Constructing the Subaru Advanced Data and Analysis Service on VO

Yuji Shirasaki *on behalf of ADC*

National Astronomical Observatory of Japan

Astronomy Data Center

Contents

- Subaru Telescope and Instruments
- Current Status of Subaru Data Archives
  - STARS, MASTARS, SMOKA
- On-going and planned improvement of Subaru Data Service
  - Quality Assessment System (NAQATA)
  - GRID computing system
  - Subaru Data Service on JVO

Related Papers

- **(P2.16) Development of Quality Assessment System for Subaru Data**

  Fumiaki Nakata et al.

- **(P3.05) New features of Subaru Telescope Science Archive System, SMOKA**

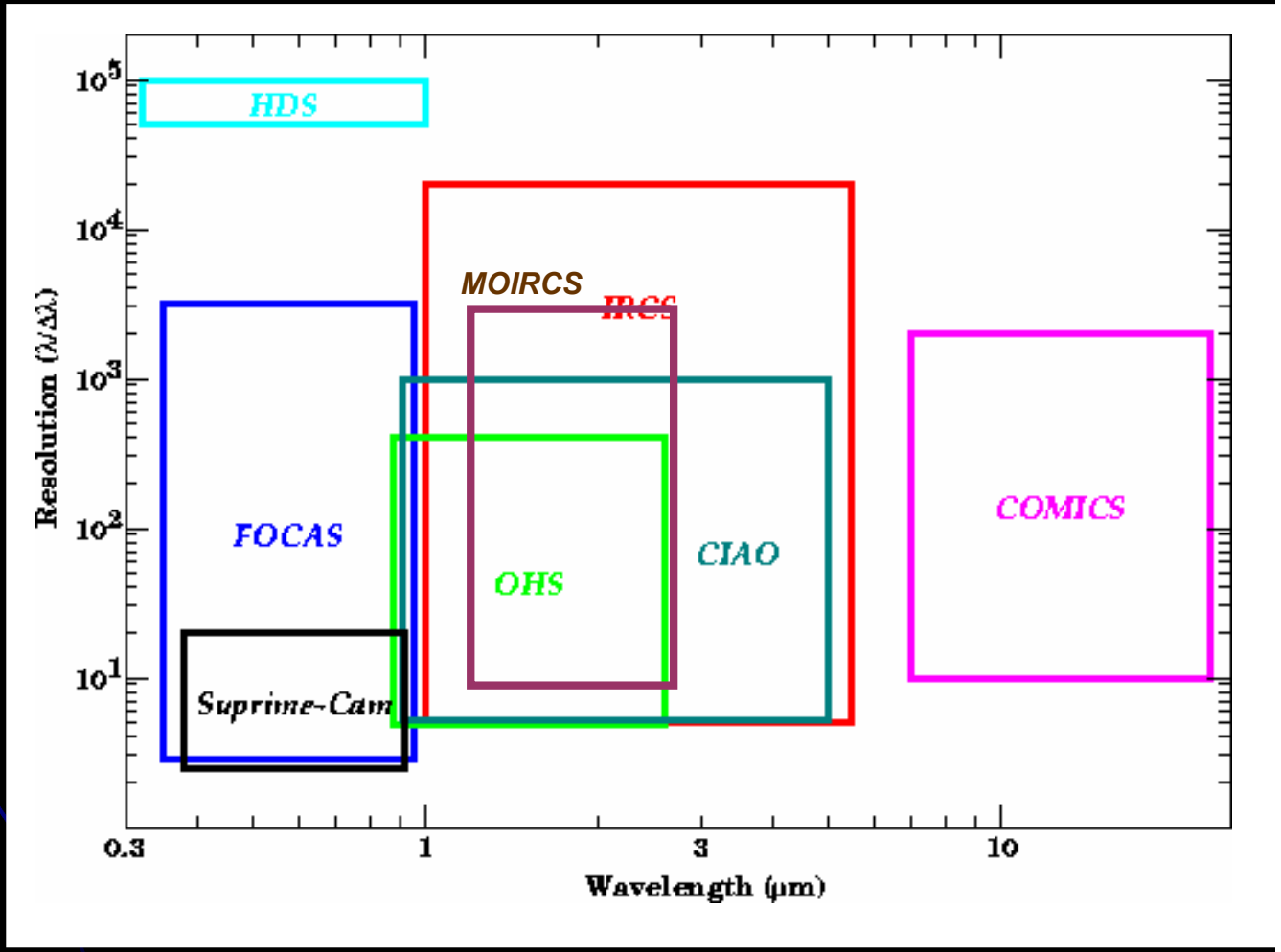
  Motohiro Enoki et al.

Subaru Telescope

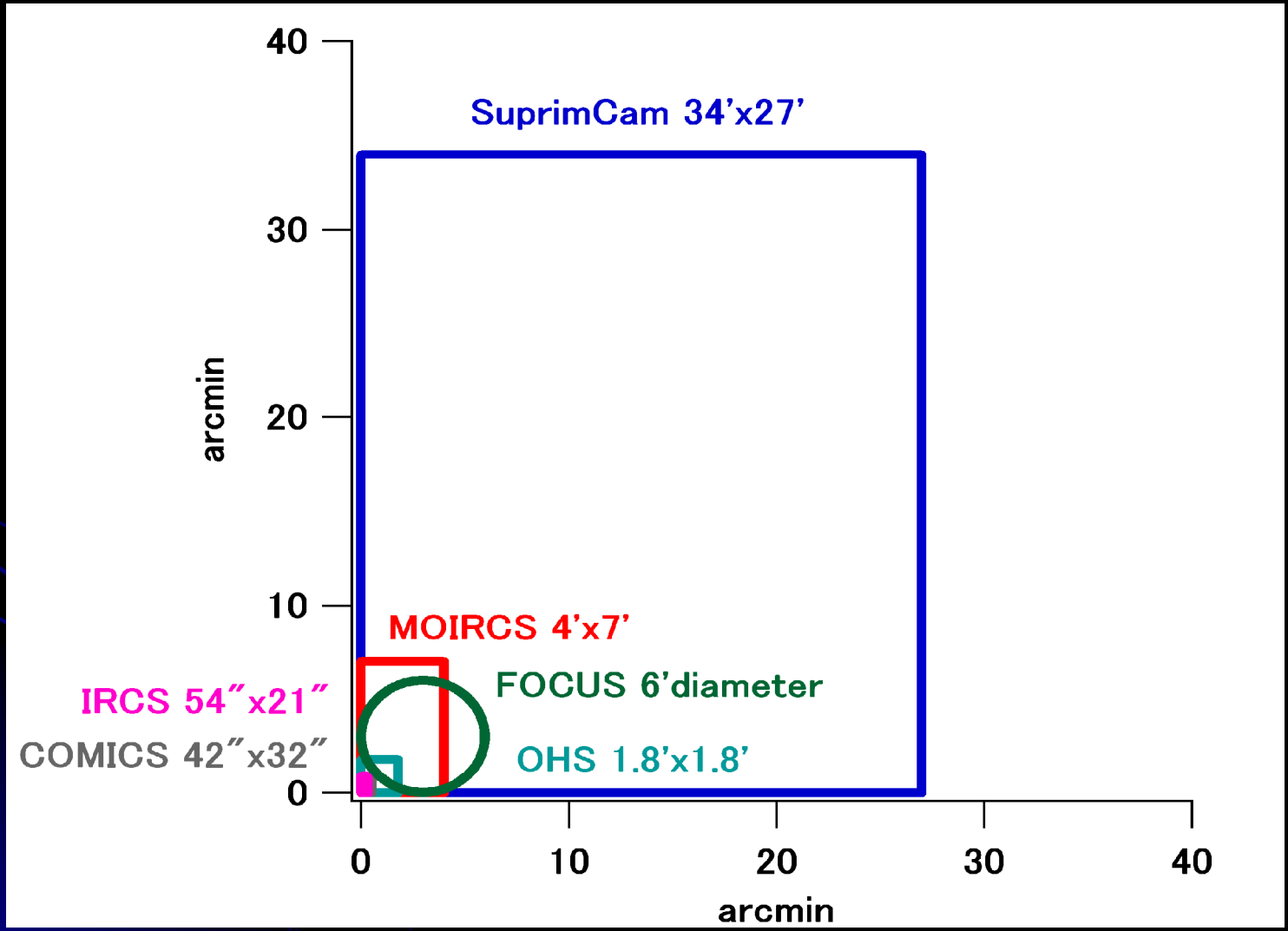
Subaru Telescope is an optical-infrared 8.2 m telescope at Hawaii, operated by NAOJ.

Instruments for Subaru

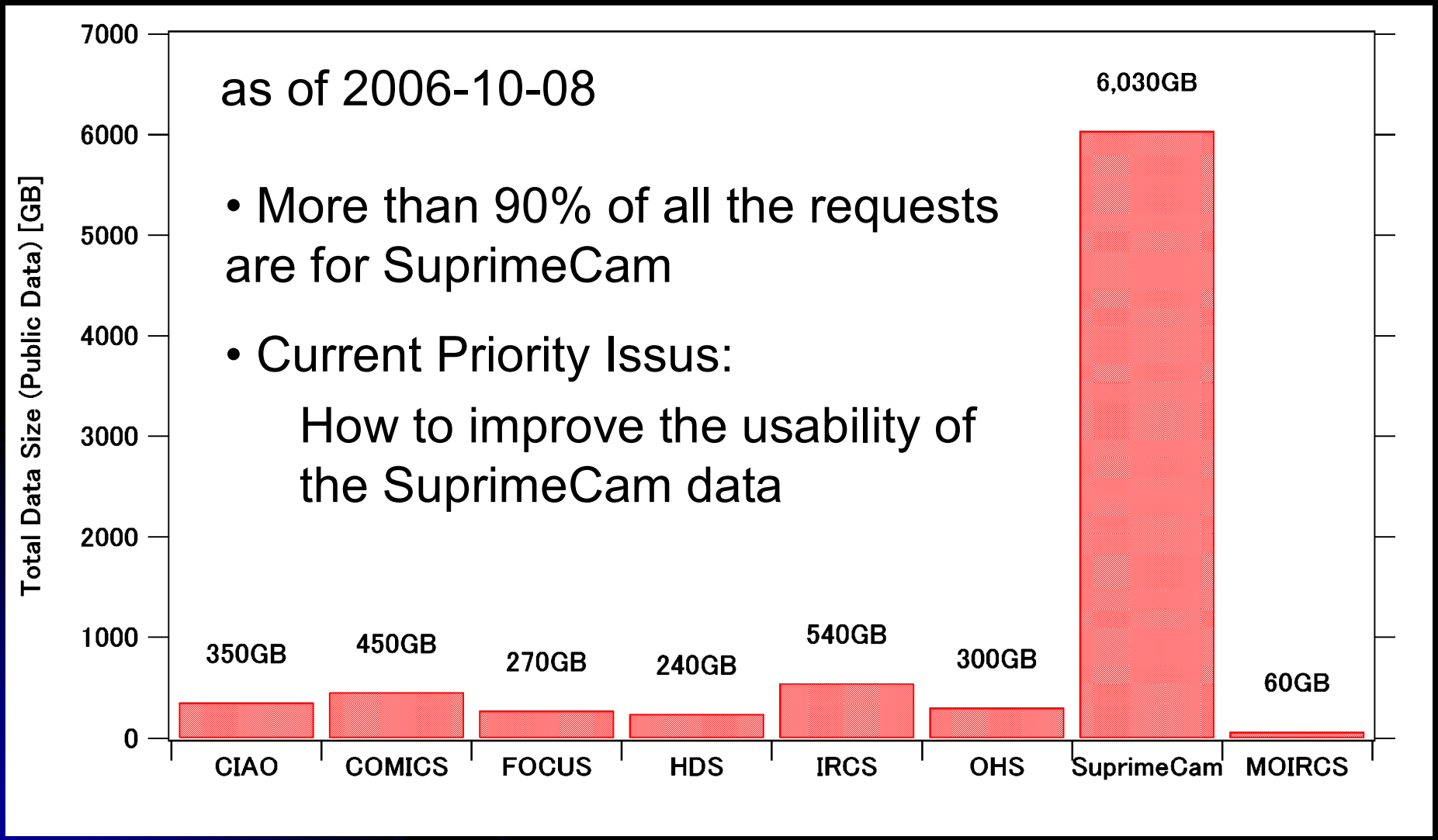
- CIAO
- ~~OHS/CISCO~~
- COMICS
- FOCUS
- IRCS
- MOIRCS
- SuprimeCam
- HDS
- AO/CIAO



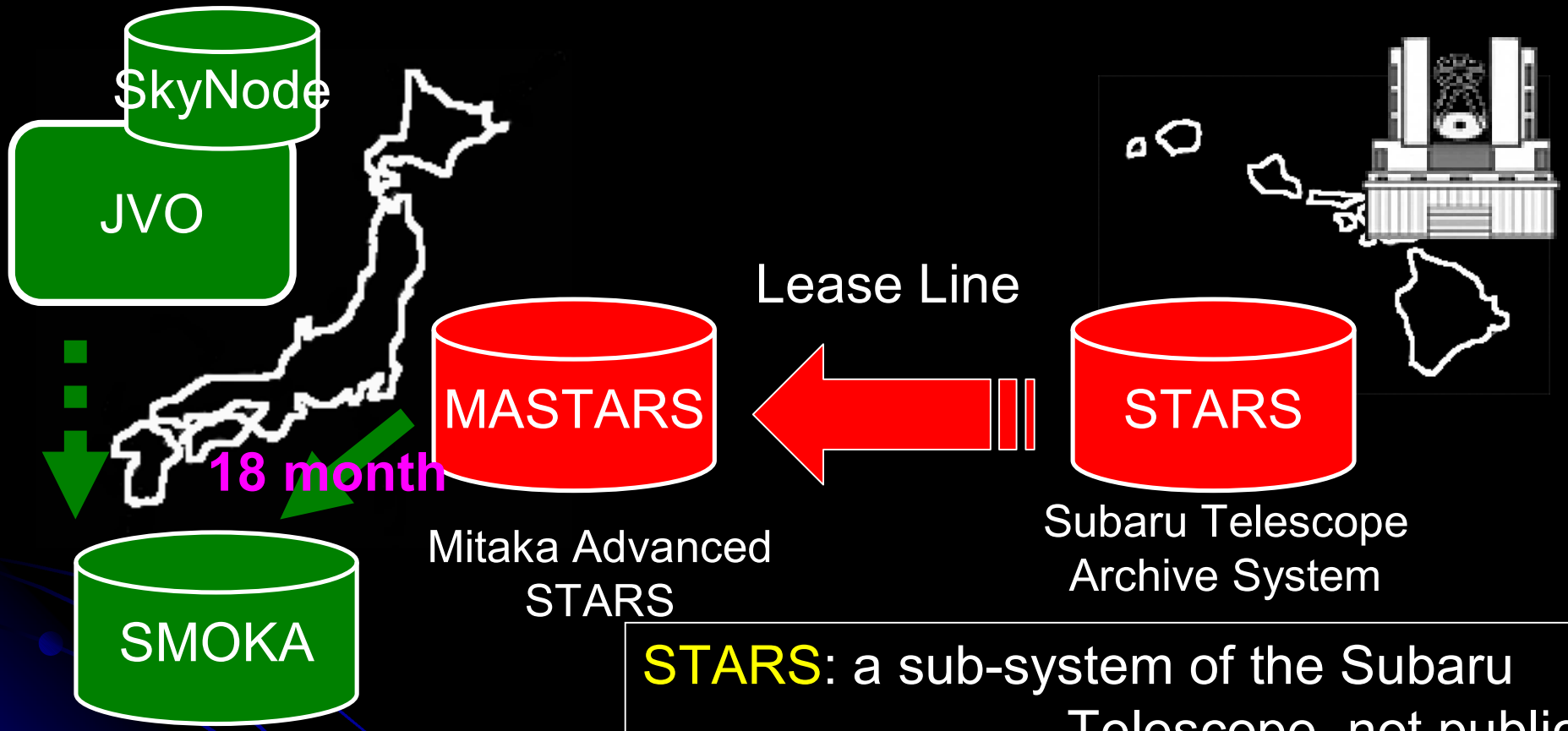
Instruments' Field of View



Total amount of public data



Subaru Data Archive



Poster 3.05
by M. Enoki et al.

