The EPIC-PN response matrix update

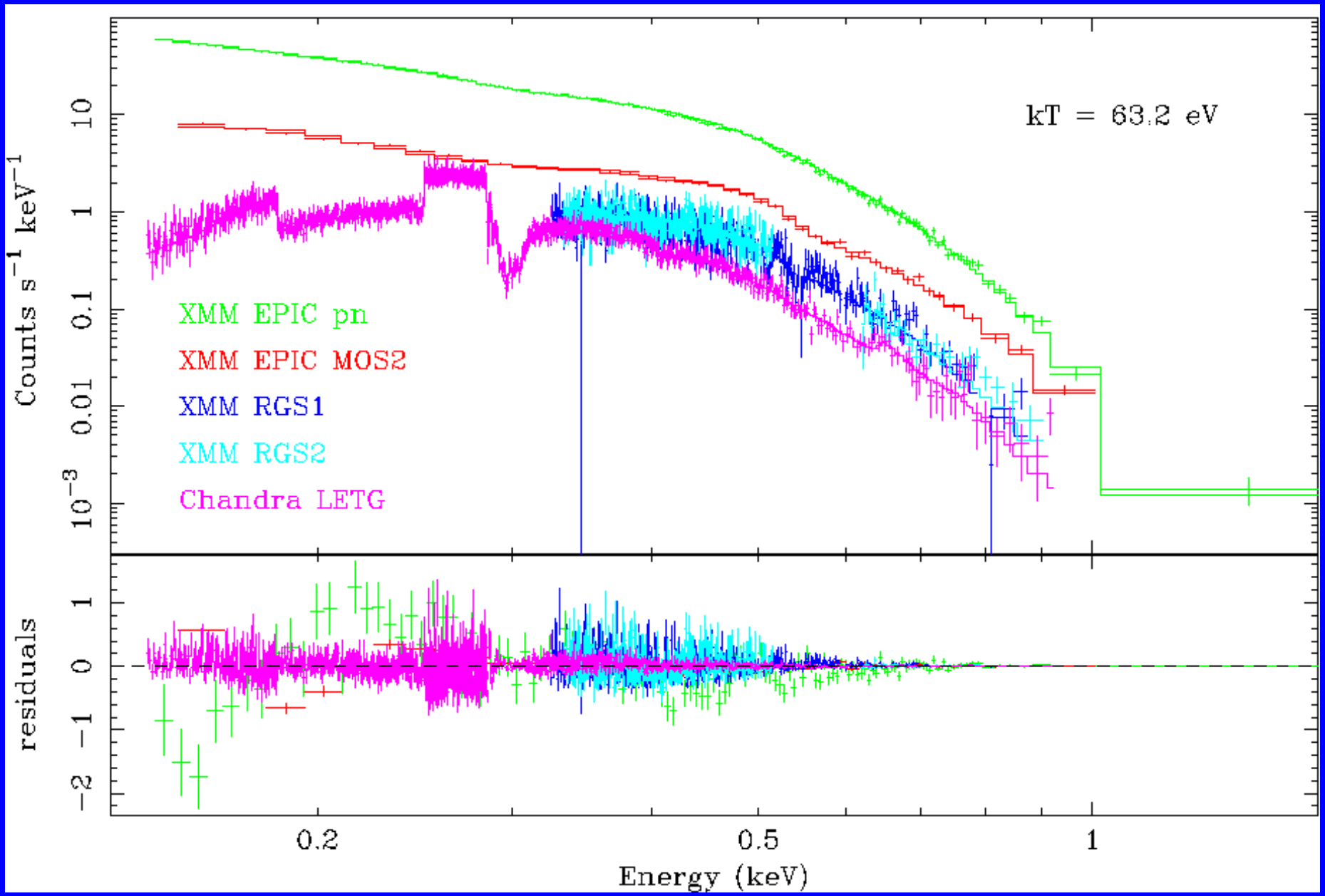
Response below 1 keV

RX J1856.5-3754

Frank Haberl

EPIC Cal meeting, VILSPA, 2.-4. July 2002

RX J1856.5-3754



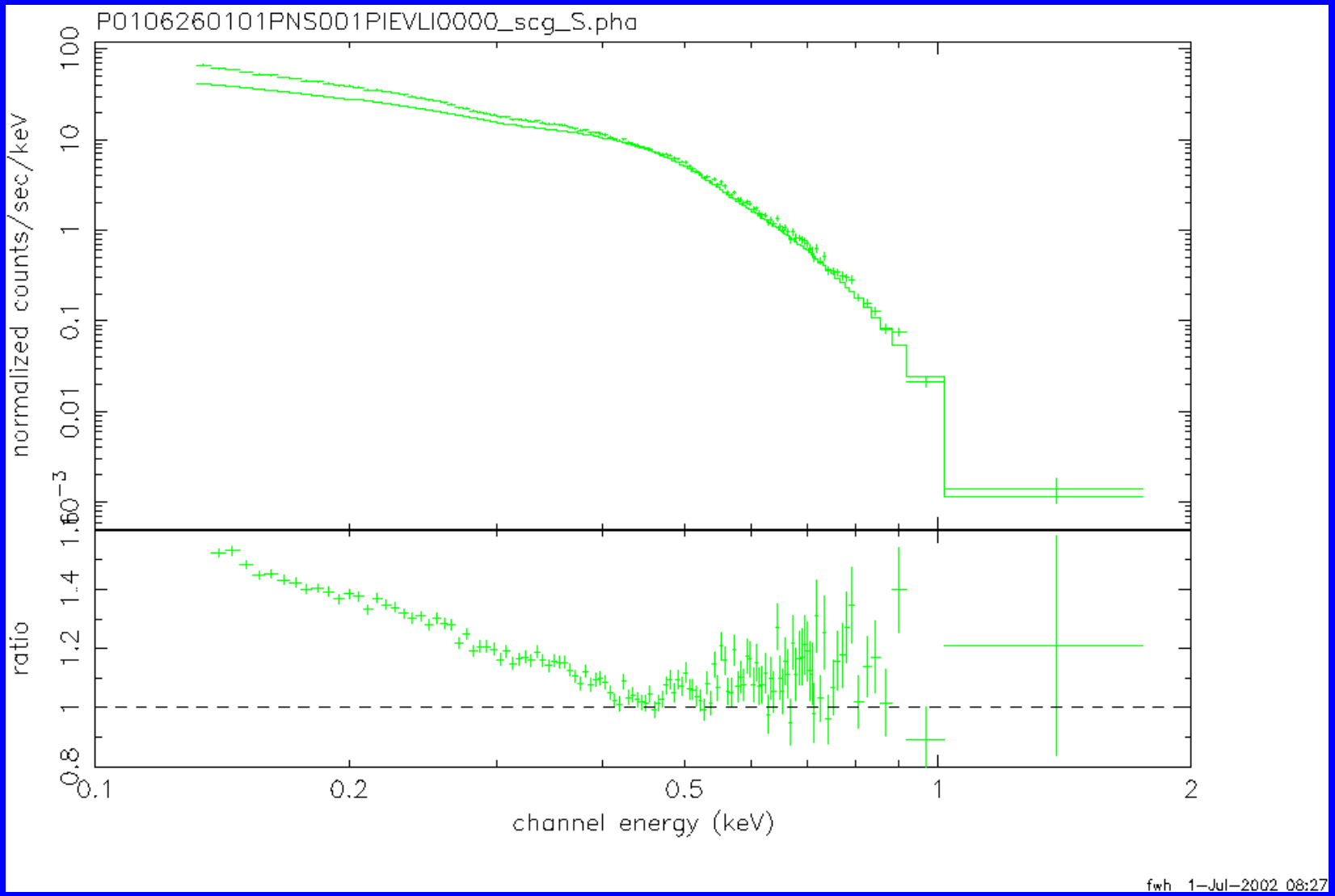
