Report from the White Dwarf (+ isolated Neutron Star) Working Group

Vadim Burwitz 29.03.2012

International Astronomical Consortium for High Energy Calibration , IACHEC

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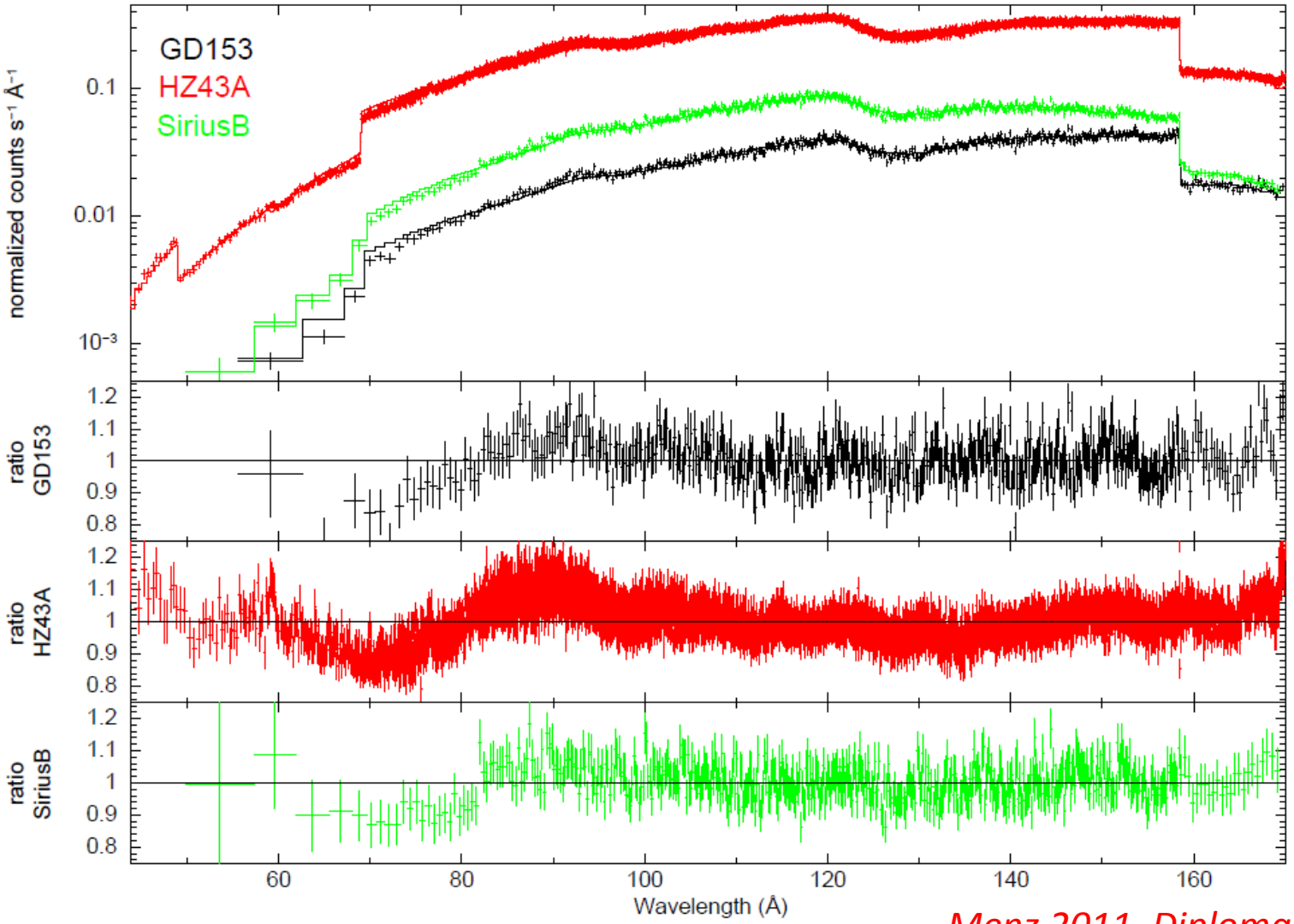
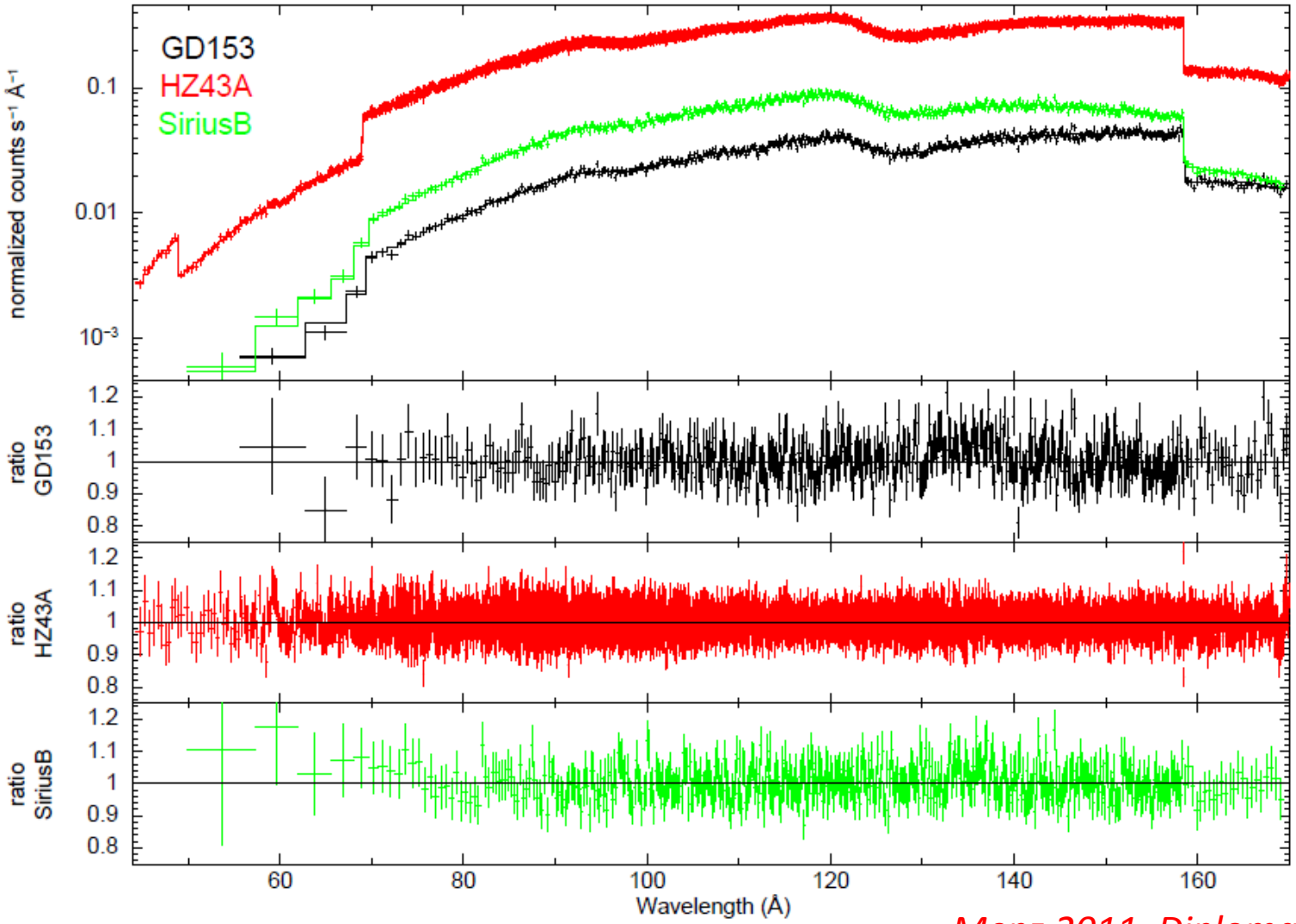
HZ43, Sirius B and GD153



