

Current Status of SMOKA



SMOKA Staff Members



Astronomy Data Center, NAOJ
Tessei Yoshida

1. About SMOKA_{1/2}

SMOKA (**S**ubaru-**M**itaka-**O**kayama-**K**iso **A**rchive system)

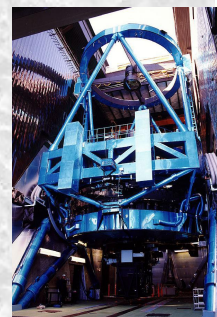
provides public data observed with the Subaru telescope and several optical and infrared telescopes operated by Japan.



Providing archives

- 8.2m Subaru Telescope (Hawaii)
- 188cm Telescope (Okayama)
- 105cm Schmidt Telescope (Kiso)
- MITSuME Telescope (Akeno, Okayama)
- 150cm Katana Telescope (Higashi-Hiroshima)

Subaru



1. About SMOKA_{2/2}

Current version : 3.7

Observational Instruments

- Subaru : Suprime-Cam, FOCAS, HDS, OHS/CISCO, IRCS, CIAO, COMICS, CAC, MIRTOS, MOIRCS, Kyoto-3DII, HiCIAO, FMOS, **Hyper Suprime-Cam(HSC)**
- Okayama : ISLE, KOOLS, HIDES, OASIS, SNG
- Kiso : 1kCCD, 2kCCD, KWFC
- MITSuME : MTA, MTO
- Higashi-Hiroshima : HOWPol, HONIR

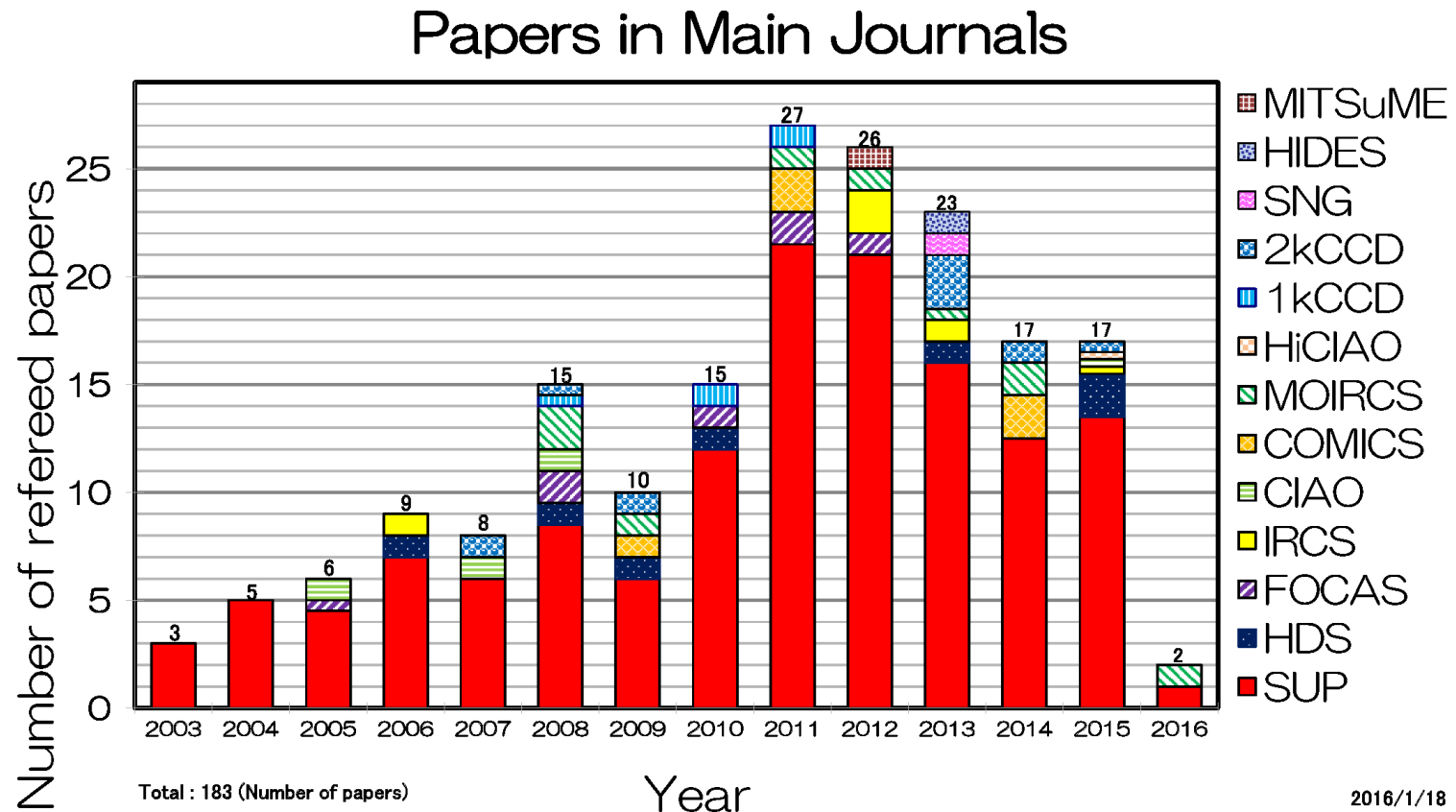
	Frames	(TB)	Occupation	Since
Subaru	3,069,642	41.8	18 months	1999~
Okayama	384,380	4.5	2 years	1991~
Kiso	840,364	6.0	1 year	1993~
MITSuME	7,617,894	15.7	1 year	2007~
Higashi-Hiroshima	334,161	2.7	18 months	2010~

