Software and Documentation

Koji Mukai

Suzaku Guest Observer Facility

Software Framework

- Multi-platform Suzaku FTOOLS, distributed as part of HEAsoft
- Other packages can be used in principle to perform certain steps but we do not actively support them
- Calibration information disseminated through the HEASARC Calibration DataBase (CALDB)
- Users receive calibrated data produced by the processing pipeline, but can (and often must) apply updated calibration information themselves

Software & CALDB

See also processing presentation

- Suzaku FTOOLS v7 includes both processing tools and analysis tools; CALDB includes files needed by both

- The users therefore have the tools necessary to perform their own reprocessing

- Key user tools include xisrmfgen and xissimarfgen

- The majority of the tools have been stable since v5

Analysis: Simplest Case

- Users start from screened event files (event_cl subdirectories under xis and hxd)
- Users specify an extraction region and/or other filtering criteria, and extract spectra, light curves, and images (non Suzaku specific)
- XIS: generate rmf and arf, or exposure maps
- HXD: obtain estimated background, and apply dead-time correction
- Light curve: barycentric correction, including the knowledge of Suzaku orbit

XIS Analysis Issues

- Xissimarfgen is extremely powerful, but is also extremely complicated and slow

- Default responses are large and hence spectral fitting can be very slow

  – A script that can handle many simple cases, xisresp (details hidden from the users)

  – "Medium" and "fast" options for smaller responses in xisresp

XIS Analysis Issues (cont'd)

- Poorer support of specialized modes (window, burst, timing, ...)

- How can we handle pile-up?

- Recent update of CTI/gain calibration means many users need to go back to unscreened data - however, only xispi (the last step in processing) and re-screening are required

HXD Issues

- V2 GSO background is yet to be released
  - HXD team expects initial delivery in Dec, 2007
  - Users will need to re-run hxdpi, due to a bug that was fixed in version 7
- Time delay between data procesisng and PIN background availability
- Background subtraction and deadtime correction involves several steps performed by hand
- Responses for extended objects...?

Alerting the Users

- E-mails to individual PIs, for critical updates that affect specific, proprietary sequences
- E-mails to the suzakunews exploder, for important updates that affect many users
- "Things to watch out for" page
- Other web pages and the ABC guide

ABC Guide Status

- Beta version of ABC Guide for Version 2 data were made available, upon request, in late October

- Update of this version under way
  - Corrections and clarifications
  - Update to correspond to Version 7 FTOOLS
  - Reprocessing of XIS data with new makepi files