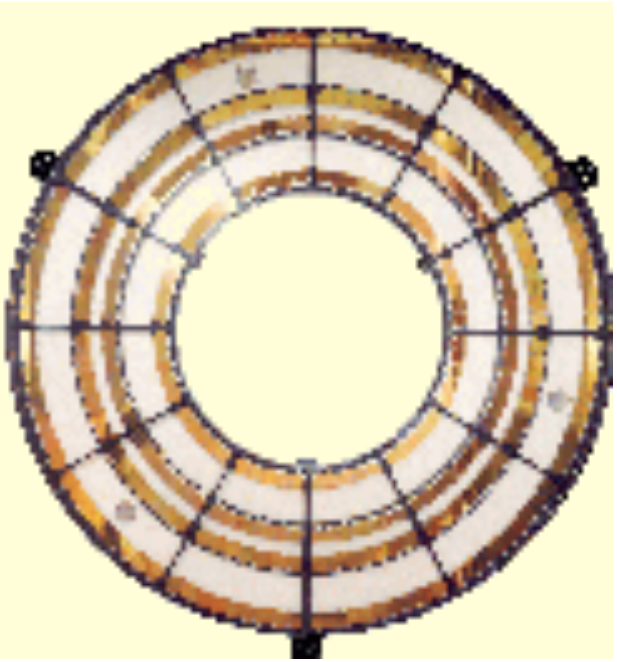
MIT Kavli Institute
for Astrophysics
and Space Research



HETG - Status

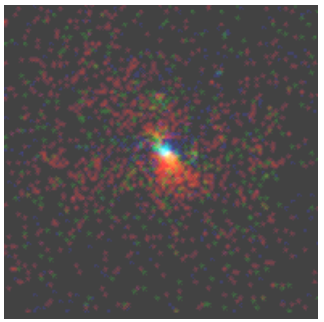
Chandra Quarterly Review No. 25
20 May 2008

Dan Dewey
dd@space.mit.edu

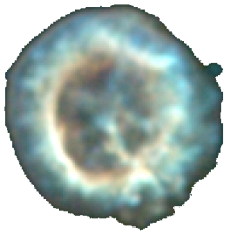
HETG IPI: Prof. C.R. Canizares
MIT Kavli Institute

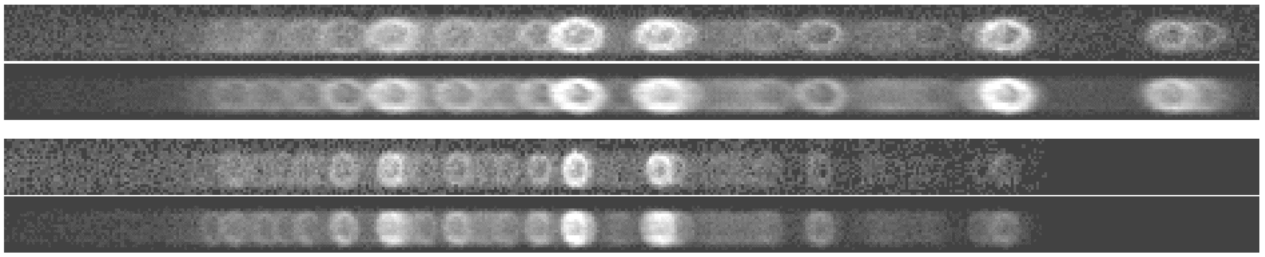
Ongoing HETG Team Activities Summary

- HETG Performance (mid-November '07 -- mid-May'08)
  - 14 HETG obsids on 6 Science + 2 Cal targets
    - ✓ 275 ks GO (Mushotzky) of NGC 4388
    - ✓ Calibration targets: 3C 273, Capella (30ks each)
  - HETG performance is nominal.
  - LETG usage: 8 obsids on 4 Science + 3 Cal targets.



