
Dating the beginning of the age of the pyramids using OSL dating and the minimum extraction sampling technique.

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Abstract

The development of OSL dating in the 1980s was a watershed for archaeological chronology. Yet while widely applied throughout many regions, in Egypt the development of OSL coincided with the introduction of a law that enacted a ban on the export of antiquities. This ban included a clause which continues to prevent the removal of archaeological samples for scientific analysis. Thus, the study of Egyptian archaeology has not benefitted from this important chronometric tool. Nowhere is this more evident than in the study of ceramics, which continue to be dated using relative dating techniques only.

Recent research undertaken at the Research Laboratory for Archaeology and the History of Art, Oxford, has aimed to bring OSL dating to Egyptian ceramic chronology. Specifically, a new sampling protocol, the minimum extraction technique (MET), has been developed in order to conduct OSL dating on ceramic material housed in museum collections. As the name implies, MET removes only a tiny sample for analysis from the ceramic, thus ensuring that the aesthetic integrity of the museum object is upheld at all times, with minimal damage being inflicted on the vessel.

This paper will discuss MET and its development, and will also present OSL results obtained from Egyptian ceramic material using this sampling protocol. This project focused specifically on dating the end of the Early Dynastic period as it transitions into the Old Kingdom: the beginning of the age of the pyramids and the culmination of Egyptian state formation. Ceramic material obtained primarily from the site of Beit Khallaf, an early Old Kingdom elite burial site, has been dated. By examining the absolute chronology of this material using OSL, our research assigns the first calendrical dates to this transitional phase of Egyptian history, and to the best of our knowledge, we present here the first OSL dates determined for ancient Egyptian ceramics.

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