Geophysical Research Abstracts
Vol. 12, EGU2010-852-2, 2010
EGU General Assembly 2010

A new regard about Surlari National Geomagnetic Observatory

Laurentiu Asimopolos, Natalia-Silvia Asimopolos, and Agata-Monica Pestina
Geological Institute of Romania, Bucharest, Ro-012271, www.igr.ro, fax:+40212240404, e-mail:laurentiu.asimopolos@igr.ro

Geomagnetic field study in Romanian stations has started with irregular measurements in late XIXth century. In 1943, the foundation of Surlari National Geomagnetic Observatory (SNGO) marks the beginning of a new era in the systematic study of geomagnetic field by a continuous registration of its variations and by carrying out standard absolute measurements in a fundamental station. The location of the observatory meets the highest exigencies, being situated in physical-geological conditions of a uniform local field, at a reasonably long distance from human activities. Its laboratories observe strict conditions of non-magnetism, ensuring the possibility of absolute standard measurements (national magnetic standards) for all the units in the country, civil or military, which are endowed with equipment based on geomagnetic metrology. These basic conditions have allowed the observatory to become by developing its initial preoccupations a centre of complex geomagnetic research, constantly involved in national and international issues, promoting new themes in our country and bringing significant contributions. During the last two decades, infrastructure and equipment used in monitoring geomagnetic field at European and planetary level have experienced a remarkable development. New registering techniques have allowed a complete to automate of data acquisition, and sampling step and their precision increased by two classes of size. Systems of transmitting these data in real time to world collecting centres have resulted in the possibility of approaching globalize studies, suitable for following some phenomena at planetary scale. At the same time, a significant development in the procedures of processing primary data has been registered, based on standardized programmes. The new stage of this fundamental research, largely applicable in various fields, is also marked by the simultaneous observation of space-time distribution of terrestrial electromagnetic field by means of stations set on satellites circling on orbits around the Earth. In Romania, fundamental research in this field have developed within a special unit SNGO, which has followed ever since its foundation two main objectives: a permanent observation of planetary magnetic field within a world net of observatories, and rendering evident some local disturbances connected, through electromagnetic induction, to the geological structure of our country's territory. Since 1998, Romanian researchers have been allowed to take part in the largest international scientific cooperation programme in the field INTERMAGNET. Last year in SNGO was made modernize of infrastructure, techniques, apparatus and informatics system suitable for acquisition, procession and interpretation of data for a continuous and systematic study of Earth electromagnetic field. After geomagnetic field and telluric field analysis of external components (daily, semi-daily, continuous and non-continuous pulsations, disturbances magnetic storms, seismic-electric signals, etc), as well as of internal components correlated with geodynamic activity and events with natural risk. Correlative phenomenological interpretation of the results obtained by SNGO with the ones obtained by other geomagnetic observatories in the INTERMAGNET network, as well as to the possibility of separating causes at local, regional and planetary scale.