Menz 2011, Diploma Thesis

Figure 5.1.: Model fits to the calibration sources with the *Chandra* effective area. In the upper panel the folded models and data are plotted. The ratios from data to model are plottet for each calibration source in the lower panels.

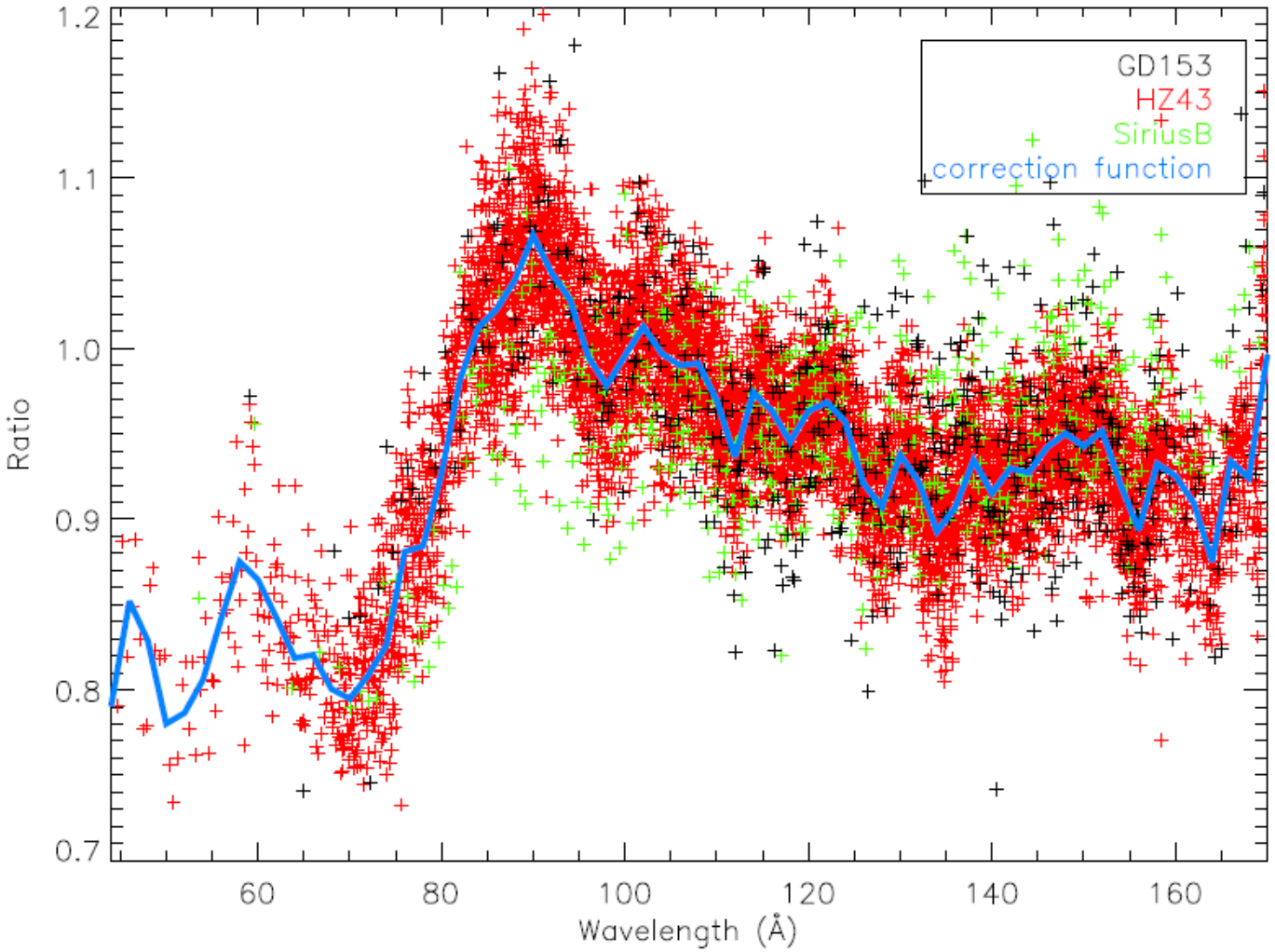
HZ43, Sirius B and GD153



Menz 2011, Diploma Thesis

Figure 5.2.: Fits to the calibration sources with the corrected effective area. Fits and ratios are plotted in the same way as in Fig. 5.1

