



Inter-university Upper atmosphere Global Observation NETWORK (IUGONET)

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IUGONET project team

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***The IUGONET is six-year research project and supported by Special Educational Research Budget (Research Promotion), MEXT, Japan**

- develop a metadata database of the upper atmosphere data by ground-based observation accumulated over 50 years since IGY by Japanese universities/institutes.
- promote effective use of the observational data spread across the institutes/universities, which leads to interdisciplinary, comprehensive studies of the upper atmosphere .
- investigate mechanism of long-term variation in the upper atmosphere

Participating universities and research institutes

NIPR, PPARC, Tohoku Univ., STE Lab., Nagoya Univ., RISH, Kyoto Univ., WDC/Kyoto, Kyoto Univ., Kwasan and Hida Observatories, Kyoto Univ., and ICSWSE, Kyusyu Univ.

Iceland
aurora imager x2
magnetometer x3

Toromso
IS radar (EISCAT)
meteor radar
MF radar

MU radar @Shigaraki

SuperDARN Hokkaido HF radar

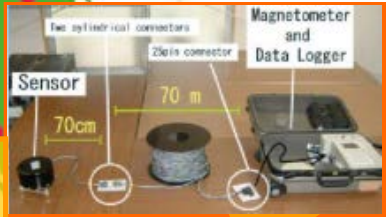
Solar observatory (Kyoto Univ.)

Equatorial Atmospheric Radar (EAR)

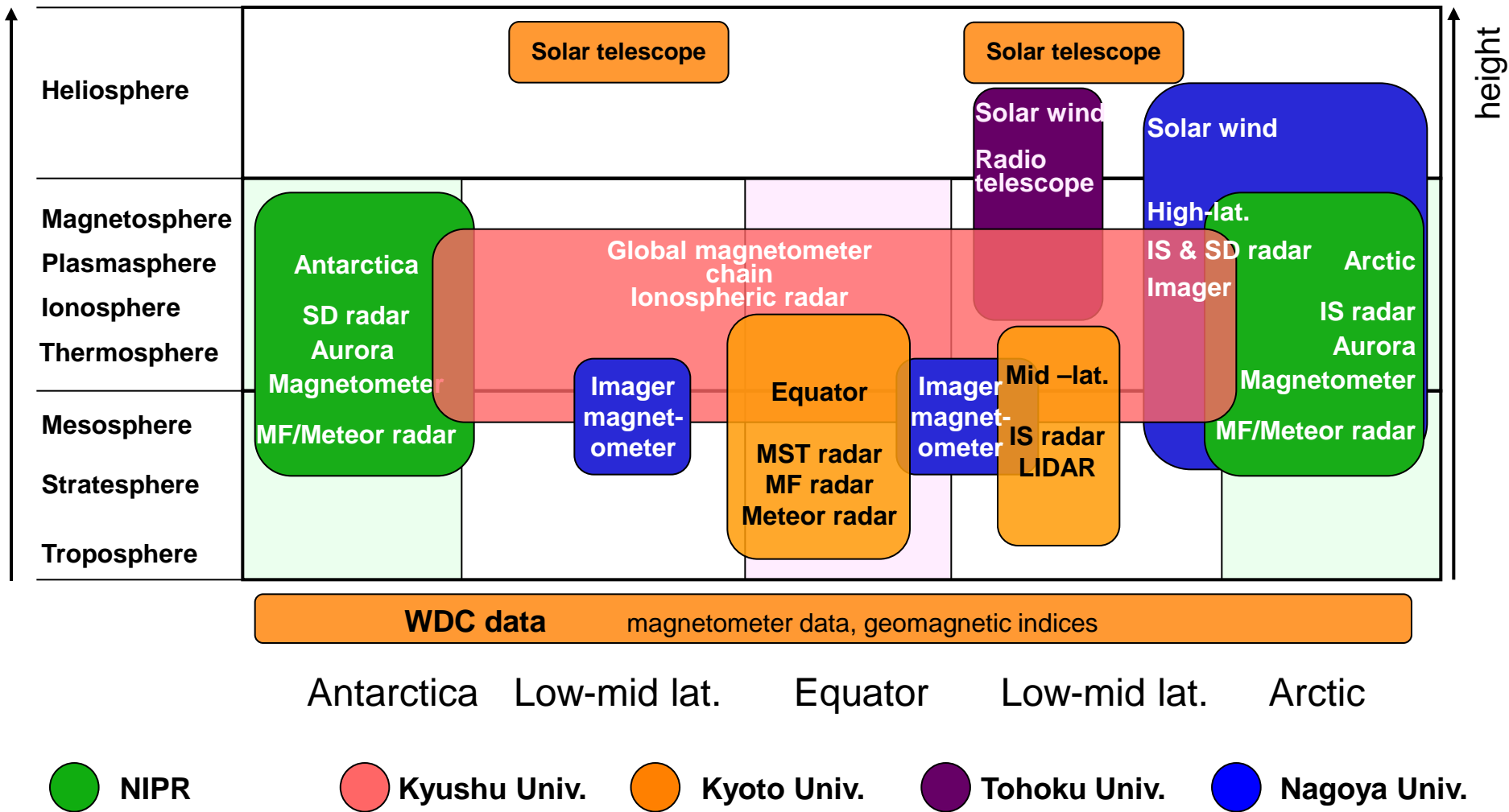
Iitate, Onagawa radio telescope magnetomter

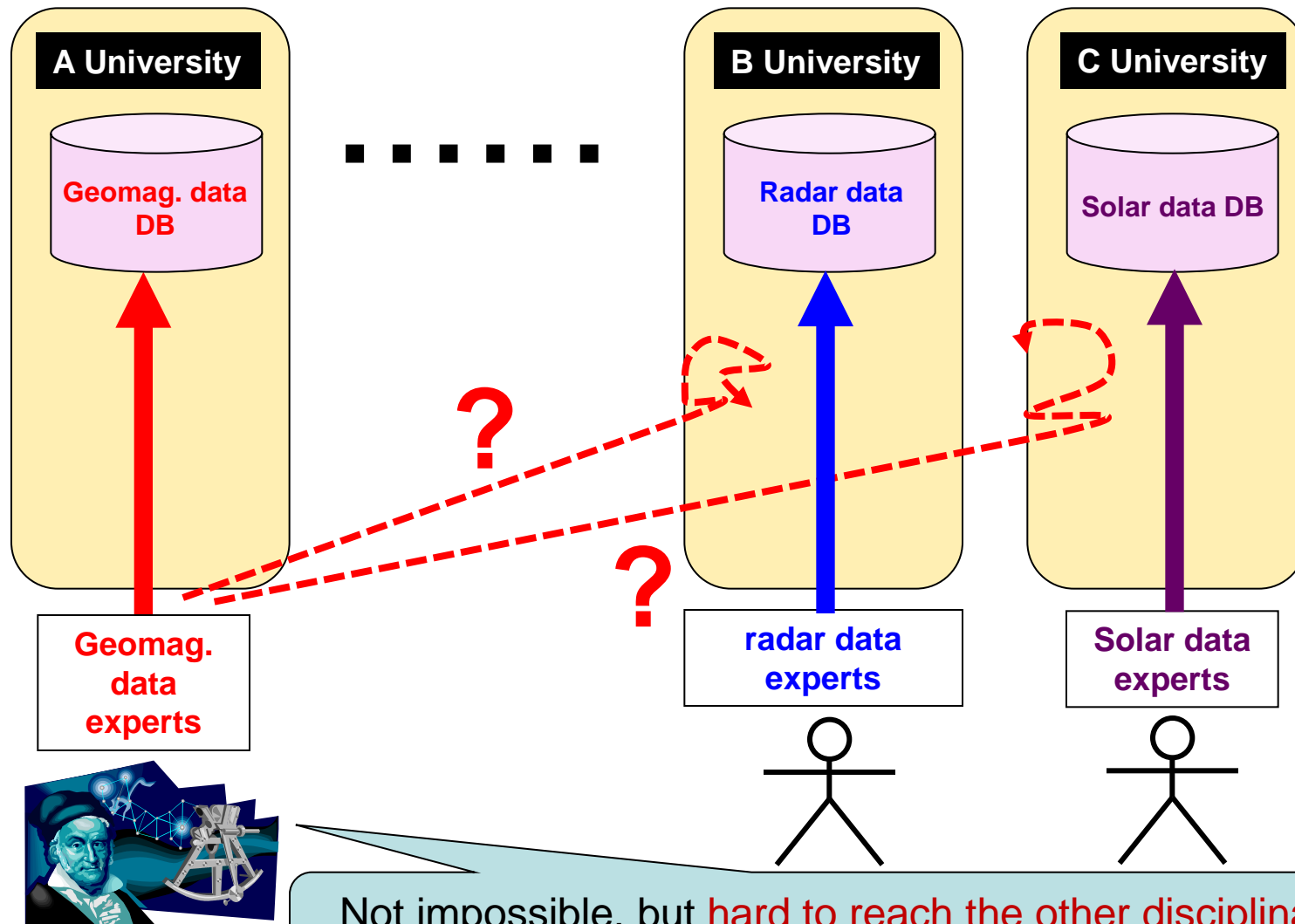
SYOWA base
SuperDARN radar x2
MF radar
aurora imagers
magnetometer chain
ELF obs. (conjugate with Onagawa)

Svalbard: IS radar (EISCAT), meteor radar, aurora imager

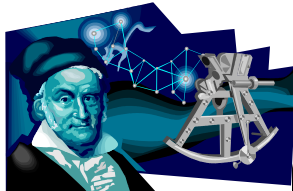
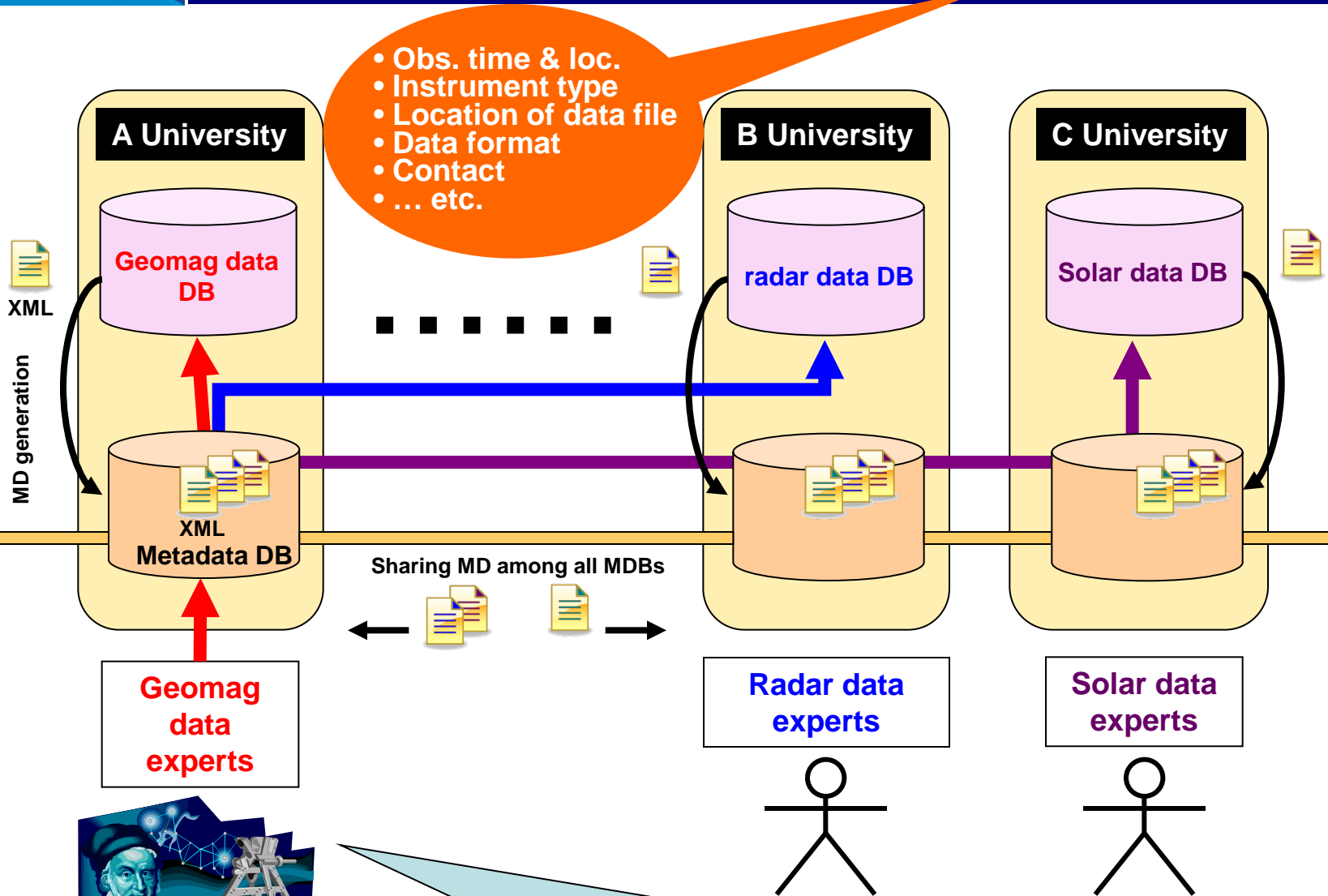


- MST radar
- ▲ MF / meteor radar
- ◆ MAGDAS magnetometer
- ★ FM-CW radar
- OMTI imager
- WDC magnetometer





Database access through metadata DB

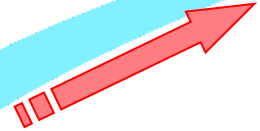


Easy to obtain various kinds of upper atmosphere data from research institutes/universities!



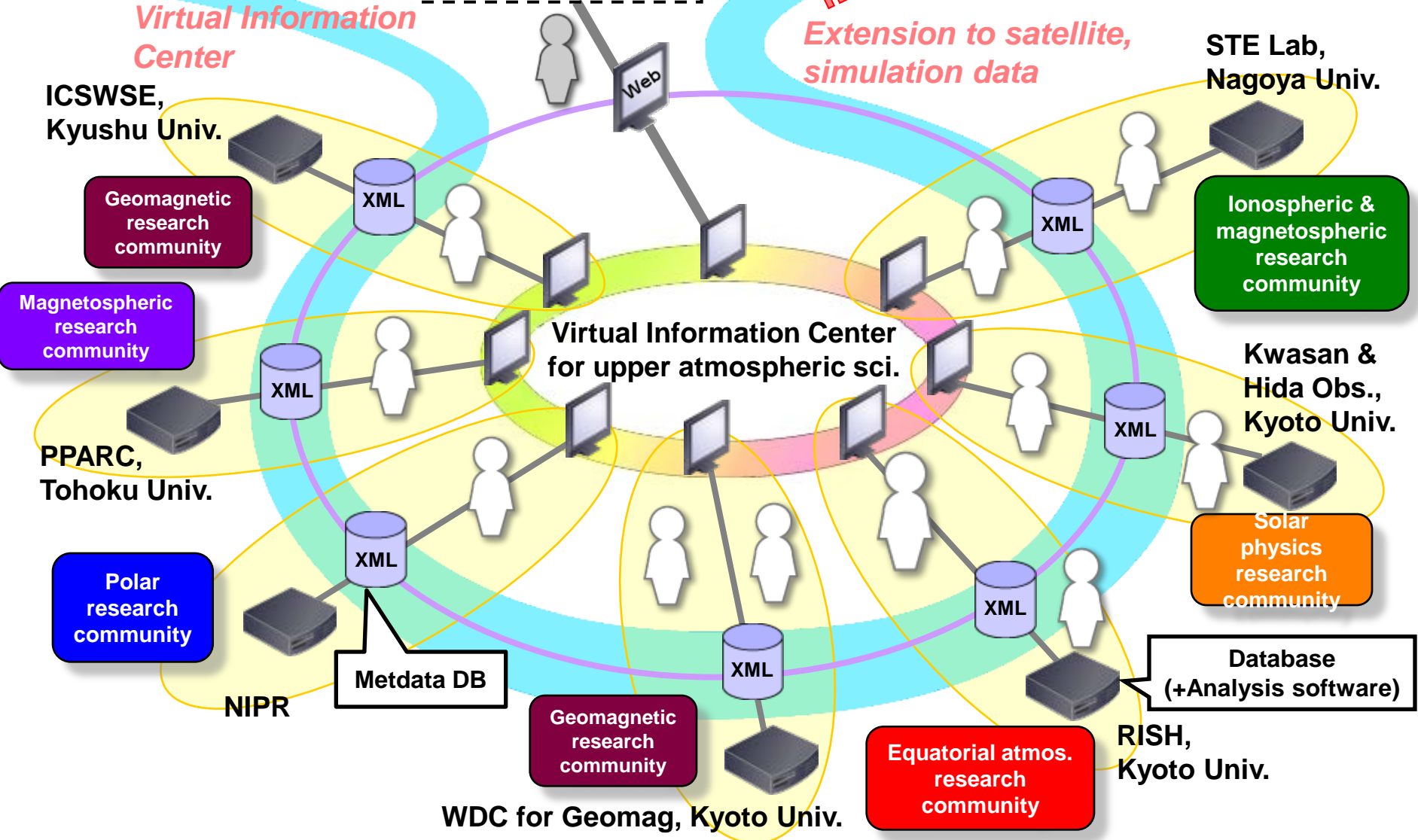
*Collaboration by
Virtual Information
Center*

Other institutes and
universities in Japan,
Overseas researchers



*Development to other
Earth Science fields*

*Extension to satellite,
simulation data*



ICSWSE,
Kyushu Univ.

Geomagnetic
research
community

Magnetospheric
research
community

PPARC,
Tohoku Univ.

Polar
research
community

NIPR

Metadata DB

WDC for Geomag, Kyoto Univ.

Geomagnetic
research
community

Equatorial atmos.
research
community

STE Lab,
Nagoya Univ.

Ionospheric &
magnetospheric
research
community

Kwasan &
Hida Obs.,
Kyoto Univ.

Solar
physics
research
community

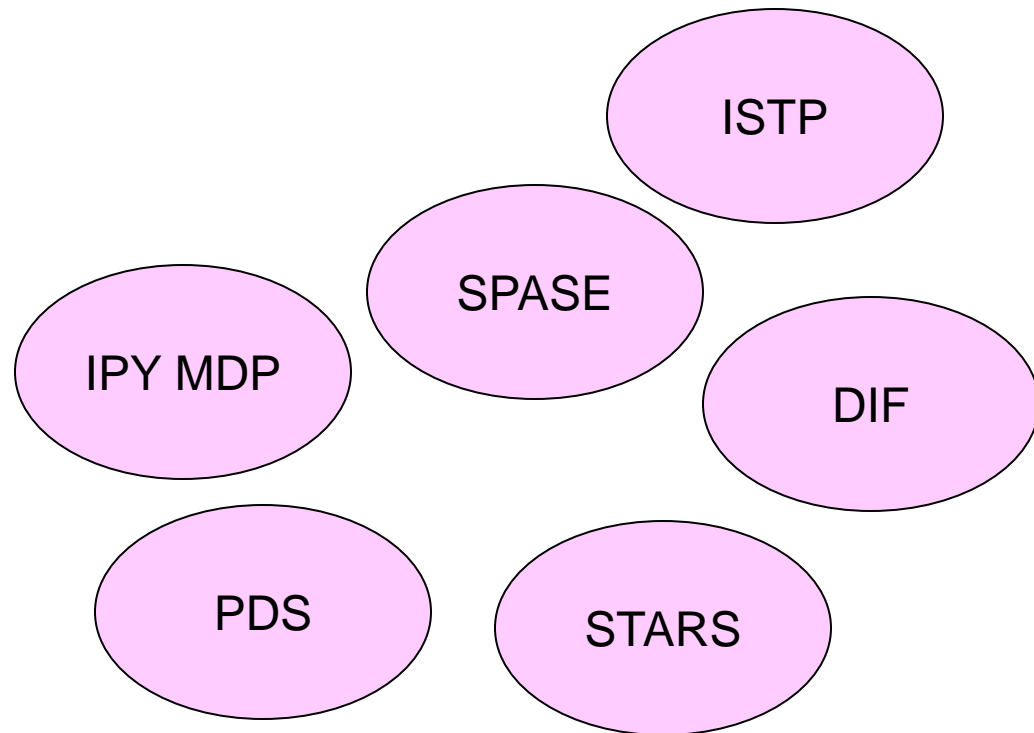
Database
(+Analysis software)

RISH,
Kyoto Univ.

Task	Y2009	Y2010	Y2011	Y2012	Y2013	Y2014	Detail
Virtual information center (VIC) of UA studies	System installation	Normal operation		System update			Construct the integrated research environment (TV-conference system, ..)
Development of metadata DB system	Prototype system devel.	Regular system devel.	Open to public				Design and develop the metadata DB system
Design the Metadata format standards	Ver.1 format	Update & document					Release the format ver.1 and keep updating if necessary
Development of data analysis software	Specifications and basic design	Programming	Open to public				Develop and release analysis softwares for UA data
Maintenance&extension of existing DBs of Observation data		Maintenance of obs. DBs & exam. of non-digital dataset		Effort focused on old data from Y2012 on			Incorporate non-DB'd data into the DBs
Metadata generation		Collecting metadata from each obs. DB		Effort focused on old data from Y2012 on			Generate metadata in the designated format and add to metadata DB
Operation of metadata DB							Release the metadata DB for community
VIC extension to related fields							Wrap up the project and discuss further extension

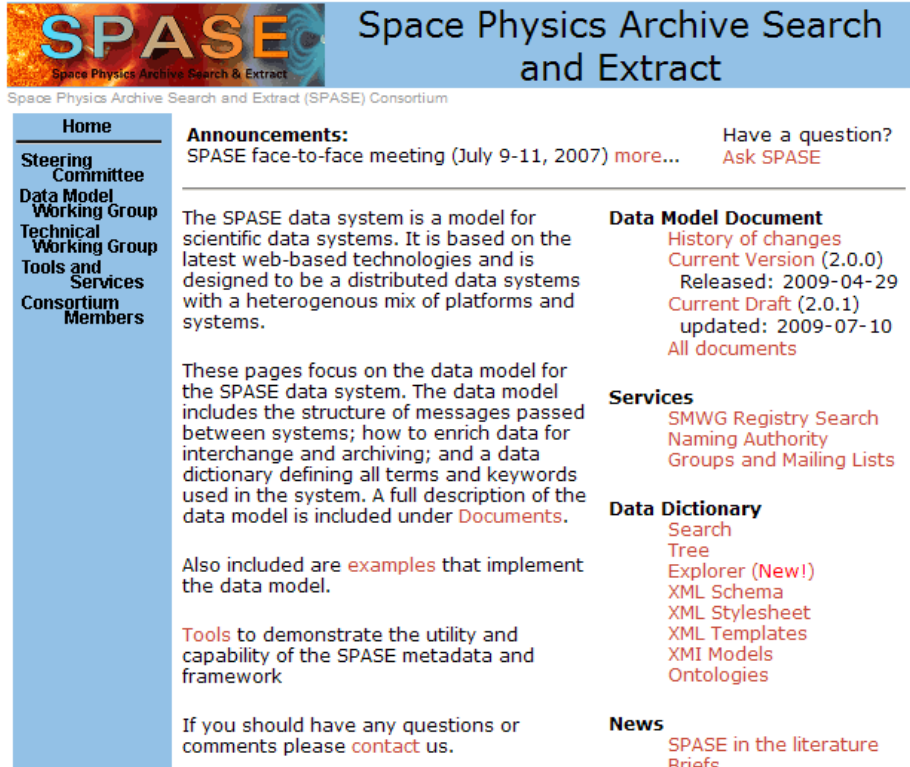
We investigate many existing metadata formats in diverse way and choice one format for our base metadata format.

項目	IPY MDP, DIF	STARS, ISTP	SPASE	PDSラベルフォーマット
やり取りする時のフォーマット	XML	XML	XML	テキスト
どの科学分野、どのDBが使っているか	IPYDID, GCMD	STP分野 STARS-DB, CDAWeb	STP, Heliospheric VHO, VMO, ViRBO	Planetary PDS
数値データセットを説明する要素の有無	○	○	○	○
カタログデータセットを説明する要素の有無	○	○	○	△
非デジタルデータを説明する要素の有無	△	×	○	○
データファイルを説明する要素の有無	×	○	○	○
可視化属性の有無	×	○	○	△
必須(null不許可)の要素数	8+18	21+72+18+26 (DB全て)	15+7+7+6+3	8(+20)
新しい要素、単語の追加が容易	×	△	○	△
ドキュメント、公開ツールが揃っているか	△	△	○	○



IUGONET metadata format = SPASE + modifications

(<http://www.spase-group.org>)



SPASE Space Physics Archive Search and Extract
Space Physics Archive Search & Extract (SPASE) Consortium

Home
 Steering Committee
 Data Model Working Group
 Technical Working Group
 Tools and Services
 Consortium Members

Announcements:
 SPASE face-to-face meeting (July 9-11, 2007) [more...](#) [Have a question? Ask SPASE](#)

The SPASE data system is a model for scientific data systems. It is based on the latest web-based technologies and is designed to be a distributed data systems with a heterogenous mix of platforms and systems.

These pages focus on the data model for the SPASE data system. The data model includes the structure of messages passed between systems; how to enrich data for interchange and archiving; and a data dictionary defining all terms and keywords used in the system. A full description of the data model is included under [Documents](#).

Also included are [examples](#) that implement the data model.

[Tools](#) to demonstrate the utility and capability of the SPASE metadata and framework

If you should have any questions or comments please [contact us](#).

Data Model Document
[History of changes](#)
[Current Version \(2.0.0\)](#)
 Released: 2009-04-29
[Current Draft \(2.0.1\)](#)
 updated: 2009-07-10
[All documents](#)

Services
[SMWG Registry Search](#)
[Naming Authority Groups and Mailing Lists](#)

Data Dictionary
[Search Tree](#)
[Explorer \(New!\)](#)
[XML Schema](#)
[XML Stylesheet](#)
[XML Templates](#)
[XMI Models](#)
[Ontologies](#)

News
[SPASE in the literature](#)
[Briefs](#)

What's SPASE?

metadata format developed by international consortium to comprehensively describe research resources regarding heliospheric and magnetospheric satellite observations

- closely related to STP and upper atmosphere researches (→ easy to use as a base format)
- new metadata elements & words appendable (→ customizable according to our data)
- widely-used in VxOs (→ possible metadata exchange in the future)

IUGONET's modifications

- additional words to represent non-digital archives
- additional words to represent heliospheric coordinates
- new metadata elements to describe observation location & range

Metadata of Numerical Data

ResourceID: space://IUGONET/NumericalData/EAR/RAO/EAR/trop_std_netcdf

ResourceHeader:

ResourceName: EAR standard tropospheric observation mode

ReleaseDate: 2010-04-12

Description: Zonal, meridional, vertical winds, beam echo intensity, and spectral width data taken by the EAR operated in the standard ...

Acknowledgement: If you acquire EAR data, we ask that you acknowledge us in ...

Contact:

PersonID: spase://IUGONET/Person/EAR.Management.Group

Role: General Contact

AccessInformation:

RepositoryID: spase://IUGONET/Repository/RISH/RISHDB

Availability: Online

AccessRights: Open

AccessURL:

URL: <http://www.rish.kyoto-u.ac.jp/ear/data/index.html>

Format: NetCDF

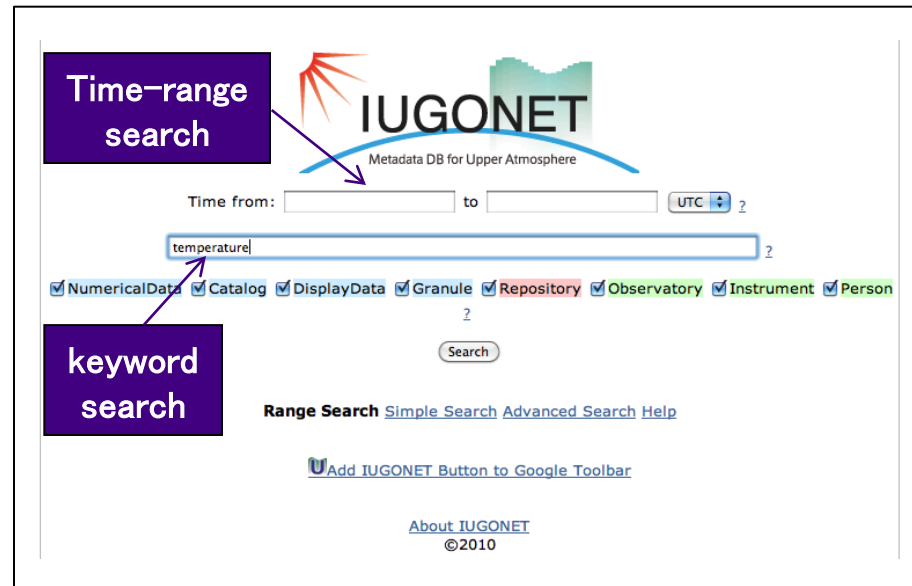
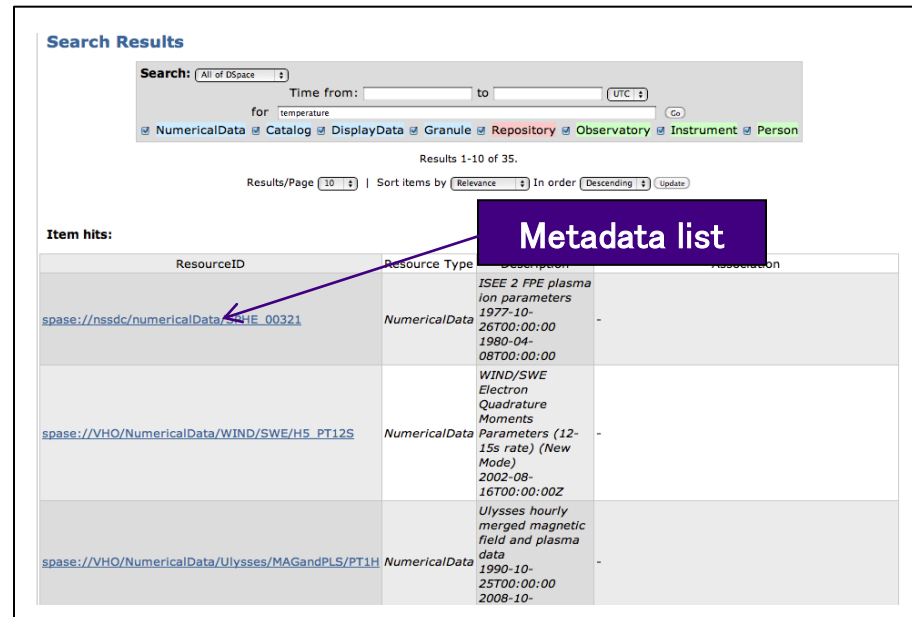
...

- Metadata of instrument, observatory, person, repository also created
- Each metadata file written in XML

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IUGONET MDB system is based on an existing repository software (DSpace).

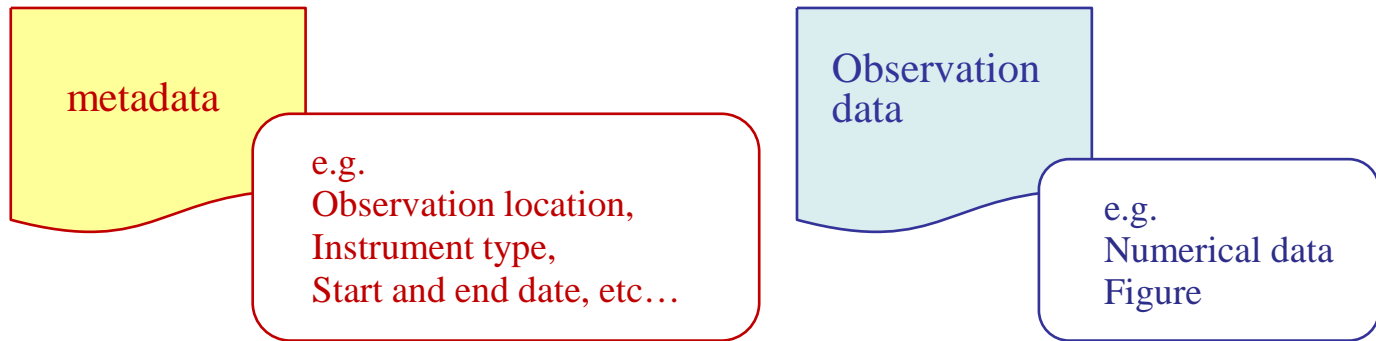
- able to register, search, collect, and provide metadata
- able to handle arbitrary metadata formats
- free, and widely used (e.g. digital university repositories)

ResourceID	Resource Type	Description	Association
spase://nssdc/numericalData/S4/E_00321	NumericalData	ISEE 2 FPE plasma ion parameters 1977-10-26T00:00:00-1980-04-08T00:00:00	-
spase://VHO/NumericalData/WIND/SWE/H5_PT12S	NumericalData	WIND/SWE Electron Quadrature Moments Parameters (12-15s rate) (New Mode) 2002-08-16T00:00:00Z	-
spase://VHO/NumericalData/Ulysses/MAGandPLS/PT1H	NumericalData	Ulysses hourly merged magnetic field and plasma data 1990-10-25T00:00:00-2008-10-	-

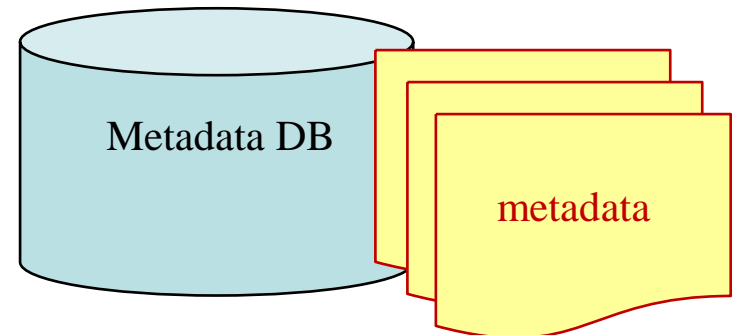
Metadata

Metadata, is often used as “data about data”, has the information about the observation data. e.g. observatory location, instrument type, start date, end date, data location, etc...



