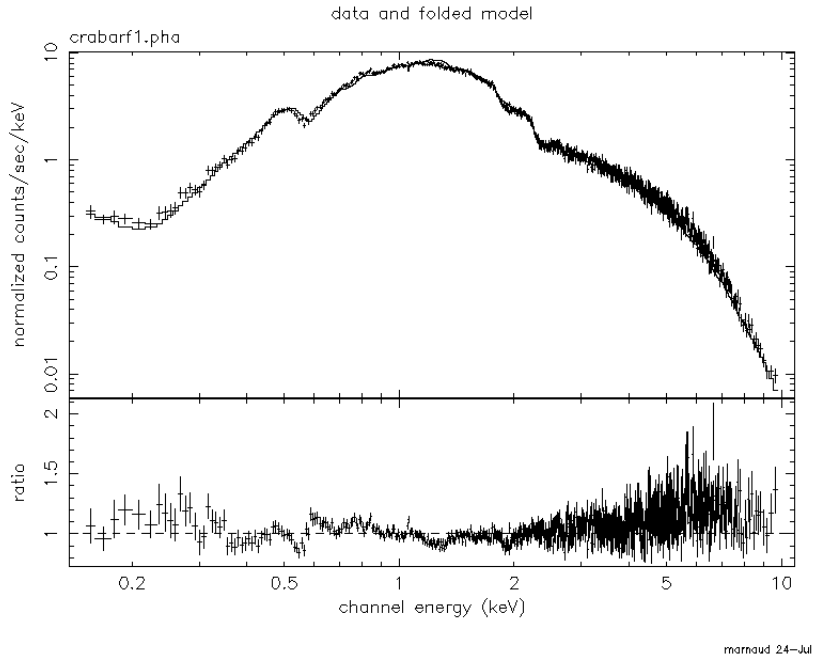
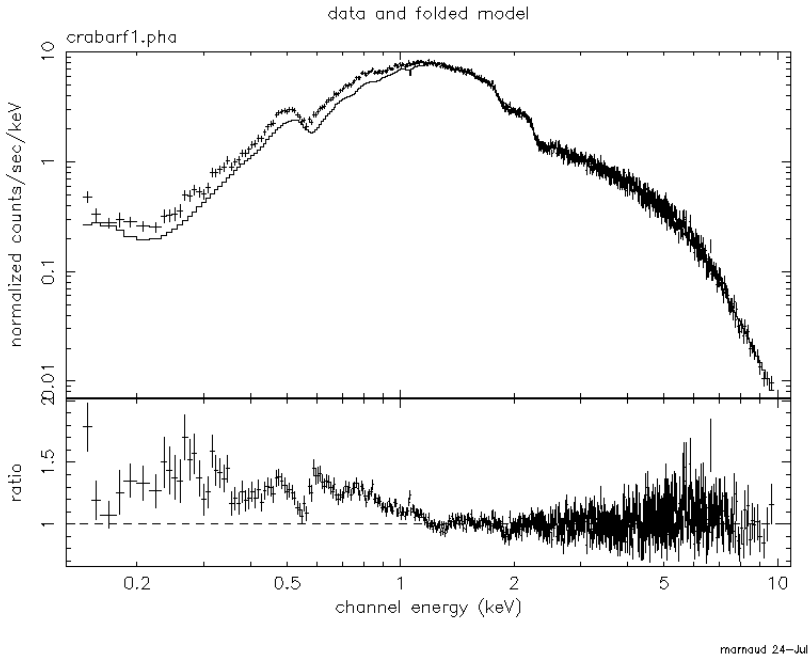
# Effective area

# Fit of Crab with 'best ' .arf:

Q(E) Sap; S(E) and RGA(E) esa




Best fit of 0.15 -10 keV data :

$\alpha = 2.15$ $n_H = 2.8\ 10^{21}\ cm^{-2}$

$\chi^2 = 2.15$

Fit 2.-10.kev with standard param :

