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Japanese Arctic Activities

2012-2013

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TOPICS

- **GRENE:** *Activity in 2012*
- **ADS:** *Arctic Data archive System*
- **IUGONET:** *'e-infrastructure' for
Upper atmospheric sciences*
- **ISAR-3** *January 14-17, 2013 in Tokyo*
- **International Forum on "Polar Data Activities in
Global Data Systems"** *October 15-16, 2013 in Tokyo*

“Green Network of Excellence”(GRENE) Program

- *Rapid Change of the Arctic Climate System and its Global Influences* -

➔ <http://www.nipr.ac.jp/grene/e/>



The poster features a globe in the top left corner showing the Arctic region. Below it, the text reads: 'Ministry of Education, Culture, Sports, Science & Technology—Japan (MEXT) "Green Network of Excellence" (GRENE) Program'. The main title is 'Arctic Climate Change Research Project Rapid Change of the Arctic Climate System and its Global Influences 2011-2016'. The background is a photograph of a snowy, mountainous Arctic landscape. At the bottom, it says 'To the Arctic..... where you can see the future of the Earth'. In the bottom left corner, it lists the 'Core Institute National Institute of Polar Research (NIPR)' and the 'Associated Institute Japan Agency for Marine-Earth Science and Technology (JAMSTEC)'.

• 2011-2016: ~~6.5~~MEUR/year
5M

• **NIPR:** Core Institute

JAMSTEC: Support Institute

• Over 300 scientists from 35 universities and institutes

• **Strategic Research Targets**

• *Japan Consortium for Arctic Environmental*

➔ *Research (JCAR)*

<http://www.jcar.org/english/>

GRENE - Arctic Climate Change Research Project

“Rapid Change of the Arctic Climate System and its Global Influences”

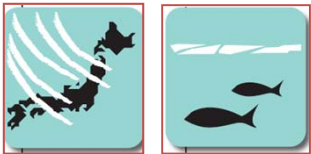
Strategic Research Targets



- ***Understanding the mechanism of warming amplification in the Arctic***



- ***Understanding the Arctic system for global climate and future change***



- ***Evaluation of the effects of Arctic change on weather in Japan, marine ecosystems and fisheries***



- ***Prediction of sea Ice distribution and Arctic sea routes***

Arctic Research Directory 2012

In-situ observation made by Japanese research group in 2012, in cooperation with Arctic countries.

Oceanography(1,2, f, g, h);
Bio-science(3, a-c); Geo-science(5); Environmental science(6,7); Glaciology(8-11, d, e); Upper atmosphere physics(13-18); Hydrology(12); Atmosphere science(19-23); Social science(24-26).

a to h, shown by alphabet is done under the new GRENE Arctic Project.