RX J1856.5-3754
fit parameters

Simultaneous fit with single temperature, 63.2 eV

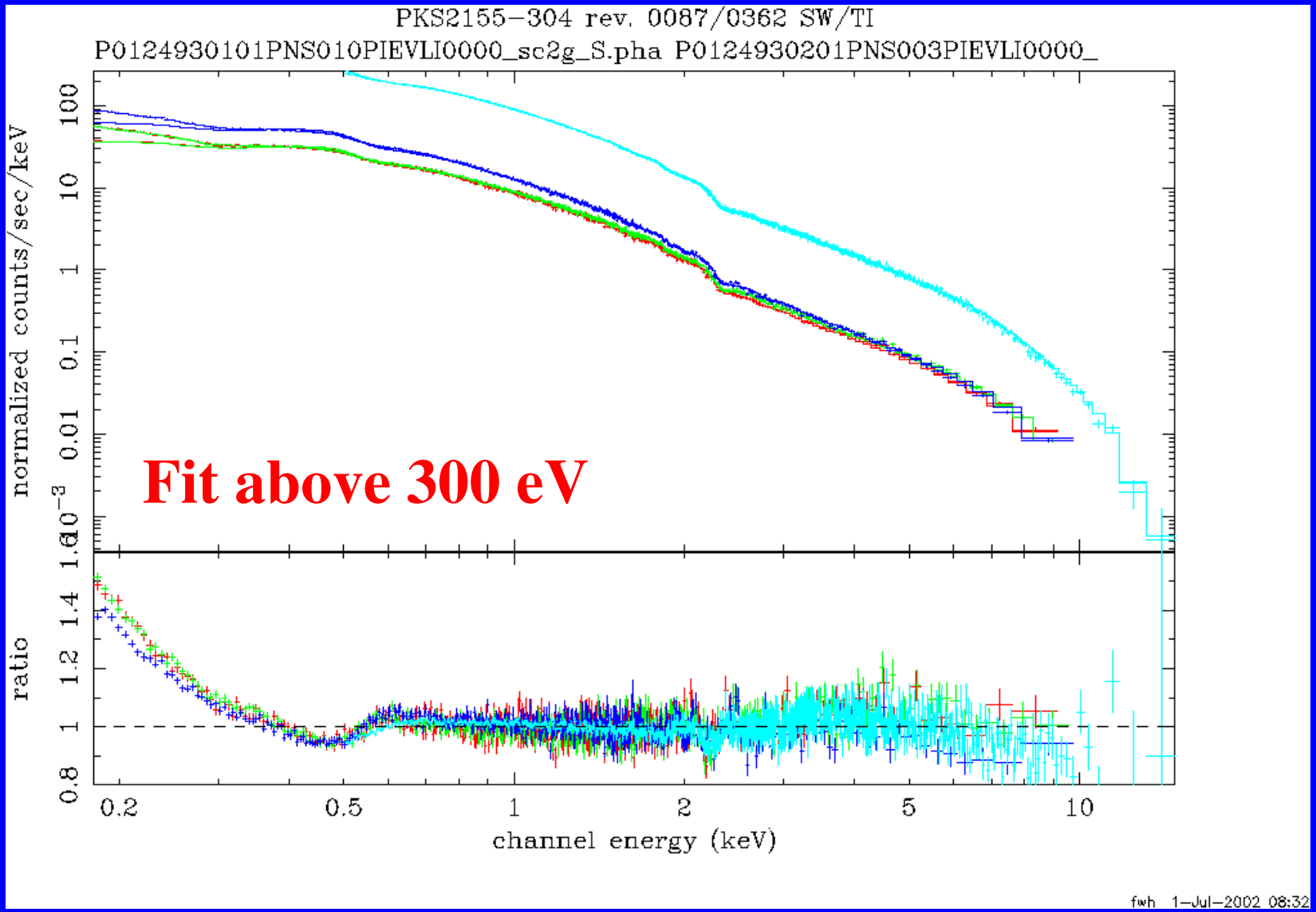
wabs*bbody

	PN	MOS2	RGS1	RGS2	LETG
n_H (10^{19} Hcm^{-2})	1.5	5.6	10.6	10.7	9.0
norm (10^{-4})	2.55	2.71	2.36	2.23	2.74