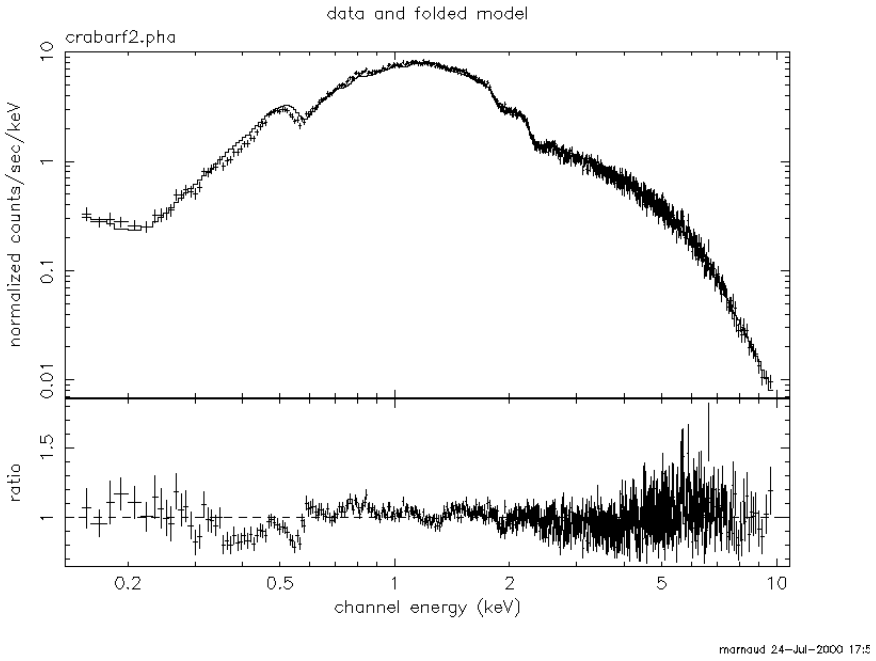
$\alpha = 2.05$ $n_H = 3.0\ 10^{21}\ cm^{-2}$

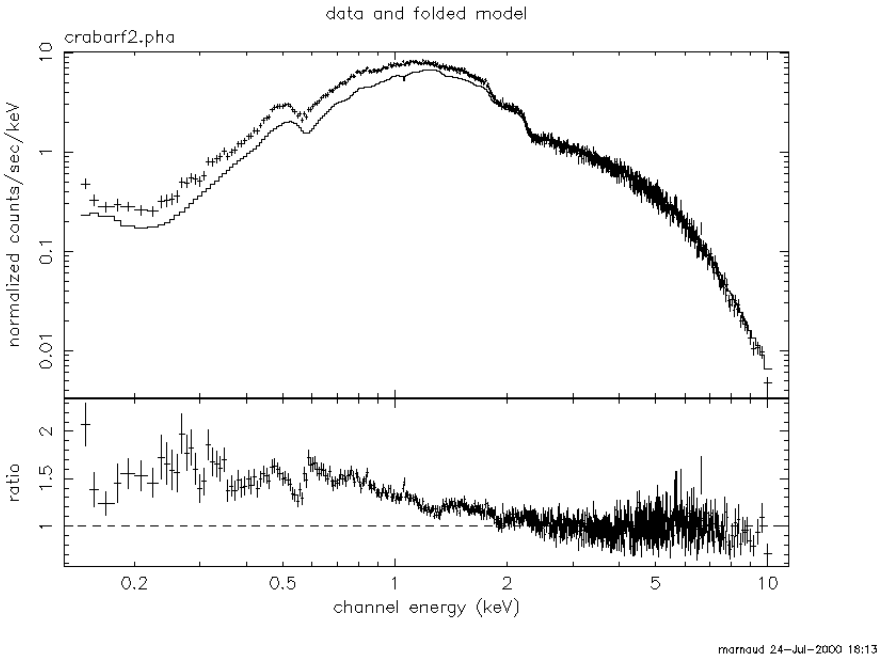
$\chi^2 = 1.03$ but

Low energy excess; bad O edge E

# Fit of Crab with old RGA :

RGA transmission = cst




Best fit of 0.15 -10 keV data :