**GRENE-Arctic project
Interdisciplinary Observation - Modeling**

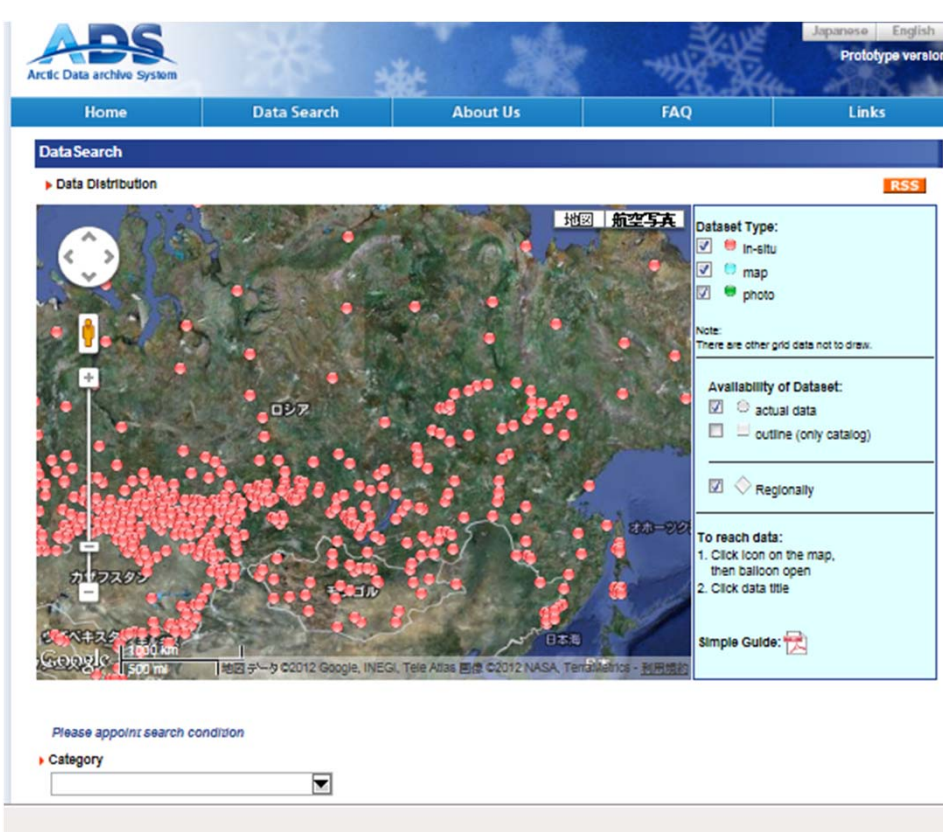


Arctic Data archive System : ADS

- GRENE-Arctic project aims connecting of observation and modeling studies in the interdisciplinary area of sciences. ADS is essential for this activity. ADS archive will be open for public use.