2. Products of SMOKA

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

- **247** Users (2015.04.01 – 2016.01.14: renew every fiscal year)
- Number of papers using SMOKA

2003–2016 : **183** papers (A&A, ApJ, AJ, PASJ, MNRAS, PASP, ICARUS, etc.)



3. Development Status

In the past year:

- (2015 Mar. 11) **Minor Bodies Search is available** (Kiso/2kCCD)
- (2015 May 01) SkyMonitor Imaging Data Service System for MITSuME(Akeno) is available
- (2015 Jun. 08) KCD(2kCCD) pin-point Search is available
- (2015 Jul. 21) Minor Bodies Search is available (Kiso/1kCCD)
- (2015 Aug. 11) KCC(1kCCD) pin-point Search is available
- (2015 Sep. 07) Released Higashi-Hiroshima/HONIR data
- (2015 Sep. 25) **Released Subaru/HSC data** (without SSP object frames)

3-1. Released Subaru/HSC data ^{1/3}

Released **HSC engineering data** (2014 Feb. 14)

Released **HSC data without SSP object frames** (2015 Sep. 25)

Resources

[SMOKA Web Index](#)

[SMOKA Overview](#) and [How To Search and Request Data](#)

[Online Help](#)

How to use SMOKA for a detail, and descriptions of reduction method.

[User Registration](#)

You need to register if you wish to retrieve FITS data.

Data Search

Abbreviations for search available data of telescope or observatory are as follows: **Subaru** (Subaru), **OAO** (Okayama (Higashi-Hiroshima)).

Simple Search (**Subaru**, **OAO**, **Kiso**, **MITSUME**, **HHO**) : search data from a list of object names

Advanced Search (**Subaru**, **OAO**, **Kiso**, **MITSUME**, **HHO**) : search data from various search constraints (add S KWF)

SUP Search (SUP) : search raw data and astrometric calibrated data

KCC (pin-point) Search (KCC) : search frames whose fields contain the search coordinates **NEW!**

KCD (pin-point) Search (KCD) : search frames whose fields contain the search coordinates **NEW!**

Calendar Search (**Subaru**, **OAO**, **Kiso**, **MITSUME**, **HHO**) : search data from a calendar (observation date) with

MB Search (SUP, KCC, KCD) : search data which may contain minor bodies in the solar system

