

Current Status of SMOKA

Subaru Users Meeting

2005 December 21

Astronomical Data Analysis Center,
National Astronomical Observatory of Japan

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What is SMOKA?

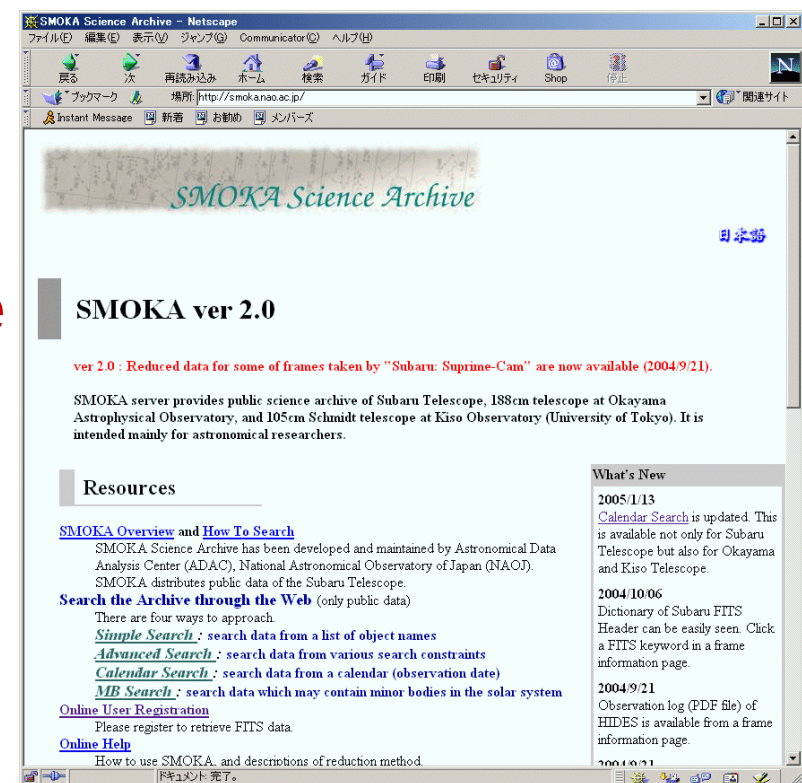
<http://smoka.nao.ac.jp/>

- SMOKA (Subaru-Mitaka-Okayama-Kiso Archive)

- The data archive system of
 - Subaru Telescope
 - Okayama 188cm Telescope
 - Kiso 105 cm Schmidt Telescope

maintained by ADAC, NAOJ

- 180 users are now registered
(165 users last year)



SMOKA Top Page

How to Search Data

http://smoka.nao.ac.jp/howto_search.jsp

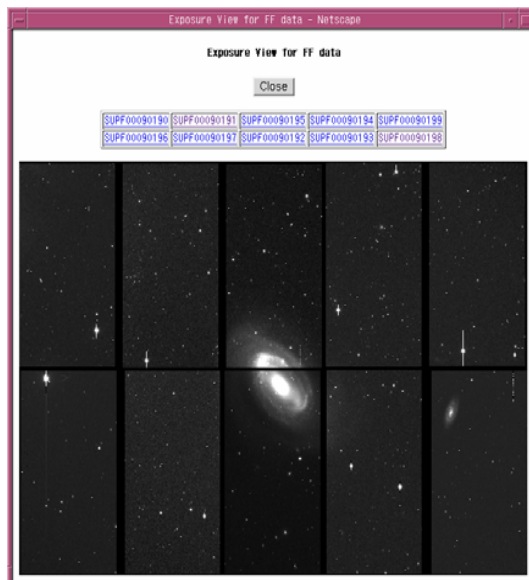
- SMOKA provides 4 ways to search data
 - ❑ **Simple Search:**
Using a list of object names
 - ❑ **Advanced Search:**
Using various search constraints (e.g., object name, data type, coordinates, filter)
 - ❑ **Calendar Search:**
Using a calendar (observation date)
 - ❑ **MB Search:**
Search data which may contain minor bodies in the solar system

