

PALEOINTENSITY RESULTS FROM THE 1.7 GA OLD HOTING GABBRO, SWEDEN

FABIO DONADINI 1, Sten-Åke Elming 2, and Lisa Tauxe 1

1. Scripps Institution of Oceanography, La Jolla, United States of America,
fdonadini@ucsd.edu

2. Luleå University of Technology, Luleå, Sweden

The Hoting Gabbro is located in the western part of the Central Svecofennian Subprovince, and dates about 1.786 ± 0.010 Ga. In the Hoting area, dykes intruded at around 1.6 Ga, and partly remagnetized the gabbros.

Previous paleomagnetic and geochemical studies indicated that the stable characteristic remanent magnetization was acquired at about 1.7 Ga, when the slow cooling of the gabbro is taken into account. Preliminary palaeointensity studies from gabbros in the Hoting area suggested a very low field of about 5.8 ± 1.9 μ T. Unfortunately, at that stage, only two sites out of nine yielded results.

During 2008, we sampled seven sites from the Hoting area in order to perform new palaeointensity experiments. At Scripps, we applied the IZZI method on 60 specimens, and 39 yielded reliable results varying between 3 and 20 μ T, and confirm the previous low results.

Low field values have been associated with oxyexsolution processes that might bias the palaeointensity result towards low values, and so we are currently investigating the mineralogy of the samples with SEM analyses.

We will present the details of the palaeointensity and mineralogical results, and infer the evolution of the geomagnetic field during Precambrian.

Palaeointensity, Precambrian

Fabio Donadini, Scripps Institution of Oceanography, University of California at San Diego,
9500 Gilman Drive, CA-92093-225 La Jolla, USA; fdonadini@ucsd.edu