STARS: a sub-system of the Subaru Telescope, not public

MASTARS: a mirror of STARS

SMOKA: public archive system

JVO: Virtual Observatory Web Portal

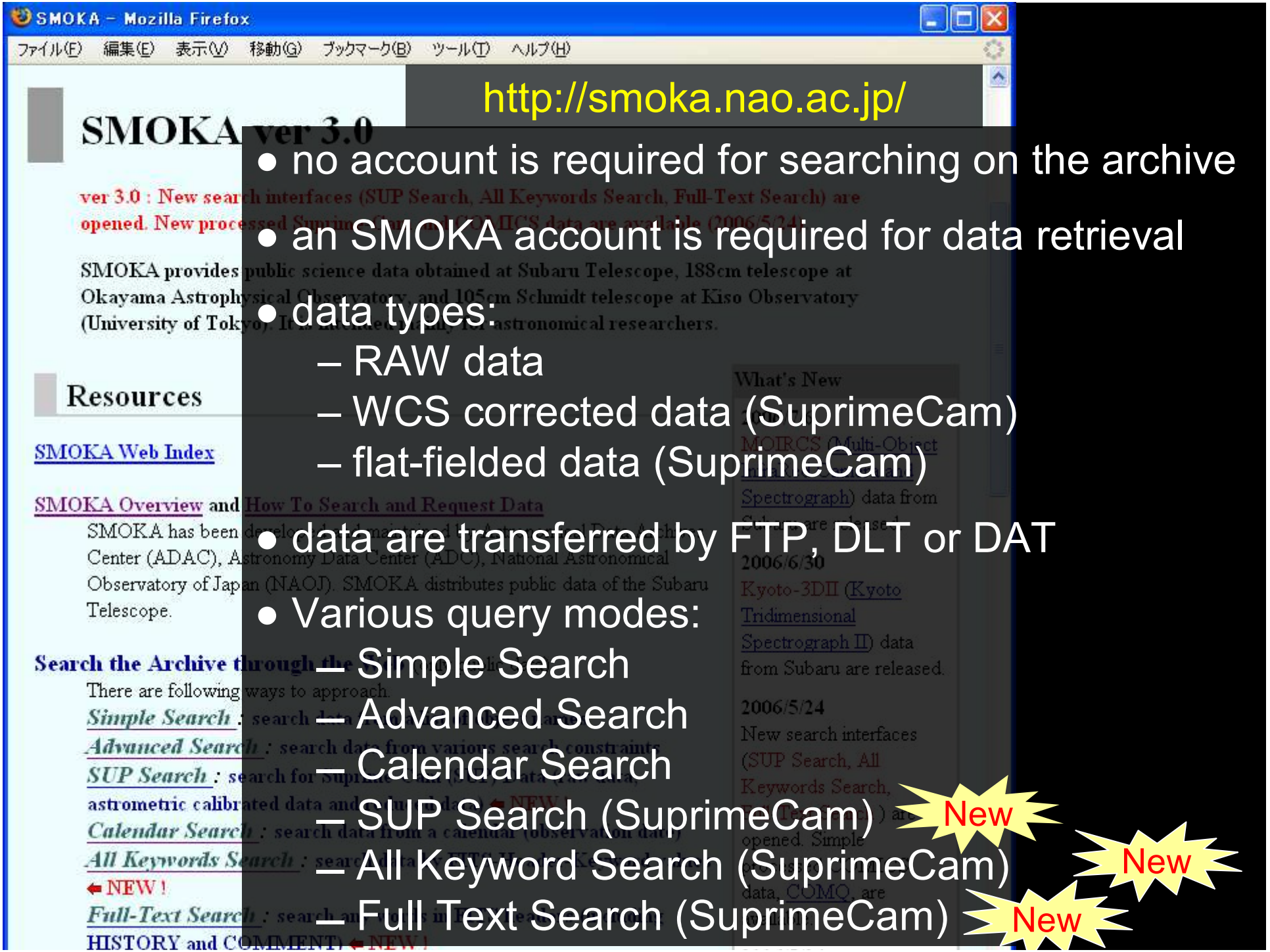
Astronomy Data Center of NAOJ

Y. Mizumoto (JVO), M. Ohishi (JVO), S. Ichikawa (SMOKA),
T. Takata (STARS, SMOKA), Y. Shirasaki (JVO),
M.Enoki (SMOKA), M. Tanaka (JVO), S. Kawanomoto (JVO),
F. Nakata (SMOKA), A. Yoshino (SMOKA),
Y. Yamada (SMOKA)

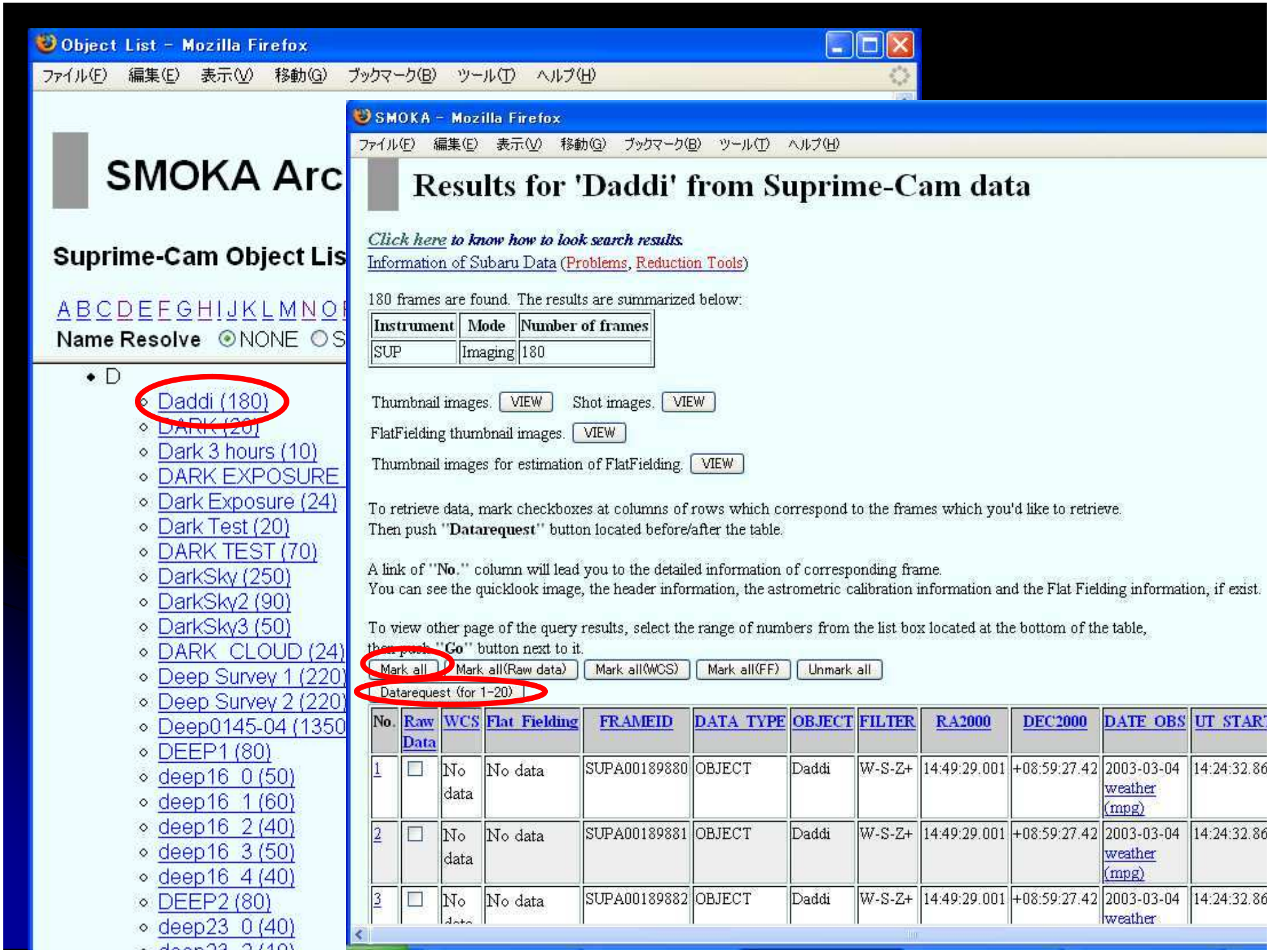
M. Yagi *Optical and Infrared Astronomy Division, NAOJ* (STARS, SMOKA),
M. Ideta *Center for Computational Astrophysics, NAOJ* (SMOKA),
T. Horaguchi *National Science Museum* (SMOKA),
T. Ozawa, *Misato Observatory* (SMOKA)
S. Honda *Optical and Infrared Astronomy Division, NAOJ* (JVO)
Fujitsu Corporation (STARS, JVO)

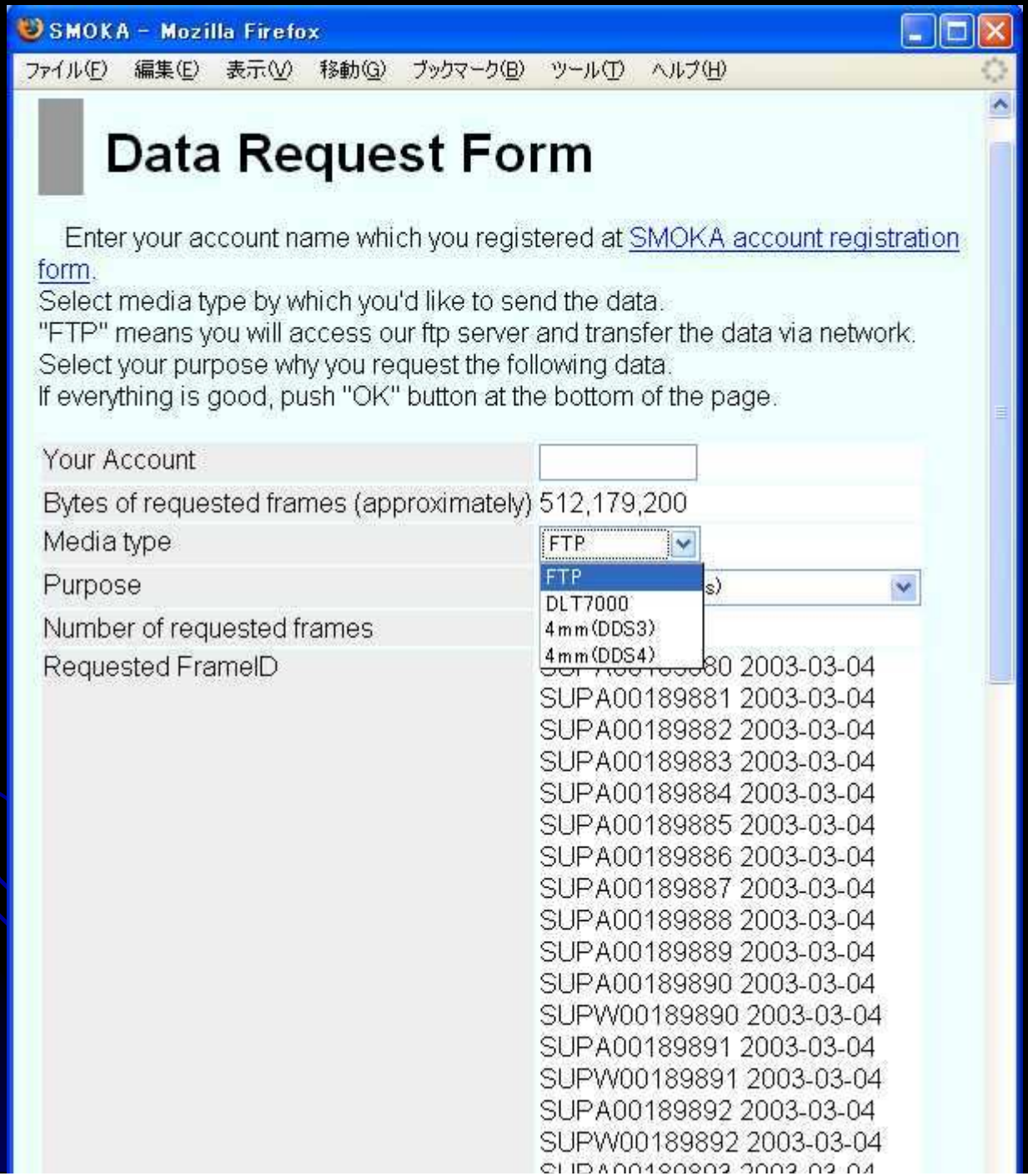
https://stars.naoj.org/
http://sb2002.sb.nao.ac.jp/

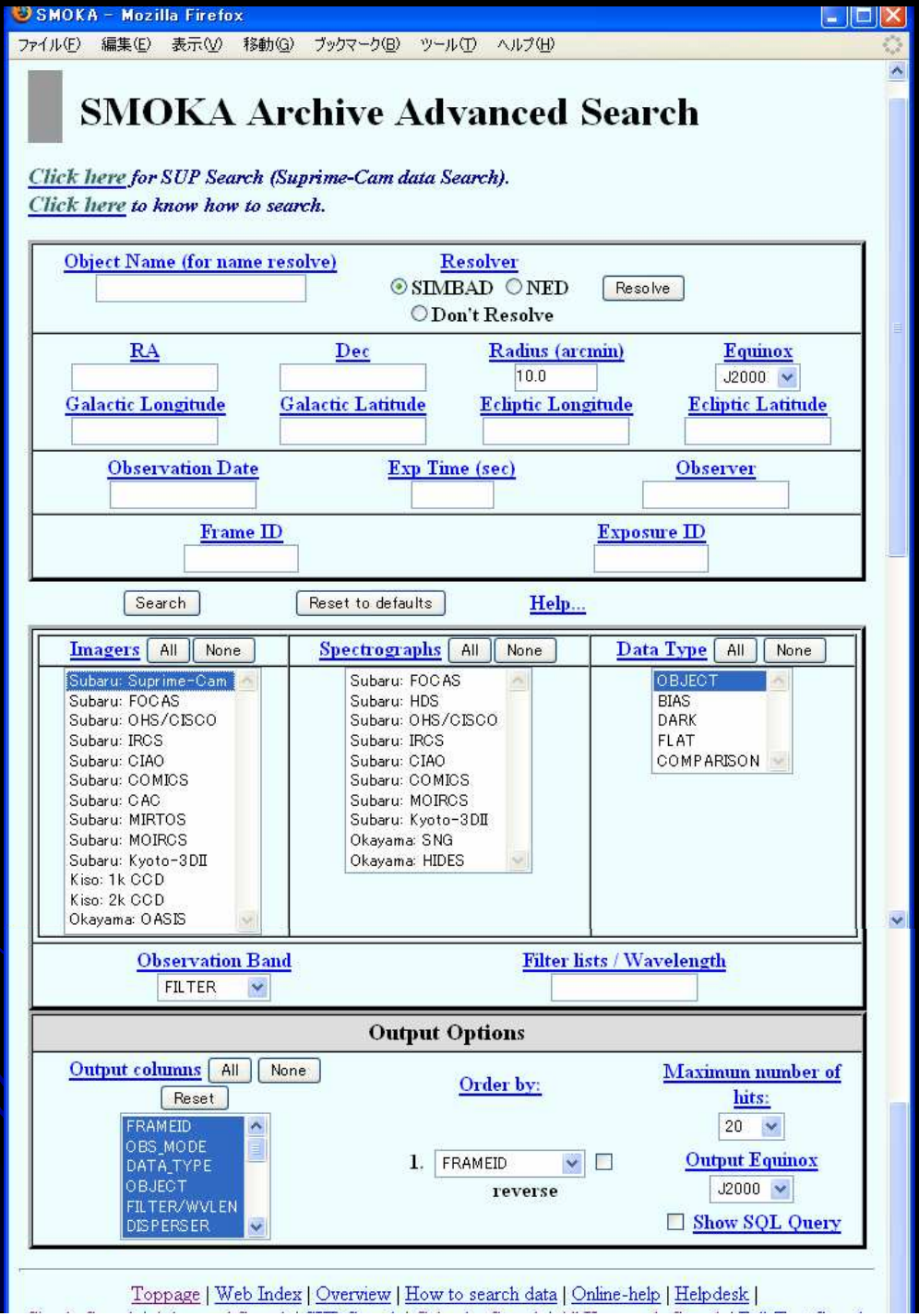
- require a user account on the Subaru computer system
- science, calibration, and environment data
- data are copied to the user scratch area on Subaru computer system
- three query modes:
  - data transfer mode
  - detailed query mode
  - tape retrieval mode

