



Exploring the Middle Pleistocene Lake Suguta Sr-isotope Stratigraphic record

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Several studies into the Quaternary stratigraphic record of the Sr-isotope composition of paleolake Turkana in the East African Rift System (EARS) show how variation of climate left a signal of changing lacustrine Sr isotope values. This Sr isotope signal was captured in the lacustrine fossil record of the Turkana Basin, and can be a useful chemostratigraphic tool (e.g. Joordens et al., 2011; van der Lubbe et al., submitted). Such lacustrine Sr-isotope changes are believed to be paced by orbital-forced insolation cyclicity, and interpreted to be the result of changing contribution of run-off from different sub-catchments of lake Turkana, as climate change shifted regional rainfall patterns.

Here, we present a first set of data from a middle Pleistocene stratigraphical sequence in the Suguta Valley, South of the Turkana Basin in the EARS. This sequence spans a couple of sedimentological cycles that potentially represent precession-forced lake level variation. In this setting, the Sr-isotope data do not vary in phase with these sedimentological cycles, but demonstrate a long trend of Sr isotope change. This may suggest that the catchment configuration of the Suguta Valley in the Mid Pleistocene was less suitable to record precession-forced hydroclimate change in Lacustrine Sr isotope ratios. This may have implications for the Turkana Basin Sr isotope record as well, because the two basins are believed to have been hydrologically connected in the Middle Pleistocene.

references:

- 1) Joordens, J.C.A. et al., 2011. An astronomically-tuned climate framework for hominins in the Turkana Basin. *Earth and Planetary Science Letters* 307, 1-8.
- 2) van der Lubbe et al., submitted. Gradual or abrupt? Changes in water source of Lake Turkana (Kenya) during the African Humid Period inferred from Sr isotope ratios