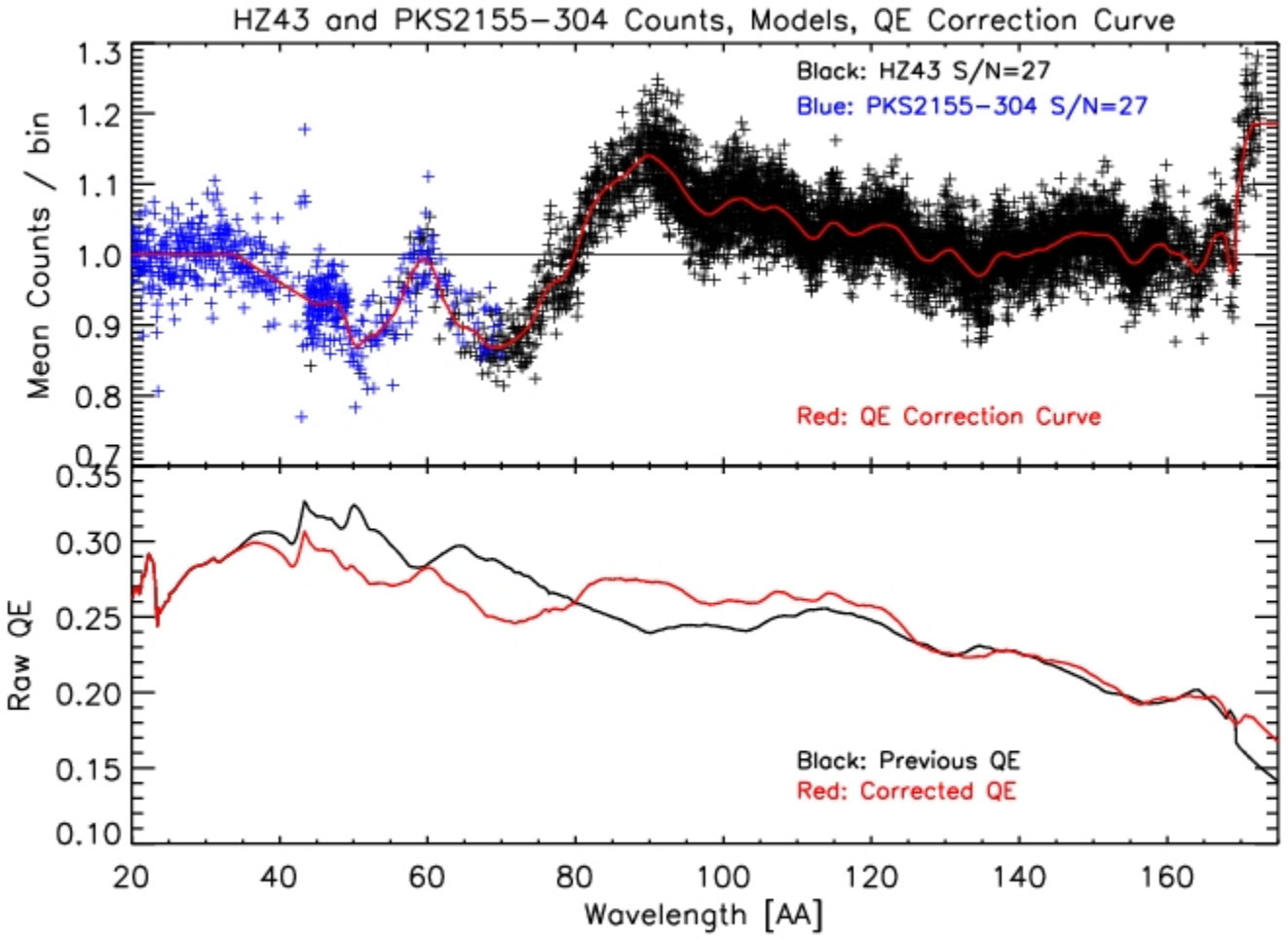
Correction function for soft energies for the LETGS



Menz 2011, Diploma Thesis

Figure 5.3.: The calculated correction function. Overplotted are the ratios from data to the uncorrected models with the same parameters as used for the correction function.

