



KERKENES DAĞ PROJECT

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The 2016 season at Kerkenes saw an expansion of work following the issuance of a full excavation permit by the government of Turkey in 2015 (fig. 1). Excavations continued within Urban Block 8, located in the northern portion of the city. New support for the excavations came from the National Science Foundation (NSF) and the project is poised to see long-term research aimed at understanding the social organization of the city at Kerkenes Dağı. In addition, geophysical survey expanded upon the work in 2015 by connecting it to the large area of prior survey in the center of the city. Additional survey was also undertaken just outside the modern village of Şahmuratlı in the vicinity of a later Roman bath complex. Finally, ongoing monitoring and conservation efforts as well as ethnographic investigations remain important components of the project.

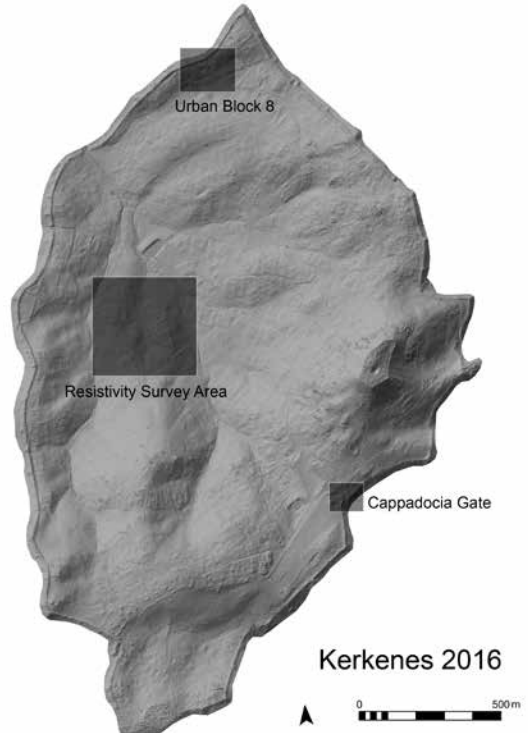


Figure 1. Map of Kerkenes showing major areas of work in 2016

Geophysical Survey

Twenty-three days of geophysics were undertaken at Kerkenes during the months of May and June. A total of 64,400 sq m (6.44 ha) of area was surveyed with the project's RM-85 resistivity meter in the south-central portion of the city (fig. 2). This area was selected in order to connect the survey from 2015 with the larger contiguous area in the center of the city. It provides a more complete plan of the area around the large structure that was the focus of excavations in 2010 and completes the building by building city plan between this large structure and the megaron excavated in 2003. While some of the buildings in this area had been intensively burned in the city's final destruction, and thus already known from the magnetometry survey in prior years, other buildings were not as heavily burnt and were only discovered in 2016. The expanding building by building city plan holds great promise for contextualizing the discoveries made within the excavations and for investigating the broader social organization of this important city.

In addition to the work within the city, two days of geophysical survey were also undertaken just outside of the village of Şahmuratlı, the village that graciously houses the project. In 2015, following the find of a partial mosaic in a field, emergency excavations were undertaken at the location by the Yozgat Museum. The excavations uncovered a Roman bath com-