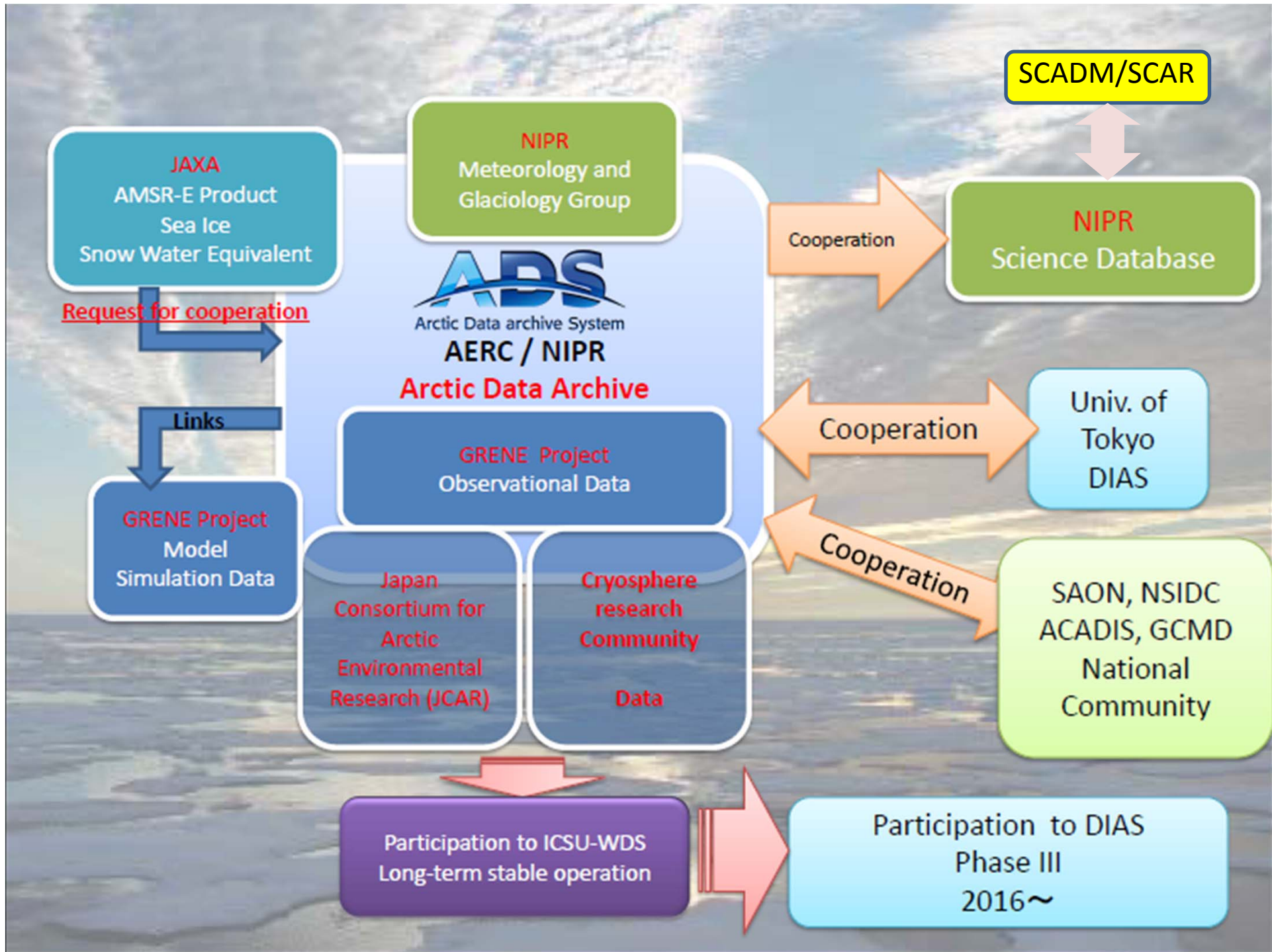


The screenshot shows the homepage of the Arctic Data archive System (ADS). The header includes the ADS logo, navigation tabs (Home, Data Search, About Us, FAQ, Links), and language options (Japanese, English). A 'Prototype version' notice is present. The main content area features a 'Maintenance Information' sidebar on the left, a central text block about the Arctic region's environmental changes, and a 'News' section. At the bottom, there are links for 'Dataset Catalog by Topic', 'Map Search', and 'Advanced Search'. Logos for NiPR, AERC, and JCAR are also visible.



The screenshot displays the 'Data Search' interface. It features a map of the Arctic region with numerous red circular markers indicating data locations. The map includes navigation controls and a scale bar. To the right of the map is a sidebar with filters for 'Dataset Type' (In-situ, map, photo), 'Availability of Dataset' (actual data, outline), and 'Regionally'. Below the map, there is a search condition input field and a 'Category' dropdown menu.

