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# 375-9: LATE-PLIOCENE/EARLY-PLEISTOCENE DIATOM RECORD FROM BARINGO BASIN, KENYA

**Wednesday, 25 October 2017**
**09:00 AM - 06:30 PM**
*Washington State Convention Center - Halls 4EF*

The Hominin Sites and Paleolakes Drilling Project (HSPDP) has collected sediment cores from several important hominin fossil and artifact sites in Kenya and Ethiopia in an effort to investigate the role of environmental forcing in shaping human evolution. A 228-m long core comprising sediments from the Chemeron Formation (3.2-2.35Ma) was recovered from the Baringo Basin and Tugen Hills region. We examined the core at ~32cm intervals for the presence of diatoms, which were detected in 138 of 521 samples. Where diatom abundance made quantitative analysis possible, diatoms were identified and counted to species level.

The core comprises repeated sequences of terrestrial and lacustrine sedimentary facies, including five diatomites and four additional diatom-bearing units, which are found exclusively in the upper 132m of the core. Diatoms are occasionally observed outside these units, although they are typically poorly preserved. No diatoms are observed below 172 meters. All diatom-bearing units are associated with sediments of low magnetic susceptibility. Within the upper 132m, we recognize three zones. Based on the diatom stratigraphy, we are able to correlate these diatomites to four out of five 'Barsemoi' diatomites previously identified in adjacent outcrops.

The diatom-bearing units provide evidence of repeated phases of lake expansion and contraction at the coring site. Deposition of diatomites implies a meso- to eutrophic- system with sufficient silica and phosphorus to sustain high diatom production. Lack of dilution by detrital inputs is also important for diatomite formation, but does not account for the thick accumulations found in zone three. The lower diatom abundances that characterize units of the second zone may reflect a period where lake phases are characterized by lower diatom production and higher detrital inputs.

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