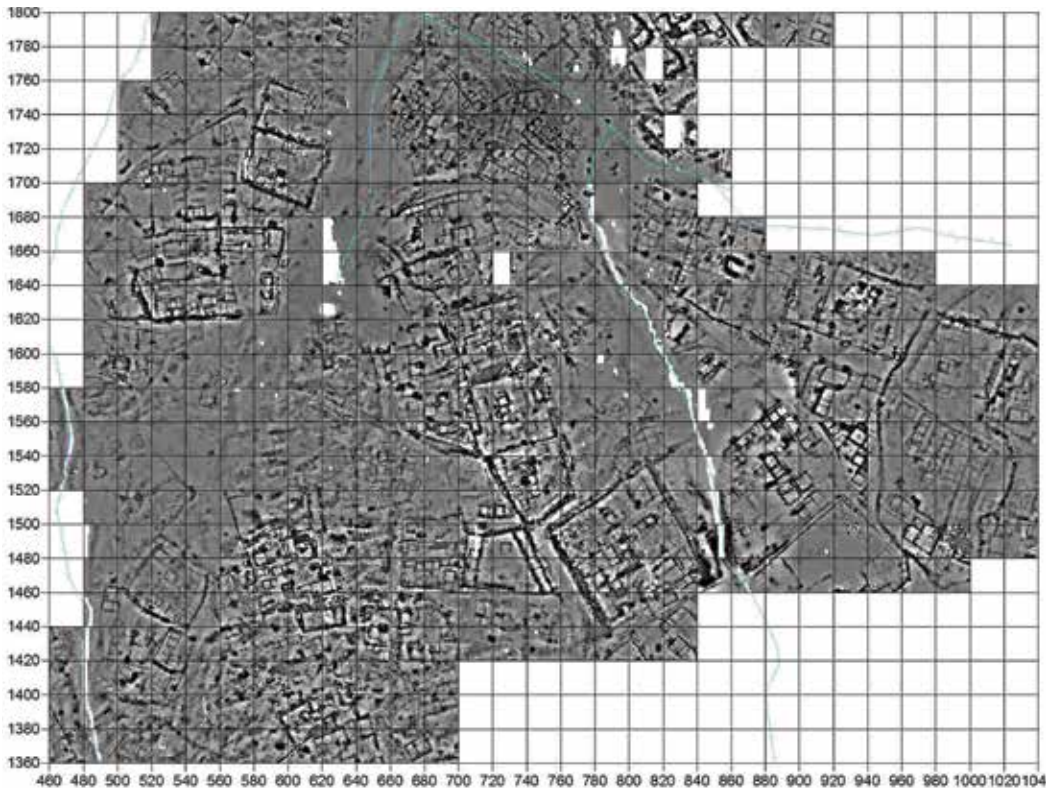


Figure 2. Results of the resistivity survey in 2016

plex. The Kerkenes team was asked to survey areas adjacent to this structure in order to try and determine the extent of the site for the Yozgat Museum. Sixteen grid squares, equaling 6,400 sq m (0.64 ha) of area, were surveyed with the RM-85 and an additional buried building was discovered well beyond the bath complex.

Surveys next year are planned to further expand upon the growing area that has been mapped in the center of the city, and to connect it up with a large area of survey in the north of the city. This will also help to connect the excavations in the north with buried structures found throughout the lower parts of the city. In addition, test surveys up at the highest point of the site, the later Byzantine castle, are expected to begin next year in collaboration with the FORTH Institute of Mediterranean Studies.

Excavation

Excavations in 2016 took place in three trenches: Trench 40 (TR40), Trench 29 (TR29), and Trench 31 (TR31) (fig. 3). All three of these trenches are located within Urban Block 8, in the northern portion of the city, and all three were partially excavated in prior seasons. These now contiguous trenches are part of a large horizontal exposure within Urban Block 8 that will eventually be extended to encompass the full 6,000 sq m of this urban block. At the end of the 2016 season a total area of 1,100 sq m has been excavated and a small section of the city wall at the northern end of the urban block has been cleared to reveal the front edge of the inner city wall. Extensive soil sampling in each of these trenches, with wet sieving of select