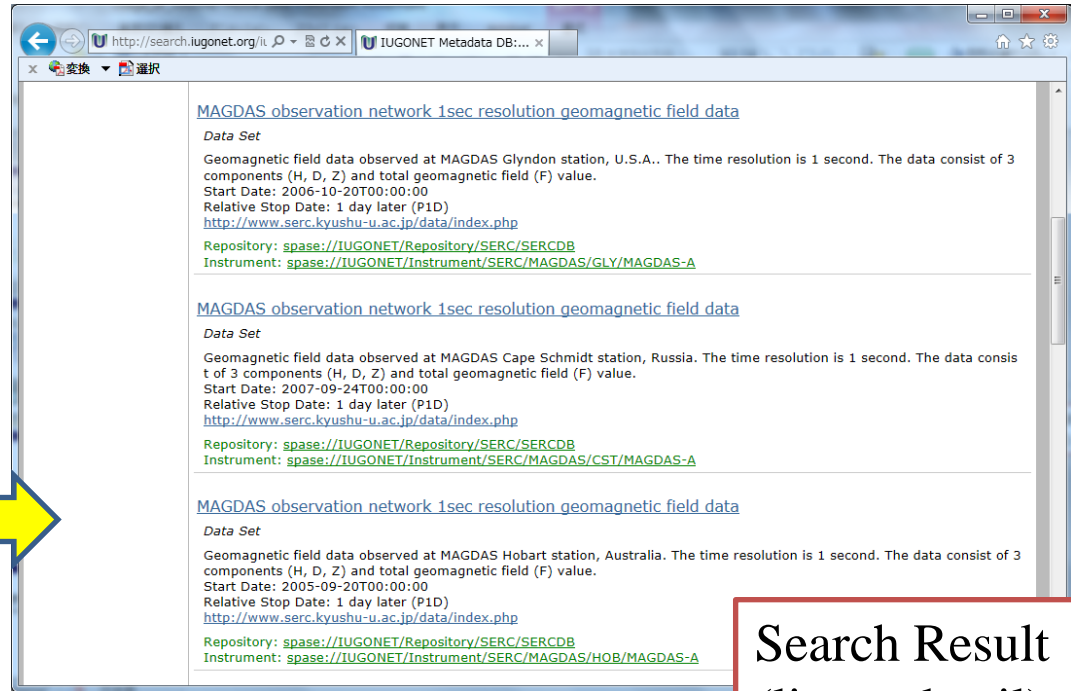
Metadata database

Database which can control (gathering, searching, etc...) many metadata.





Freeword Search,
Data type Selection,
Visualized search, etc...



Search Result
(list or detail)

- IUGONET MDB provides the service for cross-searching observational data distributed across the IUGONET institutions.
- IUGONET MDB brings a remarkable advancement in accessibility to the observational data and accelerate the interdisciplinary study.

- No registration
 - IUGONET MDB is welcome to any user. People can search and refer all metadata in our database
- Data usage restriction
 - If you want to use real data, conform to the data usage rules at each institute, and refer to acknowledgement section in metadata



Access to IUGONET MDB

Open your proper web browser, and access

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

IUGONET Metadata DB >

[Home](#)
[IUGONET MDB Search Help](#)

Browse Data
[Entire Data / Resource](#)
[Resource Type](#)

Browse Service
[Browse Service](#)

UDAS
Iugonet Data Analysis Software

IUGONET

IUGONET
Metadata DB for Upper Atmosphere

easy feedback or detail survey

All **Earth** **Sun** **Spatial**

Free Word:
Free Word (e.g. ionosphere, troposphere, magnetosphere, heliosphere.....)

Time:
from YYYY-MM-DDThh:mm:ssZ to YYYY-MM-DDThh:mm:ssZ [UTC]

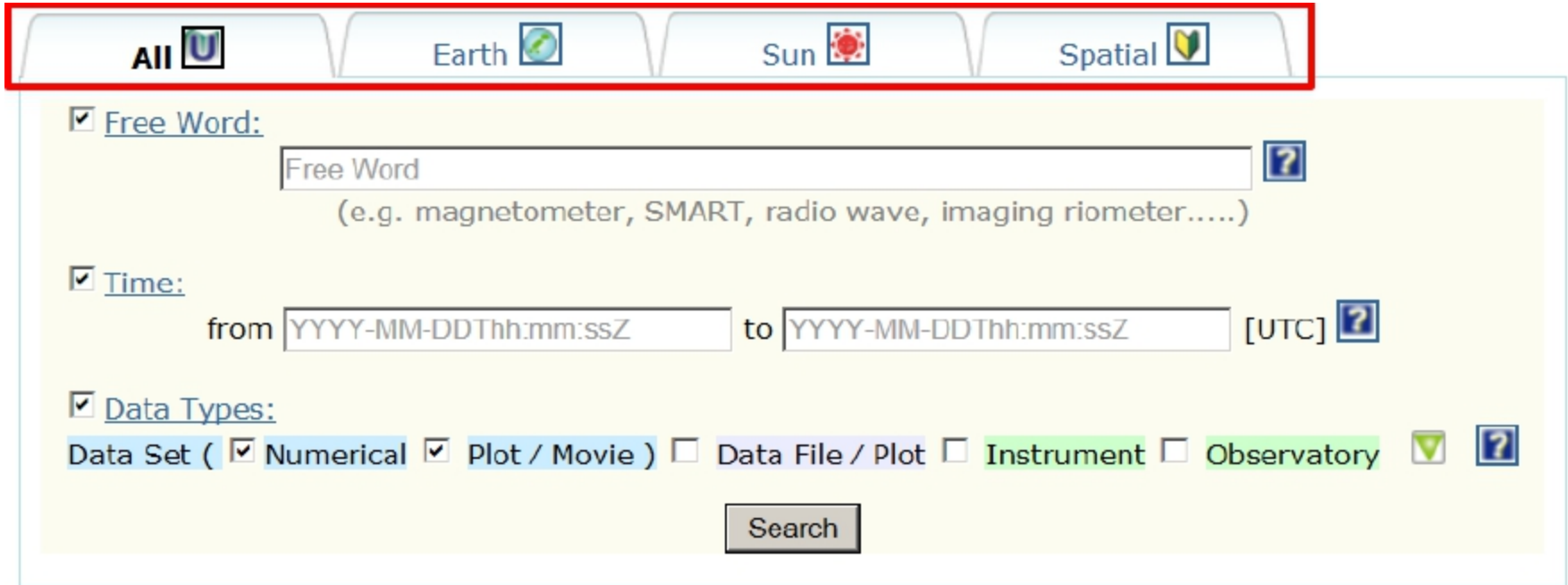
Data Types:
Data Set (Numerical Plot / Movie) Data File / Plot Instrument Observatory

RSS Feeds
RSS 1.0
RSS 2.0
RSS
Latest Update Sun Sep 09 04:43:58 JST 2012 more...

W3C XHTML 1.0

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Tabs for a variety of search objectives



The screenshot shows the search interface with four tabs: All, Earth, Sun, and Spatial. The 'All' tab is selected and highlighted with a red border. Below the tabs, there are three search filters, each with a checked checkbox and a help icon:

- Free Word:** A text input field containing 'Free Word' and a help icon. Below it, an example text reads: '(e.g. magnetometer, SMART, radio wave, imaging riometer.....)'
- Time:** Two date-time input fields separated by 'to', with '[UTC]' and a help icon to the right.
- Data Types:** A row of checkboxes for 'Numerical', 'Plot / Movie', 'Data File / Plot', 'Instrument', and 'Observatory'. A dropdown arrow and a help icon are to the right.

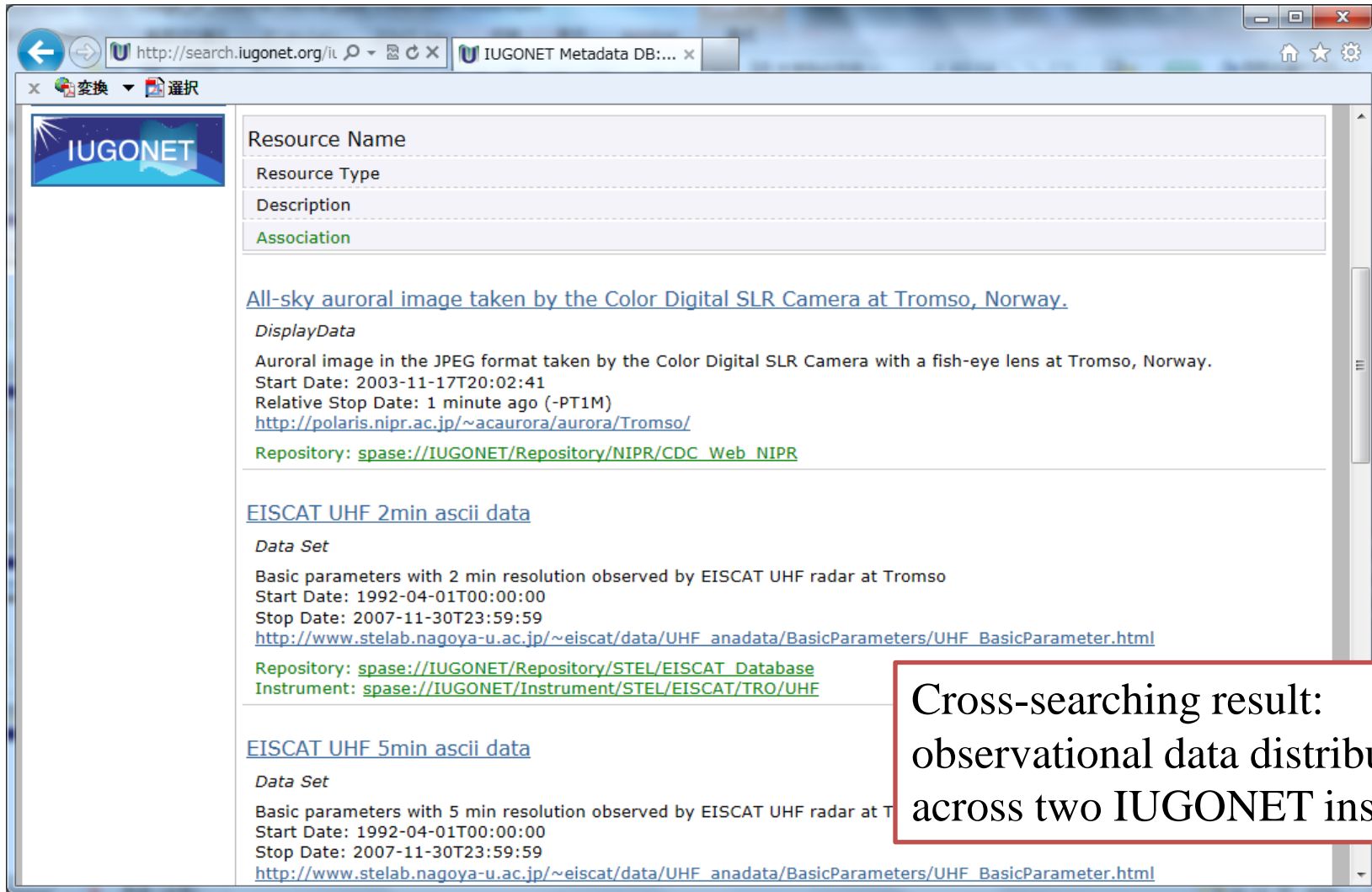
A 'Search' button is located at the bottom center of the search area.

All	Simple search for all metadata
Earth	Advanced search for all metadata except solar image metadata
Sun	Advanced search for solar image metadata
Spatial	Visualized spatial search from observation network picture

Input example keyword: "EISCAT"



The screenshot shows the IUGONET search interface. A red arrow points from the text box above to the 'Free Word' input field, which contains the text 'EISCAT'. Below the input field is a 'Search' button, which is circled in red. A green box at the bottom of the page contains the text 'Click "Search"'. The interface includes a navigation menu on the left with links for Home, IUGONET MDB, Search Help, Browse Data, and Browse Service. The main content area features the IUGONET logo and a search form with tabs for All, Earth, Sun, and Spatial. The search form includes checkboxes for 'Free Word', 'Time', and 'Data Types', and a 'Search' button. The right sidebar contains RSS Feeds and a W3C XHTML 1.0 logo. The footer contains the copyright information: Copyright © 2009-2012 IUGONET - Feedback.



Resource Name

Resource Type

Description

Association

[All-sky auroral image taken by the Color Digital SLR Camera at Tromso, Norway.](#)

DisplayData

Auroral image in the JPEG format taken by the Color Digital SLR Camera with a fish-eye lens at Tromso, Norway.
Start Date: 2003-11-17T20:02:41
Relative Stop Date: 1 minute ago (-PT1M)
<http://polaris.nipr.ac.jp/~acauration/aurora/Tromso/>
Repository: spase://IUGONET/Repository/NIPR/CDC_Web_NIPR

[EISCAT UHF 2min ascii data](#)

Data Set

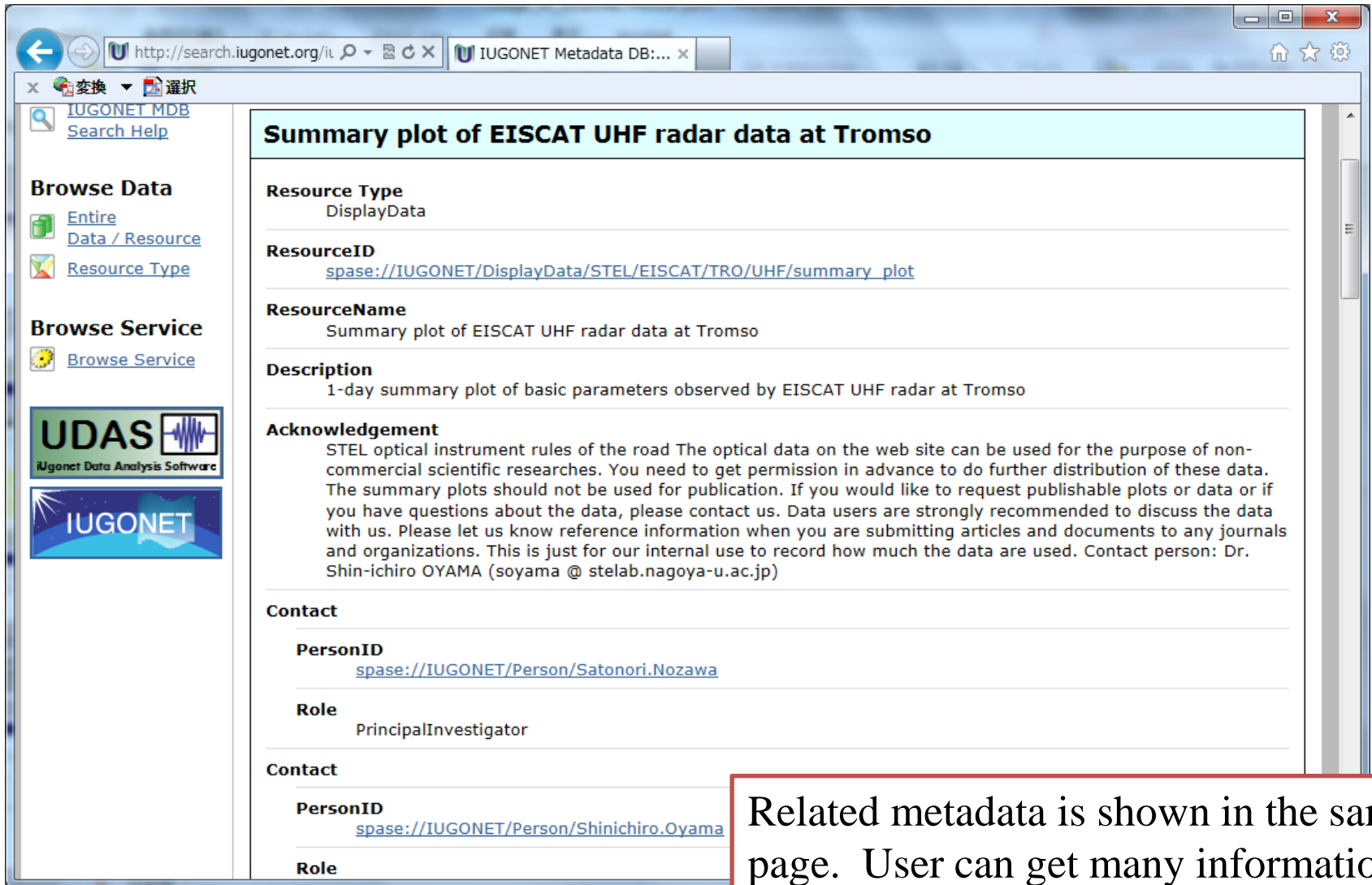
Basic parameters with 2 min resolution observed by EISCAT UHF radar at Tromso
Start Date: 1992-04-01T00:00:00
Stop Date: 2007-11-30T23:59:59
http://www.stelab.nagoya-u.ac.jp/~eiscat/data/UHF_anadata/BasicParameters/UHF_BasicParameter.html
Repository: spase://IUGONET/Repository/STEL/EISCAT_Database
Instrument: <spase://IUGONET/Instrument/STEL/EISCAT/TRO/UHF>

[EISCAT UHF 5min ascii data](#)

Data Set

Basic parameters with 5 min resolution observed by EISCAT UHF radar at Tromso
Start Date: 1992-04-01T00:00:00
Stop Date: 2007-11-30T23:59:59
http://www.stelab.nagoya-u.ac.jp/~eiscat/data/UHF_anadata/BasicParameters/UHF_BasicParameter.html

Cross-searching result:
observational data distributed
across two IUGONET institutions





The screenshot shows a web browser window with the URL <http://search.iugonet.org/il>. The page displays search results for a specific resource. The left sidebar contains navigation links for 'Browse Data' and 'Browse Service', along with logos for 'UDAS iUgonet Data Analysis Software' and 'IUGONET'. The main content area is titled 'Summary plot of EISCAT UHF radar data at Tromsø' and contains the following metadata:

Resource Type	DisplayData
ResourceID	spase://IUGONET/DisplayData/STEL/EISCAT/TRO/UHF/summary_plot
ResourceName	Summary plot of EISCAT UHF radar data at Tromsø
Description	1-day summary plot of basic parameters observed by EISCAT UHF radar at Tromsø
Acknowledgement	STEL optical instrument rules of the road The optical data on the web site can be used for the purpose of non-commercial scientific researches. You need to get permission in advance to do further distribution of these data. The summary plots should not be used for publication. If you would like to request publishable plots or data or if you have questions about the data, please contact us. Data users are strongly recommended to discuss the data with us. Please let us know reference information when you are submitting articles and documents to any journals and organizations. This is just for our internal use to record how much the data are used. Contact person: Dr. Shin-ichiro OYAMA (soyama @ stelab.nagoya-u.ac.jp)
Contact	
PersonID	spase://IUGONET/Person/Satonori.Nozawa
Role	PrincipalInvestigator
Contact	
PersonID	spase://IUGONET/Person/Shinichiro.Oyama
Role	

Related metadata is shown in the same page. User can get many information just one query.

What is data type?

Data Types:

Data Set (Numerical Plot / Movie) Data File / Plot Instrument Observatory  

Catalog Person Service





Document Annotation Repository Registry



Click here


Data type indicates the type of metadata (Another name: Resource Type)



Numerical	Sample or observation values	Person	Information about the person
Plot/Movie	Data products can be images and movies	Service	Locations for functions
DataFile/Plot	individual files	Document	Information about the document
Instrument	Information about the instrument	Annotation	Assessments of a resource
Observatory	Information about the observatory	Repository	Locations for data
Catalog	Event lists	Registry	Locations for metadata

Input keyword: "MAGDAS"

All  **Earth**  **Sun**  **Spatial** 

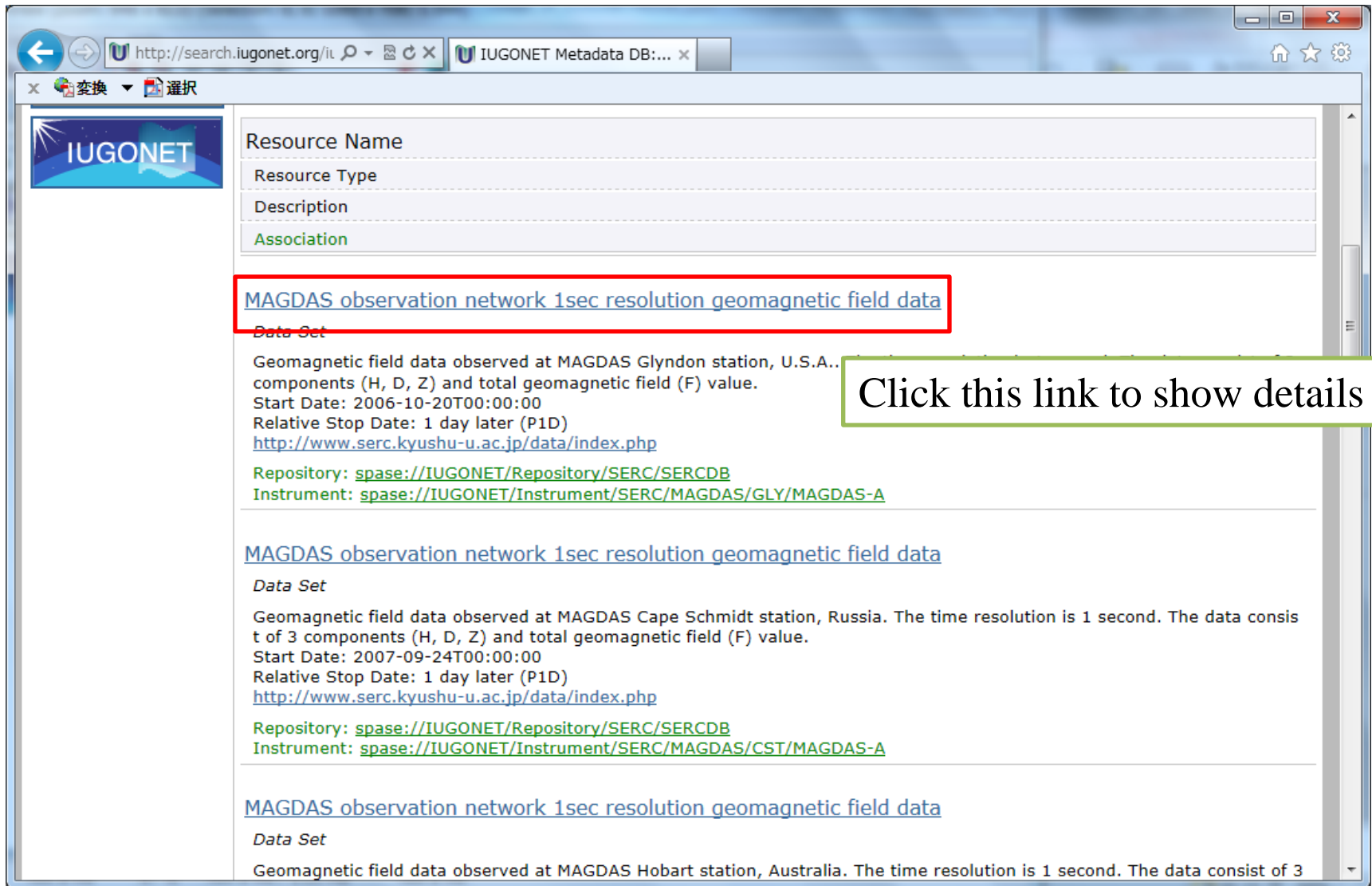
Free Word:
 
(e.g. ionosphere, troposphere, magnetosphere, heliosphere.....)

Time:
from to [UTC] 

Data Types:
 Data Set (Numerical Plot / Movie) Data File / Plot Instrument Observatory  

Check Data Set (both Numerical and Plot/Movie)

Click "Search"



The screenshot shows a web browser window with the URL <http://search.iugonet.org/it>. The page displays search results for 'MAGDAS observation network 1sec resolution geomagnetic field data'. The first result is highlighted with a red box. A green callout box points to the link with the text 'Click this link to show details'.

Resource Name
Resource Type
Description
Association

[MAGDAS observation network 1sec resolution geomagnetic field data](#)
Data Set
Geomagnetic field data observed at MAGDAS Glyndon station, U.S.A.. components (H, D, Z) and total geomagnetic field (F) value.
Start Date: 2006-10-20T00:00:00
Relative Stop Date: 1 day later (P1D)
<http://www.serc.kyushu-u.ac.jp/data/index.php>
Repository: <spase://IUGONET/Repository/SERC/SERCDB>
Instrument: <spase://IUGONET/Instrument/SERC/MAGDAS/GLY/MAGDAS-A>

[MAGDAS observation network 1sec resolution geomagnetic field data](#)
Data Set
Geomagnetic field data observed at MAGDAS Cape Schmidt station, Russia. The time resolution is 1 second. The data consist of 3 components (H, D, Z) and total geomagnetic field (F) value.
Start Date: 2007-09-24T00:00:00
Relative Stop Date: 1 day later (P1D)
<http://www.serc.kyushu-u.ac.jp/data/index.php>
Repository: <spase://IUGONET/Repository/SERC/SERCDB>
Instrument: <spase://IUGONET/Instrument/SERC/MAGDAS/CST/MAGDAS-A>

[MAGDAS observation network 1sec resolution geomagnetic field data](#)
Data Set
Geomagnetic field data observed at MAGDAS Hobart station, Australia. The time resolution is 1 second. The data consist of 3

AccessInformation

RepositoryID
<spase://IUGONET/Repository/SERC/SERCDB>

AccessURL

URL
<http://www.serc.kyushu-u.ac.jp/data/index.php>

Availability
Online

AccessRights
Restricted

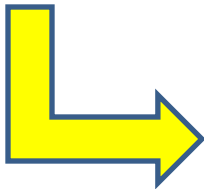
Format
Binary

Acknowledgement
Scientists who want to engage in collaboration with SERC should contact the project leader of MAGDAS/CPMN observations, Prof. Dr. K. Yumoto, Kyushu Univ., who will organize such collaborations. There is a possibility that the PI of MAGDAS will arrange offers so that there is less overlapping of themes between MAGDAS research groups. Before you use MAGDAS/CPMN data for your papers, you must agree to the following points: 1. Before you submit your paper, you must contact the PI (Prof. K. Yumoto: yumoto@serc.kyushu-u.ac.jp) and discuss authorship. 2. When you submit your paper after doing the above item 1, you must mention the source of the data in the acknowledgment section of your paper. 3. In general, you must use the following references: (i). Yumoto, K., and the 210MM Magnetic Observation Group network project, J. Geomag. Geoelectr., 48, 1297-1310., 1996. (ii). Yumoto, K., and the 210MM Magnetic Observation Group network project, PI 2 magnetic pulsations observed at the CPMN station Planets Space, 53, 981-992, 2001. (iii). Yumoto, K. and the MAGDAS Group application for space weather, Solar Influence on the Heliosphere and Earth and Prospects, Edited by N. Gopalswamy and A. Bhattacharyya, ISBN-81-8008-000-0, 2004. (iv). Yumoto, K. and the MAGDAS Group, Space weather activities at SERC, 35, pp. 511-522, 2007. 4. In all circumstances, if anything is published, you must mention the following address: Prof. Dr. Kiyohumi Yumoto, PI of MAGDAS/CPMN Environment Research Center, Kyushu University 53, 6-10-1 Hakozaki, Fukuoka 812-8581, Japan.

Scroll down to
AccessInformation

Click the link at AccessURL

You can access
MAGDAS data website
portal easily!



SERC
Space Environment Research Center

Data Base





- **MAGDAS/CPMN**


**MAGnetic Data Acquisition System/
Circum-pan Pacific Magnetmeter Network Data**


Our data archives consist of the following four databases.



- [MAGDAS-II \(MAGnetic Data Acquisition System II\)](#)
- [MAGDAS \(MAGnetic Data Acquisition System\)](#)
(About the MAGDAS and MAGDAS-II)
 - 1 sec. and 1 min. sampling data from August, 2005.
 - This network is the integrated latter three networks.
 - The principal investigator (PI) is Prof. K. Yumoto.(Supporting Information)
 - This MAGDAS observation was made by the financial supports of Japan Society for the Promotion of Science (JSPS) as Grant-in-Aid for Overseas Scientific Survey (15253005, 18253005). This database was made by the financial supports of Japan Society for the Promotion of Science (JSPS) as Grant-in-Aid for Publication of Scientific Research Results(188068, 198055, 208043), and National Institute of Information and Communications Technology(NICT) as the funded research.
- [CPMN \(The Circum-pan Pacific Magnetometer Network\)](#)
(About the Circum-pan Pacific Magnetometer Network)
 - 1 sec., 3 sec. and 1 min. sampling data from January, 1996.

Input keyword: "MF radar"

All  **Earth**  **Sun**  **Spatial** 

Free Word:
 
(e.g. ionosphere, troposphere, magnetosphere, heliosphere.....)

Time:
from to [UTC] 

Data Types:
 Numerical Plot / Movie Data File / Plot Instrument Observatory  

Check Data File / Plot

Uncheck Data Set (both Numerical and Plot/Movie)

Click "Search"



Advanced Search Result: Data File

We got 85210 search results

Item hits:

Resource Name
Resource Type
Description
Association
spase://IUGONET/Granule/NICT/SALMON/WAK/MFradar/DAE/PT30M_txt/20120206_30min_txt
<i>Data File/Plot</i>
Start Date: 2012-02-06T00:00:00 Stop Date: 2012-02-06T23:30:00 Source Type: Data http://salmon.nict.go.jp/opendata/wak/mf_radar/2012/30min/wak20120206_30min.dens Parent resource: spase://IUGONET/NumericalData/NICT/SALMON/WAK/MFradar/DAE/PT30M_txt
spase://IUGONET/Granule/NICT/SALMON/WAK/MFradar/DAE/PT30M_txt/20120216_30min_txt
<i>Data File/Plot</i>
Start Date: 2012-02-16T00:00:00 Stop Date: 2012-02-16T23:30:00 Source Type: Data http://salmon.nict.go.jp/opendata/wak/mf_radar/2012/30min/wak20120216_30min.dens Parent resource: spase://IUGONET/NumericalData/NICT/SALMON/WAK/MFradar/DAE/PT30M_txt
spase://IUGONET/Granule/NICT/SALMON/WAK/MFradar/DAE/PT30M_txt/20120203_30min_txt
<i>Data File/Plot</i>
Start Date: 2012-02-03T00:00:00 Stop Date: 2012-02-03T23:30:00

Click this link to show details

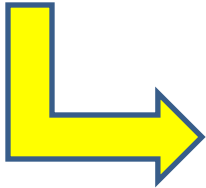


Advanced Search Result: Data File

Scroll down to Source

You can access the numerical data.
Note: Respect data usage rule at each institute!

Click the URL



IUGONET Metadata DB > IUGONET > Granule > NICT > SALMON

Questionnaire [easy feedback or detail survey](#)

Resource Type
Data File/Plot

ResourceID
spase://IUGONET/Granule/NICT/SALMON/WAK/MFradar/DAE/PT30M_txt/20120206_30min_txt

ReleaseDate
2012-05-21T12:53:59

ParentID
spase://IUGONET/NumericalData/NICT/SALMON/WAK/MFradar/DAE/PT30M_txt

StartDate
2012-02-06T00:00:00

StopDate
2012-02-06T23:30:00

Source
Data

Source Type
Data

URL
http://salmon.nict.go.jp/opendata/wak/mf_radar/2012/30min/wak20120206_30min.dens

http://salmon.nict.go.jp/op

nict.go.jp

SITE: Wakkanai
Threshold: 30.0 %
Coefficient of standard deviation: 1.5

YYYYMMDDHHMM	DATE	RANGE [km]		AVERAGED_DENSITY [cm-3]		DATA_COUNT		STANDARD_DEVIATION [cm-3]	
		DAE	DPE	DAE	DPE	DAE	DPE	DAE	DPE
201202060000	60	-999.0000	-999.0000	0	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060000	62	-999.0000	-999.0000	0	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060000	64	-999.0000	-999.0000	0	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060000	66	-999.0000	-999.0000	0	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060000	68	-999.0000	-999.0000	0	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060000	70	-999.0000	303.8154	0	2	-999.0000	-999.0000	25.9271	
201202060000	72	-999.0000	-999.0000	0	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060000	74	-999.0000	-999.0000	0	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060000	76	-999.0000	-999.0000	0	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060000	78	320.9394	91.7691	3	2	105.2529	27.0191		
201202060000	80	312.8994	72.2845	2	2	18.7092	9.2674		
201202060000	82	-999.0000	-999.0000	0	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060000	84	-999.0000	-999.0000	0	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060000	86	202.0149	37.4491	3	2	55.8026	0.8720		
201202060000	88	230.2390	57.4220	4	2	80.0311	5.3521		
201202060000	90	301.7088	174.9359	2	2	227.3270	80.5171		
201202060000	92	-999.0000	-999.0000	1	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060000	94	-999.0000	-999.0000	1	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060000	96	-999.0000	-999.0000	0	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060000	98	-999.0000	-999.0000	0	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060000	100	-999.0000	-999.0000	0	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060000	102	-999.0000	-999.0000	0	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060000	104	-999.0000	-999.0000	0	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060000	106	-999.0000	-999.0000	0	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060000	108	-999.0000	-999.0000	0	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060030	60	-999.0000	-999.0000	0	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060030	62	67.8942	-999.0000	2	0	9.0396	-999.0000	-999.0000	-999.0000
201202060030	64	-999.0000	-999.0000	1	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060030	66	-999.0000	-999.0000	0	1	-999.0000	-999.0000	-999.0000	-999.0000
201202060030	68	-999.0000	408.5043	0	3	-999.0000	76.7016		
201202060030	70	-999.0000	-999.0000	0	1	-999.0000	-999.0000	-999.0000	-999.0000
201202060030	72	-999.0000	-999.0000	0	0	-999.0000	-999.0000	-999.0000	-999.0000
201202060030	74	-999.0000	-999.0000	0	1	-999.0000	-999.0000	-999.0000	-999.0000
201202060030	76	84.8036	102.4353	4	3	30.1281	14.0173		
201202060030	78	220.3091	113.8422	5	4	59.7809	31.7782		
201202060030	80	334.0250	119.3580	3	4	120.0557	90.5060		
201202060030	82	491.2899	152.9798	3	3	87.4177	166.1586		
201202060030	84	557.5367	-999.0000	2	1	405.8101	-999.0000	-999.0000	-999.0000
201202060030	86	-999.0000	-999.0000	1	1	-999.0000	-999.0000	-999.0000	-999.0000
201202060030	88	-999.0000	-999.0000	0	0	-999.0000	-999.0000	-999.0000	-999.0000

Select tab: "SUN"

Input keyword: "SMART jpeg"

Sun 

Spatial 

Free Word:

SMART jpeg

(e.g. Sun Prominence.....)

