H/LETG — Status

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HETG IPI: Prof. C.R. Canizares
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HETG/ACIS-S Performance (October 2017 — March 2018); 1643 ks
• 53 HETG observations on 8 targets (45/8 GO/GTO observations); Parts of several large programs (Cycle 18-19): 500, 450, 327 ks GO; 480 ks GTO
• 0 HETG Cal observations

LETG Performance (October 2017 — March 2018); 961 ks
• 24 LETG/HRC-S observations, 4 targets (22/0/2 GO/GTO/Cal, 792 ks)
• 1 LETG/HRC-I observations (Cal, 2 ks)
• 7 LETG/ACIS-S observations, 1 target (Cal, 167 ks)

Grating performance is nominal.

TGCat has 1833 extractions for 476 objects (+49/+7 since last report)
Total volume: 417 GB
Downloads: 255 packages, 74 GB
3151 single file, 1.2 GB  

http://tgcat.mit.edu
HETG Team Activities

GTO Science Program, HETG/ACIS-S

Cycle 18:

★ ULX/BH: NGC 1313 X-1  481 ks  Ultra-luminous source outflow: absorption, emission lines
★ NS/BH: GRS 1915+105    97 ks  Black hole accretion, line variability
★ XRB: 4U 1626-67         45 ks  Neutron star accretion; Fe K absorption variability

Cycle 19:

★ AGN: Fairall 51         0/240 ks  Seyfert 1, warm absorber variability (w/ NuSTAR 120 ks)
★ HMXB: 4U 1907+09        0/145 ks  Accreting neutron star; wind emission, absorption lines
★ Stars: V773 Tau         0/140 ks  Evolution of pre-MS stars; flares (w/ NuSTAR 150 ks)
★ Stars: TW Hya           0/55 ks  Accretion/winds in pre-main-sequence stars (HETG/HRC-I)
★ ISM: 4U 1636-53         0/140 ks  Si, Fe absorption edges; part of survey vs N_H
★ NS: Terzan 5 X-2        0/200 ks  TOO (10%); Neutron Star Equation of State
★ LIGO/GW: GW2018nnnn     0/300 ks  TOO (10%); Gravitational wave transient

Postdoc status/activities:

Dr. Rozenn Boissay, since Feb 2017 (Ph.D. U. Geneva, May 2016)
Dr. Paul Hemphill, since Oct 2016 (Ph.D. UCSD, August 2016) [partial GTO support]
Dr. David Principe, since Nov 2016 (GO supported; involved in HETG/GTO program)
LETG Team Activities

LETG/GTO Science Program

Cycle 18:

★ AGN: (Kaastra/SRON) IC 4329a 174 ks Neutral, warm absorbers (HETG/ACIS-S) (Mehdipour, Costantini et al. 2018, in preparation)
★ Stars: (Predehl/MPE) Proxima Cen 166 ks Reference spectrum of an old M-dwarf (LETG/HRC)

Cycle 19:

★ NS: (Predehl/MPE) RX J2143.0+0654 0/175 ks Cyclotron Absorption Line in an Isolated Neutron Star (LETG/HRC)
★ Gal: (Kaastra/SRON) 1E 2216/1E 2215 0/145 ks Shocks in Galaxy Cluster Collisions (ACIS-I)
★ ISM: (Kaastra/SRON) 4U 1608-522 0/30 ks Astro-silicates through Mg and Si K-edges (HETG/ACIS)
(For details, see the 2018 *Chandra* Newsletter HETG article.)
The Ultra-Fast Outflow of the Quasar PG 1211+143 as Viewed by Time-Averaged Chandra Grating Spectroscopy


“…Crucial to this discovery were spectrometers with velocity resolutions well-matched to the width of the absorption lines. Verifying these results, searching for the additional absorption systems suggested by the XMM-Newton spectra, … will either require significantly longer Chandra/HETGS spectra, or a high resolution X-ray spectrometer with significantly higher effective area. …”

HETG/GTO Work in progress: We have just completed (Feb. 2018) 500 ks on the Ultra Luminous X-ray source NGC 1313 X-1, to search for a similar Ultra Fast Outflow (UFO) in its spectrum.