA: A Morphological and Contextual Analysis," *Asia Anteriore Antica* 3, pp. 93–123, https://doi.org/10.36253/asiana-1257, accessed October 15, 2026.

Fischer, F. 1963. *Die hethitische Keramik von Boğazköy* (*Boğazköy-Ḫattuša* IV; *Wissenschaftliche Veröffentlichung der Deutschen Orient-Gesellschaft* 75), Gebr. Mann Verlag.

Kibaroğlu, M., E. Kozal, and D.P. Mielke. 2024. "Geschichte Schreiben Mit Chemie und Mineralogie: Archäometrische Forschungen zur hethiterzeitlichen Keramik," *AntW* 3, pp. 52–61.

Kibaroğlu, M., E. Kozal, A. Klügel, G. Hartmann, and P. Monien. 2019. "New Evidence on the Provenance of Red Lustrous Wheel-Made Ware (RLW): Petrographic, Elemental and Sr-Nd Isotope Analysis," *JAS: Reports* 24, pp. 412–433, https://

doi.org/10.1016/j.jasrep.2019.02.004, accessed October 16, 2026.

Kozal, E., and M. Kibaroğlu. 2017. "Red Lustrous Wheel-Made Ware Archaeometry Project 2014–16 Studies/Red Lustrous Wheel-Made Ware Arkeometri Projesi 2014–16 Yılı Çalışmaları," *ANMED* 15, pp. 312–319.

Mielke, D.P. 2006. *Die Keramik vom Westhang* (*Kuşaklı-Sarissa* 2), Verlag Marie Leidorf GmbH.

———. 2022. "Hittite Pottery: Research, Corpus and Social Significance," in *Handbook Hittite Empire: Power Structures* (*Empires Through the Ages in Global Perspective* 1), S. de Martino ed., De Gruyter Oldenbourg, pp. 649–690, https://doi.org/10.1515/9783110661781-014, accessed October 28, 2026.

Mielke, D.P., and M. Kibaroğlu. 2023. "Mit naturwissenschaftlichen Analysen auf den Spuren hethitischer Töpferei: Archäometrische Forschungen zur Produktion und Distribution hethitischer Keramik," *Alter Orient aktuell* 20, pp. 16–25.

Müller-Karpe, A. 1988. *Hethitische Töpferei der Oberstadt von Hattuša: ein Beitrag zur Kenntnis spät-grossreichszeitlicher Keramik und Töpferbetriebe unter Zugrundelegung der Grabungsergebnisse von 1978–82 in Boğazköy* (*Marburger Studien zur Vor- und Frühgeschichte* 10), Lahn Hitzeroth Verlag.

Schoop, U.-D. 2011. "Hittite Pottery: A Summary," in *Insights into Hittite History and Archaeology* (*Colloquia Antiqua* 2), H. Genz and D.P. Mielke, eds., Peeters, pp. 241–273.

Süel, A. 2015. "The Religious Significance and Sacredness of The Hittite Capital City Sapinuwa," in *Sacred Landscapes of Hittites and Luwians: Proceedings of the International Conference in Honour of Franca Pecchioli Daddi Florence, February 6th–8th 2014* (*Studia Asiana* 9), A. D'Agostino, V. Orsi, and G. Torri, eds., Firenze University Press, pp. 101–111.

———. 2017. "Workshops Found at Tepelerarası Area of Ortaköy-Šapinuwa," *Mesopotamia* 52, pp. 65–74.

Süel, A., and M. Süel. 2011. "Başkent Şapinuva: Hitit Dünyasındaki Yeri ve Önemi," in *1. Çorum Kazı ve Araştırmalar Sempozyumu*, Ö. İpek, ed., T.C. Çorum Valiliği İl Kültür ve Turizm Müdürlüğü, pp. 93–110.

———. 2013. "Sapinuwa: Hitit Devleti'nin Başka Bir Başkenti," in *Hititler: Bir Anadolu İmparatorluğu*, M. Doğan-Alparslan and M. Alparslan, eds., Yapı Kredi Yayınları, pp. 178–193.

Süel, A., Ö. İpek, S. Gerçek, and M. Aydın. 2025. "Ortaköy Şapinuva Tepelerarası Metal İşlikleri," *Archivum Anatolicum* 19, pp. 177–213.

Reports from the Field

An UPdate from the UPlands

A Preliminary Report of Excavations at Lavrakia on Mt. Dicte

Tina Kalantzopoulou and Yiannis Papadatos

The recent excavations conducted by the National and Kapodistrian University of Athens at the administrative mansion of Gaidourophas—located in southeastern Crete, northwest of the modern town of Ierapetra—have reinforced earlier hypotheses, as well as indirect evidence, concerning the increasing interest of lowland urban and palatial centers in the systematic exploitation of mountain resources, at least during the Minoan Neopalatial period (Papadatos and Chalikias 2019; Papadatos and Kalantzopoulou 2022). This interest is further supported by the results of surface surveys conducted in the hinterland of Gaidourophas and on the eastern slopes of Mt. Dicte, which have revealed a considerable number of buildings (Beckmann 2012; Kalantzopoulou 2022).

As part of a long-term project investigating human occupation and the exploitation of mountain resources, our research focuses on the site of Lavrakia. It was first mentioned by Arthur Evans (Brown, ed., 2001, 229–231, 261, 331), subsequently revisited by John Pendlebury (1939, 236), and later examined by Sabine Beckmann for her doctoral dissertation (2012, 155). The first author of this article subsequently restudied and documented Lavrakia as part of her dissertation on the upland sites of eastern Crete (Kalantzopoulou 2022, 83–88).

Situated between 840 and 1,100 m above sea level, Lavrakia represents a relatively neglected and largely undocumented type of site: an upland cluster of rural farmhouses. Although megalithic sites are not unknown in the hinterland of eastern Crete during the

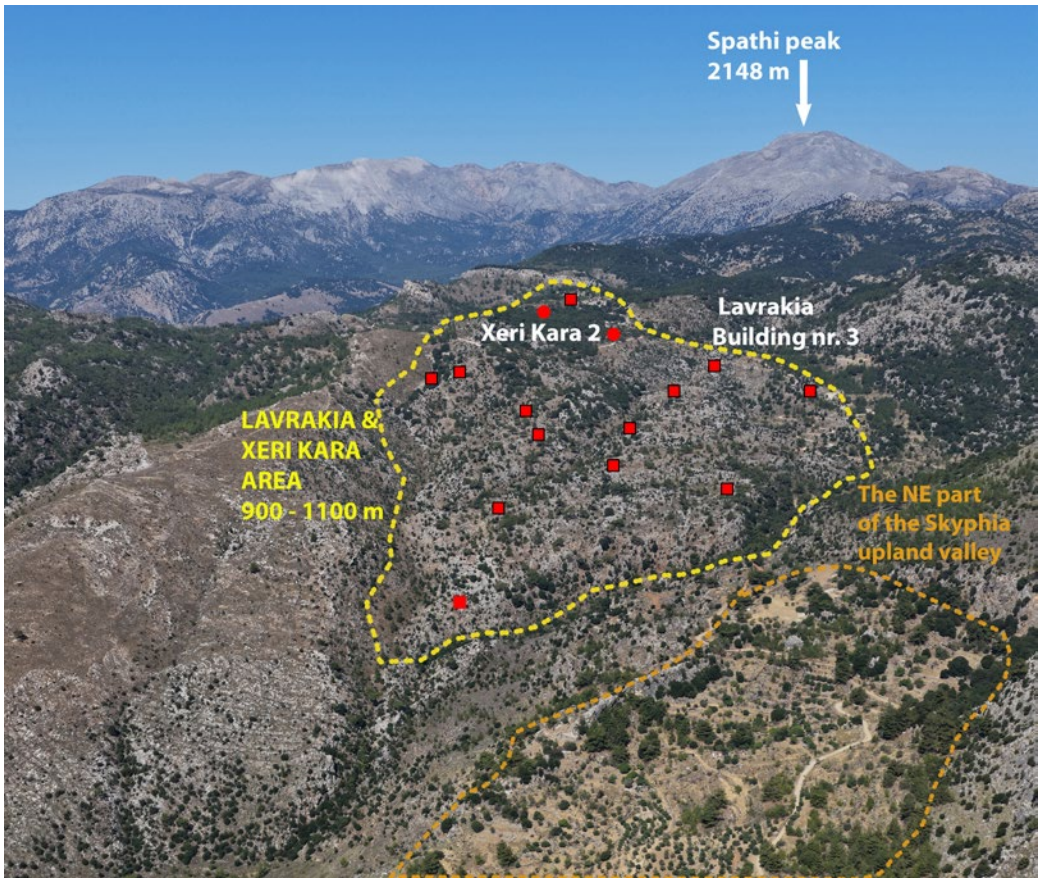


Figure 1. The Lavrakia cluster of upland rural farmhouses and its dependency Xeri Kara, dating to the Late Bronze Age, on the southeastern slopes of Mt. Dicte. Aerial view from the east showing the peaks of Dikte in the background, the northeastern part of the upland karstic valley of Skyphia, and the position of the excavated Building 3 and the Xeri Kara round structure 2 within the cluster. Photo T. Kalantzopoulou.

Neopalatial period (Haggis 2005; Chrysoulaki and Vokotopoulos 2022; Kalantzopoulou 2022), the unusually large number of such buildings and their clustering on the southeastern slopes of Dicte are particularly noteworthy (Fig. 1). We have suggested previously that these buildings were associated primarily with pastoral communities who moved from the lowlands to the uplands and established permanent settlements in these mountainous areas during the Neopalatial period, practicing a form of inverse transhumance (Papadatos and Kalantzopoulou 2022, 44–46). Accordingly, the principal objectives of the Lavrakia excavation project are to investigate the character and function of these mountain buildings, the ways in which their inhabitants organized and exploited mountain resources, as well as their strategies of survival and their relationships with the urban and palatial centers of the lowlands. At a broader level, the project seeks to reconstruct the sociopolitical framework that encouraged or enabled substantial groups of people to occupy systematically these remote and marginal mountain environments through the establishment of clustered farmhouses.

The entire Lavrakia cluster occupies approximately 100 ha and comprises 14 rectangular buildings, two subterranean circular structures, and an extensive system of enclosure and retaining walls with a combined length of more than 1,500 m. These enclosure walls frequently connect otherwise isolated, free-standing buildings and define extensive open areas between them.

Excavations commenced in 2024 at Building 3, situated at an altitude of 970 m above sea level. The first three field seasons revealed a remarkably well-preserved agropastoral building complex, including undisturbed deposits within the main building and several adjacent partially roofed or open-air spaces. These areas yielded rich assemblages of objects deposited on beaten-earth floors or directly on the bedrock (Fig. 2).

The main building consists of a rectangular, roofed space measuring 40 m^2, with megalithic facades constructed from large, roughly dressed stones on the exterior and smaller stones on the interior, possibly coated with mud. No certain door openings have been identified, and access to the interior instead may have been provided through the roof. The roof consequently may have functioned as a working or storage area, as suggested by objects recovered from the layer of collapsed roof found on top of the floor deposit, including a fragmentary pithos (Fig. 3, left). The floor deposit contained several drinking vessels dating to Late Minoan (LM) I—including ogival cups, hemispherical bowls, and conical

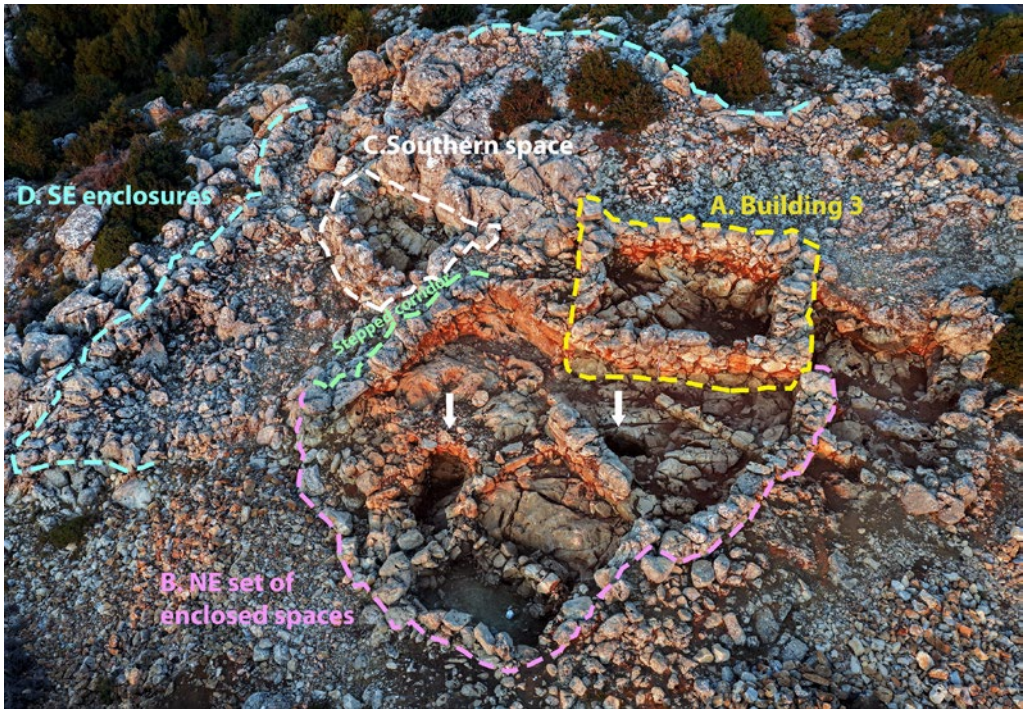


Figure 2. Lavrakia Building 3, from the east-northeast: (A) roofed area of the main dwelling in yellow; (B) northeastern set of enclosed spaces (hypostega) *in pink; (C) southern enclosed space (semi-roofed area) in white; (D) unexcavated southern set of enclosures in light blue. White arrows indicate position of two storage pits. Green line indicates route of possible stepped corridor between two sets of semi-roofed spaces. Photo T. Kalantzopoulou.*

cups (Fig. 3:2a–2c)—as well as medium-sized storage jars, amphorae, and pouring vessels, including a side-spouted jug and a beak-spouted jug. Several cooking vessels were also recovered, including tripod cooking pots and cooking dishes.

