

Saronic Harbors Archaeological Research Project (SHARP)

2008 Season Report

Introduction

The Saronic Harbors Archaeological Research Project (SHARP) carried out the second of three field seasons from 19 May to 28 June, 2008, as a project of the American School of Classical Studies, with permits from the Greek Ministry of Culture and the Institute of Geology and Mineral Exploration (IGME permit #2210). We would like to thank the ΑΖ' ΕΠΚΑ, the 25th Byzantine Ephorate, and the Enalion Ephorate for their cooperation and support. Our research continued to focus on the Mycenaean settlement at Korphos-Kalamianos; in 2008 we also conducted archaeological surface survey in the surrounding territory (Figure 1).

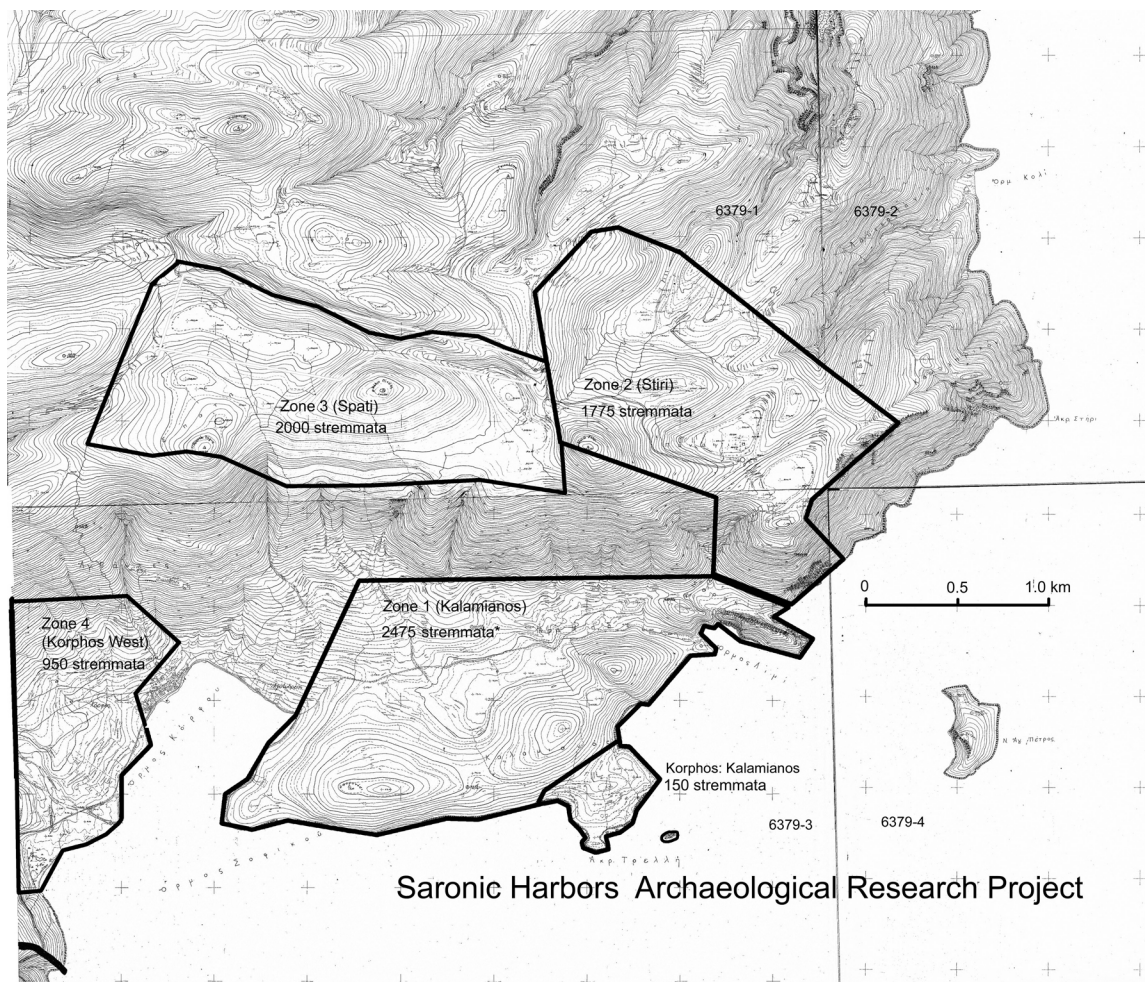


Figure 1. Korphos-Kalamianos and SHARP survey zones.

Kalamianos was a major harbor settlement of the Mycenaean palatial period, with a large, planned urban center that anchored a region of Mycenaean activity extending well beyond the site itself. The Kalamianos site is unusual in that the architectural foundations and lower walls

of an entire Mycenaean town are exposed because of extensive loss of soil into the sea on the gently sloping terrain of the site. The region is rich in additional Mycenaean period sites.

In 2008 our main priorities were the following:

1. Continue the systematic study of the architecture at Korphos-Kalamianos, including a thorough inventory of the architectural remains and an accurate plan of their location; detailed documentation of the architecture through written descriptions, drawings, and photographs; and precise architectural survey of selected buildings and complexes using an Electronic Total Station.
2. Conduct systematic archaeological surface survey on the site and in the region around it in order to detect spatial patterns in Late Bronze Age activity, and to collect small samples of artifacts for chronological and comparative purposes.
3. Continue geological and geomorphological study to characterize the geological and hydrological resources available in the Korphos area, and to address questions of long-term geomorphology, such as movement and loss of sediment at Kalamianos.