The screenshot shows the 'SMOKA Archive Advanced Search' web page. It features a search form with various input fields and dropdown menus. The 'Object Name (for name resolve)' field contains 'NGC4725'. The 'Resolver' section has radio buttons for 'SIMBAD', 'NED', and 'Don't Resolve', with 'SIMBAD' selected. Below this, there are fields for 'RA' (12h50m26.69s), 'Dec' (+25d30m02.3s), 'Radius (arcmin)' (10.0), and 'Equinox' (J2000). There are also fields for 'Galactic Longitude', 'Galactic Latitude', 'Ecliptic Longitude', and 'Ecliptic Latitude'. The 'Observation Date' field is empty, and the 'Exp Time (sec)' field contains '300'. The 'Observer' field is empty. The 'Frame ID' field contains '200A0009019'. The 'Exposure ID' field is empty. There are 'Search', 'Reset to defaults', and 'Help...' buttons. Below the search form, there are three dropdown menus: 'Imagers' (Subaru: SuperCam, Subaru: FOCAS, Subaru: OHS/CISCO, Subaru: IRCS, Subaru: CIAO, Subaru: COMICS, Subaru: CAC, Subaru: MORTOS, Kiso: 1k CCD, Kiso: 2k CCD, Okayama: OASIS), 'Spectrographs' (Subaru: FOCAS, Subaru: HDS, Subaru: OHS/CISCO, Subaru: IRCS, Subaru: CIAO, Subaru: COMICS, Okayama: SNG, Okayama: HDES), and 'Data Type' (BIAS, DARK, FLAT, COMPARISON). There are also 'Observation Band' and 'Filter lists / Wavelength' dropdowns. At the bottom, there are 'Output Options' including 'Output columns' (FRAMEID, OBS_MODE, DATA_TYPE, OBJECT, FILTERWAVLEN, DISPERSER), 'Output flags' (1, FRAMEID), 'Order by' (20), 'Output Equinox' (J2000), and 'Maximum number of hits'. There is a 'Show SQL Query' link.

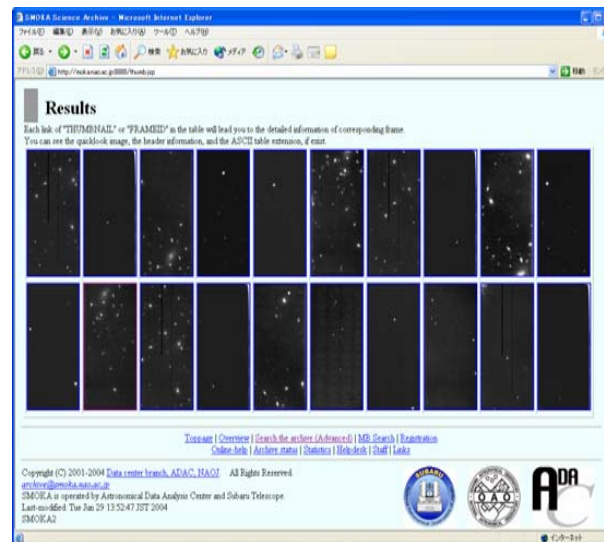
Advanced Search

Information of the Data

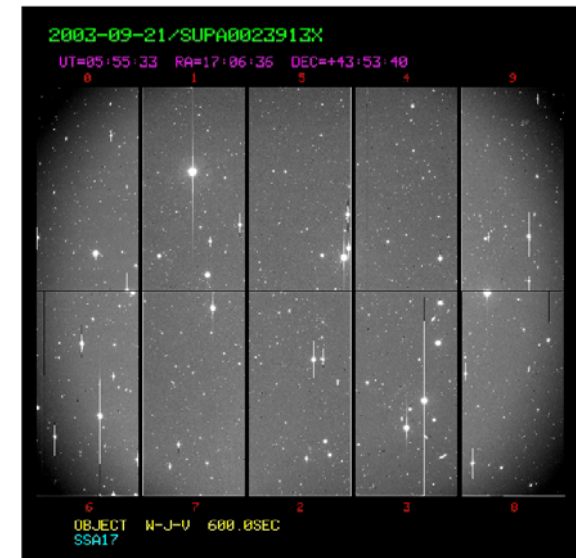
- You can roughly check the data quality
 - ❑ Quick-look image (QLI)
 - ❑ Thumbnail images
 - ❑ Shot images (only for Suprime-Cam data)