Two finds are particularly noteworthy given the rural character and remote location of the building: an intact potter's wheel (Fig. 4, upper left) and a fragment of a serpentinite implement, probably belonging to a composite drilling instrument (Fig. 4, right). Small fragments of charcoal and localized areas of burning (Fig. 4, bottom left) may indicate a fire-related destruction event, although the evidence does not suggest an intensive conflagration. A miniature aryballos and the lower part of a rhyton decorated with dark-on-light bands and dots (Fig. 3:3a, 3b) were recovered from cavities in the bedrock. These objects may have formed parts of foundation deposits, and consequently they reinforce a date for the construction of the building no earlier than LM I.

The main building was surrounded by a series of enclosed spaces, some open-air and others fully or partially roofed. Their floors consisted primarily of exposed bedrock, with soil placed inside the natural cavities. In one instance, a leveled floor was constructed using soil and cobblestones.

The southern space was enclosed by an imposing megalithic wall that measured approximately 2 m high and was constructed against a rocky outcrop. The finds recovered from this area include numerous cooking vessels, ground-stone tools, and several teeth belonging to pig(s). The largest concentration of finds, however,



Figure 3. Several objects from Building 3 during conservation by M. Tzari at INSTAP SCEC: (1) pithos (preserved height ca. 65 cm) recovered within the collapsed roof; (2a) interior of base of terracotta box with compartments and incisions (unknown use), from floor deposit; (2b) bell-cup (left) and ogival cup (right), from floor deposit; (2c) side-spouted jug, from floor deposit; (3a) lower half of rhyton from bedrock cavities in Building 3; (3b) miniature aryballos from bedrock cavities in Building 3. Photos T. Kalantzopoulou.

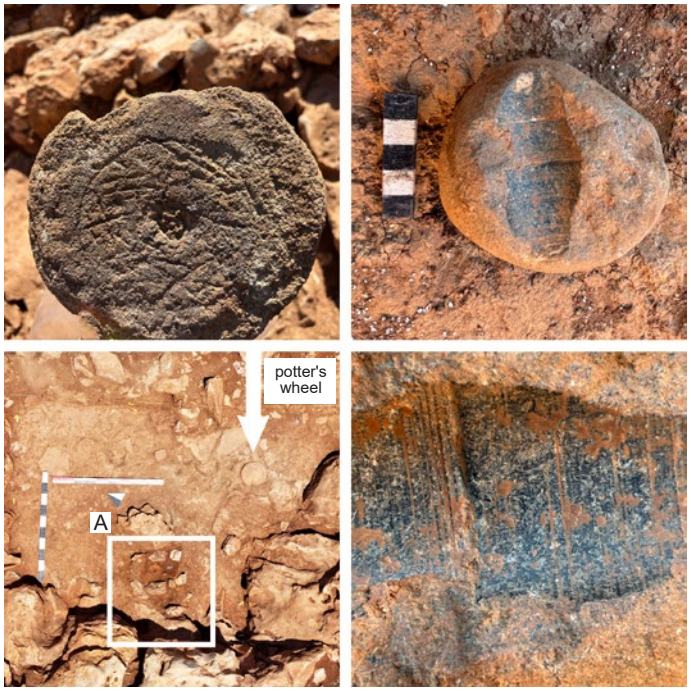


Figure 4. Terracotta implement/bat (diameter 26 cm) from a potter's wheel (top left) and a stone drill drive (right) from the floor deposit of Building 3. Square A marks a burned area within the floor deposit. Photos T. Kalantzopoulou.



Figure 5. Upper part of northeastern enclosed space during excavation including a large pithos with its base on top of its sherds (yellow dotted ellipse). Blue arrows show positions of three stands, the middle one is shown in the inset blue box. Inset white box shows vat and amphora during excavation, positioned on bedrock shelf indicated by white arrow. Photos T. Kalantzopoulou.

was recovered from the enclosed, roofed space immediately in front of the eastern facade of the building (Fig. 5). The assemblage from this room included at least six pithoi—two of which had relief decoration—several medium-sized storage vessels, a vat, an amphora (Fig. 5, inset white box), and several pouring vessels, including a trefoil-mouthed jar. Additional finds comprise tripod cooking pots and disks, an intact lid from a cooking vessel, and several drinking vessels. Three stands associated with charcoal remains may have functioned as lamps (Fig. 5, inset blue box). The deposit also contained a fragment of an incense burner, a bronze awl, a shallow tripod table made of coarse fabric (Fig. 6), several groundstone tools, a small number of fragmented ovicaprid bones, and a triton shell.

In the lower part of the eastern space, a deep, subterranean, built shaft was excavated at the edge of a cobbled floor (Fig. 2, left white arrow). The function of this installation remains uncertain. A second, smaller subterranean shaft excavated during the current field season, however, contained two intact pithoi (Figs. 2, right white arrow, 6). It is possible therefore that such structures functioned as storage pits, perhaps providing cooler conditions conducive to the preservation of organic foodstuffs (Christakis 2008, 14, 63, 73, 91).

The excavation of the first building at the Lavrakia cluster has been completed, but the project remains at an early stage, and firm conclusions cannot yet be drawn. Future work will include the excavation of one more building (Building 1), as well as detailed study of the architecture, finds, stratigraphy, depositional patterns, and site-formation processes of Building 3. In order to reconstruct the function and character of individual spaces and of the building as a whole, valuable evidence is also expected to derive from an extensive program of soil sampling for flotation and also from a broad range of scientific analyses, including soil micromorphology, phytolith analysis, Fourier transform infrared (FTIR) spectroscopy on soil, and lipid analysis on pottery. For comparative purposes, similar soil samples have been collected from a nearby abandoned *metochi* (modern corral) as part of a broader ethnographic project investigating early modern pastoral practices in the area (Blitzer 1990).

Nevertheless, the preliminary results of the first three excavation seasons already have provided significant evidence relevant to the project's principal research questions. Although the pastoral character of these buildings remains to be confirmed through further analysis of the artifactual assemblages and soil samples, the diversity and richness of the finds strengthen the hypothesis that these mountain buildings were constructed to accommodate permanent, year-round habitation and a well-organized form of occupation, rather than merely occasional or seasonal visits by mobile shepherds. This interpretation is supported by the considerable investment of labor and resources required for the construction of the megalithic buildings and the extensive landscaping, including long enclosure and terrace walls.

The large numbers of jars and pithoi, together with the groundstone tools and cooking vessels, further support the interpretation of a population that exploited the mountain landscape not exclusively for pastoral activities but also for cultivation and other



Figure 6. Different areas of the eastern enclosed space. Left and center: shallow tripod vessel during different stages of excavation. Right: smaller built storage pit, at the upper part of the northeastern semi-roofed space during excavation, with two pithoi in situ. Photos T. Kalantzopoulou.

related practices, thereby achieving a considerable degree of year-round self-sufficiency. This interpretation is reinforced by the discovery of a potter's wheel, which may indicate local pottery production, despite the fact that a substantial proportion of the pottery appears to have been imported from the lowlands. Moreover, although the faunal assemblage is limited, the presence of pig bones indicates access to meat that may not have formed part of the typical diet of highly mobile pastoral communities, which consisted exclusively of ovicaprids.

While more information from environmental and micromorphological analyses is pending, the available evidence points to the presence of well-organized households, which formed communities that inhabited the mountain zone throughout the year, establishing permanent structures and developing strategies for relative self-sufficiency and resilience in the demanding conditions of a marginal mountain environment. At the same time, it is important to emphasize that much of the pottery appears to have been imported from both the northern and southern coasts of the Ierapetra Isthmus. This indicates that the upland communities were not isolated, but they maintained significant connections with the urban centers of the lowlands.

While questions remain as to the motivations underlying the occupation of this mountainous zone, the topography, spatial organization, and settlement structure of the site may provide important clues regarding the ways in which these communities were socially and economically organized. The clustering of dwellings and the substantial investment in landscaping the "in-between" areas suggest that, alongside isolated households capable of coping independently with the demanding conditions of the upland environment, larger groups may have coalesced in order to increase efficiency and mitigate risks. In such cases, several dwellings are situated along the same slope, generally at distances of approximately 50–250 m from one another. Particularly significant is the extensive landscaping associated with these clusters, in which individual buildings are interconnected through elaborate systems of enclosure walls. Functionally, these walls appear primarily to have served as divisions or fences within the landscape, although they frequently also incorporated retaining-wall functions in response to the local topography. In some instances, they enclosed small, leveled, and elevated yards or terraces. This system is particularly well documented at Lavrakia where the complexity of the planning suggests that it was designed intentionally to fulfill specific functions across the site and to operate in close association with the clustered dwellings.

These elaborate and labor-intensive structures were arguably associated with a range of complex production activities involving substantial numbers of animals sharing the landscape with humans, as well as possibly small-scale cultivation (Kalantzopoulou and Papadatos, forthcoming). The enclosure system may be interpreted as an intricate livestock-management facility designed to keep flocks in close proximity to human habitation during particular periods of the year.

At the same time, the enclosed spaces adjacent to each building, including the excavated southern and northeastern spaces of Building 3, may have constituted animal-free spaces in which everyday domestic activities could be undertaken without disturbance by animals. Accordingly, future research will continue to investigate the spatial organization of the site and the functional and social significance of these architectural forms.

The evidence from Lavrakia therefore provides an important opportunity to investigate the nature of permanent upland occupation in Neopalatial Crete and the mechanisms through which mountain communities were integrated into wider economic and social networks. Although the archaeological and environmental analyses are still ongoing, the combination of substantial architectural investment, diversified subsistence practices, evidence for storage and craft production, and sustained connections with lowland centers points toward a complex pattern of mountain habitation rather than a purely seasonal pastoral presence. Further excavation and interdisciplinary analysis will

be essential for assessing the extent of local self-sufficiency, the organization of production, and the social and economic relationships that connected the upland communities of Dicte with the wider settlement landscape of eastern Crete.

Acknowledgments

We wish to thank the Hellenic Ministry of Culture and the Ephorate of Antiquities of Lasithi for all official permissions and the INSTAP Study Center for East Crete for logistical support.

References

Beckmann, S. 2012. "Domesticating Mountains in Middle Bronze Age Crete: Minoan Agricultural Landscaping in the Agios Nikolaos Region," Ph.D. diss., University of Crete.

Blitzer, H. 1990. "Pastoral Life in the Mountains of Crete: An Ethnoarchaeological Perspective," *Expedition* 32 (3), pp. 34–41.

Brown, A., ed. 2001. *Arthur Evans's Travels in Crete 1894–1899* (*BAR-IS* 1000), BAR Publishing.

Christakis, K. 2008. *Politics of Storage: Storage and Sociopolitical Complexity in Neopalatial Crete* (*Prehistory Monographs* 25), INSTAP Academic Press.

Chrysoulaki, S., and L. Vokotopoulos. 2022. "Δρόμοι και φυλάκια, άνδηρα καλλιέργειας και αγροικίες: Το έργο του Ερευνητικού Προγράμματος 'Μινωικοί Δρόμοι' κατά τα έτη 2011–2019," in *Ίδια η μνήμη γινάμενη παρόν . . . Το αρχαιολογικό έργο των Εφορειών Αρχαιοτήτων κατά τη χρονική περίοδο 2011–2019: 2. Επιστημονική συνάντηση Μέγαρο Μουσικής Αθηνών, 25–28 Νοεμβρίου 2019: Πρακτικά*, S. Antonopoulou and S. Petrounakos, eds., Hellenic Organization of Cultural Resource Management and Development, pp. 726–733.

Haggis, D.C. 2005. *Kavousi* I: *The Archaeological Survey of the Kavousi Region* (*Prehistory Monographs* 16), INSTAP Academic Press.

Kalantzopoulou, T.I. 2022. *Taking the High Road: Prehistoric Habitation and Exploitation in the Mountains of East Crete. New Evidence from an Extensive Survey* (*AEGIS* 22), Presses universitaires de Louvain.

Kalantzopoulou, T., and Y. Papadatos. Forthcoming. "South Coast Networks in the Neopalatial: An Examination of the Level of Integration of Marginal Economic Zones," in *Chryssi Island and the World of Littoral Archaeology: Contextualizing Island Research Around Crete. Proceedings of a Conference Held in Pacheia Ammos, Crete, 9–11 June 2023*, M. Eaby, K. Chalikias, and C. Sofianou, eds., INSTAP Academic Press.

Papadatos, Y., and K. Chalikias. 2019. "Minoan Land-Use Patterns and Landscape Transformation in the Mountains of the Ierapetra Area: The Building at Gaidourophas," in *Exploring a* Terra Incognita *on Crete: Recent Research on Bronze Age Habitation in the Southern Ierapetra Isthmus*, K. Chalikias and E. Oddo, eds., INSTAP Academic Press, pp. 79–95.

Papadatos, Y., and T. Kalantzopoulou. 2022. "Turning the Landscape into Territory: Strategies of Power for the Exploitation of the Cretan Mountains During the Neopalatial Period," in *Political Geographies of the Bronze Age Aegean: Proceedings of the Joint Workshop by the Belgian School at Athens (EBSA) and the Netherlands Institute at Athens (NIA), May 28 to 31, 2019* (*BABESCH* 43), G.J. van Wijngaarden and J. Driessen, eds., Peeters, pp. 31–46.

Pendlebury, J.D.S. 1939. *The Archaeology of Crete: An Introduction*, Methuen.

Karphi Revisited

Exploring a High-Altitude Minoan Settlement in Its Diachronic Landscape

Saro Wallace and Krzysztof Nowicki

Introduction

The Late Minoan (LM) IIIC settlement known as Karphi (ca. 1200–1000 B.C.) located high in the Dictaean Mountains of eastern Crete was excavated by the British School at Athens in 1937–1939 and again in 2008 (Pendlebury, Pendlebury, and Money-Coutts 1937–1938; Wallace 2020). It lies 1,141 m above sea level and 3 km northwest of and above the modern village of Tzermiado, which is situated on the Lasithi plateau. Below Karphi and to the west runs a deep valley route from Gonies and Avdou to the plateau via the Ambelos pass and the LM IIIC–Archaic (A) town of Papoura (where surface remains were recently documented in detail, Wallace 2025). After surface recording at Karphi in 2021 and 2022—following a transfer to the Ephorate of Antiquities of Herakleion (EFAHRA) of responsibilities for the site and the allocation of a five-year research permit to the new Polish Archaeological Institute at Athens by the Hellenic Ministry of Culture and Sports—we

started a new excavation exploring the wider site and transported the finds each year for study to INSTAP SCEC. As in 2008, INSTAP SCEC offered invaluable support in recording, analyzing, and publishing the emerging results: Dimitra Mylona and Carly Henkel are currently engaged in studying the zooarchaeological and archaeobotanical remains, respectively, and Matina Tzari is undertaking the mammoth pottery conservation effort.