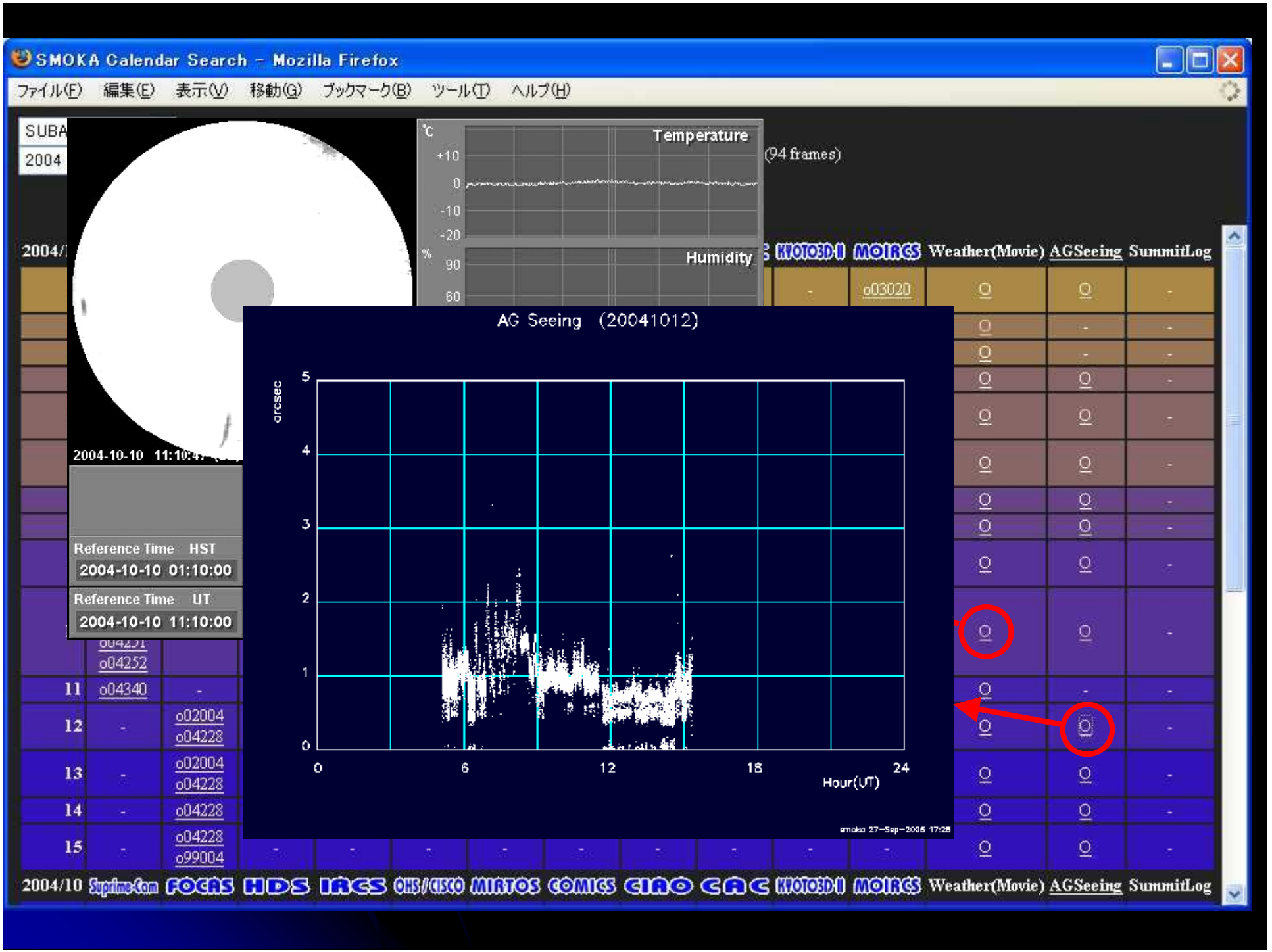


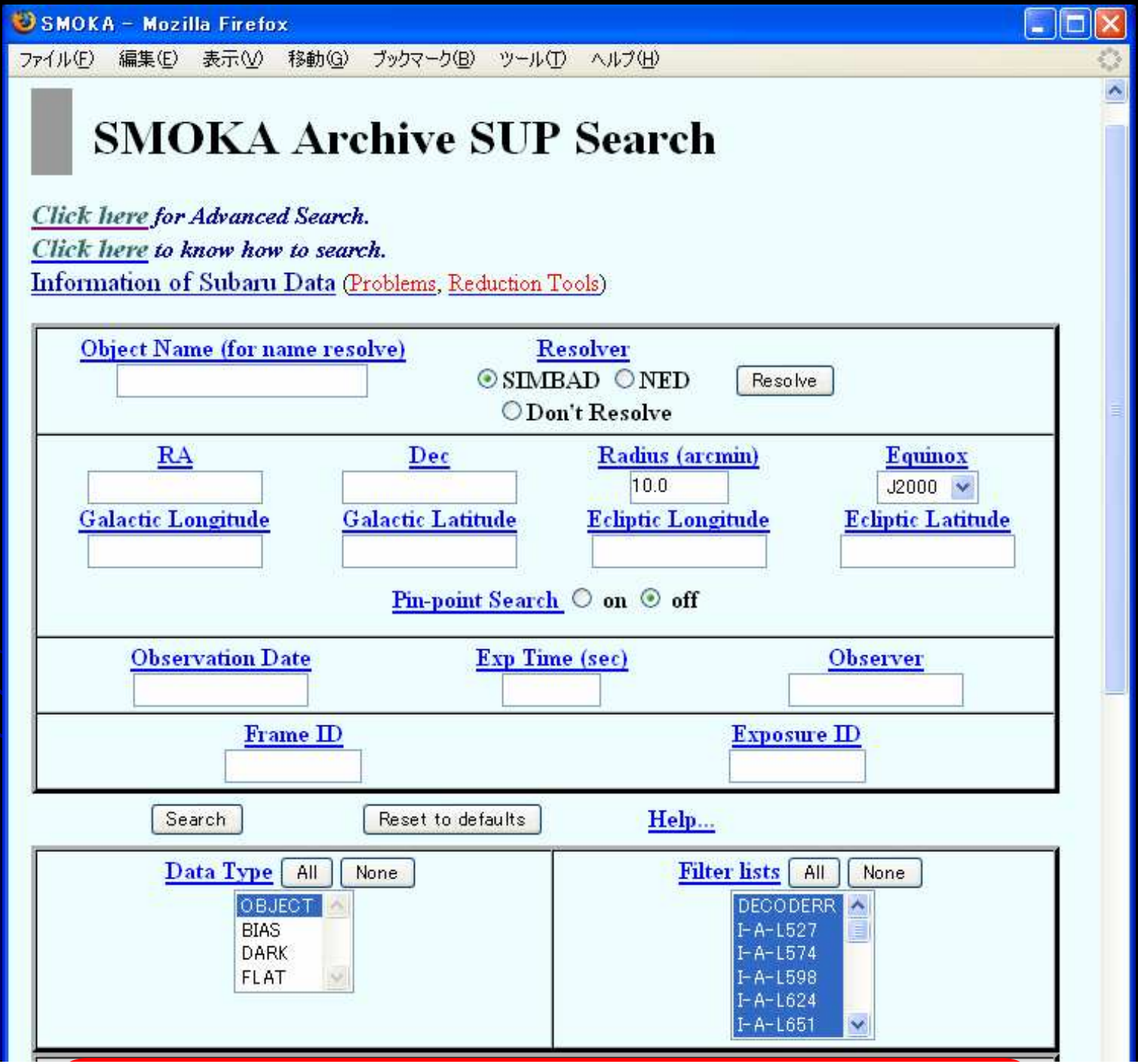
- no account is required for searching on the archive
- an SMOKA account is required for data retrieval
- data types:
  - RAW data
  - WCS corrected data (SuprimeCam)
  - flat-fielded data (SuprimeCam)
- data are transferred by FTP, DLT or DAT
- Various query modes:
  - Simple Search
  - Advanced Search
  - Calendar Search
  - SUP Search (SuprimeCam) New
  - All Keyword Search (SuprimeCam) New
  - Full Text Search (SuprimeCam) New

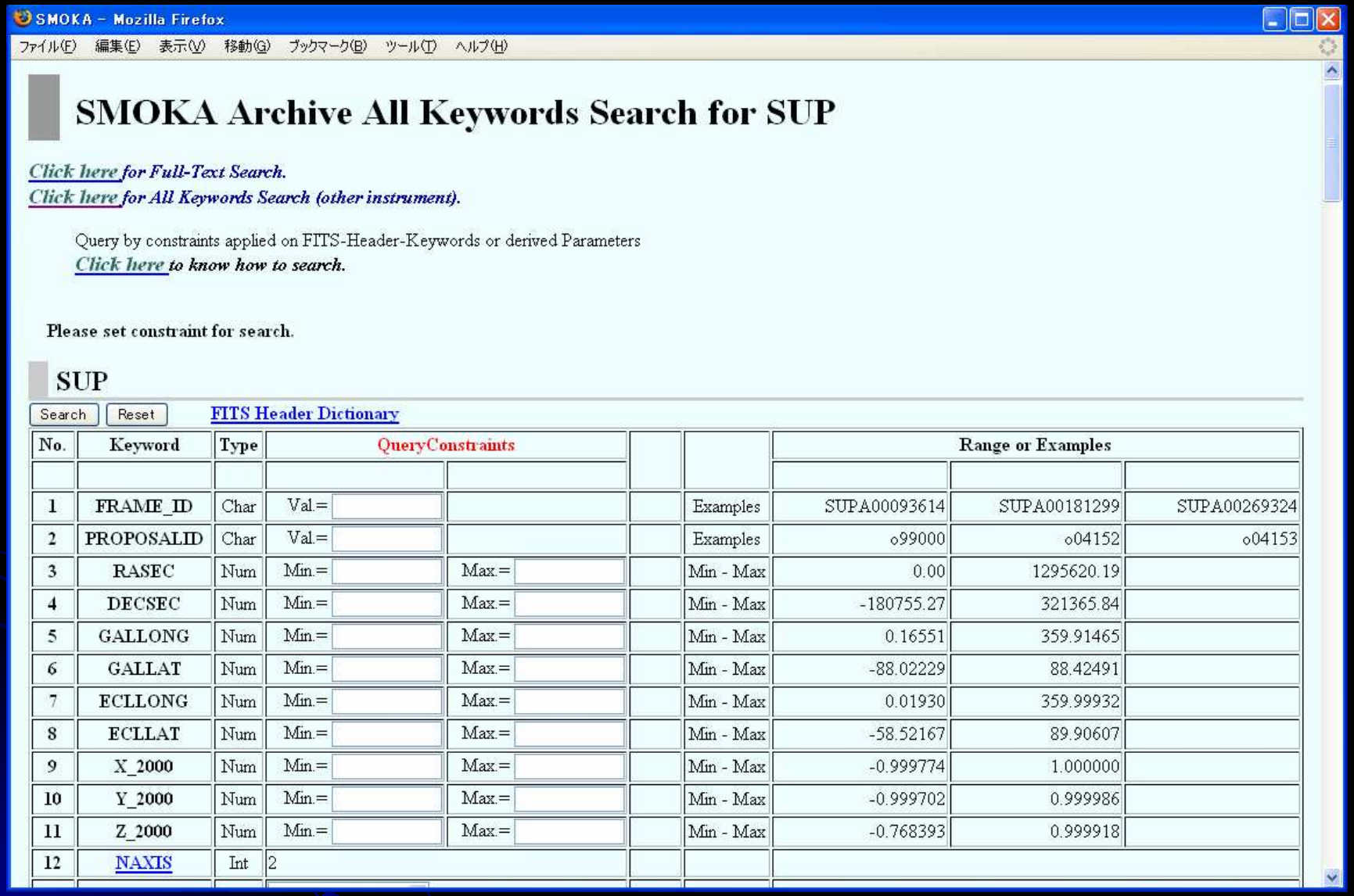

Object List - Mozilla Firefox
ファイル(F) 編集(E) 表示(V) 移動(G) ブックマーク(B) ツール(T) ヘルプ(H)
SMOKA Arc
Suprime-Cam Object Lis
A B C D E F G H I J K L M N O
Name Resolve NONE
D
Daddi (180)
Dark 3 hours (10)
DARK EXPOSURE
Dark Exposure (24)
Dark Test (20)
DARK TEST (70)
DarkSky (250)
DarkSky2 (90)
DarkSky3 (50)
DARK CLOUD (24)
Deep Survey 1 (220)
Deep Survey 2 (220)
Deep0145-04 (1350
DEEP1 (80)
deep16 0 (50)
deep16 1 (60)
deep16 2 (40)
deep16 3 (50)
deep16 4 (40)
DEEP2 (80)
deep23 0 (40)
SMOKA - Mozilla Firefox
ファイル(F) 編集(E) 表示(V) 移動(G) ブックマーク(B) ツール(T) ヘルプ(H)
Results for 'Daddi' from Suprime-Cam data
Click here to know how to look search results.
Information of Subaru Data (Problems, Reduction Tools)
180 frames are found. The results are summarized below:
Instrument | Mode | Number of frames
SUP | Imaging | 180
Thumbnail images. VIEW Shot images. VIEW
FlatFielding thumbnail images. VIEW
Thumbnail images for estimation of FlatFielding. VIEW
To retrieve data, mark checkboxes at columns of rows which correspond to the frames which you'd like to retrieve.
Then push "Datarequest" button located before/after the table.
A link of "No." column will lead you to the detailed information of corresponding frame.
You can see the quicklook image, the header information, the astrometric calibration information and the Flat Fielding information, if exist.
To view other page of the query results, select the range of numbers from the list box located at the bottom of the table,
then push "Go" button next to it.
Mark all
Mark all(Raw data)
Mark all(WCS)
Mark all(FF)
Unmark all
Datarequest (for 1-20)
No. | Raw Data | WCS | Flat Fielding | FRAMEID | DATA TYPE | OBJECT | FILTER | RA2000 | DEC2000 | DATE_OBS | UT_STAR
1 | No data | No data | SUPA00189880 | OBJECT | Daddi | W-S-Z+ | 14:49:29.001 | +08:59:27.42 | 2003-03-04 | 14:24:32.86
weather (mpg)
2 | No data | No data | SUPA00189881 | OBJECT | Daddi | W-S-Z+ | 14:49:29.001 | +08:59:27.42 | 2003-03-04 | 14:24:32.86
weather (mpg)
3 | No data | No data | SUPA00189882 | OBJECT | Daddi | W-S-Z+ | 14:49:29.001 | +08:59:27.42 | 2003-03-04 | 14:24:32.86
weather