Systematic Inventory of Architectural Remains

In order to document the architectural remains at Korphos-Kalamianos in a comprehensive way, we devised a four-part strategy:

1. A systematic inventory and mapping of the architectural remains throughout the site;
2. Detailed architectural documentation of selected areas and buildings through architectural survey and drawing;
3. Detailed architectural documentation of buildings and features through written descriptions and photographs;
4. Systematic surface collection of material from the structures, both within the bounds of walls and in the walls themselves, to provide chronological and functional information.

Architectural Inventory and Mapping

In 2007 we succeeded in compiling an inventory of the majority of architectural features visible throughout the 9-hectare area, in the form of a database of all features (ancient walls, terrace walls—mostly modern, rock piles—perhaps from field clearance, and natural, solution-enlarged fissures in the limestone bedrock) accompanied by a high-precision GPS survey of the majority of the architecture; the resulting GIS map represents one of the most detailed large-scale plans of a Mycenaean town (Figure 2).

In 2008 we continued to utilize high-precision GPS equipment to map architectural features not mapped in 2007 and to map architectural features newly found in 2008. Perhaps the most significant result from this work was the tracing of the fortification walls (see below). When new walls were identified, they were mapped and documented as described below.

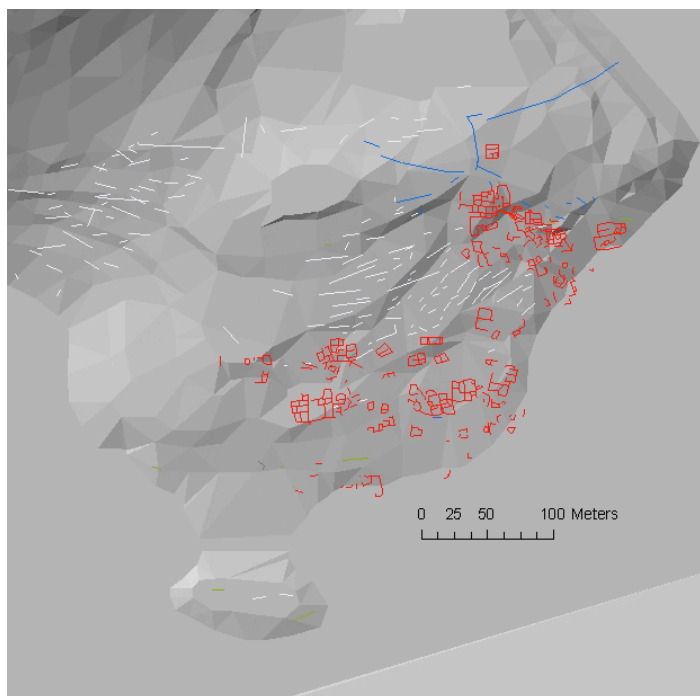


Figure 2. 2007 High-precision survey of architectural remains at Kalamianos.
Red: ancient architecture; Blue: fortification wall; White: modern terrace walls.

The major obstacles to our inventory and documentation continued to be the vegetation and state of preservation. The vegetation is primarily maquis interspersed with olive, both wild and domesticated. In some areas the thorny bushes, dense kermes oak and downy willow, and other low spreading shrubs greatly hindered our efforts. The buildings varied greatly in their state of preservation. In some cases walls were preserved to 0.75 or 1.25 m in height, up to a maximum of 2.0 m, but in other cases there was only a tumble of stones with few or no visible wall segments.

Architectural Survey and Drawing

A second strategy for documenting the architecture was to provide a detailed measurement survey and drawing of structures at Kalamianos. Unfortunately Andrew Howell, our architect in 2007, was not able to join us, but several students from 2007 had sufficient training and experience to continue the recording under the supervision of Pullen. In 2008 we succeeded in mapping a large area in Sector 5 and one in Sector 9, in addition to major portions of the fortification wall. A Total Station was used to survey in points along the walls and other features. The results were plotted in the GIS, and preliminary drawings were edited in the field. The resulting drawings present a wealth of detail, including extent of tumble and collapse both

inside and outside the structures, locations of possible doorways or thresholds, and relative confidence in the extent of the walls.

For the fortification walls in Sectors 7 and 9, a more detailed drawing was done with the Total Station. This was not a true stone-by-stone drawing in that not every stone was drawn, but the majority of larger stones and areas of bedrock used as wall were drawn as were areas of gap or tumble. This will provide a visual complement to the descriptions and photographs taken of the walls by the Architectural Documentation Team.

Building and Wall Documentation

A third component to the documentation of the architecture at Kalamianos was the detailed written description and measurements of the buildings and walls, accompanied by photographs, as in 2007. The Architectural Documentation Form and the Wall Documentation Form developed in 2007 were used again in this phase. The Architectural Documentation Form records verbal descriptions of the overall appearance of the building, nature and extent of tumble, nature and extent of corners and bonding, use of bedrock outcropping, and presence of vegetation that may have disturbed the walls. Occasionally new walls were identified and these were entered into the preliminary inventory as well.

The Wall Documentation Form is an attempt to provide a systematic set of observations about each wall. A measuring tape was strung out along the length of a wall. At every one meter mark, measurements of height and width, and observations of number of courses, relative sizes of stones on exterior and interior, presence of chinking, mortar, rillenkarren, calcium carbonate (CaCO_3), and lichen, and use of bedrock outcropping were taken. Corner blocks and other significant blocks were often measured. The major change in field procedures in 2008 was the separate recording of courses, stone sizes, etc., for both the interior and exterior faces whenever possible. In addition, the largest stone at each one-meter interval for both faces was consistently measured whenever possible.

Photographs were taken of each wall so documented. Top views from both directions, views of exterior and interior faces when possible, and details of corners, joins, and major blocks were standard shots for each wall. An attempt was made to take photographs at uniform intervals along the length of the walls, in order that the photographs better correspond to the measurements taken at the one-meter intervals. In addition, rooms and general overviews of the buildings were taken.