Time:

from YYYY-MM-DDThh:mm:ssZ to YYYY-MM-DDThh:mm:ssZ [UTC]

Solar Spatial Coverage:

Region: FullDisk PartialRegion

North e.g. 70

East e.g. 135 West e.g. -260 [degree]

South e.g. -45

Check Data File / Plot

Data Types:

Data Set (Numerical Plot / Movie) Data File / Plot Instrument Observatory

Uncheck Data Set (both Numerical and Plot/Movie)

Search

Click "Search"

In this example, we use keyword "jpeg" to see solar image on the web browser.

Click this URL

Resource Name
Resource Type
Description
Association

http://www.kwasan.kyoto-u.ac.jp/~smart/pub/2011/08/01/T1/jpeg/halphi_p00_20110801000944.jpg

Parent resource: spase://IUGONET/DisplayData/KwasanHidaObs/smart_t1_jpg

spase://IUGONET/Granule/KwasanHidaObs/smart_t1_jpg/2011/08/01/halphi_p00_20110801001144.jpg

Data File/Plot

Start Date: 2011-08-01T00:11:44
Stop Date: 2011-08-01T00:11:44
Source Type: Browse
http://www.kwasan.kyoto-u.ac.jp/~smart/pub/2011/08/01/T1/jpeg/halphi_p00_20110801001144.jpg

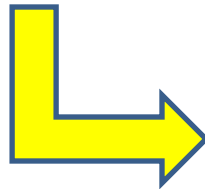
Parent resource: spase://IUGONET/DisplayData/KwasanHidaObs/smart_t1_jpg

spase://IUGONET/Granule/KwasanHidaObs/smart_t1_jpg/2011/08/01/halphi_p00_20110801000544.jpg

Data File/Plot

Start Date: 2011-08-01T00:05:44
Stop Date: 2011-08-01T00:05:44
Source Type: Browse
http://www.kwasan.kyoto-u.ac.jp/~smart/pub/2011/08/01/T1/jpeg/halphi_p00_20110801000544.jpg

Seamless browsing in IUGONET MDB



Association

spase://IUGONET/Granule/KwasanHidaObs/smart_t1_jpg/2011/08/01/halphi_p00_20110801000944.jpg

Data File/Plot

Start Date:
Stop Date:
Source Type:
http://www.kwasan.kyoto-u.ac.jp/~smart/pub/2011/08/01/T1/jpeg/halphi_p00_20110801000944.jpg

Parent res

spase://IUGONET/Granule/KwasanHidaObs/smart_t1_jpg/2011/08/01/halphi_p00_20110801001144.jpg

Data File/Plot

Start Date:
Stop Date:
Source Type:
http://www.kwasan.kyoto-u.ac.jp/~smart/pub/2011/08/01/T1/jpeg/halphi_p00_20110801001144.jpg

Parent res

spase://IUGONET/Granule/KwasanHidaObs/smart_t1_jpg/2011/08/01/halphi_p00_20110801000544.jpg

Data File/Plot

Start Date:
Stop Date:
Source Type:
http://www.kwasan.kyoto-u.ac.jp/~smart/pub/2011/08/01/T1/jpeg/halphi_p00_20110801000544.jpg

Parent res

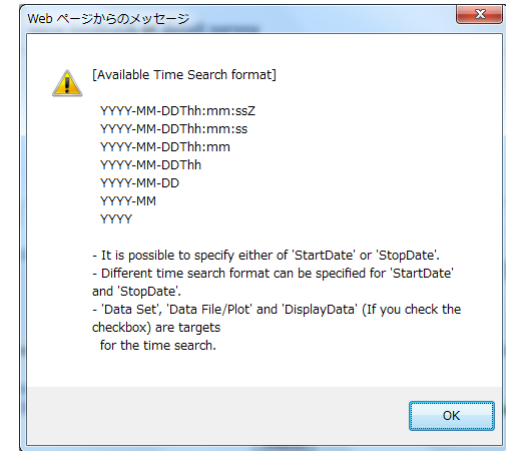
spase://IUGONET/Granule/KwasanHidaObs/smart_t1_jpg/2011/08/01/halphi_p00_20110801000744.jpg

SMART H-alpha(p00)2011-08-01_00:09:44

CLOSE X

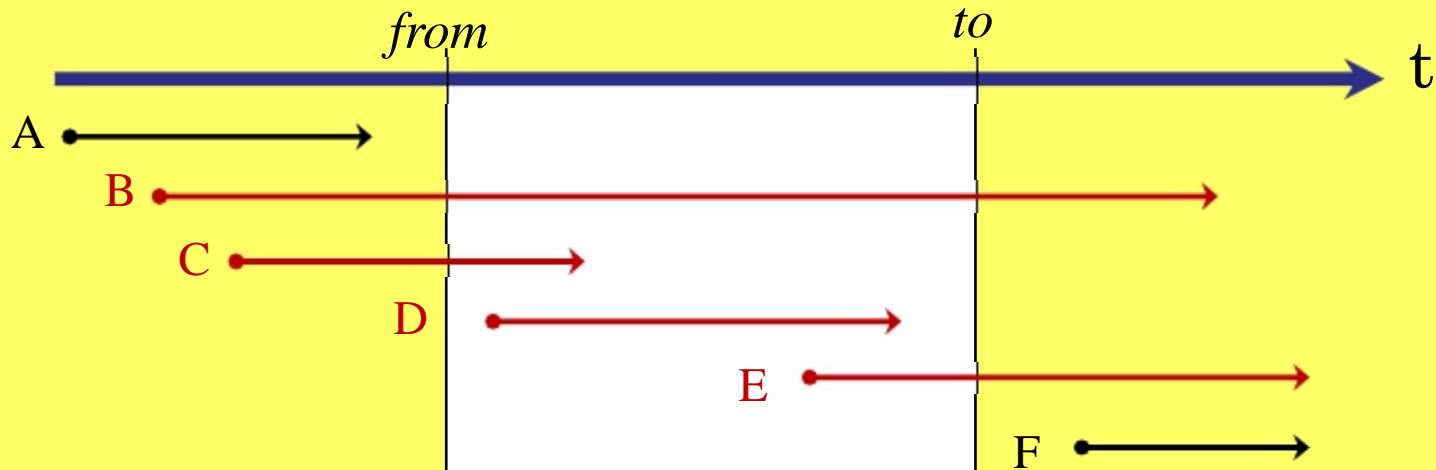
Time:

from to [UTC]



Input start date (from) and end date (to) which you interest in. To show the date format, please click icon [?].

Relationship between metadata start/end date and search scope



In this case, IUGONET MDB search metadata B,C,D, and E

Select tab: "Earth"

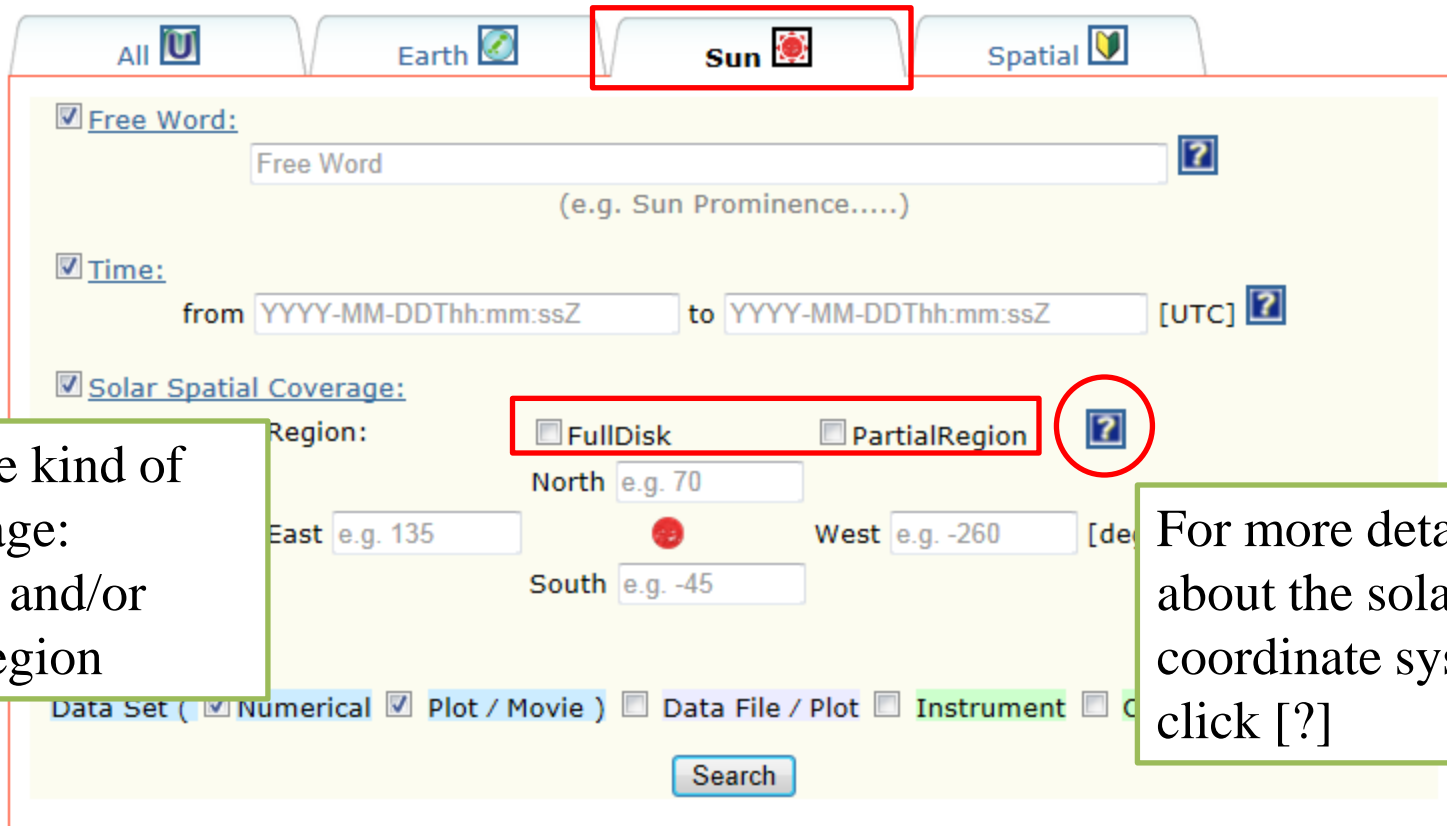
The screenshot shows a search interface with the following elements:

- Navigation tabs: All, **Earth** (selected), Sun, Spatial.
- Search filters:
 - Free Word: [Free Word] (e.g. ionosphere, troposphere, magnetosphere, heliosphere.....)
 - Time: from [YYYY-MM-DDThh:mm:ssZ] to [YYYY-MM-DDThh:mm:ssZ] [UTC]
 - Spatial Coverage/Map:
- Map visualization:
 - North: 56.8
 - West: 78.3
 - East: 191.6 [degree]
 - South: 5.4
 - Map shows regions: Mongolia (モンゴル), China (中国), Korea (韓国), Japan (日本).
 - Map controls: zoom (+/-), close map, aerial view (航空写真).

Click "view map"

Visualized spatial coverage search via GoogleMap API

Select tab: "Sun"



Free Word:
Free Word [?]
(e.g. Sun Prominence.....)

Time:
from to [UTC] [?]

Solar Spatial Coverage:
Region: FullDisk PartialRegion [?]
North e.g. 70
East e.g. 135 West e.g. -260 [de]
South e.g. -45

Data Set (Numerical Plot / Movie) Data File / Plot Instrument C

Select the kind of solar image: FullDisk and/or PartialRegion

For more detail about the solar coordinate system, click [?]

Select tab: "Earth"

All

Free Word:

Time:

from

Solar Spatial

Data Set ()

You can select the kind of solar image: FullDisk and/or PartialRegion

Web ページからのメッセージ

[Detail for Solar Spatial Coverage]

If you want to set Fulldisk/PartialRegion keyword clearly, please check the proper checkbox.

You can input solar latitude and longitude values you are interested in. The Stonyhurst Heliographic Coordinate System is supported in this search. In this coordinate system, left-hemisphere of the solar disk is defined as the eastern hemisphere and right-hemisphere is defined as the western hemisphere.

[Example]

North: N15 or +15
East : E40 or +40 West : W30 or -30
South: S25 or -25

[Note] Currently, the IUGONET search system defines the sign of longitude on the eastern hemisphere as "plus" and that on the western hemisphere as "minus".

OK

more detail about solar coordinate system, please click [?]

http://search.iugonet.org/il

IUGONET Metadata DB >

Home IUGONET MDB Search Help

Browse Data

Entire Data / Resource

Browse Service

UDAS iugonet Data Analysis Software

IUGONET

ionnaire easy feedback or detail survey

Entire Data / Resource List

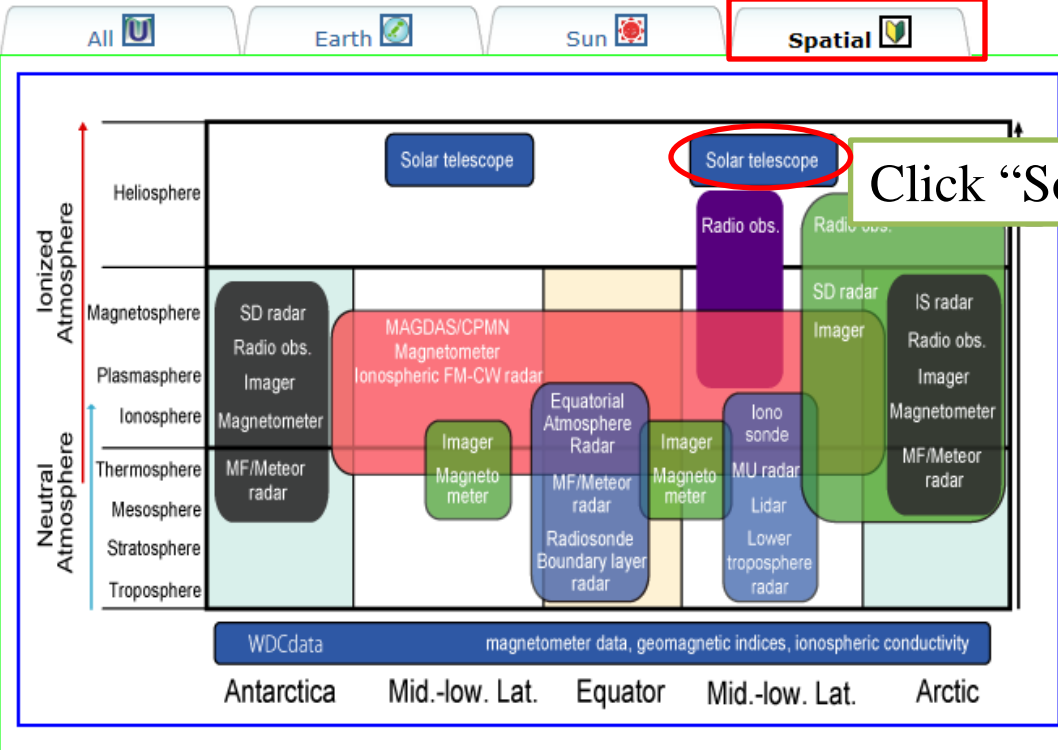
Shown below is a list of the entire data / resource categories and sub-categories. Click on a name to view that category or sub-category home page.

- **IUGONET**
 - [Person](#)
 - [Catalog](#)
 - [WDC Kyoto](#) ▶ open item
 - [DisplayData](#)
 - [KwasanHidaObs](#)
 - [NICT](#) ▶ open item
 - [NIPR](#) ▶ open item
 - [RISH](#) ▶ open item
 - [STEL](#) ▶ open item
 - [WDC Kyoto](#) ▶ open item
 - [Granule](#)
 - [KwasanHidaObs](#) ▶ open item
 - [NAOJSolarObs](#) ▶ open item
 - [NICT](#) ▶ open item

Click this URL

Brief overview of metadata registered on the IUGONET MDB.

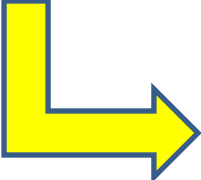
Select tab: "Spatial"

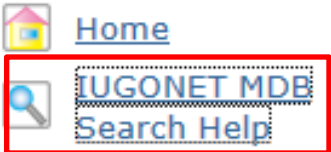


Click "Solar telescope"

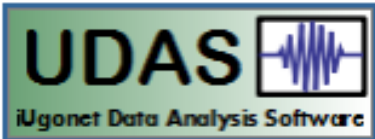
Search result relate to solar telescope

The screenshot shows the IUGONET search results page. The 'Resource Name' is 'SMART/T1 H-alpha full-disk solar images in JPEG format'. The 'Resource Type' is 'Image'. The 'Description' states: 'Multi-wavelength solar full-disk chromospheric images around H-alpha absorption line obtained with the SMART/T1 telescope at Hida Observatory. Start Date: 2005-07-01T00:00:00. Relative Stop Date: 1 day later (P1D). http://www.hida.kyoto-u.ac.jp/SMART/'. The 'Repository' is 'http://www.hida.kyoto-u.ac.jp/SMART/'. Other results include 'Raw data of IPS measurements' and 'Solar radio spectral data in VHF-band'.

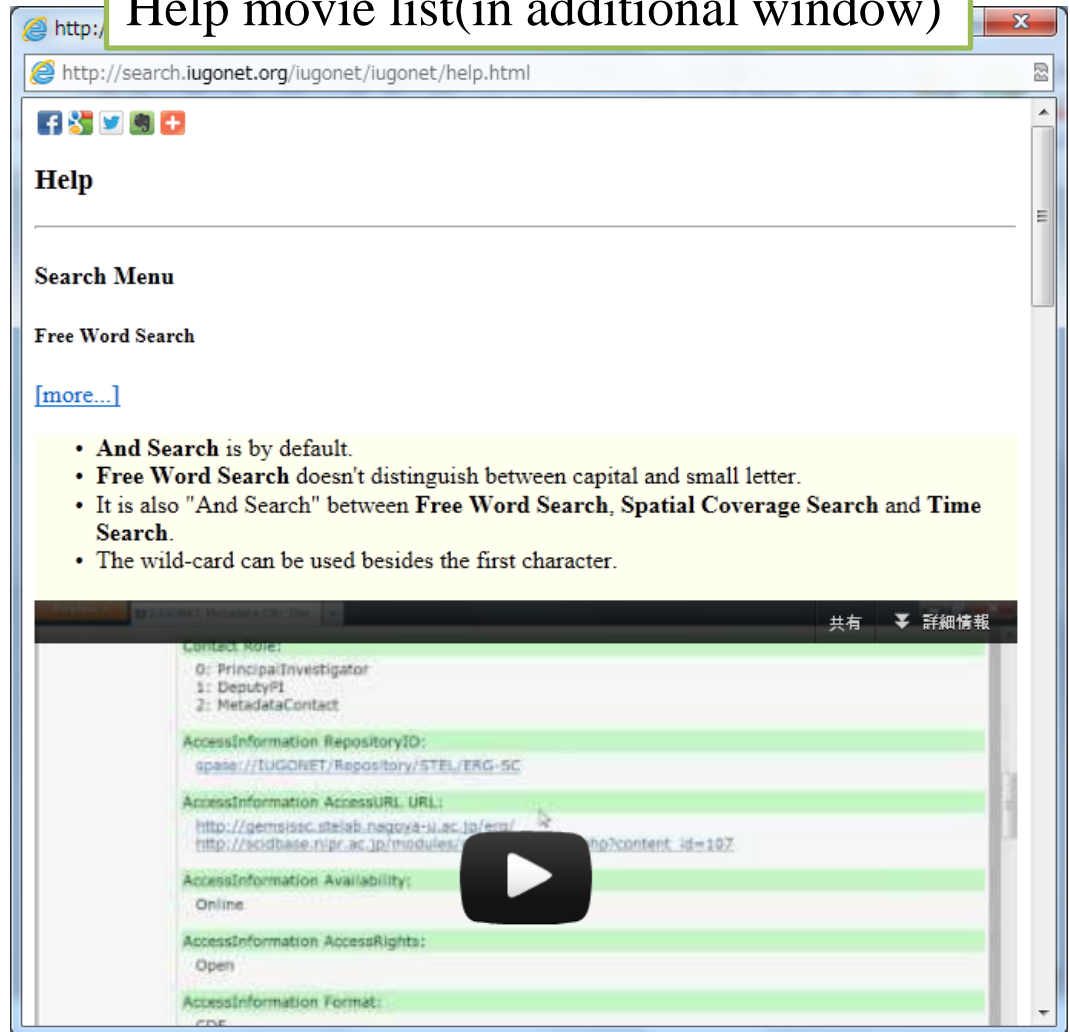




B Click this URL



Help movie list(in additional window)



http://search.iugonet.org/iugonet/iugonet/help.html

Help

Search Menu

Free Word Search

[\[more...\]](#)

- **And Search** is by default.
- **Free Word Search** doesn't distinguish between capital and small letter.
- It is also "And Search" between **Free Word Search**, **Spatial Coverage Search** and **Time Search**.
- The wild-card can be used besides the first character.

共有 ▼ 詳細情報

Contact Role:
0: PrincipalInvestigator
1: DeputyPI
2: MetadataContact

AccessInformation RepositoryID:
space://IUGONET/Repository/STEL/ERG-SC

AccessInformation AccessURL URL:
<http://gemsjssc.stelab.nagoya-u.ac.jp/erg/>
http://scibase.nipr.ac.jp/modules/showcontent.php?content_id=197

AccessInformation Availability:
Online

AccessInformation AccessRights:
Open

AccessInformation Format:
PDF



Search Tips for the IUGONET MDB

Method	Example	Explanation
Search for all word(default)	magnetogram kyoto or magnetogram AND kyoto	Include space or AND (capitalized) between the words
Search for either word	magnetogram OR kyoto	Include OR (capitalized) between the words
Combination	EISCAT (NIPR OR STEL) EISCAT AND (NIPR OR STEL)	Put a phrase in parentheses
exact word or phrase	“magnetogram”	Use quotes to search for an exact word or set of words in a specific order
Exclude a word	STEL-EISCAT	Add a dash (-) before a word

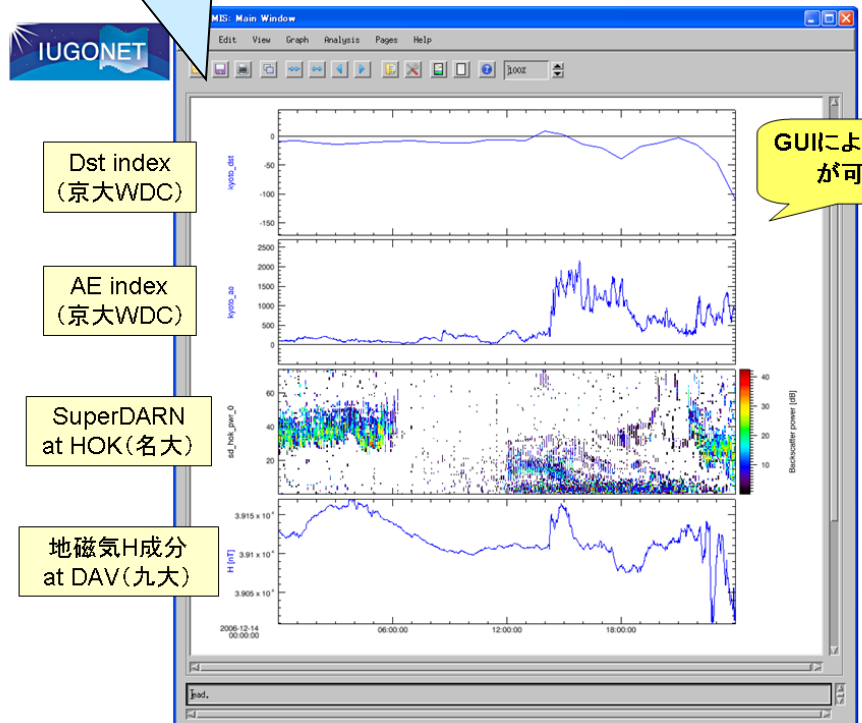
Every resource has a unique identifier (ResourceID) so that it can be tracked and referenced within a system.

Method	Example and explanation
Unique search	ResourceID:spase¥://IUGONET/Granule/STEL/Induction/ATH/induction/64hz_ergsc_cdf/stel_induction_ath_2010032623_cdf
(explanation)	Include “ResourceID:” before ResourceID. In this case, apply an escape sequence to spase://. Use backslash (spase¥://).
Tree search	ResourceID:spase¥://IUGONET/Granule/STEL/Induction/ATH/induction
(explanation)	View all metadata including this ResourceID

Task	Y2009	Y2010	Y2011	Y2012	Y2013	Y2014	Detail
Virtual information center (VIC) of UA studies	System installation	Normal operation		System update			Construct the integrated research environment (TV-conference system, ..)
Development of metadata DB system	Prototype system devel.	Regular system devel.	Open to public				Design and develop the metadata DB system
Design the Metadata format standards	Ver.1 format	Update & document					Release the format ver.1 and keep updating if necessary
Development of data analysis software	Specifications and basic design	Programming	Open to public				Develop and release analysis softwares for UA data
Maintenance&extension of existing DBs of Observation data		Maintenance of obs. DBs & exam. of non-digital dataset		Effort focused on old data from Y2012 on			Incorporate non-DB'd data into the DBs
Metadata generation		Collecting metadata from each obs. DB		Effort focused on old data from Y2012 on			Generate metadata in the designated format and add to metadata DB
Operation of metadata DB							Release the metadata DB for community
VIC extension to related fields							Wrap up the project and discuss further extension

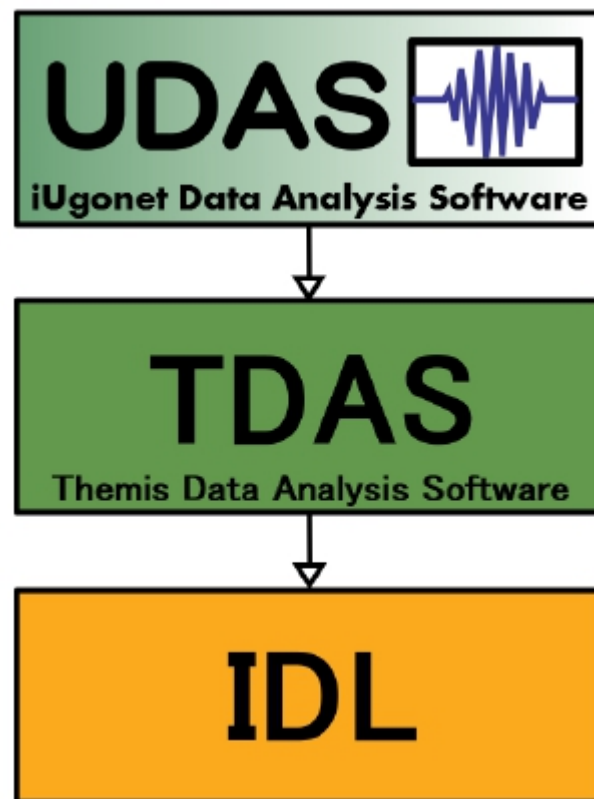
- Development of analysis and quick-look software for our observation data is on progress, in collaboration with the ERG Science Center.
- The software is produced with the THEMIS science Data Analysis (**TDAS**) IDL libraries and is functioned on the free IDL Virtual Machine.
- We discussed with TDAS team about our plug-in software package including GUI many times.

multiple,
“stacked” plots



GUI interface

- The IUGONET Data Analysis Software (UDAS) is the plug-in software for THEMIS Data Analysis Software suite (TDAS)
- The IUGONET data (e.g., geomagnetic data, aurora data, radar data, and so forth), satellite data (THEMIS, GOES, WIND, and ACE) can be handled.
- It is possible to use many 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



Relationship between
UDAS, TDAS, IDL

✓ Developer

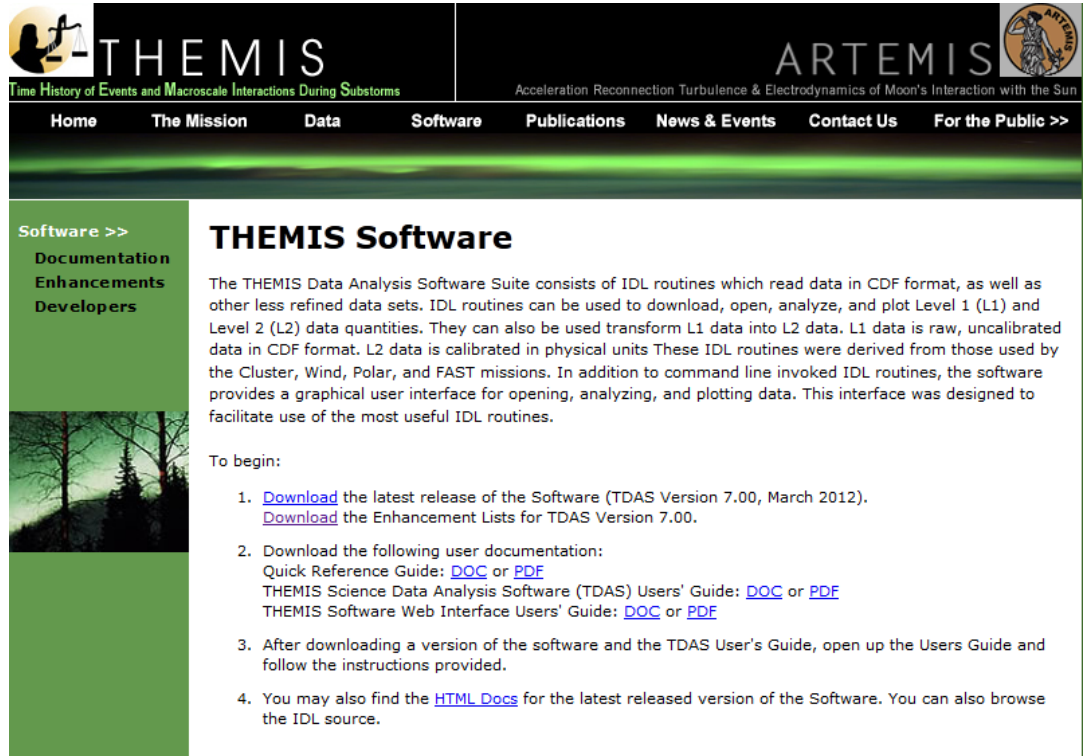
- UCB, UCLA

✓ Language

- IDL

✓ Data format

- CDF



The screenshot shows the THEMIS website interface. At the top, there are logos for THEMIS and ARTEMIS. The THEMIS logo includes the text "Time History of Events and Macroscale Interactions During Substorms". The ARTEMIS logo includes the text "Acceleration Reconnection Turbulence & Electrodynamics of Moon's Interaction with the Sun". Below the logos is a navigation menu with links: Home, The Mission, Data, Software, Publications, News & Events, Contact Us, and For the Public >>. The main content area is titled "THEMIS Software" and contains the following text:

The THEMIS Data Analysis Software Suite consists of IDL routines which read data in CDF format, as well as other less refined data sets. IDL routines can be used to download, open, analyze, and plot Level 1 (L1) and Level 2 (L2) data quantities. They can also be used transform L1 data into L2 data. L1 data is raw, uncalibrated data in CDF format. L2 data is calibrated in physical units. These IDL routines were derived from those used by the Cluster, Wind, Polar, and FAST missions. In addition to command line invoked IDL routines, the software provides a graphical user interface for opening, analyzing, and plotting data. This interface was designed to facilitate use of the most useful IDL routines.

To begin:

1. [Download](#) the latest release of the Software (TDAS Version 7.00, March 2012).
[Download](#) the Enhancement Lists for TDAS Version 7.00.
2. Download the following user documentation:
Quick Reference Guide: [DOC](#) or [PDF](#)
THEMIS Science Data Analysis Software (TDAS) Users' Guide: [DOC](#) or [PDF](#)
THEMIS Software Web Interface Users' Guide: [DOC](#) or [PDF](#)
3. After downloading a version of the software and the TDAS User's Guide, open up the Users Guide and follow the instructions provided.
4. You may also find the [HTML Docs](#) for the latest released version of the Software. You can also browse the IDL source.

<http://themis.ssl.berkeley.edu/software.shtml>

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

UDAS (IUGONET Data Analysis Software)

Topics

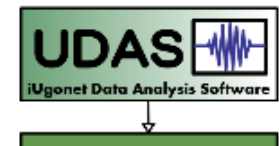
- UDAS v2.00.1 was released.
(Apr 19, 2012)



What is UDAS?

The IUGONET Data Analysis Software (UDAS) is the plug-in software for **THEMIS Data Analysis Software suite (TDAS)**.