SMOKA - Mozilla Firefox
ファイル(F) 編集(E) 表示(V) 移動(G) ブックマーク(B) ツール(T) ヘルプ(H)
Data Request Form
Enter your account name which you registered at SMOKA account registration form.
Select media type by which you'd like to send the data.
"FTP" means you will access our ftp server and transfer the data via network.
Select your purpose why you request the following data.
If everything is good, push "OK" button at the bottom of the page.
Your Account
Bytes of requested frames (approximately) 512,179,200
Media type
FTP
FTP
DLT7000
4mm(DDS3)
4mm(DDS4)
Purpose
Number of requested frames
Requested FrameID
SUPA00189881 2003-03-04
SUPA00189882 2003-03-04
SUPA00189883 2003-03-04
SUPA00189884 2003-03-04
SUPA00189885 2003-03-04
SUPA00189886 2003-03-04
SUPA00189887 2003-03-04
SUPA00189888 2003-03-04
SUPA00189889 2003-03-04
SUPA00189890 2003-03-04
SUPW00189890 2003-03-04
SUPA00189891 2003-03-04
SUPW00189891 2003-03-04
SUPA00189892 2003-03-04
SUPW00189892 2003-03-04


SMOKA – Mozilla Firefox
ファイル(F) 編集(E) 表示(V) 移動(G) ブックマーク(B) ツール(T) ヘルプ(H)
SMOKA Archive Advanced Search
Click here for SUP Search (Suprime-Cam data Search).
Click here to know how to search.
Object Name (for name resolve)
Resolver
SIMBAD NED
Don't Resolve
Resolve
RA
Dec
Radius (arcmin)
10.0
Equinox
J2000
Galactic Longitude
Galactic Latitude
Ecliptic Longitude
Ecliptic Latitude
Observation Date
Exp Time (sec)
Observer
Frame ID
Exposure ID
Search
Reset to defaults
Help...
Imagers All None
Subaru: Suprime-Cam
Subaru: FOCAS
Subaru: OHS/CISCO
Subaru: IRCS
Subaru: CIAO
Subaru: COMICS
Subaru: CAC
Subaru: MIRTOS
Subaru: MOIRCS
Subaru: Kyoto-3DII
Kiso: 1k CCD
Kiso: 2k CCD
Okayama: OASIS
Spectrographs All None
Subaru: FOCAS
Subaru: HDS
Subaru: OHS/CISCO
Subaru: IRCS
Subaru: CIAO
Subaru: COMICS
Subaru: MOIRCS
Subaru: Kyoto-3DII
Okayama: SNG
Okayama: HIDES
Data Type All None
OBJECT
BIAS
DARK
FLAT
COMPARISON
Observation Band
FILTER
Filter lists / Wavelength
Output Options
Output columns All None
Reset
FRAMEID
OBS_MODE
DATA_TYPE
OBJECT
FILTER/WVLEN
DISPERSER
Order by:
1. FRAMEID
reverse
Maximum number of hits:
20
Output Equinox
J2000
Show SQL Query
Toppage | Web Index | Overview | How to search data | Online-help | Helpdesk |


SMOKA Calendar Search - Mozilla Firefox
ファイル(F) 編集(E) 表示(V) 移動(G) ブックマーク(B) ツール(T) ヘルプ(H)
SUBA
2004
Temperature
(94 frames)
Humidity
2004-10-10 11:10:47
Reference Time HST
2004-10-10 01:10:00
Reference Time UT
2004-10-10 11:10:00
AG Seeing (20041012)
arcsec
Hour(UT)
Weather(Movie)
AGSeeing
SummitLog
Suprime-Cam
FOCAS
HDS
IRCS
OHS/CISCO
MIRTOS
COMICS
CIAO
CAC
KYOTO3DII
MOIRCS


SMOKA – Mozilla Firefox
ファイル(F) 編集(E) 表示(V) 移動(G) ブックマーク(B) ツール(T) ヘルプ(H)
SMOKA Archive SUP Search
Click here for Advanced Search.
Click here to know how to search.
Information of Subaru Data (Problems, Reduction Tools)
Object Name (for name resolve)
Resolver
SIMBAD NED
Don't Resolve
Resolve
RA
Dec
Radius (arcmin)
10.0
Equinox
J2000
Galactic Longitude
Galactic Latitude
Ecliptic Longitude
Ecliptic Latitude
Pin-point Search on off
Observation Date
Exp Time (sec)
Observer
Frame ID
Exposure ID
Search
Reset to defaults
Help...
Data Type All None
OBJECT
BIAS
DARK
FLAT
Filter lists All None
DECODERR
I-A-L527
I-A-L574
I-A-L598
I-A-L624
I-A-L651


SMOKA - Mozilla Firefox
ファイル(F) 編集(E) 表示(V) 移動(G) ブックマーク(B) ツール(T) ヘルプ(H)
SMOKA Archive All Keywords Search for SUP
Click here for Full-Text Search.
Click here for All Keywords Search (other instrument).
Query by constraints applied on FITS-Header-Keywords or derived Parameters
Click here to know how to search.
Please set constraint for search.
SUP
Search
Reset
FITS Header Dictionary
No.
Keyword
Type
QueryConstraints
Range or Examples
1 FRAME_ID Char Val.= Examples SUPA00093614 SUPA00181299 SUPA00269324
2 PROPOSALID Char Val.= Examples o99000 o04152 o04153
3 RASEC Num Min.= Max.= Min - Max 0.00 1295620.19
4 DECSEC Num Min.= Max.= Min - Max -180755.27 321365.84
5 GALLONG Num Min.= Max.= Min - Max 0.16551 359.91465
6 GALLAT Num Min.= Max.= Min - Max -88.02229 88.42491
7 ECLLONG Num Min.= Max.= Min - Max 0.01930 359.99932
8 ECLLAT Num Min.= Max.= Min - Max -58.52167 89.90607
9 X_2000 Num Min.= Max.= Min - Max -0.999774 1.000000
10 Y_2000 Num Min.= Max.= Min - Max -0.999702 0.999986
11 Z_2000 Num Min.= Max.= Min - Max -0.768393 0.999918
12 NAXIS Int 2


SMOKA – Mozilla Firefox
ファイル(F) 編集(E) 表示(V) 移動(G) ブックマーク(B) ツール(T) ヘルプ(H)
SMOKA Archive Full Text Search
Click here for All Keywords Search.
Query by constraints applied on FITS-Header-Keywords or derived Parameters
Click here to know how to search.
Instrument and Search Words
Search Instrument : Subaru / Suprime-Cam
Search Word :
Search
Reset
Output Options
Output columns
All
None
Reset
FRAMEID
OBS_MODE
DATA_TYPE
OBJECT
FILTER/WVLEN
DISPERSER
Order by:
1. FRAMEID
reverse
Maximum number of hits:
20
Output Equinox
J2000
Toppage | Web Index | Overview | How to search data | Online-help | Helpdesk |
Simple Search | Advanced Search | SUP Search | Calendar Search | All Keywords Search | Full-Text Search
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All Rights Reserved.
data_center@dbc.nao.ac.jp
SMOKA is operated by Astronomy Data Center
and Subaru Telescope.

Current Priority Issues

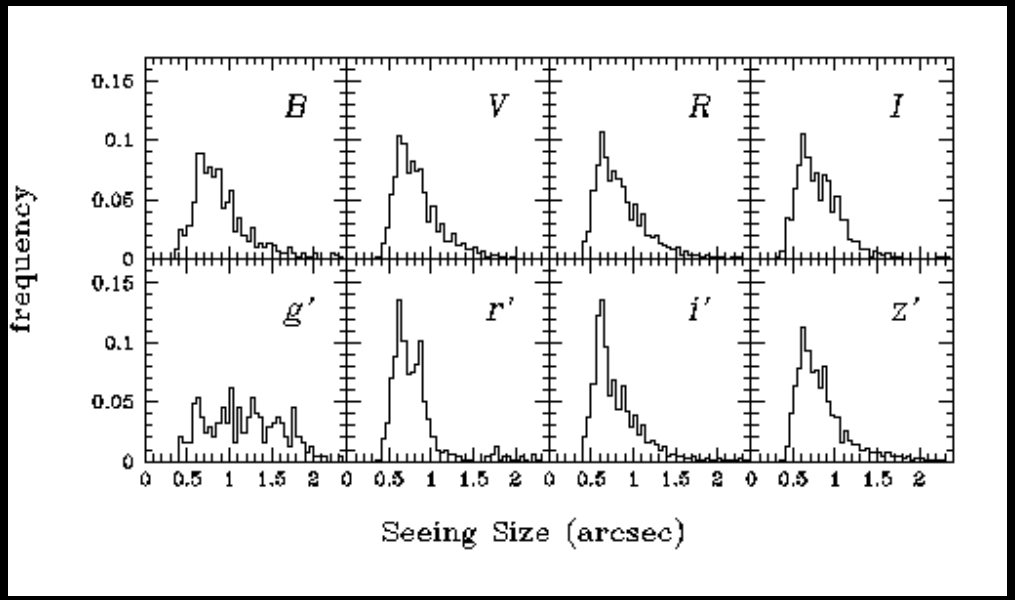
- data search based on the quality parameters
  - weather information, seeing, limiting magnitude…
  - Quality assessment system (NAQATA)
- providing processed data
  - reduced image/spectrum, co-added image, object catalog, spectrum line parameters…
  - Control the data quality
  - Researcher can devote himself to scientific analysis
  - Process the data at locations near (in term of network) the data archive
- VO interface
  - Interoperable data service

Quality Assessment System (NAQATA)

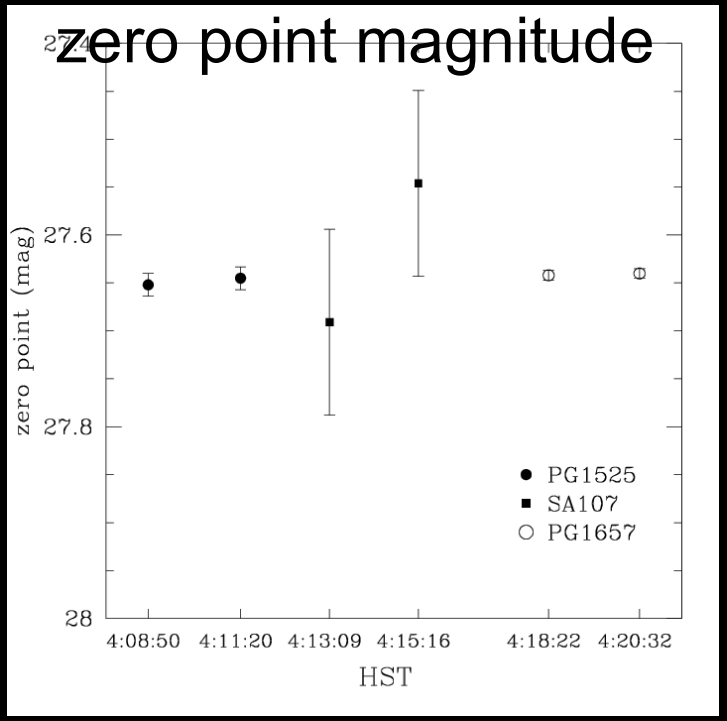
F. Nakata et al. Poster 2.16

- FITS format check
  - Check FITS standard compliance
- FITS header information check
  - Consistency check among the header values
  - Check if mandatory information is property written
  - Check format of all the header values
- Data quality evaluation (SuprimeCam)
  - Photometric zero point
  - PSF and elongation
  - Trend analysis of bias and background level
  - Monitor of gain and readout noise of CCD

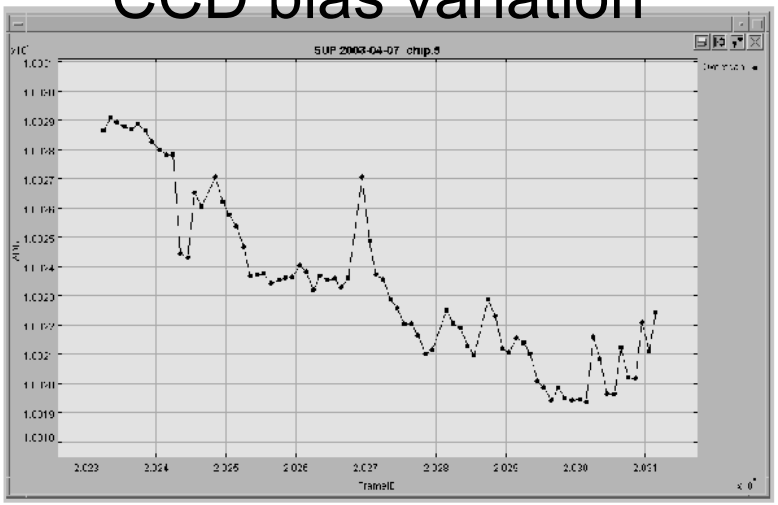
PSF distribution



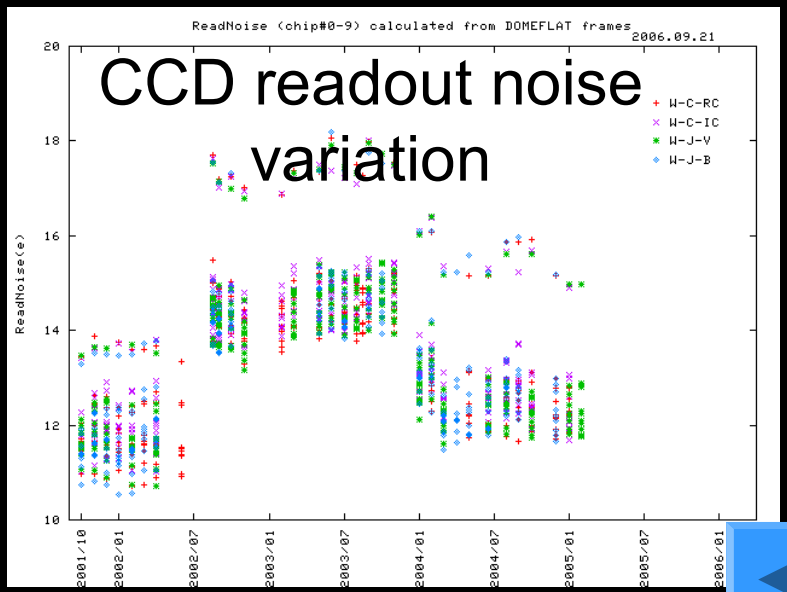
zero point magnitude



CCD bias variation



CCD readout noise variation



Necessity of the Quality Control

- Raw data reduction → knowledge about characteristics of the detector is indispensable
- Information on the environment → essential to derive a physical quantity correctly
- Archive users often have no knowledge of them → remove the detector and environment dependency.
- The quality of the data is slowly improved as a function of time (experience) → The reduction procedure at each release should be referable, and the data should be reproducible
- Data provider should owe the responsibility to manage the reproducibility of the released data