LETGS Correction using PKS2155 &HZ43



Durham 2011, Chandra Wiki

I. White Dwarfs

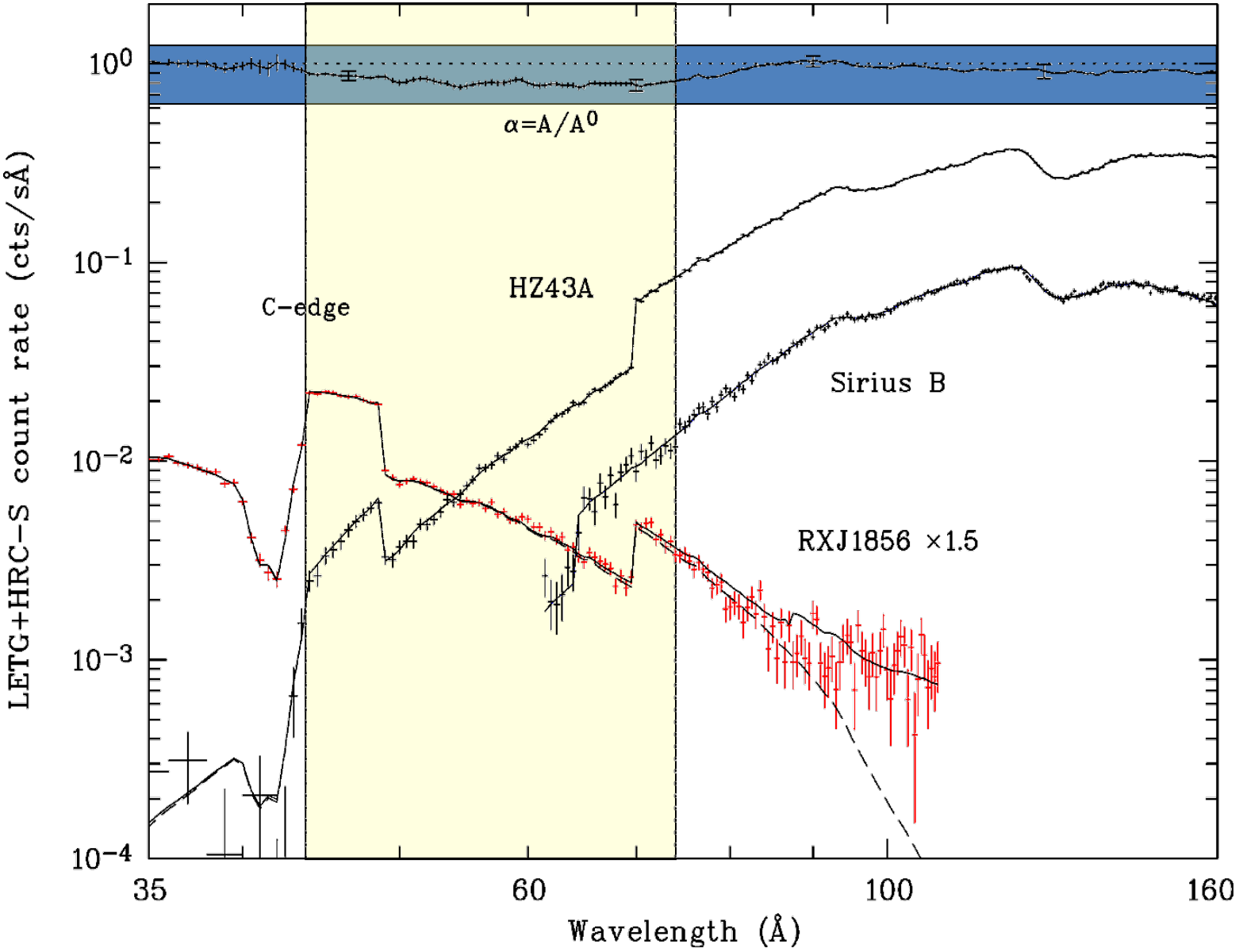
HZ 43 / Sirius B / GD153

- All have pure Hydrogen spectra
- Things to Check :
  - upper limit for Helium contribution
  - limits for gravitational redshift
  - Interstellar absorption
  - Log g well contrained from UV, optical and IR
- Fit ratios of spectra
  - independant of effective area
- Check + report
  - improvements needed for LETG +HRC-S soft effective area
- Prepare Paper ←

II. WDs + iNS

- RXJ1856 is a bridge spectrum between
  - **blazars** (high energy)
  - **WDs** (low energy) calibration
- New physical model
  - based on classical NS model atmospheres will be attempted → not easy
  - Flux distribution in Optical non Rayleigh-Jeans for similar sources!
- New RXJ1856 observation will be performed
  - 60ks old gain, 60ks with new gain.
  - Check stability of Object Spectrum/Detector
  - Cross Mission Calibration observation →other cal. teams will be informed on observing dates

