Optically Stimulated Luminescence dating of the pre-Minoan eruption paleosoil horizon, Santorini Island, Aegean Sea, Greece: Preliminary results

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We have tested the applicability of Optically Stimulated Luminescence (OSL) technique in dating seven coarse grain soil samples collected from the Santorini Island. The samples were collected from the paleosoil horizon deposited before the Minoan eruption of Santorini from five different locations. In a volcanic province like Santorini, quartz, which is mineral essential for the application of OSL, is anticipated to be scarce and any quartz concentrations are assumed to be very low and mainly of eolian origin [1]. The OSL ages were obtained from chemically purified quartz and a single-aliquot regenerative-dose (SAR) protocol was followed for the equivalent dose (De) determination, using the Riso TL/OSL DA-20 reader [2]. Also, to estimate dose rates, the natural radioactivity of soil from the surroundings of the original sample locations was measured, using gamma spectrometry. The preliminary OSL ages are presented and compared with independent age controls provided by radiocarbon dating. Additionally, the luminescence characteristics of the material extracted from the pre-Minoan eruption paleosoil are also presented and discussed.

[1] Bonde *et al*., Quat. Sc. Rev. **20,** 5-9 (2001)
[2] Murray & Wintle, Radiat. Meas. **32**, 1 (2000)

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