<http://ads.nipr.ac.jp/index.html>



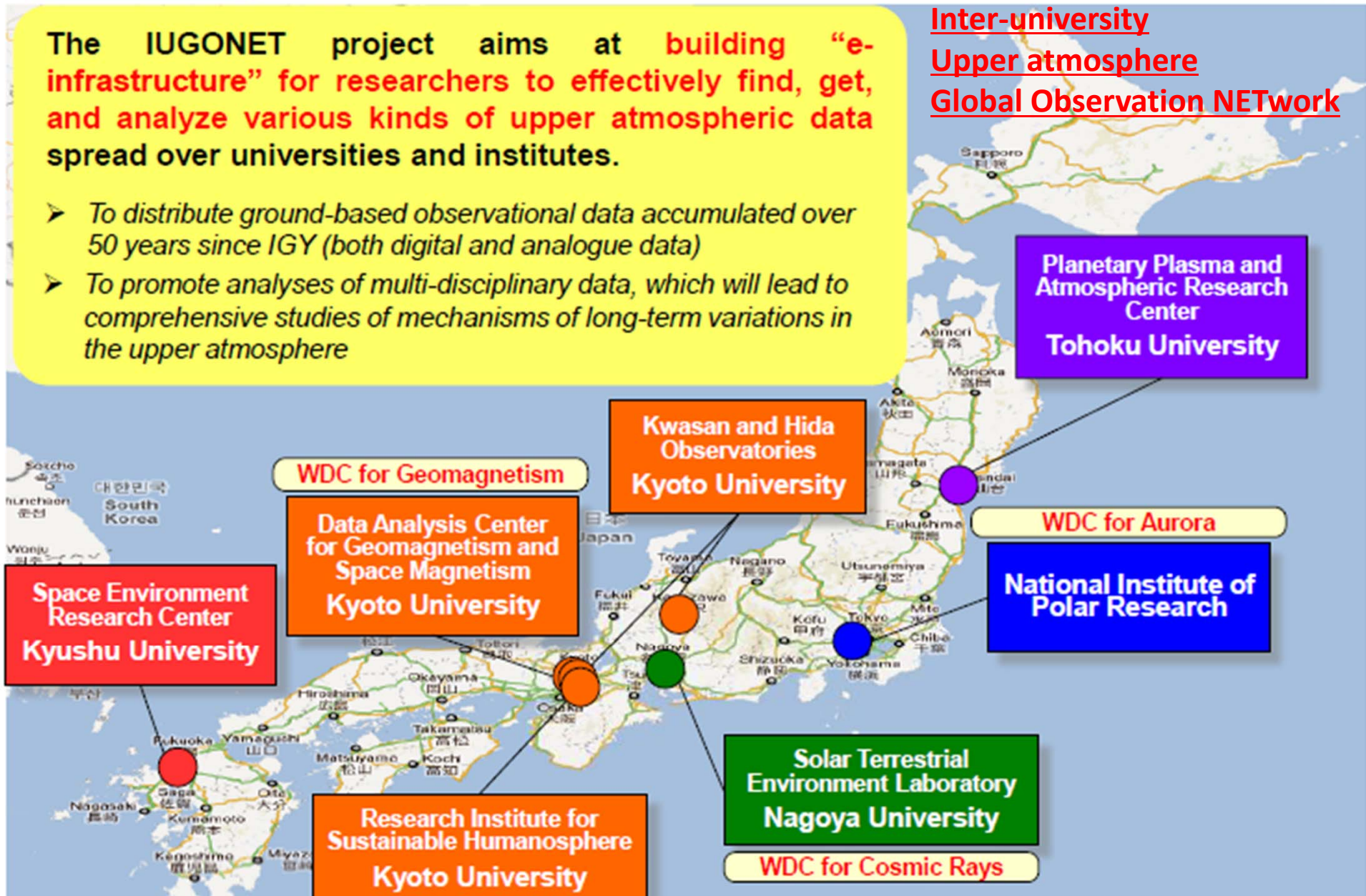


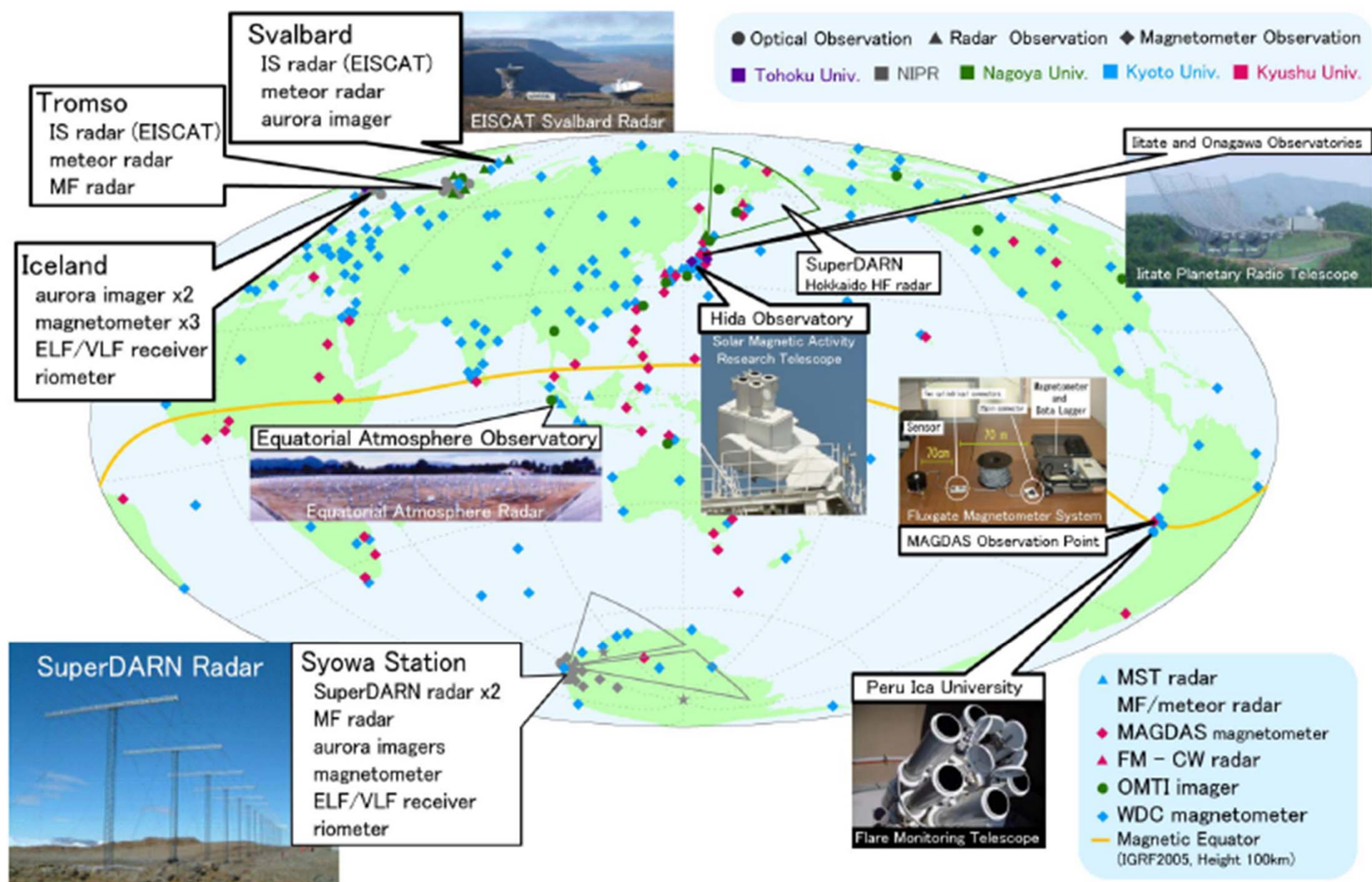
The IUGONET project – Objectives

The IUGONET project aims at building “e-infrastructure” for researchers to effectively find, get, and analyze various kinds of upper atmospheric data spread over universities and institutes.

- To distribute ground-based observational data accumulated over 50 years since IGY (both digital and analogue data)
- To promote analyses of multi-disciplinary data, which will lead to comprehensive studies of mechanisms of long-term variations in the upper atmosphere

Inter-university
Upper atmosphere
Global Observation NETwork





1. Metadata database

<http://search.iugonet.org/iugonet>

Result of Search

Relative Stop Date: 14 days ago (-P14D)
<http://semlab.stelab.nesyoa.u.ac.jp/ens/>

Repository: [spase://IUGONET/Repository/STEL/ERG-SC](http://semlab.stelab.nesyoa.u.ac.jp/ens/)
 Instrument: [spase://IUGONET/Instrument/STEL/SuperDARN/OKK/HFrader](http://semlab.stelab.nesyoa.u.ac.jp/ens/)

The common time fitacf CDF data of SuperDARN King Salmon HF radar distributed by ERG-SC

NumericalData

Common mode data obtained by SuperDARN King Salmon HF radar. Data files are distributed in the CDF format through the ERG-SC repository.
 Start Date: 2006-12-02T00:00:00
 Relative Stop Date: 169 days ago (-P169D)
<http://semlab.stelab.nesyoa.u.ac.jp/ens/>

Repository: [spase://IUGONET/Repository/STEL/ERG-SC](http://semlab.stelab.nesyoa.u.ac.jp/ens/)
 Instrument: [spase://IUGONET/Instrument/STEL/SuperDARN/OKK/HFrader](http://semlab.stelab.nesyoa.u.ac.jp/ens/)

Standard observation data of the troposphere and lower stratosphere taken by the MU radar (NetCDF format)

NumericalData

