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History of Geo- and Space Sciences

New translation of a famous paper by Gauss

In 1839 Carl Friedrich Gauss published his famous article "Allgemeine Theorie des Erdmagnetismus" ("General Theory of Terrestrial Magnetism"), wherein he developed the expansion of the geomagnetic field in terms of spherical harmonics and derived coefficients of this series from worldwide geomagnetic observations. In 1841 this paper was translated into English by Elisabeth Juliana Sabine, wife of the well-known British scientist Edward Sabine. The Sabines and Gauss knew each other personally: they had met several times.

Karl-Heinz Glassmeier (Institut für Geophysik, Technical University of Braunschweig, Germany) and Bruce Tsurutani (Jet Propulsion Laboratory, California Institute of Technology, USA) now pre-

sent a new translation, eliminating errors and deficiencies of Sabine's first translation. In addition, they have included numerous remarks on the work of Gauss, additional observational material, and bibliographical details on contemporary scientists cited by Gauss.

The paper was published in February 2014 in the science-history journal History of Geo- and Space Sciences (HGSS). It is an open access journal of Copernicus Publications. The manuscript can be read and downloaded free of charge from the Online Library on the HGSS home page:

<http://www.hist-geo-space-sci.net/5/11/2014/>

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