The settlement spreads over 3 ha and three mountain summits. Our research is focused on Area A located north of and below the Megali Koprana mountain; Area B on the lower southern slopes of Mikri Koprana (ca. 150 m east of the Karphi peak); and Area MG, the Megali Koprana summit (Fig. 1). Our aims are threefold: (1) to investigate the social organization of large new communities formed in the Aegean-wide crisis and relocation period ca. 1200 B.C.—including spatio-social units, public institutions. and status and identity systems; (2) to evaluate the constraints and opportunities under which subsistence economy operated in this turbulent period and at this altitude (with rugged slopes requiring extensive terracing, thin soils and very poor winter conditions, even wetter than today's climate, based on extensive finds of deciduous oak from the LM IIIC occupation, see Ntinou 2020); and (3) to explore how this striking landscape was experienced as a cultural palimpsest, with effects on habitus, by ancient people (Nowicki 2025). Evidence of ritual revisiting in the Protogeometric (PG) to Geometric (G) periods ca. 900–700 B.C. was noted in parts of the site (Day 2011; Wallace 2020); the 2008 excavations in Area B produced evidence of Middle Minoan (MM) I–II open-air use, likely related to the known peak sanctuary on the Karphi mountain's summit. Wallace is responsible for excavations in Areas A and MG, and Nowicki directs those in Area B.

Our new work confirms that a destruction by fire, strikingly obvious in the three areas tested in 2008 and C14-dated to ca. 1000 B.C. (Wallace and Higham 2020) affected the entire town. This has major implications for how we understand the settlement's lifespan and its end. We get a snapshot of the last use period, in which while aspects of pottery style and form show marked tendencies toward Protogeometric characteristics (e.g., ovoid vessel bodies, tall straight necks/collars, lug handles, and pithoi with stamped circles), many pots still have strong LM IIIC characteristics: Close Style decoration of panels and metopes filled with mixtures of spirals, cross hatching, and arcs; deep bowls with S-profile; stirrup jars of all sizes; neck- and belly-handled amphorae; pyxides; kalathoi; and pithoi decorated with chevron and hatched bands.

Building A1

Building A1 (Fig. 2), standing isolated below a ridge linking Megali and Mikri Koprana, reveals striking differences in this context. Its construction—otherwise a fairly typical two-room axial plan—is uniquely massive, with some blocks measuring ca. 2 m in length, and an exceptionally wide (over 1 m) doorway in the north wall into the main room. It also lacks either a destruction deposit

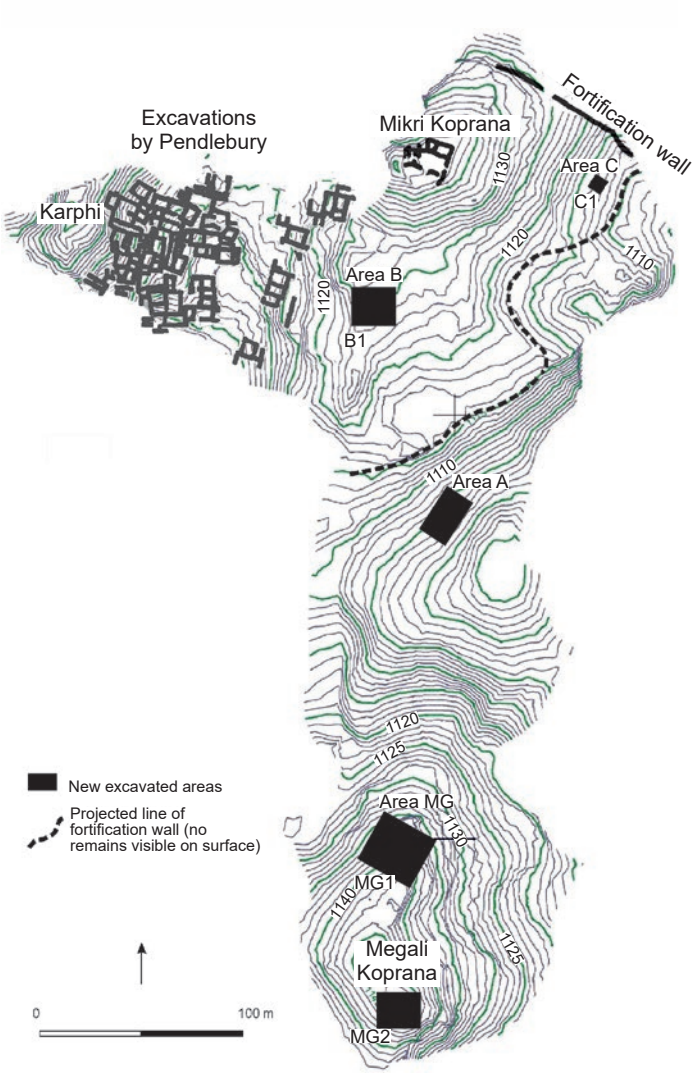


Figure 1. Plan of Karphi showing areas under investigation from 2023 to the present. Image S. Wallace.

(instead having an occupation/clearance deposit [ca. 0.2 m thick] of mixed leveling fill/natural soil, trampled soil, patches of roofing clay, residual wall stones, and sherds, with non-joining parts of the same vessels found scattered across two rooms) or a full chronological range of pottery types. Rather, we see predominantly fine decorated drinking and serving wares dating earlier, rather than later, in LM IIIC (kraters, deep bowls, lekythoi). These tend to have either an imported buff fabric or import-imitating buff slip over the long-established local red metamorphic ware, and they appear along with numerous pithoi, including an outsized pithos, sherds of which were first found in the main room in 2008, and a few cooking pots. A hearth ca. 0.6 m in diameter, smaller than the standard hearths we have recorded in Karphi houses and surprisingly small for a building of this scale, was found in the center of the main room (Fig. 3). The rear room lacks any hearth—typical in Karphi domestic settings where smaller rooms mainly had food storage functions—but it also seems to have had an extra use



Figure 2. Building A1 in 2026. Drone photo G. Damaskinakis.

for storage of some special items, of which only the broken and disturbed remains survive. Noted in the 2008 tests (Wallace 2020, 102–114) these comprise flat-based tubular or flaring clay stands, possibly fenestrated, and likely plaque or model fragments. A particular concentration was found in 2026 during excavation of the last quarter of Building A1 (the western part of the south room). Another find of interest in occupation deposits were two lumps of silvery haematite. Archaeobotanical material was located mainly around the hearth, and it included standard food species including



Figure 3. View from north of deposits above bedrock and hearth (center) in main room of Building A1. Photo S. Wallace.

olive, grass pea, bitter vetch, and lentil. Almost no animal bones were found, and the horn/antler groups decorating walls, often near doorways, in other areas are absent. Together the building's contents, location, and treatment suggest both a special use (gathering, drinking?) and special respect for that use within and/or after the settlement's lifespan because Building A1 was abandoned rather than destroyed. The occupation/abandonment deposits are buried under more than 1 m of soil and large stones, indicating no disturbance following the building's final collapse. In 2025 among lower tumbled stones just in front of the entrance, we excavated a fragment of human tibia with possible cutmarks. This suggests either use of individual skeletal elements (salvaged from a cemetery?) within Building A1 during its lifetime or the involvement of these elements in re-use/revisiting practices after the abandonment and partial collapse, most likely in the long timespan from the Early Iron Age (EIA) to the Archaic period, in which there is other evidence for revisiting at Karphi.

Megali Koprana

As in Area B, all structures excavated at Megali Koprana to date were destroyed by fire, along with their entire contents including: a bronze scrap hoard in a storeroom; a loom with accompanying sets of spool weights; all storage vessels with contents and personal items, for example, bronze jewelry and decorated bronze items; cooking pots; and small fine stirrup jars containing precious liquids. The structures were never reoccupied, although large metal items were probably removed and some disturbance of the burned and partly ruined buildings may have taken place during EIA revisiting before the whole architecture became part of a tell-like mound, only lightly touched in recent centuries of ploughing and fieldhouse construction.

Complex MG1 at the north end of the summit (Fig. 1) has walls surviving up to five courses high, and ca. 0.7 m of fallen



Figure 4. Area MG1 in 2025. Drone photo G. Damaskinakis.

stone debris, preserving floor deposits largely intact (Fig. 4). It is bounded on the north by a cliff with a drop of 2 m and on the south by a rock outcrop rising the same height; steep terraced slopes fall away to the east: the gentler west slopes have extensive surface remains of ancient buildings. Close comparison with Area B reveals standard and area-specific features of Karphi residences for the first time. We see typical axial plans with various agglomerative additions, as known from the 1930s excavations; central clay hearths in main rooms (we now know hearths to be standard in Karphi houses, but the MG1 complex has exceptional hearth diameters, at over 1 m); and central stone platforms or column bases in all main rooms (these seem especially characteristic to Megali Koprana houses: similar platforms have recently been found in Complex MG2 at the south end of the summit, only one in Area B). We infer that the mountain, located outside the fortification protecting Mikri Koprana and Karphi peaks (Wallace 2020, 11–14) may have formed a separate and acknowledged district with specific cultural practices, status, and identities.

Within the site and perhaps the district, Complex MG1 seems prosperous. The part constructed first seems to be a central building with a large main room: this had two doorways in its west wall giving access to two sizeable storerooms and a secondary, separately entered main room to its north. The west wall extended 4–5 m to the south forming a partial enclosure. A second remarkably similar building, with a rear storeroom incorporating a separate recessed area lined with green phyllite slabs, and two extra storage spaces on a rock shelf to its south, was then built inside this wall, abutting the south wall of the central structure. The double wall on the west potentially offered insulation against prevailing winds; traces of a third added wall appear on the same line farther west. Both buildings had extension areas added on the east: that of the south building is poorly aligned with the north wall of its main room, and it was clearly an afterthought. East of the central building, two west–east walls interrupting the north–south facade with its central entrance to the main room separated the extension space into a room with its own central platform and hearth (the east wall of this structure, with a likely entrance, has eroded downslope) and a smaller space housing a pithos and other stored items to its south. External areas to the north and west of the complex have sloping bedrock covered directly by tumbled stones and a few, scattered refuse-type finds. But the partly enclosed extension area east of the south building is different: it contained a dump, over 1 m deep, of dense unburned bone fragments (including many skull fragments and teeth of likely consumed animals) and abraded non-joining sherds (fine vessels, cooking pots, some pithos sherds). The dump was partly retained by a small north–south wall and possibly was related to immediate discards following (hosting?) activities inside the building.

We suggest the MG1 complex comprised a high status residence(s) used for hosting in view of several characteristics: its main room sizes; its hoard and other metal finds; its special architectural features including the double storerooms; its storage capacity and the scale of the storage and other vessels found there, including an exceptionally large stirrup jar that is difficult to imagine being transported full (Figs. 5, 6); its especially wide range of stored crops and gathered plants (Fig. 7); its range of craft activities (the in situ burned remains of a loom were found in the central building); and some special finds including the exceptionally large kraters in the south building and a household-type ritual set in the central building (hut-urns, figurines, and a building model; see Wallace and Nowicki 2026).

In Complex MG2 (Fig. 1), a 2025 test trench and a 2026 trench (8 x 10 m) revealed parts of six LM IIIC rooms. An apparently Early Minoan (EM) obsidian blade was found on bedrock in 2026. Fragments of EM–MM stone vases found in MG1 occupation and destruction deposits may also suggest use of heirloom objects retrieved from cemetery sites in the nearby Lasithi plain because



Figure 5. View from south of north storeroom deposits in the central building of Area MG1 in 2024. Photo S. Wallace.

there is no trace of either earlier settlement or burial on or around the three mountaintops.

Revisiting in the PG–G/A period occurred in complex MG1, as elsewhere in the Karphi site. In 2008 fragments of PG–G grooved cooking pots were found in topsoil in the south building: a more diverse range of pottery, including cups in the same micaceous fabric, was found in 2024–2025. In 2023 and 2024 isolated human skeletal elements (cranium fragment, likely human femur head) were found in upper destruction/building collapse layers in the central and south buildings respectively. As in Building A1, lack of associated skeletal remains could suggest salvaged material from a cemetery was transported for ritual-related purposes, either within the use span of the buildings, or after they had been ruined.

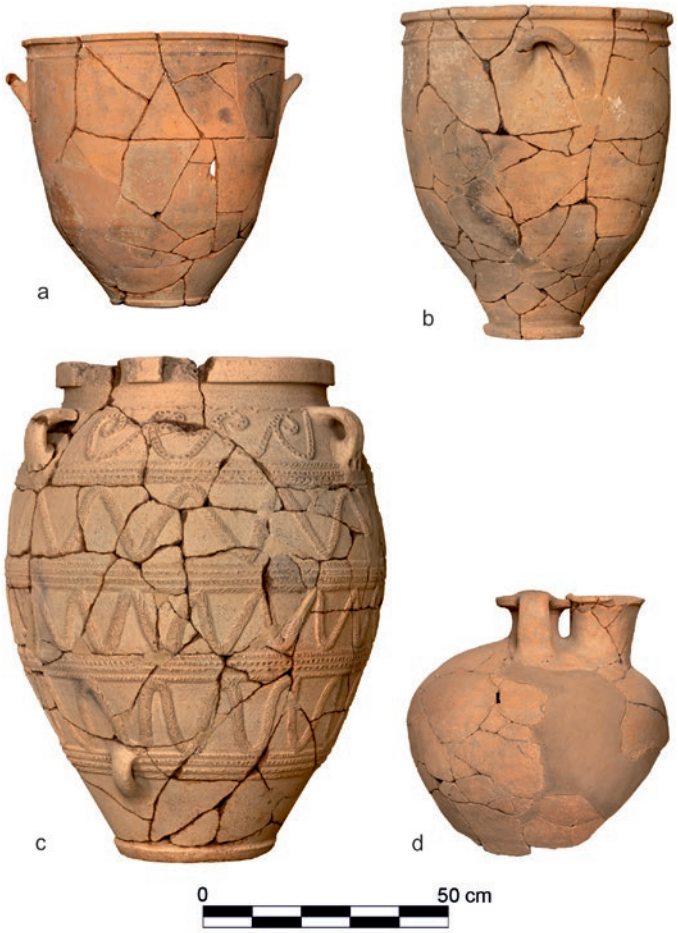


Figure 6. Pottery from Area MG1: krater-basins (a, b), pithos (c), and outsize stirrup jar (d). Photos J. Vanderpool.