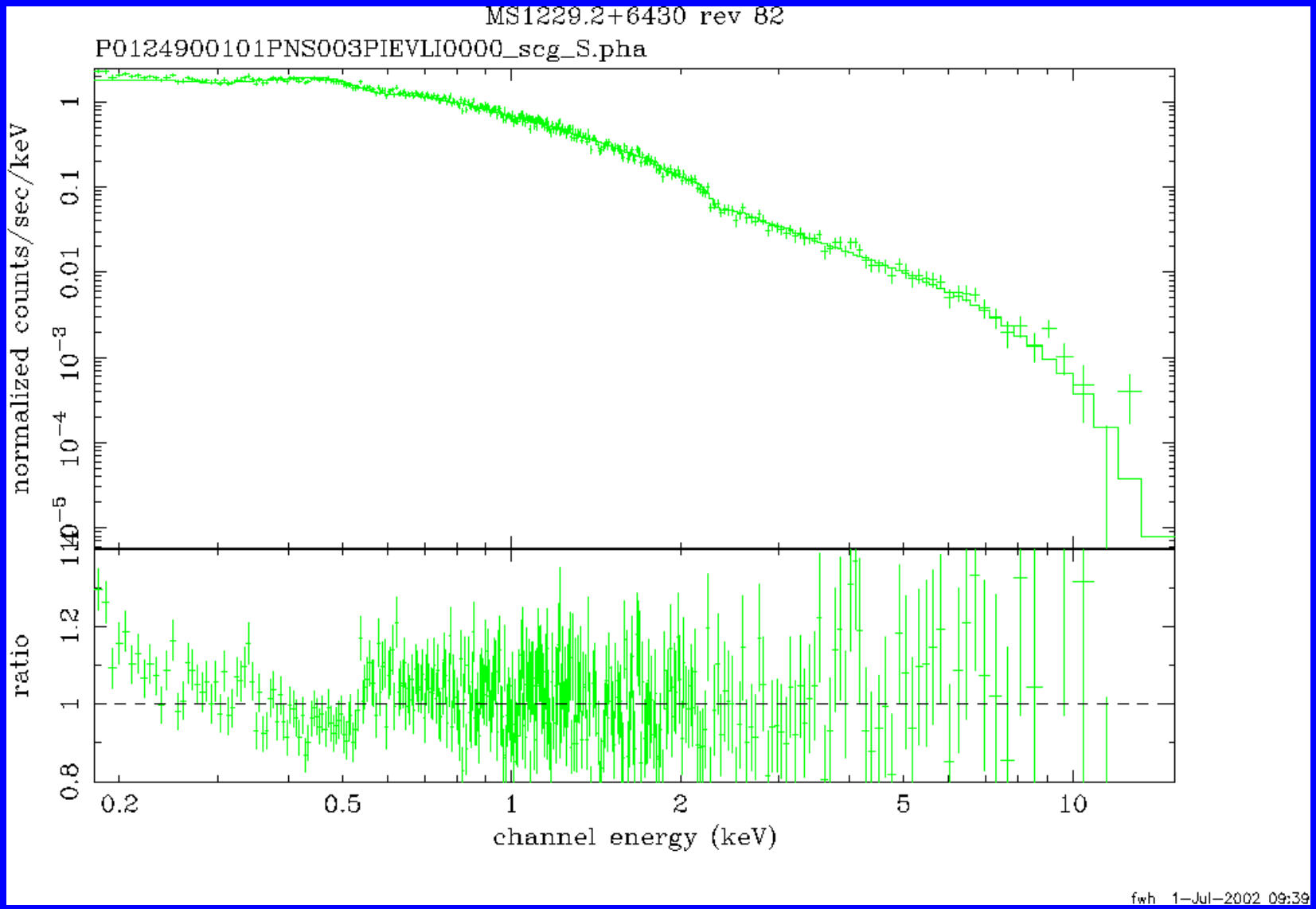
RX J1856.5-3754 SW thin
EPIC-pn response 6.2



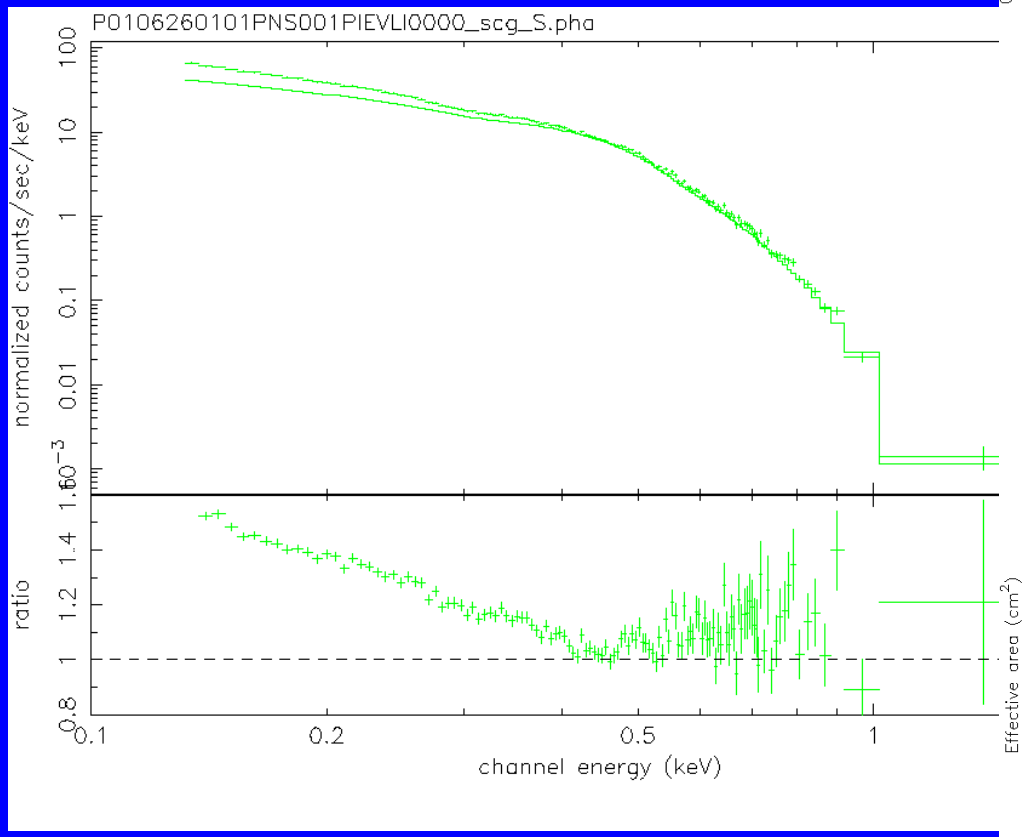
PKS 2155 SW/TI medium
EPIC-pn response 6.2