Grid Computing

- Subaru data reduction pipeline system
  - Web service based GRID
  - Generates calibration data (Super-Flat) for all the SuprimeCam data in a week
  - On-the-fly data reduction with the pre-prepared Super-Flat
  - Users can access to the data reduced with the most recent algorithm
  - Also support the older version of pipeline
- Backend computing system of the JVO
  - catalog generation
  - photo-z calculation
  - Image arithmetic
  - …

Components of the Grid system

- Computing resource management
  - Monitoring and Discovery Service (MDS)
- Data transfer
  - FTP or HTTP get
- Remote Job execution
  - Web service (Tomcat + AXIS)
- Authentication
  - No authentication at resource by resource
- All the components were developed by ourselves
  - Plan to introduce NAREGI GRID middleware

MDS Interface

Computing Resource → MDS

```
void reportStatus(String hostId,
                  double load, int njob)

void reportJobStatus(String hostId, int jobId,
                     String status)
```

Grid Client → MDS

```
ServiceInfo resolveService(String serviceId)

String getJobStatus(String hostId, int jobId)

…
```

Job Execution and Data Transfer Interface

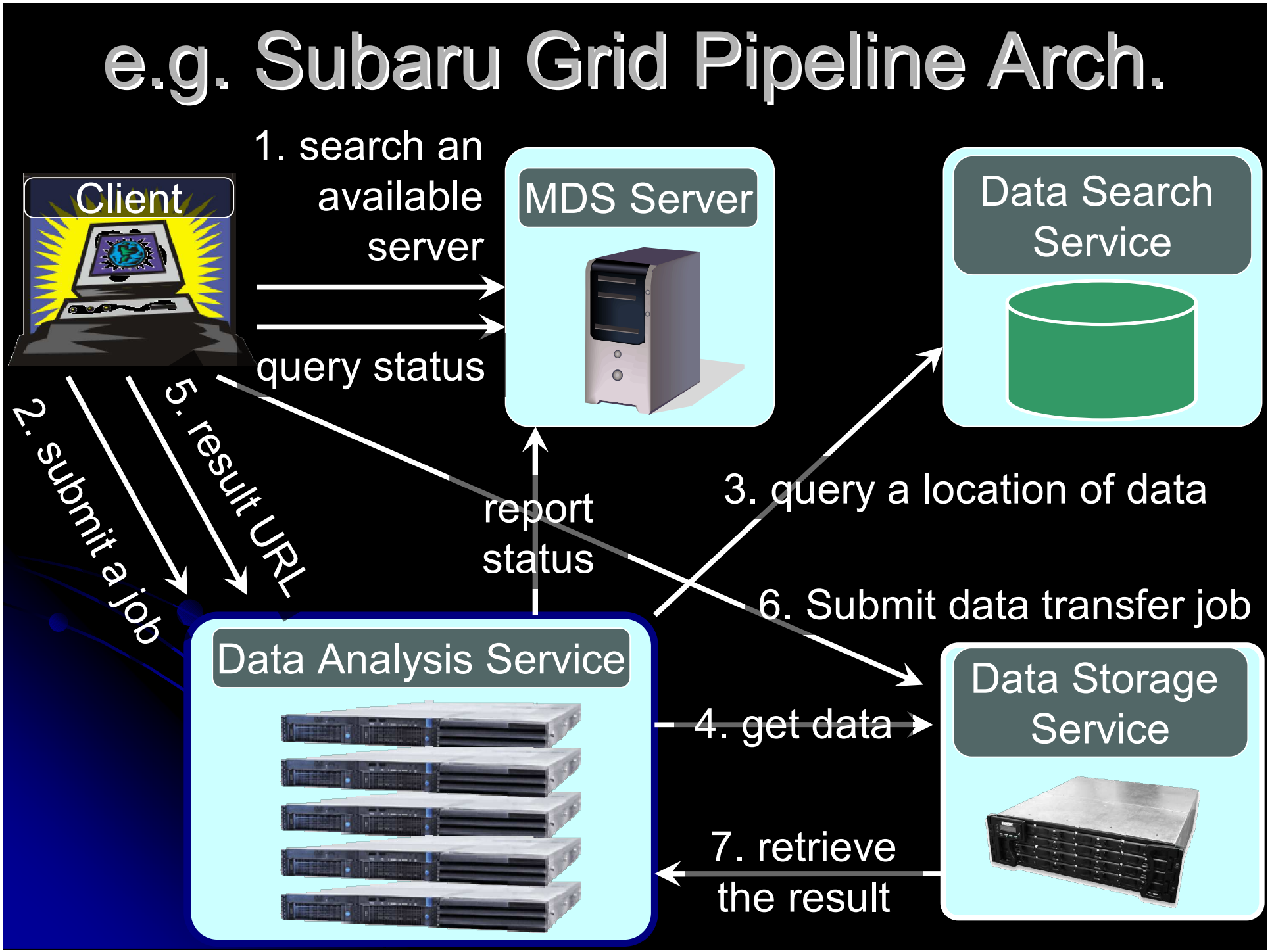
Grid Client → Computing Resource

```
int submitJob(String command, String argv)
String getResultURL(int jobId)
String query(int jobId)
String finalize(int jobId)
```

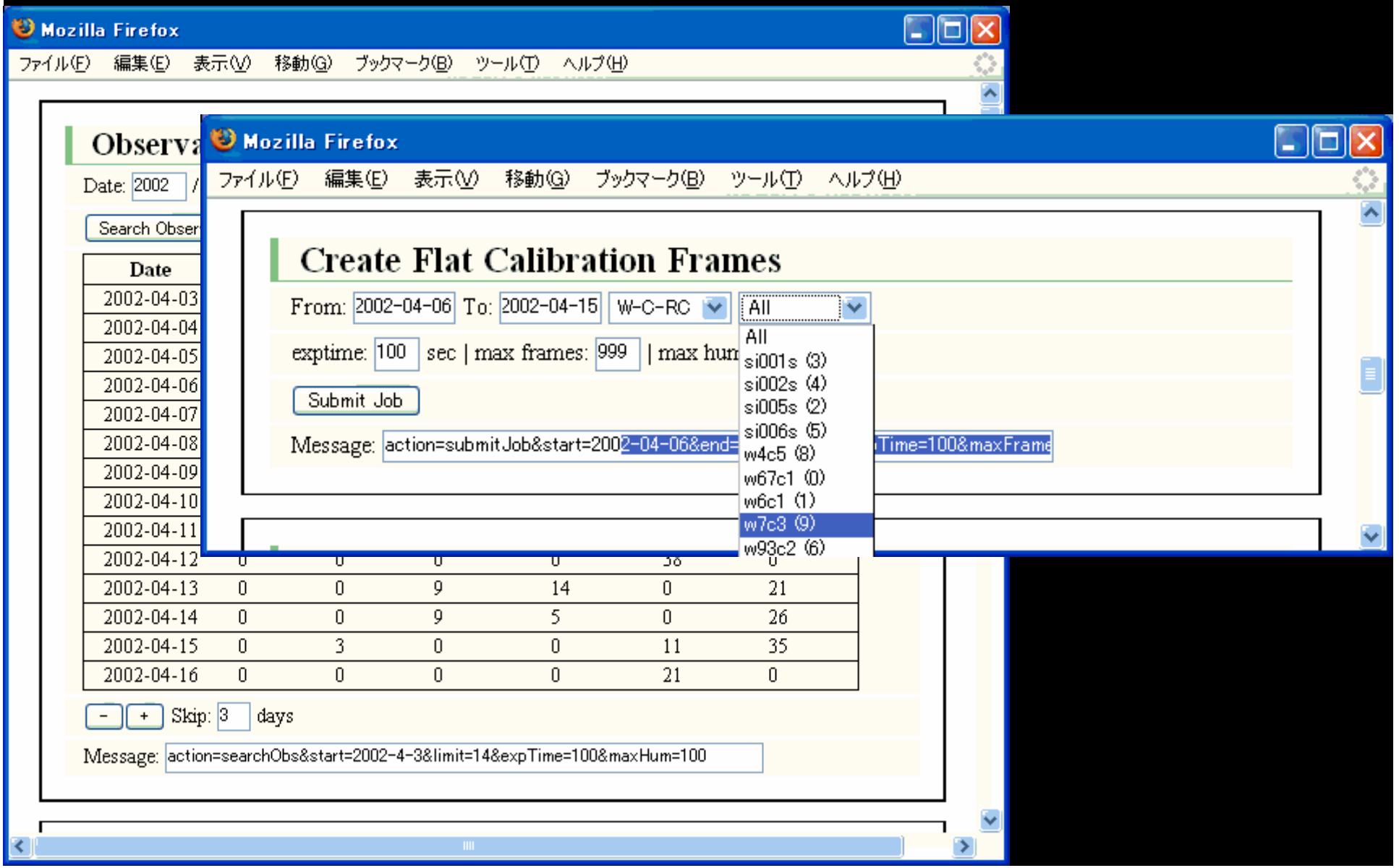
Grid Client → Storage Resource

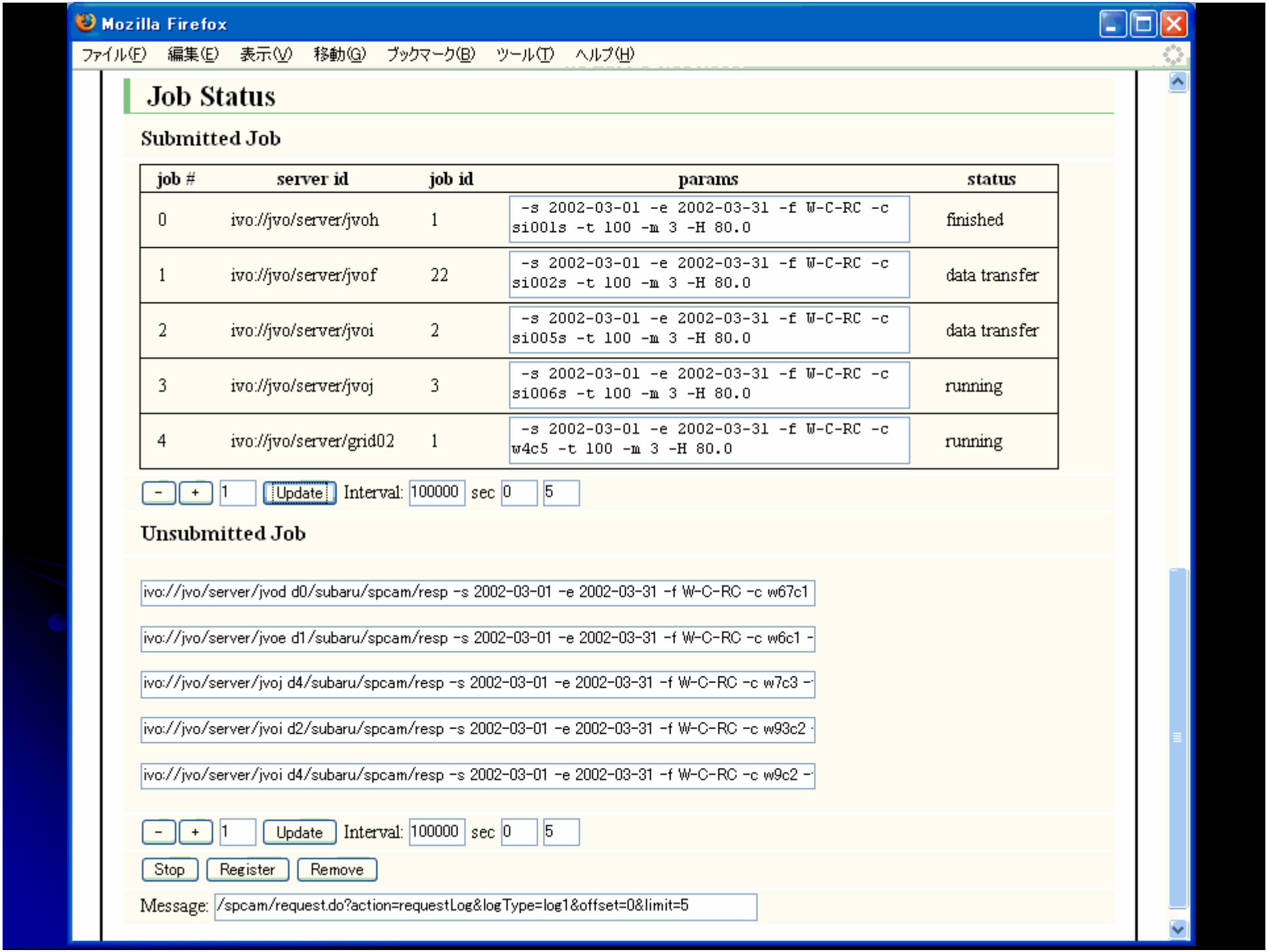
```
Int copyAsync(String src, String dest)
Void copy(String src, String dest)
Void finalize(int jobId)
```

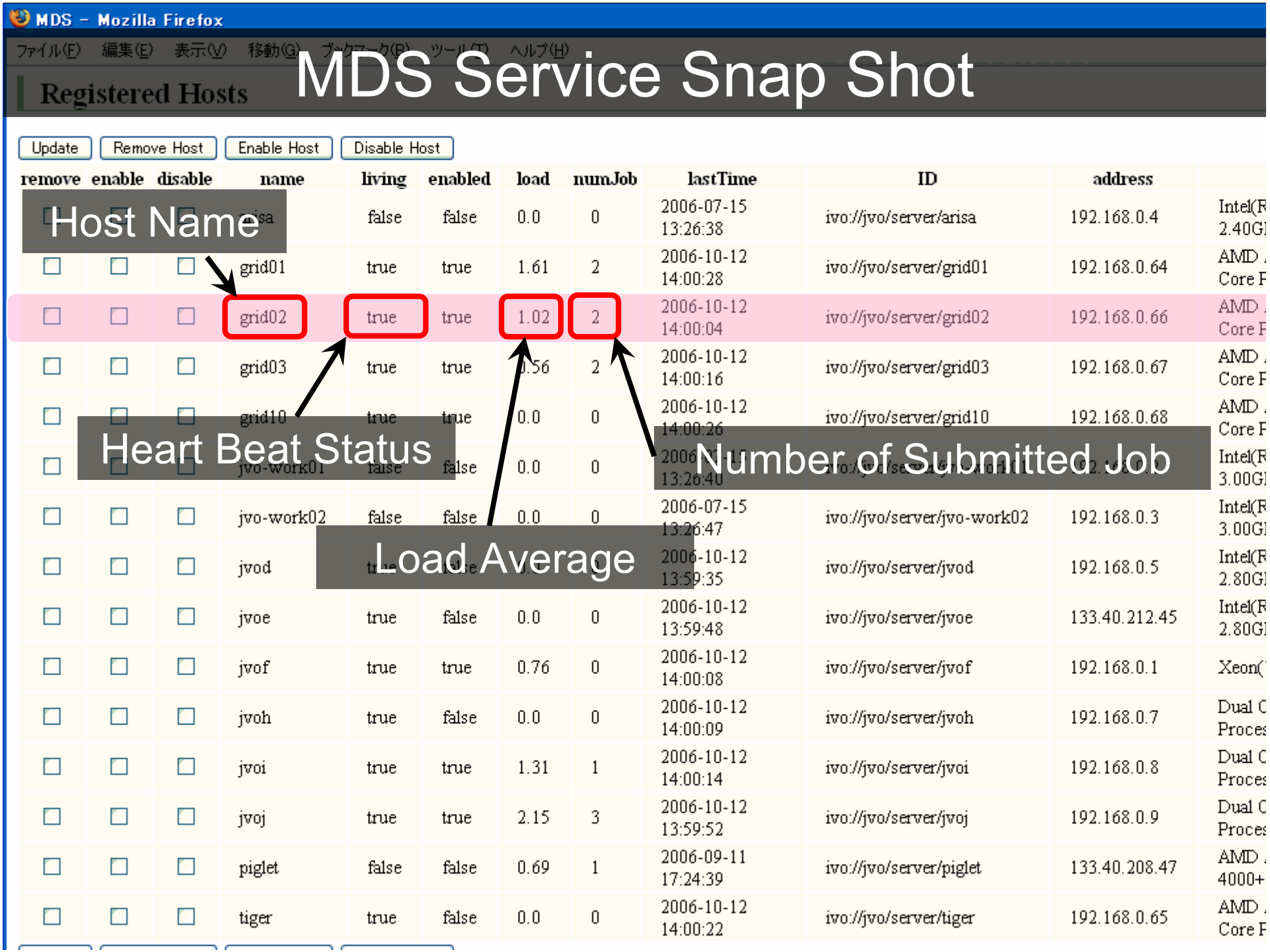
e.g. Subaru Grid Pipeline Arch.



