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Paleontological Investigation of Marsabit Road, Chalbi Basin, Northern Kenya

Tentatively dated to between 2.2 and 2.8 Ma (Nyamweru 1986, 1989; Key 1987; see below), sediments from the Chalbi Basin sample an important chapter in Earth's history. This period saw the onset of widespread global cooling and aridity (deMenocal 2004; National Research Council 2010), a trend that corresponds to a shift in orbital dynamics (National Research Council 2010), the onset of Northern Hemispheric glaciation (Raymo 1994), the cyclical expansion and contraction of East African lakes (Deino et al. 2006; Trauth et al. 2007; Ashley 2007; Kingston et al. 2007), and, ultimately, dramatic changes in African floral and faunal compositions (Vrba 1988, 1995; Cerling 1992; Reed 1997; Bobe and Eck 2001; Alemseged 2003; Bobe and Behrensmeyer 2004; Levin et al. 2004; ; Wynn 2004; Cerling et al. 2005). With respect to the human evolutionary record, the period also witnessed the possible extinction of Australopithecus in East Africa, the emergence of Homo and Paranthropus, and the emergence of a sustained archaeological record (Kimbel et al. 1996; Wood and Collard 1999; Semaw et al. 2003; Klein 2009).

At present, however, relatively few East African localities sample this important timeframe (National Research Council 2010), profoundly limiting our understanding of this critical period in global climate change and human paleobiology. As one of the few remaining largely unexplored sedimentary basins in East Africa, the Chalbi Basin provides an excellent opportunity to add important data relevant to these issues (e.g. National Research Council 2010).

Here, funding is requested to support my participation on a month-long paleontological field expedition to the Chalbi Basin, northern Kenya. In addtion to the field expedition, two weeks will be spent in at the National Musuems of Kenya cleaning, identifying, and analyzing the fossil faunal specimens recovered during field work. The ultimate goals of the project are to refine the geological, paleontological, and paleoanthropological context(s) of past fossil collections from the Marsabit Road locality, generate new fossil collections there, as well as identify additional fossil and artifact-bearing deposits elsewhere in the Basin.