



A paleomagnetic study of ca. 580 Ma volcanics near Grand Bank, Avalon Zone of Newfoundland and implications for true polar wander in the Ediacaran

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Paleomagnetic studies suggest that Laurentia moved from the equator to the pole and then back again within about 60 Ma during the Ediacaran. Since plate tectonic speeds are not fast enough to allow this, it has been hypothesized that rapid true polar wander occurred causing the Earth to tumble through 90° and then back again. More paleomagnetic data from around the world are needed to test this hypothesis. This study brings new paleomagnetic data from Avalonia. Volcanic tuff samples, dated at ca. 580 Ma, were collected from L'Anse au Loup near Grand Bank in the Avalon zone of Newfoundland. They were studied with alternating field demagnetization and thermal demagnetization. The remanance appears to be carried by magnetite and hematite in various ratios within the lava flows. Preliminary results demonstrate reversals within the stratigraphy. Primary remanence has already been proven for hematite from two volcanic sites with a positive conglomerate test (McNamara et al., 2001).