Some preliminary discussion of the architecture at Kalamianos

After two seasons of recording the architecture at Kalamianos, some preliminary discussion is possible. It must be remembered that we have not yet had time to analyze all the data, and so some of the conclusions discussed here may be overturned by future research and analysis.

Whereas in much of the site, such as in Sectors 4 and 7, buildings are set at a distance from one another, in Sector 5 we have our most dense set of architecture, seemingly the most “urban”

(Figure 3). Two different streets or alleys have been identified that allow access between structures. One of these streets, Structure 5-1223 or the “Avenue,” seems to be a major

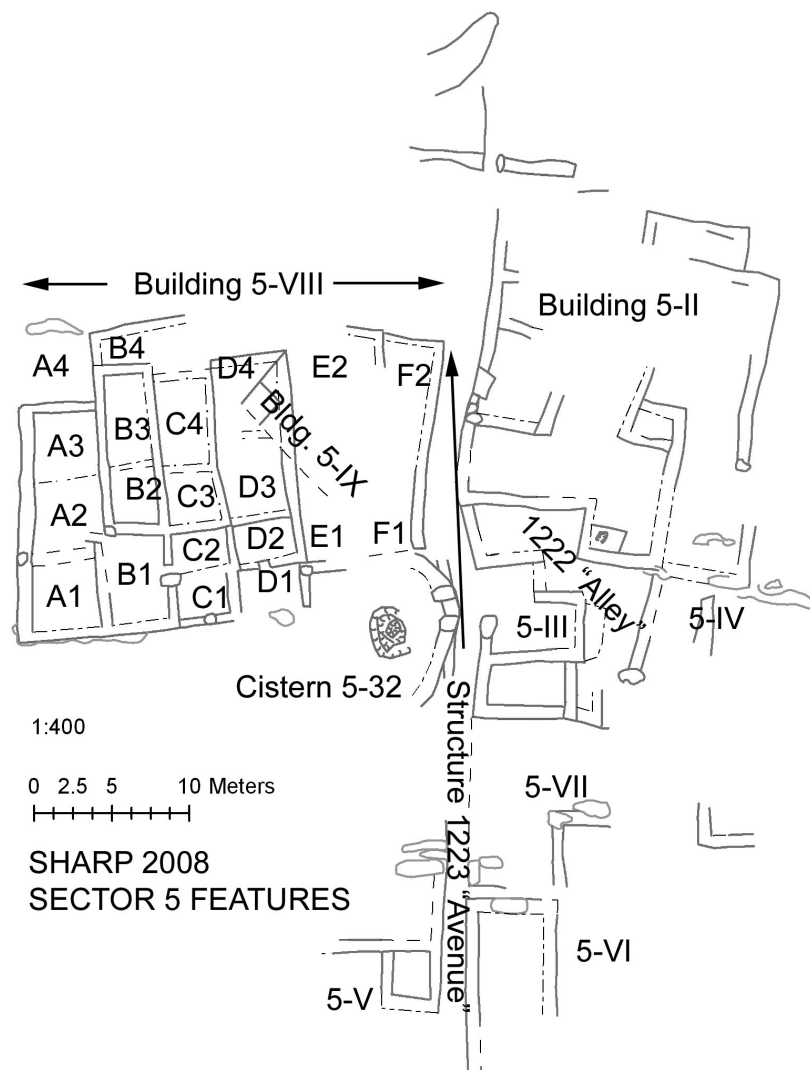


Figure 3. Sector 5 features.

organizational feature of Sector 5. We have been able to trace it for nearly 60 m. north-south in three segments which although not perfectly aligned, are continuous. One very large cut block ca. 1.5 m. in length has been placed as a “corner stone” for the Avenue and also for the alignment of Building 5-VIII to the west. To the east of the northern part of the Avenue lies Building 5-II, a very large structure, adjacent to the modern shoreline. This structure has numerous rooms, a clear entrance on the west, and several built-in features (perhaps bins or platforms).

The center of 5-II is not well defined because of the large pile of tumble (perhaps due to reuse of the area?), but there are a number of rectilinear depressions that undoubtedly represent rooms. The buildings south of 5-II are not well defined, and there is a curious lack of structures

in the center of this area; perhaps the lack of structures is due to the extensive outcropping of bedrock here. But structures are found further south until lost to the modern shoreline.

West of Building 5-II is a very interesting large structure, Building 5-VIII. This structure has six parallel units, oriented north-south, each of which has 3 to 4 rooms running north-south (the units are labeled A through F from west to east, and the rooms numbered from south to north). In appearance, then, the structure is an insula like those seen elsewhere in the Aegean. One of the units, B2-B3, was apparently rebuilt at a slightly higher level and with slightly larger stones. Perhaps when the building was destroyed (earthquake?) one family returned and rebuilt on the same foundations part of the structure. At some later, unspecified time (Roman?) another structure, 5-IX, was built at a very different orientation atop units D and E.

The curious circular feature 5-32 is most likely a well or cistern. It existed before Building 5-VIII as the southern wall of units E and F of 5-VIII are placed further north than the southern walls of units A-D. Thus the form of Building 5-VIII accommodated the previously existing 5-32 cistern. At some point a semi-circular wall was built (preserved only on the east) around it, with a doorway directly onto the avenue; later still, this doorway was blocked by stones.

