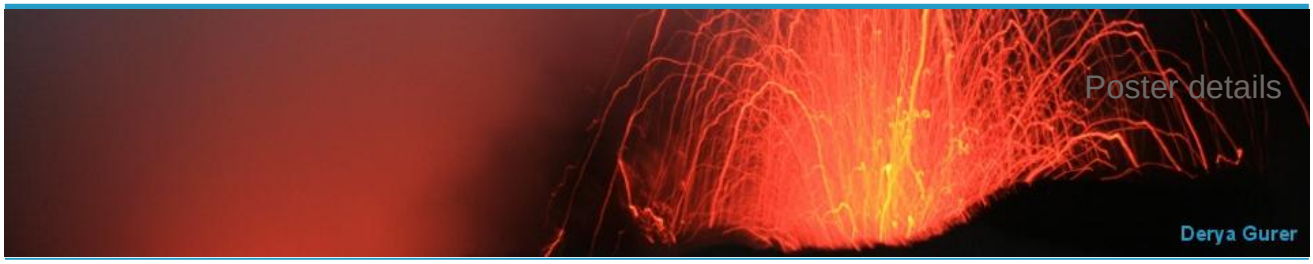

The Pleistocene continental core WTK-13 from the Turkana Basin (Kenya) and its correlation to both the climate and paleoanthropological record.

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Theme: (Paleo-)climate dynamics

Abstract

At West Turkana (Kenya) the core WTK-13 was drilled in paleolake sediments as part of the Hominin Sites and Paleolakes Drilling Project (HSPDP), near the site where the famous Homo erectus skeleton of “Turkana boy” was found. It can be correlated to the rich paleontological and archaeological sites found in outcrops around the Turkana Basin. The core has a recovery of 95 percent and a total length of 216 meters. A parallel outcrop record along the Kaitio lagga (dry river bed), close to the Turkana drill site, has 180 meters of exposed sediments and is also being investigated. Here we present for the first time a geochronological correlation between the the WTK core and the Kaitio outcroup. Correlation of the records is based on the identification of the top of the Olduvai subchron (C2N) at 1.78 Ma, six tephrostratigraphic markers, magnetic susceptibility and key marker beds. Our research shows a lithostratigraphic record with transition from deeper but highly fluctuating lake environments to lake margin and finally deltaic settings. The core to outcrop correlation shows a clear loss of quality of the paleomagnetic data from core to outcrop due to weathering. The unexposed core sediments not only preserve a better paleomagnetic signal, but also enable reconstruction of an excellent climate and environmental record (biomarkers, phytoliths, pollen etc). The detailed record of climate and environmental change is closely linked to the rich paleontological and archaeological discoveries from nearby sites and around the Turkana Basin. Our data will contribute to understanding the influence of climate and environmental change on the occurrence of key adaptive changes in anatomy, morphology, and/or behaviour (such as the earliest Acheulean stone tool use) of our hominin relatives during that period.

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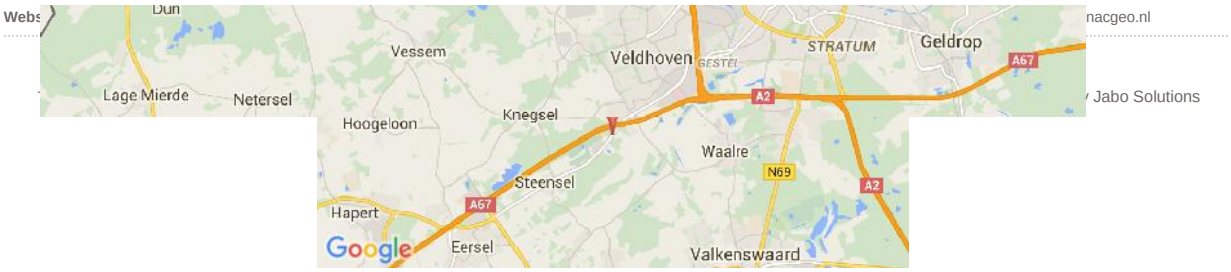
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