- The IUGONET data (e.g., geomagnetic data, aurora data, radar data, and so forth), satellite data



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




























Radio Telescope

<Heliosphere>

UDAS load procedures	Observations data	Institutes	Photos/Movies/Docs
iug_load_jprt	Solar HF radio spectrum	Tohoku Univ.	 /  / 













Radar

<Magnetosphere, ionosphere and atmosphere>

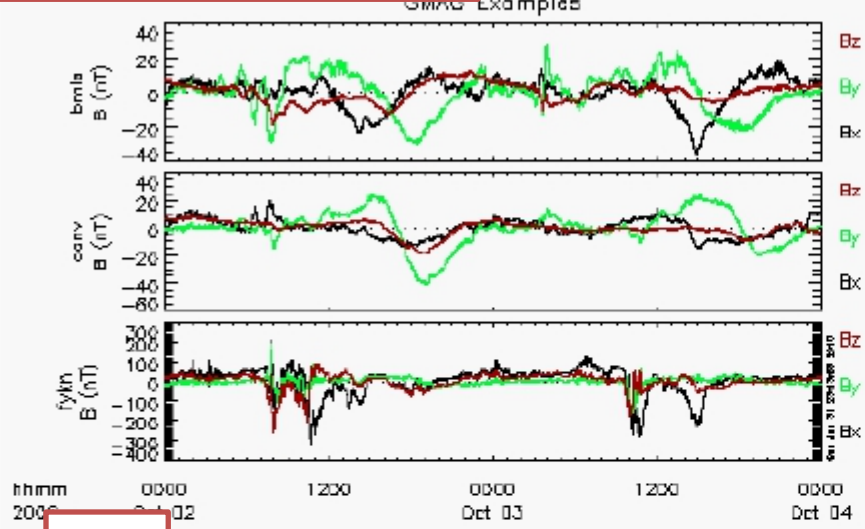
UDAS load procedures	Observations data	Institutes	Photos/Movies/Docs
iug_load_blr_rish	Boundary layer radar	RISH, Kyoto Univ.	 /  / 
iug_load_ltr_rish	L-band Lower Troposphere radar	RISH, Kyoto Univ.	 /  / 
iug_load_ear	Equatorial atmosphere radar	RISH, Kyoto Univ.	 /  / 
iug_load_mu	MU radar	RISH, Kyoto Univ.	 /  / 
iug_load_meteor_rish	Meteor radar	RISH, Kyoto Univ.	 /  / 
iug_load_mf_rish	MF radar	RISH, Kyoto Univ.	 /  / 
iug_load_wpr_rish	Wind Profiler radar	RISH, Kyoto Univ.	 /  / 
erg_load_sdft	SuperDARN radar	NIPR; Nagoya Univ.; NICT	 /  / 
erg_load_eiscat	EISCAT radar	NIPR; Nagoya Univ.	 /  / 

Geomag

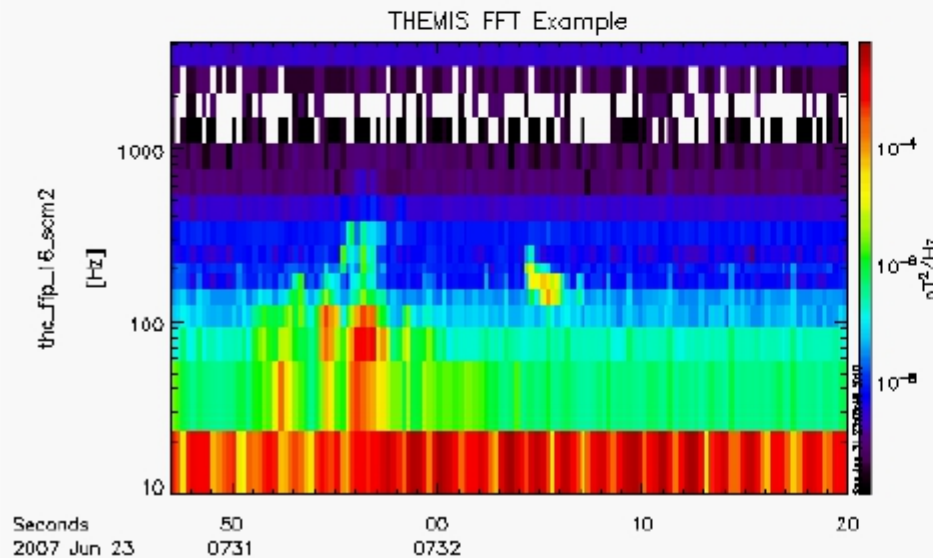
<Geomagnetism and its activities>

UDAS load procedures	Observations data	Institutes	Photos/Movies/Docs
iug_load_gmag_wdc	AE, Dst, ASY/SYM indices, Geomagnetic Field Data at the Observatories (hourly values, 1 minute values)	WDC, Kyoto Univ.	 /  / 
erg_load_gmag_nipr (iug_load_gmag_nipr)	Geomagnetic Field Data at Syowa and Iceland stations	NIPR	 /  / 
erg_load_gmag_mm210 (iug_load_gmag_mm210)	210-degree Magnetic Meridian magnetometer network	Nagoya Univ.; Kyushu Univ.	 /  / 
iug_load_gmag_serc	MAGDAS ground magnetometer	Kyushu Univ.	 /  / 

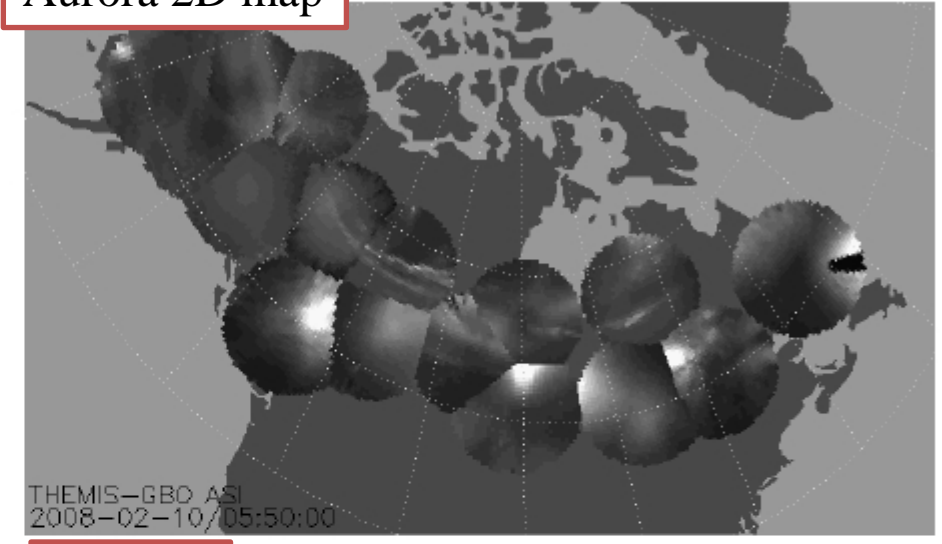
Time series stack plot



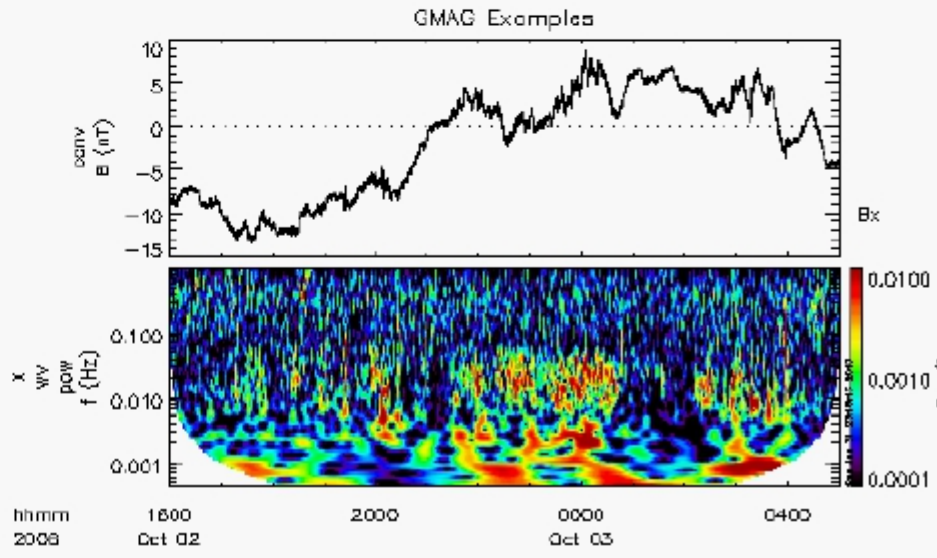
FFT



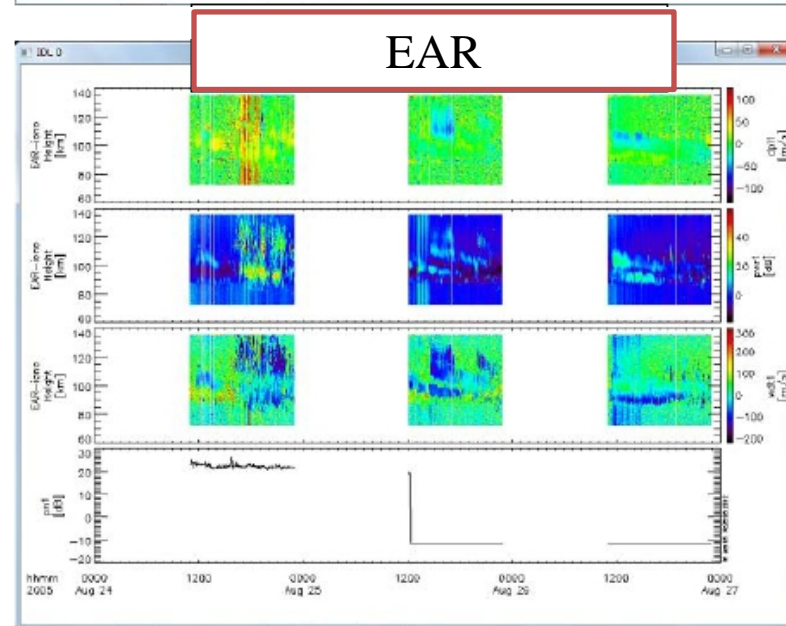
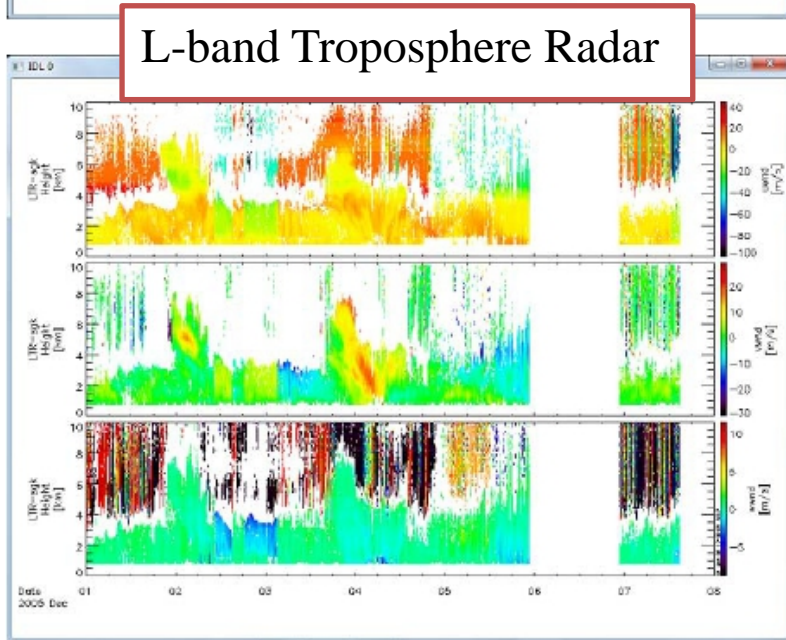
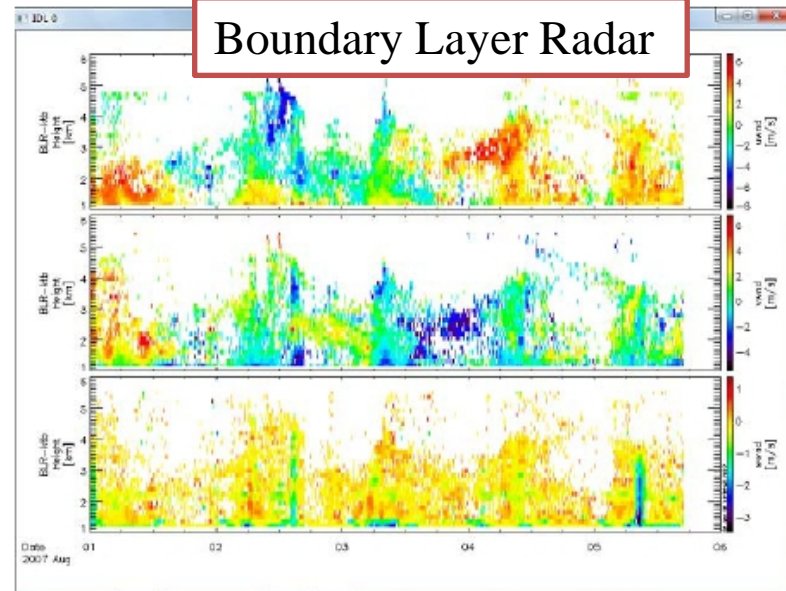
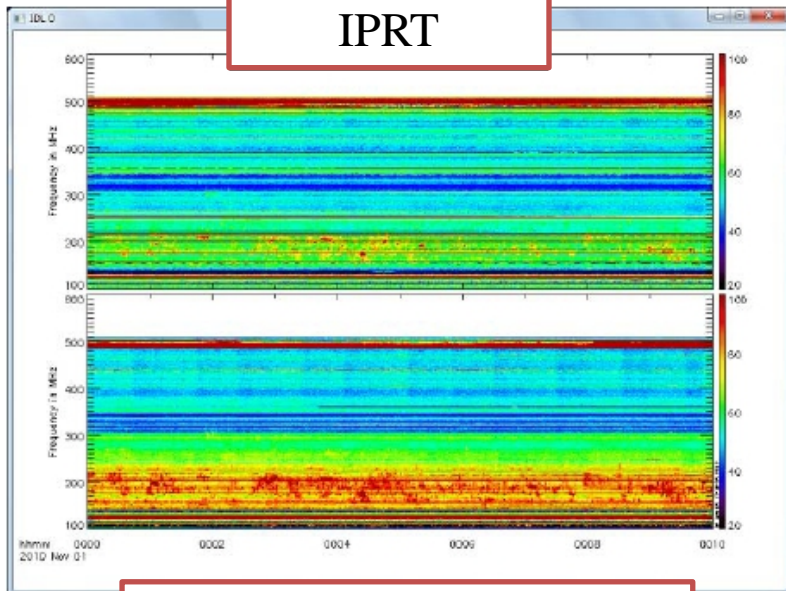
Aurora 2D map



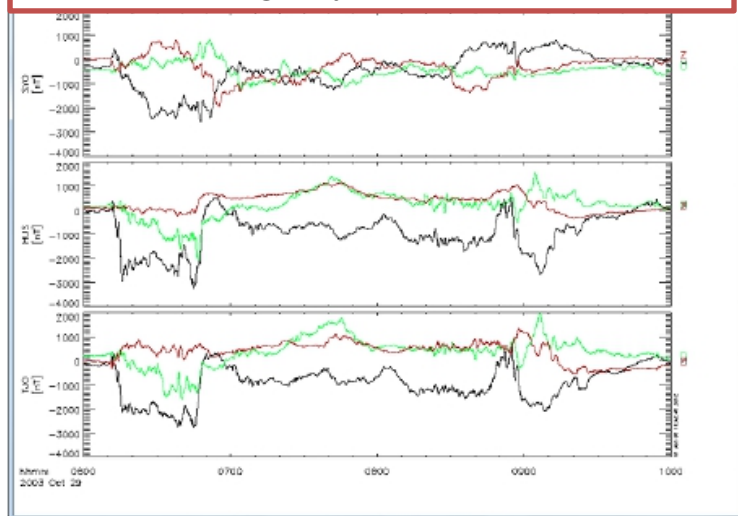
Wavelet



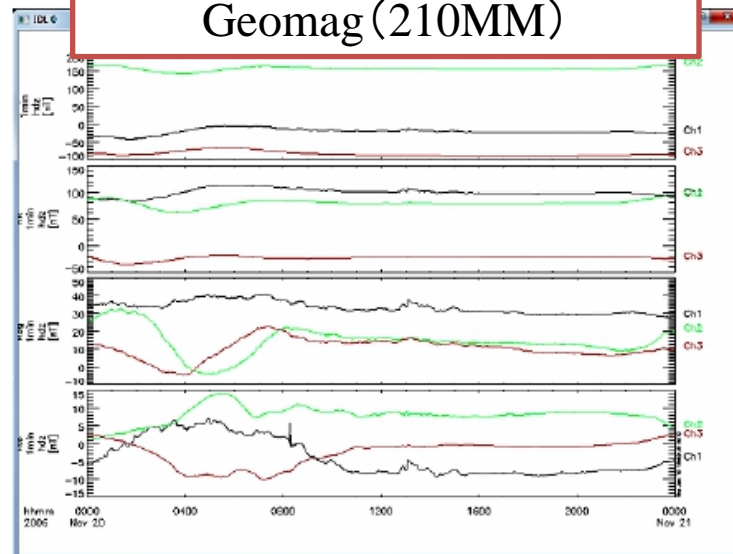
Example of visualization by using UDAS



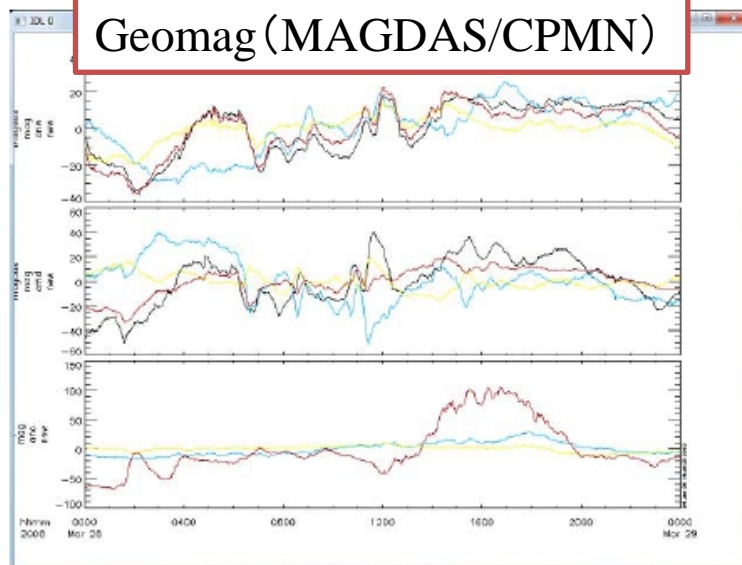
Geomag (Syowa, Iceland)

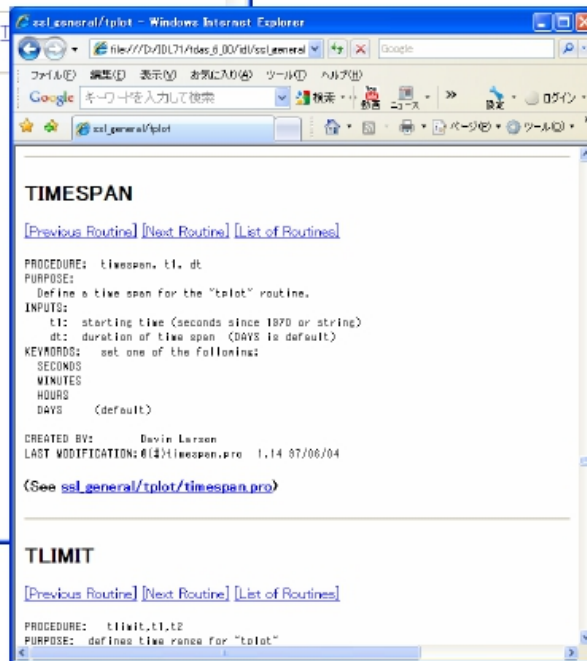
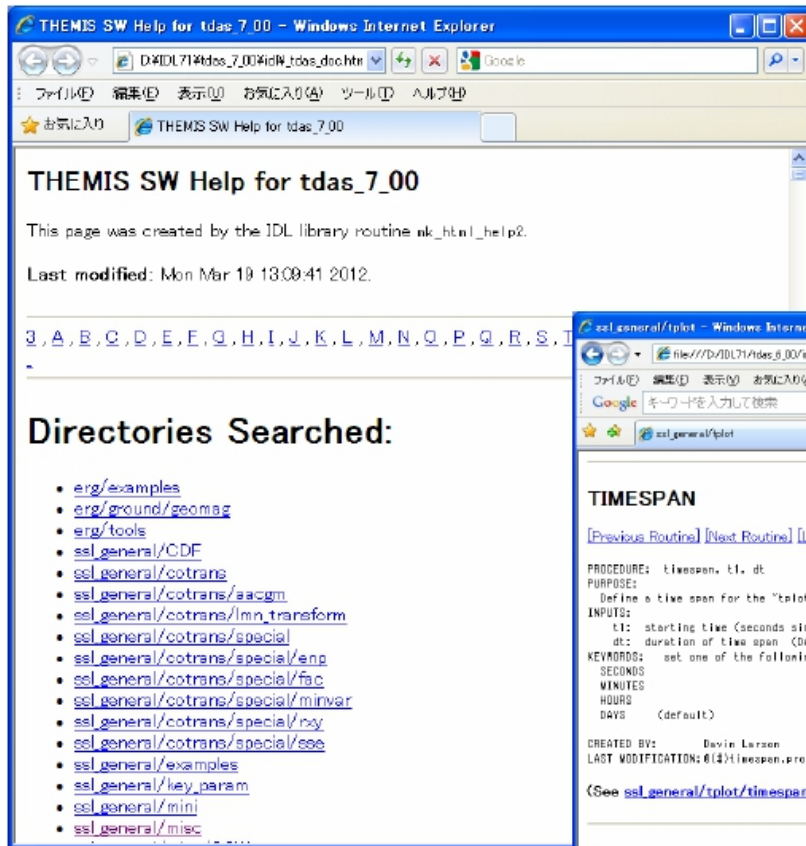


Geomag (210MM)



Geomag (MAGDAS/CPMN)





Command Reference HTML

http://themis.ssl.berkeley.edu/socware/tdas_7_00/idl/_tdas_doc.html
[tdas_7_00/idl/_tdas_doc.html](#)
[udas_2_00_1/_udas_doc.html](#)



Movies (How to use UDAS)

UDAS Boundary Layer Rader data analysis - YouTube - Windows Internet Explorer

http://www.youtube.com/watch?v=Z-JJkSM-C3c&feature=player_embedded

[UDAS] Boundary Layer Rader data analysis

iugonet2009 + チャンネル登録 32本の動画

NX - geomag@10.226.89.172:1049 - VT

Applications Places System Mon Oct 24, 12:04 PM geomag

```
Terminal
File Edit View Terminal Help
such as BLR data provided by Research Institute for
Humanosphere of Kyoto University. We would also app
a copy of the relevant publications.
THEMIS> tplot names
% Compiled module: TPLOTT_NAMES.
 1 iug_blr_ktb_uwnd
 2 iug_blr_ktb_vwnd
 3 iug_blr_ktb_wwnd
THEMIS> tplot, [1,2,3]
% Compiled module: TPLOT.
% Compiled module: WI.
% Compiled module: PLOT_POSITIONS.
% Compiled module: TIME_TICKS.
% Compiled module: BOX.
TPLOT(398): 1 iug_blr_ktb_uwnd
% Compiled module: STRUCT_VALUE.
% Compiled module: SPECPLT.
% Compiled module: INTERP.
% Compiled module: BYTESCALE.
% Compiled module: DRAW_COLOR_SCALE.
TPLOT(398): 2 iug_blr_ktb_vwnd
TPLOT(398): 3 iug_blr_ktb_wwnd
% Compiled module: TIME_STAMP.
THEMIS> s
```

tplot変数を再確認

0:56 / 3:12

IUGONET channel
in YouTube
<http://www.youtube.com/user/iugonet2009/>



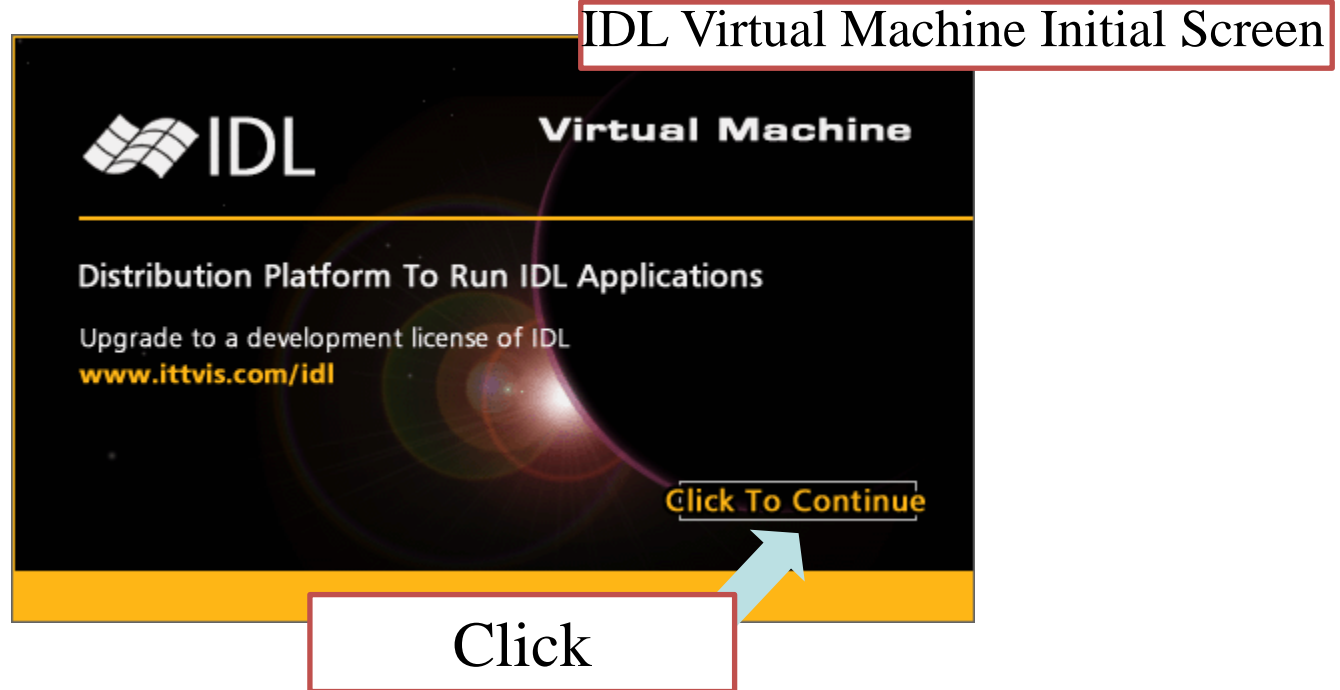
UDAS GUI operation on IDL-VM

Note:

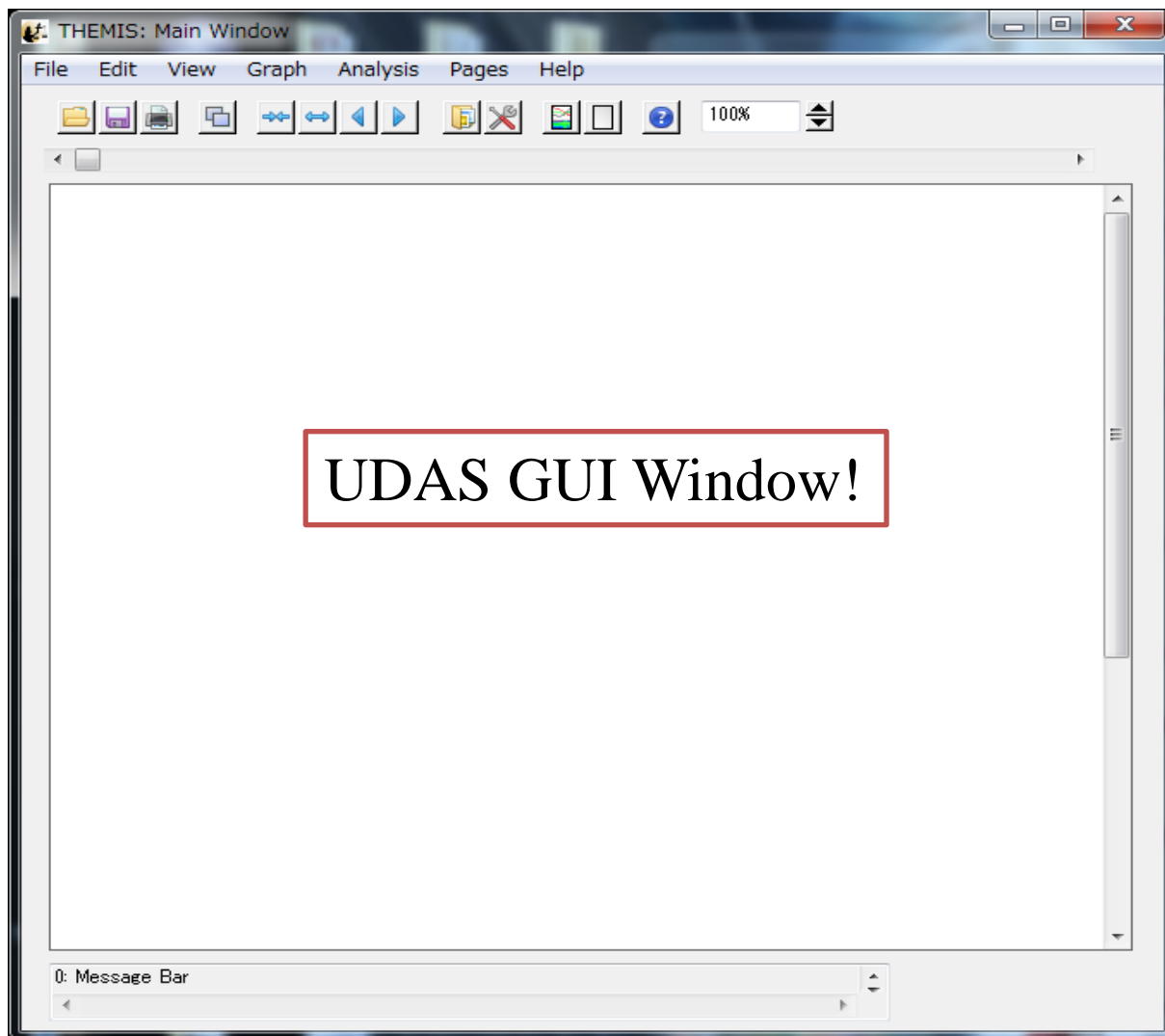
UDAS VM is ***not released yet***.

Please wait for a while until the UDAS VM will be released(in near future), or use UDAS under licensed IDL software.