In Sector 9 we have some of the clearest evidence for reuse of Kalamianos in a time period after the Mycenaeans. In Building 9-IV, a large Mycenaean structure of canonical masonry, there is a feature (9.961; see Figure 4) we are interpreting as a kiln. A packing of small stones not in typical Mycenaean masonry style has been placed in the southeast corner of the structure. In this packing is a circular depression less than 2 m. in diameter that begins to incurve as it rises in height. The inner ring of stones display clear evidence of burning. Associated with the stone packing are finger impressed Roman tiles and spirally grooved ware. Elsewhere in the vicinity Late Roman 1 and 2 amphorae rims were found. There are a few remains of walls built in a haphazard style at different orientations in Sectors 9 and 5 which may also be of later date, but little ceramic material was found in direct association with these walls.

The fortification wall system (Figure 4) is complex, but we have succeeded tracing it in the north, west, and south parts of Kalamianos. In addition, we have identified what we believe are two gates in the walls. The eastern circuit wall (Structure 7.XVI, 7.XXV, and 9.V) encircles the highest portion of the site on the east, running from the beach in the northeast, to the north gate area, and circling back to the southeast. This circuit of fortification wall is nearly continuous. Within this circuit are only two structures, Building 7-II and an unnumbered one, so it is unclear what the purpose of enclosing this area separately might be. In Sector 9 there may be a gate complex associated with this fortification wall, but its exact form is still unclear. Another wall circuit has been traced in segments along the southern end of Sectors 4 and 3 and through the western portion of Sector 3 until it is lost at the wall surrounding the large house plot in the northwest portion of Kalamianos. This circuit most likely joined to the northwest fortification complex in Sectors 6 and 7. The main gate area for the Kalamianos fortification

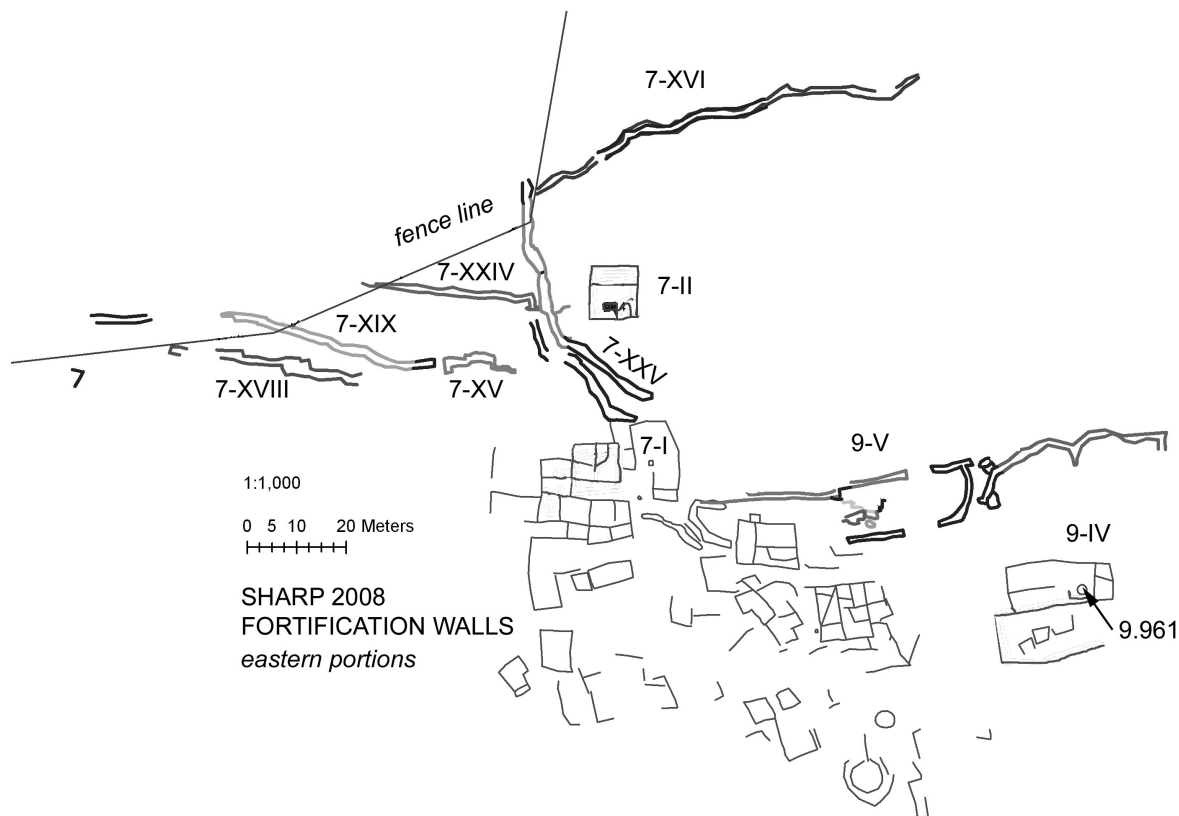


Figure 4. Fortification Walls.

complex seems to be in Sector 7. We identified three parallel walls (Structures 7.XXIV, 7.XIX, and 7.XVIII, from outermost to innermost) that approach the westernmost portion of the eastern circuit wall (Structure 7.XXV). The well-preserved tower, Building 7.XV, sits at the eastern end of the middle wall (Structure 7.XIX). The outer wall, Structure 7.XXV, most likely joins a wall flanking the west side of Structure 7.XXV on the east, but we lose trace of 7.XXIV to the west. Perhaps this outer wall (7.XXIV) functions as part of an overlapping arms type of gate/entrance, funneling people through a narrow space between 7.XXIV and 7.XIX-7.XV. The third wall, Building 7.XVIII, like the middle wall, makes great use of bedrock outcropping at the edge of a bedrock shelf/terrace looking down to the north. It was traced for only ca. 30 m., and it is not clear how it relates at either end to the other walls.

