



Terrestrial Magnetism in Ottoman Empire: Documents and Measurements

Ferhat Ozcep

Istanbul University, Geophysics, Istanbul, Turkey (ferozcep@istanbul.edu.tr)

In the modern sense, geophysics started with geomagnetic works in the 1600s in Ottoman geography. The period between 1600 and 1800 includes the measurement of magnetic declination, inclination and magnetic field strength. Before these years, there is a little information, such as how to use a compass, in the *Kitab-i Bahriye* (the Book of Navigation) of Piri Reis, who is one of the most important mariners of the Ottoman Empire. However, this may not mean that magnetic declination was generally understood. The first Turkish scientific book relating to terrestrial magnetism is the book of *Fuyuzat-i Miknatissiye* that was translated by Ibrahim Müteferrika and printed in 1731. The subject of this book is earth's magnetism. Magnetic compass was mentioned in several books. These are Muhammed al Awfi's "*Jami al- Hikayat*" (translated into Turkish by Ibn Arabşah); Piri Reis's *Kitab-I Bahriye* (The Book of "Navigation" or "Seafaring" or "Sea"); Seydi Ali Reis's "*Risale-i Mirat-I Kainat min Alat-I Irtifa*" (The Treatise called the Mirror of Universe according to the instrument for measuring Altitude) and *Kitab Al-"Muhit" Fi 'Ilm'al-Eflak Va'l Abhur* (Book of the Regional Seas and the Science of Astronomy and Navigation). There are two original magnetic declination determinations in Istanbul in 1727 and 1893 by Ottoman Turks. Also, many geomagnetic measurements between 1600 and 1917 were carried out during international campaigns in Ottoman geography. This study was carried out in History and Philosophy of Science, University of Cambridge and supported by Istanbul University Research Project Unit (project Number: IRP-49162).