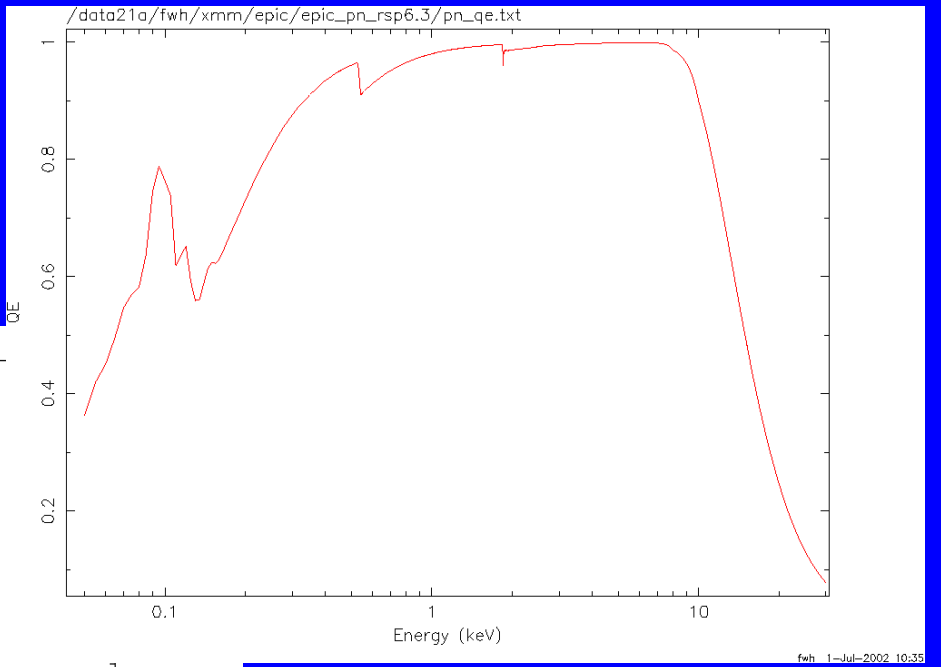


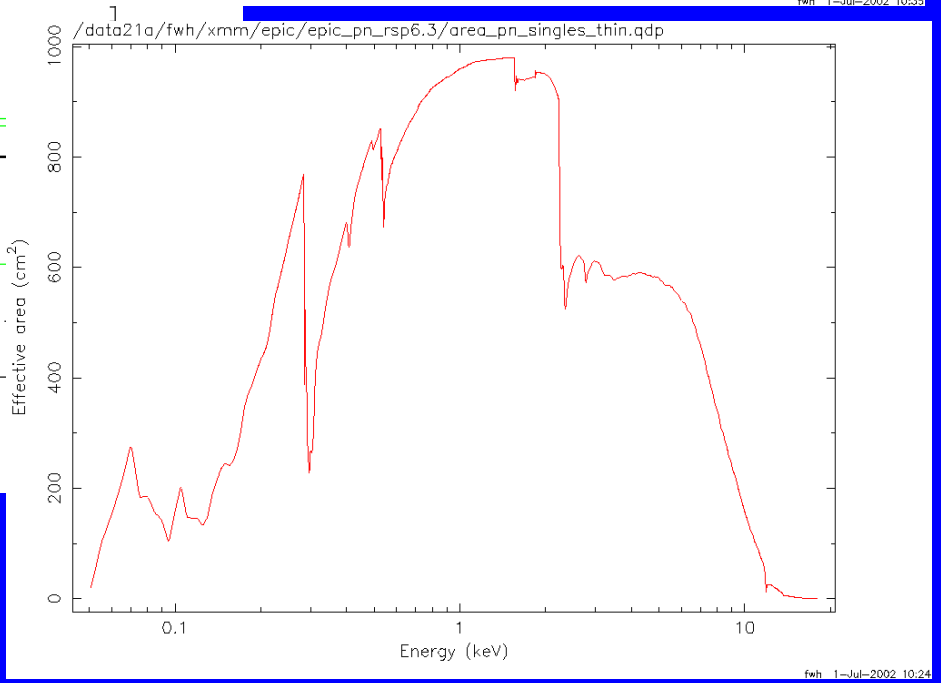
MS1229.2+6430 FF thin
EPIC-pn response 6.2



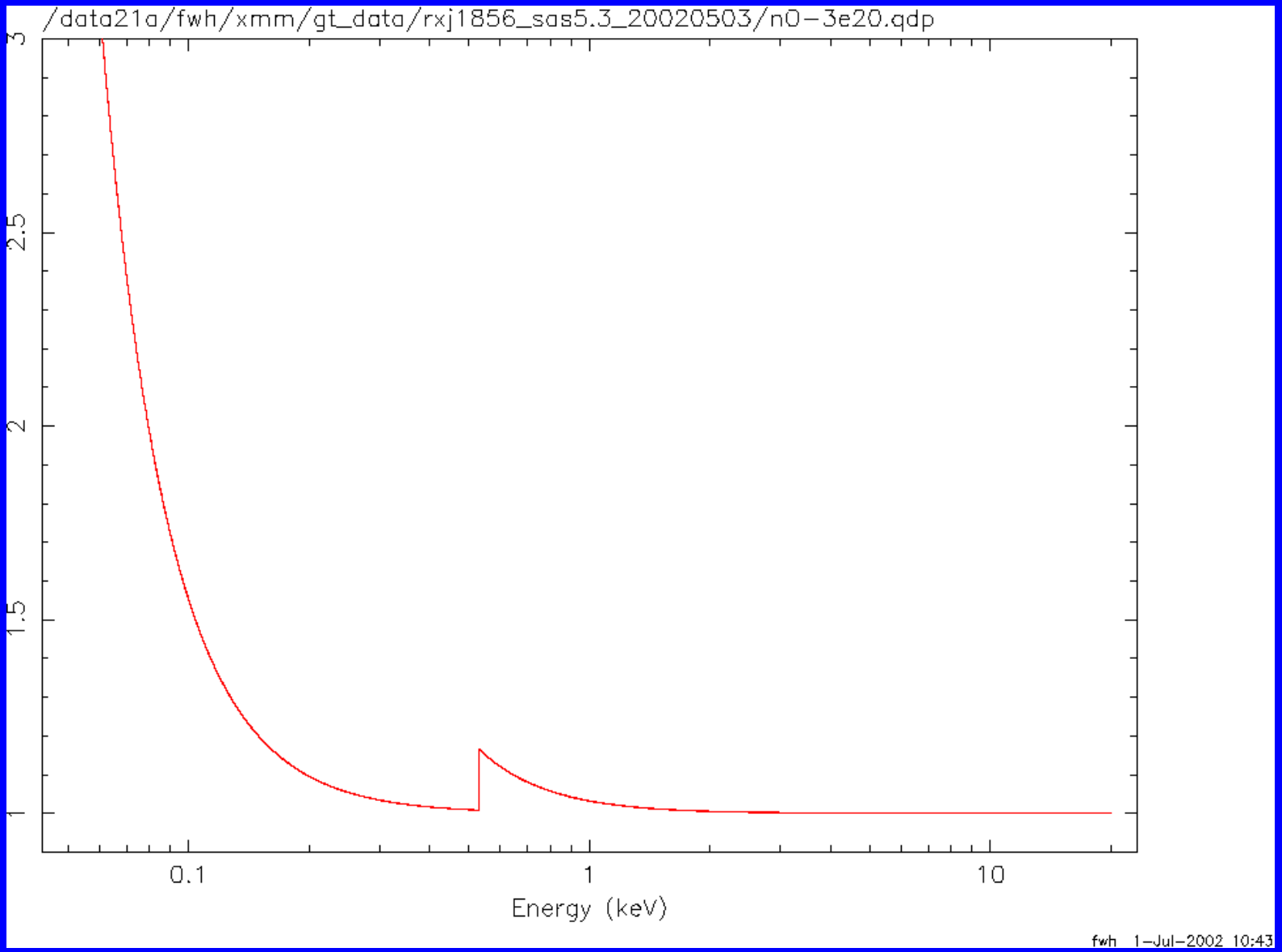
EPIC-pn effective area singles, thin filter



