



Geophysical measurements during the Novara vessel world circumnavigation from 1857 to 1859

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A world circumnavigation of the Austrian-Hungarian Navy with the frigate Novara under the command of Commodore Bernhard Wüllerstorff-Urbair took place from April 1857 to August 1859. The Imperial Academy of Sciences Vienna (now Austrian Academy of Sciences) acted as its scientific advisory board. The formulation of the main geoscientific goals were laid out by the late Alexander von Humboldt.

Among the various scientific goals in a broad range of disciplines, the geomagnetic measurements conducted by the scientists onboard were supposed to increase significantly the knowledge of geomagnetism 20 years after the foundation of the "Göttinger Magnetischer Verein". The main magnetic field instrument was a Lamont theodolite, calibrated at the Central Institute for Meteorology and Geomagnetism Vienna. Due to instrumental difficulties some of the field measurements demanded further corrections during and after the cruise. Nevertheless, the magnetic field values at 17 land-based locations and additional measurements (declination only) onboard the Novara on open sea could be derived. These measurements improved the knowledge of the terrestrial magnetic field and its variations substantially because at this time there were no magnetic observatories operational south of the equator. Additionally regular measurements of the sea surface temperature along the ship route were performed, published but not intensely analyzed.

We show, analyze and discuss some examples of the geomagnetic and sea surface temperature measurements made, especially crossing the southern pacific, and compare them with present-day data from satellite observations.