0. Get IDL Virtual Machine Environment
1. Get UDAS Virtual Machine application
2. Extract zip file to your proper directory
3. Start IDL Virtual Machine

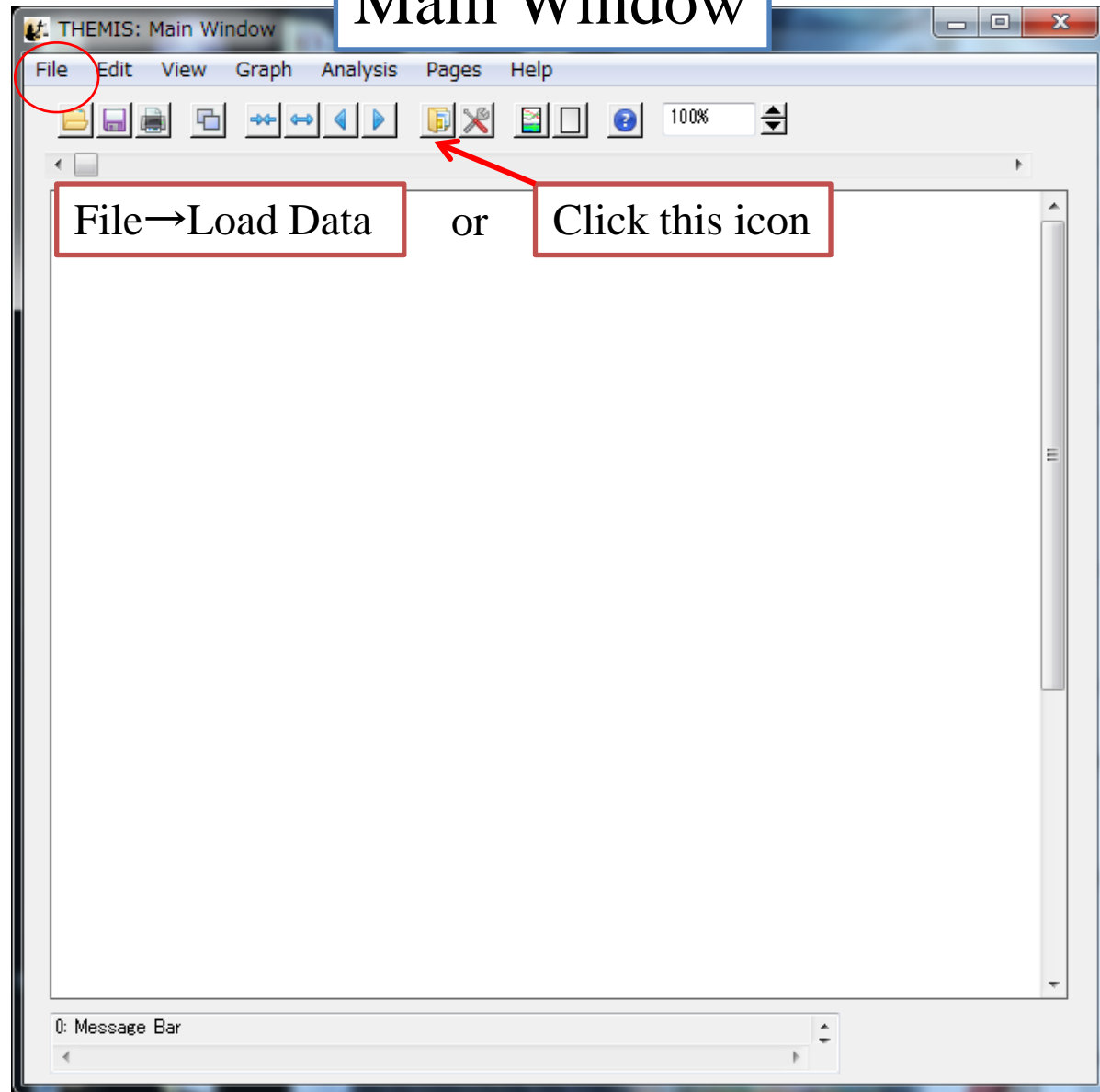


4. Select file
thm_gui_new.sav

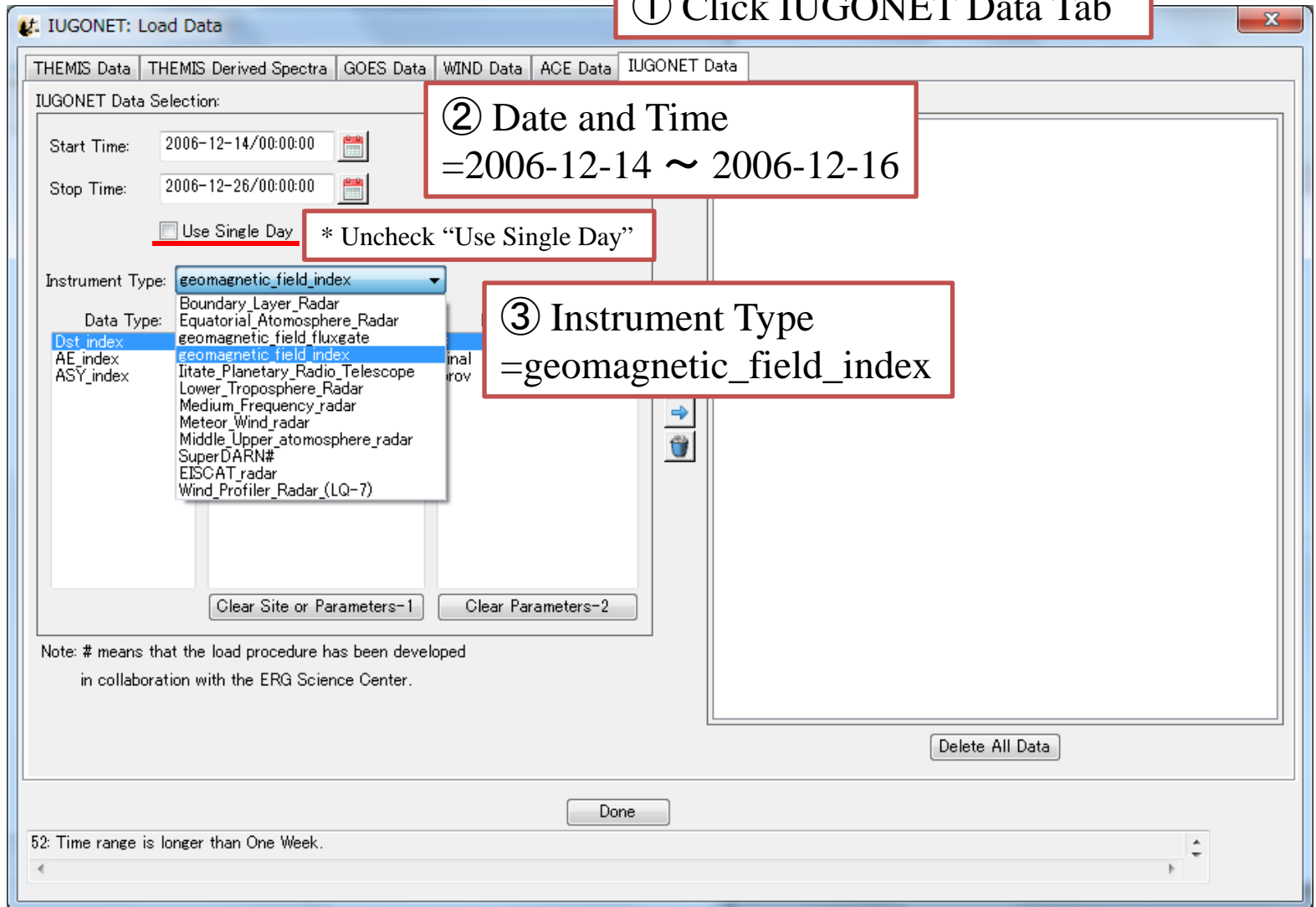


Example:
Load Dst index

Main Window



Load Data Window



① Click IUGONET Data Tab

② Date and Time
=2006-12-14 ~ 2006-12-16

*** Uncheck "Use Single Day"**

③ Instrument Type
=geomagnetic_field_index

THEMIS Data | THEMIS Derived Spectra | GOES Data | WIND Data | ACE Data | **IUGONET Data**

IUGONET Data Selection:

Start Time: 2006-12-14/00:00:00

Stop Time: 2006-12-26/00:00:00

Use Single Day

Instrument Type: geomagnetic_field_index

Data Type:

- Boundary_Layer_Radar
- Equatorial_Atmosphere_Radar
- geomagnetic_field_fluxgate
- geomagnetic_field_index
- Iitate_Planetary_Radio_Telescope
- Lower_Troposphere_Radar
- Medium_Frequency_radar
- Meteor_Wind_radar
- Middle_Upper_atmosphere_radar
- SuperDARN#
- EISCAT_radar
- Wind_Profiler_Radar_(LQ-7)

Clear Site or Parameters-1 | Clear Parameters-2

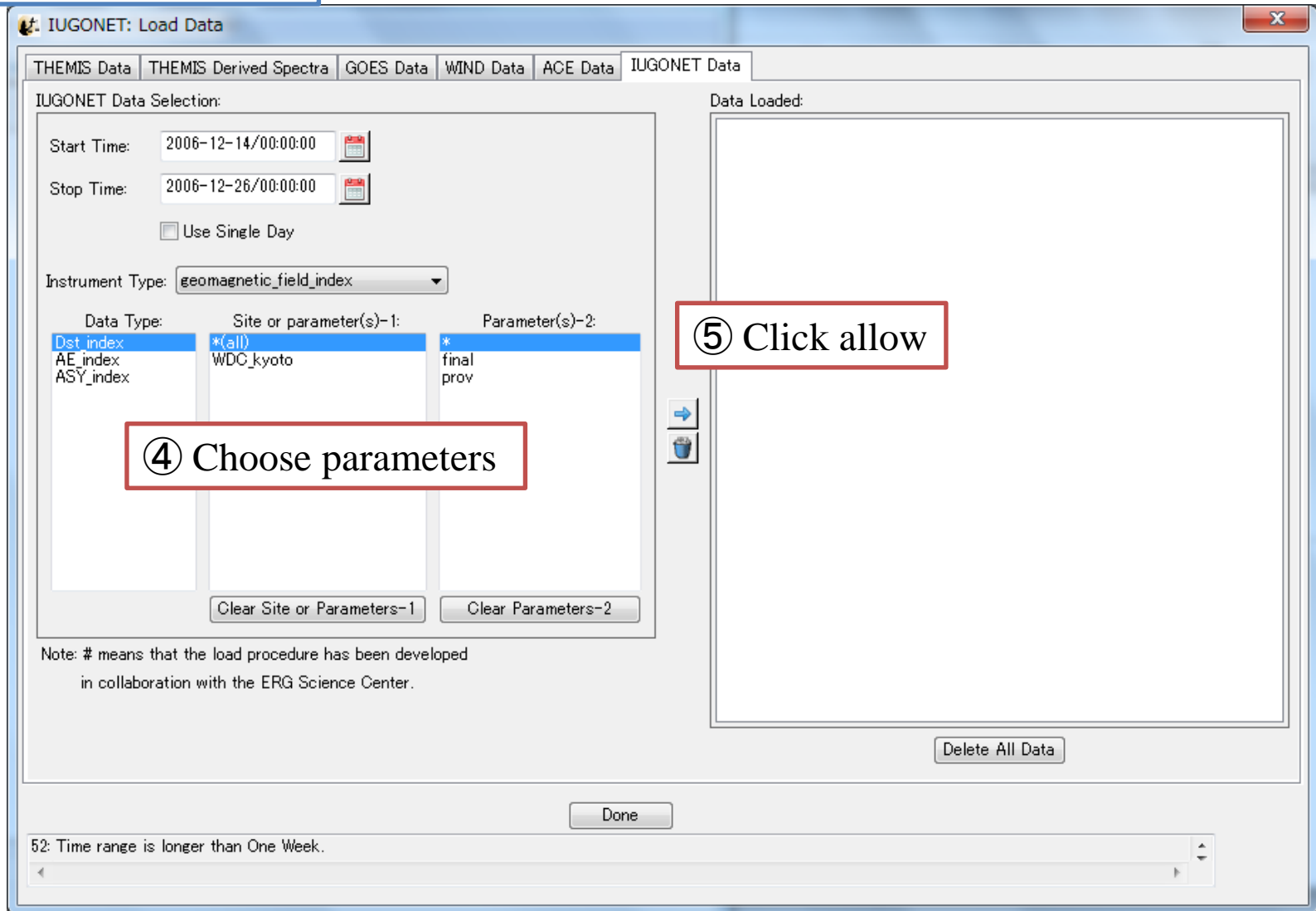
Note: # means that the load procedure has been developed in collaboration with the ERG Science Center.

Delete All Data

Done

52: Time range is longer than One Week.

Load Data Window

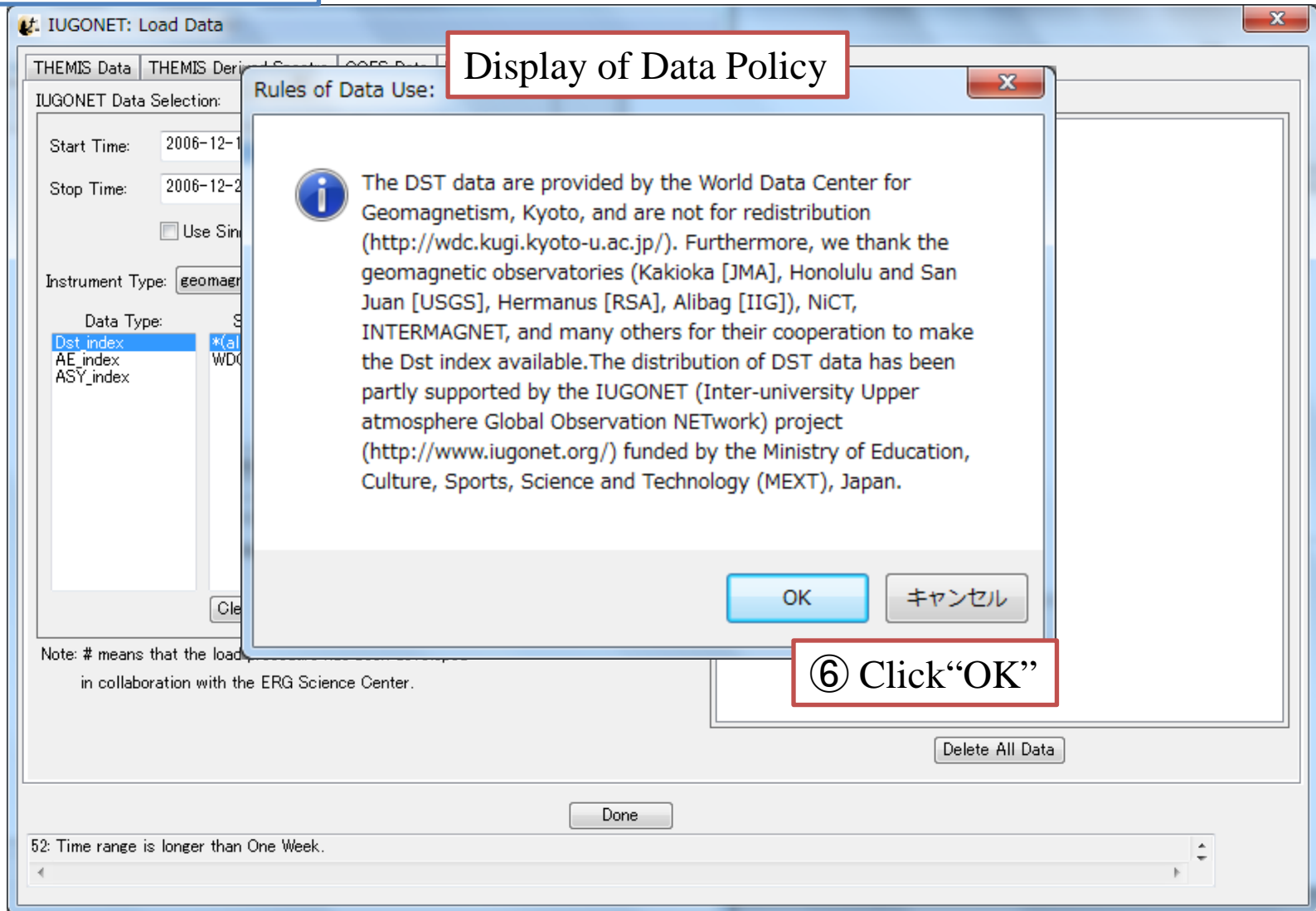


The screenshot shows the 'IUGONET: Load Data' window. The 'IUGONET Data Selection' section includes fields for 'Start Time' (2006-12-14/00:00:00) and 'Stop Time' (2006-12-26/00:00:00), a 'Use Single Day' checkbox, and an 'Instrument Type' dropdown set to 'geomagnetic_field_index'. Below these are three columns: 'Data Type', 'Site or parameter(s)-1', and 'Parameter(s)-2'. The 'Data Type' column contains 'Dst_index', 'AE_index', and 'ASY_index'. The 'Site or parameter(s)-1' column contains '* (all)' and 'WDC_kyoto'. The 'Parameter(s)-2' column contains '* final' and 'prov'. A red box with the number 4 and the text 'Choose parameters' is overlaid on the 'Data Type' column. To the right of the selection area are two buttons: a right-pointing arrow and a trash can icon. A red box with the number 5 and the text 'Click allow' is overlaid on the right-pointing arrow button. Below the selection area are 'Clear Site or Parameters-1' and 'Clear Parameters-2' buttons. A 'Data Loaded' area is on the right, and a 'Delete All Data' button is at the bottom right. A 'Done' button is at the bottom center. A status bar at the bottom left shows '52: Time range is longer than One Week.'

④ Choose parameters

⑤ Click allow

Load Data Window



The screenshot shows the 'IUGONET: Load Data' window. A dialog box titled 'Rules of Data Use:' is displayed in the foreground, containing the following text:

i The DST data are provided by the World Data Center for Geomagnetism, Kyoto, and are not for redistribution (<http://wdc.kugi.kyoto-u.ac.jp/>). Furthermore, we thank the geomagnetic observatories (Kakioka [JMA], Honolulu and San Juan [USGS], Hermanus [RSA], Alibag [IIG]), NiCT, INTERMAGNET, and many others for their cooperation to make the Dst index available. The distribution of DST data has been partly supported by the IUGONET (Inter-university Upper atmosphere Global Observation NETwork) project (<http://www.iugonet.org/>) funded by the Ministry of Education, Culture, Sports, Science and Technology (MEXT), Japan.

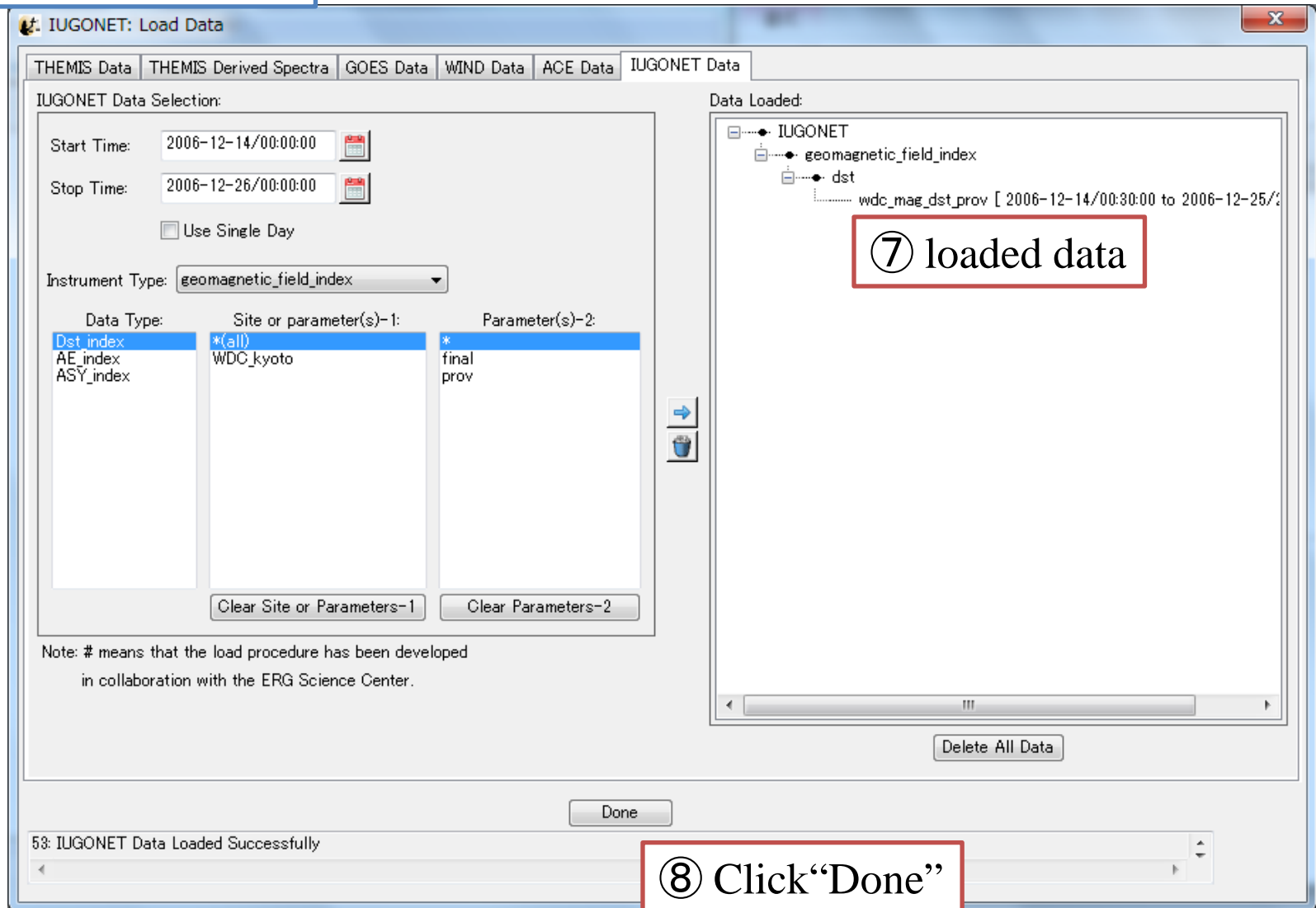
At the bottom of the dialog box are two buttons: 'OK' and 'キャンセル' (Cancel).

In the background, the 'IUGONET Data Selection:' window is visible. It includes fields for 'Start Time:' (2006-12-1) and 'Stop Time:' (2006-12-2), a 'Use Sim' checkbox, and an 'Instrument Type:' dropdown set to 'geomagr'. Under 'Data Type:', a list contains 'Dst_index', 'AE_index', and 'ASY_index', with 'Dst_index' selected. A 'Done' button is at the bottom center, and a 'Delete All Data' button is at the bottom right. A status bar at the very bottom indicates '52: Time range is longer than One Week.'

Display of Data Policy

⑥ Click "OK"

Load Data Window



The screenshot shows the 'IUGONET: Load Data' window with the following details:

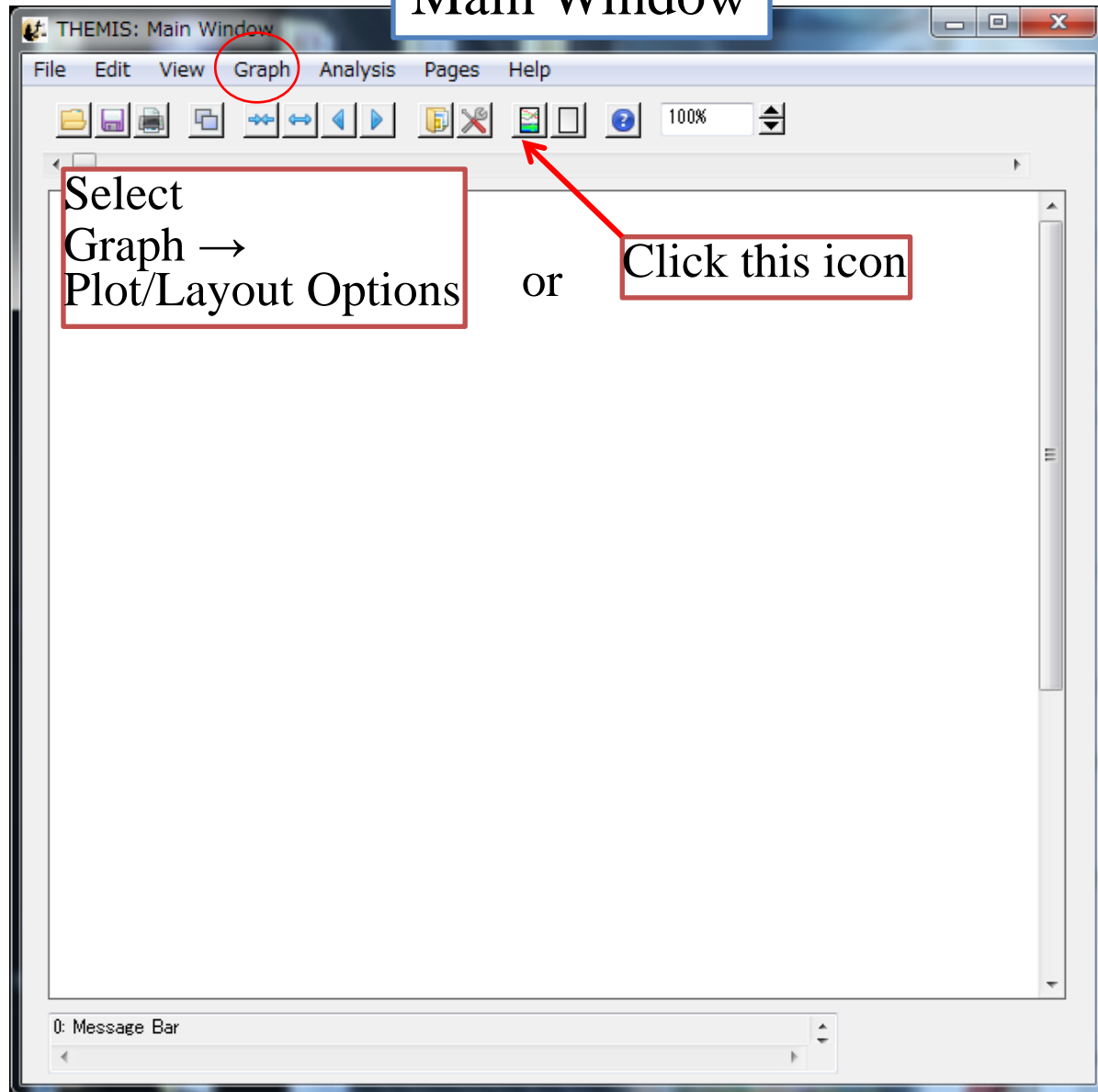
- Start Time:** 2006-12-14/00:00:00
- Stop Time:** 2006-12-26/00:00:00
- Use Single Day
- Instrument Type:** geomagnetic_field_index
- Data Type:** Dst_index, AE_index, ASY_index
- Site or parameter(s)-1:** *(all), WDC_kyoto
- Parameter(s)-2:** *, final, prov
- Data Loaded:** IUGONET > geomagnetic_field_index > dst > wdc_mag_dst_prov [2006-12-14/00:30:00 to 2006-12-25/00:00:00]
- Status Bar:** 53: IUGONET Data Loaded Successfully

Annotations in the image:

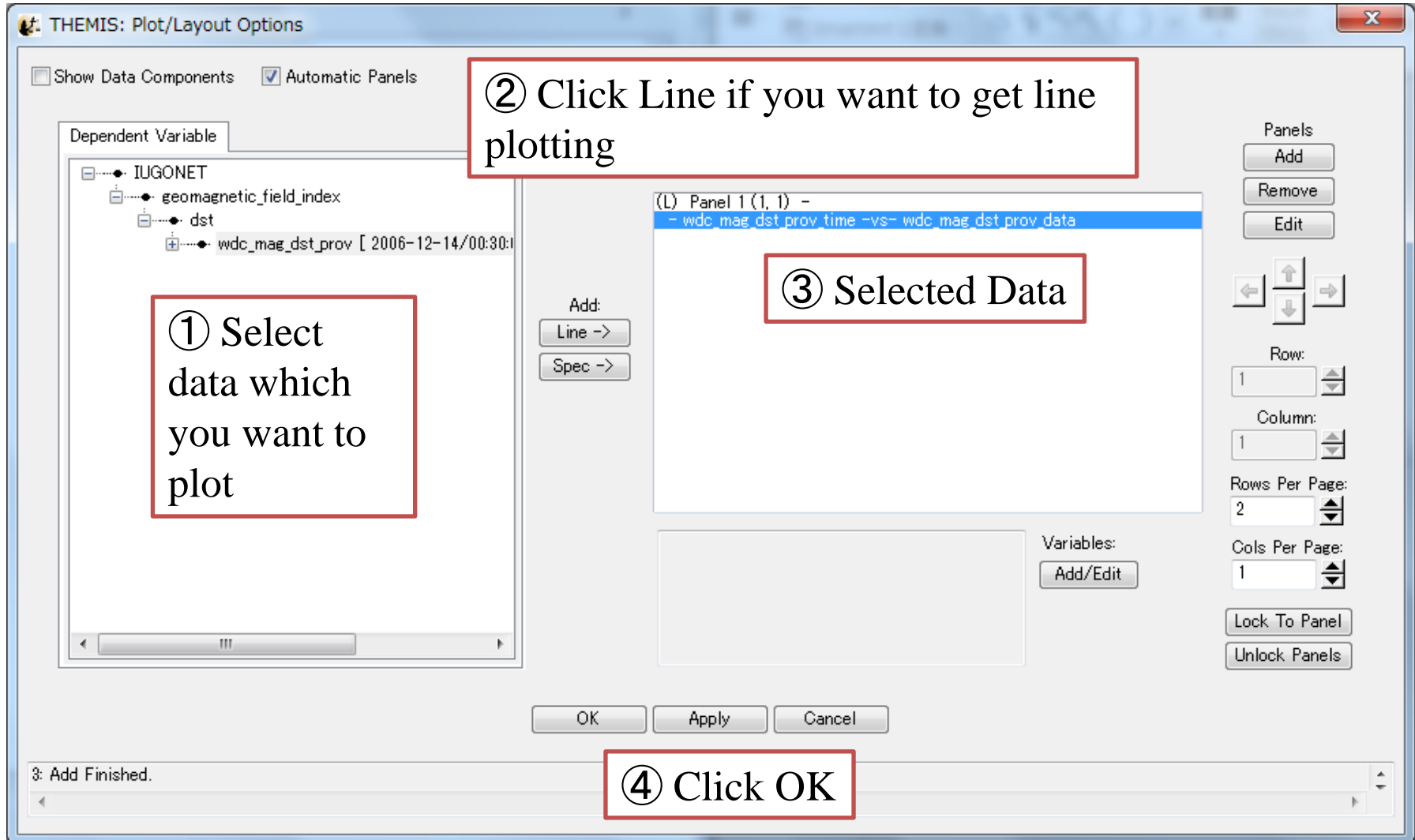
- A red box with a circled '7' highlights the 'Data Loaded' tree view.
- A red box with a circled '8' highlights the 'Done' button at the bottom of the window.

Next: Plot Dst index

Main Window



Plot/Layout Options Window



① Select data which you want to plot

② Click Line if you want to get line plotting

③ Selected Data

④ Click OK

The screenshot shows the 'THEMIS: Plot/Layout Options' dialog box. On the left, a tree view under 'Dependent Variable' shows 'IUGONET' expanded to 'geomagnetic_field_index' and 'dst', with 'wdc_mag_dst_prov [2006-12-14/00:30:00]' selected. In the center, the 'Add:' section has 'Line ->' selected. On the right, a panel titled '(L) Panel 1 (1, 1) -' contains the text '- wdc_mag_dst_prov_time -vs- wdc_mag_dst_prov_data'. At the bottom, the 'OK' button is highlighted. A status bar at the bottom left shows '3: Add Finished.'

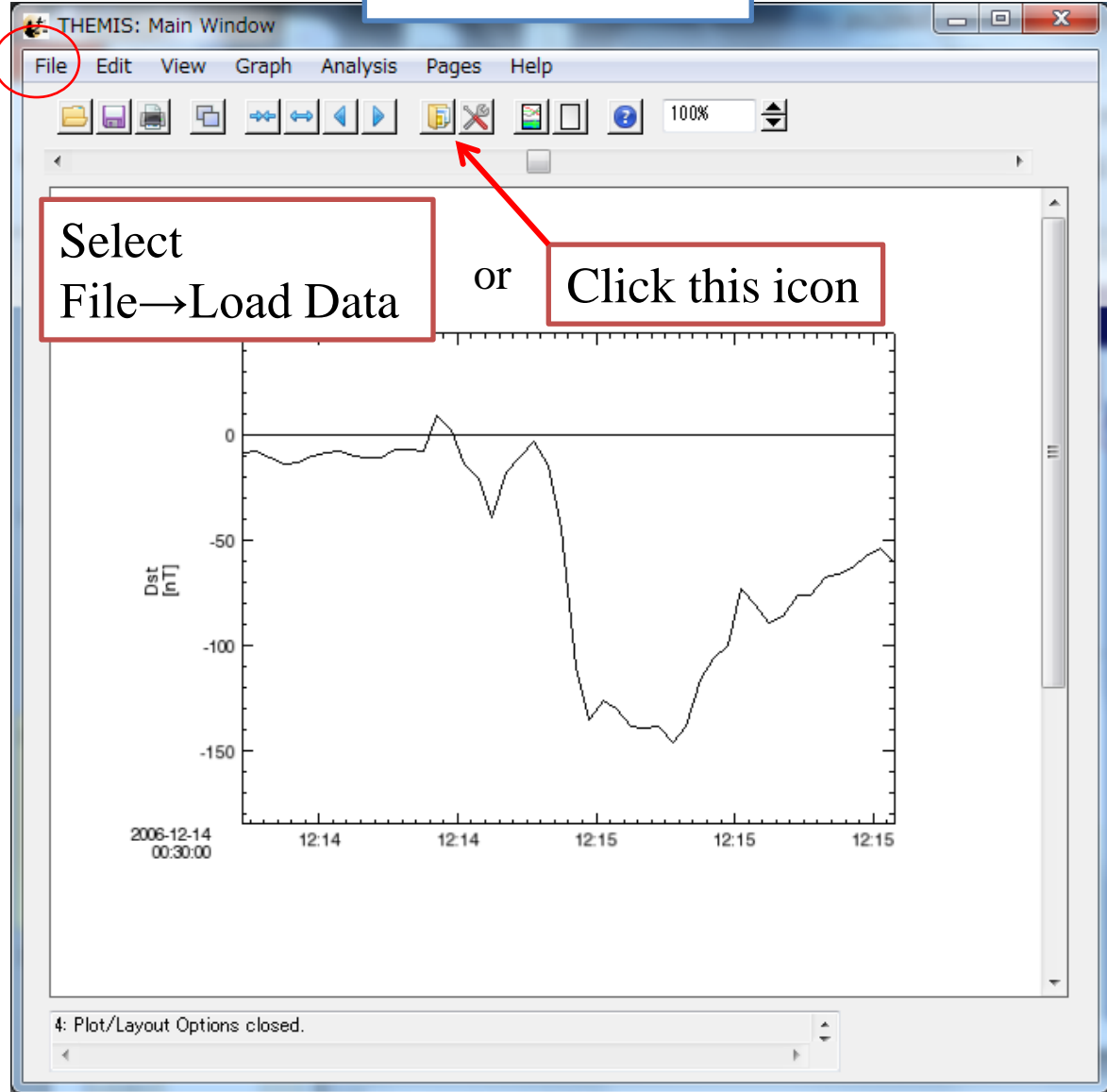
Main Window

Next: Load other data

Let's load following data:
ACE satellite
Instrument: MFI
Type: h0
Parameter: BGSM

Let's load following data:
ACE satellite
Instrument: SWE
Type: h0
Parameter: V_GSE

Let's load following data:
MAGDAS magnetometer
(in IUGONET tab)
Instrument: magnetometer
Station: ASB



Load Data Window

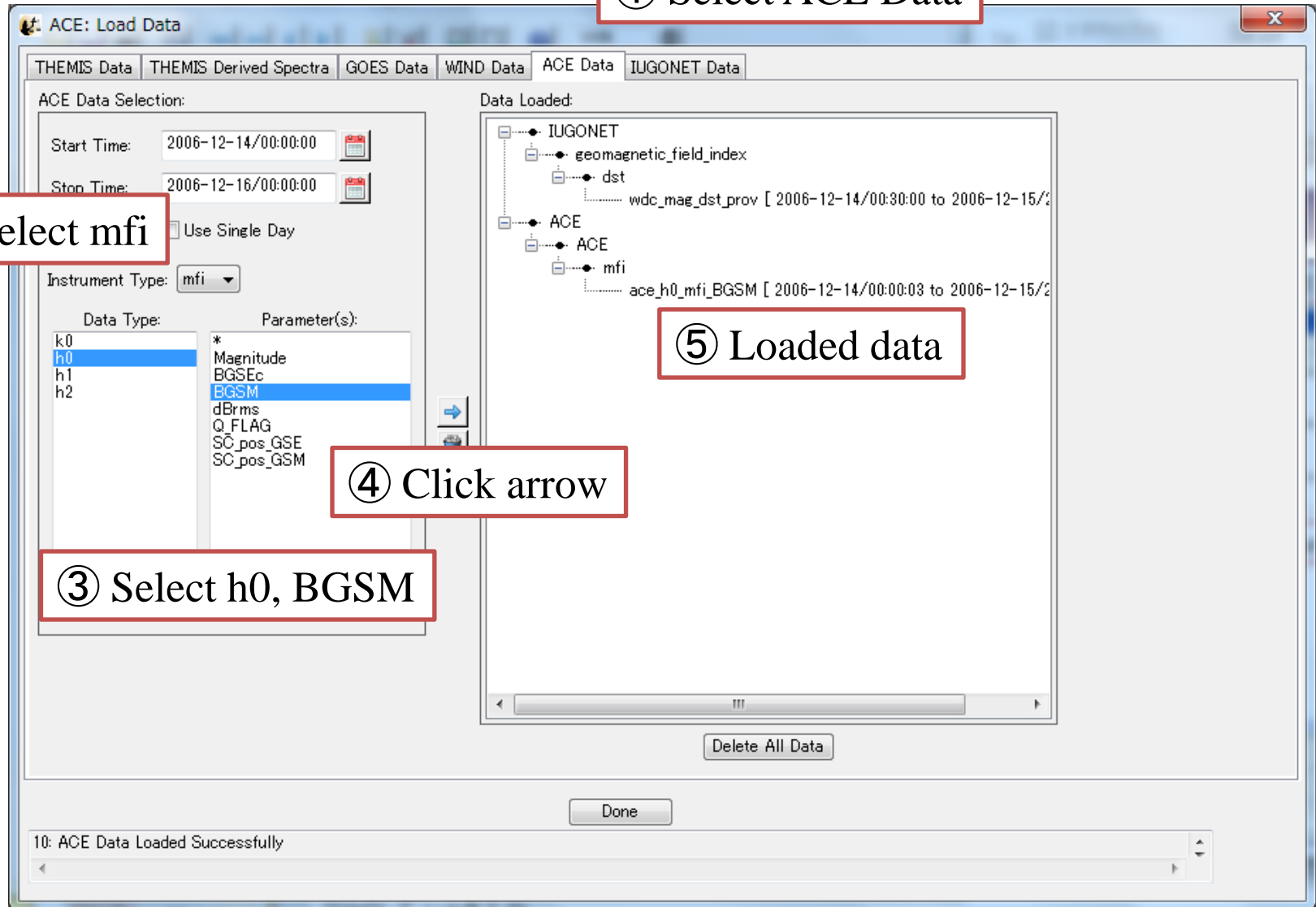
① Select ACE Data

② Select mfi

③ Select h0, BGSM

④ Click arrow

⑤ Loaded data



The screenshot shows the 'ACE: Load Data' window with the following elements:

- ACE Data Selection:**
 - Start Time: 2006-12-14/00:00:00
 - Stop Time: 2006-12-16/00:00:00
 - Use Single Day:
 - Instrument Type: mfi
 - Data Type: k0, h0, h1, h2
 - Parameter(s): Magnitude, BGSEc, BGSM, dBrms, Q_FLAG, SC_pos_GSE, SC_pos_GSM
- Data Loaded:**
 - IUGONET
 - geomagnetic_field_index
 - dst
 - wdc_mag_dst_prov [2006-12-14/00:30:00 to 2006-12-15/2
 - ACE
 - ACE
 - mfi
 - ace_h0_mfi_BGSM [2006-12-14/00:00:03 to 2006-12-15/2

- Buttons:** Delete All Data, Done
- Status Bar:** 10: ACE Data Loaded Successfully

Load Data Window

The screenshot shows the 'ACE: Load Data' window with the following elements:

- 1 Select ACE Data:** A red box highlights the 'ACE Data' tab in the top navigation bar.
- 2 Select swe:** A red box highlights the 'swe' dropdown menu in the 'Instrument Type' field.
- 3 Select h0, V_GSE:** A red box highlights the 'h0' and 'V_GSE' entries in the 'Data Type' list.
- 4 Click arrow:** A red box highlights the blue arrow button between the 'Data Type' and 'Parameter(s)' lists.
- 5 Loaded data:** A red box highlights the 'Data Loaded' tree view, specifically the 'swe' node under 'ACE'.

