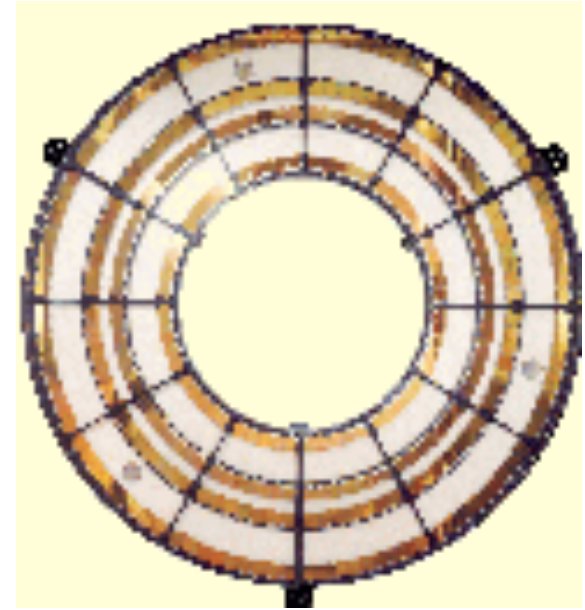




MIT Kavli Institute
for Astrophysics
and Space Research

HETG - Status

Chandra Quarterly Review No. 27
25 March 2009



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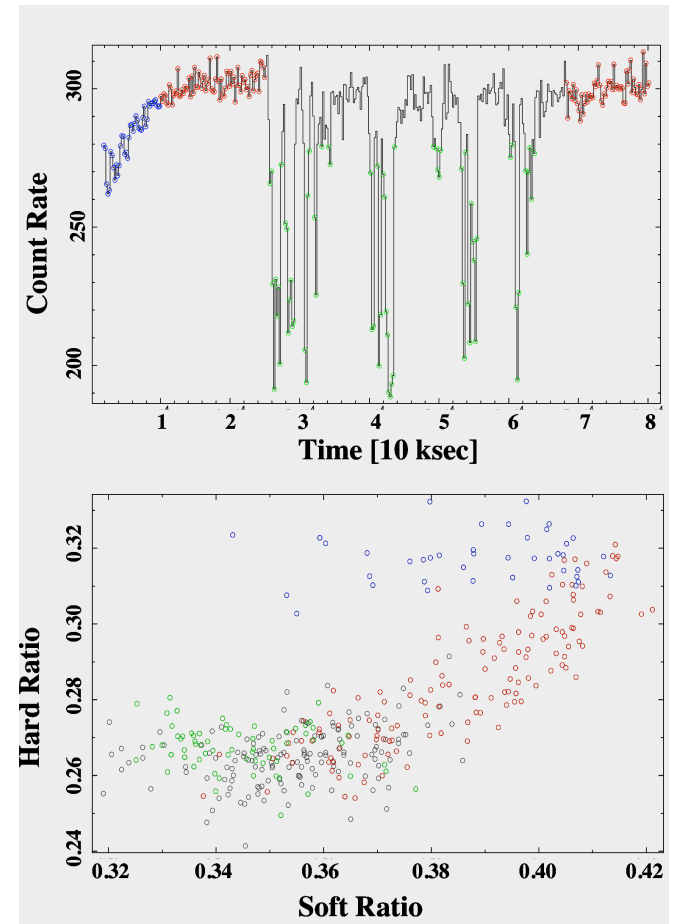
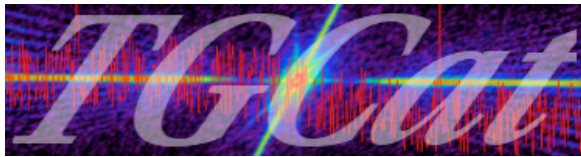
Ongoing HETG Team Activities Summary