Thus it appears that the site of Kalamianos was encircled with a fortification system that enclosed all of the architecture as well as large areas of land that were not built upon (Sector 6, Sector 8, and Sector 9), similar in the way that Gla's walls enclose much "empty" space. This does raise the questions of the function of this "empty" space in the Mycenaean period, why the architecture was placed where it is, and whether the modern(?) terrace walls are indeed modern. In the eastern portion of the terraced area, near the junction of Sectors 6, 7, 4, and 5, there are several very large piles of stones that could represent the remnants of cleared buildings. These stone piles would have to be dismantled in order to ascertain whether there was any preserved architecture below or at the core of the piles.

Archaeological Surface Survey

In 2008, we continued to work within our permit survey area of 7.35 km² (Figure 1). In all forms of survey combined, our coverage was approximately 3.68 km², a 50% sample, though the intensity of the different survey units used to cover this area varied (see below). A significant percentage of the survey area could not be walked due to steep slope or dense vegetation affording little access and no ground visibility. Lack of access to private, fenced properties was not a significant problem.

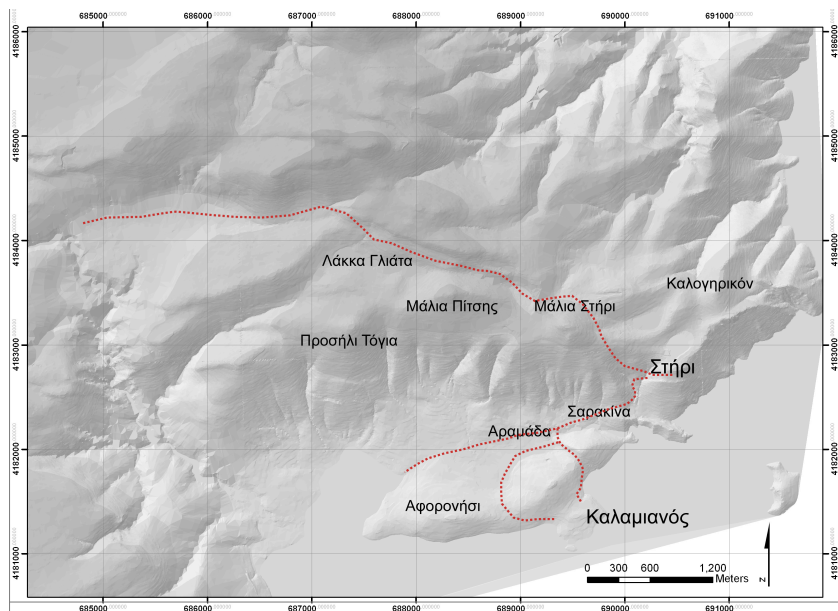


Figure 5. Digital terrain model of survey zone with important locations indicated. The red dashed line shows likely routes of movement through the area in antiquity.

Methods

We used three main types of survey units (Figures 6, 7): Discovery Unit (DU), Extensive Discovery Unit (EDU), and Architectural Discovery Unit (ADU).

The first of these was a canonical “Discovery Unit” (DU), in which students walked in parallel lines 10 meters apart, counting all artifacts on tally counters (“clickers”), and collecting small numbers of samples for use as chronological indicators and comparative specimens. The conditions of discovery were recorded in detail for each survey unit (e.g., ground visibility, vegetation cover). For a detailed description of the methods used in this type of survey, see T. Tartaron et al., “The Eastern Korinthia Archaeological Survey: Integrated Methods for a Dynamic Landscape,” *Hesperia* 75 (2006), pp. 453–523.

Extensive Discovery Units allowed for greater spatial coverage, but with less intensity and lower resolution. These units were walked systematically, with students in parallel lines 50 meters apart. The purpose of this survey was mainly to recover features, such as architecture, rather than artifacts. Walkers did not count artifacts, and only collected them if they were deemed

unusually significant. We made substantial use of Extensive Discovery Units (EDUs) in areas where dense artifactual and architectural concentrations were not expected. The EDU was a more important tool in SHARP than it had been in the Eastern Korinthia Archaeological Survey (EKAS), because artifact densities in the Korphos region were low, on account of poor surface visibility and various geomorphological factors. EDUs were useful in covering areas with very dense vegetation, such as the forested hills north and west of Kalamianos. Nevertheless, EDU survey effectively detected architectural complexes in such areas.

The Architectural Discovery Unit was used to map as well as count and collect artifacts from identifiable buildings and architectural complexes (Figure 7). The ADU was used for major architectural sites (Kalamianos, Stiri), and also for smaller buildings and complexes found in the countryside. At Kalamianos and Stiri, we made initial sketches with compass, measuring tape, and hand-held GPS units, and later generated more accurate plans using Differential GPS (DGPS) equipment. For other ADUs, we have at present only the field sketches made with compass, measuring tape, and hand-held GPS units. ADU survey allowed us to map architectural features in some detail and to recover artifactual evidence for their date and function.

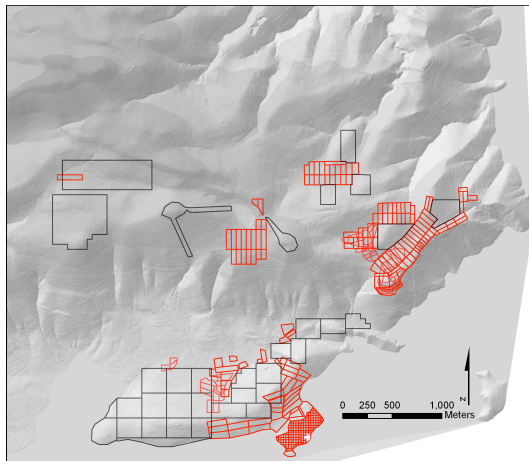


Figure 6. Survey units: Discovery Units in red and Extensive Discovery Units in gray.