All Keywords Search (**Subaru**, **OAO**, **HHO**) : search data by FITS-Header-Keyword values

Full-Text Search (**Subaru**, **OAO**, **Kiso**, **MITSUME**, **HHO**) : search any words in FITS headers (including HISTO

Overlapped Area Search (SUP and KCD) : search area(s) observed multiple times

New Overlapped Area Search (test version) : search area(s) observed multiple times

Summit Log Search (**Subaru**) : search any words in Summit Logs

Number of Frame Search (test version) : search number of frames and their IDs from object coordi

Engineering Data Search

ENG Search (HSC) : search engineering data

3-1. Released Subaru/HSC data ^{2/3}

Num. of frames:
218,968
(on 2016 Jan.14)

Observation date:
from 2014 Mar. 25

It is able to choose
in the same way as
other instruments.

SMOKA Archive Advanced Search

[Click here for SUP Search \(Suprime-Cam data Search\).](#)
[Click here to know how to search.](#)

Search Conditions

Object Name (for name resolve)

Resolver
☒ SIMBAD ☐ NED
☐ Don't Resolve

Coordinate System
 ☒ Circular
Equinox

Field of View (arcmin)

center (RA)
 copy/paste to

center (DEC)
 copy/paste to

Radius (arcmin)

From (RA)
 To (RA)

From (DEC)
 To (DEC)

Observation Date

Exp Time (sec)

Observer

Frame ID

Exposure ID

Output Format
☒ TABLE (max 5,000 rows, HTML) ☐ ASCII (max 20,000 rows, text)

Frame or Shot mode
☒ FRAME ☐ SHOT (SUP and KWF ONLY)

[Help...](#)

Instruments/Filters

Instruments
1 selected

☒ Check all ☐ Uncheck all

☐ HiCIAO

☐ FMOS

☒ Hyper Suprime-Cam

☐ Kiso

☐ 1k CCD

Observation Mode
3 selected

Data Type
1 selected

Filter lists / Wavelength

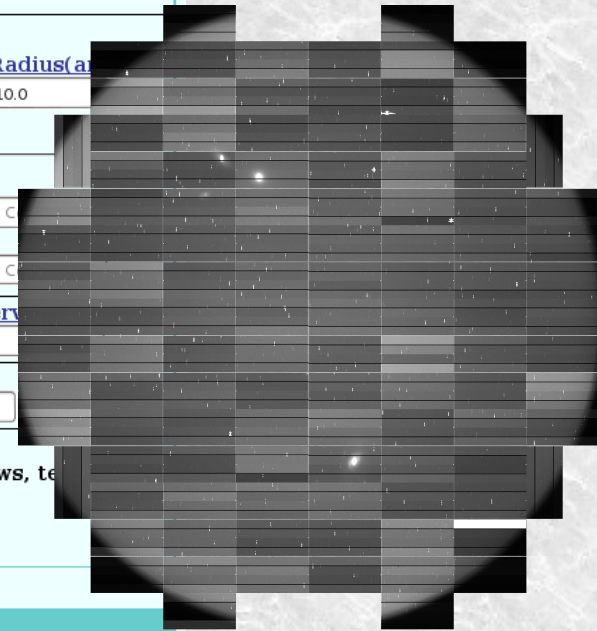
Output Options

Order by:
1. ☐ reverse

Maximum number of hits:

