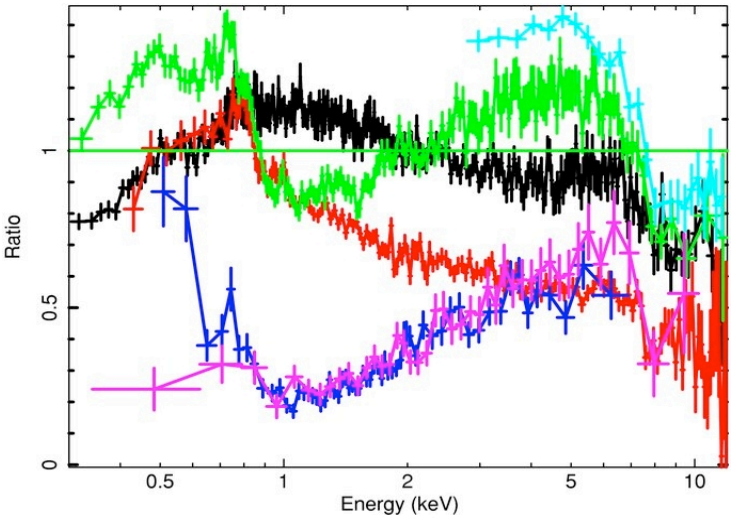
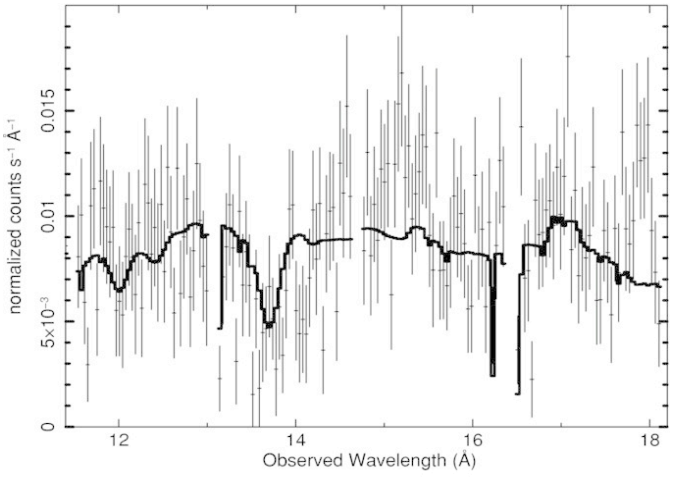
Alternate Targets: Active Galactic Nuclei

- PDS 456 (QSO, NLS1, z = 0.184)
  - Observed once for 145 ks in 2003
  - Was very faint in 2003, occurs in 1/3 of observations
  - When bright, showed
    - strong Fe UTA at modest ionization
    - high ionization warm absorber
    - possible high velocity absorption near Fe K



PDS 456 spectra relative to a PL model:

XMM PN 9/07,
Suzaku 2007;
XMM 2001;
MEG 2003;
ASCA 1998;
XTE 2001

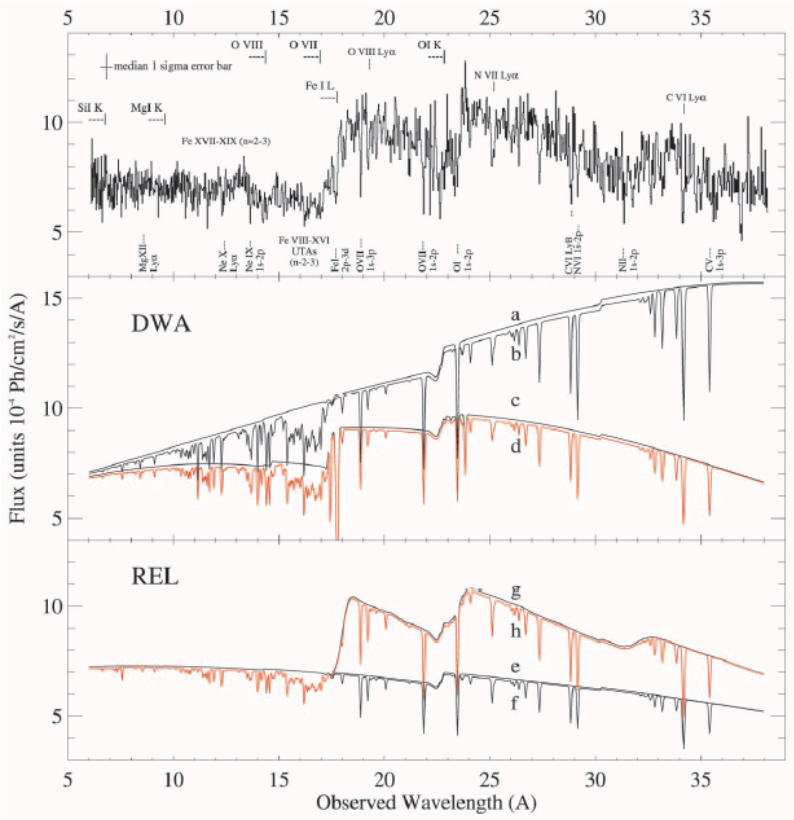


PDS 456: RGS data, model has broadened Ne X at 16,000 km/s outflow.