Figure 7. Examples of Architectural Discovery Units at Kalamianos (in light gray).

Survey at Kalamianos

We completed the intensive archaeological survey of the Kalamianos site that was begun in 2007. We superimposed over the site a grid of survey units, most of which are 25 × 25 meters (Figure 8). We walked each grid square as a Discovery Unit, so that one level of resolution for our counts and collections is the size of the grid square. However, Mycenaean buildings, often with clearly recognizable rooms, existed within many survey units. Whenever we encountered buildings in which rooms with four walls were preserved, we counted and collected within those features as ADUs first, before the DU was walked. Usually, our method was to count and collect from two contexts: the interior of the room, and the interior of the walls. Because the

Mycenaeans built the walls with two faces (interior and exterior) and a rubble core, we found that broken pottery was often part of the fill between the wall faces. This gave us a valuable way to establish a *terminus post quem* for the construction of a building. The other collection, from the interior of the rooms, might give us some information about the date and use of specific rooms within a building. Thus, ADU survey within the buildings gave us a second and finer level of resolution (Figure 7).

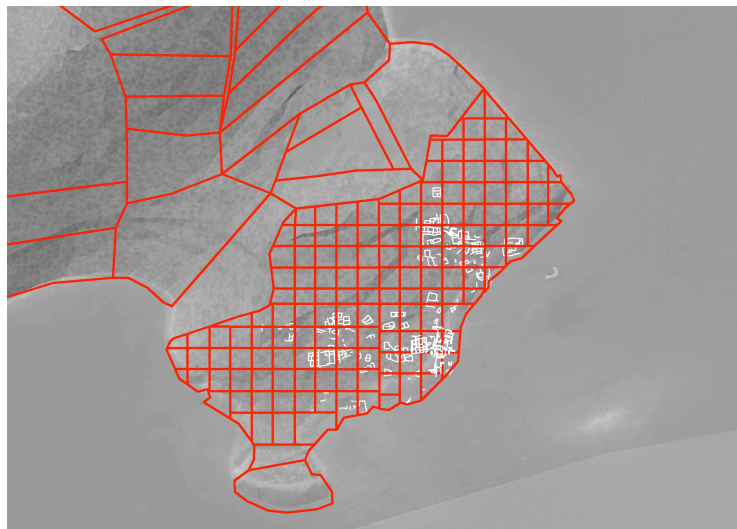


Figure 8. Grid of Discovery Units at the Kalamianos site.

The surface survey at Kalamianos yielded more than 50 buildings of Mycenaean date. Thousands of artifacts were examined (and a small sample collected) at the site, with dates from the Early Bronze Age to the modern period. The overwhelming majority of artifacts for which we could assign a secure date belonged to the Mycenaean period, with Early Helladic and Late Roman artifacts present in small but detectable amounts. We can say with some certainty, however, that there was no major or even very significant occupation of Kalamianos after the Late Bronze Age, and all of the pre-modern architectural remains are Mycenaean with the exception of a minor reuse of a Mycenaean building in Sector 9 during Late Roman times, when a ceramic kiln was installed in the corner of a Mycenaean building (Building 9-IV with kiln 9.961) that was apparently still exposed almost two millennia after it was first built.

Survey beyond Kalamianos

Outside the Kalamianos site, survey proceeded to the north and west, and in the hills extending from Stiri, westward along a series of basins enclosed by hills (technically, *poljes*) (see Figure 5). In most of these places, evidence of Mycenaean activity, especially architectural, was found. Sites of other periods, including Final Neolithic, Early Bronze Age, Classical/Hellenistic, and Early Modern, were also discovered and studied. Finally, in the last survey zone to the west and southwest of Korphos village, we detected a small Mycenaean outpost on a hill north of the location Κόκκινο Χώμα.

In a saddle between two low hills just north of the Kalamianos site, an expansive Mycenaean fortified enclosure was found. The fortification wall, up to 2 meters thick, is preserved only on the western and southern sides, but approximately 200 meters of it are extant. Within the enclosure there is one preserved building of probable Mycenaean date, a small rounded enclosure of approximately 15 x 11 m. Mycenaean pottery was recovered from inside at least two of the segments of fortification wall. There are also large-stone terrace walls on the hill outside the fortification, which in at least one case produced a Mycenaean sherd. We believe that this evidence, along with similar occurrences at Stiri, may show that the Mycenaeans built terrace walls. The saddle enclosure has a good view of the Saronic around Kalamianos, and of the low basin at Aramada to the north.

Until the modern gravel road was cut into the steep hill leading up to Stiri from Kalamianos, people from Korphos accessed the Panayia church by walking up a rather steep but entirely manageable dirt road up a revma from Sarakina to the lower polje just east of the church. We walked this path in 2008. This would not have been suitable for wheeled traffic. Interestingly, at the point where this path reaches the lower basin, there is a Mycenaean complex that includes a fortification wall and possibly a tower. It thus seems likely that in Mycenaean times this route was used as well.

