Geophysical Research Abstracts, Vol. 9, 00618, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-00618

Measurements of the geomagnetic field of Macedonia with the LEMI 203 Theodolite

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A measurement of the geomagnetic field of Macedonia on net of 15 repeat stations was carried out in 2003 and 2004. After the disintegration of Yugoslavia, the first geomagnetic measurements were carried out in three repeat stations: Plackovica, Ponikva and Galicica. In 2004 the current net of 15 repeat stations was established. After detailed geomagnetic investigation, the location for establishing the future geomagnetic observatory in Macedonia in Mt. Plackovica was determined. Measurements were carried out with Theodolite of the Royal Geomagnetic Observatory in Dourbes, Belgium by Dr. Jean Rasson and LEMI 203 Theodolite of the Faculty of Mining and Geology in Stip carried out within the Tempus project “Geomagnetic Masurements and Qality Sandards” by Lviv Centre of Institute of Space Research. The LEMI 203 instrument is non magnetic theodolite widely used in observatories, industry and in the terrain. For the measurement of the geomagnetic field a single component fluxgate sensor was built in. Its major features are high resolution, low level of noise, low temperature influence and low energy consumption. The measured area amounted to $\pm$ 100 000 nT, and the value of total vector of the territory of Macedonia is about 46 000 nT. The analyses of data obtained during measurements indicated that both instruments yielded measure values with the same order of accuracy.