SuprimeCam Response Calculator

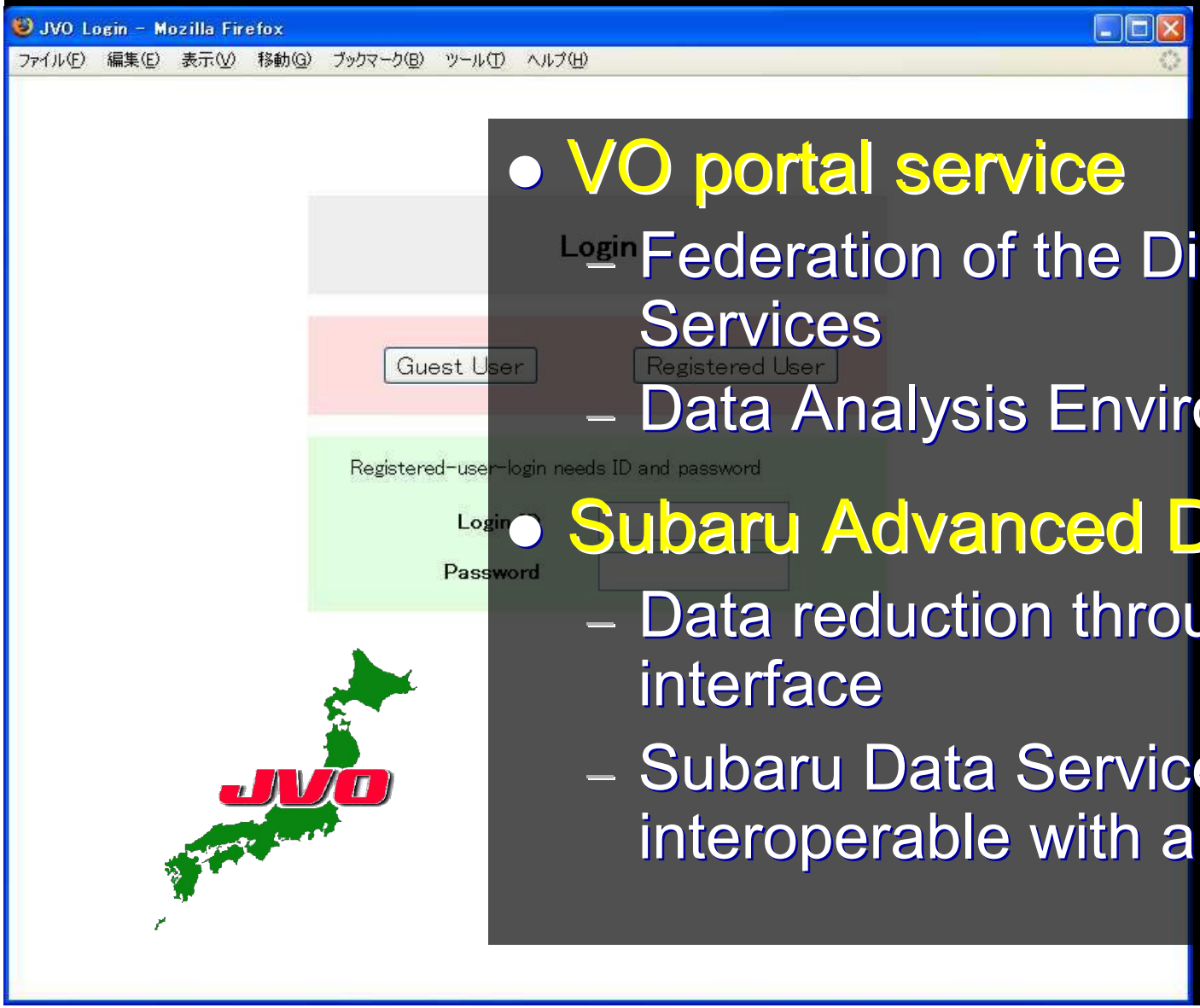



Mozilla Firefox
ファイル(F) 編集(E) 表示(V) 移動(G) ブックマーク(B) ツール(T) ヘルプ(H)
Job Status
Submitted Job
job # | server id | job id | params | status
0 | ivo://jvo/server/jvoh | 1 | -s 2002-03-01 -e 2002-03-31 -f W-C-RC -c si001s -t 100 -m 3 -H 80.0 | finished
1 | ivo://jvo/server/jvof | 22 | -s 2002-03-01 -e 2002-03-31 -f W-C-RC -c si002s -t 100 -m 3 -H 80.0 | data transfer
2 | ivo://jvo/server/jvoi | 2 | -s 2002-03-01 -e 2002-03-31 -f W-C-RC -c si005s -t 100 -m 3 -H 80.0 | data transfer
3 | ivo://jvo/server/jvoj | 3 | -s 2002-03-01 -e 2002-03-31 -f W-C-RC -c si006s -t 100 -m 3 -H 80.0 | running
4 | ivo://jvo/server/grid02 | 1 | -s 2002-03-01 -e 2002-03-31 -f W-C-RC -c w4c5 -t 100 -m 3 -H 80.0 | running
- + 1 Update Interval: 100000 sec 0 5
Unsubmitted Job
ivo://jvo/server/jvod d0/subaru/spcam/resp -s 2002-03-01 -e 2002-03-31 -f W-C-RC -c w67c1
ivo://jvo/server/jvoe d1/subaru/spcam/resp -s 2002-03-01 -e 2002-03-31 -f W-C-RC -c w6c1 -
ivo://jvo/server/jvoj d4/subaru/spcam/resp -s 2002-03-01 -e 2002-03-31 -f W-C-RC -c w7c3 -
ivo://jvo/server/jvoi d2/subaru/spcam/resp -s 2002-03-01 -e 2002-03-31 -f W-C-RC -c w93c2 -
ivo://jvo/server/jvoi d4/subaru/spcam/resp -s 2002-03-01 -e 2002-03-31 -f W-C-RC -c w9c2 -
- + 1 Update Interval: 100000 sec 0 5
Stop Register Remove
Message: /spcam/request.do?action=requestLog&logType=log1&offset=0&limit=5

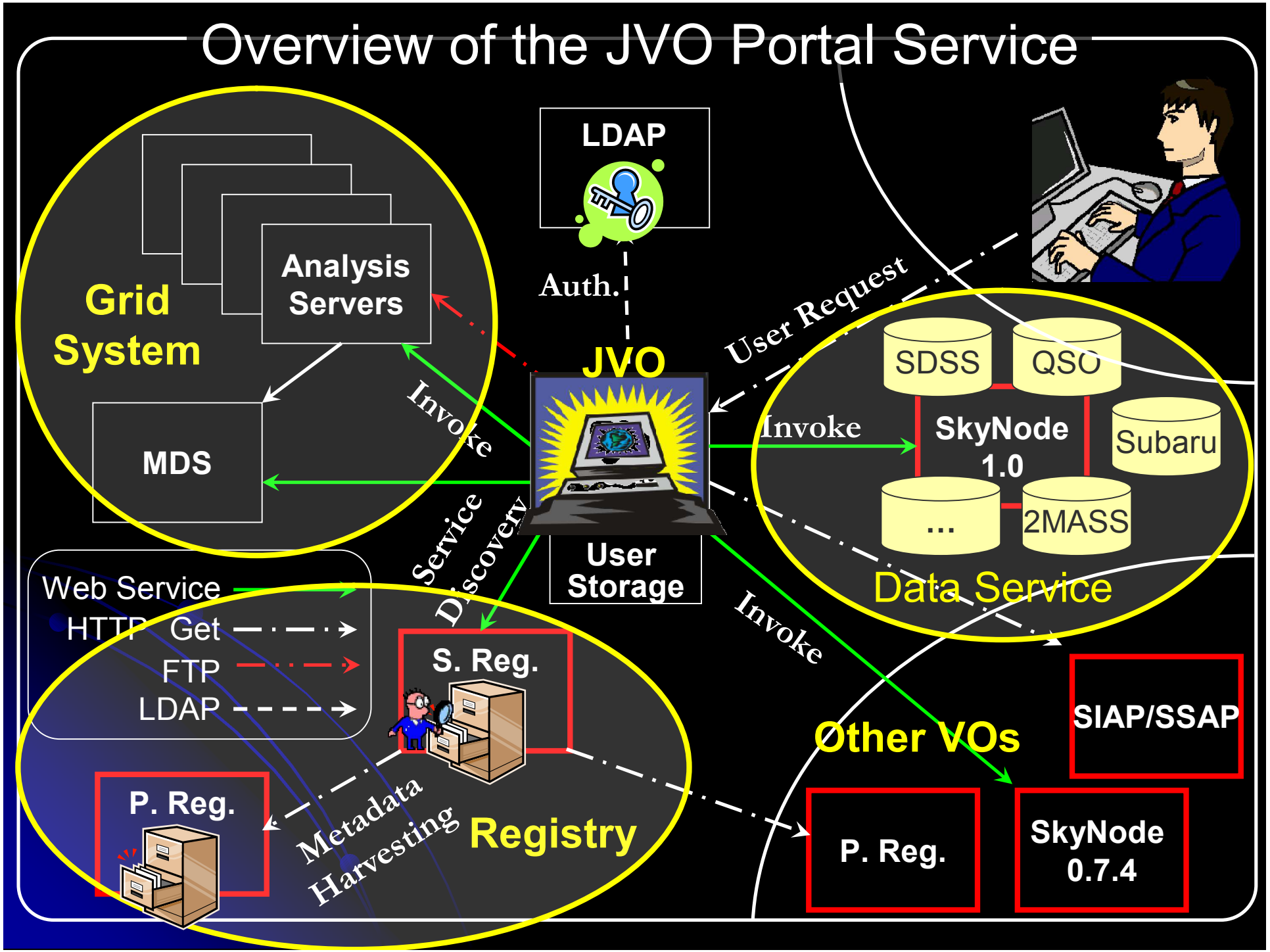

MDS - Mozilla Firefox
ファイル(F) 編集(E) 表示(V) 移動(G) ブックマーク(B) ツール(T) ヘルプ(H)
MDS Service Snap Shot
Registered Hosts
Update
Remove Host
Enable Host
Disable Host
remove enable disable name living enabled load numJob lastTime ID address
Host Name
Heart Beat Status
Load Average
Number of Submitted Job
arisa false false 0.0 0 2006-07-15 13:26:38 ivo://jvo/server/arisa 192.168.0.4
grid01 true true 1.61 2 2006-10-12 14:00:28 ivo://jvo/server/grid01 192.168.0.64
grid02 true true 1.02 2 2006-10-12 14:00:04 ivo://jvo/server/grid02 192.168.0.66
grid03 true true 0.56 2 2006-10-12 14:00:16 ivo://jvo/server/grid03 192.168.0.67
grid10 true true 0.0 0 2006-10-12 14:00:26 ivo://jvo/server/grid10 192.168.0.68
jvo-work01 false false 0.0 0
jvo-work02 false false 0.0 0 2006-07-15 13:26:47 ivo://jvo/server/jvo-work02 192.168.0.3
jvod true true 0.0 0 2006-10-12 13:59:35 ivo://jvo/server/jvod 192.168.0.5
jvoe true false 0.0 0 2006-10-12 13:59:48 ivo://jvo/server/jvoe 133.40.212.45
jvof true true 0.76 0 2006-10-12 14:00:08 ivo://jvo/server/jvof 192.168.0.1
jvoh true false 0.0 0 2006-10-12 14:00:09 ivo://jvo/server/jvoh 192.168.0.7
jvoi true true 1.31 1 2006-10-12 14:00:14 ivo://jvo/server/jvoi 192.168.0.8
jvoj true true 2.15 3 2006-10-12 13:59:52 ivo://jvo/server/jvoj 192.168.0.9
piglet false false 0.69 1 2006-09-11 17:24:39 ivo://jvo/server/piglet 133.40.208.47
tiger true false 0.0 0 2006-10-12 14:00:22 ivo://jvo/server/tiger 192.168.0.65

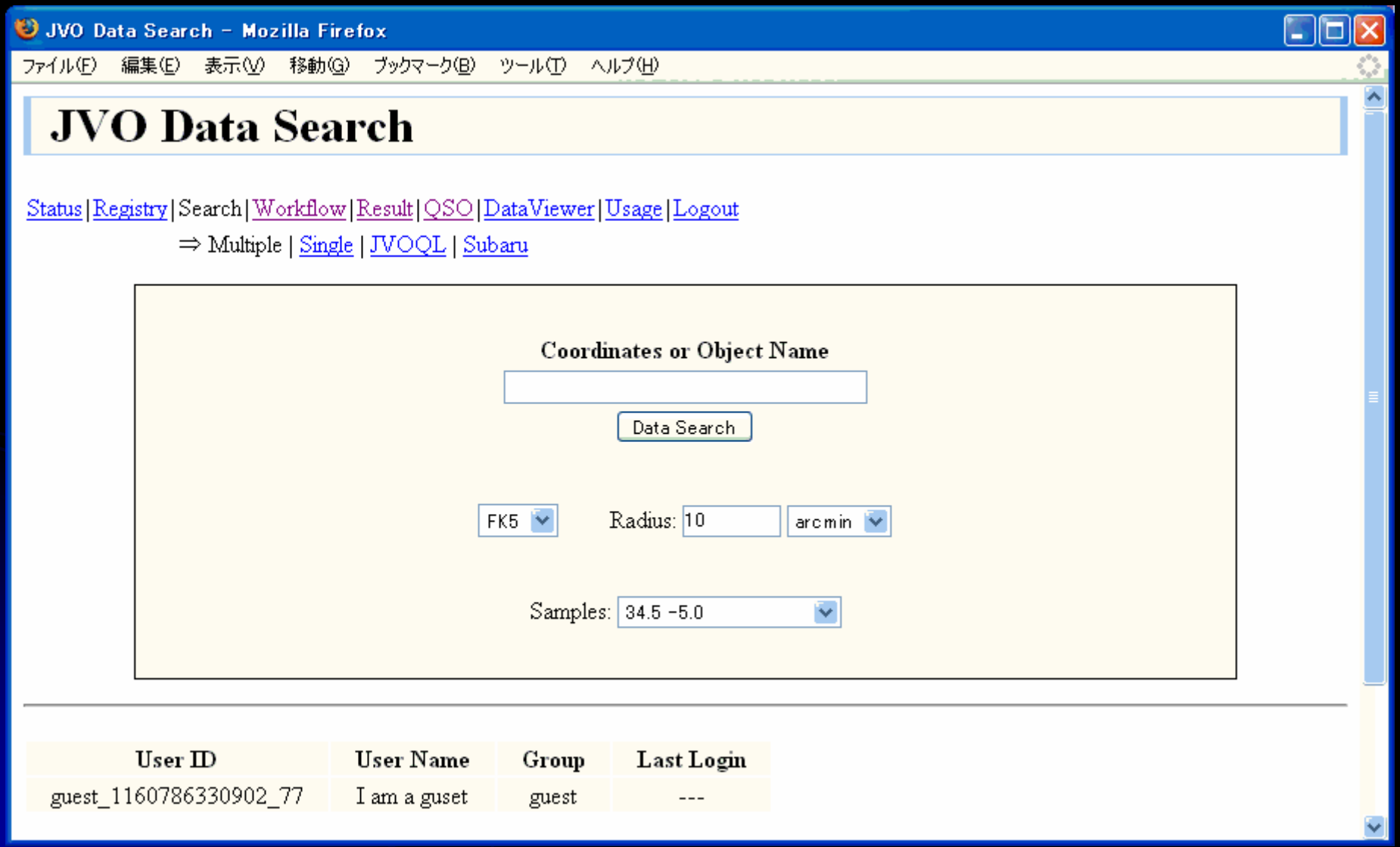
Japanese Virtual Observatory (JVO)