NGC 4388
(non-grating image)

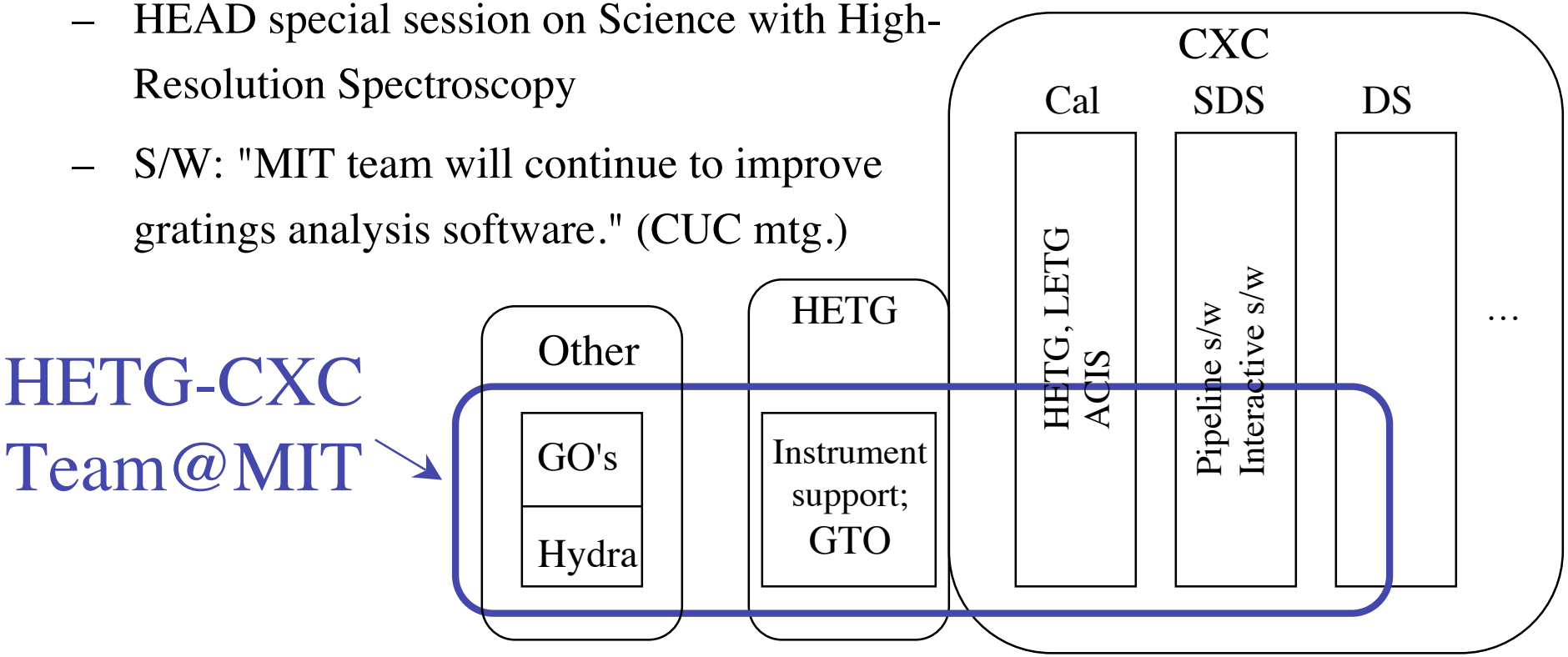




- HETG Calibration
  - Support cross-calibration of X-ray missions (http://www.iachec.org *)
    - *International Astronomical Consortium for High Energy Calibration
    - Thermal SNR working group, Paul Plucinsky, chair.
    - Comparing E0102 models with two epochs of HETG observations.