$\alpha = 2.16$ $n_H = 2.6\ 10^{21}\ cm^{-2}$

$\chi^2 = 1.83$

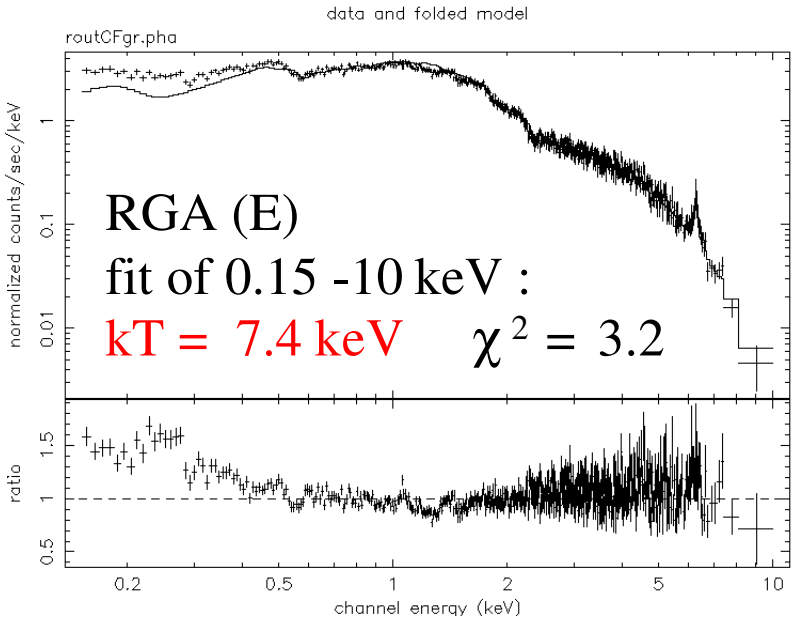
Fit 2.-10.kev with standard param :

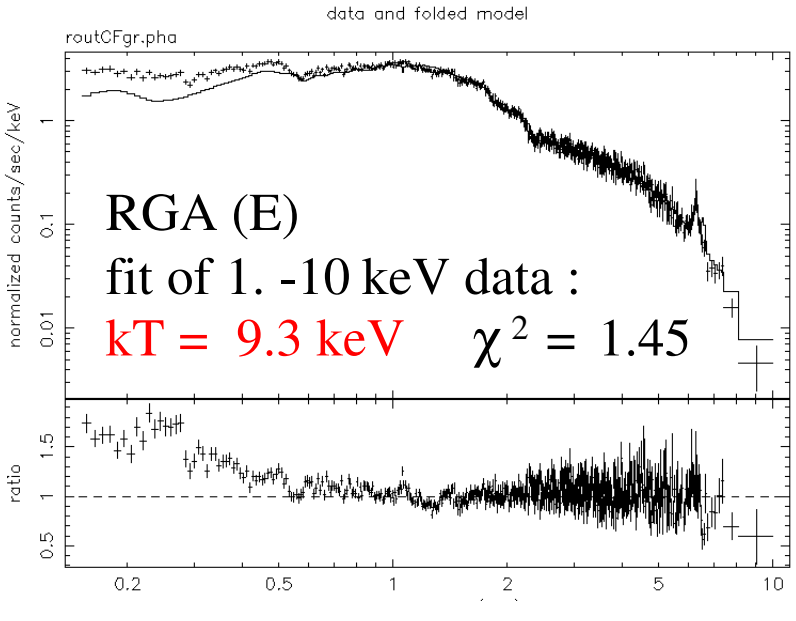
$\alpha = 2.05$ $n_H = 3.0\ 10^{21}\ cm^{-2}$