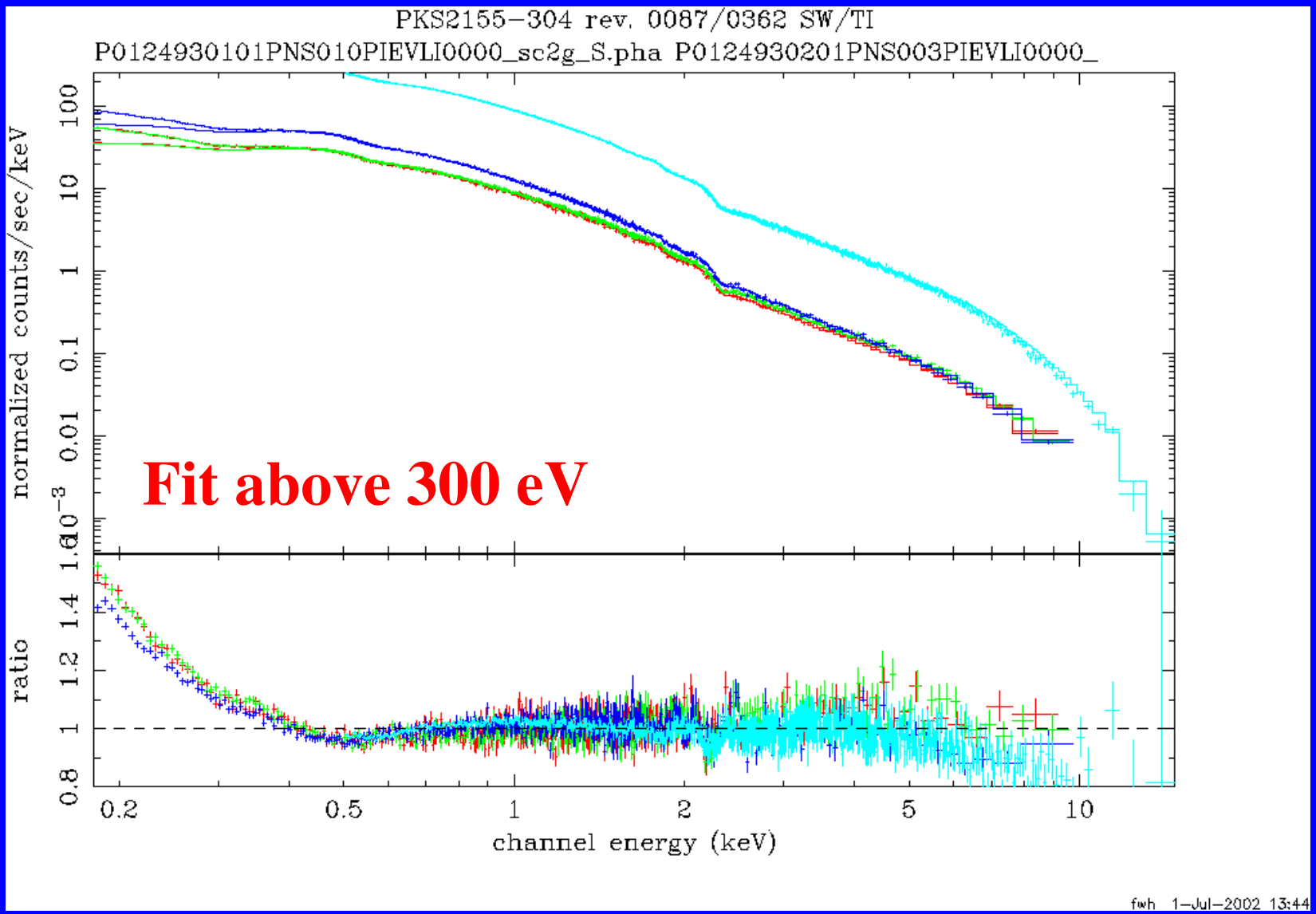




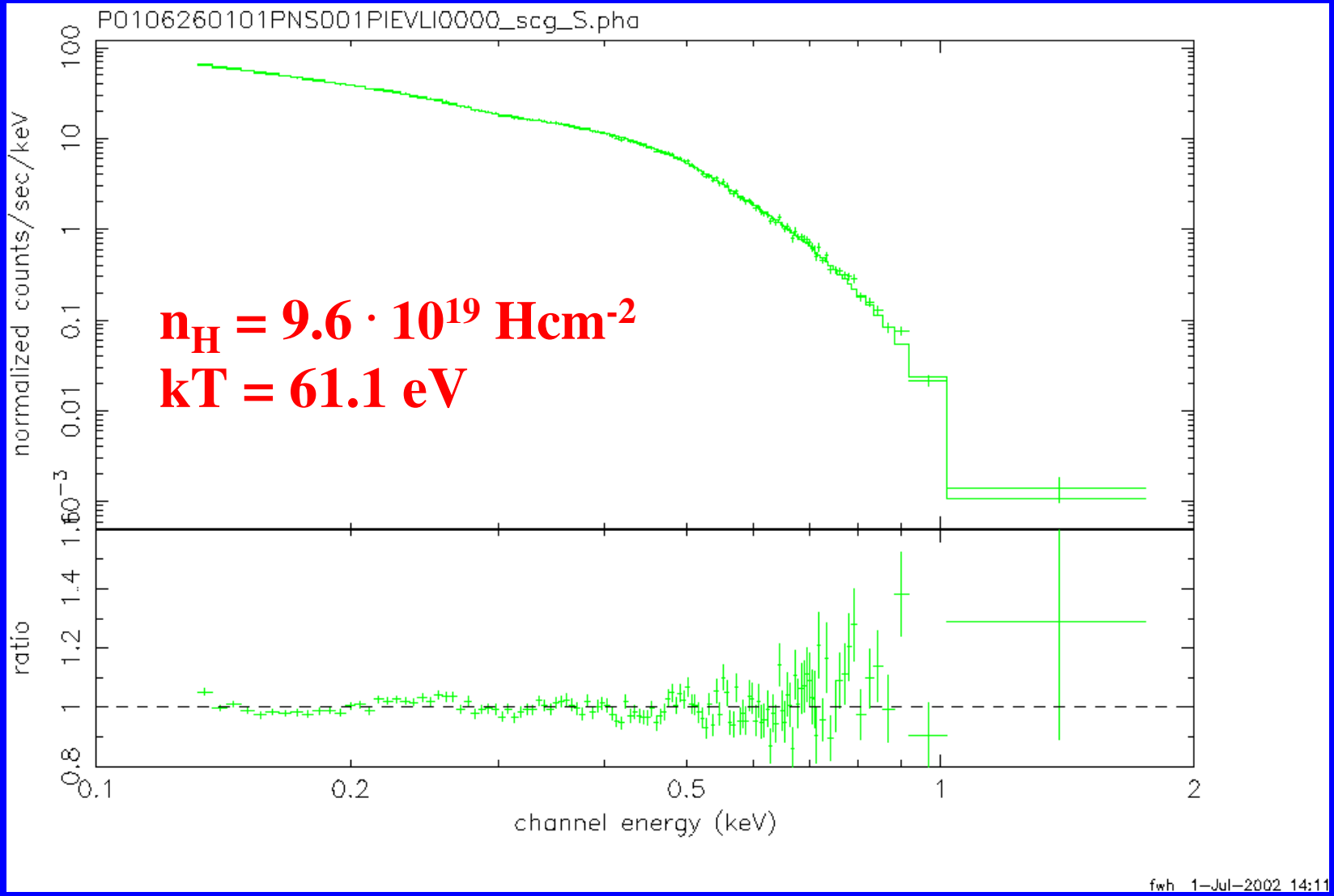
The Oxygen edge



PKS 2155