Area B

Middle Minoan I–II material found in Area B (Fig. 1) in 2008 signified open-air use, likely for cooking or food preparation (Wallace 2020, 114–141). The pottery was found in ashy soil in rock crevices under LM IIIC floor deposits, and it was clearly encountered by LM IIIC builders and residents. It mainly comprised cups, some cooking pots, and medium jars. Miniature vessels were found but not storage vessels or the figurines regularly found in the Karphi peak sanctuary.

In 2023–2026 we revealed extensive areas of overlying LM IIIC architecture and deposits similar to those in the 1930s excavations adjoining to the west, and they offer the first chance to characterize habitation contexts and architectural sequence in detail. Ten separate rooms or spaces have now been exposed in two agglomerative complexes currently termed B1. A southern complex is orientated east-west with entrances on the east, while beyond a small gap on the north a second complex was built at angles to it, orientated northeast–southwest. There are indications that parts of the complex made reference to the earlier period of use: a sherd-constructed LM IIIC hearth, unique on the site, was found very close to a MM hearth or fire zone. Excavation here tests and changes our hypotheses about "standard" versus "higher-status" residences and about economic production in LM IIIC. For example, while weaving seems to have been restricted to some complexes in the settlement (see Wallace 2021), and the only preserved loom was found in MG1, a loom clearly was present in one B1 main room/structure (as was also the case in MG2). This is witnessed by more than 60 loomweights—probably representing three sets of about 20—in a main room (4) within the south complex. Horn and antler clusters as decorative features on walls and particularly close to doorways were found across B1, just as in MG1 and MG2 (Fig. 8). Average main room sizes in the B1 complexes, however, currently appear somewhat smaller than those in MG1: total finds and densities, including the range of food crops represented, remain to be compared directly in order to throw light on social organization across different districts. A standard range of foodstuffs was recovered from the LM IIIC deposits—including lentil, barley, emmer and einkorn, some free-threshing wheat, grass pea, bitter

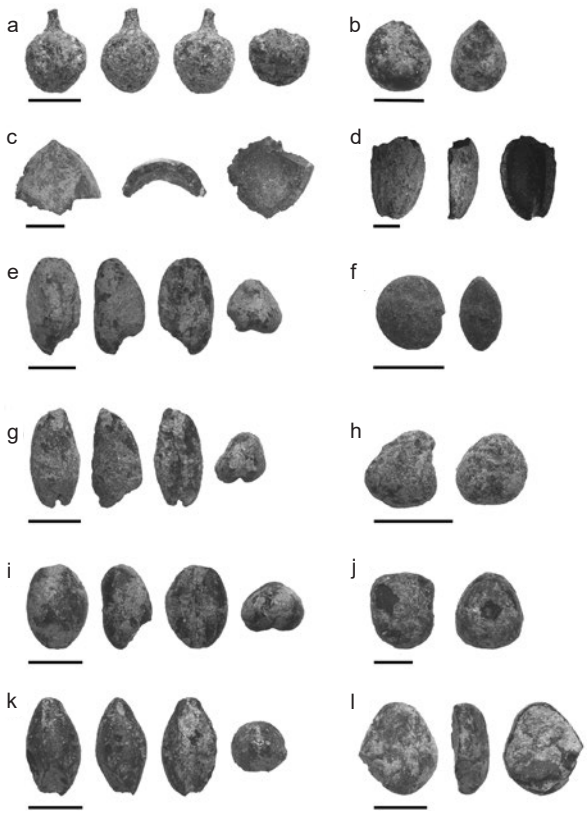


*Figure 7. Charred plant remains: (a) grape pip (*Vitis vinifera *ssp.) from B1 room 3; (b) fig seed (*Ficus *sp.) from MG1 central building storeroom; (c) almond shell (*Amygdalus communis*) from B1 (MM II deposit in/above circular structure); (d) olive stone (*Olea europaea*); (e) emmer wheat (*Triticum turgidum *ssp.* dicoccum*) from MG central building main room; (f) lentil (*Lens culinaris*) from B1 room 4; (g) einkorn wheat (*Triticum monococcum*) from MG central building main room; (h) bitter vetch (*Vicia ervilia*) from MG2; (i) free-threshing wheat (*Triticum aestivum/turgidum *ssp.* durum*) from MG1 central building main room; (j) grass pea (*Lathyrus sativus*) from B1 room 4; (k) hulled barley (*Hordeum vulgare*) from MG1 central building storeroom; (l) broad bean (*Vicia faba *var.* minor*) from MG central building main room. Scale bars set at 3 mm, except (b) set at 1 mm. Photos C. Henkel.*



Figure 8. Horn deposits from B1 under study. Photo D. Mylona.



Figure 9. View from east of Middle Minoan circular structures emerging under LM IIIC architecture in B1. Photo K. Nowicki.

vetch, olive, almond, grape, and fig (Fig. 7)—with some closely associated with particular vessels. Species of interest include acorn, suggesting either an intrusion from burned oak branches used as roofing or packing, or as a supplementary food.

The first MM architecture here was found in 2024–2025 and comprises two circular stone-built structures, unroofed and found standing one course high, under a MM II deposit. In one, a MM I use layer is separated from the overlying deposits by a sealing layer of roofing-type clay: its floor may have been paved, and a built shelf or bench adjoins the bedrock against which it stands on the west (Fig. 9). In the very center of the structure, a hearth or burned area was found. Pottery and bones were rare. Both phases of MM use in the area appear to have involved ritual activity. In 2026 we uncovered still earlier activity in the same place, predating the circular construction and located in deep crevices, including an upturned cup dating to MM I or earlier.

References

Day, L.P. 2011. *The Pottery from Karphi: A Re-Examination* (*BSA* Studies 19), British School at Athens.

Nowicki, K. 2025. *Settlement in Crete during the Bronze to Iron Age Transition: The Crisis, Collapse and Reconstruction c. 1230–900 BC*, De Gruyter.

Ntinou, M. 2020. "Analysis of the Wood Charcoal," in Wallace 2020, pp. 233–241.

Pendlebury, H.W., J.D.S. Pendlebury, and M.B. Money-Coutts. 1937–1938. "Excavations in the Plain of Lasithi III: Karphi. A City of Refuge of the Early Iron Age in Crete," *BSA* 38, pp. 57–145.

Wallace, S. 2020. *Karphi Revisited: A Settlement and Landscape of the Aegean Crisis Period c. 1200–1000 BC* (*BSA* Suppl. 50), British School at Athens.

———. 2021. "Socioeconomic Crisis and Cultural Innovation: The LBA–EIA East Mediterranean Via a Case Study of Lasithi, Crete," *OJA* 40, pp. 391–416, https://doi.org/10.1111/ojoa.12232, accessed October 14, 2026.

———. 2025. "Quantity and Quality: Integrating Modern Fieldwork and Analysis of Museum Collections to Enrich Narratives of Prehistoric and Social Change in North Central Crete," in *Proceedings of the 13th International Congress of Cretan Studies, Agios Nikolaos, 5–9 October 2022,* vol. A2, G. Moschovi, I. Lydaki, and K. Kopaka, eds., Society of Cretan Historical Studies, https://13-iccs.gr/assets/082_A1_WALLACE.pdf, accessed October 14, 2026.

Wallace, S., and T. Higham. 2020. "Radiocarbon Analyses," in Wallace 2020, pp. 243–248.

Wallace, S., and K. Nowicki. 2026. "A Series of Unfortunate Events: Deurbanization, Agency, Placemaking, and the Origins of City-States in Crete 1200–700 BC," *WorldArch* 57, pp. 65–92, https://doi.org/10.1080/00438243.2025.2608645, accessed October 14, 2026.

Prehistoric Elephant Hunters of Crete?

Thomas Strasser, Andreas Darlas, Miriam Clinton, Alexandra van der Geer, and Athanassios Athanassiou

The Megalos Peristeres Cave (MPC) is located on the northwest coast of Crete, 3.5 km west of the center of Rethymnon (Figs. 1, 2). A joint excavation carried out in the cave in 2024–2025 under the auspices of the American School of Classical Studies at Athens and the Ephorate of Palaeoanthropology and Speleology of the Hellenic Ministry of Culture attempted to assess the extent to which humans interacted with the Middle–Late Pleistocene Cretan fauna: specifically, the extinct endemic deer *Candiacervus*, which includes an impressive variety of species, and a species of dwarf elephant, *Palaeoloxodon creutzburgi* (Figs. 3, 4). Could humans have so significantly impacted the environment and thus contributed to the extinction of these animals? Did climate play a role in their demise? We combined archaeology and paleontology to elicit a clear understanding of this "contact" phase of humans and native animals.

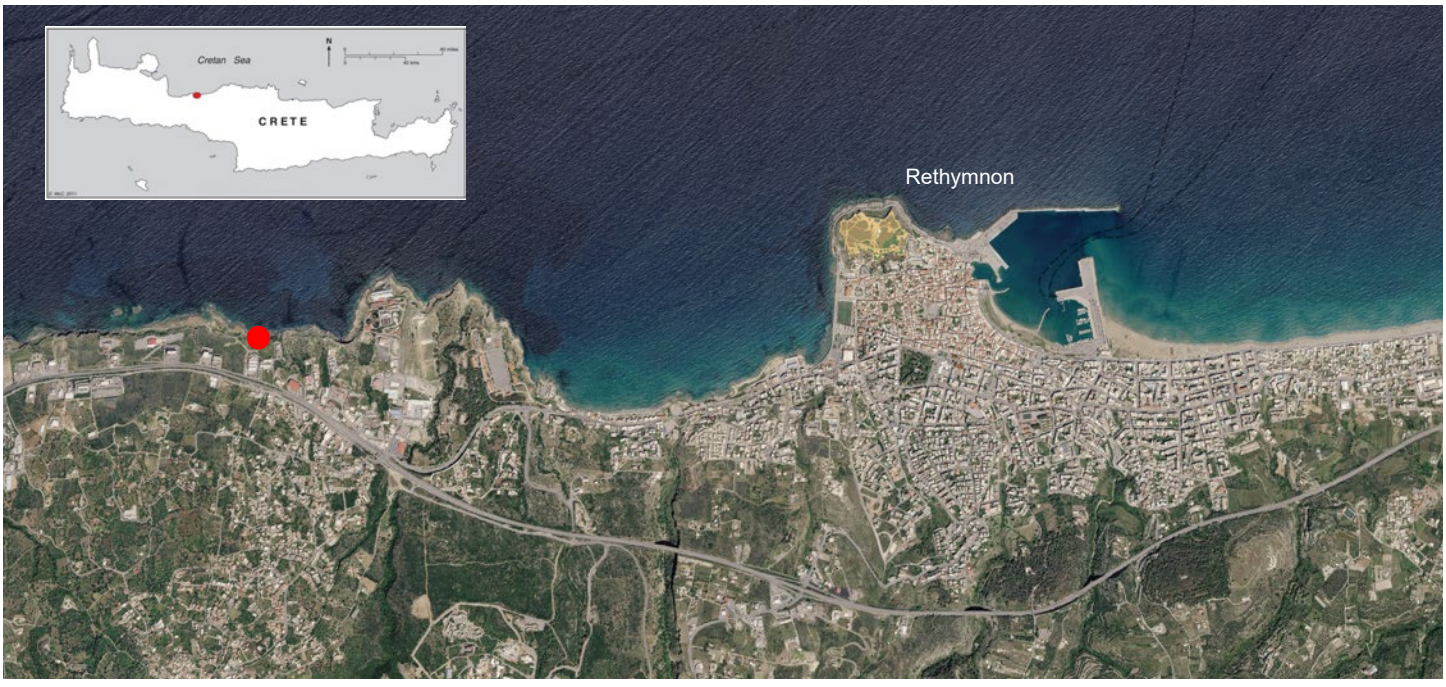


Figure 1. Location of Megalos Peristeres Cave west of Rethymnon in northwestern Crete. Image E. McClellen; modified from Google Earth.



Figure 2. View looking northwest from inside the Megalos Peristeres Cave. Photo T. Strasser.



*Figure 3. Partial skeleton and reconstructed outline of the dwarf elephant of Crete (*Palaeoloxodon creutzburgi*) in the Paleontological Museum of Rethymnon. This composite skeleton is constructed of fossils from various sites. Photo A. Athanassiou.*

Megalos Peristeres Cave in a Local Context

Crete has been an island since the Pliocene, due to a marine transgression that followed the Messinian Salinity Crisis, ca. five million years ago, and thereby it offers a truly isolated oceanic context to examine the questions posed above. After acquiring mostly its present geographic form and extent, Crete witnessed the immigration of vertebrates able to colonize remote islands. Two major migration waves are known from the island's fossil record. The first happened sometime during the Early Pleistocene, possibly as early as one million years ago, and included mainly hippopotamus, mammoth, and mouse populations, which became established on the island and evolved into endemic species: the dwarfs *Hippopotamus creutzburgi* and *Mammuthus creticus*, and the giant mice of the genus *Kritimys*. The second migration wave that followed the extinction of the older endemic fauna included elephant, deer, mouse, shrew, and otter immigrants that evolved into endemic species as well. This more recent endemic fauna is of late Middle to Late Pleistocene age (i.e., a few hundred thousand to a few tens of thousands of years ago), and the fossils are very common in caves along the northern coast of Crete, particularly west of Rethymnon. This is one of the richest Late Pleistocene fossil mammal areas in the Mediterranean. It is comprised of the largest amount of fossil deer sites (as well as other fauna) on the island (de Vos 1984; van der Geer, Lyras, and de Vos 2021). Megalos Peristeres Cave belongs to this group of fossiliferous caves, and due to the large amount of sediments accumulated on its floor, it was considered a fruitful location to test the question of whether humans interacted with those faunas.