The 10-minute average (on Data Form) format taken by the MU radar at Shiraki in the Shiga prefecture, Japan (34.83N, 136.10E, 385m MSL), which has been operated in the standard observation mode of the troposphere and stratosphere. The observation data are stored in the NetCDF files of each day. The file name is (year)(month)(day).nc. The NetCDF data include range, height, time, three components of wind velocity, radial Doppler velocity, echo power, spectral width and noise level for each beam number and so on. The azimuth and zenith angles of beam 1, 2, 3, 4 and 5 are (0, 0), (0, 10), (90, 10), (180, 10) and (270, 10), respectively, in unit of degree. The value of 1.0e+10 means missing data.
 Start Date: 1995-03-15T15:03:00

<http://www.fish.kyoto-u.ac.jp/radar-ir/irup/mu/data/>

Repository: [spase://IUGONET/Repository/STEL/ERG-SC](http://semlab.stelab.nesyoa.u.ac.jp/ens/)
 Instrument: [spase://IUGONET/Instrument/STEL/SuperDARN/OKK/HFrader](http://semlab.stelab.nesyoa.u.ac.jp/ens/)

Field-aligned irregularity (FAI) observation data of the ionosphere taken by the EAR (NetCDF format)

NumericalData

The field-aligned irregularity (FAI) observation data in the NetCDF (Network Common Data Form) format taken by the equatorial atmosphere radar (EAR) at Kotabang, Indonesia (0.20S, 100.32E, 865m MSL). This FAI observation mode covers a wide altitude range from 80 to 600 km in the ionosphere (D-region (below 90 km), E-region (90-130 km), and F-region (above 150 km)). The observation data are stored in the NetCDF files of each day and observation parameter. The file name is (year)(month)(day).(observation parameter).nc. The NetCDF data include range, height, time, radial Doppler velocity, echo power, spectral width and noise level for each beam number and so on. Details of the observation parameter are described in the EAR-FAI homepage (<http://www.fish.kyoto-u.ac.jp/ear/data-fa/index.html>). The value of 1.0e+10 means missing data.