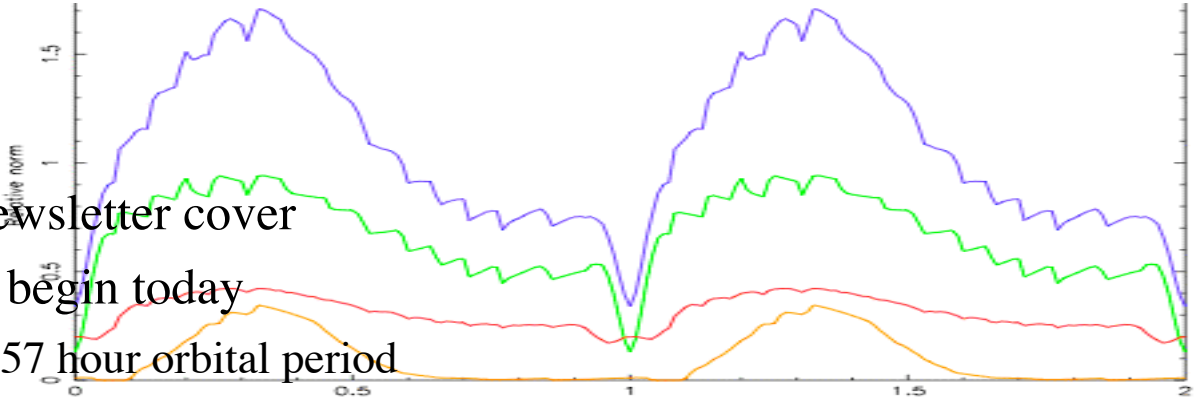
Ongoing HETG Team Activities, cont.

- Science Support to CXC, etc.
  - HETG/LETG Legacy Catalogue,"TGCat", w/Joy Nichols et al.
  - HEAD special session on Science with High-Resolution Spectroscopy
  - S/W: "MIT team will continue to improve gratings analysis software." (CUC mtg.)



Ongoing HETG Team Activities, cont.

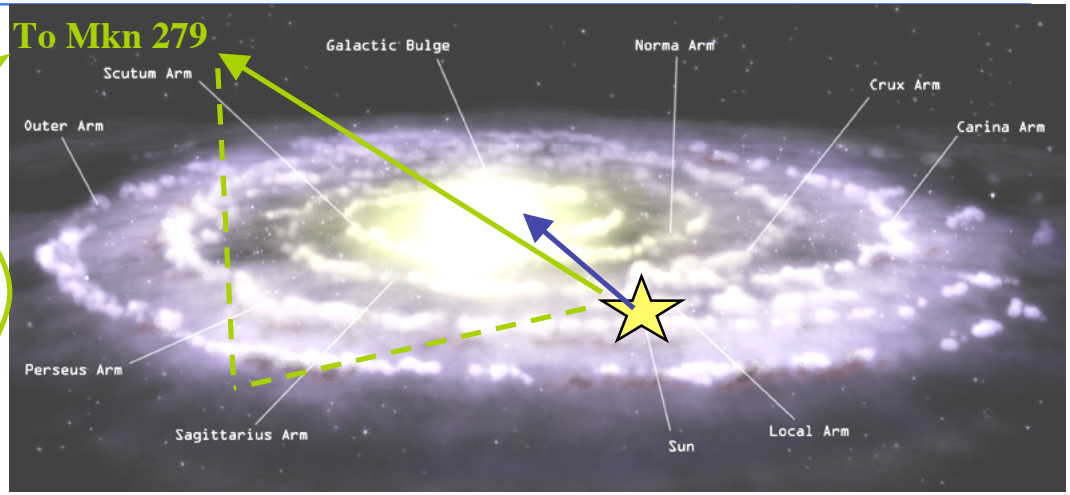
- GTO Science Program
  - Cycle 9:
    - Orion obs.s complete: Newsletter cover
    - **X 1822-37**: observations begin today
      - Neutron star binary, 5.57 hour orbital period
      - Observe 7+ orbits, study geometry from light curves