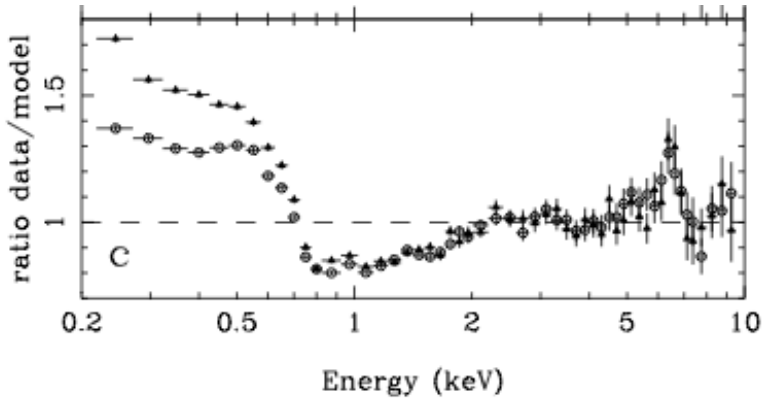
Goals:

- Test for relativistic soft X-ray lines
- Test for hard X-ray absorption
- Model highly ionized warm absorber

- Mk 766 (Sy 1, z = 0.0129)
  - Observed in 2001 with HETGS, for 90 ks
  - Rel. O VIII, N VII lines in RGS (Branduardi-Raymont+01, Sako +03 and Mason+ 03)
  - 3 component WA in HETGS (McKernan+07)
  - Like MCG-6-30-15 but x7 less data!
  - Variable soft excess



Mason et al. 03 model of Mk 766 spectrum using either the Dusty Warm Absorber (DWA) model or the relativistic line (REL) model.

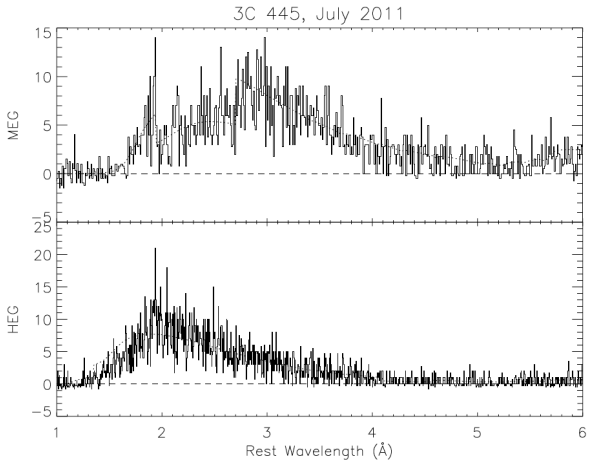


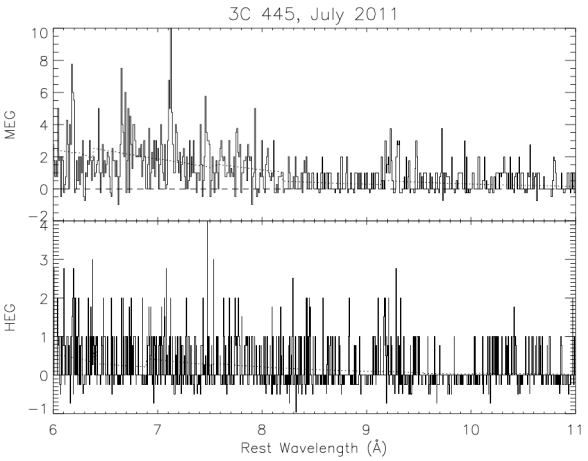
From Page et al: XMM pn, MOS show strong soft and variable excess. No warm absorber needed!

Goals:

- Develop more refined model of the Warm absorber
- Test for O VII and O VIII edges in data
- Combine with long XMM observation

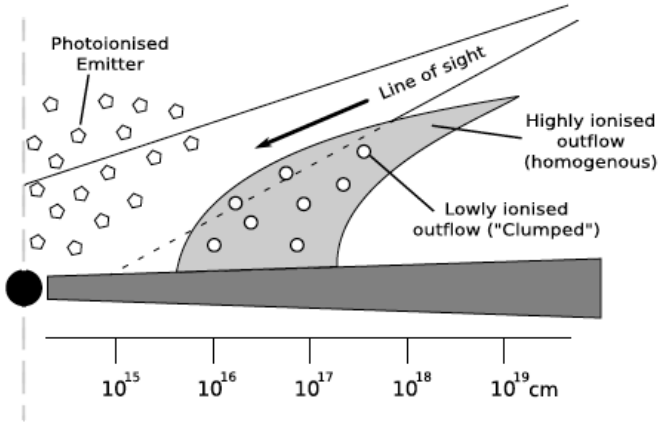
• 3C 445 (FR II radio galaxy, z = 0.056)
  - •420 ks in AO13
  - •Source was faint
  - •0th order has soft extended emission
  - •Below 3 keV: line-dominated with some continuum





Goals:

- Test for deep Fe-K edge at 7.35 keV
- Measure density in photo-excited gas using Si XIII
- Test emission lines for broadening at 2500 km/s
- Distinguish photo-excitation from collisional excitation in soft emission line spectrum



Model from Reeves+ ’10