

[2-12]

## UPPER ATMOSPHERE DATA IN THE POLAR REGION DURING THE MARCH 17-18 AND JUNE 22-24, 2015 GEOMAGNETIC STORMS

*Y Tanaka<sup>1</sup>, Y Ogawa<sup>1</sup>, A Kadokura<sup>1</sup>, H Miyaoka<sup>1</sup>, A S Yukimatu<sup>1</sup>, H Yamagishi<sup>1</sup>, A Shinbori<sup>2</sup>, N Umemura<sup>3</sup>, S Abe<sup>4</sup>, Y Koyama<sup>5</sup>, M Yagi<sup>6</sup>, and S UeNo<sup>7</sup>*

<sup>\*1</sup>*National Institute of Polar Research*

*Email: ytanaka@nipr.ac.jp*

<sup>2</sup>*Research Institute for Sustainable Humanosphere, Kyoto University*

<sup>3</sup>*Solar-Terrestrial Environment Laboratory, Nagoya University*

<sup>4</sup>*International Center for Space Weather Science and Education, Kyushu University*

<sup>5</sup>*Transdisciplinary Research Integration Center, Research Organization of Information and Systems*

<sup>6</sup>*Planetary Plasma and Atmospheric Research Center, Tohoku University*

<sup>7</sup>*Kwasan and Hida Observatories, School of Science, Kyoto University*

The Japanese Antarctic Research Expedition (JARE) started on the occasion of the International Geophysical Year (IGY) and has performed various observations at Syowa Station and the surrounding areas. National Institute of Polar Research (NIPR) involves in a wide range of activities in the Antarctic research programs, especially through long-term monitoring observations and advanced researches of the Antarctic region. We, space and upper atmospheric sciences group, NIPR, have been conducting ground-based network observations in the Arctic region as well as the Antarctic region, with optical imagers, radars, and magnetometers. Such observational data are used to study the mechanisms of various auroral phenomena, solar wind-magnetosphere-ionosphere interaction, and coupling processes in the middle and upper atmosphere in the polar regions.

The space and upper atmospheric sciences group, NIPR, is a member of IUGONET (Inter-university Upper atmosphere Global Observation NETwork), which is a Japanese inter-university project that started in 2009 to build research infrastructure for the upper atmospheric studies, such as metadata database and data analysis software (Hayashi et al., 2013). As a part of the project activities, we converted most types of the upper atmospheric data at NIPR to CDF (Common Data Format) files and released them to the public via the internet. The converted files can be easily loaded, visualized, and analyzed with SPEDAS (Space Physics Environment Data Analysis Software), which was developed using IDL (Interactive Data Language) and includes a plug-in module provided by IUGONET.

We will show the upper atmospheric data obtained by auroral imagers, magnetometers, and ionospheric radars in the Arctic and Antarctic regions during the geomagnetic storms on March 17-18 and June 22-24, 2015. In addition, we will briefly introduce how easily these data can be visualized and analyzed with SPEDAS.

## REFERENCE

Hayashi, H., Y. Koyama, T. Hori, Y. Tanaka, S. Abe, A. Shinbori, M. Kagitani, T. Kouno, D. Yoshida, S. UeNo, N. Kaneda, M. Yoneda, N. Umemura, H. Tadokoro, T. Motoba, and IUGONET project team (2013), Inter-university Upper Atmosphere Global Observation NETwork (IUGONET), Data Sci. J., 12, WDS179-WDS184.