Go to metadata details

Jump to database web

2. Data analysis software

<http://www.iugonet.org/en/software.html>

UDAS (IUGONET Data Analysis Software)

UDAS v1.00.b1 was released on May 13, 2011. → [Download UDAS](#)

Topics

- UDAS v1.00.b1 was released on May 13, 2011. → [Download UDAS](#)

What is UDAS?

We provide users with IUGONET Data Analysis Software (UDAS) to read and analyze ground-based observational data opened individually by each institution in the IUGONET project.


- UDAS is a plug-in software of THEMIS Data Analysis Software suite (TDAS), which has many useful routines to visualize and analyze time series data.
- It accesses the IUGONET data through the internet, and then the data are automatically downloaded onto the user's computer. Users can get and analyze the data without any concerns about data locations.
- The loaded data and/or plots can be exported to a variety of data format (ASCII, PNG, JPEG, PS, EPS, etc.).
- GUI (Graphical User Interface) as well as the CLI (Character User Interface) is supplied for beginners.
- Even users who do not have the IDL commercial license will be able to use the GUI-based UDAS on the IDL Virtual Machine* (under development).

* The IDL Virtual Machine is a freely distributed, cross-platform utility for running compiled IDL codes. The IUGONET project will distribute compiled IDL codes of the data analysis software.

[Getting started](#)

[View screenshots](#)

[List of load procedures and corresponding IUGONET observations](#)




Data Policy

When you use the IUGONET data, please check the data policy for each data set. The data policy will be displayed in the console, when you run the load procedures on IDL. It is also possible to search the data policy at the [IUGONET Metadata Database](#).

Collaborations

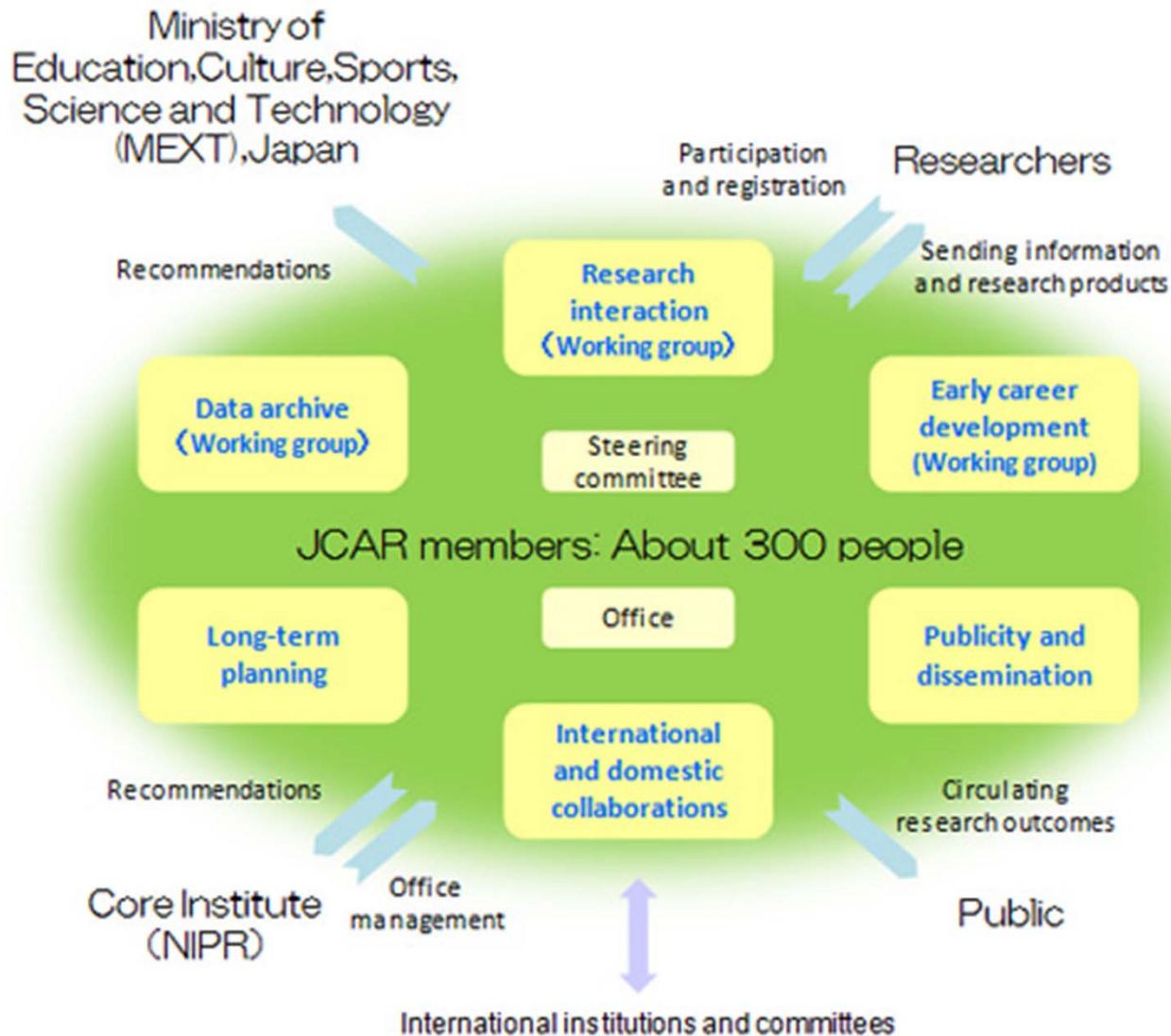
UDAS: [Access/View](#)

