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国際宇宙天気イニシアティブ事業への日本の貢献 Japan's Contribution to the ISWI

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In February 2010, the International Space Weather Initiative (ISWI) was proposed as a new agenda item to be addressed by the Scientific and Technical Subcommittee of the Committee on the Peaceful Uses of Outer Space (COPOUS), United Nations (UN). The ISWI agenda item was endorsed by the Committee in June 2010 and by the General Assembly in October 2010. The ISWI is governed by a Steering Committee, and being supported by the United Nations, ESA, NASA, JAXA and the International Committee on Global Navigation Satellite Systems.

The objectives of ISWI are to develop the scientific insight necessary to understand the physical relationships inherent in space weather, to reconstruct and forecast near-Earth space weather and to communicate this knowledge to scientists and to the general public. This would be accomplished by (a) continuing to expand and deploy new and existing instrument arrays, following the successful practices of the IHY 2007, (b) promoting data coordination and analysis to develop predictive models using ISWI data from the instrument arrays to improve scientific knowledge and to enable future space weather prediction services and (c) continuing to promote knowledge of heliophysics through training, education and public outreach.

In Japan, the STPP (Solar Terrestrial Physics Program) subcommittee of the Science Council of Japan is participating in ISWI as a follow-on program of the IHY (2006-2009). The Chairman of the STPP subcommittee (Prof. K. Yumoto of Kyushu Univ.) and other members of the subcommittee are moving forward to newly construct Japan's programs of (a) instrument arrays, (b) data coordination and analysis, and (c) training, education and public outreach. Five instrument array programs, i.e., the Continuous H-alpha Imaging Network (CHAIN), the Global Muon Detector Network (GMDN), the Magnetic Data Acquisition System (MAGDAS), the Optical Mesosphere Thermosphere Imagers (OMTIs), and the South-East Asia Low-Latitude Ionosonde Network (SEALION) were already proposed by Dr. S. Ueno and Prof. K. Shibata, Kwasan and Hida Observatories, Kyoto Univ., Prof. K. Munakata, Shinshu Univ., Prof. K. Yumoto, Space Environment Research Center, Kyushu Univ. (SERC), Prof. K. Shiokawa, Solar-Terrestrial Environment Laboratory, Nagoya Univ. (STEL), and Dr. T. Nagatsuma, NiCT, respectively. The existing databases of Solar Wind, Space Environment (satellite measurements), and Geomagnetic Field will be provided by Prof. M. Tokumaru, (STEL), Dr. T. Obara, JAXA, and Prof. T. Iyemori, WDC for Geomagnetism, Kyoto Univ., respectively, to contribute to the data coordination and analysis programs for ISWI in Japan. Public outreach will be carried out through the Network of International Space Environment Services (ISES) of NiCT, (Dr. S. Watari). The ISWI Newsletter is published by SERC, Kyushu Univ. (Prof. K. Yumoto is Publisher and Mr. G. Maeda is Editor) by e-mail and mail. Distribution of the Newsletter to UN Member States is also supported through mailing system of the United Nations, Office for Outer Space Affairs (UNOOSA).

The First 2010 UN/ESA/NASA/ JAXA Workshop on ISWI was held at Helwan, Egypt, during November 06-10, 2010 for the presentation of science results from existing and future distributed observatories and their applications for prediction of space weather. Four Japanese instrument array programs, i.e., CHAIN, GMDN, MAGDAS, and OMTIs, were reported by respective project leaders. They presented their recent activities, and discussed future collaborations with the ISWI attendees of the first ISWI workshop.

In particular, SERC organized the first MAGDAS Session during the ISWI Workshop to realize 'Equal Partnership' of 'instrument provider' and 'instrument hosts'. This is the guiding principle of IHY/ISWI. The objectives of the MAGDAS Session were to frankly exchange information and opinions of MAGDAS members, and to start discussion on how we can accelerate Capacity Building.

Keywords: International Space Weather Initiative (ISWI), Scientific and Technical Subcommittee of the Committee on the STPP (Solar Terrestrial Physics Program), First 2010 UN/ESA/NASA/ JAXA Workshop, Capacity Building