

Abdelhak AIT LAHNA, Colombo Celso Gaeta TASSINARI, Nasrddine YOUBI, Hassan ADMOU, João MATA, El Hafid BOUOUGRI, Latifa CHAIB, Richard E. ERNST, Ulf SÖDERLUND, Moulay Ahmed BOUMEHDI, Mohamed Khalil BENSALAH and El Mostapha AARAB, 2016. Refining the Stratigraphy of the Taghdout Group by Using the U-Pb Geochronology of the Taghdout Sill (Zenaga inlier, Anti-Atlas, Morocco). *Acta Geologica Sinica* (English Edition), 90(supp. 1): 1.

Refining the Stratigraphy of the Taghdout Group by Using the U-Pb Geochronology of the Taghdout Sill (Zenaga inlier, Anti-Atlas, Morocco)

Abdelhak AIT LAHNA¹, Colombo Celso Gaeta TASSINARI², Nasrddine YOUBI^{1,*}, Hassan ADMOU¹, João MATA³, El Hafid BOUOUGRI¹, Latifa CHAIB¹, Richard E. ERNST⁴, Ulf SÖDERLUND⁵, Moulay Ahmed BOUMEHDI¹, Mohamed Khalil BENSALAH¹ and El Mostapha AARAB¹

¹ Department of Geology, Faculty of Sciences-Semlalia, Cadi Ayyad University, Prince Moulay Abdellah Boulevard, P.O. Box 2390, Marrakech, Morocco

² Centro de Pesquisas Geocronológicas (CPGeo), Instituto de Geociências (IG), Universidade de São Paulo- USP, Caixa Postal 11348, CEP 05422-970, São Paulo (SP), Brazil

³ Instituto Dom Luiz, Faculdade de Ciências, Universidade de Lisboa, 1749-016 Lisboa, Portugal

⁴ Department of Earth Sciences, Carleton University, 1125 Colonel By Drive, Ottawa, Canada K1S 5B6

⁵ Department of Geology, Lund University, Sölvegatan 12, SE-223 62 Lund, Sweden

The Anti-Atlas belt of southern Morocco is situated on the northern edge of the West African craton (WAC). It corresponds to a broad anticlinorium some 800 km long and 200 km wide, trending ENE-WSW, parallel to the Alpine High Atlas chain. The Precambrian basement outcrops in several inliers (“boutonniers”) within late Ediacaran and younger units distributed along two major fault zones (the South Atlas Fault and Anti-Atlas Major Fault). The Precambrian stratigraphy of the Anti-Atlas comprises several Groups, some with poor age constraints. The Taghdout Group consists essentially of basalts, quartzites, and stromatolitic/oolitic carbonates and represents a passive margin sequence (Taghdout and Lkest Groups) deposited during the break-up and rifting of the northern margin of the WAC. The rifting culminated with the creation of an oceanic basin between the northern edge of the WAC and an unknown terrane. The relics of the oceanic crust (Bou-Azzer Group) are preserved in the Bou-Azzer and Sirwa inliers as highly sheared allochthonous ophiolite complexes. Dating of plagiogranite intrusions in the Sirwa inlier indicate formation of oceanic crust at ca. 760 Ma (U-Pb zircon age). The age of the Taghdout Group

has been poorly constrained. It was previously thought to be c. 1000-800 Ma on the basis of (1) the presence of stromatolites that point to a Neoproterozoic age, i.e. younger than 1000 Ma, and the (2) age of the contact-metamorphosed walls of the associated mafic dykes (Rb/Sr, 789 ± 10 Ma). However, with the U-Pb dating of numerous dyke swarms in the Anti-Atlas Inliers, 2040 Ma, 1750, 1650, 1416-1380, c. 870, it was suggested by Youbi et al., (2013) that the Taghdout Group could be Mesoproterozoic in age, with a preference for an age of 1750 Ma. In order to test this idea, a mafic sill within the Taghdout Group in the Zenaga inlier has been dated by the U-Pb SHRIMP (Sensitive High Resolution Ion Microprobe) method, yielding an age of 1639 ± 34 Ma. This age confirms that the Taghdout Group is nearly 1 Ga older than previously thought.

References

Youbi, N., Kouyaté, D., Söderlund, U., Ernst, R., Hafid, A., Ikenne, M., Soulaïmani, A., Bertrand, H., El Janati, M., and R'kha Chaham, K., 2013. The 1750 Ma Magmatic Event of the West African Craton (Anti-Atlas, Morocco). *Precambrian Research*, 236: 106–123.

* Corresponding author. E-mail: aitlahna.abdelhak@gmail.com