Current Status of SMOKA

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

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Subaru-Mitaka-Okayama-Kiso-Archive (SMOKA)
science archive system providing public data;
• Subaru Telescope (8.2m)
• 188 cm telescope (OAO)
• 105 cm Schmidt telescope (Kiso Obs.)
• 50 cm telescope (Akeno Obs. and OAO)

SMOKA is developed and operated by ADC / NAOJ
Data Request:
5000-20000 frames / month

Users:
229 (29 Jan. 2008)
Products of SMOKA

Papers using SMOKA
- 3 papers in 2003 (Suprime-Cam 3)
- 5 papers in 2004 (Suprime-Cam 5)
- 6 papers in 2005 (Suprime-Cam 5, CIAO 1)
- 9 papers in 2006 (Suprime-Cam 7, HDS 1, IRCS 1)
- 8 papers in 2007 (Suprime-Cam 6, CIAO 1, 2kCCD 1)
- 1 thesis in 2005 (2kCCD)

Astronomical Teaching Materials using SMOKA
“Hubble Law” for high school students (2003)
(by PAOFITS-WG (http://paofits.dc.nao.ac.jp))
Current Status and Future Plan of SMOKA

Current version is **SMOKA Ver. 3.1**
Updates from Ver 3.0 (from previous Subaru UM)
- **MITSuME** data
- **Weather Information** Pages
- **Computer Replacement** (- Mar. 2008)

Related Things ...
- **NAQATA**
- **Astrometric Calibration** of Suprime-Cam Data

Future Plan
- astrometric calibrated data
- new instruments and telescopes
- catalogs
Quality Assessment System
“NAQATA”

“NAQATA” is the data assessment system for observed data obtained by the Subaru Telescope. (May 2007~)

- Check for FITS data
  - FITS format (fitsverify)
  - Keywords of FITS header

- Assessment of the data quality
  - PSF
  - Limiting Magniture
  - Gain, Readout Noise

Final Aim: Construction of a Quality Control System
Judge continuation/cancellation of observation
- Whether the data quality is enough?
- Is setting of instruments correct?
Astrometric Calibration of Suprime-Cam Data

The positions of objects are very important!

But.....the case of Suprime-Cam,

Informations of position (WCS, World Coordinate System) in the raw data has error of about 30" (at maximum).

- shift (position of center)
- distortion
Calibration of the WCS (Astrometric Calibration)

- Stars detected in images vs. USNO-B1.0 catalog
- Fit by 3rd order expression
- Fit 10 CCD chips at the same time using relative position between CCD chips
- Thin out stars to make distribution of stars uniformly

Difference between coordinates of model and USNO-B1.0 catalog

![Diagram showing star distribution and coordinates](image)
Distribution of Position Accuracy (0.2 - 0.5 arcsec)

Atmospheric Refraction (larger refraction at lower elevation)