

2012年5月20-21日に発生した金環日食の際の日本における地磁気変化 Changes of the geomagnetic field in Japan during the annular solar eclipse on May 20-21, 2012

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An annular solar eclipse passed along Japan islands morning on May 20-21, 2012. In addition to a number of public observatories of the 3-component geomagnetic fields in all parts of Japan, we have fluxgate magnetometers and a liquid nitrogen SQUID magnetometer in Northeastern and Central Japan. Most of our observation sites were within the path of this eclipse, and one was within the area of more than 90% magnitude of the eclipse. We checked the changes in the data of the geomagnetic field during the eclipse. Here, the change was defined as the difference from the average curve obtained from the geomagnetically calm days in May 2012. As a result, we found that the amplitudes of the changes in the x, y, z-components and the total force were about +5, -20, -5, and +5 nT, respectively. They are almost within the average +/- of the standard deviation except the y-component. We can expect the currents relatively flowing northwards in the ionosphere over the Japan islands during the eclipse. Because the northern part of the shadow connected to the night hemisphere at that time, it would block the Sq currents flowing southwards.

キーワード: 金環日食, 地磁気

Keywords: annular solar eclipse, geomagnetic field