EPIC-pn response 6.3 (O-edge) SW/TI medium



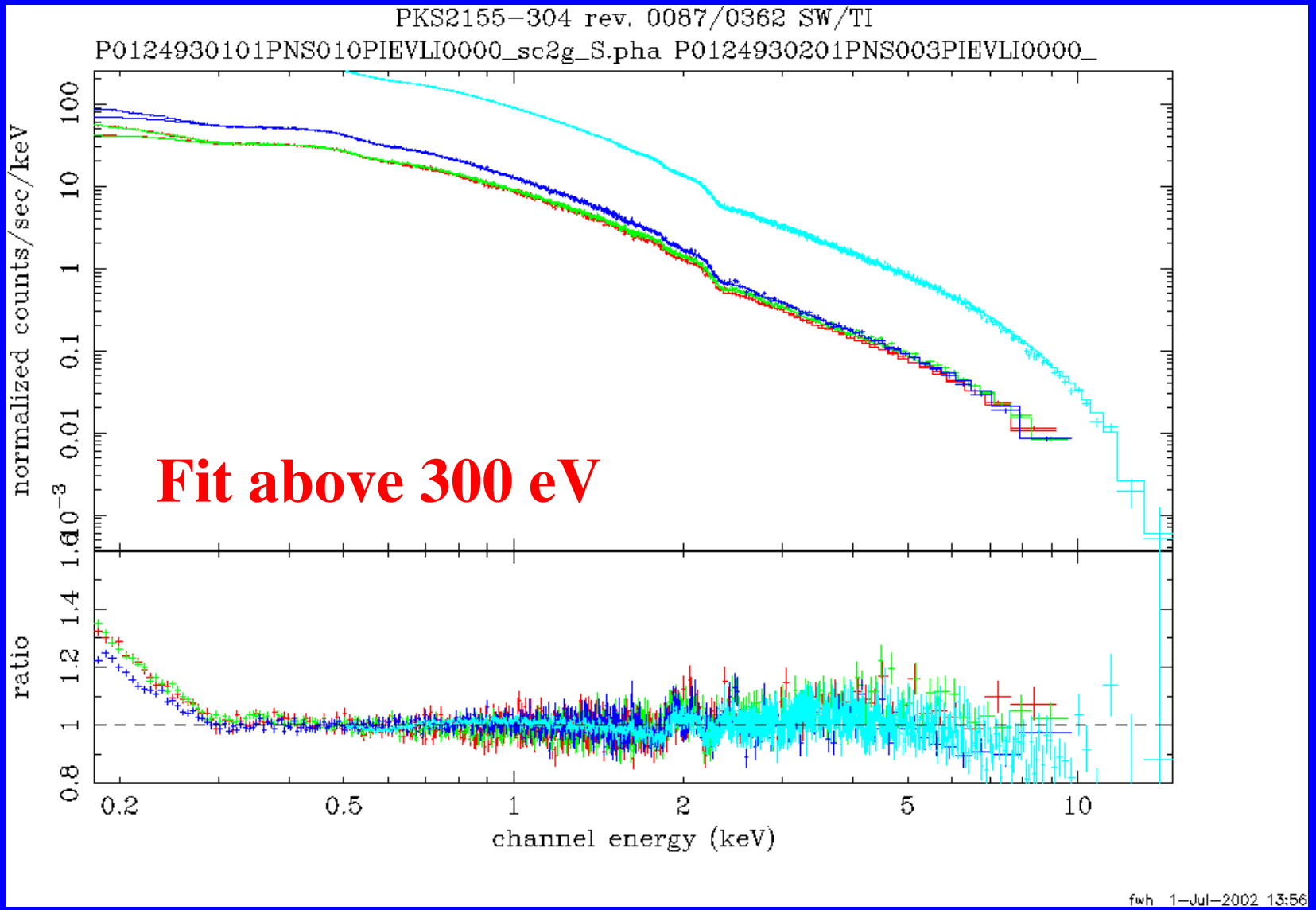
RX J1856.5-3754 SW thin
EPIC-pn response 6.3 (O-edge + PEM)