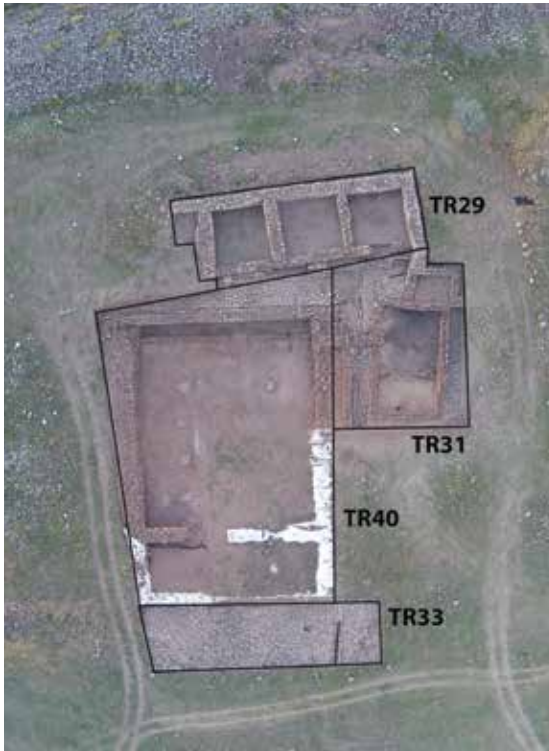


Figure 3. Aerial photograph of the excavation areas of Trenches 29, 31, 33, and 40



Figure 4. Stone walled bin with in situ pottery and wood in the northern end of the inner room of Trench 40

contexts, was paired with programs of pottery and metal analysis. Together these techniques are allowing us to discover different areas that were used for different activities by the people that once inhabited this urban block.

TR40 was placed to expose the entirety of a very large columned building near the middle of the urban block, along with a section of pavement just behind the building's back wall. In 2015 this trench had been extended by 300 sq m and the building collapse in the large inner room was excavated down to just above the floor level. In 2016, 260 sq m of this area was excavated to the preserved floor surfaces and the inner facing of the eastern and western walls were further articulated. The inner facing of both walls exposed this year showed evidence for posts, with rows of post holes identified at regular intervals between sections of interior wall facing. Patches of the highly burnt floor surface were also preserved, particularly in the southwestern quadrant of the inner room. Exposed bedrock in the more northern areas of the floor suggest that portions of the original floor surface was laid directly onto the bedrock. These areas of the floor did not survive weathering after the destruction of the building.

In the far northern end of the inner room a line of stones extending along a parallel line 1.5 m out from face of the north wall was found in 2015. We had postulated that it might be the front edge of a raised platform. Further excavation of the area this year revealed that this line was actually the uppermost course of a roughly 45 degree sloping stone bin edge, enclosing the northernmost area of the trench right up to the north wall of the building (fig. 4). Traces of floor plaster were found down ca. 30 cm at the bottom of the bin, particularly on the western side of the bin. The bin appears to continue farther through the line of the wall



Figure 5. Carved bone plaque with the image of a canine from Trench 40

Across the inner room a range of notable finds were discovered at or just above the floor surface. Above the floor surface and still in mudbrick collapse from the wall between the inner room and the antechamber was found a 3.0×3.5 cm bone plaque with a carved figure of a canine (fig. 5). A more fragmentary and burnt ivory plaque, 8×4 cm in size, with three carved mythical figures including a sphinx was found directly on the floor near the farthest north-western column base (fig. 6). An even more significant cluster of finds was located within the eastern third of the area of the sloping stone bin at the back of the inner room. This included more portions of the large vessel with lead pot menders first found in 2015, a few additional pieces of pottery, and discarded animal bone. Pieces of wood carbonized by the fire were also found in the bin in close proximity to the large vessel, including some small carved pieces of wood of which the largest was 4.0×2.6 cm in size (fig. 7).

Other carved items found near the large vessel included: miniature 2 cm long ivory bolsters and fragments with attachments (fig. 8), a small square 2.2 cm carved ivory frame (fig. 9), a bone cylinder just over 3 cm long and 2 cm in diameter (fig. 10), and hundreds of ivory and bone inlays and fragments. These could have all come from wooden furniture with bone, ivory, and wood inlays or the components of such furniture that may have been left here. Several additional metal items were also found in close proximity within that part of the bin



Figure 6. Carbonized pieces of carved wood from the eastern bin area of Trench 40

to the east and to the west in areas that will be explored further in 2017. Directly in front of the bin and running across the entire width of the room were two parallel lines of flat stones set 1 m apart and filled between with a leveling fill of small stones. These stones, based on parallels elsewhere in the city, are likely the subflooring for a wooden platform. No traces of the original wooden flooring were found beyond traces of burning on the rocks and in the soil matrix.



