The Inter-university Upper Atmosphere Global Observation NETwork (IUGONET) is an Inter-university project by the National Institutes of Polar Research (NIPR), Tohoku University, Nagoya University, Kyoto University, and Kyushu University to build a database of metadata for ground-based observations of the upper atmosphere. The IUGONET institutions/universities have been collecting various types of data by radars, magnetometers, photometers, radio telescopes, telescopes, heliographs, etc. at various locations all over the world and at various altitude layers from the Earth's surface to the Sun. The metadata database will be of great help to researchers in efficiently finding and obtaining these observational data spread over the institutions/universities. This should also facilitate systematic analysis of multi-disciplinary data, which will lead to new types of research in the upper atmosphere.

The project also has been developing a software to help researchers download, visualize, and analyze the data provided from the IUGONET institutions/universities.

IUGONET Metadata DB for Upper Atmosphere

The IUGONET Metadata database has been released for beta testing! It is now available at http://search.iugonet.org/iugonet.

The IUGONET Metadata database contains a total of 1,259,921 metadata. The IUGONET project adopted Dspace as the metadata database platform. Though the software widely used by digital repositories at various universities.

The current version of the IUGONET Common Metadata Format is 1.8.3 and its XMI schema is available at http://www.iugonet.org.

IUGONET common metadata format = SPASE + modifications

The “search result” shows part of metadata title, description, and access URL. If available - data that each entry keywords. For example:

- The metadata "Title" is linked to metadata details which include at least brief description of the data set.
- The "Owner information" shows the metadata details of the observational data.
- The "owner information" shows the data files if they are available online.

Currently under development:

IUGONET started in FY 2009 as a 5-year mission. For this fiscal year (FY2011) we plan to release the metadata database online to the public along with its related software to handle our observational data.

Datasets to be registered

Currently 773 metadata files of "Numerical Data" and "Display Data" are registered in the IUGONET metadata database. We are now talking with more researchers and institutes who are interested in registering metadata of their ground-based observations of the upper atmosphere into the IUGONET metadata database. The number of registered datasets will be continuously increasing.

IUGONET project

The IUGONET project is a Japanese inter-university project to build a database of metadata for ground-based observations of the upper atmosphere. The IUGONET institutions/universities have been collecting various types of data by radars, magnetometers, photometers, radio telescopes, telescopes, heliographs, etc. at various locations all over the world and at various altitude layers from the Earth's surface to the Sun. The metadata database will be of great help to researchers in efficiently finding and obtaining these observational data spread over the institutions/universities. This should also facilitate systematic analysis of multi-disciplinary data, which will lead to new types of research in the upper atmosphere.

IUGONET project aim is also at building a metadata database of the upper atmosphere data acquired by ground-based observations so that people can obtain information of various data from the metadata database. IUGONET project is planning to develop effective use of the observational data spread across universities and institutes, and then lead to new interdisciplinary, comprehensive studies regarding the upper atmosphere.

We have various kinds of observational data acquired so far by global observation network of radars, magnetometers, photometers, radio telescopes, telescopes, etc.

Our observations cover all over the world and wide altitude range from the Earth's surface up to the Sun's surface.

The databases of these ground-based observations have been managed and maintained by each university/institute that conducted the observation. It is often the case that these databases have been used by only a very few researchers who were involved in the observation campaign. There is no one general, potential users to find out these databases due to lack of information.

IUGONET project aims at building a metadata database of the upper atmosphere data acquired by ground-based observations so that people can obtain information of various data from the metadata database. IUGONET project is planning to develop effective use of the observational data spread across universities and institutes, and then lead to new interdisciplinary, comprehensive studies regarding the upper atmosphere.

The IUGONET project started in FY2009 as a 5-year mission. For this fiscal year (FY2011) we plan to release the metadata database online to the public along with its related software to handle our observational data.

Analysis software (UDAS)

The beta version of the IUGONET data analysis software, named UDAS (currently version 1.0.0b3), can be downloaded from the project website at http://www.iugonet.org/en/software.html.

The UDAS is written in IDL (Interactive Data Language), which is widely used in the field of solar and terrestrial physics. We are developing the software on the basis of THEMIS Data Analysis Software suite. The UDAS is distributed as a plugin of TINAS to handle data provided from the IUGONET universities/institutes.

The TDAS already contains a lot of useful functions to enable users to download, visualize, and analyze various kinds of data. It is easy to make check plots of time series in order to compose various kind of data at one time.

Users don't have to take care of data formats when analyzing the data. The data downloaded and plots created can be exported to a variety of data format (ASCII, PNG, JPEG, EPS, etc.).

GUI (Graphical User Interface) as well as IDL Character User Interface is available so that even users who are not familiar with the data can visualize and analyze them.

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We acknowledge the cooperation and great help from the THEMIS Science Support Team in allowing us to use TDAS for our data analysis software (UDAS).

The UDAS has been developed in collaboration with the ERC (Energetic and Radiation in Spaces) Science Center.

SuperDARN KSR radar data was provided by the National Institute of Informations and Communications Technology (NTT) through ERC5. The GUI procedures for the data in UDAS was developed in collaboration with NICT.

Tohoku University, Nagoya University, Kyoto University, and Kyushu University.

San Francisco, California, USA

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