QLI



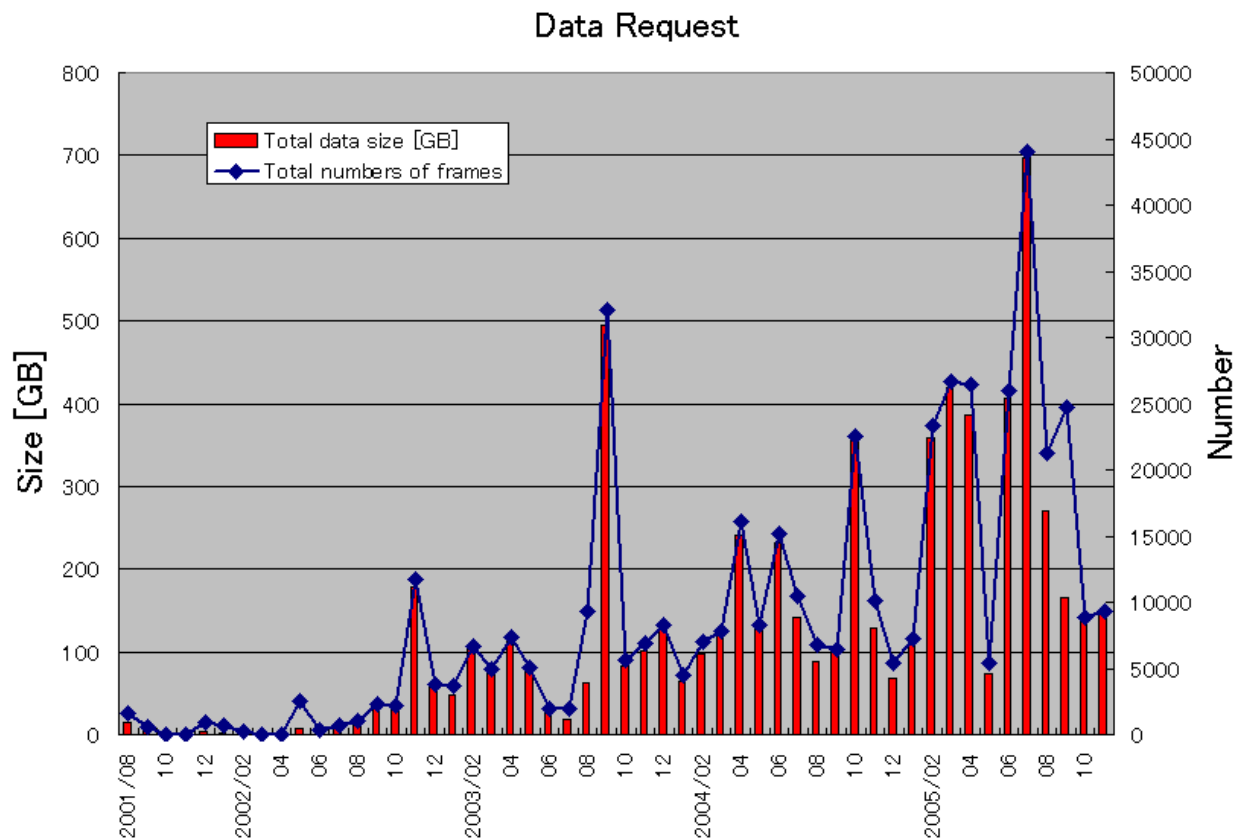
Thumbnail image



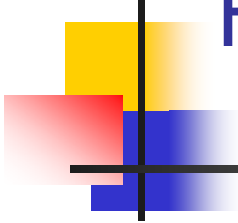
Shot image

Status of Data Request

<http://smoka.nao.ac.jp/about/drstat.jsp>



- 10000~30000 frames (100~400GB) are requested par a month
- Over 90 % of the requested data are Suprime-Cam data