APHORONISI

Aphoronisi is the name of the peak of the east–west ridge that terminates in the southeast corner of Korphos Bay. Survey on the ridge was conducted mainly as EDUs, after DUs in the eastern end of the ridge produced evidence for architecture but very few artifacts. Our most important activity on this ridge was to reexamine a series of large cairns that Michael Dixon reported in his doctoral dissertation (*Disputed Territories: Interstate Arbitrations in the Northeast Peloponnese, ca. 250–150 B.C.*, Ohio State University, 2000, pp. 87–89) as markers of the border between the Corinthia and the Epidauria in the Hellenistic period. Based on the form of these cairns and the finds we extracted from them, it is our opinion that they were constructed in the Early Bronze Age, and that they can now be associated with similar features at Vayia in the eastern Corinthia and Vassa in the northeastern Argolid (see T. Tartaron, D. Pullen, and J. Noller, “*Rillenkarren* at Vayia: Geomorphology and a New Class of Early Bronze Age Fortified Settlement in Southern Greece,” *Antiquity* 80 [2006]: 145–160). We have interpreted these cairns and the long, lower rubble piles connecting them as the collapsed walls and towers of defensive enclosure walls. The features on Aphoronisi match these formal criteria well, and the fact that we extracted Early Bronze II sherds from their interiors (along with some Final Neolithic–Early Bronze I) indicates a similar chronology. Even if we are correct about the initial construction and use of the cairns and associated features, this does not preclude their reuse for purposes such as marking boundaries in later times.

STIRI

On a low ridge between two hilltops at Akrotirio Stiri high above the Kalamianos site, we discovered a second large Mycenaean settlement overlooking a steep sea cliff and an expansive view of the Saronic Gulf to the east. This settlement is smaller than the one at Kalamianos (the main part of the complex is approximately 200 x 70 meters), but the architecture is quite similar

and the chronology appears to be the same. We covered the ridge first with ADUs within the buildings, and then with DUs for a more general recovery of artifacts and other features. Later in the season, we were able to map the architecture with DGPS, with an accuracy on the order of a few centimeters or better (Figure 9).

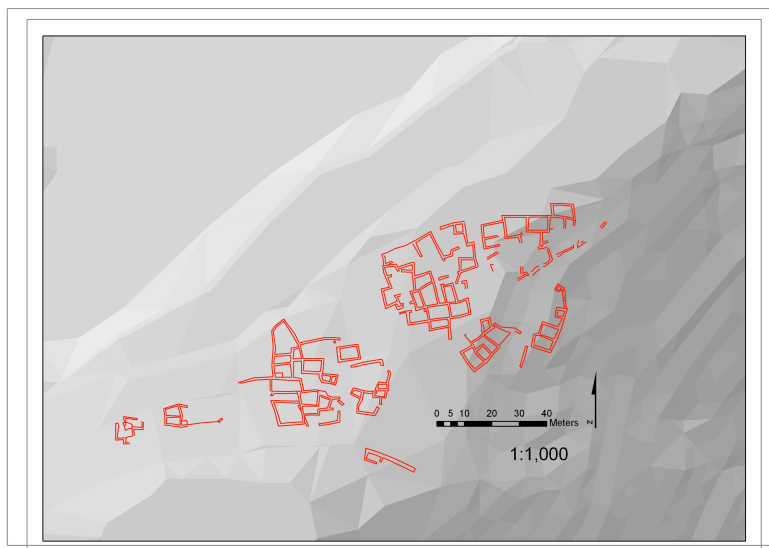


Figure 9. DGPS map of architecture at the Mycenaean settlement at Stiri.

The role that the Mycenaean settlement at Stiri played in the political, economic, and social system of the Korphos region in the palatial period is uncertain. One function of a settlement with such a broad viewshed may have been to monitor traffic approaching the area from both land and sea. From the geodetic marker on the small hill south of the site, Kalamianos and the Saronic Gulf stretching out to the south are in plain view, while from the sea cliff bordering the settlement on the east a much broader view of the Saronic coasts, including Attica and Salamis, can be seen. Thus, the community at Stiri could monitor maritime traffic on the Saronic, as well as the land passes above Kalamianos at Aramada and Sarakina, and those using the series of basins to the west that lead to Sophiko and beyond (more on these below).

On the south-facing slope beneath the geodetic marker, there exists a series of robust terrace walls, some of them ancient and probably Mycenaean, as well as architecture and artifact scatters from many periods, especially Early Bronze Age. Across the upper reaches of the slope, there are numerous roughly squarish piles of stone that we interpret as wall collapse, possibly the remains of EH buildings since sherds of that period were found in spatial association with them. Some of the terrace walls, however, seem to be Mycenaean. We were able to extract from at least one such wall sherds of secure Mycenaean date. At least one massive wall cuts across the contour, and thus cannot be a terrace wall, but was perhaps instead a boundary wall or even a fortification. The quantity of Mycenaean artifacts recovered on this slope was relatively small. The slope also yielded evidence of activity in other periods, mainly modern and early modern. There are many modern terrace walls, several modern buildings in various states

of disrepair and collapse, including one associated with a threshing floor. Lita Tzortzopoulou-Gregory is studying the early modern and modern remains in our survey area.

AREAS WEST OF STIRI: MALIA STIRI, MALIA PITSIS, PROSILI TOYIA, LAKKA GLIATA

The surface survey extended to the west to include the narrow corridor of movement along a series of roughly east–west-trending basins surrounded by high hills. They are filled by soil and water from the hills, making them relatively fertile and attractive for farming on the basin floors, settlements on the lower slopes, and herding in the higher elevations. In each one there is evidence for use in several periods of the past, and some of them are still intensively utilized.

