

# **A revised geodynamic significance of the Tachdamt Bleida series (Bou Azzer El Graara, central Anti-Atlas, Morocco): geochemistry and Sm-Nd isotopes**

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On the basis of recent radiometric data (U/Pb zircon; Bouougri et al., 2020), the Tachdamt Bleida series, thought to be unique, has been divided into two distinct formations: the Bleida Formation and Tachdamt formations. The volcanoclastic rocks of Tachdamt Fm. yield an age of ca. 883 Ma while the detrital zircon ages from Bleida Fm. argue for a maximum depositional age at ca. 700 Ma. It becomes necessary to consider these two formations independently and to revise their geodynamic significance. The Bleida and Tachdamt formations consist mainly of mafic rocks (basalts and dolerites) associated with rare keratophyres. Indistinctly, in the Bleida as well in the Tachdamt formation, the rocks display geochemical features of passive margin tholeiites with flat to slightly LREE-enriched REE pattern and are consistent with an E-MORB type source. Exceptionally, some rocks (keratophyres or dolerites) are more enriched in HREE and LILE. They could correspond to a different magmatic episode or could come from a previously enriched source. Except for one sample, positive  $\epsilon_{Nd}$  values argue for a juvenile source of magmas. TDM ages fall into three age groups for Bleida at 2080, 1600, and 1244 Ma, and range from 1990 to 1710 Ma for the Tachdamt formation. This magmatism started during the earliest stages of the rifting of the Rodinia responsible for the development of a passive margin in the NW edge of the West African Craton.