

THE CONTRIBUTIONS OF COMPUTATIONAL IMAGING METHODS IN ARCHAEOLOGY: CASE STUDIES IN PHASELIS AND TERMESSOS

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Abstract: This study focuses on the application of digital imaging methods, *Photogrammetry (Structure from Motion)* and *Reflectance Transformation Imaging (RTI)* on archaeological materials and the contribution of these methods to the analysis processes of artifacts. The first example included in the study is the documentation of Hadrian's Gate and its inscriptions dedicated to the Emperor Hadrianus and his family in Phaselis Ancient City and producing its replica/model scaled down at 1/20 via 3D printer through the photogrammetric data, trying restitutions over its printed pieces and display the replica of the gate on its original place in field. Our other study focuses on the results obtained from *photogrammetry* and RTI methods applied on a columnar sarcophagus located in *Termessos Ancient City, E-1 Necropolis*, and the challenges encountered under the field conditions.

The work carried out on the sarcophagus produced results that have contributed to the elucidation of controversial points that were not clarified in previous studies. Thus the depicted figures and missing part of the inscription on the sarcophagus became clear. Both studies have enabled us to realize the importance of preserving and documenting the artefacts and to observe the contributions of computational imaging methods to the archaeological and epigraphical studies. While documenting the monumental artefacts of Hadrian's Gate has importance in terms of the preservation and restoration project, digital imaging of the sarcophagus in Termessos made it possible to illuminate controversial points.

Keywords: Photogrammetry, RTI, Documentation, Phaselis, Termessos