S15-P02 - A 550 kyr hydroclimate record from Chew Bahir, southern Ethiopia, reconstructed from oxygen isotope analysis of lacustrine sedimentary carbonates. International Paleolimnology Association-International Association of Limnogeology Meeting, Stockholm, Sweden June 18-21, 2018

Jonathan R. Dean (1,2), Melanie J. Leng (2), Asfawossen Asrat (3), Melissa S. Chapot (4), Andrew S. Cohen (5), Alan Deino (6), Verena Foerster (7,8), Henry F. Lamb (4), Helen M. Roberts (4), Frank Schaebitz (8), Martin H. Trauth (7), Finn A. Viehberg (8) and the Chew Bahir Science Team (1) School of Environmental Sciences, University of Hull, UK (2) NERC Isotope Geosciences Laboratory, British Geological Survey, Keyworth, Nottingham, UK (3) School of Earth Sciences, Addis Ababa University, Ethiopia (4) Department of Geography and Earth Sciences, Aberystwyth University, UK (5) Department of Geosciences, University of Arizona, Tucson, AZ, USA (6) Berkeley Geochronology Center, Berkeley, Ca, USA (7) Institute of Earth and Environmental Science, University of Potsdam, Germany (8) Institute of Geology and Mineralogy, University of Cologne, Cologne, Germany j.dean2@hull.ac.uk

There are few long, continuous, terrestrial Pleistocene records from eastern Africa, so it has been difficult to establish the relative influences of different climate forcings on the region’s hydroclimate and to understand the climatic conditions through the time interval of anatomically modern human (AMH) origin and dispersal out of Africa. To address these gaps in our knowledge, the Hominin Sites and Paleolakes Drilling Project cored lake sediments from Chew Bahir in southern Ethiopia, close to the Omo-Kibish, site of the oldest known eastern African AMH fossils. A preliminary chronology for the 298 m core based on OSL and Ar-Ar ages suggests that the record covers the past c.550 kyr. Here we use the oxygen and carbon isotope composition of endogenic calcite to reconstruct changes in hydroclimate. The data suggest significant fluctuations in water balance, with seemingly more evaporative conditions during glacial periods and less evaporative conditions during interglacials. As well as precessional-scale variability at times of higher eccentricity, we demonstrate a sawtooth structure to the data, which we argue suggests the importance of factors other than local insolation changes in influencing Ethiopian hydroclimate. We also make inferences about the possible correlation between the stability of climate and the dispersal of anatomically modern humans out of Africa.