HETG - Status

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Ongoing HETG Team Activities Summary

- **HETG Performance (mid-May 2007 -- mid-November '07)**
  - 29 HETG obsids on 15 targets
    - ✓ Our GTO: *Orion fields (161 ks)*, Cyg X-2 (CC, 150 ks)
    - ✓ Calibration targets: 3C 273, PKS 2155-304 (30ks each)
  - HRMA FWHM is constant - OK.
  - HETG performance is nominal.

- **HETG Calibration**
  - Recent work: [http://space.mit.edu/home/dd/Hydra/E0102_Cal/P2COMP/P2comp_sept07.html](http://space.mit.edu/home/dd/Hydra/E0102_Cal/P2COMP/P2comp_sept07.html)
    - SNR E0102 for cross-calibration: compared with new RGS model fluxes.
  - Future work:
    - HEG cross-dispersion asymmetry (initial work by Ishibashi)
    - Higher-orders' calibration
Ongoing HETG Team Activities, cont.

- Science Support to CXC, etc.
  - X-ray Grating Spectroscopy Workshop (July) [http://cxc.harvard.edu/xgratings07/agenda/abstracts.html]
  - 8 Years of Science with Chandra, Huntsville (October)
    - Many talks/posters from HETG & CXC@MIT people.

- GTO Science Program
  - Cycle 8 program: All 4 targets complete.
    - Orion example on next page.
  - Cycle 9 observations begun with more Orion data.
  - Postdoc status:
    - 3 PDs with finishing dates: 9/08, 3/09, 8/09; all within current contract.
    - Expect Fall/Winter '08 advertising for '09 replacements (2) on new contract.
GTO observations of the Orion Trapezium

- Long-term GTO project
- Cycles 1, 5, 8 & 9
- 15 observations, totaling ~ 480 ks
- Rich set of sources and observation epochs
- 7 papers in ApJ (so far)

- Composite "sky" image from recent poster by Testa et al. at the "Eight Years of Science with Chandra" meeting, Huntsville.
Ongoing HETG Team Activities, cont.

• GTO Science Program, cont.
  – HETG (and LETG) Legacy: High-Resolution X-ray Spectroscopy
    • Analysis Software: "day-to-day" and advanced
      [link: http://space.mit.edu/CXC/software/index.html]
        * MARX -- Chandra all-component ray-trace code.
        * ISIS -- Interactive [high-resolution] spectral interpretation system.
        * "Event-2D" and "Source-3D" -- custom s/w, works with ISIS.
  • Catalog of transmission grating targets & observations - "TG Cat"
    * Manageable number of HETG & LETG targets observed, ~ 400.
    * Provide "value-added" high-resolution products and information.
    * Supports multi-wavelength users.
  • Informing the community
    * TBD (papers, threads, x-ray 'textbook', … )
  – Carried out by the "HETG and CXC@MIT" group, working with others in the CXC.
Supporting High-Resolution Spectroscopy in a variety of domains.

The "HETG & CXC@MIT" Group

- HETG & CXC@MIT Group
- GO's
- Hydra
- Instrument support; GTO
- HETG
- Other contracts
- HETG & ACIS
- Pipeline s/w
- Interactive s/w
- Cal
- SDS
- DS
- ...