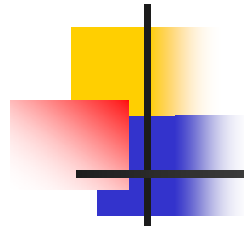


Results from SMOKA

<http://smoka.nao.ac.jp/about/publish.jsp>

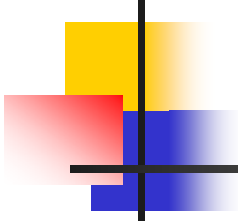
Total 13 papers using SMOKA have been published in
ApJ, AJ, PASJ

- Chapman et al. 2003 ApJ, 585, 57-66
- Barger et al. 2003 AJ, 126, 632-665
- Takata et al. 2003, PASJ, 55, 789-800
- Capak et al. 2004, AJ, 127, 180-198
- Hu et al. 2004, AJ, 127, 563-575
- Steffen et al. 2004, AJ, 128, 1483-1500
- Smail et al. 2004, ApJ, 616, 71-85
- Egami et al. 2004, ApJS, 154, 130-136
- Motch et al. 2005, A&A, 429, 257-265
- Broadhurst et al. 2005, ApJ, 619, L143-L146
- Chapman et al. 2005, ApJ, 622, 772-796
- Neuhaeuser et al. 2005, A&A, 435, L13-L16 (CIAO)
- Wittman, D. 2005, ApJ, 632, L5-L8



New Development of SMOKA

- New Interface for Suprime-Cam Data Search
 - Data Quality Search : Using seeing size etc. of images
 - Pin-point Search : Search data with 1 arcsec accuracy
- Supplying several versions of reduced data
- Expansion of the calendar search function
- FITS Keywords Search
- Supplying the SMOKA data list to CDS VizieR



New Interface for Suprime-Cam Data Search

- Over 90 % of the requested data are Suprime-Cam data (about 300,000 frames)

To search Suprime-Cam data more effectively, we develop two new functions

- Data Quality Search :

We can use seeing sizes, limiting magnitudes etc, of images as search constraints

- Pin-point Search :

We can select only one frame including the input coordinate (accuracy 1 arcsec)

New Interface for Suprime-Cam Data Search

- We develop new interface for Suprime-Cam data including pin-point search and data quality search.

Pin-point search on/off

Data Quality Search
(seeing size/ lim. mag.)

Select calibrated data
(WCS calibration / Flat Field)

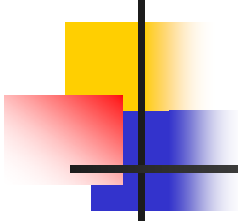
SMOKA Science Archive TEST - Netscape

http://moka.nao.ac.jp/SUPsearch.jsp

SMOKA Archive Suprime-Cam Data Search

[Click here for Simple Search.](#)
[Click here for Advanced Search.](#)
[Click here for Calendar Search.](#)
[Click here to know how to search.](#)
[Information of Subaru Data](#) ([Problems](#), [Reduction Tools](#))

Object Name (for name resolve)		Resolver	
		☒ SIMBAD ☐ NED Resolve	
☐ Don't Resolve			
RA	Dec	Radius (arcmin)	Equinox
		10.0	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	Filter lists		
All None	All None		
OBJECT	DECODERR		
BIAS	I-A-1527		
DARK	I-A-1574		
FLAT	I-A-1598		
	I-A-1624		
	I-A-1651		
Data quality (About)			
Seeing Size	Elongation	Limiting Magnitude	Sky Level
ALL	ALL	ALL	ALL
Calibrated data type (About SUP calibrated data)			
☒ All data ☐ WCS calibrated data ☐ Flat Fielded data			



Supplying Several Versions of Reduced Data

- From Sep 2004, we have offered reduced and calibrated data of Suprime-Cam
- **WCS calibration:**
 - Matching USNO-B catalog, the WCS-related terms in FITS header are calibrated.
 - The accuracy is 0.2-0.4 arcsec
- **Reduced data:**
 - Bias-subtracted and flat-fielded data

