



## JUDO and UDON

Dedicated web-tools for browsing and quick-analysis of space astronomical data

Ken EBISAWA, T. TAMURA, H. MURAKAMI, C. YAMAUCHI and  
H. NARUMI

Center for Science-satellite Operation and Data Archive (C-SODA)  
Japan Aerospace eXploration Agency (JAXA)  
Institute of Space and Astronautical Science (ISAS)



# JAXA, ISAS and DARTS

- **JAXA** (Japan Aerospace eXploration Agency )
  - Japan’s sole institute to develop and launch rockets and satellites.
- **ISAS** (Institute of Space and Astronautical Science)
  - A part of JAXA, and a research institute for [Space Science](#).
- **DARTS** (Data Archives and Transmission System;  
<http://darts.isas.jaxa.jp>)

Multi-disciplinary, multi-wavelength archives for science satellite data

- [Space astronomy](#)
  - Suzaku, Akari, ASCA, Ginga, HALCA, IRTS
- [Solar physics](#)
  - Hinode, Yohkoh
- [Solar Terrestrial Physics \(STP\)](#)
  - Geotail, Akebono, Reimei
- Visit “DARTS of the Month”!
  - <http://darts.isas.jaxa.jp/month>
  - DARTS introduction movie:  
<http://darts.isas.jaxa.jp/month/200708/200708.html>

# JUDO and UDON



[http://www2.hawaii.edu/~nhiraoka/judo\\_clipart.jpg](http://www2.hawaii.edu/~nhiraoka/judo_clipart.jpg)



<http://www.netlaputa.ne.jp/~ryufuu/udon/image/udon2.jpg>

- **JUDO** and **UDON** are parts of **DARTS** (DATA Archives and Transmission System)
- **On-line tools** developed for **DARTS users** to access and browse archival data easily
- No need to download software
- Work with standard browsers
- Targeted for professional astronomers using **DARTS**



# JUDO

JAXA Universe Data Oriented

<http://darts.isas.jaxa.jp/astro/judo>

- **Navigate the entire sky** using mouse to search for desired targets/observations
- **Browse images** easily, zoom-in, zoom-out
- Directly access FITS images in DARTS
  - WCS compliant
- Designed for multi-mission
  - Currently only **Suzaku** X-ray data available
  - **Akari** infrared data being implemented
- Developed in C and Java script with Ajax technology



# UDON

Universe via DARTS ON-line

<http://darts.isas.jaxa.jp/astro/suzaku/udon.html>

- Facilitate **on-line data analysis**
  - Display pseudo-color image, change color, extract X-ray light curves and spectra
- Currently, only **Suzaku** public data are accessible
- Developed using IDL ON-the net (ION), Flash, ftools



# Future of JUDO and UDON

- Seamless link of **DARTS**, **JUDO** and **UDON**
  - Search for data, browse and quick analysis
- **JUDO** for multi-mission, multi-wavelength tool
  - ASCA (X-ray), Akari (infrared)
  - Use archival data from outside of JAXA
- Direct link to external database from **JUDO**
  - Obtain information of the targets found in JUDO
  - Access to simbad, NED, heasarc etc
  - Catalog source display from VizieR
- Access **DARTS**, **JUDO** and **UDON** from external database
  - Implement **Virtual Observatory** protocol