Figure 4. Partial skeleton and reconstructed outline of the dwarf Pleistocene deer of Crete Candiacervus ropalophorus *in the Paleontological Museum of Rethymnon. This composite skeleton is constructed of fossils from various sites. Photo A. Athanassiou.*

What We Found

We excavated grid squares measuring 2 x 2 m (Fig. 5). Many fossil bones were found in 2024, including *Candiacervus* (Cr). Immediately below the topsoil is a Final Neolithic stratum. That stratum is immediately above an ash layer. At approximately 60 cm deep, we uncovered the atlas bone of an extinct elephant, which has dimensions consistent with an attribution to the Cretan endemic elephant *Palaeoloxodon creutzburgi* (Pc). Stone tools were found in the flotation residue immediately above it, some of

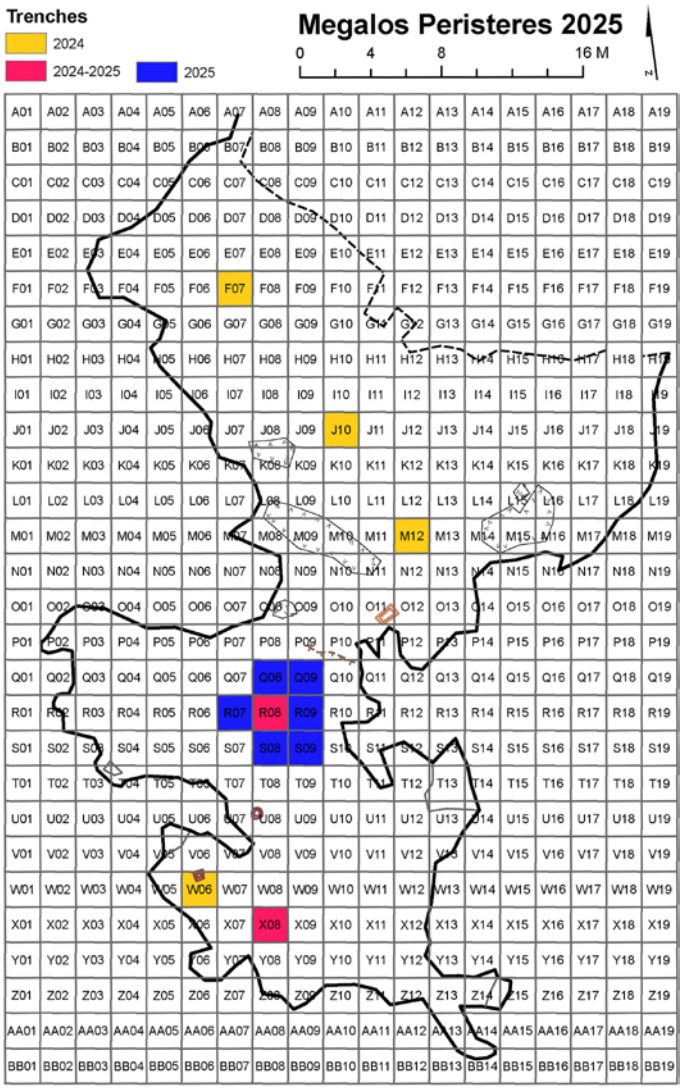


Figure 5. Grid plan of trenches in the cave. Image M. Clinton.



Figure 6. Tusk and molars of the dwarf elephant in MPC. North arrow is on top of the molars. Photo T. Strasser.

which appear to be terminal Pleistocene. Though the tools were found in a higher stratum, no pottery was found in, or below, the stratum associated with the elephant. These finds would decide the focus of the 2025 season.

In June and July of 2025, the team excavated for eight weeks, opening six new trenches measuring 2 x 2 m and completing two that were started in 2024 (Fig. 5). There were two objectives. The first was to decipher the stratigraphy of the cave sediments. The second was to learn how much of the Pc was preserved in addition to the atlas bone found in 2024. To accomplish this, we excavated a series of trenches around the atlas. After the topsoil is a stratum of highly calcified sediment around the elephant skeletal elements, which was far too hard for shovels or hand picks. Chisels had to be used to continue the excavation. This solidly calcified layer was also where the elephant bones were located. We had to remove large chunks of calcified soil, which had many bones solidified within it. We found a considerable part of the skeleton of a single, adult elephant. The nature of the findings indicates that additional individuals existed in the cave, including juveniles. Tools were found both in and below the highly calcified soils that contained the Pc.

We dry sieved 100% of the topsoil, and everything below it was transported to the INSTAP Study Center for East Crete for 100% flotation and sorting of residue by Matina Papadaki. This amounted to ca. 1,400 sediment bags, resulting in a much slower process than usual due to the highly calcified sediment. Consequently, artifactual finds are only now emerging as we proceed through the material destined for water sieving, but very promising lithics have been found, such as a possible Palaeolithic point, as well as Melian obsidian.

We also found a complete elephant tusk and some molars in and below the calcified soil level (Fig. 6). That tusk is one of the two best preserved tusks of this species found (the other is on display in the Paleontological Museum of Rethymnon; Fig. 3). This is a very important find for both paleontology and archaeology. We hope the cleaning of the tusk may reveal signs of human interaction, but that examination will take some time.

We plan to produce a series of carbon-14 dates from the fossil Cr/Pc bones to provide a chronological sequence for this lower stratum. For now, there is a date for another fossil from the island (i.e., artifacts associated with datable faunal remains). Using the amino acid racemization method, the date of one Pc specimen from the nearby Simonelli Cave was estimated as 49,000 B.P. (±20%) (Belluomini and Delitala 1983). Though it is only a single date, it indicates a Late Pleistocene date is likely for our specimens as well, and that *Palaeoloxodon* was not the first or last of its species. In addition, fragments of pumice were found at MPC. They require a specialist's analysis, which is pending. They possibly could date to a pre-Minoan eruption of Santorini, for example, the Plinian eruption of 21,000 B.P. As our analyses of bones and residue continues, more exciting discoveries will inevitably be made.

Acknowledgments

We thank the Ephorate of Palaeoanthropology and Speleology, the Archaeological Museum of Rethymnon, the American School of Classical Studies at Athens, Providence College, and INSTAP SCEC for their valuable assistance and support of the excavation.

References

Belluomini, G., and L. Delitala. 1983. "Datazione di resti ossei e dente del Pleistocene Superiore e dell'Olocene dell'area mediterranea con il metodo della racemizzazione degli aminoacidi," *Geografia Fisica e Dinamica Quaternaria* 6, pp. 21–30.

de Vos, J. 1984. "The Endemic Pleistocene Deer of Crete," *Verhandelingen der Koninklijke Nederlandse Akademie van Wetenschappen, Afd. Natuurkunde* 31, pp. 1–100.

Van der Geer, A., G. Lyras, and J. de Vos. 2021. *Evolution of Island Mammals: Adaptation and Extinction of Placental Mammals on Islands*, 2nd ed., Wiley.

Thank You to Our Supporters

Thanks to Our Donors for Equipment Upgrades

Kostas Chalikias

Over the past year, the INSTAP Study Center for East Crete acquired several major pieces of equipment that have strengthened both its research facilities and its digital documentation capabilities. These purchases were made possible through the generous support of two donors: Nick Ervin, who funded new computers and illustration equipment (and who last year helped us with the purchase of the new truck), and Crawford (Chill) Hill, who sponsored the upgrade and repair of the portable X-ray fluorescence spectroscopy (pXRF) instrument.

The most substantial investment in the William D.E. Coulson Conservation Laboratory was the pXRF upgrade and repair at a cost of over €26,000. Since its return to service, the upgraded system already has been used actively across a range of research projects (Fig. 1). These include doctoral work on metal alloys and crucible fragments from Malia Area Pi for Valentin Loescher (Sorbonne University) as well as the study of serpentinite vessels from Mochlos by Killian Regnier (UCLouvain). Further, Emma Lipsett has used the instrument to establish provenance of obsidian pebbles from Stelida, Naxos. In addition, excavation directors have made use of the system, including Tristan Carter who analyzed copper-based artifacts from Stelida and Tom Strasser who sourced obsidian from the Megalos Peristeres Cave.

Nick Ervin's contribution focused on improving the computing and illustration infrastructure at the Study Center. Over the course of the year, his support enabled the purchase of a series of essential items: a laptop for the conservation lab; a high-performance desktop computer for drafting, photogrammetry, and AutoCAD work; a stand for a 24-inch Wacom monitor to support ergonomic use of the digital drawing system; and a high-performance laptop for staff conducting remote illustration work.



Figure 1. Conservation intern Katy Lamb calibrating the pXRF in the lab at the Study Center. Photo K. Hall.

Taken together, these investments have improved the Study Center's ability to support a wide range of research activities. From scientific analysis with the upgraded pXRF to archaeological illustration, photogrammetry, and digital documentation, the new equipment already is being put to daily use by staff, students, and visiting researchers. We are grateful to Crawford Hill and Nick Ervin for making these important acquisitions possible.

Donor Spotlight

A Love of Learning About Minoans and Mycenaeans

David Griffin

I am a retired pastor who has developed a keen interest in the Aegean Bronze Age. I became fascinated with Minoan and Mycenaean archeology about 20 years ago after a cousin wrote a novel of historical fiction that featured Knossos. A few years later, I became aware of the Griffin Warrior grave at Pylos, the archaeologists Jack Davis and Sharon Stocker, the INSTAP Study Center for East Crete, and its newsletter *Kentro*. Increased knowledge about the Minoan and Mycenaean civilizations made me want to know more. In the Minoans of Crete I see an exceptional people with remarkable sailing skills, creative artistry, and a love for nature. And yet all of this is wrapped in mystery because their written record is so small and mostly undeciphered.

During a trip to Greece in 2016, I was able to enjoy a personal encounter with the palaces of Knossos and Phaistos as well as ancient Akrotiri. Visits to the Herakleion Archaeological Museum, the Archaeological Museum of Thera, the Museum of Cretan Ethnology, and the National Archeological Museum in Athens added richly to my knowledge of Crete in the time of the Minoans.

During the last year I designed a tour and led the group in May of 2026 around Minoan sites in Crete as well as Akrotiri and the Palace of Nestor. We also visited the Study Center where Eleanor Huffman graciously showed us elements of the good work done by this fine institution (Fig. 1). I hope and pray the very best for INSTAP and the amazing archaeological heritage of Crete.



Figure 1. David Griffin with Eleanor Huffman at the Study Center in May. Photo courtesy D. Griffin.

Contribute to the Al and Mary Leonard Emergency Site Preservation Fund



This fund addresses the urgent conservation efforts for archaeological sites in Crete such as fence construction and installation of signage to guide visitors. Through the significant contribution of the Leonards, we can now provide $5,000 grants each year for the next decade. These crucial preservation efforts will have a lasting impact on preserving Crete's cultural heritage sites for generations to come.

We invite all of our friends and members to contribute to this important cause. Every donation, no matter the amount, plays a vital role in supporting our mission of preserving cultural heritage. For more information, see https://instapstudycenter.net/giving/.

> My late wife Mary's connection to the Study Center began in 1997, when we led a small group around Crete during the Center's opening. But it was in 2002 and 2003, while volunteering at the Hagios Charalambos excavation, cleaning bones in a small tent, that the idea for this gift first took root. The cave had been accidentally discovered during road construction and wisely sealed until proper excavation could be carried out. Each time we returned to Crete, Mary reflected on how the island's rich past might be protected amid growing modern development. This fund is a step toward answering that concern, supporting efforts to preserve Crete's remarkable archaeological heritage.
>
> *—Al Leonard*



Support the Future of Aegean Archaeology

We are seeking donations for fellowships and internships in the amount of $3,000 at the INSTAP SCEC in 2027. These initiatives include the Richard Seager and Harriet Boyd Hawes Fellowships, the William D.E. Coulson Conservation Laboratory Internship, and the Ceramic Petrography Internship.

Numerous graduate students, doctoral candidates, and postdoctoral researchers have used the facilities at the Study Center with very rewarding results. They generate high-quality research, and they become acquainted with archaeological material and practices. Many of the fellows and interns have written peer-reviewed articles based on their work at the Study Center, have launched academic careers, or have started their own research projects. These positions have become an integral part of the Study Center's mission, and we hope that you will help us support them.

Richard Seager Fellowship

The Richard Seager Fellowship helps doctoral candidates complete their Ph.D. dissertations. Established in 2009, each year one fellowship is awarded to a candidate working on a topic in the Aegean Bronze or Iron Age. Research subjects have included Minoan cooking wares, Prepalatial and Protopalatial pottery from Mochlos and Knossos, plant remains from Minoan ritual contexts, and human remains from prehistoric cemeteries. Since its inception, 10 fellowship recipients have completed their dissertations, helping to ensure the continuation of Aegean Bronze Age scholarship.

Harriet Boyd Hawes Fellowship

The Harriet Boyd Hawes Fellowship was created in 2017 to provide support to Ph.D. candidates or recent Ph.D. recipients for projects involving gender studies in Aegean Bronze Age archaeology. It is open to those in the fields of Anthropology, Art History, Ancient History, and Classics. Since its inception, five fellowships have been awarded, and the field has benefited from such diverse topics as intergenderism on Minoan seals, an examination of female figurines from peak sanctuaries, and the history of female archaeologists studying Minoan civilization.

Conservation Internships

Each summer the Study Center hosts international graduate students enrolled in conservation programs for four-week internships that provide hands-on experience in the William D.E. Coulson Conservation Laboratory. During their time at the Study Center, conservation interns work on recently excavated archaeological material in a well-equipped, modern conservation laboratory and participate fully in the work of the lab. Tasks include the examination and analysis of artifacts, their cleaning and reconstruction, and their full documentation and photography. Since 2000, the program has helped more than 40 interns gain experience in preserving the past.

Ceramic Petrography Internship

Students complete a four-week internship under the tutelage of Dr. Eleni Nodarou, director of the William A. McDonald Ceramic Petrography Laboratory, which was founded in 2002. Open to graduate students of archaeology, geology, conservation, and related fields, the goal is to emphasize the archaeological component of the discipline, the criteria for grouping petrographic samples, and the methodology of describing thin sections. This scientific method uses state-of-the-art technology to enable petrographers to examine pottery production and distribution and to shed light on issues of technology of manufacture as well as trade and exchange of commodities.

Al and Mary Leonard Emergency Site Preservation Fund

This fund supports site conservation to address the urgent needs for archaeological sites across the island such as fence construction or repairs and the installation of bilingual signage to improve visitor understanding. These crucial preservation efforts will have a lasting impact on preserving Crete's cultural heritage sites for generations to come.

Donate Today

Please support the Study Center's interns and fellows online through PayPal by visiting https://instapstudycenter.net/giving/ and clicking the donate button. Be sure to indicate how you would like your donation applied.