Simultaneous fit to RXJ1856 and the WDs



Beuermann et al. 2006, 2008

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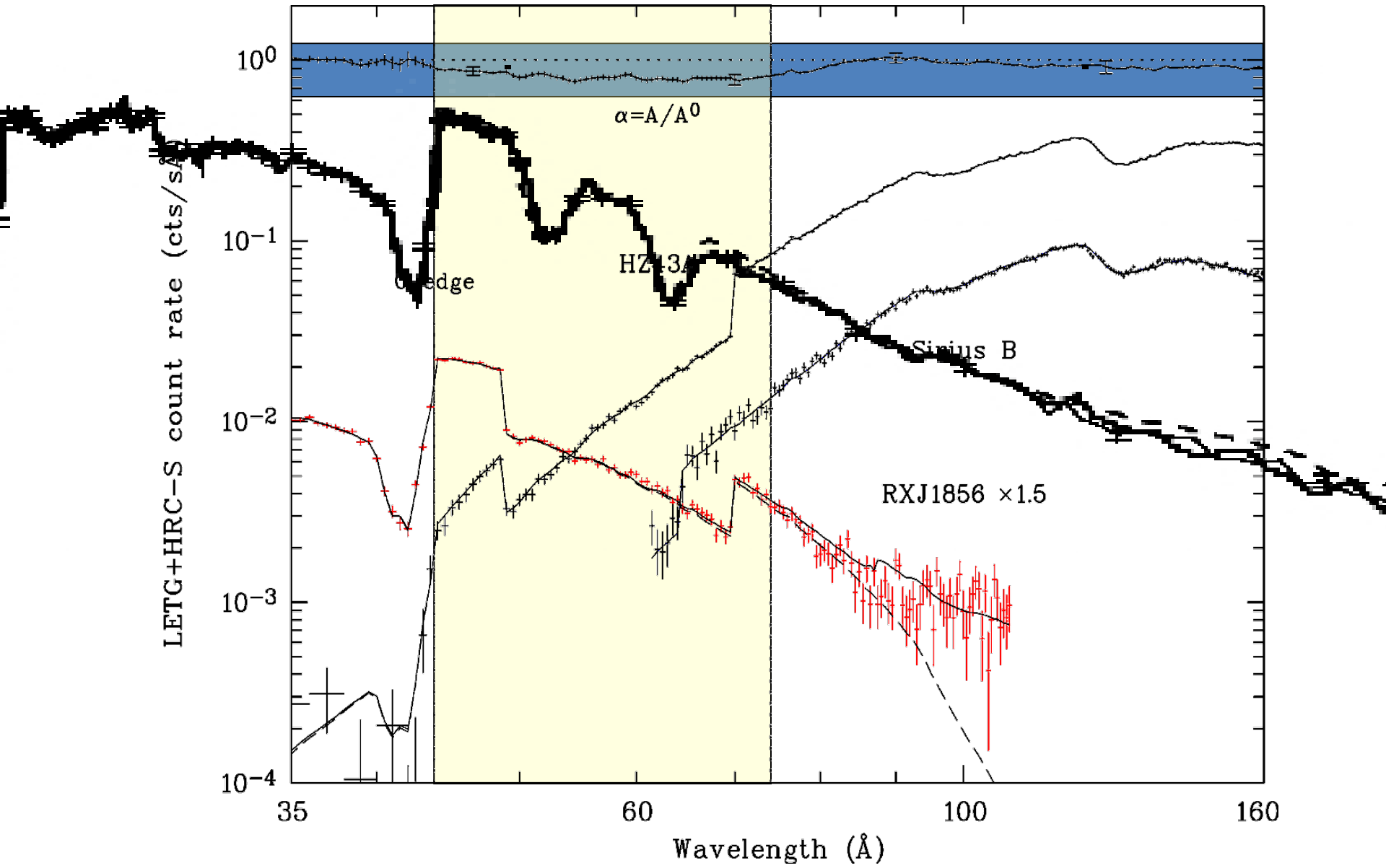

Beuermann et al. 2006, 2008

III. Other things

- Cas A CCO shows a ~20% Flux decrease over 10 yrs
  → No due to contamination – ruled out
  → is it a Chandra CTI effect? Probably not. (Max 1.5%)

- Update Wiki, add links to data and models used.