



MIT Kavli Institute  
for Astrophysics  
and Space Research

# HETG - Status

*Chandra* Quarterly Review No. 30  
2 September 2010



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## Ongoing HETG Team Activities Summary

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- HETG Performance (March through August 2010)
  - 28 HETG obsids on 13 Science + 1 Cal target
    - \* Includes our GTOs: Cas A, GX 13+1, ESO 323-G077.
  - **FWHM of streak is steady**; HETG performance is nominal.
  - LETG usage: 23 obsids on 4 Science + 4 Cal targets
  
- HETG Calibration
  - CC mode: Comparing TE(Faint) and GRADED obs.s
    - \* User recommendation: CC+Faint unless very bright ( $> 0.25$  Crab).
  - EDSER for HETG: barely detectable effect in Capella data.
    - \* EDSER = Energy-Dependent Subpixel Event Repositioning

# Ongoing HETG Team Activities, cont.

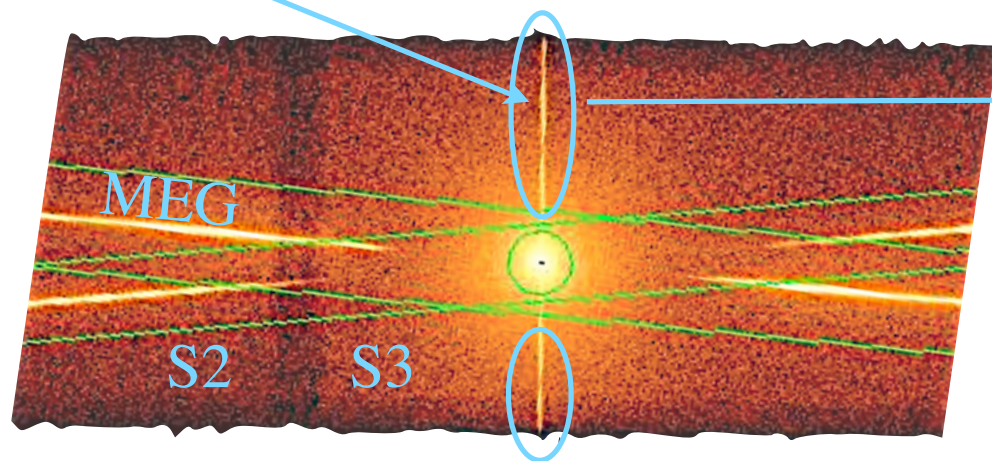
- Science Support to CXC, etc.
  - TGCat: <http://tgcat.mit.edu/>
    - Updated 300+ obs.s (>2005) for new ACIS-S contamination model
  - Supported Peer Review panel.

TGCat Site Statistics (from 19-Feb-2010):

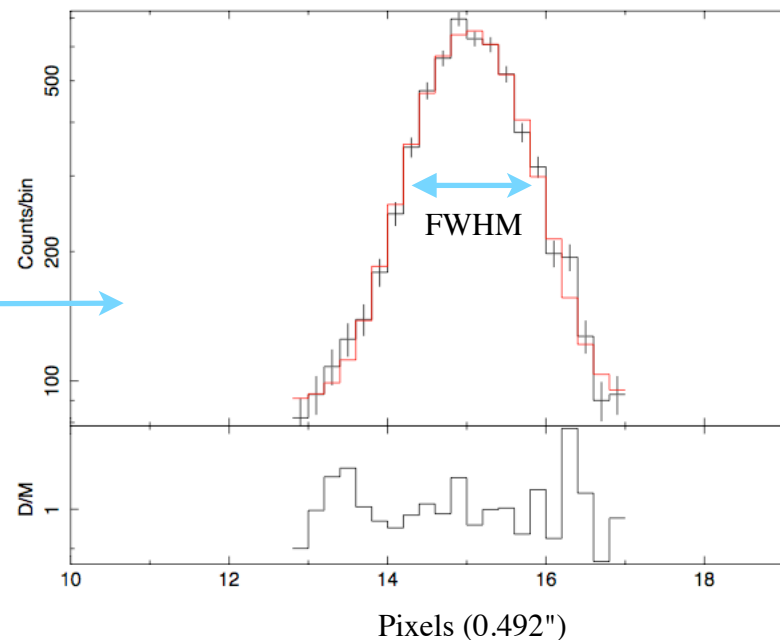
Site Queries: 12696 from 180 distinct IP addresses  
 VO Queries: 11141 from 154 distinct IP addresses  
 Pkg Downloads: 171 from 59 distinct IP addresses

