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LEAF WAX BIOMARKERS AS PROXIES FOR REGIONAL CLIMATE VARIATION DURING HOMININ EVOLUTION

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Climate change is thought to play a critical role in human evolution. However, this hypothesis is difficult to test due to a lack of long, high-quality paleoclimate records from key hominin fossil locales. We improve the understanding of this relationship by examining Plio-Pleistocene lake sediment cores from East Africa that were drilled as the foundation of the Hominin Sites and Paleolakes Drilling Project, an international effort to study the environment in which our hominin ancestors evolved and dispersed. The goal of our research is to produce sedimentary records of climatic and environmental change from the basins in which early hominins lived in order to test various hypotheses.
We have analyzed organic geochemical signals of climate in lake sediment drill cores from West Turkana in Kenya, which spans roughly 1.87-1.38 Ma, and contains some of the first fossils from *Homo erectus*. In particular, we present compound-specific stable isotopic analyses of terrestrial plant waxes, which are ablated from vegetation and preserved in lake sediments. The carbon and hydrogen isotopic compositions of these waxes record changes in regional vegetation and hydrology, and is a proven recorder of regional climate. Thus, the biomarker proxies provide a relatively direct indicator of past rainfall and vegetation

structure where hominins lived. The timing and nature of critical transitions in human evolution recorded in this basin are compared against these orbital-scale environmental records.
Session No. 102

T195. Paleoenvironmental Reconstruction of Hominin Sites: New Methods, New Data, and New Insights I
Monday, 2 November 2015: 8:00 AM-12:00 PM
Room 324 (Baltimore Convention Center)