- HETG Performance (~mid-October'08 -- mid-March'09)
 - 68 HETG obsids on 13 Science + 1 Cal target
 - * 5 of our GTO targets: long NGC 1068, EV Lac, 3 binaries
 - * GO includes 3 at 200+ks: NGC 4051, SN 1996cr, Kappa Ori
 - * GO multi-epochs of SN(R) 1987A and Eta Car.
 - FWHM of streak is steady; HETG performance is nominal.
 - LETG usage: 11 obsids on 4 Science + 1 Cal target; performance nominal.
- HETG Calibration
 - CC and TE cross-calibration with 4U 1957+11
 - * Data in-house, looks useful. Analysis in progress (N. Schulz.)
 - Plans: Look into re-observing E0102 w/HETG for cal.



Ongoing HETG Team Activities, cont.

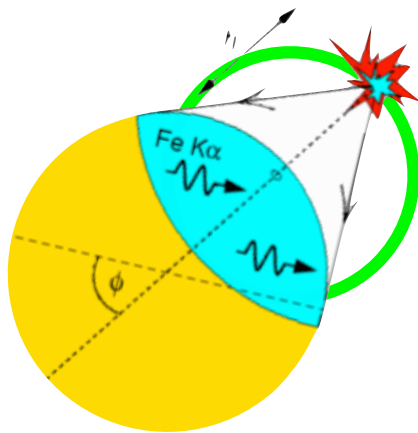
- Science Support to CXC, etc.
 - HETG article in Chandra Newsletter
 - * "Z-pattern" of the X-ray binary Cyg X-2
 - TGCat Support
 - * List ~ 350 HETG Objects, through Cy10.
 - * Help do V&V of the TGCat products.
 - * TGCat ready for use: <http://tgcats.mit.edu/>
 - * Plans: Using TGCat products w/ISIS, etc.





Ongoing HETG Team Activities, cont.

- GTO Science Program
 - Cycle 9:
 - ✓ Completed, [NGC 1068: 400 ks](#) in Nov./Dec.'08
 - Cycle 10:
 - ✓ AGN, Ark 564 (250 ks)
 - ✓ XRB/IGM, 4U 0614+091 (200 ks)
 - ✓ [Flare star, EV Lac \(100 ks\)](#)
 - ✓ XRBs: GX 5-1, 4U 1556-60 (32, 40 ks)
 - Cas A "HETG-II": 8-years-later (70ks)
 - Postdoc status:
 - * One PD finishing 8/09; within current contract.
 - * Two PDs started during past months:
 - * Increasing group focus on AGN