Output Equinox

SHOT image
can be displayed



3-1. Released Subaru/HSC data _{3/3}

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

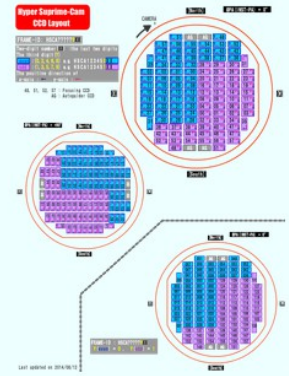
HSC CCD layout

smoka.nao.ac.jp/about/subaru.jsp

SMOKA

Hyper Suprime-Cam

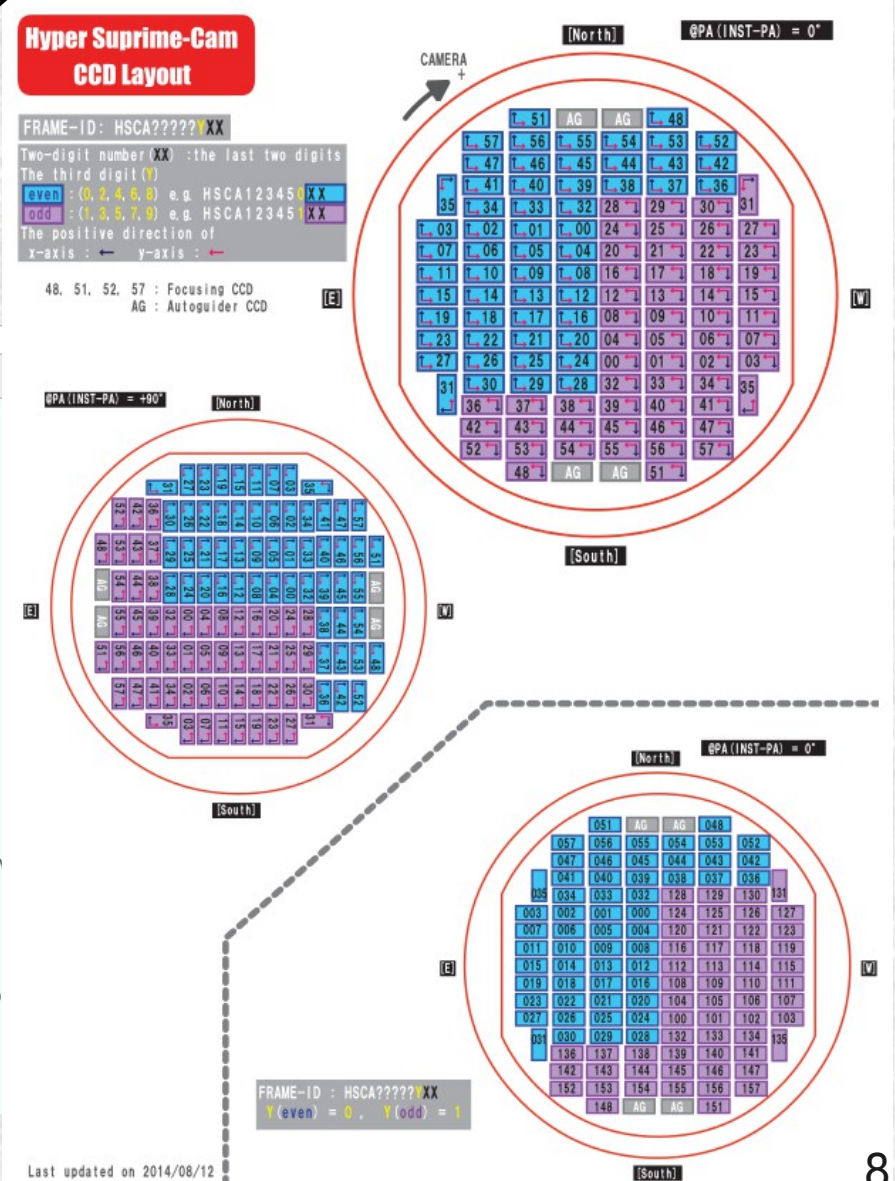
- The CCD layout of Hyper Suprime-Cam (HSC) is the following.



Please click on the image to enlarge or click [here](#) to view

Others

- 2013 Aug. - Sep.: Primary mirror coating.
- Dome-flat images taken during 2013-02 - 2013-12 may be heterogeneous because of
- 2010 Jul. - Sep.: Primary mirror coating and major upgrade work.
- 2006 Aug.: Primary mirror coating.
- 2003 Aug.: Primary mirror coating.
- 2001 Aug.: Primary mirror coating.



