

東北および中部日本における2012年5月21日(日本時間)の金環日食に伴う地磁気の変化

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Changes in the Geomagnetic Field during the Annular Solar Eclipse of 21 May 2012 (JST) in Northeastern and Central Japan

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Based on analyses of, for example, radio radar and GPS-TEC, it is well known that a solar eclipse causes reduction of the plasma content in the ionosphere under its shadow. It is widely accepted that such an electrically cold hole changes the Sq flow in the ionosphere and induces the change of the geomagnetic fields. In order to understand this relation, the geomagnetic field during solar eclipse has been observed for the last several decades. Especially, the annular solar eclipse of 21 May 2012 (JST) passed along Southwestern, Central and Northeastern Japan in which the public dense network of geomagnetometers has been set up for the long-term observation. We also observed the 3-component geomagnetic fields using fluxgate magnetometers and a liquid nitrogen SQUID magnetometer, in addition to some electric and meteorological parameters, in Northeastern and Central Japan during this eclipse. Most of our observation sites were within the path of this eclipse, and one was within the area of more than 90% magnitude of eclipse. As expected, we confirmed the changes of these parameters (e.g., 5-10 nT in the geomagnetic field), which were obtained by subtracting the May-averages. In this presentation, we show the time series distributions of these differences (mainly of geomagnetic fields) and discuss the local and regional properties of the distributions.