" wow, tgcat is great! " - TK

Streak in HETG GX 13+1 observation



Obsid 11816 : FWHM of Streak = 34.014 um +/- 1.4755 (90%)

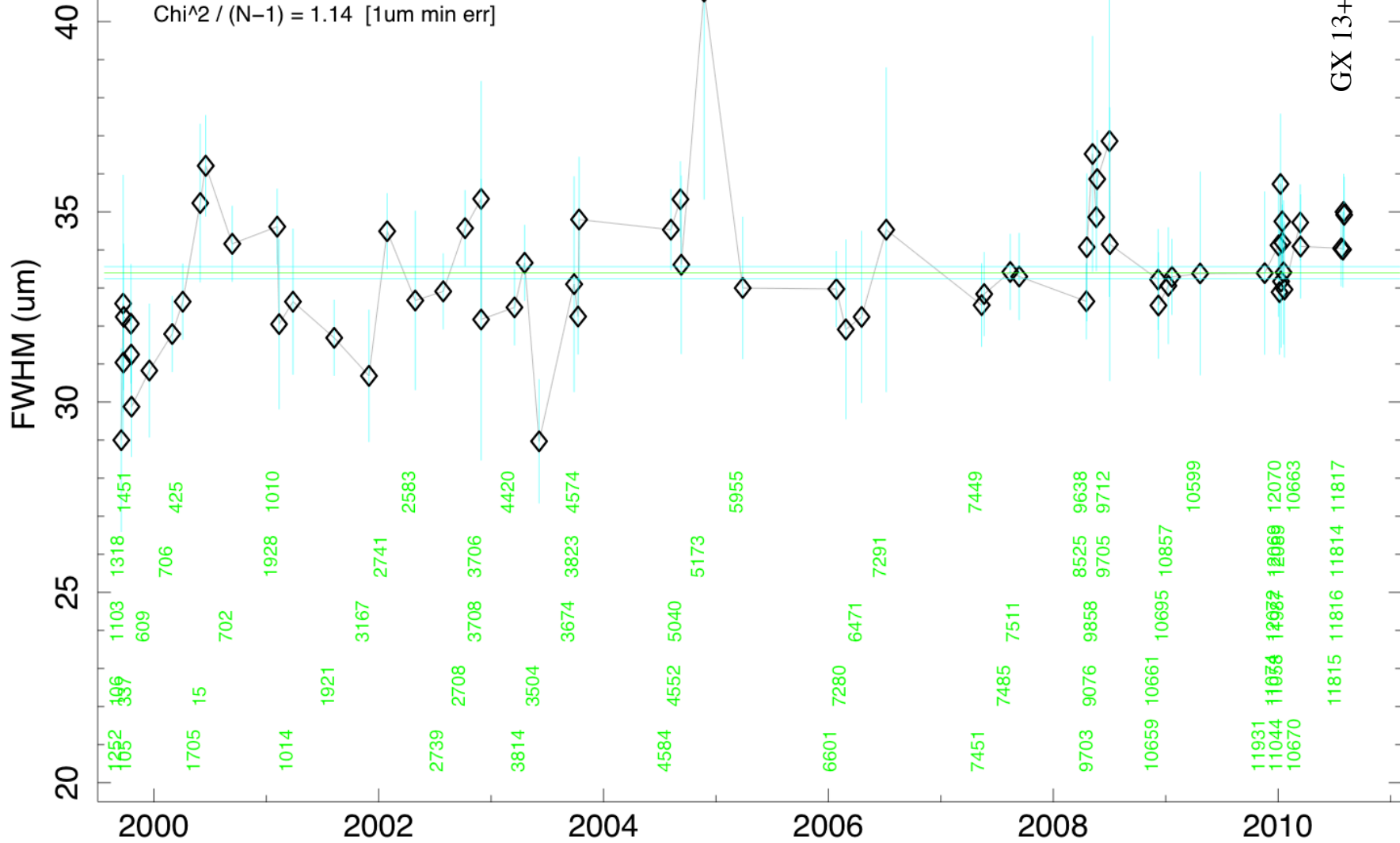




# HETG Streak FWHM History

Ave FWHM = 33.39 +/- 0.15 um

Chi^2 / (N-1) = 1.14 [1um min err]

