

RADIO OBSERVATION DATA AT SYOWA STATION, ANTARCTICA DURING JANUARY 2008–DECEMBER 2009

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1. Introduction

The National Institute of Information and Communications Technology has been observing the absorption of cosmic radio noise with a standard relative ionospheric opacity meter (riometer) at 30 MHz at Syowa Station, Antarctica since February 1966. This report presents the data observed from January 1, 2008 through December 31, 2009. The combined data plots also contain geomagnetic field variations provided by the National Institute of Polar Research, Research Organization of Information and Systems.

Comments on this report and requests for additional copies are welcome and should be sent to the following address:

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Syowa Station			
Geographic		Geomagnetic*	
Latitude	Longitude	Latitude (Deg.)	Longitude (Deg.)
69° 00.4' S	39° 35.4' E	-70.4	83.5

2. Location

* Geomagnetic latitude and longitude are calculated by IGRF-10(2005).

3. Observer

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4. Instrumentation

The riometer receiver has a center frequency near 30 MHz and is connected to a vertically directed five-element Yagi antenna whose elements are oriented in the east-west direction. The antenna is designed to match the 50-ohm coaxial cable (10D-2E), which is 100 m long. A noise signal from a reference noise diode, with power levels of 4000, 8000, 12000, 16000 and 20000 K, is inserted at 0500 UT each day. The output signal of the riometer is converted from analog to digital every second and stored in a digital storage system.

The upper panel shows actual received power in K from 0 UT to 24 UT each day. The scale of the vertical axis of the upper panel is based on the daily calibration. The lower panel shows variations of the H, D and Z components of the geomagnetic field at Syowa Station. A data gap in the geomagnetic field data on 26 December 2009 is caused by an adjustment of the offset level of magnetometer.

It should be noted that noise level in the received power data has been increased since April 2007. Therefore, observational data obtained by a spare riometer receiver are shown in this report (JARE Data Reports No. 314, Ionosphere 78). The spare riometer has not been fully calibrated. If you want to use the data for your research, presentation, or publication and also if you have any questions or comments, please contact us at the address noted above.















































































































































































































































































































































