3-2. Minor Bodies Search ^{1/3}

Searching frames, which possibly obtained known asteroids or comets
(only the astrometric calibrated frames)

Instruments: Subaru/Suprime-Cam, Kiso/1kCCD, Kiso/2kCCD

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3-2. Minor Bodies Search ^{2/3}

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Instruments: Subaru/Suprime-Cam, Kiso/1kCCD, Kiso/2kCCD

SMOKA Archive Search for Minor Bodies

[Click here for Minor body Search by 'FRAME ID' list.](#)

[Click here to know how to Minor body Search.](#)

Last data update(SUP): [Comets](#): June, 2015 / [Asteroids](#): July, 2015

Last data update(KCC): [Comets](#): August, 2015 <-NEW!/ [Asteroids](#): July, 2015

Last data update(KCD): [Comets](#): August, 2015 / [Asteroids](#): July, 2015

Search for Minor Bodies by Object Name.

1. Select Asteroid or Comet,
2. Select kind of the key-word/value for name resolve among "object Number(Asteroid only)", "object DSGN Name", and "object Name",
3. Input key-value/word, then click "**Resolve**" button.

Search Conditions	
Object Category (select)	☒ Asteroid ☐ Comet
Keyword type for Object Name Resolve (select)	☒ object Number ☐ object DSGN Name ☐ object Name
Object Number/DSGN Name/Name (for name resolve)	
Resolve	Reset to defaults

3-2. Minor Bodies Search _{3/3}

Searching frames, which possibly obtained known asteroids or comets
(only the astrometric calibrated frames)

Instruments: Subaru/Suprime-Cam, Kiso/1kCCD, Kiso/2kCCD

Result of SMOKA Archive Search for Minor Bodies

Search Conditions

OBJECT NAME	Instrument	Search Period	
		From	To
1999 JU3	KCD	1998-09-16	2012-02-27

Sample

name : 1999 JU3

instrument : 2kCCD

Results

A link of "No." column will lead you to the detailed information of corresponding frame.

To view the object within thumbnail image of frames (up to 10 frames);

- (1) mark checkboxes at "Data" columns of rows which correspond to the frames which you'd like to view,
- (2) then push "View Thumbnails" button.

Note that the number of thumbnail images that can be displayed is limited to 10 images.

To retrieve data, mark checkboxes at columns of rows which correspond to the frames which you'd like to retrieve. Then push "Datarequest" button.

No.	Data	FRAMEID	DATE_OBS	Object Position [pix]				Information of the frame					
				X	Y	Xerr	Yerr	DATA_TYPE	OBJECT	FILTER	RA2000	DEC2000	UT_START
1	☐	KCD110599	2007-09-04	771.0	998.0	0.093	0.083	OBJECT	1999JU3	R	22:23:12.915	+19:13:59.72	14:07:06
2	☐	KCD110601	2007-09-04	784.0	996.0	0.094	0.083	OBJECT	1999JU3	R	22:23:12.705	+19:14:02.48	14:21:41
3	☐	KCD110602	2007-09-04	789.0	995.0	0.094	0.084	OBJECT	1999JU3	R	22:23:12.545	+19:14:03.41	14:28:57
4	☐	KCD110603	2007-09-04	793.0	994.0	0.093	0.083	OBJECT	1999JU3	R	22:23:12.208	+19:14:03.82	14:37:58
5	☐	KCD110604	2007-09-04	801.0	994.0	0.094	0.084	OBJECT	1999JU3	R	22:23:12.182	+19:14:04.12	14:45:17
6	☐	KCD110605	2007-09-04	806.0	994.0	0.093	0.084	OBJECT	1999JU3	R	22:23:12.147	+19:14:04.54	14:52:30
7	☐	KCD110606	2007-09-04	813.0	993.0	0.094	0.084	OBJECT	1999JU3	R	22:23:12.027	+19:14:05.28	14:59:48
8	☐	KCD110607	2007-09-04	841.0	1435.0	0.094	0.084	OBJECT	1999JU3	R	22:23:14.282	+19:03:01.13	15:09:24
9	☐	KCD110608	2007-09-04	846.0	1434.0	0.094	0.084	OBJECT	1999JU3	R	22:23:14.233	+19:03:02.17	15:16:43
10	☐	KCD110610	2007-09-04	931.0	1106.0	0.094	0.083	OBJECT	1999JU3	R	22:23:21.556	+19:11:15.37	15:31:42
11	☐	KCD110611	2007-09-04	940.0	1105.0	0.093	0.084	OBJECT	1999JU3	R	22:23:21.456	+19:11:16.06	15:40:29
12	☐	KCD110612	2007-09-04	943.0	1104.0	0.094	0.084	OBJECT	1999JU3	R	22:23:21.141	+19:11:16.96	15:47:44