If you prefer to send us a check, please make it out to the INSTAP Study Center and include in the memo portion how you would like your gift to be allocated. Mail it to INSTAP Study Center for East Crete, attn. Elizabeth Shank, P.O. Box 162, Rouzerville, PA, 17250 USA.

If you would like to donate in euros, please contact Eleanor Huffman at the INSTAP Study Center (eleanorhuffman@instapstudycenter.net or tel. +30-28420-93027). Make sure to note how you would like your donation applied.

The INSTAP SCEC is a non-profit 501(c)3 charitable foundation, and our US tax identification number is 13-3832587. All donations are tax exempt to the fullest extent of the law.

Support the Future of Aegean Archaeology

AEGEAN LEGACY CIRCLE

SECURING THE FUTURE OF THE INSTAP STUDY CENTER FOR EAST CRETE

The Aegean Legacy Circle is designed to honor and recognize those who have made a lasting commitment to the future of the INSTAP Study Center through planned gifts. These types of deferred or legacy gifts are a way for donors to make charitable contributions from financial or estate plans.

Planned giving is critical to ensure the continuity of the Study Center's mission to advance the study and preservation of the prehistoric heritage of Crete and the broader Aegean region.

Members of the Aegean Legacy Circle will be joining a dedicated group of individuals who share a profound commitment to support the decades-long mission of the INSTAP Study Center. Planned giving can take many forms, such as bequests, charitable trusts, life insurance, or other estate planning instruments.

Each gift, regardless of size, helps to secure the future of our research, heritage management, educational programs, and community outreach in Crete. Members can choose to assist the Study Center's mission by making a gift to support:

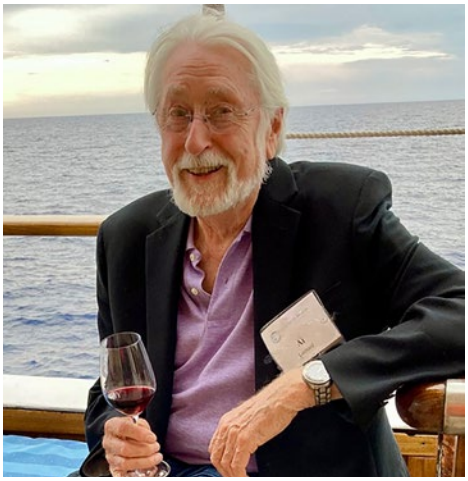
- The Study Center's endowment
- Funds for an internship or fellowship
- A specific facility upgrade
- New equipment
- A specific archaeological project. You may even wish to create a new funding opportunity for future archaeological projects.

In recognition of their generosity, members of the Aegean Legacy Circle will receive:

- Acknowledgment in the *Kentro* newsletter and in communications with SCEC members (unless one prefers to remain anonymous)
- Naming opportunities with major donations (e.g., lab space, lecture series, facilities)
- Invitations to exclusive events like lectures and receptions
- Regular updates on the Study Center's work and achievements
- Gratis copies of books published by INSTAP Academic Press

Please feel free to contact us at info@instap.org with any questions you may have about the Aegean Legacy Circle.





Al Leonard cruising the Aegean Sea. Photo T. Curry.

We are delighted to welcome the second member to the Aegean Legacy Circle, Al Leonard. His generosity has already made a meaningful difference through the Al and Mary Leonard Emergency Site Preservation Fund. His commitment to the Study Center will continue well into the future through his legacy gift, helping to preserve its mission for generations to come.

THANK YOU FOR YOUR SUPPORT

As a private nonprofit organization, we rely on our membership to help us document and conserve the cultural heritage of Greece. Support from our friends and members enables us to provide essential archaeological services to international scholars working in Greece and to the local branch of the Hellenic Ministry of Culture. We are proud of our commitment to the future of the discipline in the form of conservation and petrography internships and research fellowships for doctoral students and postdoctoral scholars.

We heartily thank our supporters who donated from September 1, 2025, through August 31, 2026, and we apologize for any inaccuracy or omission that may have occurred during compilation of the list below. To learn more or to join the Friends of INSTAP SCEC, please contact Elizabeth Shank, US Coordinator, elizabethshank@hotmail.com. To have your name included in next year's issue of *Kentro*, donate online by scanning the QR code.

Aegean Legacy Circle

Stuart and Bonny Evans
Al Leonard

Patrons, $1,000 or More

AEGEAS Nonprofit Civil Company
Anonymous
Arete Foundation
Philip P. Betancourt
Thomas M. Brogan and Natalia Vogeikoff-Brogan
Jack Davis and Sharon Stocker
Kathleen and Nick Ervin
Stuart and Bonny Evans
Julie Herzig and Robert Desnick
Crawford Hill, Chill Foundation
Gladys Krieble Delmas Foundation
Al Leonard
Marc Mancuso
John Seim
Select Equity Group, L.P.
Joseph Shaw
Jeffrey Soles
Tom Strasser
Joe Wagman
Malcolm H. Wiener

Partners, $500–$999

Leslie Day
Susan C. Ferrence
Elizabeth Shank
Mike White

Stewards, $100–$499

Lonce Bailey
Gary Bingham
Kostas Chalikias
Kevin Daly
Jason Earle
Joanne Murphy
Robert Oppman
Judith Papit
Julia Shear
Susan Kirkpatrick Smith

Supporter, $1–$99

David H. Stackhouse

Banner Year for Prof. Jack Davis

Thomas M. Brogan

While all of our members, staff, and leaders are enjoying a productive year, probably none have had quite as much fun as Jack Davis, Blegen Professor in the Department of Classics at the University of Cincinnati, Director Emeritus of the American School of Classical Studies at Athens (ASCSA), and Co-Director of the Pylos Excavation Project. He is also a distinguished member of the managing committee of the Study Center. In May Jack received the Athens Prize from the trustees of the ASCSA at the school's annual gala in New York City. Later that same month, Jack and his wife, Dr. Sharon Stocker, attended the grand opening at the National Archaeological Museum in Athens of the special exhibit *Pylos of Nestor: A Mycenaean Kingdom Revealed* (May 26 to Oct. 31, 2026), the third and final leg of a marathon traveling exhibition highlighting their major discoveries at Pylos. The show first opened in Kalamata in February 2025 before taking a long detour at the J. Paul Getty Museum in Malibu, California. Finally, Jack was the focus of the 21st International Aegean Conference titled "NESTOR: Celebrating the Work of Wise Jack Davis." This event was organized by former students and colleagues at the University of Cincinnati and hosted by the ASCSA. It included lectures by more than 100 colleagues and friends over the course of five days (Fig. 1). The talks are available on the ASCSA website and YouTube channel for anyone who missed the event. The INSTAP Study Center also wishes to congratulate Jack on his many achievements and to thank him for his kind counsel and many generous gifts.



Figure 1. Jack Davis (center front) with the participants of the 21st International Aegean Conference held in his honor, Athens, June 2026. Photo K. Tzortzinis; courtesy ASCSA.

Archaeometry Conference at the Archaeological Museum of Chania

Susan C. Ferrence

The Commission on the Archaeometry of Prehistoric and Protohistoric Inorganic Artefacts, Materials, and Their Technologies of the Union Internationale des Sciences Préhistoriques et Protohistoriques (UISPP; https://uispp.net/index.php/en/commissions/archaeometry) hosted its annual archaeometry colloquium (https://chania2025.sciencesconf.org) at the Archaeology Museum of Chania in Crete (https://amch.gr/en/) on November 6–8, 2025 (Fig. 1). The conference included participants from several other UISPP commissions and from other institutions located in a total of 25 different countries. It was streamed live on the museum's YouTube channel, and the recordings of the livestream are found there (https://www.youtube.com/@amchania/streams). The conference was supported by: the Ephorate of Antiquities of Chania, Crete, and the General Directorate of Antiquities and Cultural Heritage, both of the Hellenic Ministry of Culture; the Region of Crete; AGM Archeoanalisi, Merano, Italy; INSTAP Academic Press, Philadelphia, PA, USA; and the University of Miskolc, Hungary. Local news outlets covered the event and published several stories.

The new Archaeological Museum at Chania was opened in 2022 in the suburb of Chalepa, one of the historic parts of Chania, and it offers a magnificent view over much of the city, especially the seafront. It was a perfect location for the conference because the facilities include a state-of-the-art auditorium, which holds about 120 people and seamlessly hosts online presentations, an excellent cafe for breaks, and collaborative helpful staff led by their incomparable director, Eleni Papadopoulou (Fig. 2).

As one of the most important regional archaeological museums in Greece, the Archaeological Museum of Chania plays a central role in the presentation and study of material culture from western Crete, making it an especially meaningful venue for a conference dedicated to archaeometric research. The museum's commitment to public outreach was further demonstrated through the live streaming of the sessions on its YouTube channel, allowing a wider international audience to follow the proceedings.



Figure 1. Participants of the UISPP archaeometry conference at the Archaeological Museum of Chania, Crete, Nov. 7, 2025. Photo L. Ntantidakis.



Figure 2. Eleni Papadopoulou, director of the Archaeological Museum of Chania and also of the Ephorate of Antiquities of Chania, welcomed conference participants to the museum, Nov. 6, 2025. Photo. S. Ferrence.

Presentations spanned across time periods, continents, and different types of media and scientific analyses from neanderthals in the Caucasus and their exploitation of flint to a precious medieval almandine jewel from Great Moravia, from Bronze Age stone molds for metal axes found in Spain to the investigation of bronze artifacts from Japan. Many papers focused on the archaeometric examination of Minoan artifacts from several sites in Crete including: Late Minoan I Poros and Late Minoan II Knossos in Herakleion; Middle Minoan III Kastelli in the Pediada; Middle Minoan IA Petras, Late Minoan IB Siteia, and Late Minoan III Chalasmenos, all in eastern Crete; and Late Minoan III Maroulas near Rethymnon in western Crete. In particular, a paper on the LM I bronze kouros rescued from smugglers near Siteia was presented by the former director of the Ephorate of Antiquities of Lasithi, Chrysa Sofianou, and her co-authors, including the conservation procedures by Klio Zervaki and the X-ray fluorescence (XRF) examination by Alessandra Giumlia-Mair, all of which informed the iconographic analysis contributed by Thomas Brogan and Philip Betancourt. A unique type of copper-arsenic alloy with special surface

treatment has been discovered (using XRF) from the LM I tombs of Poros (excavation and publication project directed by Nota Dimopoulou) in which dark bluish-black iridescent beads stand out from other jewelry items. The MM IA stratified burial of a family under House Tomb 2 in the necropolis of Petras (excavation and publication project directed by Metaxia Tsipopoulou) has yielded an impressive collection of gold jewelry, the analysis of which informs our understanding of local and imported precious metal jewelry. For the complete program and abstracts, see: https://uispp.net/en/commissions/activities/archaeometry-conference-stone-glass-ceramics-and-metals-chania-crete-greece.

Introducing BIOSOCIAL

Illuminating Minoan Society through Bioarchaeology

Sotiria Kiorpe

BIOSOCIAL: Social Bioarchaeological Perspectives on the Minoan Society. Intersecting Identities Across Time and Space

This research initiative is funded by the Marie Skłodowska-Curie Actions (MSCA) of the European Union. The author is the project leader and MSCA Fellow from the Aristotle University of Thessaloniki, and the host institution is the Cyprus Institute where she will work under the supervision of Assoc. Prof. Efthymia Nikita.

This project explores aspects of social inequality and identity in one of the earliest complex societies in Europe, Minoan Crete. Building on recent approaches to social organization and complexity that emphasize bottom-up perspectives and human agency, the project applies an intersectional framework to the study of osteological and mortuary evidence, an approach never used before in prehistoric Aegean studies. Intersectionality forms the conceptual backbone of the project, moving beyond the treatment of sex, age, kinship, and migrant status as isolated variables to examine how these aspects intersected to shape lived experiences in Minoan Crete.

To achieve this, the project integrates biodistance, isotopic, and other osteobiographical data with funerary contextual evidence. Two coastal sites—Petras in the northeast of the island and Poros near Knossos in north-central Crete—have been selected as ideal case studies because both played key roles in regional networks and shared aspects of elite material culture. However, these regions followed distinct economic and historical trajectories. Accordingly, the project adopts a bottom-up approach, seeking an in-depth understanding of intra-site developments through the cross-examination of multiple contexts within the same cemetery, while also comparing patterns between the two regions. The temporal span captures major sociopolitical changes, from Prepalatial times through the First and Second Palace periods. Four Petras house tombs were previously studied in the author's doctoral thesis; BIOSOCIAL extends this research by incorporating biodistance and isotopic analyses to investigate kinship, diet, and mobility—elements not included in the earlier work. Two Poros chamber tombs will be studied for the first time during this project.

BIOSOCIAL has four research objectives:

1. To examine the relationship between funerary practices and social strategies in order to compare staged vs lived identities.
2. To explore patterns of inequality in disease, stress, and diet.
3. To assess whether biological affinity shaped mortuary practices and social relations.
4. To identify mobility patterns.

The project also makes a significant contribution to data accessibility and scholarly collaboration. All primary data will be made available through an open-access database, supporting transparency and future research. Notably, BIOSOCIAL will deliver the first extensive analysis of skeletal material from Neopalatial Crete, addressing a critical gap in current knowledge.

By examining how social hierarchies were structured and negotiated within Minoan communities, BIOSOCIAL will provide a historical perspective on the mechanisms that create and mitigate inequality, offering comparative insights relevant to contemporary debates on gender, migration, and social cohesion.

The author is grateful to the directors of the Poros and Petras excavations, Nota Dimopoulou and Metaxia Tsipopoulou, respectively, for granting access to the human skeletal material. Special thanks are also extended to the INSTAP Study Center for East Crete for their warm hospitality and support in facilitating this research.

Celebrating 50 Years of the New York Aegean Bronze Age Colloquium

Jason Earle, Jerolyn E. Morrison, and Michael Nelson

This year, the New York Aegean Bronze Age Colloquium (NYABAC) celebrated its 50th anniversary and on March 26, 2026, held its final meeting. Aleydis Van de Moortel gave the last lecture on the subject of "The Emergence of Socio-Political Complexity at Mitrou and the Formation of a Central Greek Elite Culture in the LH I–IIA Period (ca. 1700–1450 B.C.)."