Several versions of median-flat images are provided

- using object images taken during 1 observing run (1 month; SuperFLAT)
- using all available object images (HyperFLAT)
- using dome flat images (DomeFLAT)

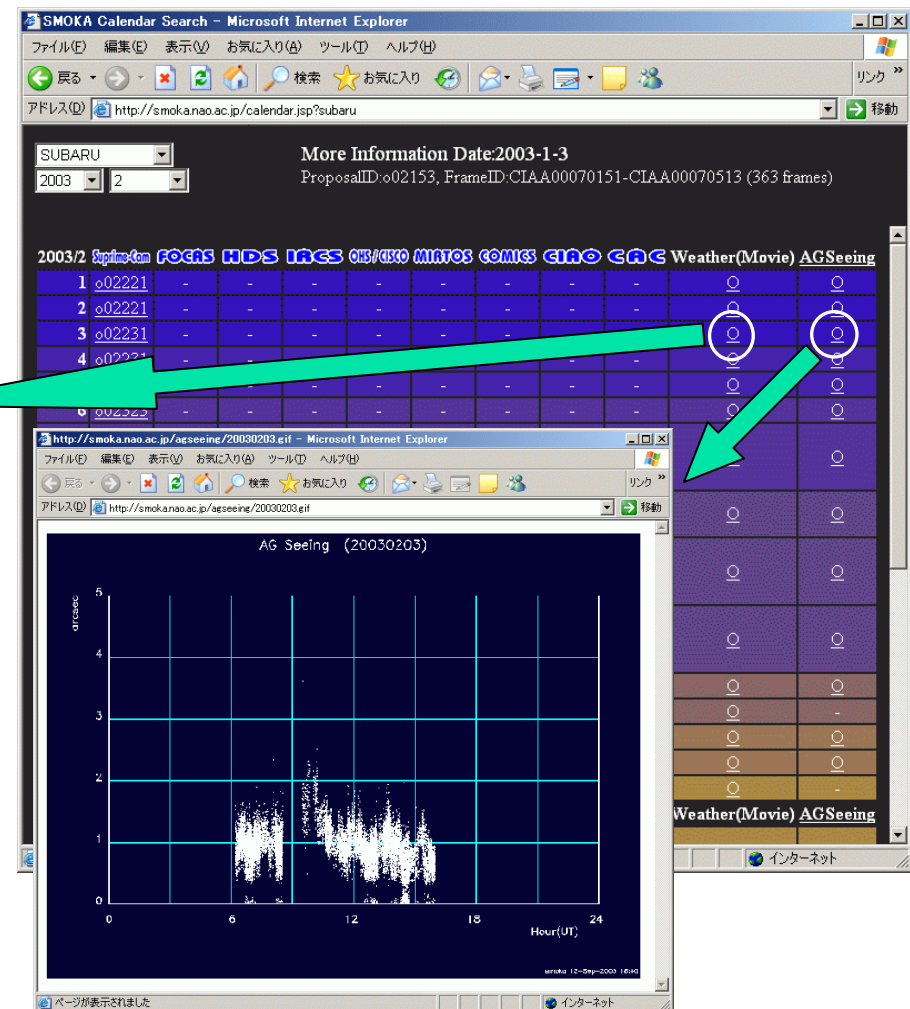
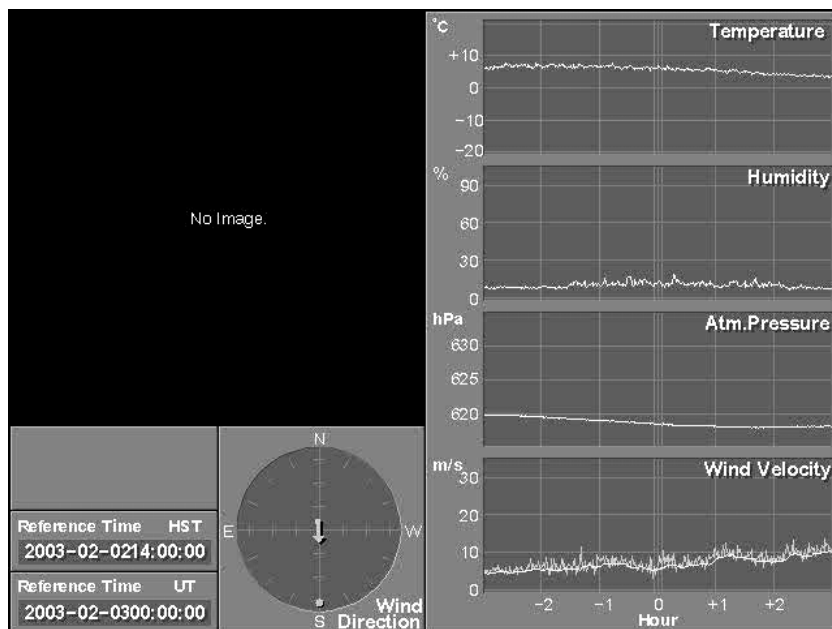
You can select the adequate reduced data due to your science aims.

