

EGU21-3685

<https://doi.org/10.5194/egusphere-egu21-3685>

EGU General Assembly 2021

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## Paleomagnetism of the Upper Cretaceous oceanic red beds in southern Tibet, China: Implications for the extent of Greater India at ~75 Ma

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The extent of Greater India with precise and accurate chronological control is a key issue that concerns the spatio-temporal pattern and tectonic models of the India-Asia collision. Here we carried out a detailed magnetostratigraphic and paleomagnetic study on the Upper Cretaceous oceanic red beds (CORBs) (Chuangde Formation) exposed in the Tethyan Himalaya terrane. The high temperature (650–690°C) magnetic components are isolated from two separated sections at Cailangba and display both normal and reverse polarities, which were used to construct magnetic polarity sequences of the sections that can be subsequently correlated to the geomagnetic polarity time scale (GPTS) to better estimate the age of the rocks. With the aid of previously published biostratigraphy by Chen et al. (2011, *Sedimentary Geology*), the polarity magnetozones of the Cailangba B section are correlated to chron C32r.2r (74.3–74.0 Ma) and the upper part of chron C33n (79.9–74.3 Ma), and the single normal polarity magnetozones of the Cailangba A section is correlated to the upper part of chron C33n (79.9–74.3 Ma). As a result, the CORBs in the Cailangba A and B sections represent the time interval of 76.2–74.0 Ma by magnetobiostratigraphy. Two independent methods of inclination shallowing correction were tested, which all indicate a bias inclination of ~70%. After inclination shallowing correction, the mean inclination increased to  $\approx 35.0^\circ$ , giving what we propose to be a high-quality Late Cretaceous paleopole of  $40.8^\circ\text{N}/256.3^\circ\text{E}$ ,  $A_{95} = 1.8^\circ$ . Our findings indicate that the Indian passive continental margin was situated at a paleolatitude of  $19.4^\circ \pm 1.8^\circ\text{S}$  at ~75 Ma. These data suggest that Greater India extended about  $715 \pm 374$  km farther north from the present northern margin of India in the Late Cretaceous, implying a latitudinal width of  $3641 \pm 308$  km for the Neo-Tethys Ocean that still separated the Lhasa terrane of southern part of the Asian plate and the Greater India.