Figure 7. Fragmentary ivory plaque with mythical beasts from Trench 40



Figure 8. Portion of a miniature ivory bolster from the eastern bin area of Trench 40



Figure 9. Miniature ivory frame from the eastern bin area of Trench 40



Figure 10. Small bone cylinder from the eastern bin area of Trench 40

including: a portion of a copper alloy spatula, an iron arrowhead, and small metal tacks and rivets. In the western part of the bin area a small amount of additional pottery and bone were found along with a few more small finds including: a piece of amber inlay 1.5 × 0.9 cm in size and a perforated iron band a little over 6 cm long.

To the north of the building, a paved area extends back towards the multi-roomed building excavated in TR29 in 2011. It was in this building that the original ivory plaque from Kerkenes was discovered in 1996. A portion of this paved area was excavated in 2015 and the rest was excavated in 2016. A small portion of the pavement excavated this year falls in TR29 and the rest in TR40. This entire area has now been connected to form a large contiguous excavation area. On the pavement within TR40 a small cluster of pottery and a copper-alloy shaft fragment just under 4 cm long were found. On the far eastern extents of this paved area at the entrance to Room 2 within TR29 an iron awl just under 4 cm in length was found (fig. 11).



Figure 11. Iron awl from the edge of the pavement in front of Room 2 in Trench 29

TR31 is located directly to the east of the northern most end of TR40 and to the south of the eastern most end of TR29 (fig. 3). Portions of TR31 were excavated in 2012, including the staircase leading up into Room 3 of the multi-roomed building in TR29. In 2016, TR31 was extended to the south and east as the trench was enlarged by an additional 136.5 m². At the end of 2012 the entrance to two rooms to the south of Room 3 in TR29 had been discovered. In 2016 the full extents of both of these rooms (Rooms 4 and 5) were defined as well as areas just outside the rooms and between these rooms and TR40.

The extents of Room 4, to the east of the staircase leading up to Room 3 in TR29, was defined and wall collapse from the final destruction was removed down to just above the floor level. This room will be cleared fully in 2017. To the south of Room 4 the larger Room 5, which measures 5.20 m × 8.22 m in size, was defined and cleared all the way to the level of the plaster floor. The north and west walls of Room 5 exhibited well-preserved plain wall plaster across both interior wall surfaces (fig. 12). The largely continuous wall plaster surface



Figure 12. Wall plaster on the northern wall of Room 5 in Trench 31. Note the slots for wooden vertical beams spaced roughly every meter

was broken by nine well defined 20 cm vertical beam slots located approximately 1 m apart along the face of both walls. Reed impressed mud plaster fragments, likely from the upper superstructure or thatch roof of the building were plentiful within the building collapse. Running east–west a secondary wall was found at and below the floor level. This wall appears to have been a small terrace wall to retain the level floor in the northern portion of the room. The well preserved plaster floor in the northern part of the room is not preserved over the top of this wall or across the much shallower southern portion of the room. Within Room 5 a number of objects were discovered including an almost complete trefoil jar (fig. 13) and various pieces of pottery. Two large grinding stones were also found which might provide a hint as to food preparation activities taking place in this room. A number of pieces of metal were also found including a complete copper alloy bilobate arrowhead (fig. 14).

