MAGNETOSTRATIGRAPHY AND $^{40}$Ar/$^{39}$Ar DATING OF CAMP LAVA FLOWS AT THE TRIASSIC-JURASSIC BOUNDARY, MOROCCO

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The Central Atlantic Magmatic Province (CAMP), the largest known flood basalt province in the Phanerozoic, is generally associated with the incipient opening of the Atlantic Ocean at the Triassic-Jurassic boundary ca. 200 Ma. Paleomagnetic sampling targeted packages of CAMP lava flows in central Morocco from condensed sections identified on the basis of field observations and geochemistry. Lava flows in Moroccan CAMP are divided into four basic units, each comprising multiple flows (after Bertrand, 1991): the Formation (Fm.) Inférieure, Fm. Intermédiaire, Fm. Supérieure, and at the top, the Récurrence, separated from the first three by a period of red clay deposition. Oriented cores were demagnetized using both alternating field (AF) and thermal techniques. Cores from the same lava flow processed by AF demagnetization were later crushed for subsequent separation of plagioclase and dated by the $^{40}$Ar/$^{39}$Ar method. Paleomagnetic results reveal wholly normal polarity interrupted by a brief reversal event defined by data from a single flow located at the base of the Fm. Intermédiaire. Preliminary results from a 250 m section of lavas spanning three formations in the Haut Atlas of Morocco confirm the presence of this brief reversal. $^{40}$Ar/$^{39}$Ar analyses of these samples yielded six plateau ages including each formation. These ages are indistinguishable within $2\sigma$ error limits, sharing a mean age of 200.9 ± 0.7 Ma ($2\sigma$) relative to the Fish Canyon sanidine at 28.02 Ma (Renne et al., 1998). This demonstrates the brevity of these eruptions despite the presence of significant sedimentary horizons between them. These ages are slightly older than the average elsewhere around Pangea, suggesting CAMP volcanism initiated in Morocco and may span the Triassic-Jurassic transition. Correlation of our observed reversal
with the E23n, E23r, E24 sequence reported in the Newark basin (Olsen et al., 2003) would further support this. These new data also contribute to the magnetostratigraphic time scale at the Triassic/Jurassic transition and the apparent polar wander path for the African continent ca. 200 Ma.