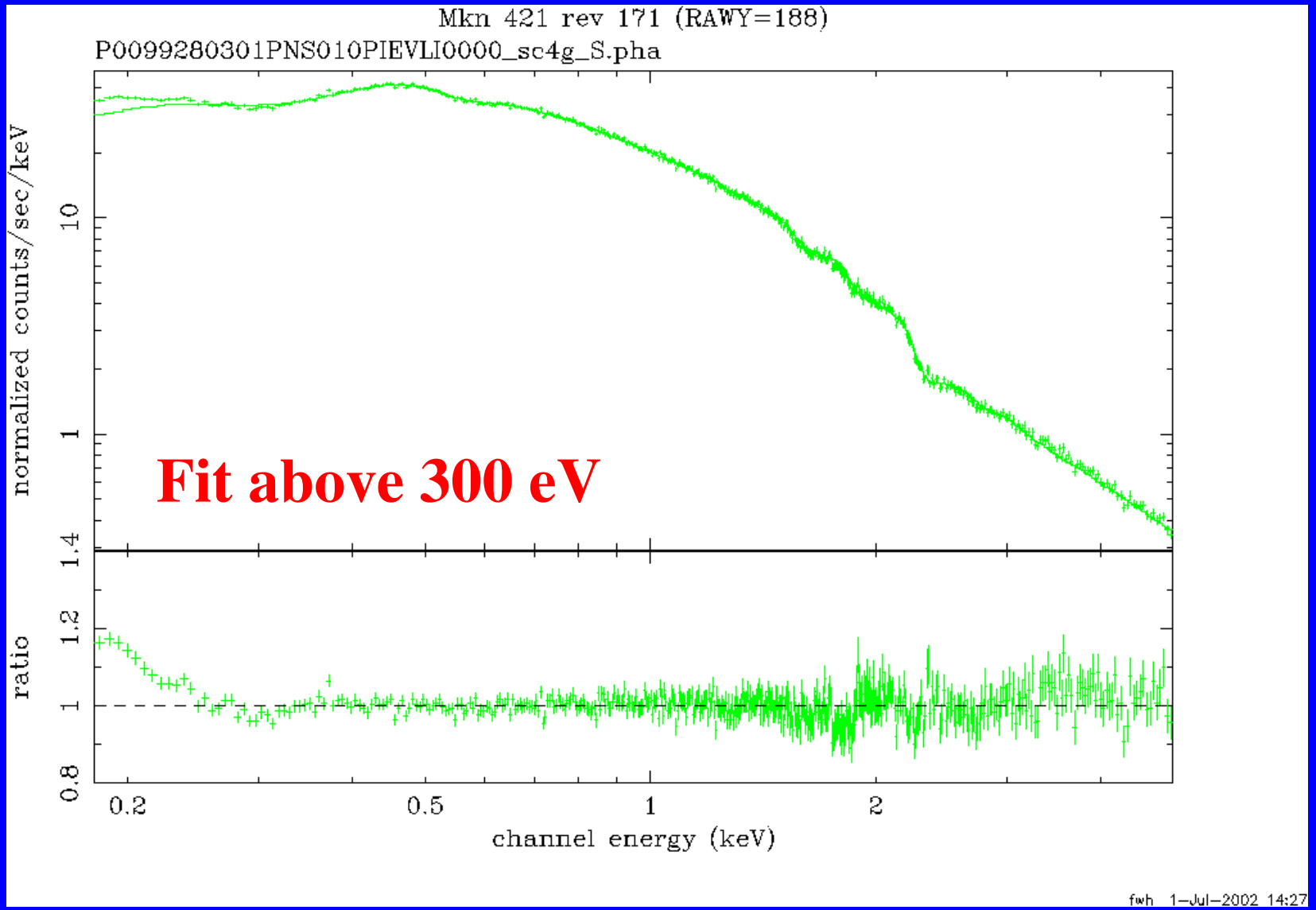
$n_H = 9.6 \cdot 10^{19}$ Hcm^{-2}

kT = 61.1 eV

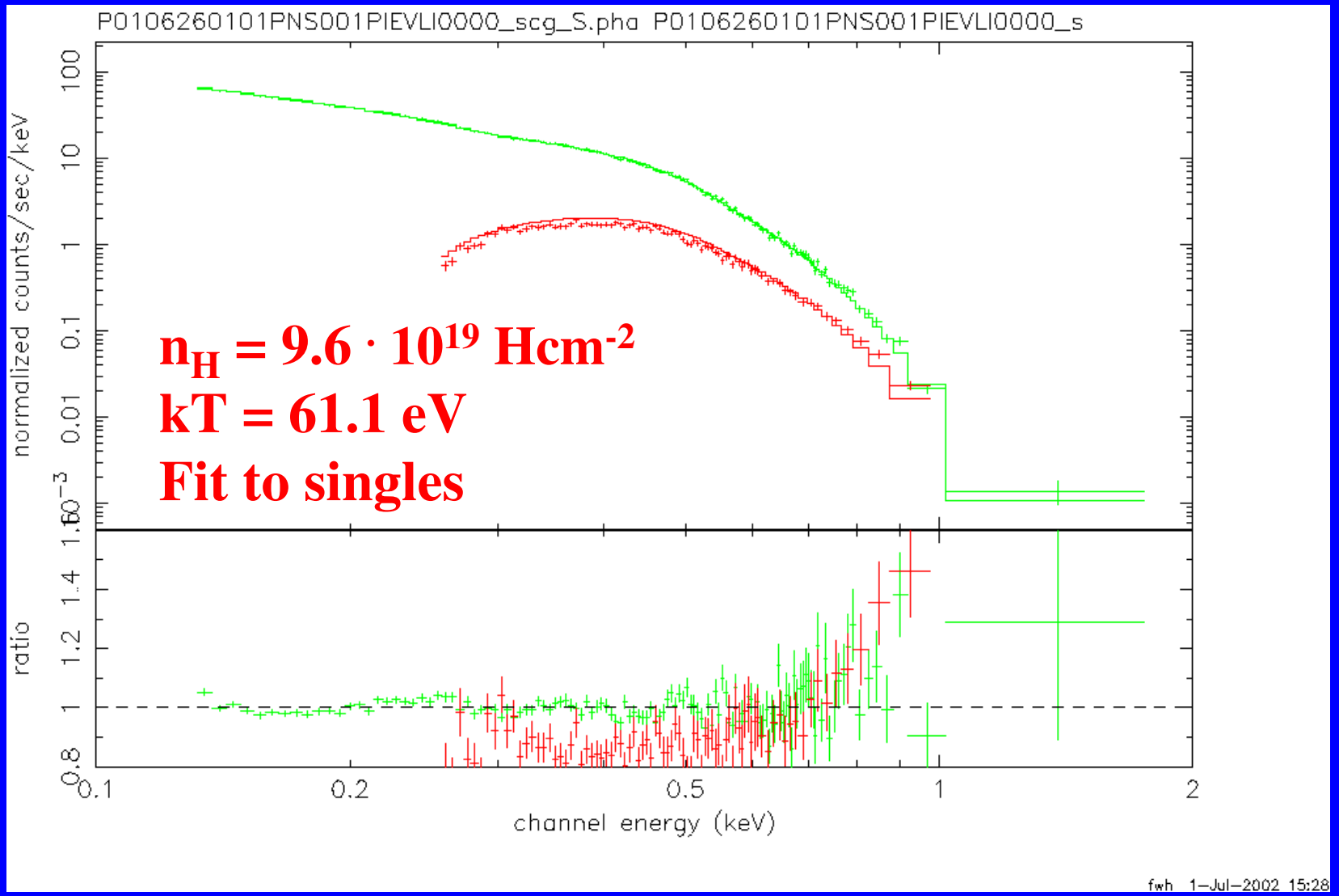
PKS 2155 SW/TI medium
EPIC-pn response 6.3 (O-edge + PEM)