The 'Data Loaded' tree view shows the following structure:

- IUGONET
 - geomagnetic_field_index
 - dst
 - wdc_mag_dst_prov [2006-12-14/00:30:00 to 2006-12-15/2
 - ACE
 - mfi
 - ace_h0_mfi_BGSM [2006-12-14/00:00:03 to 2006-12-15/2
 - swe
 - ace_h0_swe_V_GSE [2006-12-14/00:00:51 to 2006-12-15/2

At the bottom of the window, there is a 'Delete All Data' button and a 'Done' button. A status bar at the very bottom displays the message: '11: ACE Data Loaded Successfully'.

Load Data Window

① Select IUGONET Data

② Select geomagnetic_field_fluxgate

③ Select magdas, asb, *

④ Click arrow

⑤ Loaded data

THEMIS Data | THEMIS Derived Spectra | GOES Data | WIND Data | ACE Data | IUGONET Data

IUGONET Data Selection:

Start Time: 2006-12-14/00:00:00

Instrument Type: geomagnetic_field_fluxgate

Data Type:	Site or parameter(s)-1:	Parameter(s)-2:
magdas	*(all)	*
210mm#	anc	
WDC_kyoto	asb	
NIPR_mag#	cmd	
	cst	
	dav	
	daw	
	dvs	
	eus	
	her	
	hob	
	ilr	
	kui	

Data Loaded:

- IUGONET
 - geomagnetic_field_index
 - dst
 - wdc_mag_dst_prov [2006-12-14/00:30:00 to 2006-12-15/2
 - geomagnetic_field_fluxgate
 - asb
 - magdas_mag_asb [2006-
 - ACE
 - ACE
 - mfi
 - ace_h0_mfi_BGSM [2006-12-14/00:00:03 to 2006-12-15/2
 - swe

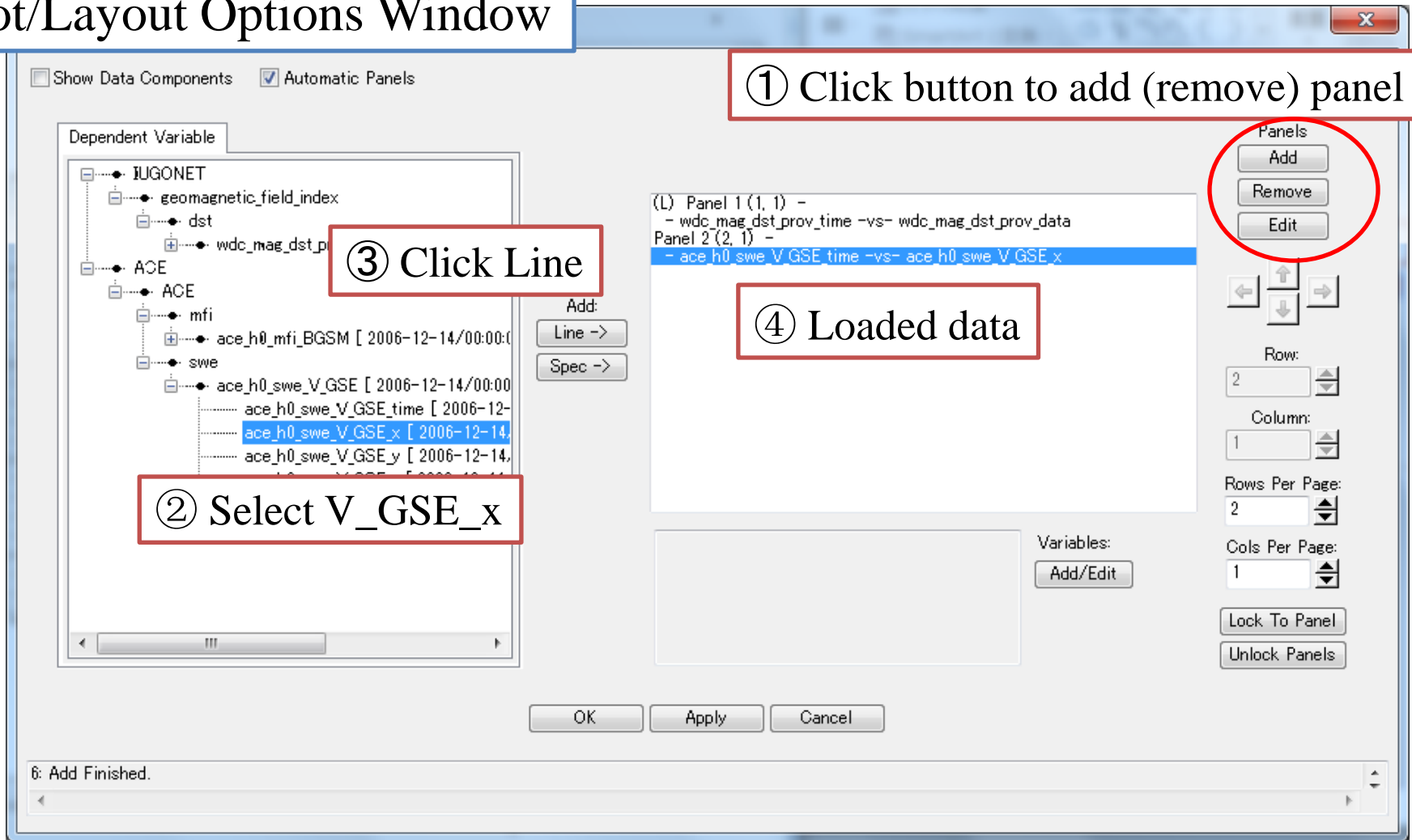
Delete All Data

Done

12: IUGONET Data Loaded Successfully

Next: Plot V_GSE_x

Plot/Layout Options Window



Show Data Components Automatic Panels

① Click button to add (remove) panel

② Select V_GSE_x

③ Click Line

④ Loaded data

Dependent Variable

- IUGONET
 - geomagnetic_field_index
 - dst
 - wdc_mag_dst_p
 - ACE
 - ACE
 - mfi
 - ace_h0_mfi_BGSM [2006-12-14/00:00:00]
 - swe
 - ace_h0_swe_V_GSE [2006-12-14/00:00:00]
 - ace_h0_swe_V_GSE_time [2006-12-14/00:00:00]
 - ace_h0_swe_V_GSE_x [2006-12-14/00:00:00]
 - ace_h0_swe_V_GSE_y [2006-12-14/00:00:00]

Line -> Spec ->

(L) Panel 1 (1, 1) -
- wdc_mag_dst_prov_time -vs- wdc_mag_dst_prov_data
Panel 2 (2, 1) -
- ace_h0_swe_V_GSE_time -vs- ace_h0_swe_V_GSE_x

Variables: Add/Edit

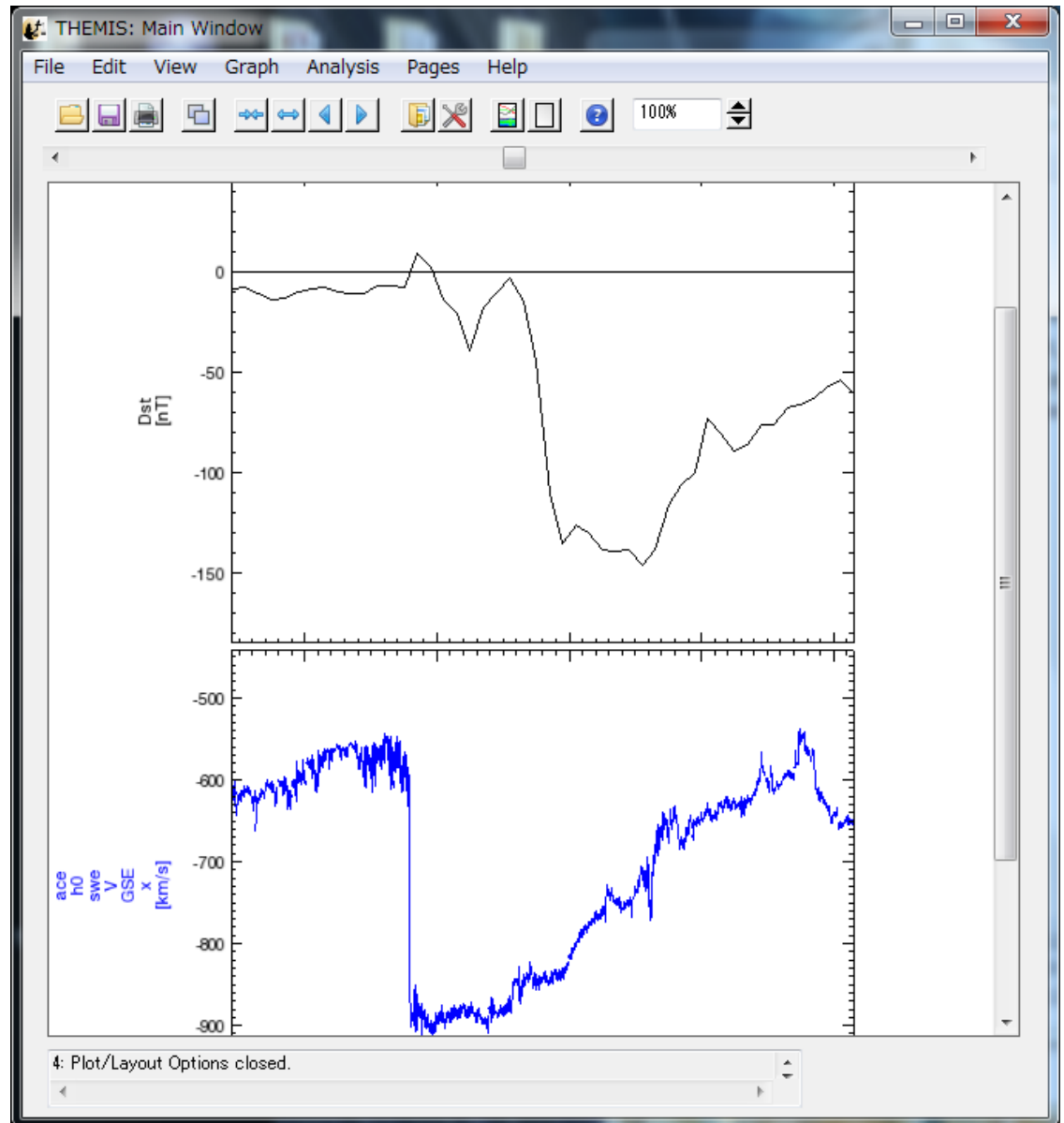
Row: 2 Column: 1
Rows Per Page: 2
Cols Per Page: 1

Lock To Panel
Unlock Panels

OK Apply Cancel

6: Add Finished.

Next:
plot ACE mfi and
ASB geomagnetic
data



Plot/Layout Options Window

Show Data Components Automatic Panels

Dependent Variable

- IUGONET
 - geomagnetic_field_index
 - dst
 - wdc_mag_dst_p
 - geomagnetic_field_flux
 - asb
 - magdas_mag_asb [2006-12-14/00:00:00]
 - ACE
 - ACE
 - swc
 - ace_h0_swe_V_GSE [2006-12-14/00:00:00]
 - ace_h0_swe_V_GSE_time [2006-12-14/00:00:00]
 - ace_h0_swe_V_GSE_x [2006-12-14/00:00:00]
 - ace_h0_swe_V_GSE_y [2006-12-14/00:00:00]
 - ace_h0_swe_V_GSE_z [2006-12-14/00:00:00]
 - ace_h0_swe_V_GSE_yaxis [2006-12-14/00:00:00]

Panel List:

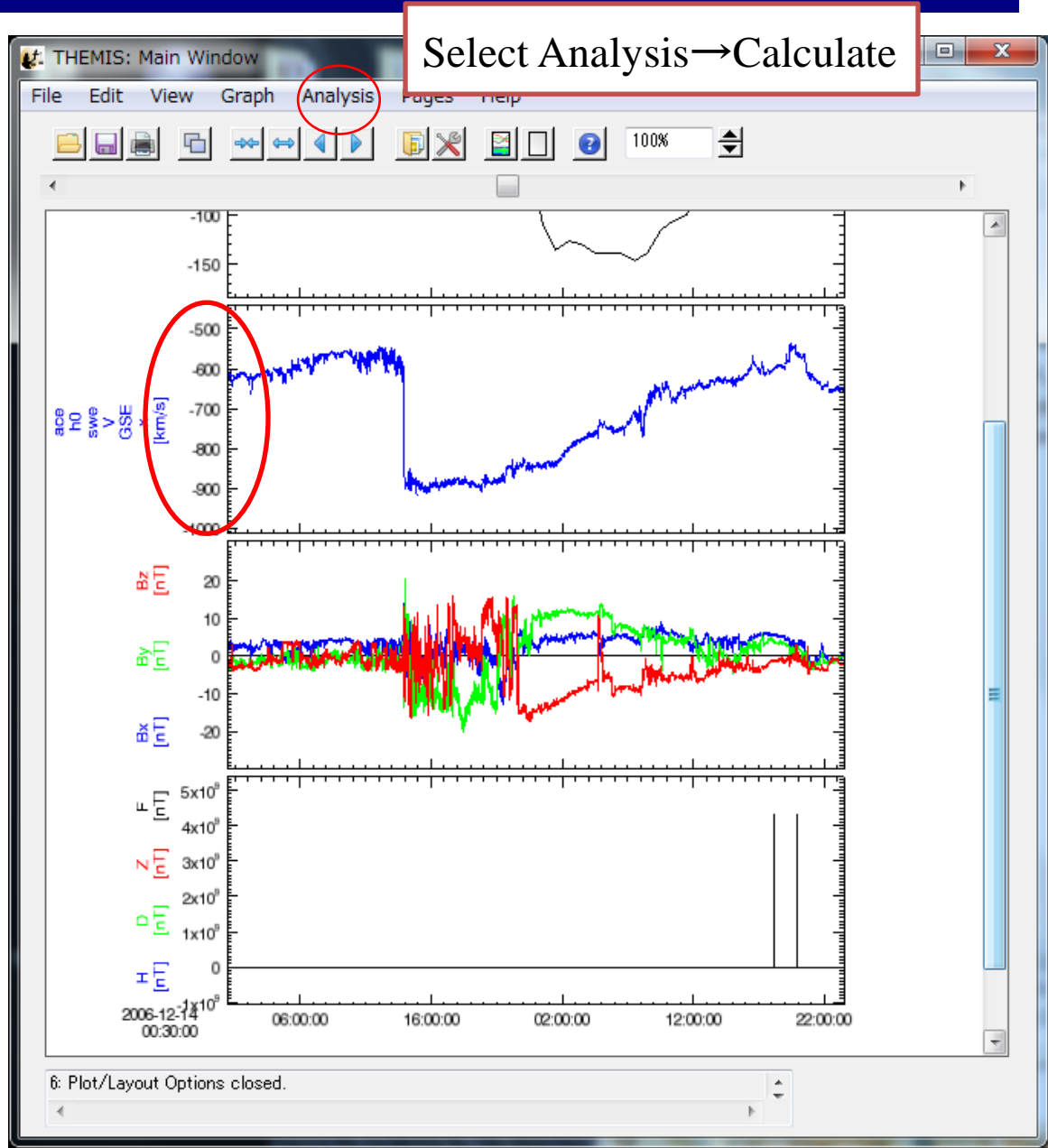
- (L) Panel 1 (1, 1) -
 - wdc_mag_dst_prov_time -vs- wdc_mag_dst_prov_data
- Panel 2 (2, 1) -
 - ace_h0_swe_V_GSE_time -vs- ace_h0_swe_V_GSE_x
- Panel 3 (3, 1) -
 - ace_h0_mfi_BGSM_time -vs- ace_h0_mfi_BGSM_x
 - ace_h0_mfi_BGSM_time -vs- ace_h0_mfi_BGSM_y
 - ace_h0_mfi_BGSM_time -vs- ace_h0_mfi_BGSM_z
- Panel 4 (4, 1) -
 - magdas_mag_asb_time -vs- magdas_mag_asb_0
 - magdas_mag_asb_time -vs- magdas_mag_asb_1
 - magdas_mag_asb_time -vs- magdas_mag_asb_2
 - magdas_mag_asb_time -vs- magdas_mag_asb_3

Buttons: Add, Remove, Edit, Line ->, Spec ->, Add/Edit, OK, Apply, Cancel

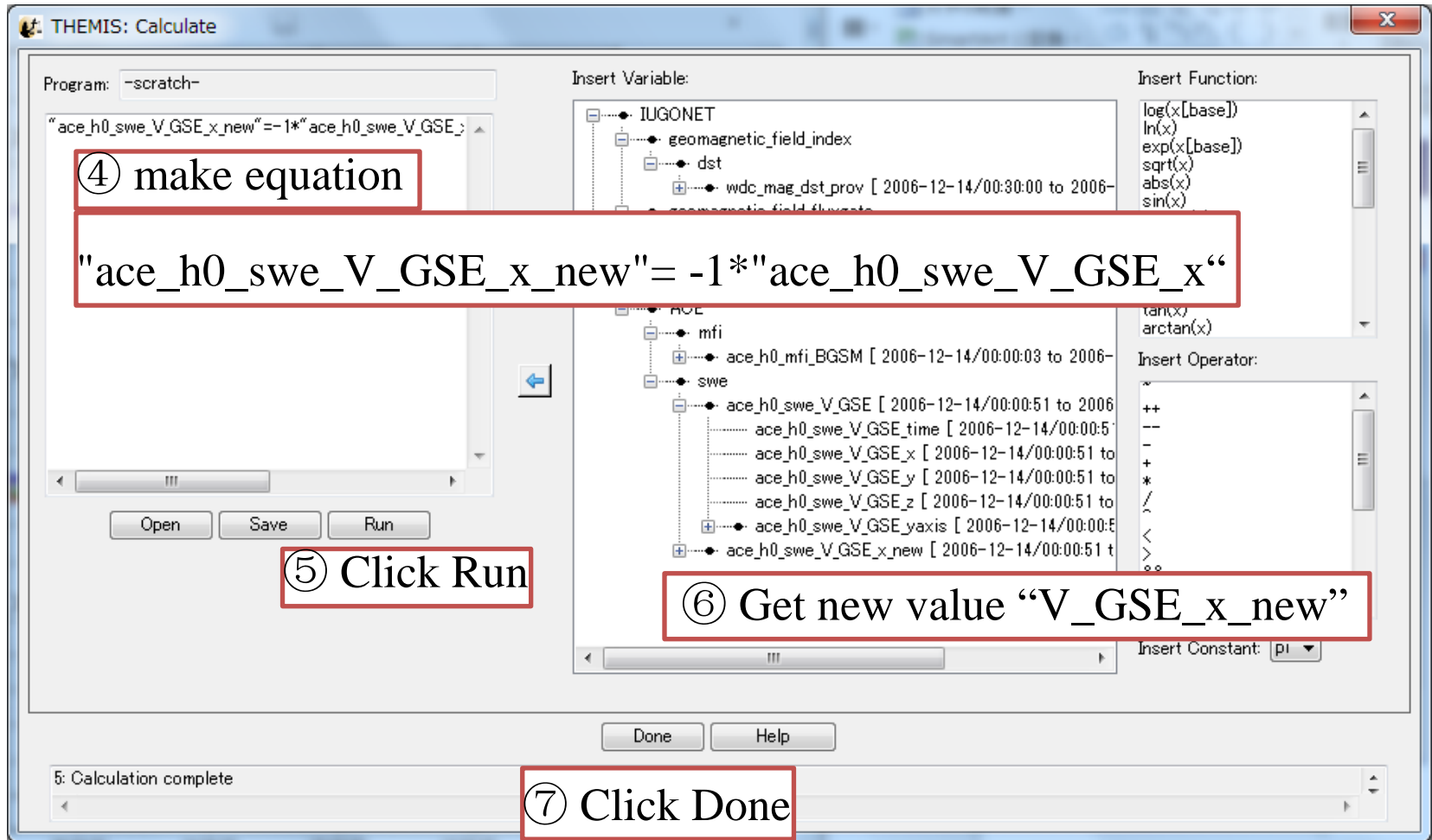
Layout Controls: Panels (Add, Remove, Edit), Row: 4, Column: 1, Rows Per Page: 4, Cols Per Page: 1, Lock To Panel, Unlock Panels

6: Add Finished.

Next:
Calculation



Calculate Window



The screenshot shows the 'THEMIS: Calculate' window with the following components and annotations:

- Program:** -scratch-
- Equation Editor:** Contains the equation `"ace_h0_swe_V_GSE_x_new" = -1*"ace_h0_swe_V_GSE_x"`. A red box highlights this equation with the annotation **④ make equation**.
- Insert Variable:** A tree view showing variables like `geomagnetic_field_index`, `dst`, `wdc_mag_dst_prov`, `geomagnetic_field_fluctuate`, `ACE`, `mfi`, `ace_h0_mfi_BGSM`, `swe`, `ace_h0_swe_V_GSE`, `ace_h0_swe_V_GSE_time`, `ace_h0_swe_V_GSE_x`, `ace_h0_swe_V_GSE_y`, `ace_h0_swe_V_GSE_z`, `ace_h0_swe_V_GSE_yaxis`, and `ace_h0_swe_V_GSE_x_new`. A red box highlights the `ace_h0_swe_V_GSE_x` variable with the annotation **⑥ Get new value "V_GSE_x_new"**.
- Insert Function:** Lists functions such as `log(x[,base])`, `ln(x)`, `exp(x[,base])`, `sqrt(x)`, `abs(x)`, `sin(x)`, `tan(x)`, and `arctan(x)`.
- Insert Operator:** Lists operators: `++`, `--`, `+`, `-`, `*`, `/`, `<`, `>`, and `..`.
- Buttons:** `Open`, `Save`, `Run`, `Done`, and `Help`.
- Status Bar:** Shows `5: Calculation complete`. A red box highlights this status with the annotation **⑦ Click Done**.
- Annotation ⑤:** A red box highlights the `Run` button with the annotation **⑤ Click Run**.

Plot/Layout Options Window

THEMIS: Plot/Layout Options

Show Data Components Automatic Panels - CREATE PLOTS -

① Select V_GSE, and then click Remove

Dependent Variable

- [-] IUGONET
 - [-] geomagnetic_field_index
 - [-] dst
 - [+] wdc_mag_dst_prov [2006-12-14/00:30:00]
 - [-] geomagnetic_field_fluxgate
 - [-] asb
 - [+] magdas_mag_asb [2006-12-14/00:00:00]
 - [-] ACE
 - [-] ACE
 - [-] mfi
 - [+] ace_h0_mfi_BGSM [2006-12-14/00:00:00]
 - [-] swe
 - [-] ace_h0_swe_V_GSE [2006-12-14/00:00:00]
 - [-] ace_h0_swe_V_GSE_time [2006-12-14/00:00:00]
 - [-] ace_h0_swe_V_GSE_x [2006-12-14/00:00:00]
 - [-] ace_h0_swe_V_GSE_y [2006-12-14/00:00:00]
 - [-] ace_h0_swe_V_GSE_z [2006-12-14/00:00:00]
 - [+] ace_h0_swe_V_GSE_yaxis [2006-12-14/00:00:00]
 - [+] ace_h0_swe_V_GSE_x_new [2006-12-14/00:00:00]

Panel 1 (1, 1) -
- wdc_mag_dst_prov_time -vs- wdc_mag_dst_prov_data

Panel 2 (2, 1) -
- ace_h0_swe_V_GSE_time -vs- ace_h0_swe_V_GSE_x

Panel 3 (3, 1) -
- ace_h0_mfi_BGSM_time -vs- ace_h0_mfi_BGSM_x
- ace_h0_mfi_BGSM_time -vs- ace_h0_mfi_BGSM_y
- ace_h0_mfi_BGSM_time -vs- ace_h0_mfi_BGSM_z

Panel 4 (4, 1) -
- magdas_mag_asb_time -vs- magdas_mag_asb_0
- magdas_mag_asb_time -vs- magdas_mag_asb_1
- magdas_mag_asb_time -vs- magdas_mag_asb_2
- magdas_mag_asb_time -vs- magdas_mag_asb_3

Variables:
Add/Edit

Add

Line ->

Spec ->

Add

Remove

Edit

Row: 4

Column: 1

Rows Per Page: 4

Cols Per Page: 1

Lock To Panel

Unlock Panels

OK Apply Cancel

0: Status information is displayed here.

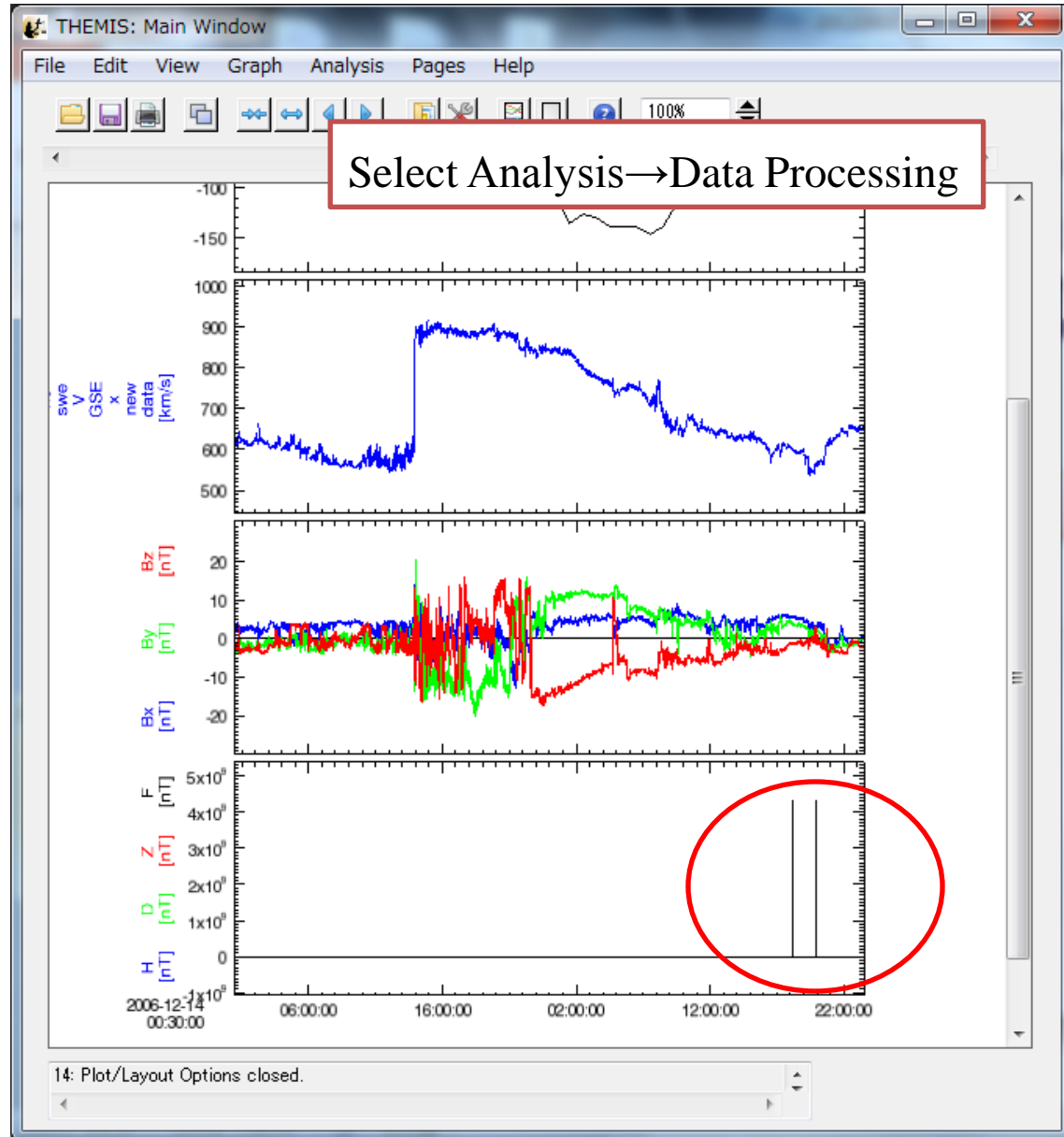
Plot/Layout Options Window

The screenshot shows the 'THEMIS: Plot/Layout Options' window. It features a tree view of 'Dependent Variable' on the left, a list of panels in the center, and control buttons on the right. Four red boxes with numbers 1-4 provide step-by-step instructions:

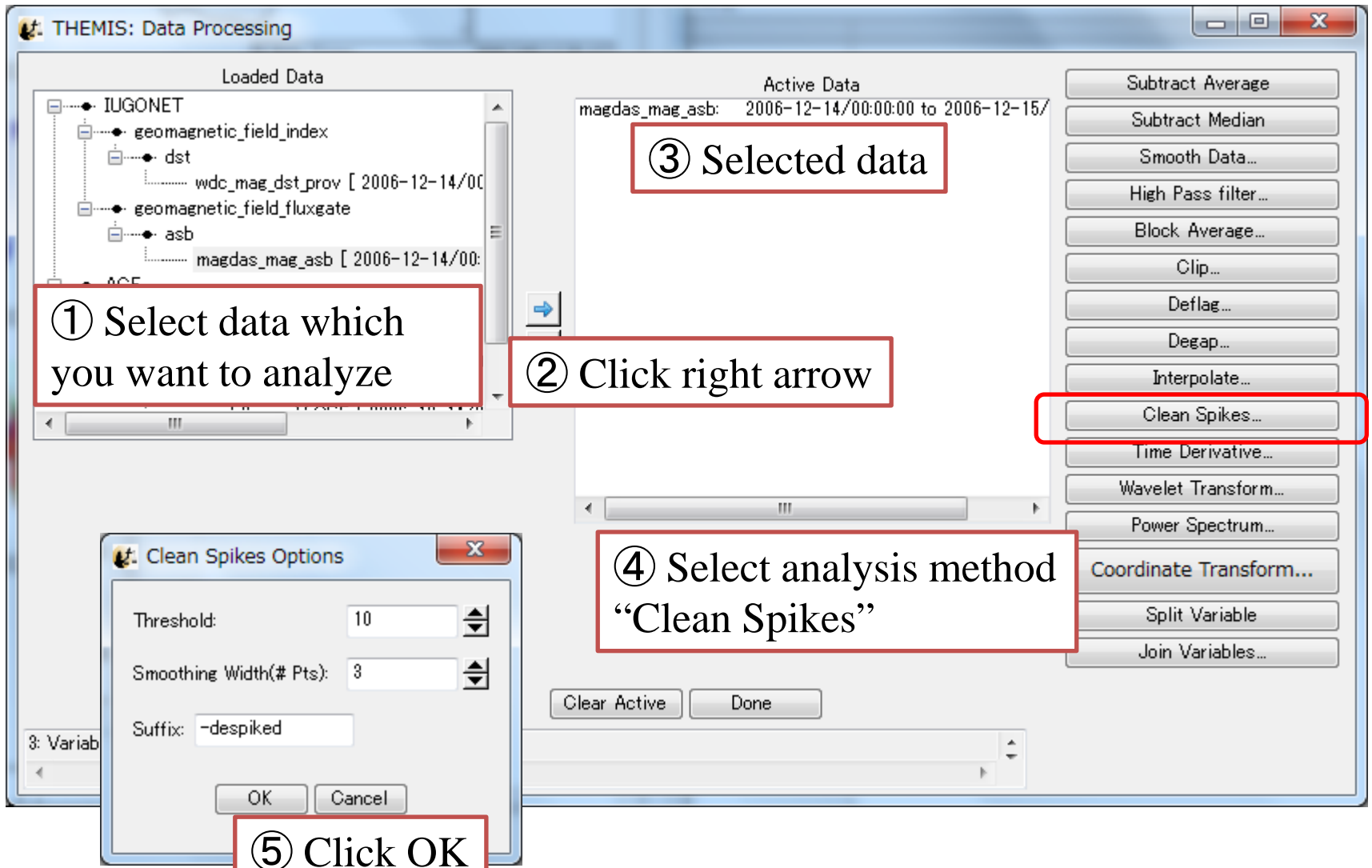
- 1** Select `V_GSE_x_new` in the tree view.
- 2** Click `Line ->` in the 'Add:' section.
- 3** Click the line `- ace_h0_swe_V_GSE_x_new time -vs- ace_h0_swe_V_GSE_x_new data` in the panel list.
- 4** Click `OK` at the bottom.

