Paleomagnetism and Rock Magnetism of the Jurassic-Cretaceous Basalts of the Aghzif-Naour and Aït Attab Sections, Morocco

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The Jurassic-Cretaceous interval is a crucial period in the Earth's history where active plate tectonics and global climate changes took place. The Pangaea break-up and subsequent evolution of major plates such as Eurasia and North America is now well constrained by sea-floor anomalies and apparent polar wander paths but the paleomagnetic database of Africa remain outdated in term of age dating and paleomagnetic quality criteria. Here we investigated the Jurassic (Aghzif-Naour section) and Cretaceous (Aït Attab section) basaltic successions of the Oued El-Abid syncline , Central High Atlas, Morocco, in order to update previously published paleomagnetic poles and to provide new magnetic mineralogy data to check for the primary (during cooling) or secondary (remagnetization) of the remanence isolated in these rocks. Our preliminary results show that both Jurassic and Cretaceous lavas recorded stable magnetic remanence at high temperatures and high fields. Mean characteristic remanent magnetizations for the Aghzif-Naour and Aït Attab basalts are oriented D=338º; I=35º; A95=7.3 and D=355º; I=36º; A95=24, respectively. Corresponding paleomagnetic poles are located at Plong=254º; Plat=66º; Dp=4.8; Dm=8.4º and Plong=195º; Plat=77º; Dp=16.2; Dm=28, respectively. These results slightly differ from previous studies in term of magnetic inclination but are more consistent when plotting on the recent global APWP in African coordinates. Preliminary rock magnetic analysis suggested titanomagnetite and, accessorily haematite as principal carriers of the remanence. Ongoing additional magnetic measurements will certainly help in providing new high quality paleomagnetic poles for Morocco at the Jurassic-Cretaceous boundary and discuss the paleogeographic evolution of the North African and neighboring plates at these times.