The colloquium was conceived in 1975 by Malcolm Wiener, Guenter Kopcke, and Ellen Davis. As Guenter once remarked, nothing would have come about had it not been for the example set by Edith Porada's Ancient Near East Seminar at Columbia University, founded in 1966. Early on, Wiener described the colloquium as "a monthly meeting of leading scholars from Boston to Baltimore working in the field" with a schedule that alternated "between hearing reports of members on work in progress and listening to reports from distinguished visitors." This was a public forum to discuss current research on the archaeology and cultures of prehistoric Greece and neighboring regions. Member reports served a vital function in the pre-internet age: news was shared about current research projects; professional correspondence was read; and recent travels were recounted. In these ways, participants kept abreast of the latest developments in the field. By the early 1980s, reports by members had disappeared from the program, and talks by invited speakers came to constitute the standing format of meetings. Like INSTAP and the INSTAP Study Center for East Crete, NYABAC flourished due to the vision, leadership, and generosity of Malcolm Wiener.

The first documented meeting was held on March 19th, 1976, with John Coleman giving a lecture titled "Excavation of a Neolithic Cemetery on Keos (with Emphasis on the First Appearance of Copper Metallurgy and on New Radio-Carbon Dates)"—a year before the publication of his *Keos* I volume on the same subject (American School of Classical Studies at Athens, 1977). The roster of speakers and range of topics addressed over the subsequent decades is impressive (Fig. 1). Since 1976, there have been 355 talks, averaging about 7–8 lectures per year, although of course some years had more talks than others. These numbers clearly demonstrate the knowledge and desire of the Aegean Bronze Age academic community to present and engage at a high level over the past 50 years.

The colloquium has been honored to host speakers from around the world, both in New York and online. A brief overview of the research topics presented includes Aegean chronology, pottery styles, architecture, metallurgy, frescoes, Linear A and B, trade, craft production, social and political organization, religious practices and beliefs, and daily activities like cooking and dining. Discussions around the table often ranged across the Early, Middle, and Late Bronze Ages and frequently focused on connections between the Minoans and the Mycenaeans, the identity of the Phoenicians, the role of Cyprus during the Bronze Age, and the nature of Minoan and Egyptian interactions. A synopsis of the periods and regions covered can be seen in Figure 2. Such breadth and depth of scholarly inquiry clearly demonstrate that the colloquium was home to a global community with far-reaching interests.

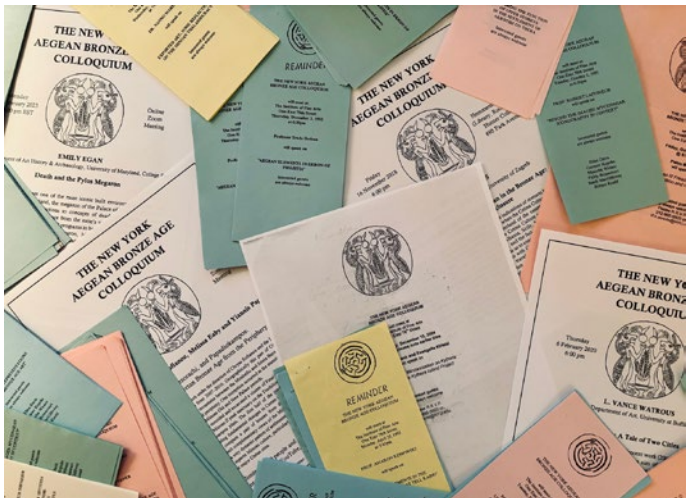


Figure 1. Flyers from the New York Aegean Bronze Age Colloquium. Photo J. Earle.

Over the years, meetings were held at various venues in New York City, such as Columbia University, NYU's Institute for the Study of the Ancient World, and Hunter College, but from its inception to the outbreak of the pandemic in 2020, the primary home of the colloquium was the Seminar Room at NYU's Institute of Fine Arts on the Upper East Side of Manhattan. On many occasions, the room was packed—with professors and curators from New York and beyond, graduate students, and undergraduates—and interested members of the public also crowded in. The unwritten rules governing who sat where in the lecture room, and especially who was *persona grata* at the large roundtable, were often opaque to the uninitiated.

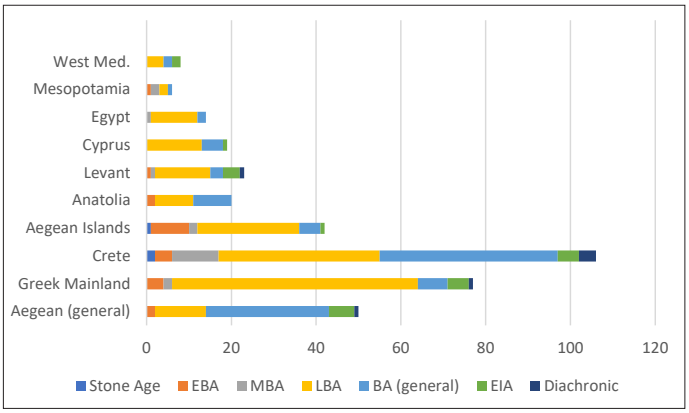


Figure 2. New York Aegean Bronze Age Colloquium meeting topics by period and region. Image J. Earle.

It is difficult to capture in words all the qualities of those meetings, but two accounts of longtime members of the colloquium are illustrative. Tom Palaima has recounted how at his first academic job, at Fordham University in the Bronx during the early 1980s, he was teaching no courses connected with Linear B or Aegean prehistory, and so for him, the monthly NYABAC meetings—where he was welcomed right from the start—were like visits to paradise or a magic fairy land. Not only were his thoughts ignited and his sharing of them welcome, but he also made lifelong friends. Likewise, former colloquium director Robert Koehl noted that when he arrived in New York to teach at Hunter College in the late 1980s, the meetings were already well established, with a core group of Wiener, Kopcke, Davis, Palaima, Sandy MacGillivray, and Phil Betancourt. Discussions were stimulating, so much so that he often continued dissecting information and ideas over the phone with Ellen for days afterward. The dinners that followed meetings provided the chance to get to know an extraordinary range of scholars in a more informal setting, with friendships forged at those dinners that continue to this day.

Since 2020, the colloquium has met exclusively online, allowing for global participation and greatly expanding our audience. Lost in this digital transition, however, was the wonderful frisson of meetings in the dimly lit and ornately decorated seminar room, as well as the convivial exchanges at post-lecture dinners. Speakers too have missed the opportunity to visit New York and explore its many cultural treasures. In organizing the colloquium these past few years, these absences loomed large in our minds and eventually grew to overshadow the positives of expanded reach. Considered alongside the recent proliferation of online lectures and the 50th anniversary of the colloquium, now seemed like the right moment for this series to end.

Thanks to everyone who has participated in the colloquium over the years, to our past directors upon whose shoulders we stood, to the student assistants and staff of the institutions we have called home, to Malcolm Wiener and INSTAP for long-term financial support, and especially to the more than 200 speakers whose talks were truly the lifeblood of the colloquium.

Congratulations

Jerolyn E. Morrison



We are pleased to extend many well wishes to Jerolyn E. Morrison who is the newest assistant professor in the Department of Art and Art History at Baylor University in Waco, TX. She earned her Ph.D. in 2015 at the University of Leicester in the United Kingdom.

Jerolyn is a long-time member of the Mochlos Archaeological Project, and she has been working at the Study Center in the summers on Mochlos pottery since 2004. The manuscript of her future *Mochlos* IVB volume on Late Minoan IB pottery is in the final stages of preparation before submission to INSTAP Academic Press.

She also has worked with Chrysa Sofianou and Tom Brogan at Papadiokambos since her Fulbright Fellowship in Greece (2006–2007). She was the first Seager Fellow of the INSTAP Study Center in 2010, and she was also the first petrography intern in 2004. In addition to her research on Minoan pottery of Crete, she has collaborated with Salvatore Vitale, Toula Marketou, and Ioannis Iliopoulos on Kos since 2011. She works there with the Serraglio,

Eleona, and Langada Archaeological Project, under the scientific aegis of the Italian Archaeological School of Athens, to investigate connections between Crete and the southeastern Aegean.

In 2021, Jerolyn joined Baylor University as a full-time temporary lecturer in art history. She teaches core curriculum and upper-level courses that focus on the Ancient Mediterranean and the Aegean Bronze Age, utilizing hands-on, experiential learning components. She has expanded her research to include Etruscan pottery as part of a Baylor field school for the San Giuliano Archaeological Research Project in Lazio, Italy, which is located about 70 km northwest of Rome where two unlooted tombs (late 7th c. B.C.) have been excavated in the last year. Many of the finds from the larger funerary chamber are already on display in the nearby museum in Barbarano Romano where local residents have enthusiastically supported the archaeological project and actively participated in the protection of their ancient cultural heritage.

We wish Jerolyn much success in her new position at Baylor!

Sarah Malik Bell



We offer our sincere congratulations to Sarah Malik Bell on her new position as Assistant Professor of Art History and Archaeology at Berea College in Berea, KY. Sarah received her Ph.D. in 2025 from the Joukowski Institute for Archaeology of the Ancient World at Brown University in Providence, RI.

Sarah's wide-ranging, yet unique focus examines the ritual visitation of abandoned sites associated with social trauma in both antiquity and the contemporary moment, investigating the material legacies of difficult heritage and the intersections between mourning and the material world. Her work demonstrates this facility: her most recent article, "Materiality and Mourning: Sandy Hook and the Role of the Material World in the Work of Memorialization and Grief" was published this year in the journal *Mortality*, and she was invited by the Student Affairs Interest Group of the Archaeological Institute of America to give their annual dissertation lecture in September, entitled "Remembering Collapse: Understanding Ritual at Abandoned Late Bronze Age Sites on Crete Through the Lens of Social Trauma Theory."

Sarah's involvement with INSTAP SCEC began in 2021 and continued in 2022 when she worked on the Mochlos Archaeological Project, and in 2024 she was the recipient of the Richard Seager Fellowship. We look forward to following her burgeoning career and wish her all the best!

Georgios Doudalis



Georgios Doudalis is another Mochlos veteran to be congratulated for his new position, an appointment as an Assistant Professor at the University of the Aegean in Rhodes. He has already had three years' teaching experience in the Department of Ancient Mediterranean Studies at the University of North Carolina at Greensboro where he has taught numerous archaeology courses and has brought students to work at Mochlos in the summer for a hands-on course in Minoan and Mycenaean pottery at the INSTAP Study Center for East Crete.

Georgios first came to Mochlos in 2004 when he was an undergraduate at the University of Crete, and he has worked there every year since, apart from a brief interlude in the Greek army. He was the Seager Fellow in 2015. In 2021 he became assistant director of the Mochlos project, and in 2025 he was appointed co-director with Jeffrey Soles. He also has had extensive excavation experience in Crete at Gavdos with Katerina Kopaka in 2005–2007 and 2009–2010, and in the upcoming 2027–2028 excavations at Mochlos he will serve as field director.

After receiving his undergraduate degree at the University of Crete, Georgios earned a M.A. degree at the University of Sheffield, and then he went on to earn his Ph.D. at Ruprecht-Karls-Universität Heidelberg, which was awarded magna cum laude in 2019, along with his dissertation defense, which was awarded summa cum laude. His dissertation was published in 2022 as *Mochlos in the Protopalatial Period: Ceramic Analysis and Social Perspectives in the Middle Bronze Age* (*Daidalos*: *Heidelberger Abschlussarbeiten zur Klassischen Archäologie* 12; https://doi.org/10.11588/propylaeum.913). He also has published numerous articles, the latest in 2025: "What is Mine is Not Yours: Potters' Marks as Indicators of Local Pottery Production and Territoriality in the Protopalatial Period," in M.E. Alberti, G. Dionisio, and A.M. Jasink (eds.), *Meaningful Practices: Non-Scribal Communication in the Aegean and the Near East During the Bronze Age* (*Strumenti per la didattica e la ricerca* 231; *Periploi* 12; https://doi.org/10.36253/979-12-215-0765-2).

In the future, as he takes up his new post in Rhodes, he plans to expand the university's archaeology courses and its overseas outreach. We extend our warmest wishes for his success.

Lauren E. Wilson



Lauren E. Wilson is the new librarian fellow at the Study Center. We congratulate her on the fellowship and also on defending her doctoral dissertation entitled "The Building in the Meïdani Square, Kastelli: The Study of the Drinking Vessels and Drinking Practices in the Pediada Region of Minoan Crete" on March 20, 2026, in the Department of Art History at Tyler School of Art, Temple University, Philadelphia, PA, USA.

During her fellowship she plans to augment her doctoral research on the Kastelli ceramic drinking vessels by studying the remaining artifactual materials excavated from the Meïdani building, which consists of local and imported pottery vessels (storage/transport, cooking/food preparation, serving/dining, special/ritual/ceremonial, other/utilitarian), faunal remains, stone (tools, lamps, vessels, game pieces), metals, and non-portable remnants (hearth, architectural remains). Lauren will study the Meïdani-Kastelli pottery and conduct ceramic petrography on the coarse wares at INSTAP SCEC. In May, she presented her study of the ceramic and stone lamps from the Meïdani building at the ScapeCon8 Conference in Catania, Sicily. In the late summer, she began a collaboration with the Levantine Ceramics Project (LCP) to include data about the cataloged ceramic objects from Meïdani-Kastelli in this open-access database. This is important because there are currently no Minoan pottery samples in the LCP. Given that ceramic imports with petrographic parallels to the Pediada have been found in the southern Levant of the Late Bronze Age, Lauren hopes to facilitate future discussions on trade interconnections between the Aegean and the Levant.

Best Wishes

Michalis Augoustinakis



We would like to congratulate Captain Michalis Augoustinakis on his retirement and thank him for his many years of support. Michalis is especially well known to the staff and project members who worked for the excavation on the island of Chryssi, located off the coast of Ierapetra in southeastern Crete. Since 2009, he made more than 200 trips to and from the island on his vessel *Poseidon*, transporting people, excavation and conservation supplies, and archaeological finds. Over the years, he also took many archaeologists on short excursions to the island of Kouphonisi located east of Chryssi and off the Cretan coast southeast of Makrygialos. We are grateful to Michalis for his dedication and friendship over the past 17 years and wish him all the best in his retirement!

Ria Kiorpe and Dimitris Kokkinakis



Many blessings to longtime couple Ria Kiorpe and Dimitris Kokkinakis who wed in August 2025 in an intimate ceremony in Pacheia Ammos. We wish them a lifetime of happiness!