3-2. Minor Bodies Search _{3/3}

Searching frames, which possibly obtained known asteroids or comets
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Instruments: Subaru/Suprime-Cam, Kiso/1kCCD, Kiso/2kCCD

Result of SMOKA Archive Search for Minor Bodies

Search Conditions

OBJECT NAME	Instrument	Search Period	
		From	To
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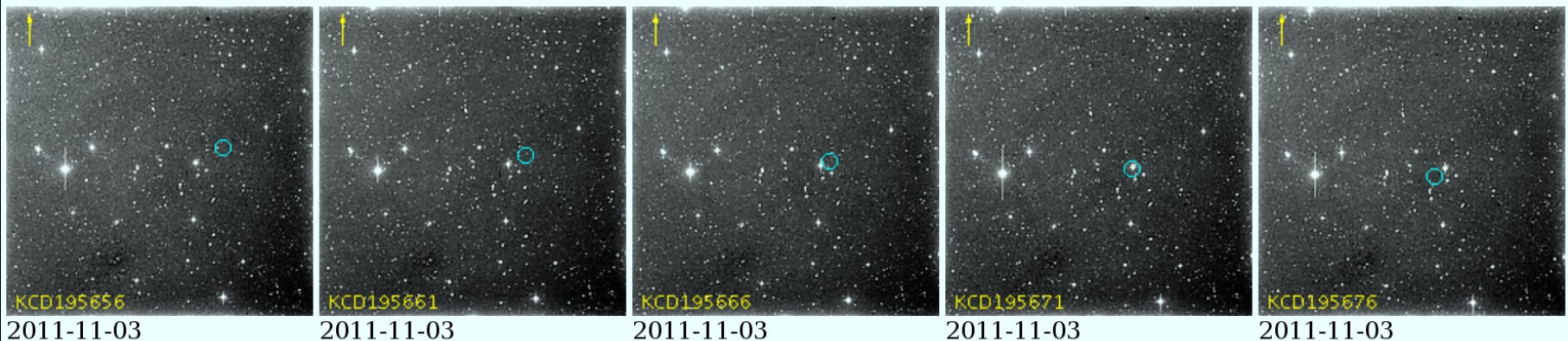
Sample

name : 1999 JU3

instrument : 2kCCD

Thumbnail images

The arrow in each thumbnail image shows the direction of North of the frame.



		OBJECT NAME	Instrument	Search Period	From	To	Object	Instrument	Search Period	From	To
10	☐	KCD110610	2007-09-04	931.0	1106.0	0.094	0.083	OBJECT	1999JU3	R	22:23:21.556 +19:11:15.37 15:31:42
11	☐	KCD110611	2007-09-04	940.0	1105.0	0.093	0.084	OBJECT	1999JU3	R	22:23:21.456 +19:11:16.06 15:40:29
12	☐	KCD110612	2007-09-04	943.0	1104.0	0.094	0.084	OBJECT	1999JU3	R	22:23:21.141 +19:11:16.96 15:47:44

Dear researchers,
Please use SMOKA for your studies!!

Our poster : **P25**

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