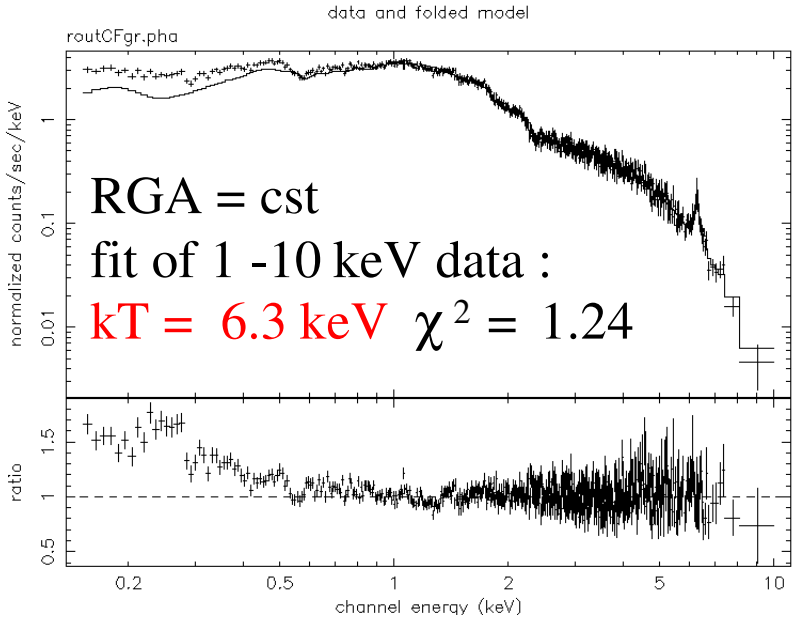
$\chi^2 = 1.27$

Low E excess ; excess in 1.-2. Kev

==> new arf better ?



