HETG - Status

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Ongoing HETG Team Activities Summary

• **HETG Performance**
  - 34 HETG obsids, Nov.'05 - February 2006; ~ dozen targets, recent DDT
  - Monitoring HRMA FWHM - 3 observations added - looks good.
  - HETG performance is unchanged and superbly nominal.

• **HETG Calibration**
  - New HEG and MEG efficiencies released in CALDB, Dec.'05.
  - ACIS gains on S0-S5 looking good - improved order sorting.
  - Future work:
    • Absolute effective area; cross-calibration w/XMM, RXTE/PCA
    • Piled-up spectra; Higher orders; CC mode data (Sco X-1)
    • Inclusion of systematic errors in model fitting.
The image above shows "order plots" from the recent observation of RS Oph,, obsid 7280. Note how thin and crisp the order bands are, showing very good ACIS energy/gain correction. Below are similar plots from obsid 1102, Cyg X-2, as processed in 1999. That's progress!
Ongoing HETG Team Activities, cont.

- Science Support to CXC, etc.
  - HETG Newsletter article
- HETG AGN archive: [http://hotgas.pha.jhu.edu/](http://hotgas.pha.jhu.edu/)

- GTO Science Program
  - Cycle 6 observations complete: M81*, SS 433, GX 5-1, PG 0844+349
  - GTO Targets submitted for Cycle 8; the process begins.
  - Post Docs: Selected postdoc to arrive in the Fall.

- HETG Science Examples:
  - Cas A and 3D modeling - prompted by HETG observation & analyses
Cas A Silicon "Markert Model" (1983)

Schematic and Renderings of the Markert model geometry.
At left, a schematic of the model geometry is shown, from Fig.5 of Markert et al. 1983.
The middle and right images show "volview" renderings of the 3D model array at two viewing orientations.
The middle’s orientation is similar to the schematic’s;
the dotted line is a "garnish" component indicating the line-of-sight to the observer.
The right image is shown as-seen along the line-of-sight by the observer.
Cas A: Building a Remnant …

Silicon-dominated knots measured w/HETG:

Model of blastwave and ejecta shells:

Silicon-line image

Continuum image