The most remarkable discoveries pertaining to prehistory were a number of small fortified enclosures on the hills overlooking the routes to the west, but more directly with views to the sea and to Kalamianos. Some of these enclosures were seen by Michael Dixon and reported in his doctoral dissertation (2000, pp. 82–85) as Classical/Hellenistic towers associated with Corinthian-Epidaurian border disputes. We would like to propose instead that they are prehistoric, and almost surely Mycenaean, in date. There are many arguments against the later date. The masonry style of the walls is one problem. They are best described as large rubble constructions, with inner and outer faces of uncut, unhammered stones with a core of small-stone rubble and earth, quite unlike other examples of Classical and Hellenistic fortified sites in the area, and quite similar to Mycenaean construction techniques. There is a virtual absence of historical-period artifacts at these sites. Elsewhere, Classical/Hellenistic fortified sites, large and small, are littered with pottery and especially broken roof tiles, presumably because the stone walls were continued in mudbrick and then surmounted by roof tiles. We found no such artifacts, and in fact very few artifacts of any date. In several cases, we did recover a few small sherds of prehistoric, and most likely Mycenaean, date from the walls. Our case for assigning them to the Mycenaean period rests more on the masonry style than the artifacts. Although in many cases we lack conclusive evidence for a Mycenaean date, these enclosures share a common masonry style and their plans have striking elements in common (Figure 10).

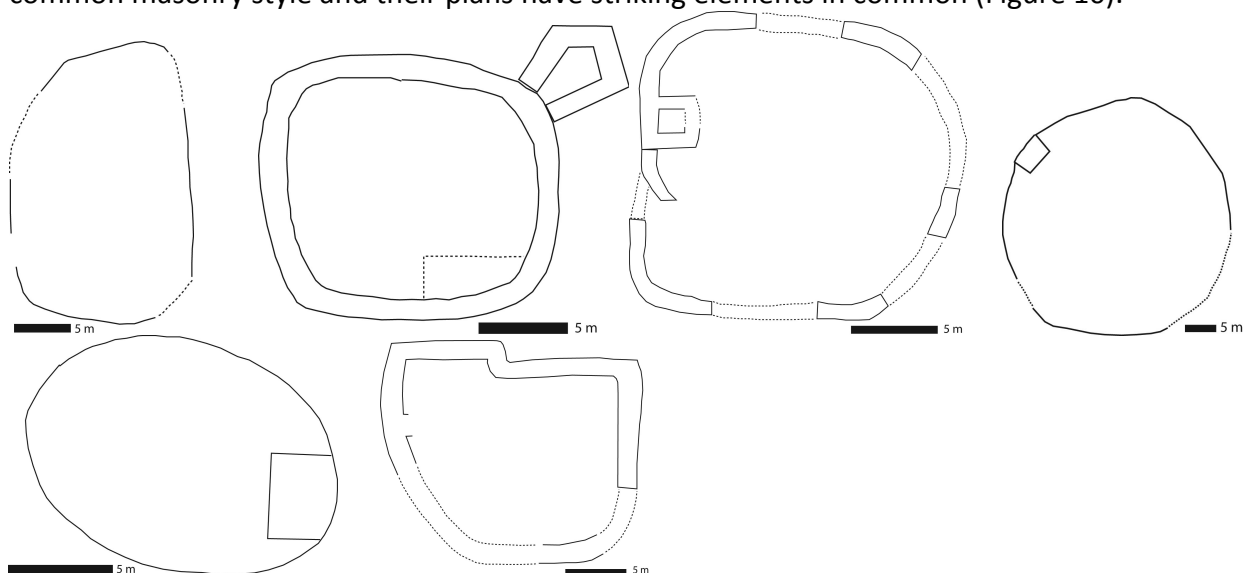


Figure 10. Rough field sketches of fortified enclosures in the survey area.

These fortified enclosures seem to have been carefully placed to simultaneously monitor maritime and overland traffic. Typically, they have a panoramic view of the Saronic, and the placement of some on south-facing slopes shows the primary orientation toward the sea. Yet each is also in a position to control movement overland via the natural corridor formed by the series of east–west-trending basins (see Figure 5). Hypothetically, we would associate these sites closely with Kalamianos and Stiri in a system of defense and exploitation of resources in service of the Mycenaean political economy of the 14th–13th centuries.

In the basin between Malia Stiri and Malia Pitsis, we discovered a cairn and wall feature like those at Aphoronisi (see above), which produced no artifacts but in form suggests an Early Bronze Age date. At Lakka Gliata, a site of Classical date was probably a small farmstead. Other periods, including Late Roman, were sparsely represented throughout the area.

Conclusion

In 2008 we completed a 50% sample of our survey area. The survey was tremendously productive, especially of architectural complexes and features of Mycenaean date. We now must turn to a careful analysis of the data, which we believe will allow us to make very powerful statements about the fundamental role of Kalamianos and the Korphos area in the expanding Mycenaean world of the 14th and 13th centuries B.C.

Geomorphological Study

Geological and geomorphological search, carried out by Dr. Rick Dunn (Norwich University, Vermont, USA), focused on problems of erosion and sediment movement, hydrology, and coastline change over time. In 2007, Dunn had mapped the geomorphic and geological units in detail, and studied erosional indicators such as karren features, and bedrock and sediment levels. In 2008 Dunn concentrated on karstic features such as faults and on hydrology of the region. Dunn mapped the lines of the bedrock joints across the site. These joints often split into what we call “fissures.” These fissures occur in association with architecture, and as they seem to be sources of fresh water, the distribution of the fissures may be a factor in the location of architecture.

Dunn was permitted to extract several cores on the Kalamianos site and region. The extraction of cores within 50 m of the coastline was supervised by representatives of the Enalioi (Underwater Antiquities Ephoreia). Because of the presence of bedrock and stones, most of the cores were very shallow. One core, within Building 7-I, had a few particles of partially burned clay (perhaps burnt mud brick or daub?), indicating that there most likely will be cultural deposits to be excavated. All sediments extracted from the cores were returned to the holes. One core near the coast in Sector 5 (but not in a structure) produced two tiny ceramic pieces (less than 0.5 cm in length); these were brought back to the SHARP lab to be recorded in the SHARP finds and deposited in the Isthmia Museum.