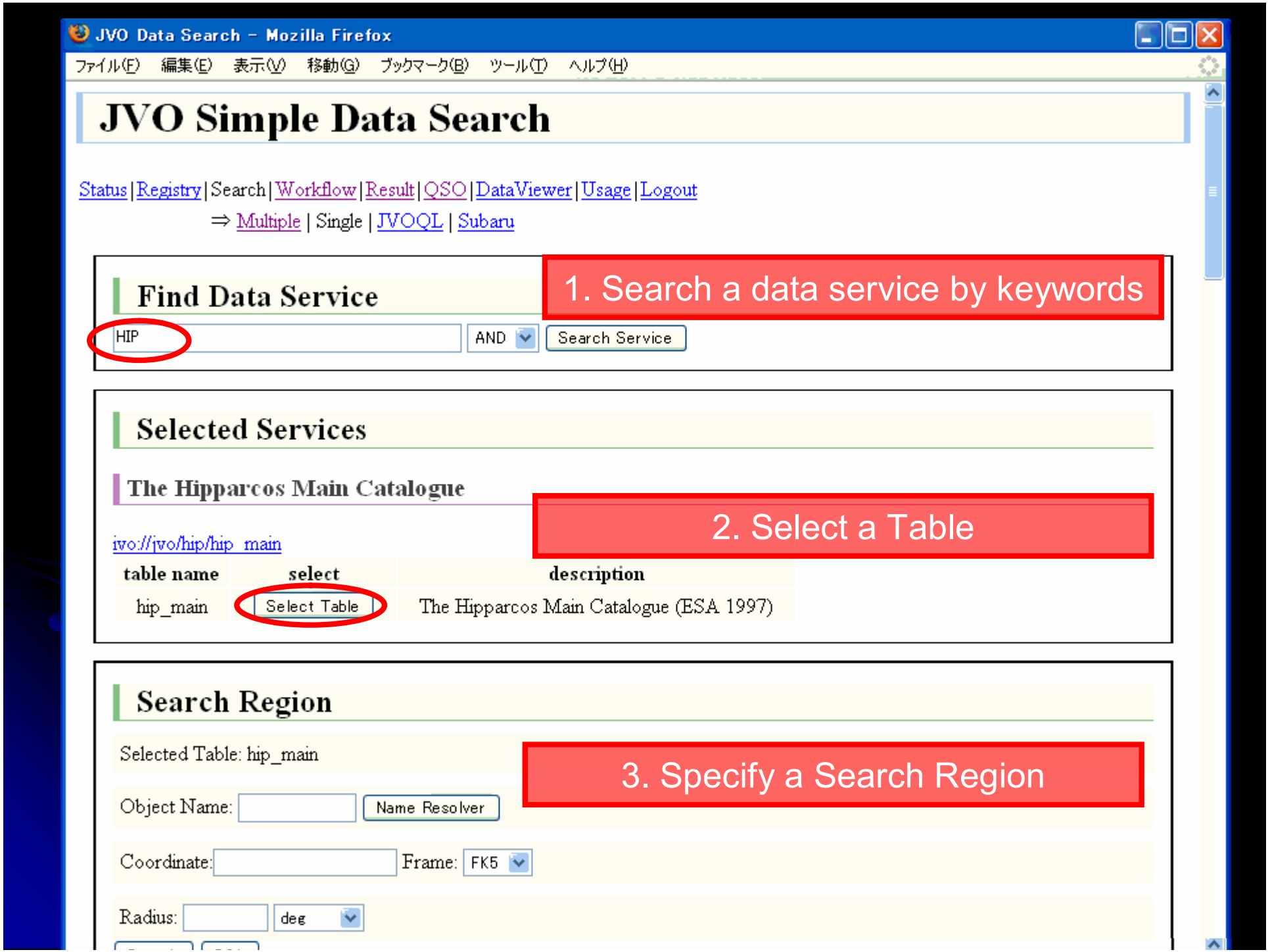
http://jvo.nao.ac.jp/portal



- **VO portal service**
  - Federation of the Distributed VO Services
  - Data Analysis Environment
- **Subaru Advanced Data Service**
  - Data reduction through the Web interface
  - Subaru Data Service interoperable with any VO service


Overview of the JVO Portal Service
LDAP
Auth.
JVO
User Request
Grid System
Analysis Servers
MDS
Invoke
Service Discovery
User Storage
Invoke
SDSS
QSO
SkyNode 1.0
Subaru
...
2MASS
Data Service
Web Service
HTTP Get
FTP
LDAP
S. Reg.
P. Reg.
Metadata Harvesting
Registry
Invoke
Other VOs
SIAP/SSAP
P. Reg.
SkyNode 0.7.4


JVO Data Search - Mozilla Firefox
ファイル(F) 編集(E) 表示(V) 移動(G) ブックマーク(B) ツール(T) ヘルプ(H)
JVO Data Search
Status | Registry | Search | Workflow | Result | QSO | DataViewer | Usage | Logout
⇒ Multiple | Single | JVOQL | Subaru
Coordinates or Object Name
Data Search
FK5
Radius: 10
arcmin
Samples: 34.5 -5.0
User ID
User Name
Group
Last Login
guest_1160786330902_77
I am a guset
guest


JVO Data Search - Mozilla Firefox
ファイル(F) 編集(E) 表示(V) 移動(G) ブックマーク(B) ツール(T) ヘルプ(H)
JVO Simple Data Search
Status | Registry | Search | Workflow | Result | QSO | DataViewer | Usage | Logout
⇒ Multiple | Single | JVOQL | Subaru
Find Data Service
1. Search a data service by keywords
HIP
AND
Search Service
Selected Services
The Hipparcos Main Catalogue
2. Select a Table
ivo://jvo/hip/hip_main
table name
select
description
hip_main
Select Table
The Hipparcos Main Catalogue (ESA 1997)
Search Region
Selected Table: hip_main
3. Specify a Search Region
Object Name:
Name Resolver
Coordinate:
Frame:
FK5
Radius:
deg

votable-viewer - Mozilla Firefox

ファイル(F) 編集(E) 表示(V) 移動(G) ブックマーク(B) ツール(T) ヘルプ(H)

VOTable Viewer

Status | Registry | Search | Workflow | Result | QSO | DataViewer | Usage | Logout

Metadata: Display

MESSAGE: OK
FROM: 0 MAX: 20 SCROLL: 1
SELECT: c7,c8,c10,c35,c4
FILTER: C35<2.5
ORDER:

Update << < | > >> Clear Order
data viewer JVOPlot Aladin VOPlot VOTable download

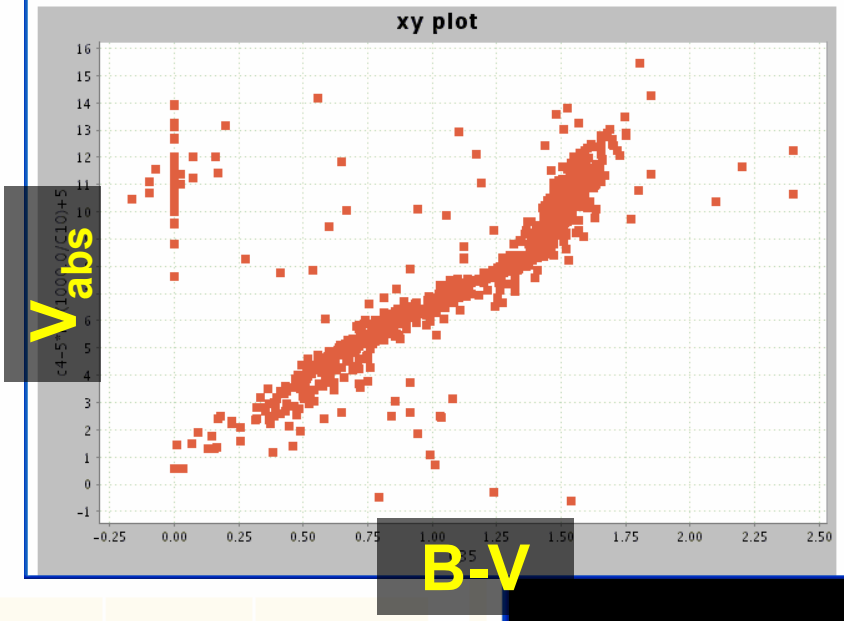
933records,
1 2 3 4 5 6 7 8 9 10

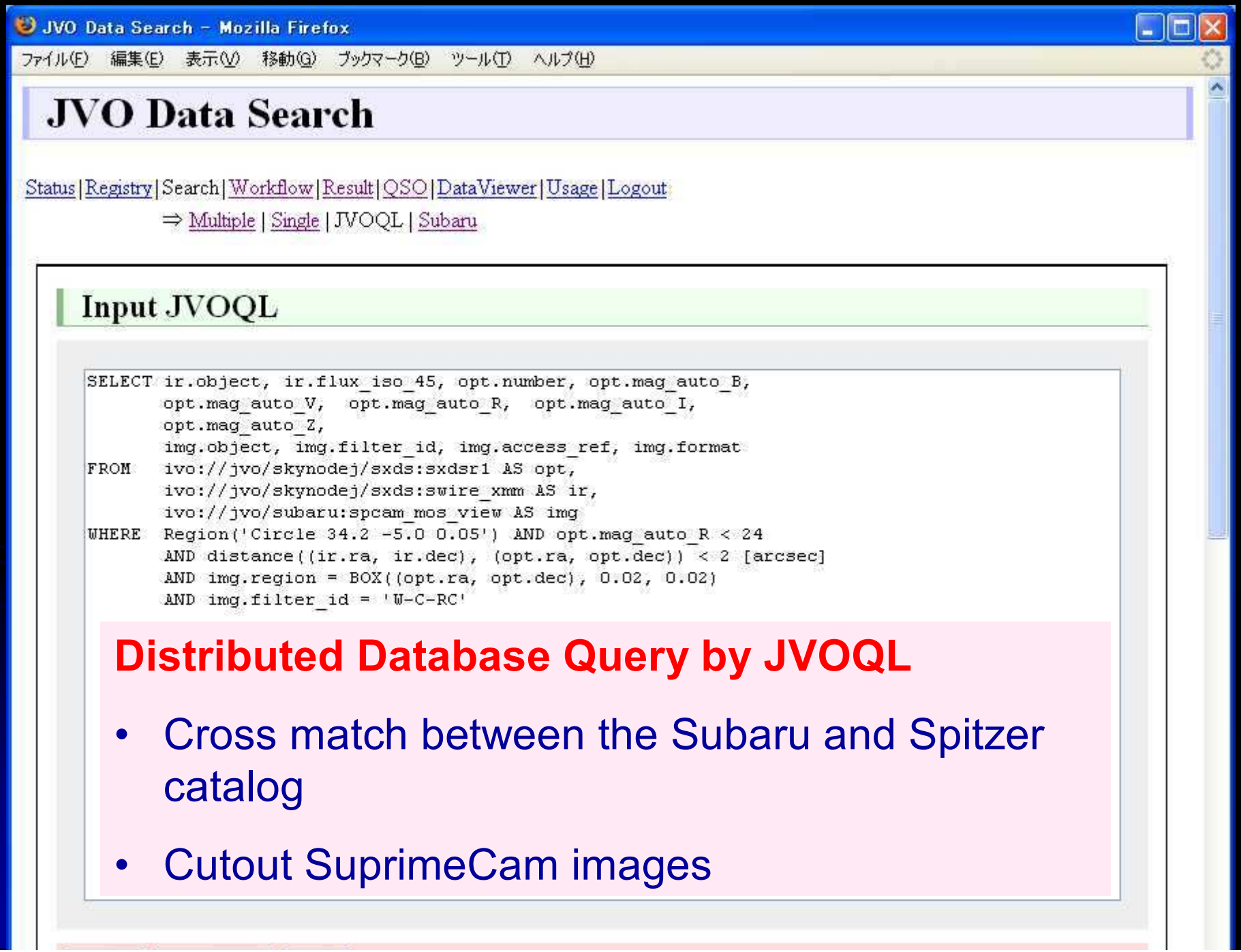
Alias Name			C7	C8	C10	C35	C4
#	check	download	T.RA	T.DEC	T.PLX	T.B_V	T.VMAG
0			0.53502094745636	-68.2802047729492	63.03	1.39	9.24
1			0.540187776088715	27.0844898223877	80.63	0.69	5.8
2			1.29233646392822	45.7869338989258	86.98	1.472	9.95
3			1.32445347309113	-67.8312301635742	62.48	1.076	8.49

