Recent activities of MAGDAS project

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International Center for Space Weather Science and Education (ICSWSE), Kyushu University is the research institute for the purpose of conducting research and education in space weather and related fields. Our magnetometer array is well known as the "MAGDAS/CPMN (MAGnetic Data Acquisition System/Circum-pan Pacific Magnetometer Network)" (Principal Investigator: Dr. A. Yoshikawa). Currently, over 70 magnetometers and 3 FM-CW (Frequency Modulated Continuous Wave) radars have been installed all over the world. One of our recent research topics is Equatorial Electrojet (EEJ). To accelerate the understanding of EEJ structure, we constructed dense magnetometer array near magnetic equator at Peru and Malaysia. MAGDAS instruments send observational data to ICSWSE in near real-time via the Internet. Our Ph. D. student developed new EEJ model by using Peruvian array, and it will be published as his Ph.D. thesis. We also calculate EE-index (Uozumi et al, 2008) for space weather nowcast/forecast using magnetometer data along the magnetic equator, and publish every hour on the website. We also plan to install new FM-CW radar at Sicaya, Peru. In addition, we also use MAGDAS for capacity building of host institutes. We teach how to use the instrument, data, and scientific applications based on geomagnetism. In this fiscal year, we held the National School on Space Weather and Electromagnetism (NSoSEE), in August 2017 at UiTM Pasir Gudang, Malaysia. Following the success of the above school, we plan to hold Japan-Malaysia Joint Seminar on Space Weather and Electromagnetism and Intensive Course on Space Magnetohydrodynamics (JMJSEE), in March 2018, at Kyushu University, Japan. It is important that any user can easily get detailed information and data related to MAGDAS. For the information of MAGDAS, we provide various MAGDAS information via our website. In addition, we provide the MAGDAS information via optimized metadata database system by IUGONET (Inter-university Upper Atmosphere Observation NETwork) Type-A. Users can download and analysis verified MAGDAS data using our website, SPEDAS (Space Physics Environment Data Analysis System), ERG-SC (https://ergsc.isee.nagoya-u.ac.jp/), SuperMAG (http://supermag.jhuapl.edu/), and so on. We believe researchers use MAGDAS data on proper rule and develop their science. In this paper, we will introduce about scientific, educational and data activities of MAGDAS project.

