

A preliminary report on paleomagnetic study of hominoid fossil bearing formation in Samburu Hills, Northern Kenya

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Hominids spread from Africa to the rest of the world after evolved from hominoid through Australopithecus to Homo. Thus hominoids in Africa hold the key to the elucidation of human evolution. In 1982, the Japan-Kenya joint expedition team conducted by Ishida found fossil specimens of a large hominoid (Samburupithecus) of the late Miocene in Samburu Hills, Northern Kenya (Ishida and Pickford, 1997). The

sanidine K-Ar ages from the pumice beds yielding Samburupithecus show 9.47

$- 9.57 \pm 0.22$ Ma (Sawada et al., 1998). The hominoid fossil has an important role in evolutionary anthropology, providing evidence of evolution during a large information gap from 14 to 5 Ma in Africa.

Paleomagnetic study was performed for the purpose of magnetostratigraphic dating of the fossil. We sampled lacustrine claystone and siltstone, and lavas mainly in the Namurungule Formation, which has yielded the Samburupithecus fossil. The upper part of the Aka Aiteputh Formation, which underlies the Namurungule Formation, was also sampled. 72 oriented block samples were collected from 26 layers. One to five core specimens for paleomagnetic measurement were prepared from each oriented sample. Stepwise thermal demagnetizations up to 680 deg. C and/or alternating field demagnetizations up to 180mT were conducted for all the specimens. Reliable paleomagnetic directions were obtained from 75 % of specimens over 20 layers. Virtual geomagnetic pole positions were calculated from these directions, and magnetic polarities were determined from them. The magnetic polarity sequence is clearly divided into two zones. A normal polarity zone for the whole part of the Namurungule Formation overlies a reverse polarity zone of the Aka Aiteputh Formation.

Correlation with the geomagnetic polarity time scale [Cande and Kent, 1995] was made, with the K-Ar age constraints. The normal polarity zone including the Samburupithecus fossil is correlated with chron C4Ar.2n or C5n.1n. This indicates that the age of the Samburupithecus fossil falls into 9.58-9.624 Ma (C4Ar.2n) or 9.74-9.88 Ma (C5n.1n).