
Protohistoric and Historic monumental funerary structures in the "Chott el Jérid" area (Southern Tunisia): the importance of photogrammetry for rapid and complete documentation in the Saharan context.

Enrico Lucci^{*1}, Andrea Monaco^{*†2}, Moufida Jnen^{‡3}, and Jaafar Ben Nasr^{§4}

¹Department of Ancient World Studies, Sapienza University of Rome, Italy – Italie

²The Archeological Mission to the Sahara, Sapienza University of Rome; Italy – Italie

³Institute National du Patrimoine, Tunis, Tunisia (INP) – Tunisie

⁴Department of Archaeology, University of Kairouan, Tunisia. – Tunisie

Résumé

As part of the research programme of the joint archaeological Tunisian-Italian mission in the Sahara, in 2015 we started to investigate the funerary practices of late Prehistoric, Protohistoric and Historic societies in southern Tunisia. The funerary archaeology of the northern edge of the Sahara is currently not well known given the few systematic research projects carried out in the past. Using the reports of funerary monuments, during surveys carried out by the "*Service Géographique de l'Armée Française*" in the early 20th century, along with information collected on the field by Francois Paris, a sample study area was selected in the south, south-east of the "Chott el Jérid" depression, within the governorates of Kébili and Gabès. The density analysis of "Megalithic ruins", obtained through data processing in the GIS environment revealed some major concentrations of tumulus necropolises, alternating with isolated monuments scattered in the landscape in the southeast area of Douz. The fieldwork strategy was planned taking into account the social and political situation characterizing several North African and Middle Eastern countries in recent years. To optimize the documentation of funerary structures, 3D photogrammetric models were used to reduce the time taken and the number of people in the field.

Photogrammetry was used during all the various stages of the archaeological investigation, from the survey phase, to collect information about the overall conditions of the tumulus structures, to the excavation of individual structures to obtain as complete as possible a picture of all the excavation phases. Overall, 6 structures excavated during the archaeological campaigns of 2016 and 2017 were recorded with photogrammetry; for one site, where six tumuli were clustered on top of a small hill, we attempted a photogrammetric survey of the entire area. The most significant problem for the application of photogrammetry in a desert context is the sand, a highly mobile element with an indistinct surface. On the other hand, among the several advantages, considering that some of the tumuli investigated were

*Intervenant

†Auteur correspondant: andra.monaco9@gmail.com

‡Auteur correspondant: moufidasisgille@hotmail.fr

§Auteur correspondant: bennasr.jaafar@gmail.com

characterized by a small burial chamber cut into the geological bedrock, was the potential for detecting the profile of these burial chambers retaining the upper dome. The use of photogrammetry provided us with a complete documentation of the features investigated before the end of the fieldwork. Using the dense point cloud and the scaled 3D model we can remotely observe the peculiarities of the different types of monument.

Mots-Clés: photogrammetry, Tunisia, funerary structures, Chott el Jerid, Sahara, 3D