Three thresholds for entrances into Room 5 were located, one in the southeastern portion of the room and two others in the northwestern portion of the room on either side of a wall extending from the room to the west before meeting up with the eastern wall of the large columned building in TR40. The northernmost of these entrances on the west side of the building opens onto the stone pavement coming down from the staircase to Room 3 in TR29. The southernmost of these entrances opens onto a 1.9 m wide stone paved corridor running north to south along most of the western side of Room 5. This corridor also contains the southward continuation of the drain noted in the pavement to the north in 2012 which presumably connects with the covered drain excavated in TR33 in 2014 and 2015. This paved



Figure 13. Trefoil jug found on the floor of Room 5 in Trench 31



Figure 14. A copper alloy arrowhead from Room 5 in Trench 31

corridor can also be accessed from the pavement area to the north by a threshold in the wall that bisects the two western entrances into Room 5. This corridor area is removed from the eastern wall of the large columned building in TR40 by a wall defining its western extent and a narrow 1 m wide slot to the west of that wall with no discernible entrances. This slot appears to have preserved mud plaster on its walls, but further understanding of this feature will need to await full excavation in 2017.

The entrance on the southern end of the eastern wall of Room 5 opens onto a stone paved surface area extending to the north and to the east. This outside paved area extends to the north almost half the length of Room 5 and between 1.15 m and 1.60 m to the east from the outside face of the wall. To the east this paved area is separated from a second stone paved area by a 7.0 cm unpaved slot that may have functioned as a drain. This second paved area to the east of the narrow slot continues beyond the easternmost extent of TR31. To the north of the first paved area is an unpaved area extending 1.2 m out from the eastern wall of Room 5. A stone set in the northwestern corner of this area was presumably the footing for a post that formed part of a roof over this unpaved area and the pavement to the south. Sections of plaster preserved on the lowest courses of the outside of the eastern wall of Room 5 also suggest that these areas may have been at least partially roofed, and numerous fragments of burnt wood could be evidence of the frame and roof in this area.

Recording of the excavations has increasingly made use of 3D models derived from photogrammetric methods and 2016 saw the entirety of the excavations recorded in this manner. These models can then be exported for digitization and the resulting plans and sections checked in the field, speeding up the orthorectification process used prior to the 2015 season. In addition, the models provide new ways to visualize the architecture and the archaeology in order to better understand how these areas were originally built and used. Finally, the models provide a way to monitor shifts in the standing architecture in order to plan long-term preservation efforts in collaboration with our colleagues at Abdullah Gül University in Kayseri. In the interim, following excavation, plastered floors and walls were covered in geotextile and a clean layer of soil to help preserve them during the upcoming winter.

Facilities and Infrastructure Improvements, Conservation, and Ethnographic Research

Accompanying the archaeological excavations and surveys, Associate Director Sevil Baltalı-Tırpan from Istanbul Technical University continued her important work of engagement and ethnography with the local village of Şahmuratlı during the 2016 season. This work provides a critical conduit for understanding both the site and the project from the perspectives of our gracious hosts in the village. It is essential that local understandings of the site are given voice because they are an important part of this living landscape that we all work within. Over time we plan to more actively incorporate aspects of these memories and histories into the long-term site presentation efforts by the project, so that all stakeholders have involvement in both its presentation and preservation.

Speaking of preservation, in the Cappadocia Gate continued photogrammetric work using drone photography was completed in order to model changes occurring within the towers, walls, and glacis (fig. 15). Yearly modeling will form a baseline from which ongoing conservation efforts can be designed and tested. With such a large and unique structure that was so heavily burnt in the final destruction of the city, 3D models that can be compared from year



Figure 15. 3D model of the Cappadocia Gate generated from drone photography

to year provide a practical way to monitor it and aid in making decisions about what steps can be taken to preserve it. This same modeling was also used elsewhere in the city, on a smaller scale, to record and monitor the reconstructed wall caps in the area of the 2010 excavations. Additional infrastructural work during the 2016 season included replacement of portions of the fencing surrounding both the Cappadocia Gate and the Palatial Complex and the removal of modern graffiti found over the winter on the front of the Palatial Complex. An extension and regrading of the new road leading up to the northern portion of the city was also completed by the Sorgun Administrative Director, Metin Kayhan. Even with the critical new road, road access to the city remains a key problem for those wishing to visit the city, and future road extensions were discussed with the new Yozgat Governor after he arrived in July.

Acknowledgments

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