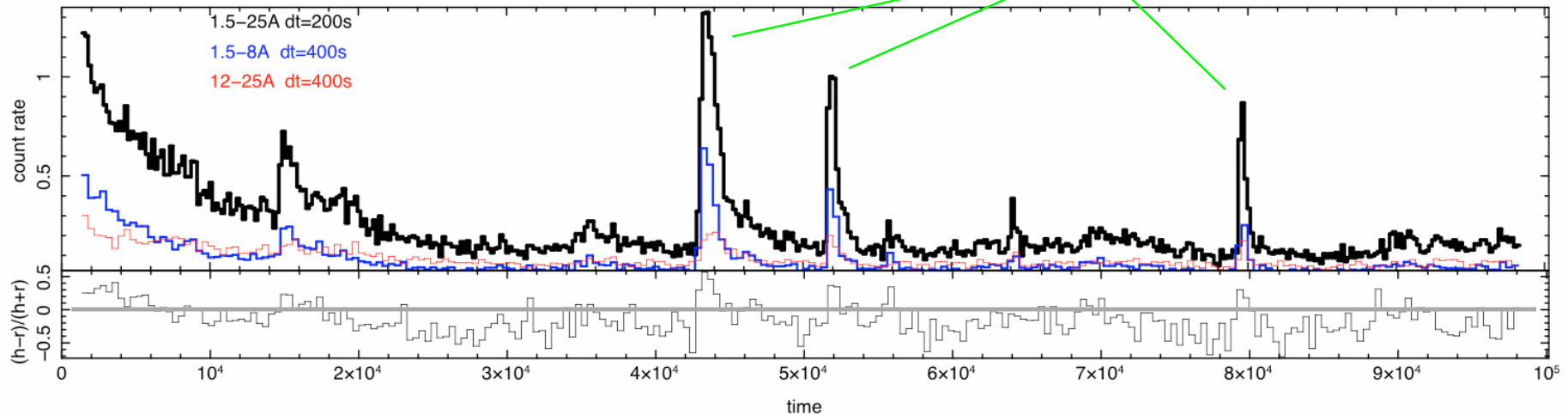
- EV Lac: Catching the Flares

- Extract spectrum from flaring regions/times
- Infer flaring loop temp., density, dynamics, and height (Testa+ 2008).

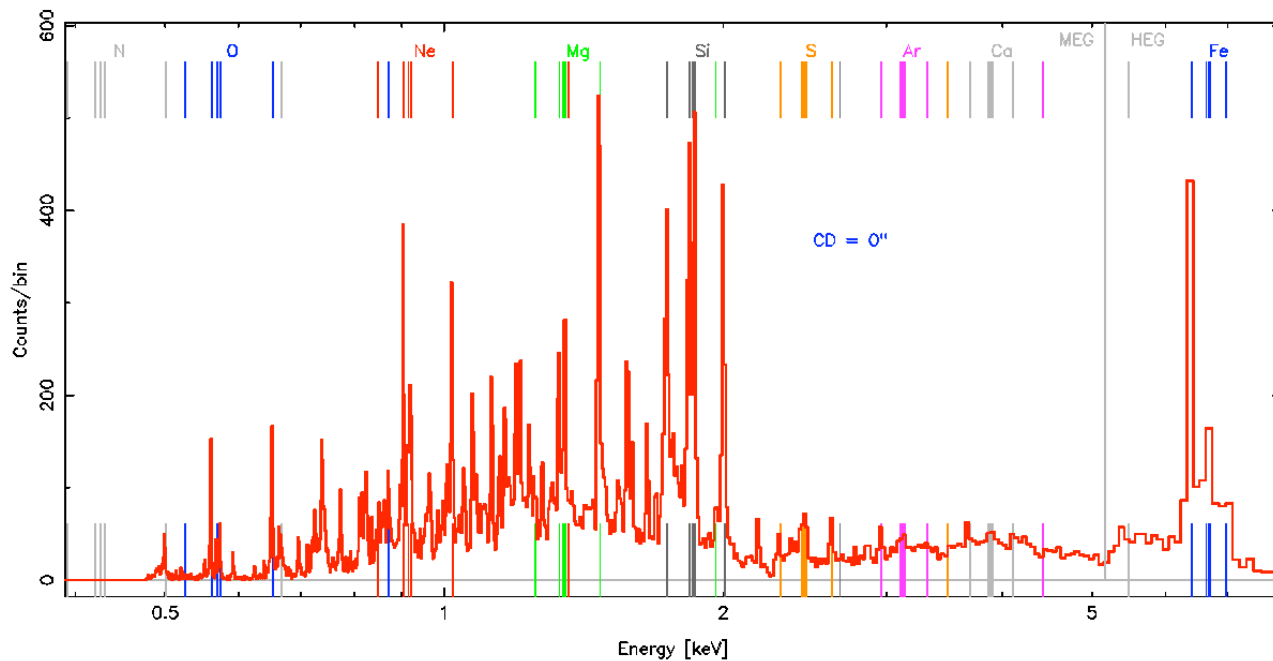


EV Lac HETGS ObsID 10679

Flares



- NGC 1068: Spectra vs Position
 - ~ 450 ks of HETG exposure
 - Extract spectra along the "ionization cone"
 - PostDocs will figure out what it means :)



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HST view of NGC 1068