Mkn 421 SW thick
EPIC-pn response 6.3 (O-edge + PEM)



RX J1856.5-3754 SW thin
EPIC-pn response 6.3 (O-edge + PEM)

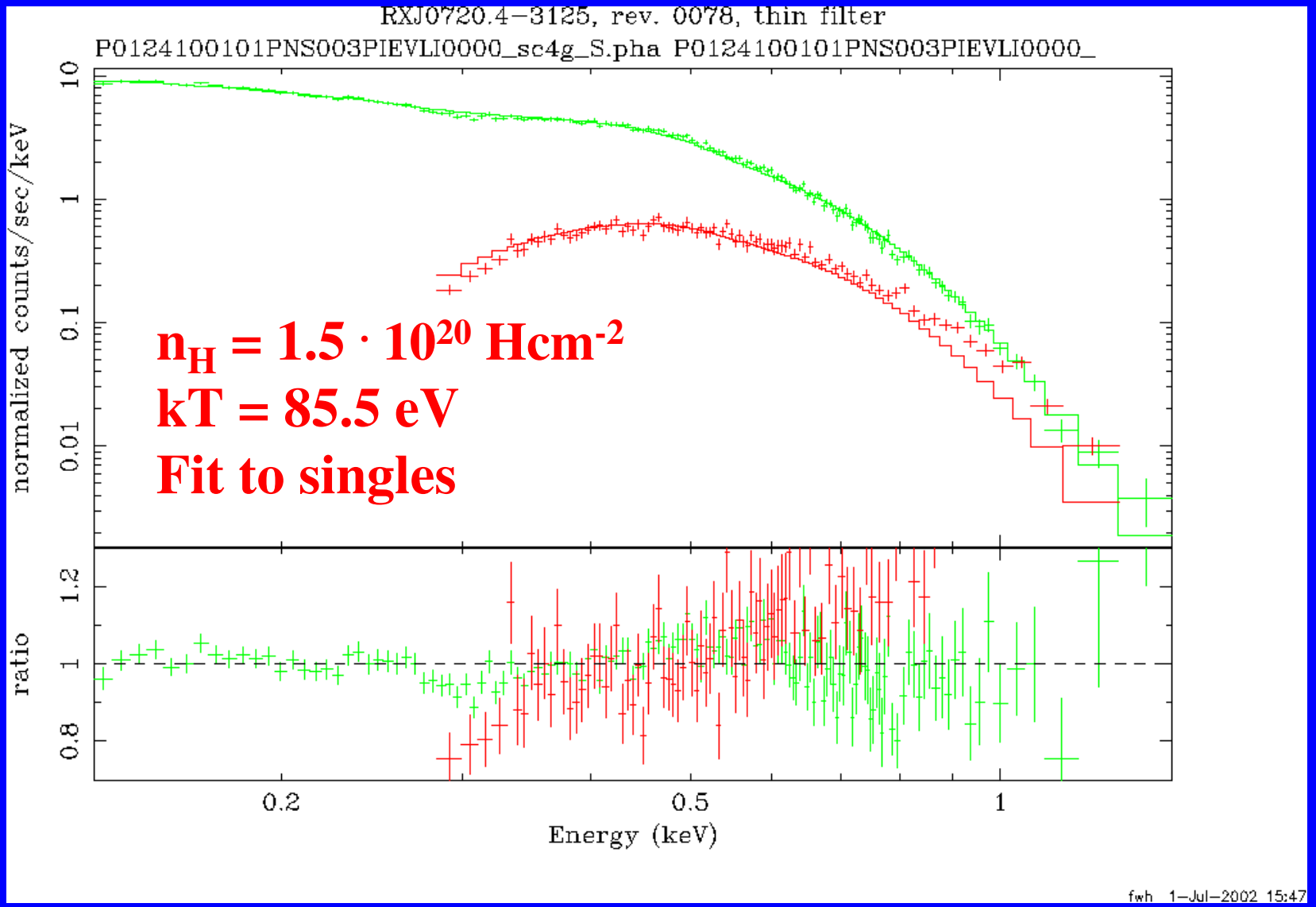


$n_H = 9.6 \cdot 10^{19}$ Hcm^{-2}

kT = 61.1 eV

Fit to singles

RX J0720.4-3125 FF thin
EPIC-pn response 6.3 (O-edge + PEM)



Current status of EPIC-pn response
PN 6.3

Problem 1 ---- Oxygen edge

- fudge to fit spectra around 500 eV
- where to apply:
  - too large factors for pn QE
  - all filters?

Problem 2 ---- modified redistribution

- increased shoulder height
- in soft spectra (<1keV) it works
- why not in spectra with events above 1 keV?
  - Si escape should be a few % effect
- does no work with doubles in the same way
  - is this an effect of the not-understood ´´doubles´´ in readout-direction?