Despoina Papadopoulou and Nontas Paximadakis



We wish much happiness to Despoina Papadopoulou and Nontas Paximadakis on the occasion of their wedding. The couple met while both participated in an excavation at Kastelli (the site of the new airport). In October 2025, they tied their bonds in Kato Kastelliana in a traditional Cretan wedding ceremony with all the trimmings including 12 koumparoi!

Milestones

Study Center Will Celebrate 30 Years of Cretan Studies in 2027



Celebration of the opening of the INSTAP Study Center for East Crete, July 1997. Photo K. May.

The Study Center is thrilled to announce a pair of anniversary events as we begin our fourth decade supporting research on the prehistory of Crete and the wider Aegean. In June 2027 we will offer a lecture and reception for the general public highlighting the work of the Study Center, especially that related to major discoveries at sites around the Mirabello and isthmus of Ierapetra. The second event in July 2027 will feature new research by the next generation of scholars who will carry the torch in future decades. Both events will be held at the Teloneion in Pacheia Ammos. For more details, stay up to date with our social media by following our Facebook group and checking the Study Center website from January next year.

Thomas M. Brogan to be New Director of ASCSA

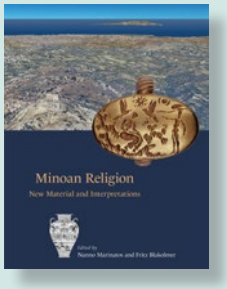


Tom Brogan and Melissa Eaby at INSTAP SCEC, summer 2026. Photo E. Huffman.

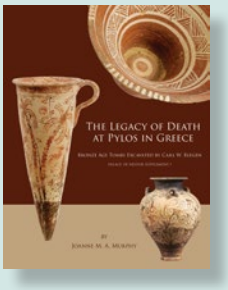
The INSTAP Study Center for East Crete is pleased to announce that its director, Thomas M. Brogan, has been appointed as the next director of the American School of Classical Studies at Athens, beginning a three-year term on July 1, 2027. During this period, he will continue to serve as the executive director of INSTAP while taking a leave of absence from his duties at the Study Center. The collections curator of the Study Center, Melissa S. Eaby, will serve as acting director in his absence. Melissa completed her doctorate at the University of North Carolina at Chapel Hill in 2007 before serving as the assistant director of the Azoria Project and collaborating on numerous archaeological projects led by the directors of the Ephorate of Antiquities of Lasithi. We wish them both continued success in their new roles.

New Titles from
INSTAP Academic Press

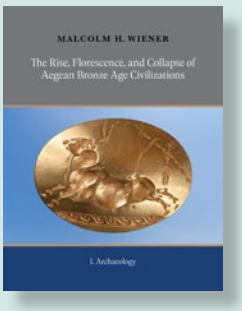
www.instappress.org

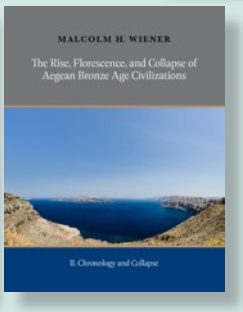


Minoan Religion: New Material and Interpretations
Nanno Marinatos and Fritz Blakolmer, eds.
Hardback, 276 pages, 133 figures
ISBN 978-1-931534-45-1
2026



The Legacy of Death at Pylos in Greece: Bronze Age Tombs Excavated by Carl W. Blegen (*Palace of Nestor* Suppl. 1)
Joanne M.A. Murphy
Hardback, 588 pages,182 illustrations in text, 88 figures, 85 plates
ISBN 978-1-931534-41-3
Expected December 2026





The Rise, Florescence, and Collapse of Aegean Bronze Age Civilizations
Vol. I: *Archaeology*
Vol. II, Part 1: *Chronology*; Part 2: *Collapse*
Malcolm H. Wiener†
Hardback, 906 total pages
Vol. I: 85 figures, 3 tables; Vol. II: 68 figures, 6 tables
ISBN 978-1-931534-47-5
Expected December 2026

Special pricing on select titles through March 31, 2027:
https://isdistribution.com/instap-special-pricing-2026
Use promo code **3073-26** for online or phone orders.
For queries in North America, orders@isdistribution.com.

For sale pricing in the UK and Europe
(click through to shopping basket):
https://indiepubs.co.uk/collections/instap
For indiepubs queries, sales@isdinternational.co.uk.

For access to PDFs
https://www.jstor.org/publisher/instappress

To purchase our books in the USA
https://isdistribution.com/publisher/instap-academic-press

To purchase our books in the UK and Europe
https://indiepubs.co.uk/collections/instap

Friends of the INSTAP Study Center to Host the Fifth Annual Malcolm H. Wiener Symposium

During the Annual Meeting of the American Institute of Archaeology, January 7–10, 2027, at the Boston Marriott Copley Place in Boston, MA, the Friends of the INSTAP Study Center will host the Fifth Annual Malcolm H. Wiener Symposium. Thomas Brogan will present the work at the Study Center from the previous year. Our invited speaker is Tom Strasser, Professor of Art and Art History at Providence College in Providence, RI. Check the conference program for further details. We hope you will be able to join us!

Crete before the Minoans: The Stone Ages

Thomas F. Strasser

The Ice Ages of Crete were an unexplored territory. This was true for most Mediterranean islands until quite recently. Only in recent years has research found evidence for early hominin presence on Crete and other islands throughout much of the Palaeolithic. A summary of research illuminates this very long period in the Cretan past. It played an important diachronic role: from *Homo erectus*' departure from Africa up to a Mesolithic trade network in obsidian. What were the challenges of getting to Crete? To what extent did the hominins impact the fragile island ecosystem of Crete? The evidence from Crete is contributing to changing paradigms of early island colonization (Figs. 1–3).



Figure 1. Handaxe from Preveli Gorge in southwest Crete. Photo N. Thompson.



Figure 2. Petroglyph in the Asphendou Cave in western Crete depicting the extinct Pleistocene deer, Candiacervus ropalophorus. *Photo S. Murray.*



Figure 3. Staff of the Study Center visits the excavation in the Megalos Peristeres Cave near Rethymnon, Crete, co-directed by Thomas Strasser (back row, third from left; see also p. 43), July 2026. Photo T. Brogan.

Remembrances

Polymnia Metaxa Muhly

George Papasavvas



Poly Muhly died in early June 2026. She was a truly exceptional person: full of life, a dedicated wife and mother, a brilliant archaeologist, a loyal friend, and the most generous person I have ever known, always there to support her friends and colleagues in life and in their work. Her sharp intellect, knowledge, and generosity made her an excellent mentor, and there was always so much to learn from her. She taught me how to observe and analyze stratigraphy—and, equally memorably, how to make the best pesto and the best lemon bars. Her wonderful sense of humor lifted the spirits of everyone around her. On site, she was truly a force of nature. I was constantly amazed by her acute comprehension of complex issues of the excavation at Syme in southeastern Crete, always keeping miles ahead of everyone in the trenches (Poly pictured with Angeliki Lembessi at Syme). I will always remember her with immense admiration, affection, and gratitude.

Maria Coutroubaki Shaw

Elizabeth Shank



Maria Coutroubaki Shaw passed away on December 7, 2025. She was retired Professor of Art History and Archaeology at the University of Toronto. Maria and her husband Joe were viewed by some of us of a certain generation as expert archaeological grandparents, part of a pantheon of teachers belonging to an age of remarkable discovery and advances in Aegean Bronze Age studies. Touring Kommos with the pair of them was an unforgettable experience. Their enthusiasm and love of the site were obvious and contagious. Maria and Joe were in fact awarded the AIA's Gold Medal Award for Distinguished Archaeological Achievement in 2006. Joe's numerous publications focusing on Minoan architecture and Maria's expertise with Aegean Bronze Age painted plaster were perfectly wedded, forming an understanding of the nature of built and decorated environments. Maria's focus on multiple reconstructions of fresco scenes on paper, such as her work with the Lily Prince Fresco (*Hesperia* Suppl. 33, 2004, pp. 65–84), showed the value of careful study in creating reconstructions with different possibilities for how prehistoric scenes may have appeared—this is now a standard practice in reconstructing wall paintings. Many of her articles are foundational work for anyone studying painted decorated plaster from the Aegean Bronze Age. Maria worked closely with Anne Chapin to produce *Woven Threads: Patterned Textiles of the Aegean Bronze Age* (*Ancient Textiles* 22; Oxbow Books) in 2016. While working at Kommos, Maria and Joe and their team would often attend summer evening lectures held at the INSTAP SCEC. In this way, many new students were able to meet them, and we all benefitted from their presence and stories of the happenings down south at Kommos. Maria's death, due to Alzheimer's disease, is painful to all of us who were lucky enough to know her. We offer our condolences to Joe, their son Alexander, and their daughter Robin and their grandchildren.

Where Human Paths Cross: At Mochlos with Gloria Steinem

Jerolyn E. Morrison



Within a single week, the world lost a few prominent female trailblazers: Dolly Parton, Yayoi Kusama, and Gloria Steinem. For many, their concurrent deaths felt like a symbolic, synchronized passing of the torch for female empowerment, even though these women operated in entirely different cultural spheres. As scholars of the ancient world, our engagement with these figures transcends personal admiration. Women are central to understanding how society constructs and commemorates power across time, and equally important, how it chooses to forget them.

This intersection of memory and empowerment brings to mind the late summer of 2014, when Gloria Steinem celebrated her 80th birthday with a memorable trip to Crete. She was joined by Amy Richards, a friend and colleague, along with Amy's sons Webber and Beckett, who arrived with a soccer ball firmly in hand to mark the UEFA tournament. Throughout the year, these trailblazing women traveled to both familiar and new destinations, celebrating life and envisioning future milestones. For those of us wrapping up a fruitful summer of research in East Crete, sharing in a piece of their journey was a remarkable privilege.

Several of us took a small boat to Mochlos for a tour of the Minoan site, followed by a wonderful evening feast! It is no secret that Gloria was no foodie; back in NYC, she was perfectly content with a simple sandwich from her corner deli. Yet that evening, gathered around the hearth fire, our shared meal became the backdrop for a rich conversation about the complexities of humanity, bridging the recent past with the diverse cultures of the ancient world. Sitting at the table with Gloria and Amy in the harbor town of Mochlos—itself an ancient crossroads for a multitude of eras—served as a powerful reminder of how deeply human paths can cross over time.

A few weeks later, Amy reached out to ask how they could help support our work. After careful consideration, I asked the Ms. Foundation to assist in launching the Harriet Boyd Hawes Fellowship and purchasing a kiln for the Study Center to be integrated into the W.A. McDonald Laboratory of Petrography founded in 2002. Established in 2015, the followship is a pioneering initiative dedicated to researching the role of women and gender in the Aegean Bronze Age. We remain deeply grateful to the Ms. Foundation, Gloria, and Amy for their enduring generosity and dedication to amplifying diverse voices.

INSTAP Study Center for East Crete

Institute for Aegean Prehistory

Thomas M. Brogan, *Executive Director*
Elizabeth Shank, *SCEC United States Coordinator and Kentro Editor*
INSTAP Academic Press, Kentro *Production*

INSTAP Study Center for East Crete
P.O. Box 162, Rouzerville, PA 17250, USA
Tel. 717-504-5043, elizabethshank@hotmail.com

The Study Center is affiliated with the Mediterranean Section of the University of Pennsylvania Museum of Archaeology and Anthropology and the History of Art Department at the University of Pennsylvania.

SCEC Managing Committee

Philip P. Betancourt
Thomas M. Brogan
D. Matthew Buell
Kostas Chalikias
Jack Davis
Leslie P. Day
Georgios Doudalis
Melissa Eaby
Stuart Evans
Susan C. Ferrence
Geraldine C. Gesell
Donald C. Haggis
Panagiotis Karkanas
Al Leonard
Jennifer Moody
Margaret S. Mook
Jerolyn E. Morrison
Elizabeth Shank
R. Angus K. Smith
Jeffrey S. Soles
Thomas Strasser
L. Vance Watrous
Bonna Wescoat

Study Center for East Crete

Thomas M. Brogan, *Director*
Eleanor J. Huffman, *Business Administrator*
Melissa Eaby, *Collections Curator*
Stephania N. Chlouveraki, *Site Conservation Scientist*
Kathy Hall, *Senior Conservator*
Matina Tzari, *Conservation Technician*
Doug Faulmann, *Chief Artist*
Lily Bonga, *Artist*
Gabriella Lazoura, *Artist*
Jeff Vanderpool, *Photographer*
Eleni Nodarou, *Ceramic Petrographer*
Dimitra Mylona, *Faunal Analyst*
Lauren Wilson, *2026–2027 Librarian Fellow*
Matina Papadaki, *Soil Flotation Technician*
Pierre-Luc Chartré, *Custodian*

INSTAP Study Center for East Crete
P.O. Box 364, Pacheia Ammos, Ierapetra 72200, Crete, GREECE
Tel. +30-28420-93027
tombrogan@instapstudycenter.net
eleanorhuffman@instapstudycenter.net
www.instapstudycenter.net

Table of Contents

Malcolm Hewitt Wiener, Founder of INSTAP: July 3, 1935–October 12, 2026 1

Special Projects

Studying the Knossos Town Mosaic: The Earliest Map in Europe 3
Preserving the Past: Conservation of the Minoan Architecture on Chryssi Island 6
(Re)Studying a Legacy Assemblage: The Human Remains from Myrtos Pyrgos 10
East Cretan Peak Sanctuaries Project: Petsophas Pottery Study, April 2026 14

Work by Study Center Labs

Aegean Odyssey: 2026 Summer Work Projects 16
Photography of Anavlochos Artifacts 18

Fellows and Interns

A Fresh Look at Marine Style Pottery 19
Three Vessel Types Used for Cooking at Protopalatial Phaistos 22
A Cartoonist in East Crete 26
A Sherd Nerd's Full-Circle Love Story 28
Petrographic Analysis of Pottery from the Hittite City of Šapinuwa (Ortaköy/Çorum) in Central Anatolia 29

Reports from the Field

An UPdate from the UPlands: A Preliminary Report of Excavations at Lavrakia on Mt. Dicte 32
Karphi Revisited: Exploring a High-Altitude Minoan Settlement in Its Diachronic Landscape 37
Prehistoric Elephant Hunters of Crete? 43

Thank You to Our Supporters 47

News and Announcements 50