- [File](#)
- [Objects](#)
- [Member List](#)
- [Observation Network](#)
- [Metadata Database](#)
- [Metadata Format](#)
- [Data Analysis Software](#)
- [Project Timeline](#)
- [Publications List](#)
- [News & PDF](#)



We have already released the IUGONET metadata database and the data analysis software for beta-testing!

Japan Consortium for Arctic Environmental Research



第3回 国際北極研究シンポジウム

ISAR-3

**Third International Symposium
on the Arctic Research**

Date : Jan 15 to 17, 2013

Place : National Museum of Emerging Science and Innovation (Mirai) Tokyo

**Detecting the change in the Arctic System and searching
the global influence**

270 participants
from 15 countries.
13 Sessions
7 general sessions
6 Special Sessions

Jan.14 Public lecture
**Jan.16 APECS career
development panel.**



International Forum on “Polar Data Activities in Global Data Systems”

- Joint Forum
Standing Committee on Antarctic Data Management (SC-ADM)
WDS Scientific Committee (WDS-SC)



Scope of the Forum

The International Polar Year (IPY; 2007–2008) was the world’s most diverse international science program. IPY greatly enhanced the exchange of ideas across nations and scientific disciplines to reveal the status of, and changes to, planet Earth as viewed from the polar regions. The scientific results from IPY are only now beginning to emerge, but it is clear that a deep understanding will require creative use of myriad data from many disciplines. Many of these projects provided well-coordinated observation platforms, and many continue in the post-IPY era. The huge amount of data accumulated during and after IPY should be its most important legacy; if those data are well preserved and utilized.



International Forum on “Polar Data Activities in Global Data Systems”

October 15-16, 2013

National Museum of Nature and Science, TOKYO, JAPAN

1ST CIRCULAR

DRAFT

Schedule

Oct. 13-14 SC-ADM

Oct. 15-16 An International Forum on
“Polar Data Activities in Global Data Systems”

Oct. 17-18 WDS-SC

<http://www.polar-data-forum.org/> .



Themes of the Sessions

- Activities of the SC-ADM, Antarctic data management
- Activities of the ICSU-WDS, current status on membership, strategy and data policy
- Activities of IASC data management, present status on SAON data
- Data management of IPY2007-2008, data as a legacy, Polar Information Commons
- Metadata management, repository network, cloud system, inter-operability
- Real-time data acquisition, distribution, utilization system
- Virtual Observatory, ITC technology, huge data, Earth Observing Systems
- Education, Outreach, Data Publisher, Data Citation
- International & multi-disciplinary collaboration/cooperation
- Future direction in polar data activities in global systems