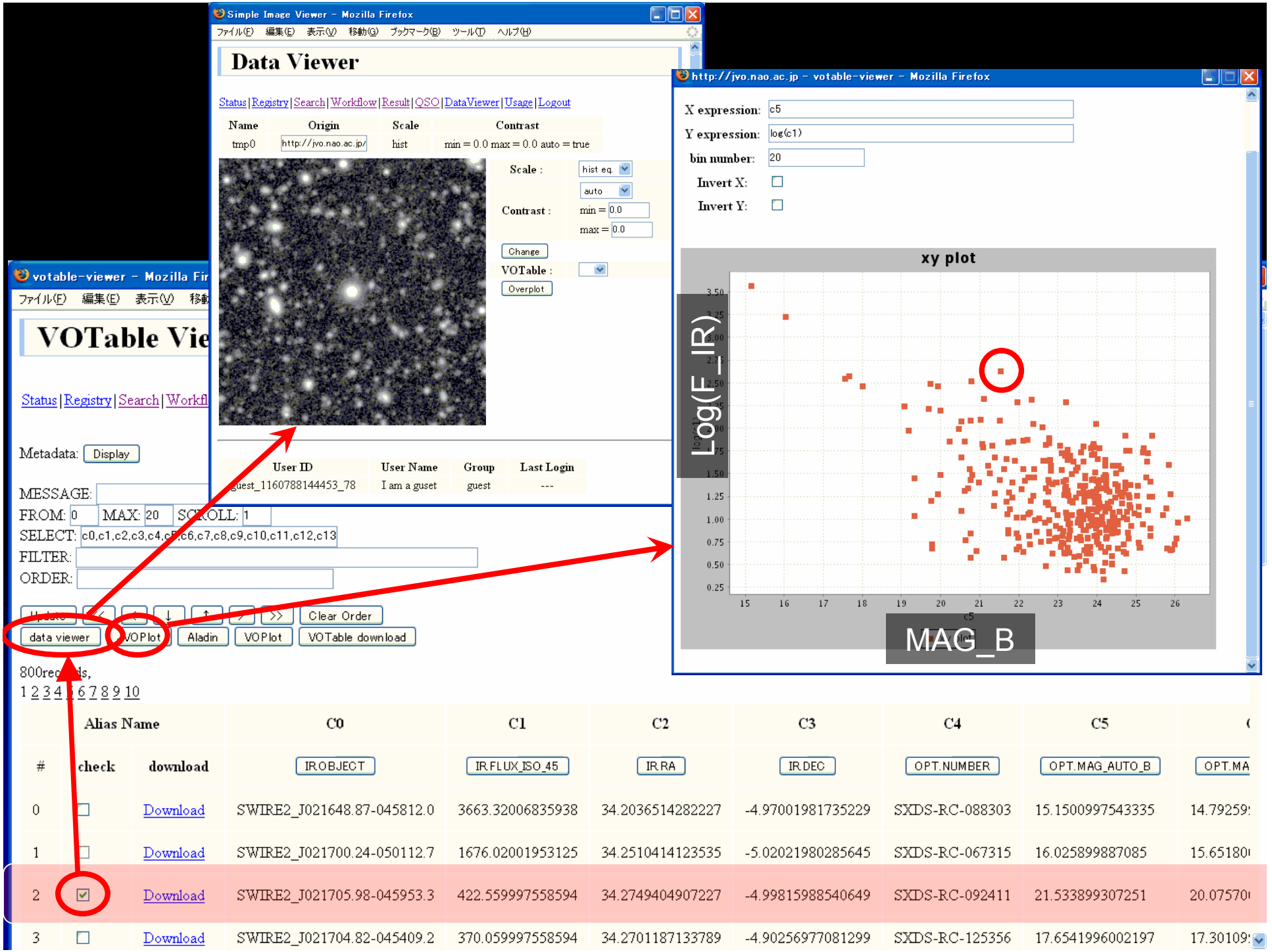
http://jvo.nao.ac.jp - votable-viewer - Mozilla Firefox

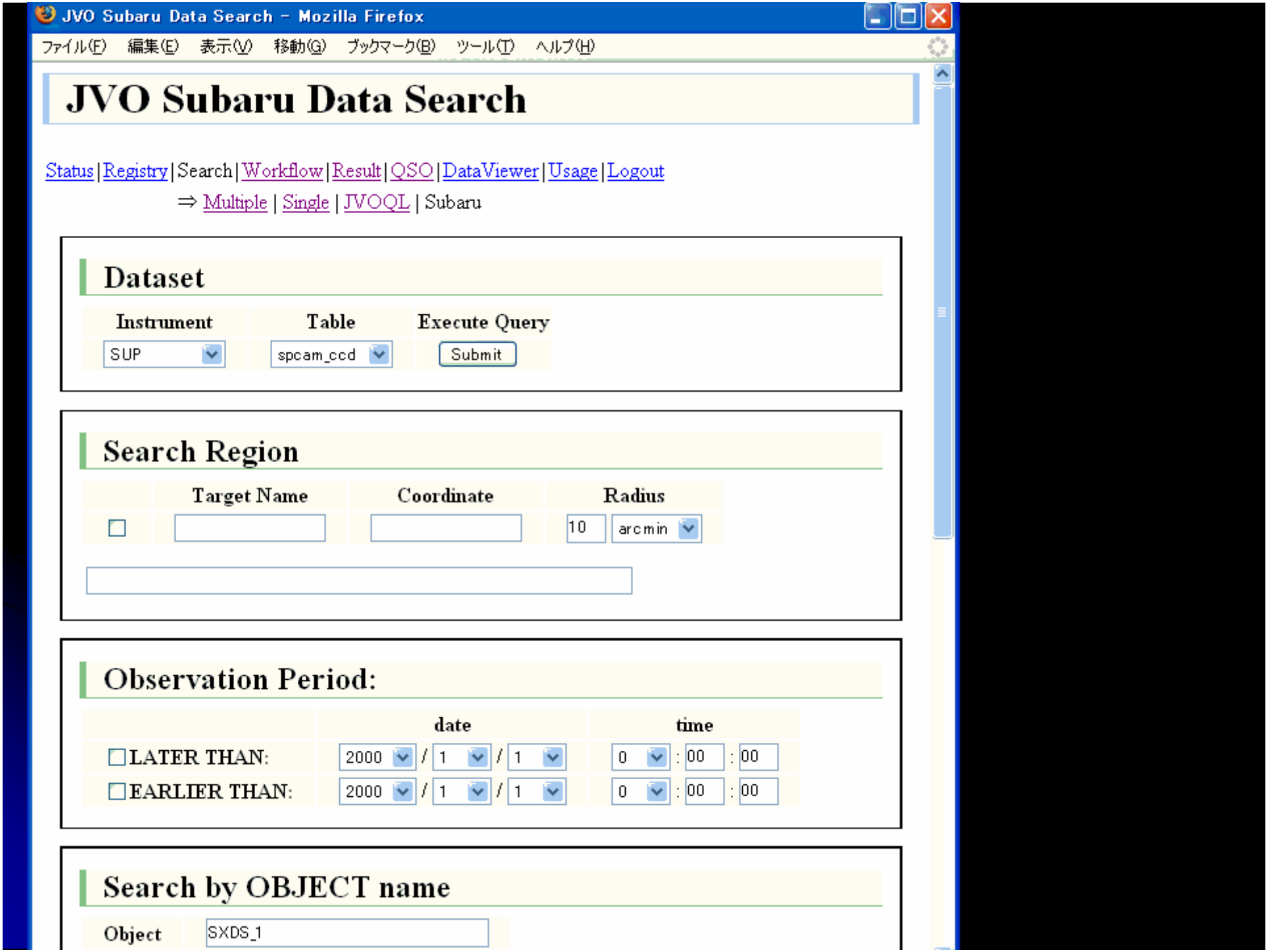
XY Plot | Line Plot | Histogram

X expression: C35
Y expression: c4-5*log(1000.0/C10)+5
bin number: 20
Invert X:
Invert Y:



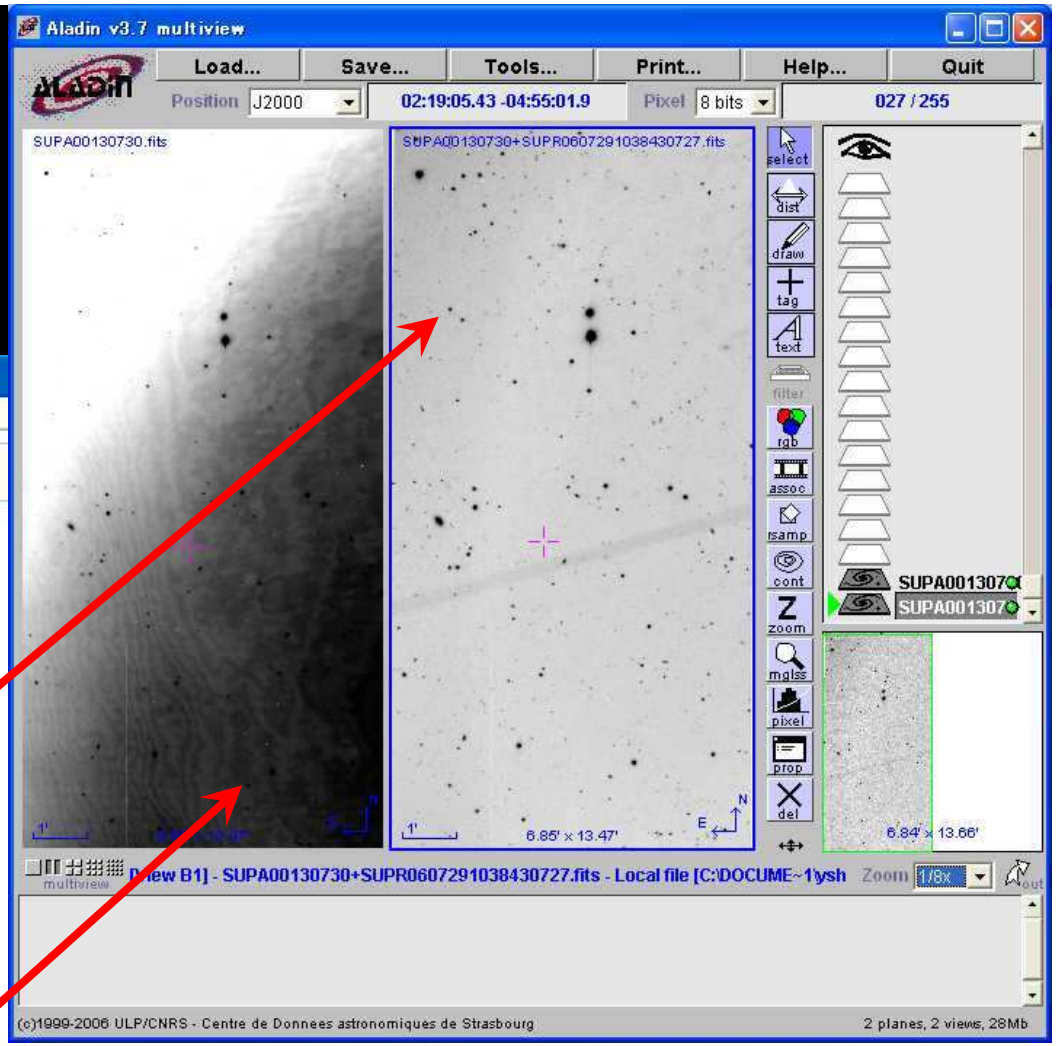

JVO Data Search - Mozilla Firefox
ファイル(F) 編集(E) 表示(V) 移動(G) ブックマーク(B) ツール(T) ヘルプ(H)
JVO Data Search
Status | Registry | Search | Workflow | Result | QSO | DataViewer | Usage | Logout
⇒ Multiple | Single | JVOQL | Subaru
Input JVOQL
SELECT ir.object, ir.flux_iso_45, opt.number, opt.mag_auto_B,
opt.mag_auto_V, opt.mag_auto_R, opt.mag_auto_I,
opt.mag_auto_Z,
img.object, img.filter_id, img.access_ref, img.format
FROM ivo://jvo/skynodej/sxds:sxdsr1 AS opt,
ivo://jvo/skynodej/sxds:swire_xmm AS ir,
ivo://jvo/subaru:spcam_mos_view AS img
WHERE Region('Circle 34.2 -5.0 0.05') AND opt.mag_auto_R < 24
AND distance((ir.ra, ir.dec), (opt.ra, opt.dec)) < 2 [arcsec]
AND img.region = BOX((opt.ra, opt.dec), 0.02, 0.02)
AND img.filter_id = 'W-C-RC'
Distributed Database Query by JVOQL
• Cross match between the Subaru and Spitzer catalog
• Cutout SuprimeCam images


Simple Image Viewer - Mozilla Firefox
Data Viewer
Status | Registry | Search | Workflow | Result | QSO | DataViewer | Usage | Logout
Name
Origin
Scale
Contrast
tmp0
http://jvo.nao.ac.jp/
hist
min = 0.0 max = 0.0 auto = true
Scale :
hist eq.
auto
Contrast :
min = 0.0
max = 0.0
Change
VOTable :
Overplot
User ID
User Name
Group
Last Login
guest_1160788144453_78
I am a guset
guest
---
http://jvo.nao.ac.jp - votable-viewer - Mozilla Firefox
X expression: c5
Y expression: log(c1)
bin number: 20
Invert X:
Invert Y:
xy plot
Log(F_IR)
MAG_B
votable-viewer - Mozilla Fir
VOTable Vie
Status | Registry | Search | Workfl
Metadata: Display
MESSAGE:
FROM: 0 MAX: 20 SCROLL: 1
SELECT: c0,c1,c2,c3,c4,c5,c6,c7,c8,c9,c10,c11,c12,c13
FILTER:
ORDER:
Clear Order
data viewer
VOPlot
Aladin
VOPlot
VOTable download
800records,
1 2 3 4 5 6 7 8 9 10
Alias Name
C0
C1
C2
C3
C4
C5
#
check
download
IR.OBJECT
IR.FLUX_ISO_45
IR.RA
IR.DEC
OPT.NUMBER
OPT.MAG_AUTO_B
OPT.MA
0
Download
SWIRE2_J021648.87-045812.0
3663.32006835938
34.2036514282227
-4.97001981735229
SXDS-RC-088303
15.1500997543335
14.79259
1
Download
SWIRE2_J021700.24-050112.7
1676.02001953125
34.2510414123535
-5.02021980285645
SXDS-RC-067315
16.025899887085
15.65180
2
Download
SWIRE2_J021705.98-045953.3
422.559997558594
34.2749404907227
-4.99815988540649
SXDS-RC-092411
21.533899307251
20.07570
3
Download
SWIRE2_J021704.82-045409.2
370.059997558594
34.2701187133789
-4.90256977081299
SXDS-RC-125356
17.6541996002197
17.30109


JVO Subaru Data Search - Mozilla Firefox
ファイル(F) 編集(E) 表示(V) 移動(G) ブックマーク(B) ツール(T) ヘルプ(H)
JVO Subaru Data Search
Status | Registry | Search | Workflow | Result | QSO | DataViewer | Usage | Logout
⇒ Multiple | Single | JVOQL | Subaru
Dataset
Instrument
Table
Execute Query
SUP
spcam_ccd
Submit
Search Region
Target Name
Coordinate
Radius
10
arcmin
Observation Period:
date
time
LATER THAN:
2000 / 1 / 1
0 : 00 : 00
EARLIER THAN:
2000 / 1 / 1
0 : 00 : 00
Search by OBJECT name
Object
SXDS_1

– Reduction 10s (Bias+Flat+Distortion+Astr omeotyr)

– Transfer 30s



votable-viewer – Mozilla Firefox

ファイル(F) 編集(E) 表示(V) 移動(G) ブックマーク(B) ツール(T) ヘルプ(H)

VOTable Viewer

Status | Registry | Search | Workflow | Result | QSO | DataViewer | Usage | Logout

Metadata: Display

MESSAGE: OK
FROM: 0 MAX: 20 SCROLL: 1
SELECT: c31,c32,c1,c2,c3,c4,c5,c6,c7,c8,c9,c10,c11,c1
FILTER:
ORDER:

Update << < ↓ ↑ > >> Clear Order
data viewer JVOPlot Aladin VOPlot VOTable download

1000records,
1 2 3 4 5 6 7 8 9 10

	Alias Name	C31	C32	C1	C2	C3	C4	C5
#	check	download	_T0.ACCESS_REF_RESP	_T0.ACCESS_REF_RAW	_T0.RAW_ID	_T0.UT_START	_T0.EXPTIME	_T0.FILTER_ID	_T0.DETECTOR_ID
0	☐	Download	Link	Link	SUPA00134470	2002-09-30 11:11:47.326	900.0	W-J-B	w67c1
1	☐	Download	Link	Link	SUPA00134480	2002-09-30 11:27:47.082	900.0	W-J-B	w67c1
2	☐	Download	Link	Link	SUPA00134490	2002-09-30 11:43:44.412	900.0	W-J-B	w67c1

Summary

- Functionality of searching SuprimeCam data based on the data quality indices is implemented on SMOKA
- SMOKA has started to provide reduced data of SuprimeCam since Sep 2004
- Subaru reduction pipeline system based on the GRID architecture is under construction.
- Subaru data analysis environment will be provided on the JVO portal.