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Deino, A. L., Sier, M., Garello, D., Keller, C. B., Kingston, J. Scott, J., and Cohen, A. S. (2018). [PP31C-1671 Upper Pliocene Age Model for the HSPDP Baringo-Tugen-Barsemoi Core (Kenya) and Climatic Implications](https://agu.confex.com/agu/fm18/meetingapp.cgi/Paper/362799) . AGU Fall Meeting, Washington, D.C.

Approximately 228 m of fluviolacustrine sedimentary rocks, paleosols, and tuffs were acquired in 2013 via a single drill core into upper Pliocene (Piacenzian) strata in the foothills of the Tugen Hills west of Lake Baringo, Kenya, as a component of the Hominin Sites and Paleolakes Drilling Project (HSPDP). Specifically, the core recovered a ~3.31–2.54 Ma interval of the highly fossiliferous and hominin-bearing Chemeron Formation. A Bayesian stratigraphic age model of the core has been developed using control points derived from 40Ar/39Ar dating and tephrostratigraphy of tuffaceous units, and paleomagnetic reversal stratigraphy. The model reveals three main intervals with distinct sediment accumulation rates; an early rapid phase from 3.2–2.9 Ma, a relatively slow phase from 2.9–2.7 Ma, and the highest rate of accumulation from 2.7–2.6 Ma. The intervals of rapid accumulation correspond to periods of high Earth orbital eccentricity, whereas the slow accumulation interval corresponds to low eccentricity at 2.9–2.7Ma. This correspondence suggests that astronomically mediated climate processes, rather than tectonic drivers, may be responsible for changes in sediment accumulation rate. However, unconformable fluvial conglomerates present in this interval may also indicate a significant time gap in the sedimentary succession. Age calibration of the core’s magnetic susceptibility and gamma density logs identifies a close temporal correspondence between a shift from high- to low-frequency signal variability at ~3.04 Ma, and the onset of northern hemisphere glaciation, interpreted to represent glacial climate teleconnections between northern latitudes and the tropics.