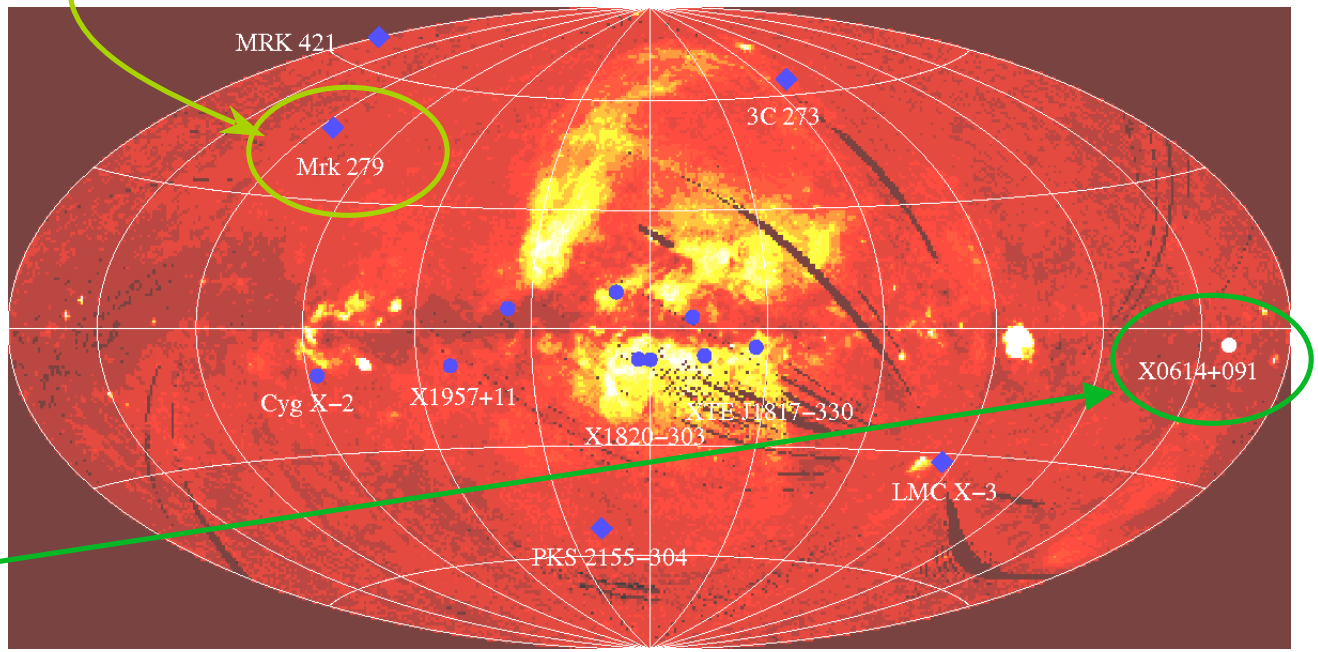


  - Cycle 10 GTO observations selected and OK'ed:
    - AGN (250 ks); XRB/IGM (200 ks); Flare star (100 ks)
    - Cas A 8-years-later (70ks); and 2 XRBs (32, 40 ks).
  - Postdoc status:
    - 2 postdocs "graduated" early - good for them.
    - 1 PD with finishing date of 8/09; within current contract.
    - Advertised for up to two (2) additional postdoc hires.
      - In process of interviewing ~5 candidates.

Science: Measuring Inter- Stellar/Galactic Media

- PD: Yangsen Yao
- Measuring the "medium" between stars and galaxies: ISM and IGM.
- See absorption from objects located along different sight-lines.
- Cy 10: Add a target opposite the Galactic center.





Science: Yangsen Yao, ISM/IGM cont.

Legacy observations of the Galactic ISM absorption:
A combined spectrum of Cyg X-2, 4U 1820-303, and XTE J1817-330
23 lines detected: 19 identified and 4 unidentified (450 ks in total with HETG)