Additional window details include: 'Show Data Components' (unchecked), 'Automatic Panels' (checked), '- CREATE PLOTS -', and a status bar at the bottom left that reads '3: Add Finished.'

Next:
Data Processing –
reduce spike noise,
subtract average



Data Processing Window



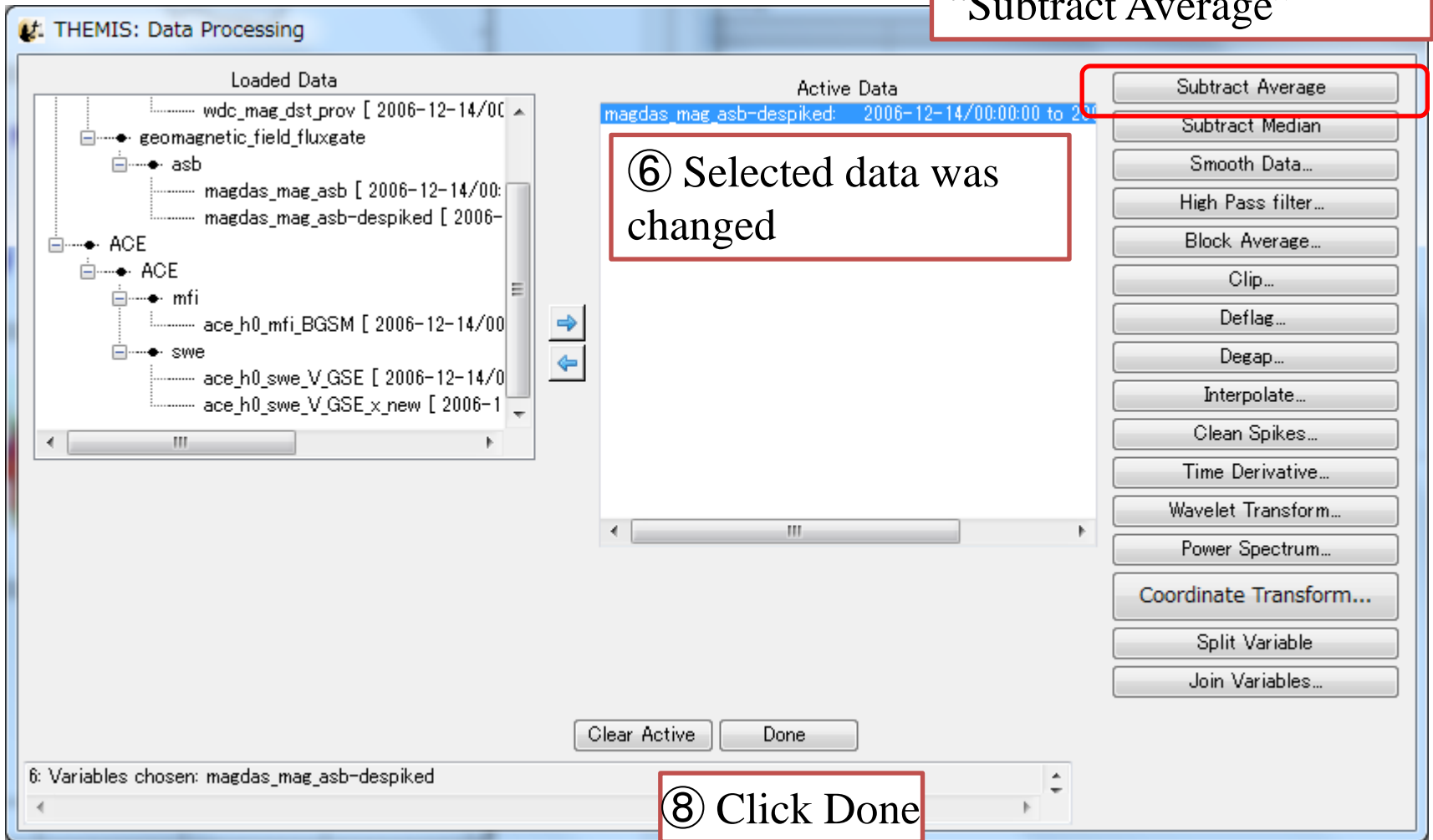
The screenshot shows the THEMIS Data Processing window. The 'Loaded Data' tree on the left contains 'IUGONET' with sub-items 'geomagnetic_field_index', 'dst', 'wdc_mag_dst_prov', 'geomagnetic_field_fluxgate', 'asb', and 'magdas_mag_asb'. The 'Active Data' section shows 'magdas_mag_asb' for the period '2006-12-14/00:00:00 to 2006-12-15/'. A list of processing methods is on the right, with 'Clean Spikes...' highlighted. A 'Clean Spikes Options' dialog box is open, showing 'Threshold: 10', 'Smoothing Width(# Pts): 3', and 'Suffix: -despiked'. The 'OK' button is highlighted.

- ① Select data which you want to analyze
- ② Click right arrow
- ③ Selected data
- ④ Select analysis method "Clean Spikes"
- ⑤ Click OK

Data Processing Window

⑦ Select analysis method
“Subtract Average”

⑥ Selected data was
changed



The screenshot shows the THEMIS Data Processing window. On the left, the 'Loaded Data' tree view shows a hierarchy: 'geomagnetic_field_fluxgate' containing 'asb' (with sub-items 'magdas_mag_asb' and 'magdas_mag_asb-despiked') and 'ACE' containing 'ACE' (with sub-items 'mfi' and 'swe'). The 'Active Data' list in the center shows 'magdas_mag_asb-despiked' selected. On the right, a vertical toolbar contains various analysis methods, with 'Subtract Average' highlighted by a red box. At the bottom, the 'Done' button is highlighted by a red box. The status bar at the bottom left indicates '6: Variables chosen: magdas_mag_asb-despiked'.

⑧ Click Done

Plot/Layout Options Window

THEMIS: Plot/Layout Options

Show Data Components Automatic Panels - CREATE PLOTS -

① Select Panel4 and then click Remove

Dependent Variable

- IUGONET
 - geomagnetic_field_index
 - dst
 - wdc_mag_dst_prov [2006-12-14/00:30:00]
 - geomagnetic_field_fluxgate
 - asb
 - magdas_mag_asb [2006-12-14/00:00:00]
 - magdas_mag_asb-despiked [2006-12-14/00:00:00]
 - magdas_mag_asb-despiked-d [2006-12-14/00:00:00]
 - ACE
 - ACE
 - mfi
 - ace_h0_mfi_BGSM [2006-12-14/00:00:00]
 - swe
 - ace_h0_swe_V_GSE [2006-12-14/00:00:00]
 - ace_h0_swe_V_GSE_x_new [2006-12-14/00:00:00]

```

(L) Panel 1 (1, 1) -
- wdc_mag_dst_prov_time -vs- wdc_mag_dst_prov_data
Panel 2 (2, 1) -
- ace_h0_swe_V_GSE_x_new_time -vs- ace_h0_swe_V_GSE_x_new_data
Panel 3 (3, 1) -
- ace_h0_mfi_BGSM_time -vs- ace_h0_mfi_BGSM_x
- ace_h0_mfi_BGSM_time -vs- ace_h0_mfi_BGSM_y
- ace_h0_mfi_BGSM_time -vs- ace_h0_mfi_BGSM_z
Panel 4 (4, 1) -
- magdas_mag_asb_time -vs- magdas_mag_asb_0
- magdas_mag_asb_time -vs- magdas_mag_asb_1
- magdas_mag_asb_time -vs- magdas_mag_asb_2
- magdas_mag_asb_time -vs- magdas_mag_asb_3
            
```

Row:

Column:

Rows Per Page:

Cols Per Page:

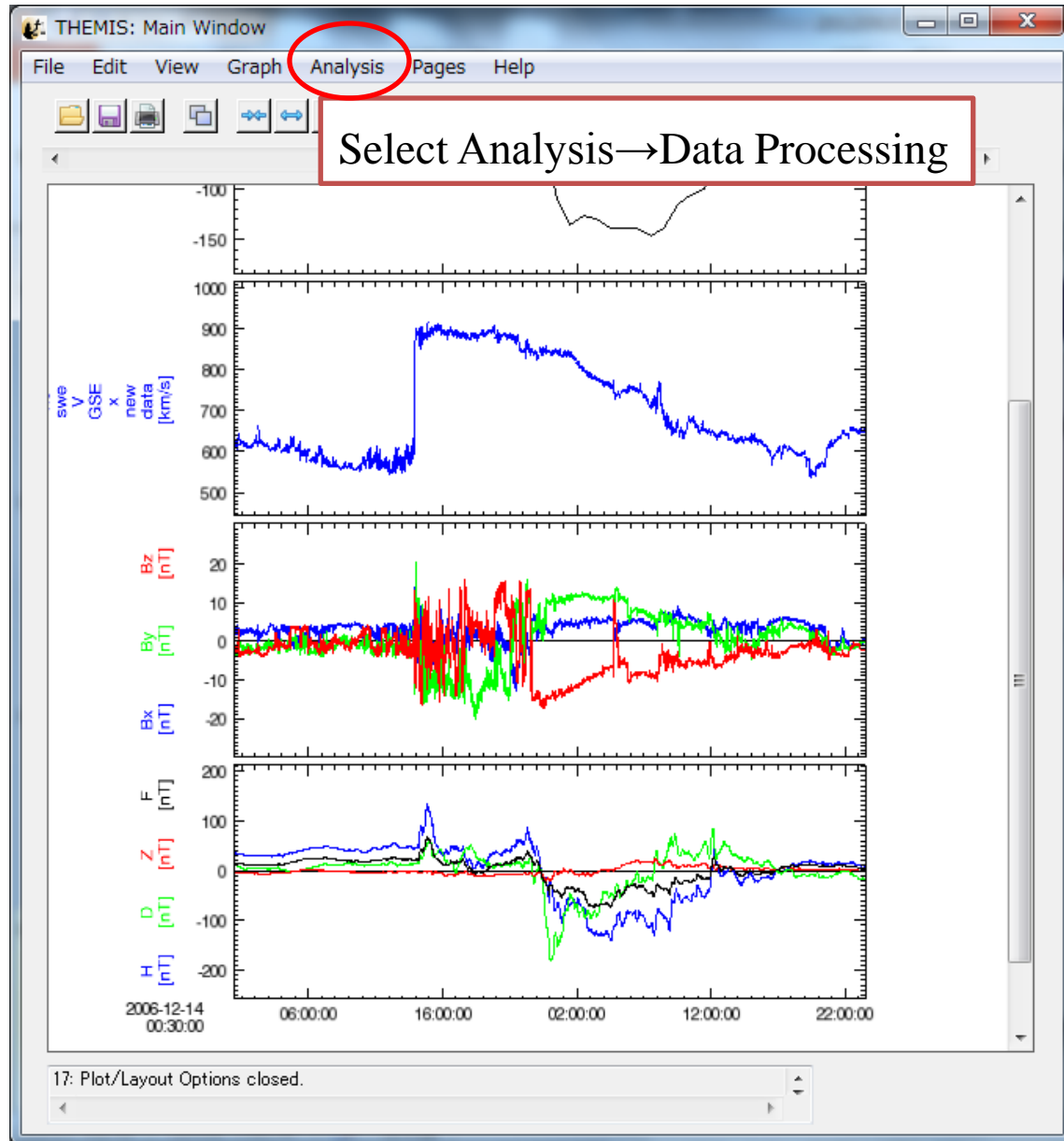
0: Status information is displayed here.

Plot/Layout Options Window

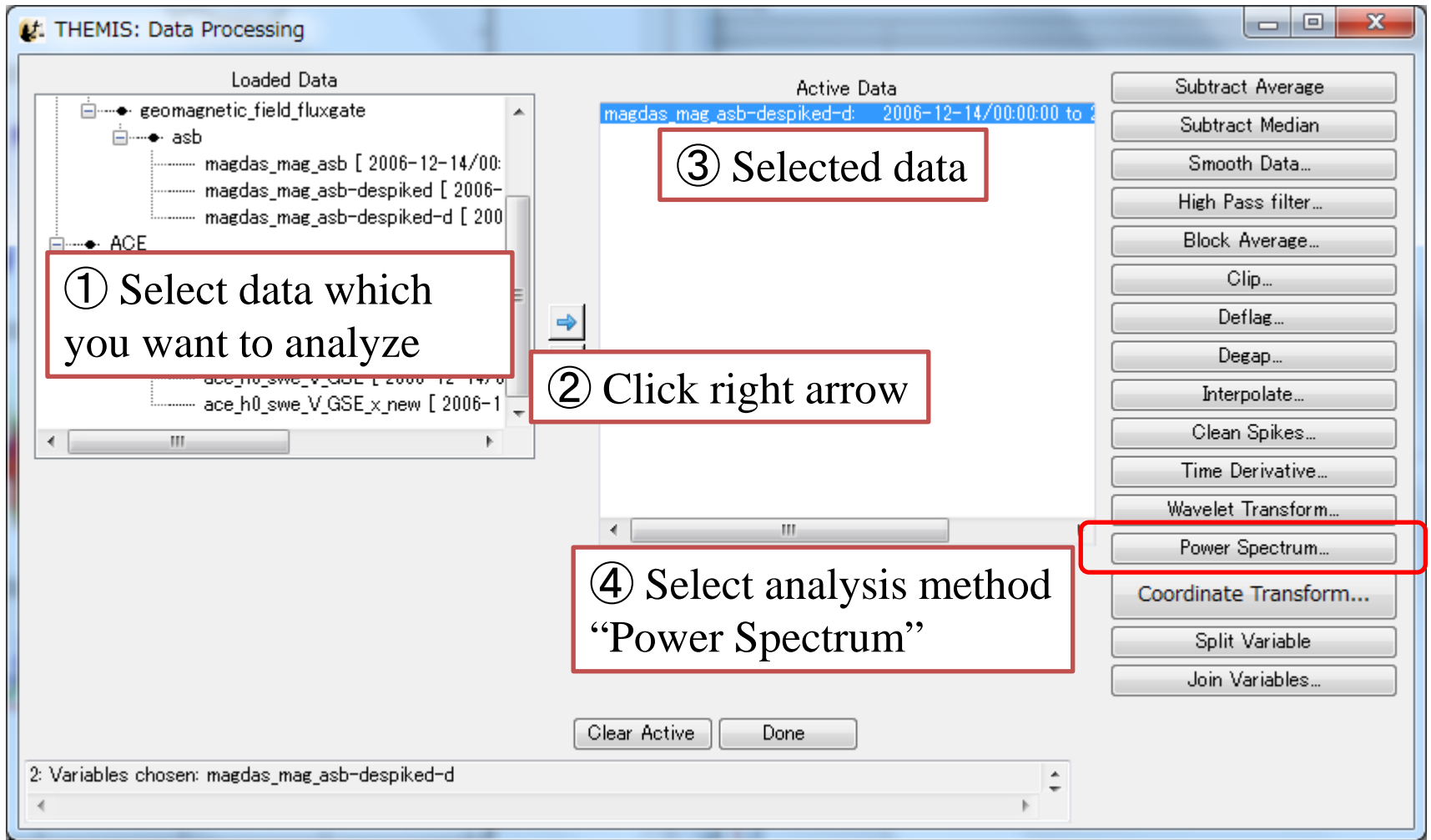
The screenshot shows the 'THEMIS: Plot/Layout Options' window. On the left, a tree view under 'Dependent Variable' shows the 'IUGONET' folder expanded, with 'magdas_mag_asb-despiked-d [2006-12-14/00:00:00]' selected. A red box around this selection is labeled '② Select magdas_mag_asb-despiked-d'. In the center, there are 'Add:' buttons for 'Line ->' and 'Spec ->'. A red box around the 'Line ->' button is labeled '③ Click Line'. On the right, a list of panels is shown, with the last line of the fourth panel highlighted in blue. A red box around this line is labeled '④ Click OK'. The status bar at the bottom left says '7: Add Finished.' and a red box around the 'OK' button is labeled '④ Click OK'. Other UI elements include 'Show Data Components', 'Automatic Panels', 'CREATE PLOTS', and various panel management controls on the right side.

Next:
 Calculate Power
 Spectrum using Data
 Processing and Spec plot

Component:
 magdas_mag_asb-despiked-d
 FFT parameter:
 Window Size:64
 Window Sift: 32



Data Processing Window

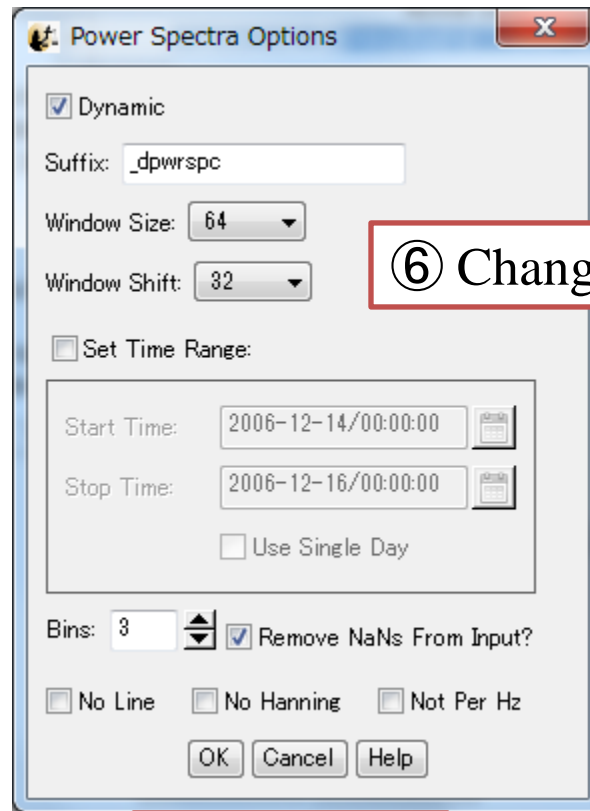


The screenshot shows the THEMIS Data Processing window. It is divided into several sections:

- Loaded Data:** A tree view on the left showing data sources like 'geomagnetic_field_fluxgate', 'asb', and 'ACE'. A red box with the text "① Select data which you want to analyze" points to the 'asb' folder.
- Active Data:** A central area showing the selected data: 'magdas_mag_asb-despiked-d: 2006-12-14/00:00:00 to :'. A red box with the text "③ Selected data" points to this text.
- Navigation:** A right-pointing arrow button is located between the Loaded and Active data sections. A red box with the text "② Click right arrow" points to this button.
- Analysis Methods:** A vertical list of buttons on the right side, including 'Subtract Average', 'Subtract Median', 'Smooth Data...', 'High Pass filter...', 'Block Average...', 'Clip...', 'Deflag...', 'Degap...', 'Interpolate...', 'Clean Spikes...', 'Time Derivative...', 'Wavelet Transform...', 'Power Spectrum...', 'Coordinate Transform...', 'Split Variable', and 'Join Variables...'. A red box with the text "④ Select analysis method 'Power Spectrum'" points to the 'Power Spectrum...' button.

At the bottom of the window, there are 'Clear Active' and 'Done' buttons, and a status bar that reads "2: Variables chosen: magdas_mag_asb-despiked-d".

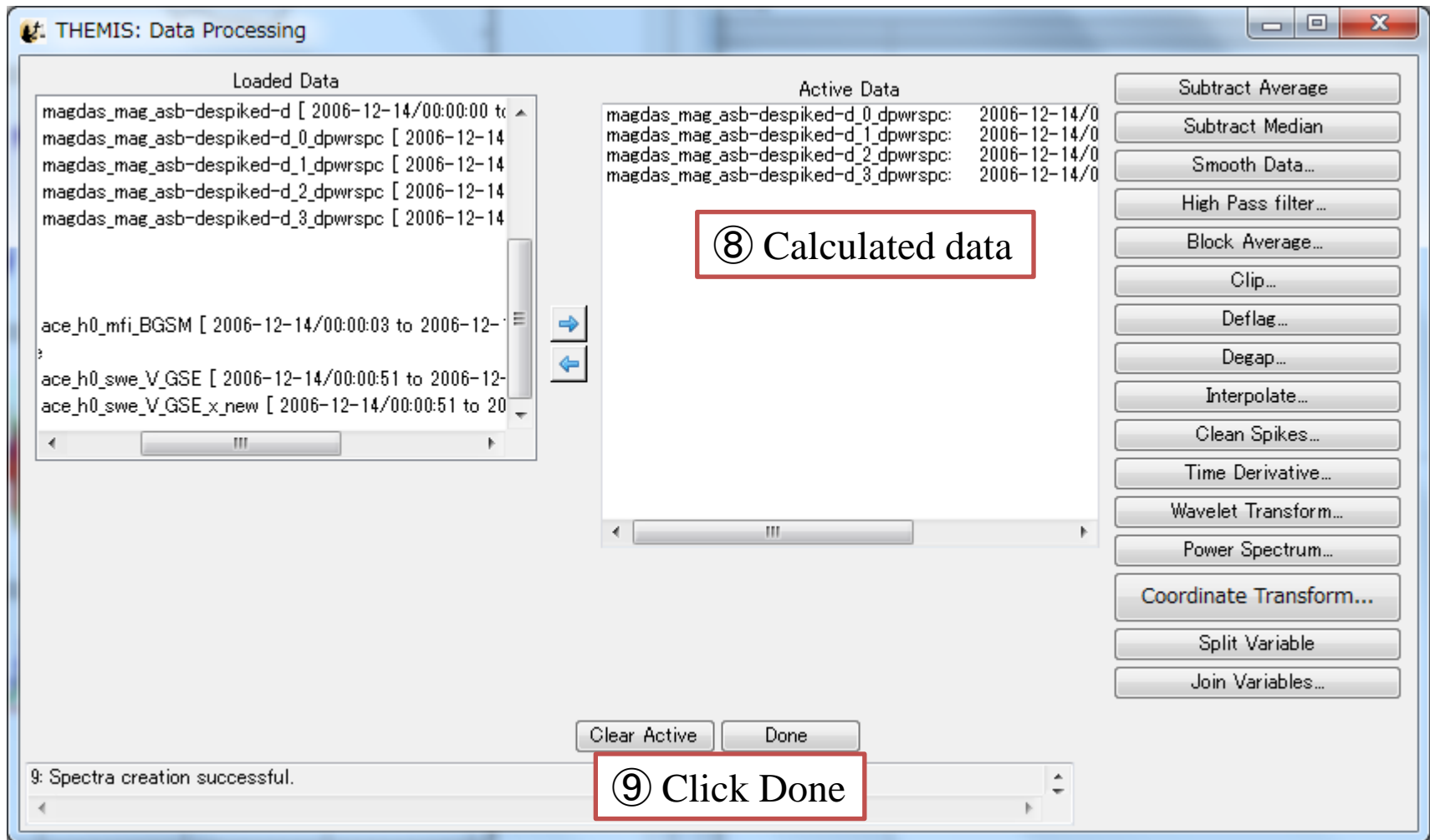
Power Spectra Options



⑥ Change parameters

⑦ Click OK

Data Processing Window



Plot/Layout Options Window

Show Data Components Automatic Panels

- CREATE PLOTS -

Dependent Variable

- geomagnetic_field_index
 - dst
 - wdc_mag_dst_prov [2006-12-14/00:00:00]
 - geomagnetic_field_fluxgate
 - asb
 - magdas_mag_asb [2006-12-14/00:00:00]
 - magdas_mag_asb-despiked [2006-12-14/00:00:00]
 - magdas_mag_asb-despiked-d [2006-12-14/00:00:00]
 - magdas_mag_asb-despiked-d_0_dpwrspc [2006-12-14/00:00:00]
 - ACE
 - mfi
 - ace_h0_mfi_BGSM [2006-12-14/00:00:00]
 - swe
 - ace_h0_swe_V_GSE [2006-12-14/00:00:00]
 - ace_h0_swe_V_GSE_x_new [2006-12-14/00:00:00]

① Select data which you want to plot

② Click Spec

Line ->
Spec ->

```
(L) Panel 1 (1, 1) -  
- wdc_mag_dst_prov_time -vs- wdc_mag_dst_prov_data  
Panel 2 (2, 1) -  
- ace_h0_swe_V_GSE_x_new_time -vs- ace_h0_swe_V_GSE_x_new_data  
Panel 3 (3, 1) -  
- mfi_BGSM_time -vs- ace_h0_mfi_BGSM_x  
- mfi_BGSM_time -vs- ace_h0_mfi_BGSM_y  
- mfi_BGSM_time -vs- ace_h0_mfi_BGSM_z  
Panel 4 (4, 1) -  
- magdas_mag_asb-despiked-d_time -vs- magdas_mag_asb-despiked-d  
- magdas_mag_asb-despiked-d_time -vs- magdas_mag_asb-despiked-d  
- magdas_mag_asb-despiked-d_time -vs- magdas_mag_asb-despiked-d  
- magdas_mag_asb-despiked-d_time -vs- magdas_mag_asb-despiked-d  
Panel 5 (5, 1) -  
- magdas_mag_asb-despiked-d_0_dpwrspc_time -vs- magdas_mag_asb-despiked-d_0_dpwrspc
```

③ Added data

Variables:
Add/Edit

Panels

Add

Remove

Edit

← ↑ → ↓

Row: 5

Column: 1

Rows Per Page: 5

Cols Per Page: 1

Lock To Panel

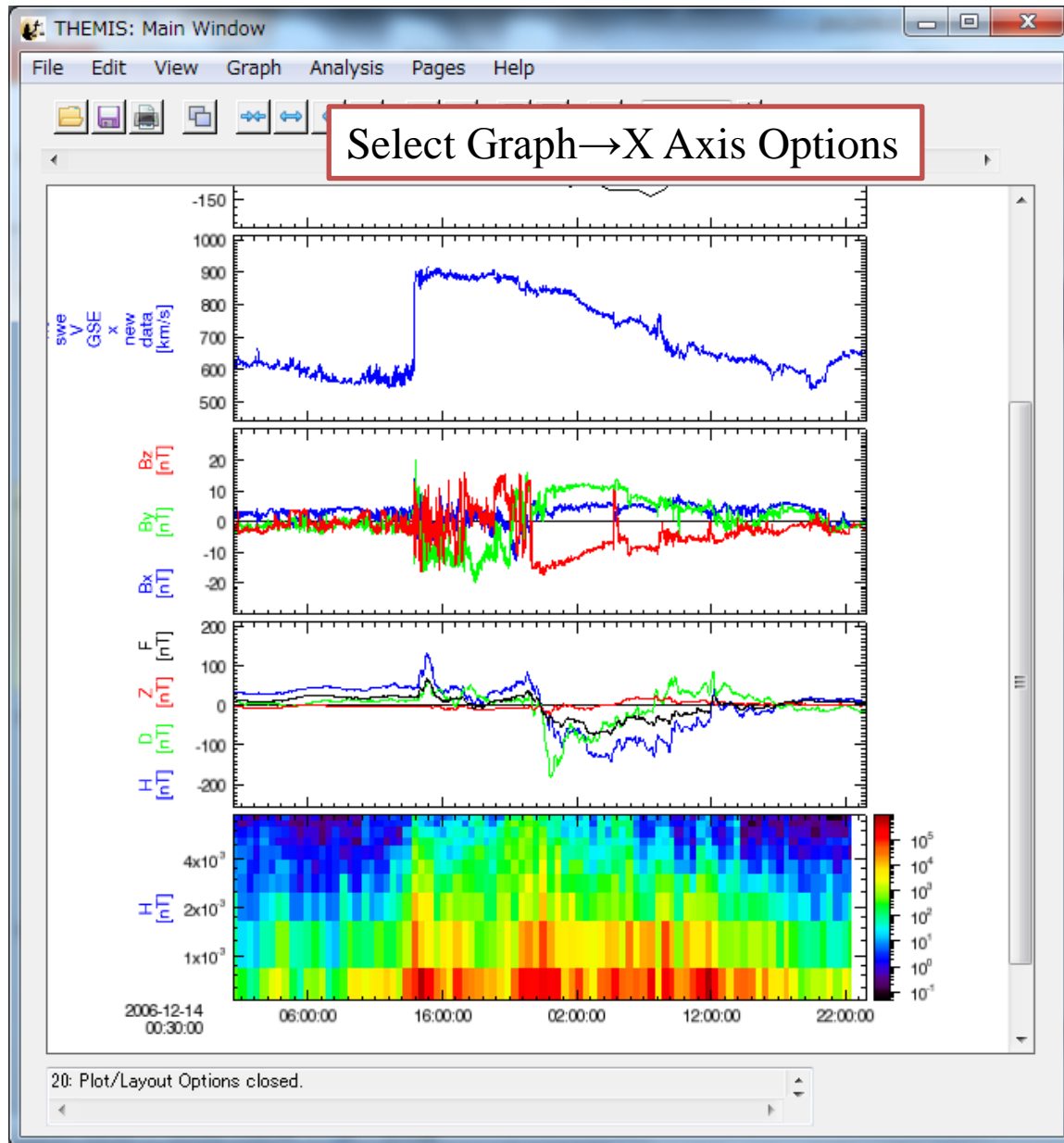
Unlock Panels

OK Apply Cancel

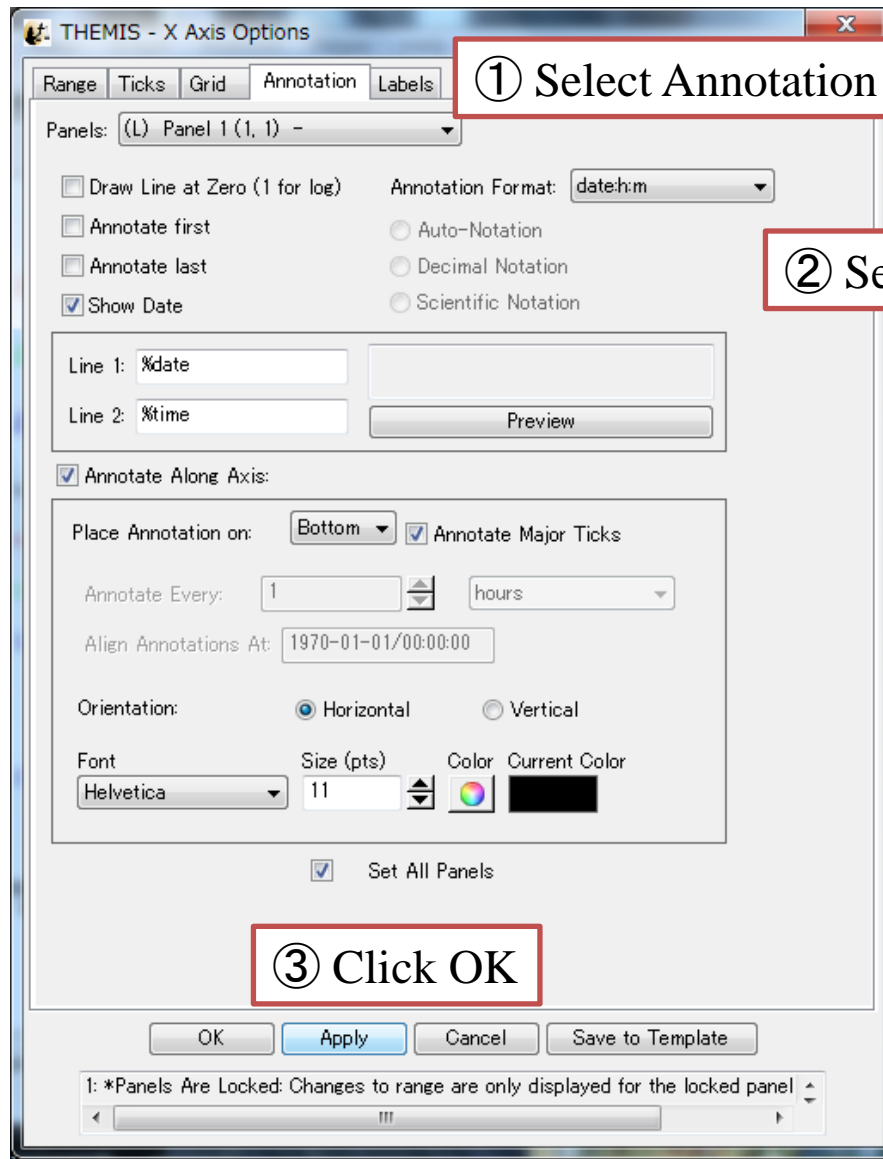
④ Click OK

3: Add Finished.

