The IUGONET project and its international cooperation on development of metadata database for upper atmospheric study

The IUGONET project has been developing the infrastructures and common tools (metadata database (IUGONET-MDB) and data analysis software (UDAS)) to facilitate the distribution and wide use of the ground-based upper atmospheric data provided by the IUGONET university/institutes.

- IUGONET is continuously in discussion with the SPASE Consortium, since the IUGONET common metadata format is based on the SPASE metadata model. IUGONET is currently discussing the possible international collaboration with the databases of the European project “Near earth space data infrastructure for e-science (ESPAS)” and the “Virtual Observatory (VO)” of the United States.

- In Japan, in addition to the metadata provided by the IUGONET institutions/universities, metadata from the National Astronomical Observatory of Japan (NAOJ), National Institute of Information and Communications Technology (NICT), and the Kakioka Magnetic Observatory of the Japan Meteorological Agency (JMA) have been registered.

Summary

Character of the variation in the upper atmosphere
1. Affected by a variety of phenomena from the earth surface to the space
2. Many physical parameters
3. Various waves including that of solar activity are overlapped

Background of the IUGONET project

- Complicated Upper Atmospheric Phenomena

Observational data should be quality controlled and managed by the responsible person to know the data. For users, it is not easy to reach a necessary information, since databases are distributed in various institutes.

Necessity of a Metadata Database

IUGONET provides a new research platform that enables metadata extracted from ground-based observation data to be shared. In addition, IUGONET developed analysis software to access and analyze data in an integrated fashion.

IUGONET includes three WDS members: JIPR (Aurora), Kyoto Univ. (Geomagnetism), STEL (Cosmic Ray).

International/Interdisciplinary linkage

ICSU - WDS
ICSU - CODATA
(International Framework)

Japanese STP community

IUGONET is a base of a network center - Functioning like a big data center efficiently

IUGONET MDDB: what’s inside?

Number of Registered data (as of 17 May 2013)

Mit. 8,394,891
Except for Granule: 2578
(Observatory: 776, Instrument: 869, Dataset 943)

Search Results

Metadata Details

IUGONET adopted DSpace as the metadata database platform. DSpace is a free software widely used by digital repositories at many universities over the world. One of the major differences between Dublin Core used in the library systems and scientific metadata is the description of domain and period of observation.

Further developments and international collaborations

Experience IUGONET tools at IUGONET Booth!
Research Meeting: 19-21 August, 2013 @ NIPR (Tokyo)