Expansion of the calendar search function

<http://smoka.nao.ac.jp/calendar.jsp>

■ Calendar Search

- ❑ Movie of the sky monitor image (MPEG)
- ❑ Seeing size of AG (Auto Guider) image



Others

■ FITS Keywords Search:

{ All keywords search
Full-Text Search

■ Supplying the SMOKA data list to CDS VizieR:

We can search Suprime-Cam data from VizieR, which is the catalog services of CDS (Centre de Donnees Astronomiques de Strasbourg)

SMOKA Science Archive - Microsoft Internet Explorer

ファイル(E) 編集(E) 表示(V) お気に入り(A) ツール(T) ヘルプ(H)

戻る 進む 検索 検索 お気に入り リンク

アドレス http://smoka.nao.ac.jp/allKeywords.jsp 移動

All Keywords Search

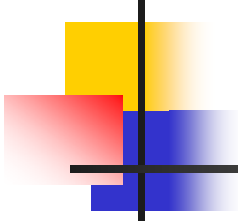
Query by constraints applied on FITS-Header-Keywords or derived Parameters
[Click here to know how to search.](#)

SUP

Search Reset

Seq. No.	Keyword	Type	Fixed Value	Min. Value	Max. Value	Query Constraints
			Example 1	Example 2	Example 3	
1	FRAME_ID	Char	SUPA00067053	SUPA00128459	SUPA00189524	---
2	PROPOSALID	Char	o99000	o03314	o03418	---
3	RASEC	Num	0.00	1295620.19		Min. Max.
4	DECSEC	Num	-180234.67	321365.84		Min. Max.
5	GALLONG	Num	0.16551	359.91465		Min. Max.
6	GALLAT	Num	-88.02229	88.42491		Min. Max.
7	ECLLONG	Num	0.01930	359.99932		Min. Max.
8	ECLLAT	Num	-58.52167	89.90607		Min. Max.
9	X_2000	Num	-0.999774	1.000000		Min. Max.
10	Y_2000	Num	-0.999702	0.999986		Min. Max.
11	Z_2000	Num	-0.766775	0.999918		Min. Max.
12	NAXIS	Int	2			
13	NAXIS1	Int				- Select Value -
14	NAXIS2	Int				- Select Value -
15	DATE-OBS	Char	2001-10-21	2002-09-11	2003-03-04	---
16	UT	Char	09:11:21.026	14:14:12.329	11:27:11.442	---
17	UT-STR	Char	09:11:21.026	14:14:12.329	11:27:11.442	---

All Keywords Search



Future Plans of SMOKA

- Cooperation with Virtual Observatory (VO)

SMOKA is expected to be the major resource of Subaru and optical-infrared telescope data for VO.

- Release data of new instruments

- Subaru : FMOS, MOIRCS
- Okayama : HBS, ISLE, OAOWFC, MITSuME
- Kiso : KONIC

- Making original catalogs of objects

We are planning to release the original catalog of objects in deep fields and will proceed astronomical studies.

- Trend analysis of data quality