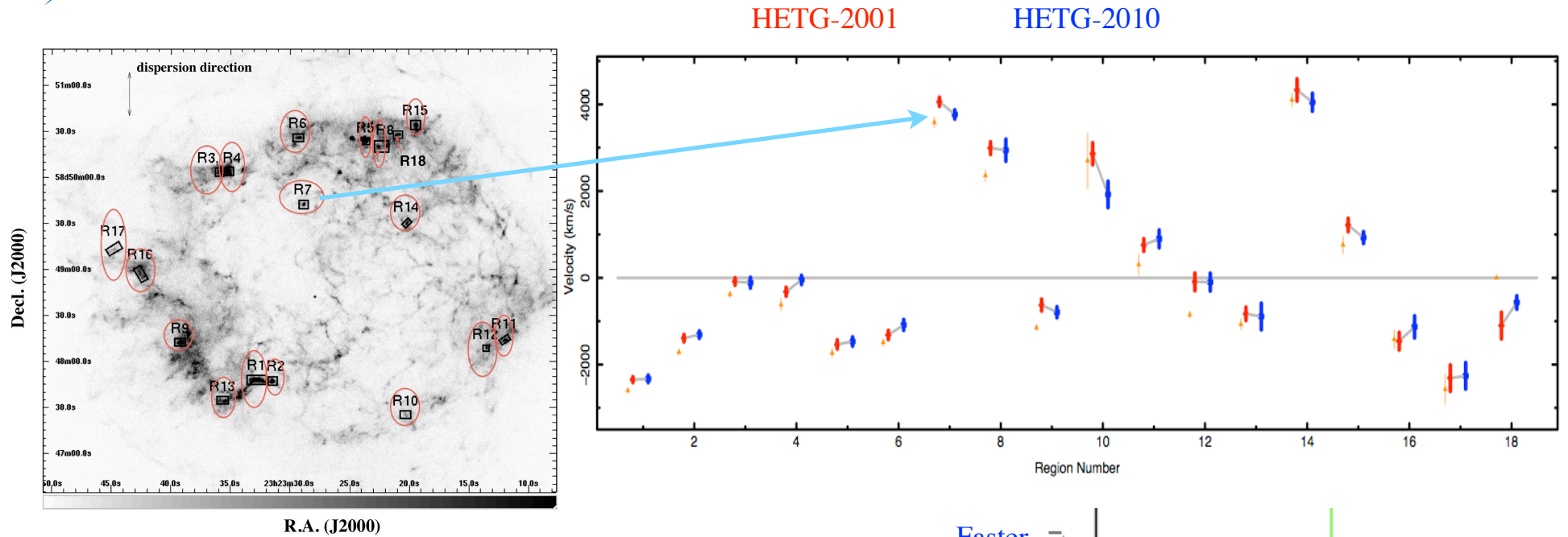




## Ongoing HETG Team Activities, cont.

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- GTO Science Program
  - Cycle 10 - finished up at end of April:
    - ✓ Cas A "HETG-II": 9.0-years-later (70 ks)
  - Cycle 11 - complete:
    - ✓ TWA 19A, NGC 2992, ESO 323-G077, GX 13+1
  - Cycle 12:
    - XRB: GX 349+2 (120 ks)
    - SNRs: SN 1987A (180 ks), E0102 (150 ks), Puppis A "Micro-X pointing" (15 ks)
    - AGN (Fe-K, warm abs.): Mkn 841 (200 ks)
  - Postdoc status:
    - \* A recent departure due to job-finding success; initiate postdoc search in next months.



- Cas A ~330 years old and changing
- HETG Observations 9 years apart
- Measure *changes* in speeds & ionization
- Better understand the dynamics of Cas A