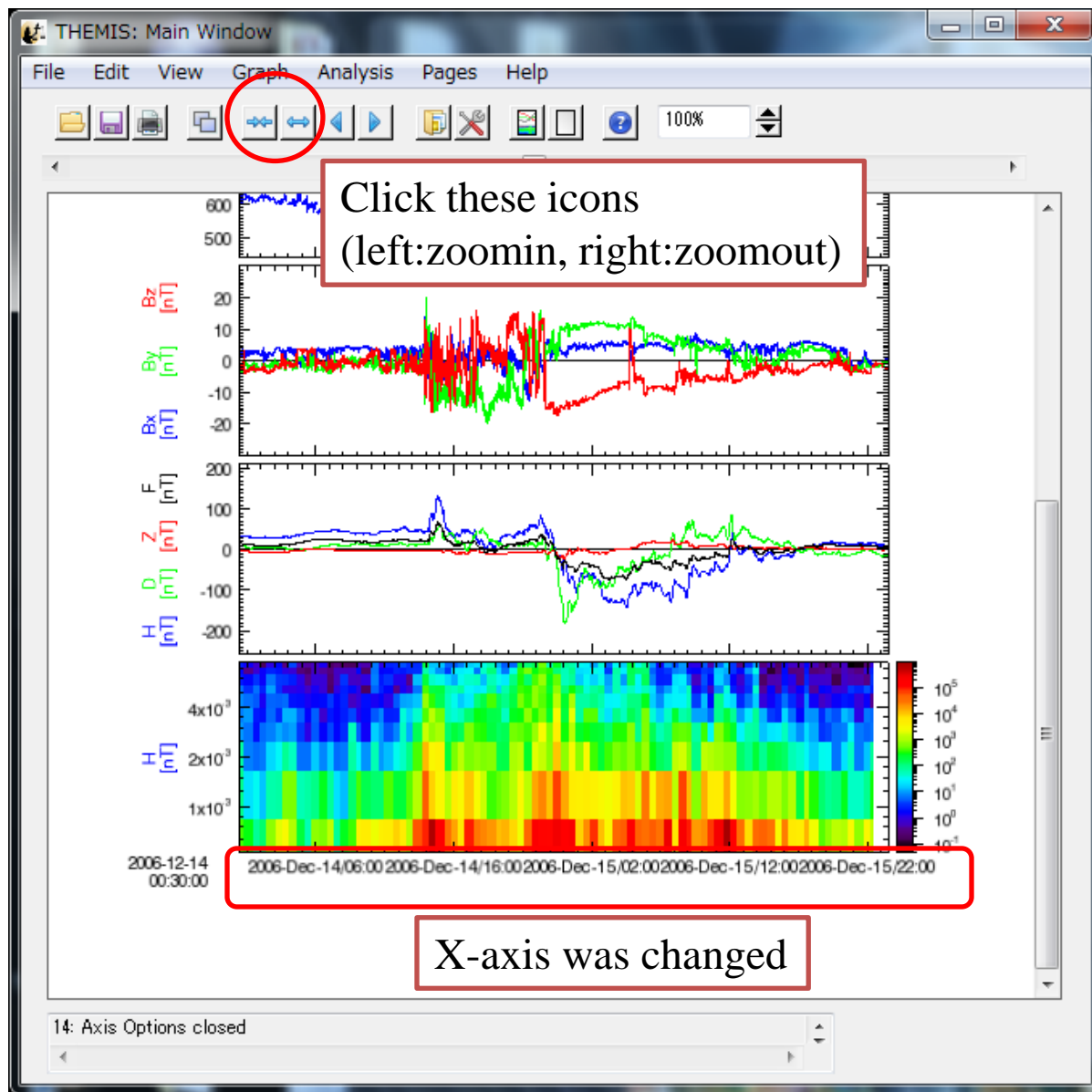
Next: Change X axis parameter



X Axis Options Window

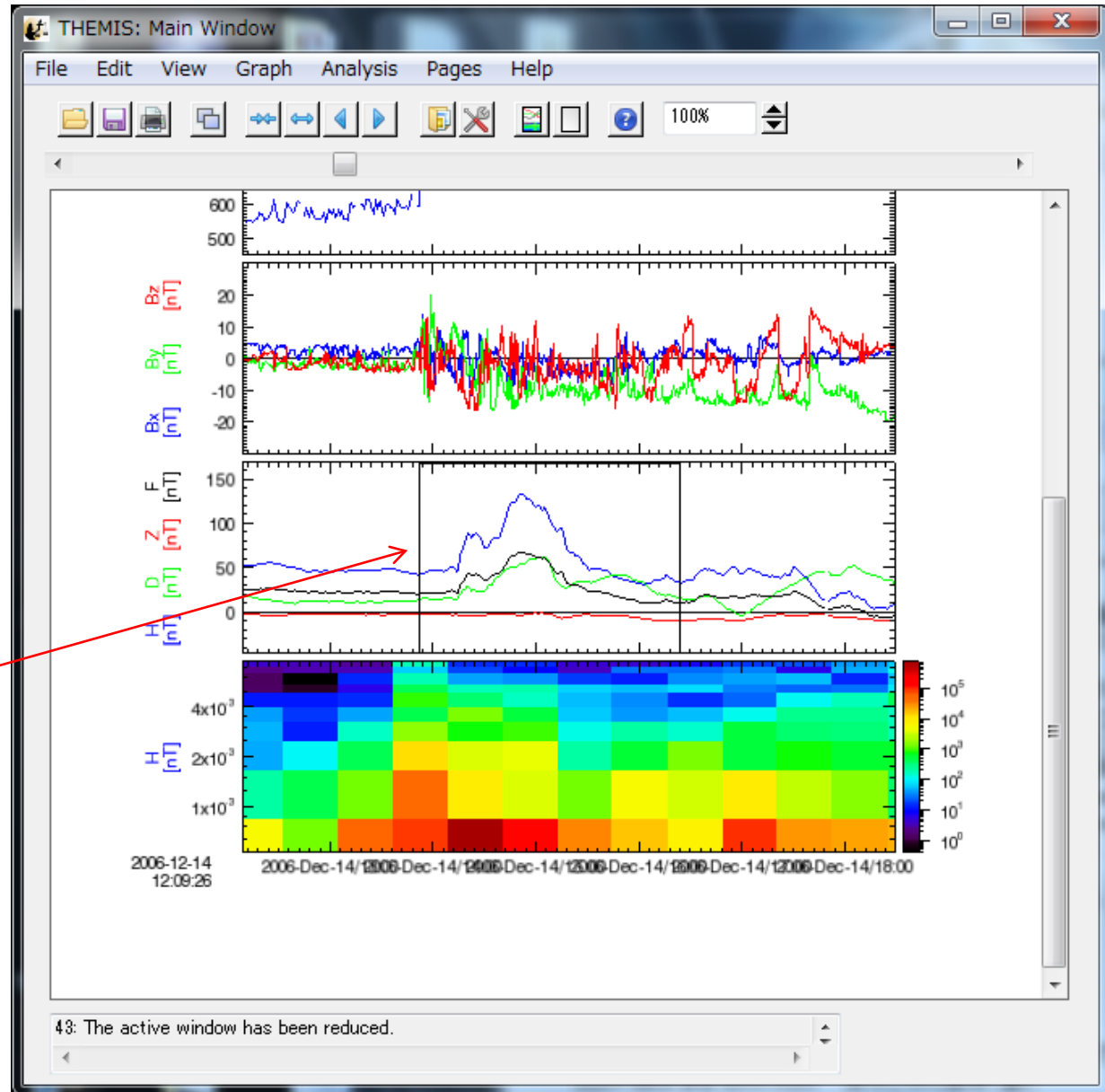


Next: Zoom in and Zoom out



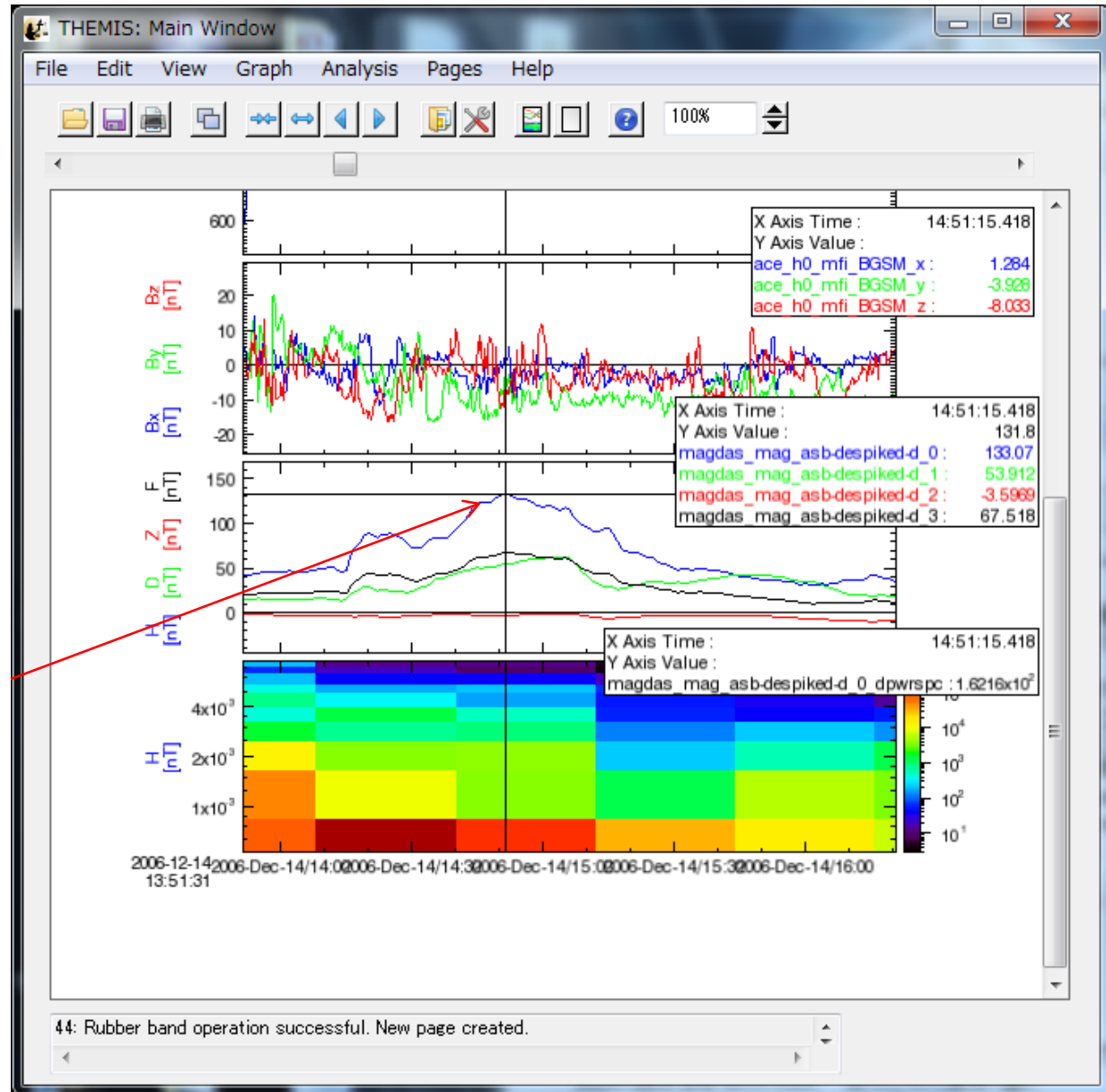
Next: Zoom in and Zoom out

highlight the region by dragging the mouse over it, you will get zoomed in figure!

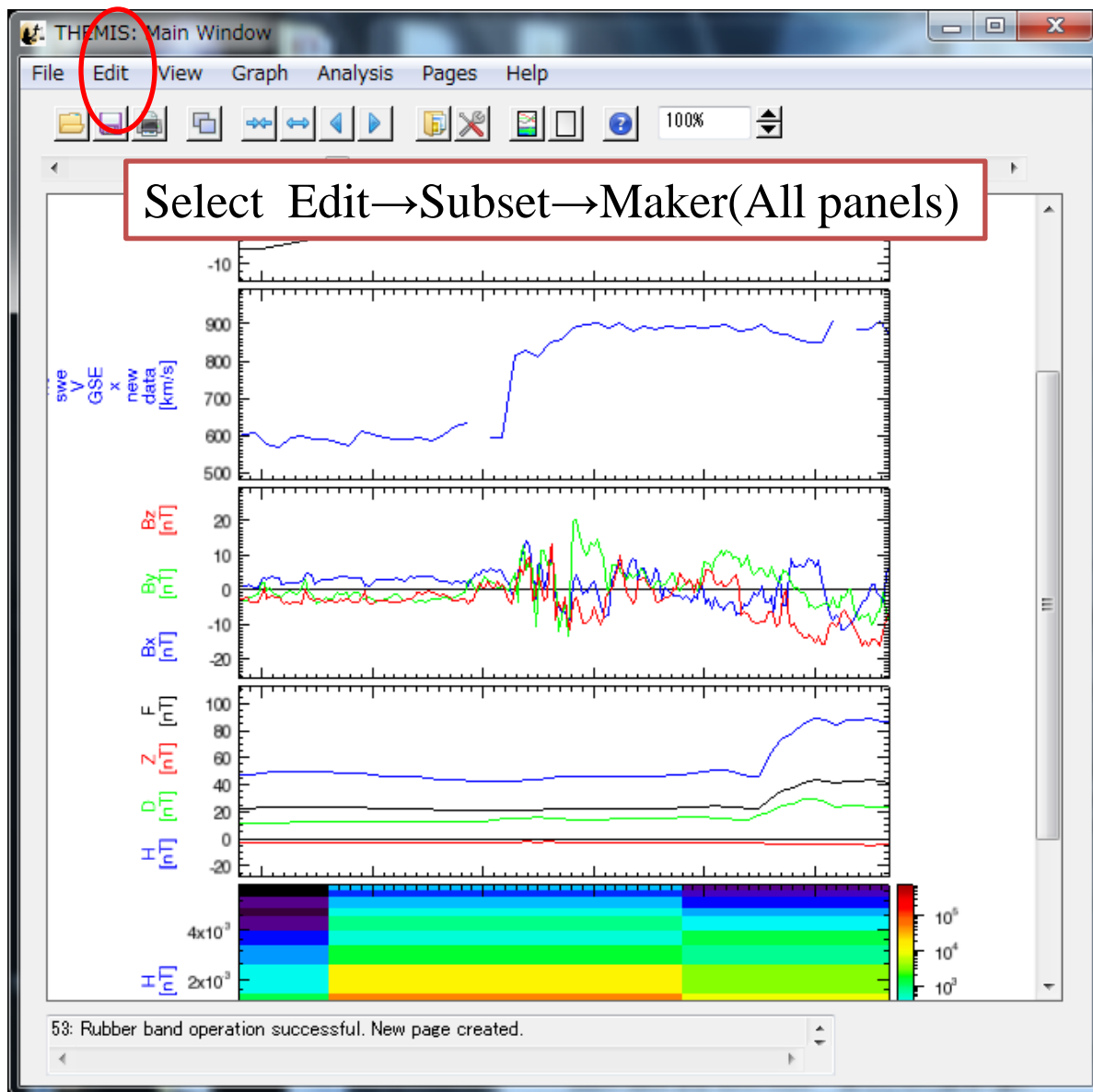


Next: Zoom in and Zoom out

put your mouse pointer over the plot, you will see the value at each plot.

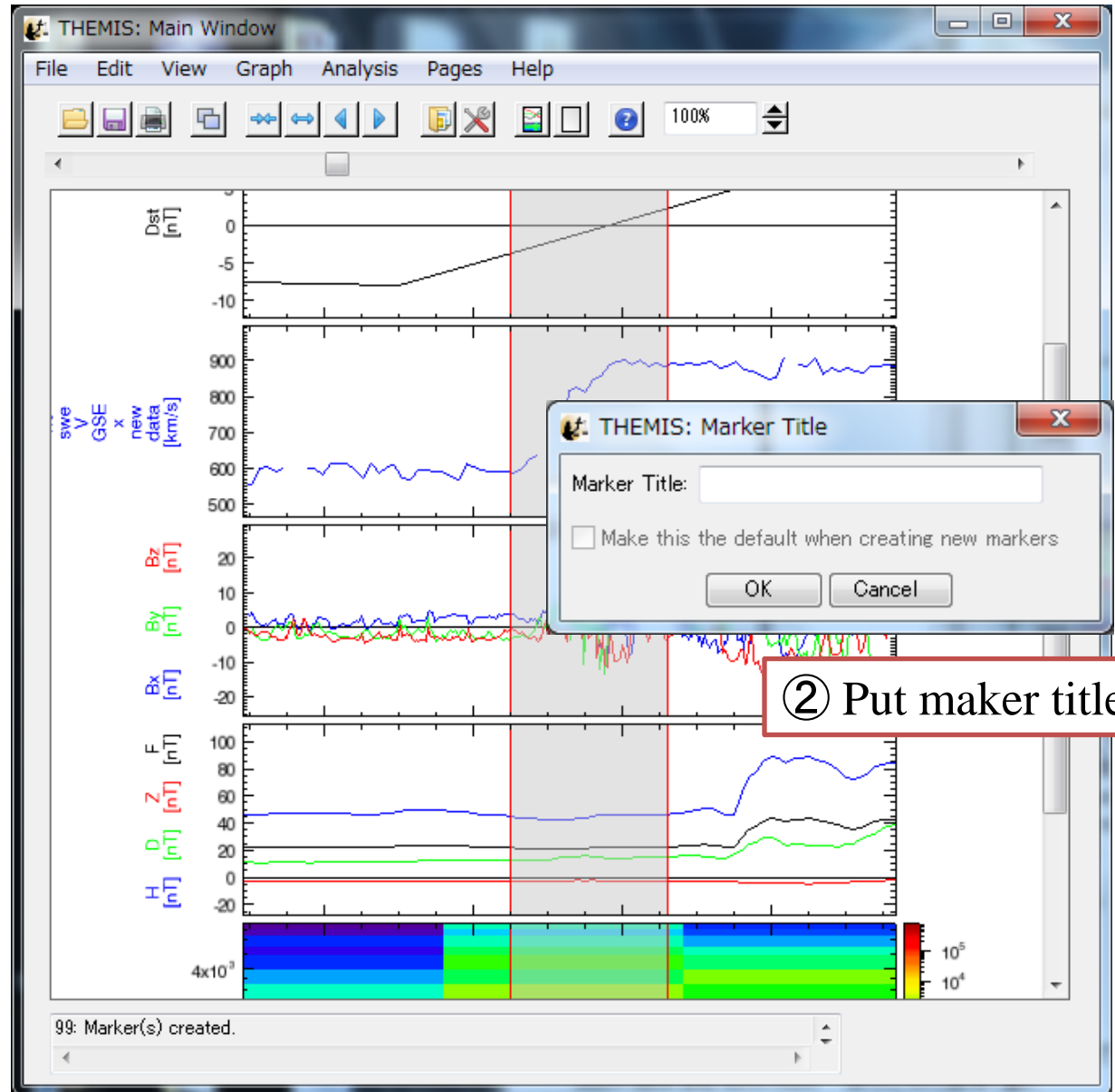


Next: Marking



Next: Marking

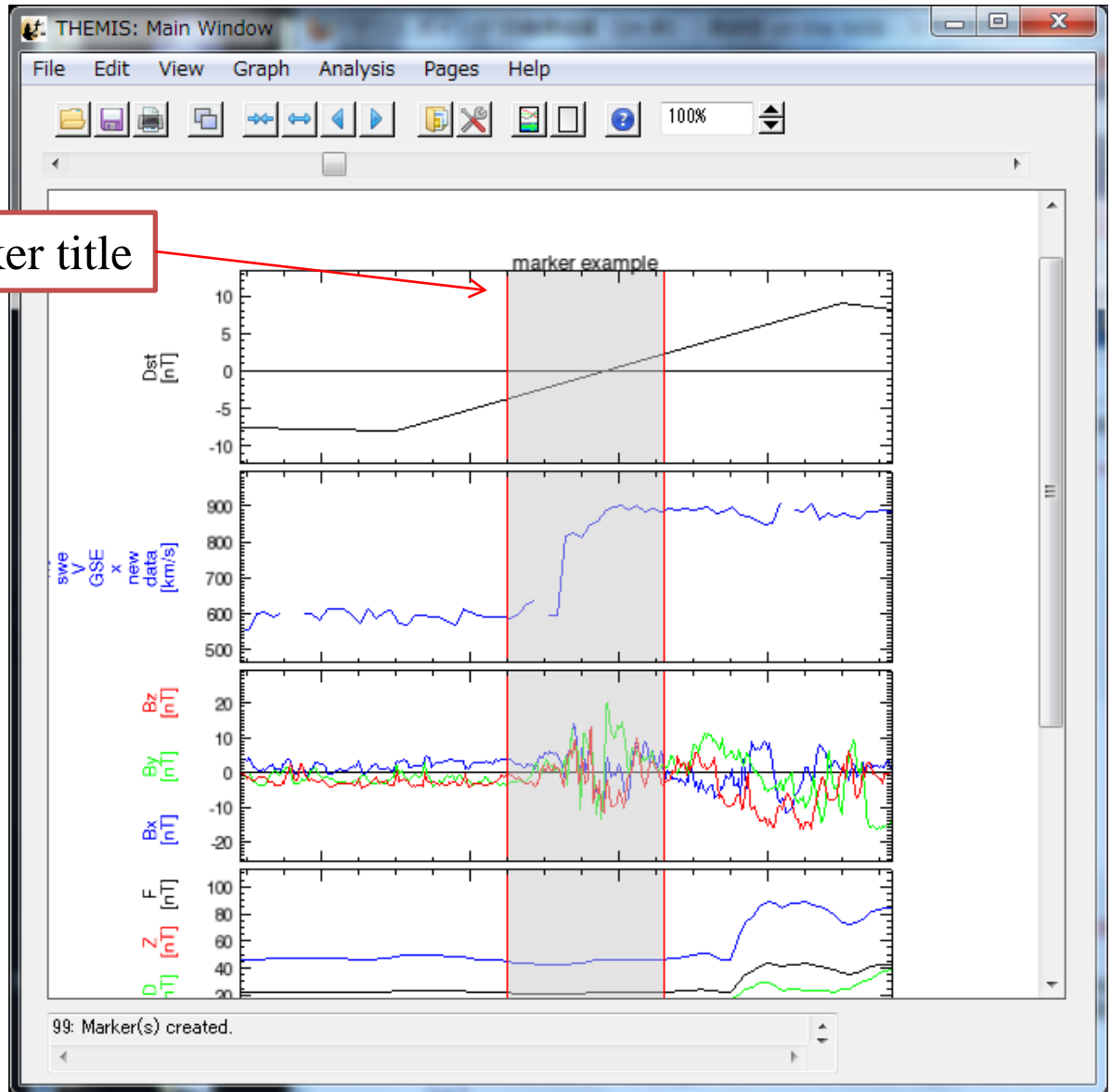
① Hold down the Ctrl key, and then highlight the region by dragging the mouse over it.



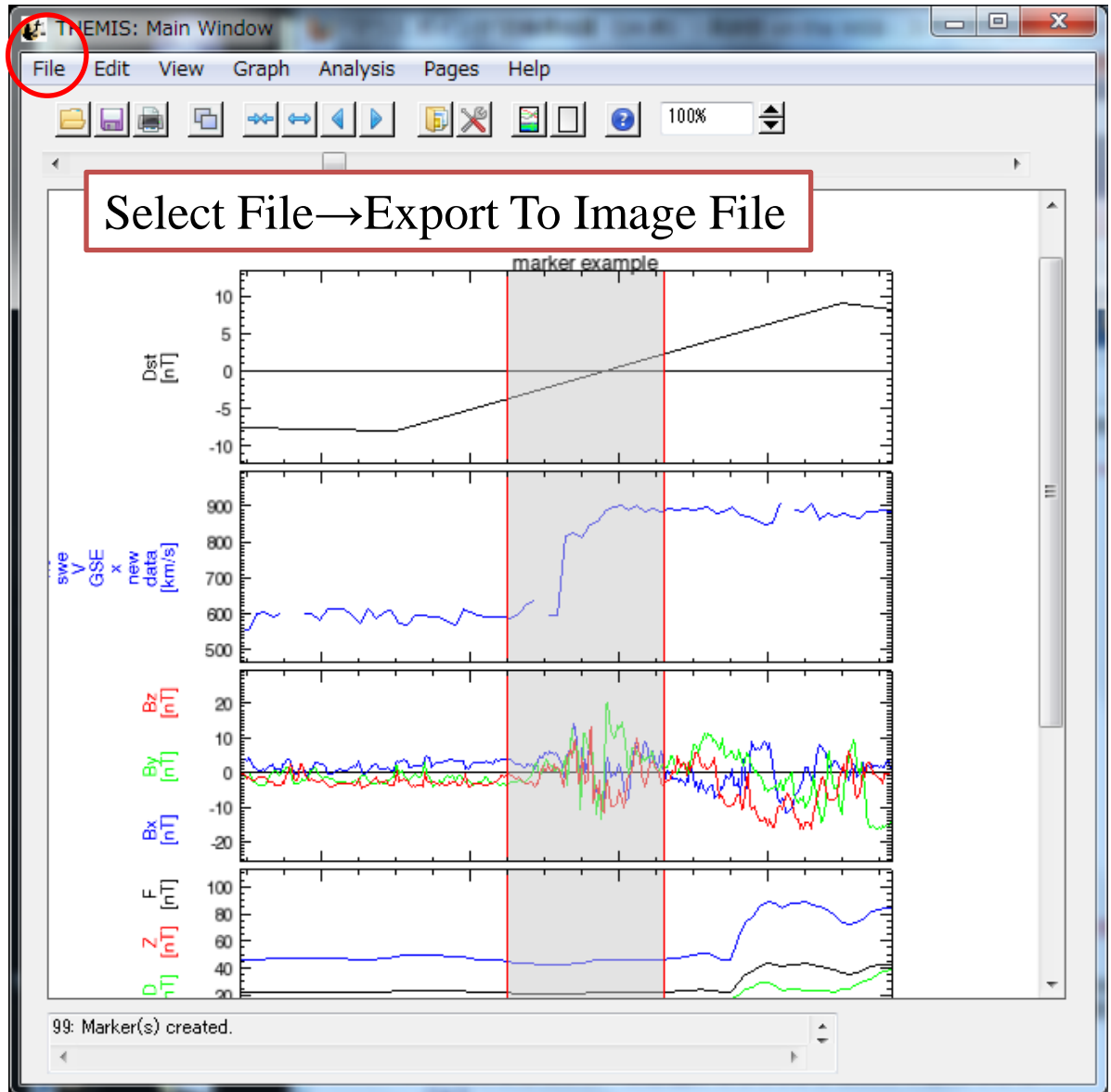
② Put maker title

Next: Marking

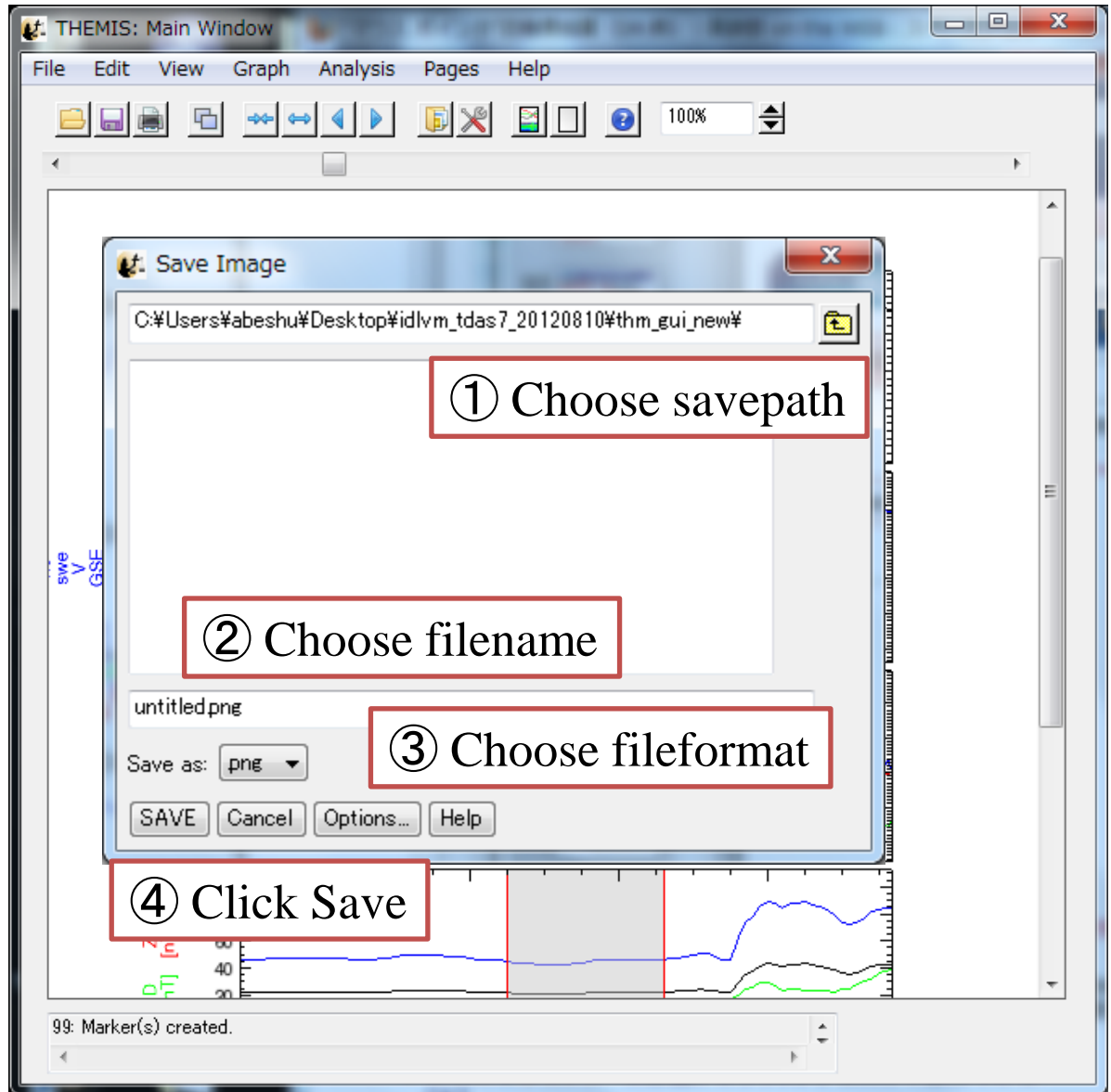
Marker and maker title



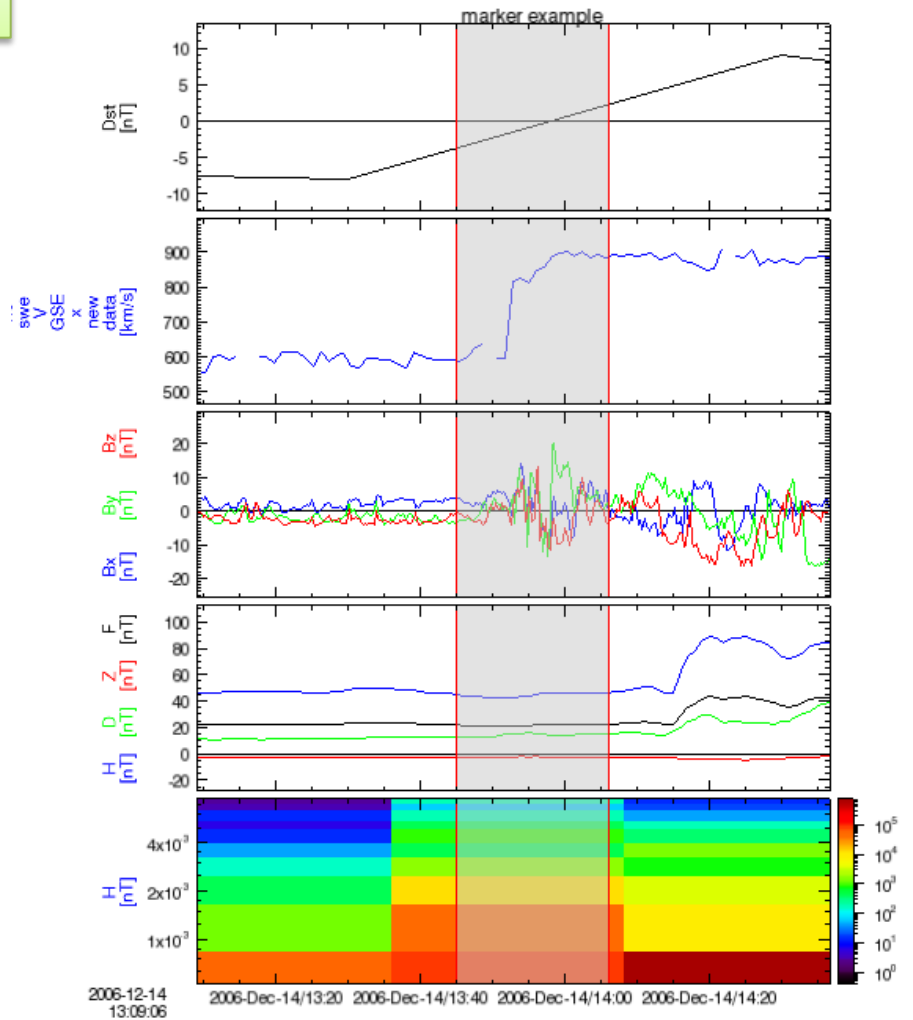
Next: Save plot
as file



Next: Save plot
as file



Practice makes perfects!



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

IUGONET Inter-university Upper atmosphere
Global Observation NETWORK

Analysis Soft. Metadata DB Project

Google™ Custom Search

日本語

いいね! 送信 「いいね!」と言っている友達はまだいません。

Metadata DB can be used

- * Keyword/Timespan/Region search the IUGONET metadata like Geomagnetic data, radar data
- * Reach to observational data by link information in metadata.
- * Over 3 million metadata are recorded. (Jun, 2012)

- Information -

OpenSearch interface for Metadata DB was prepared.

iugonet iugonet

iugonet IUGONETメタデータデータベースでの高度な検索方法をご紹介します⇒

To know more about this project, please visit this page at regular intervals as we are always posting the latest news.

Thank you for your attention