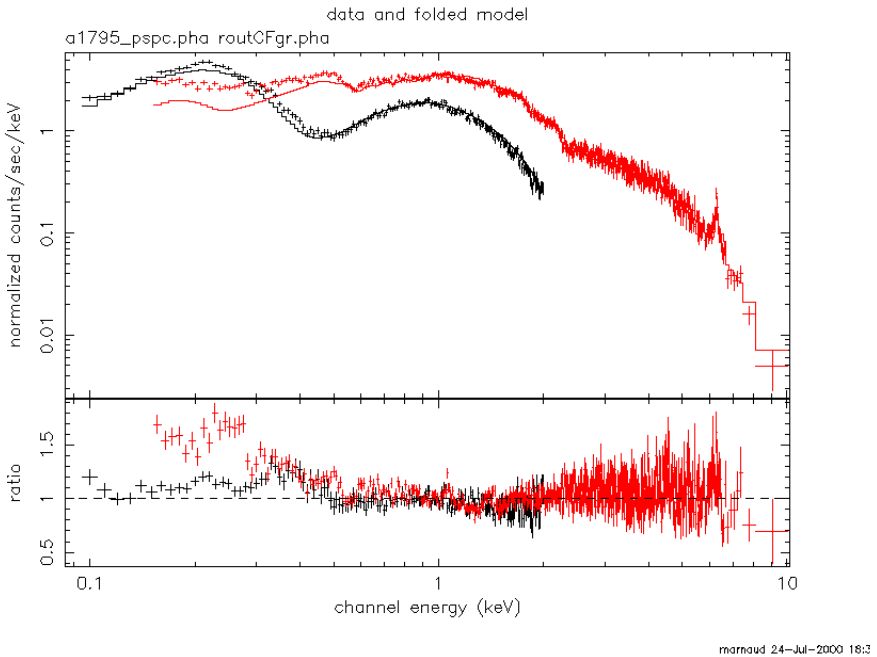



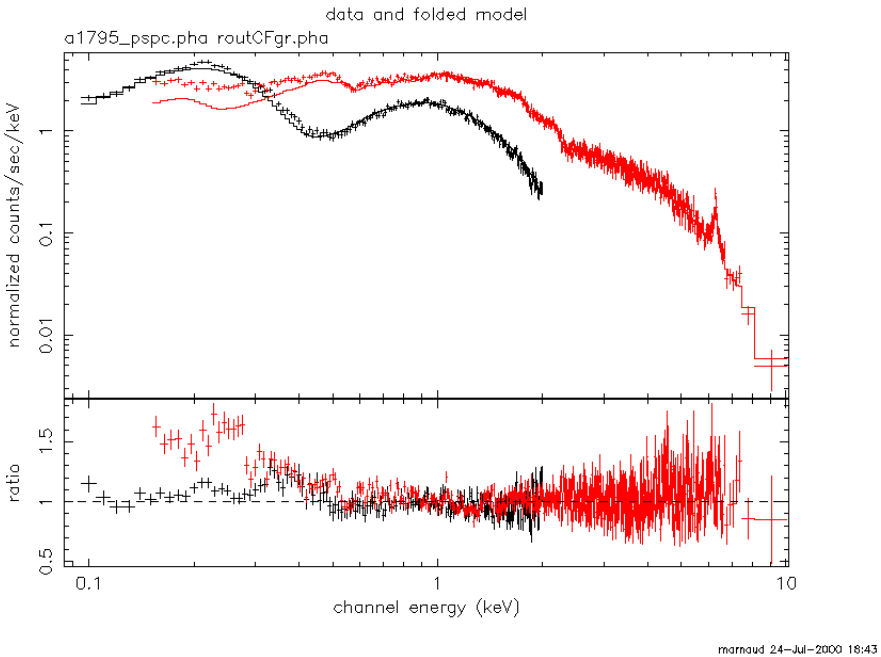

Fit of A1795

$kT_{asca} = 7.8 \pm 1$ kev

- Soft excess
- HUGE systematic error
- ‘ Old ’ RGA better ?

# Combined MOS (1. -10 keV ) - PSPC fit




RGA (E) :
kT = 8.6 keV
PSPC/MOS =0.78 $\chi^2$ = 1.85

RGA = cst :
kT = 6.0 keV
PSPC/MOS =0.92 $\chi^2$ = 1.44

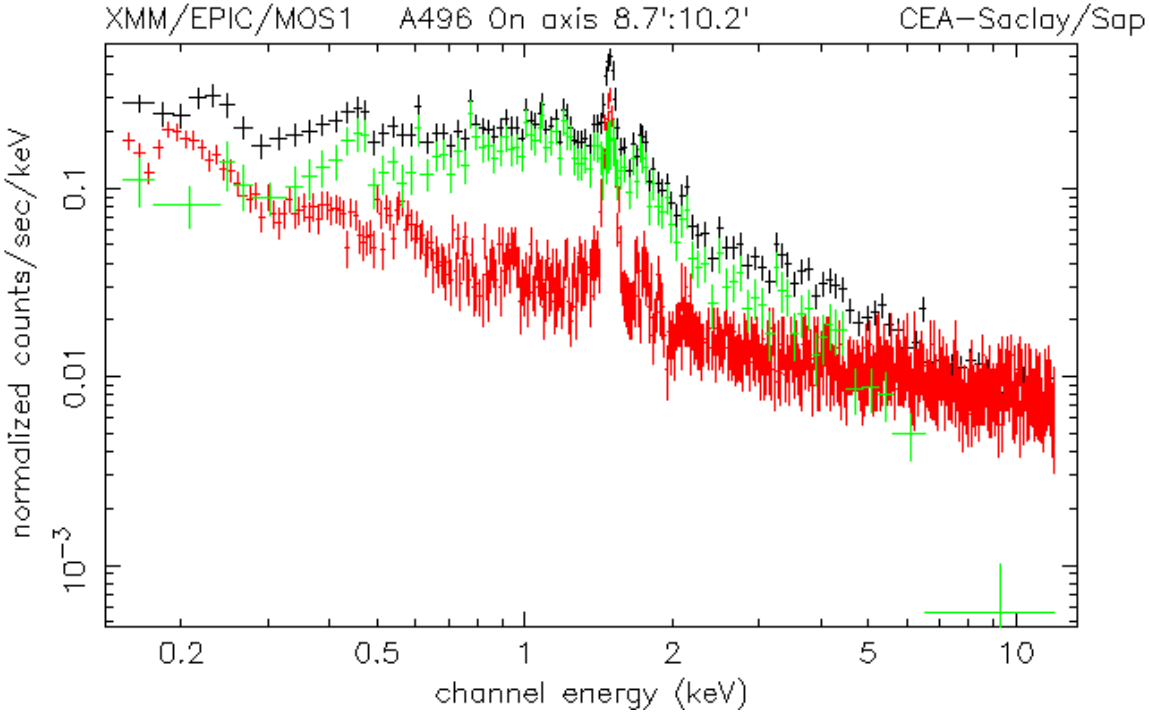
Huge systematic errors (cst RGA best?)
(instrumental) soft excess confirmed

# Conclusion:
# scientific analysis compromised !

- Huge systematics on Slope and kT
  - RGA(E) crucial
  - Other effects ?
  - Cross calibration with pn, with CHANDRA ?
- Inconsistencies at low E
  - Gain problems?
  - Wrong effective area at low E?

# Study of extended sources: Some sources of systematical uncertainties

With
N.Aghanim
S.Majerowicz
D. Neumann



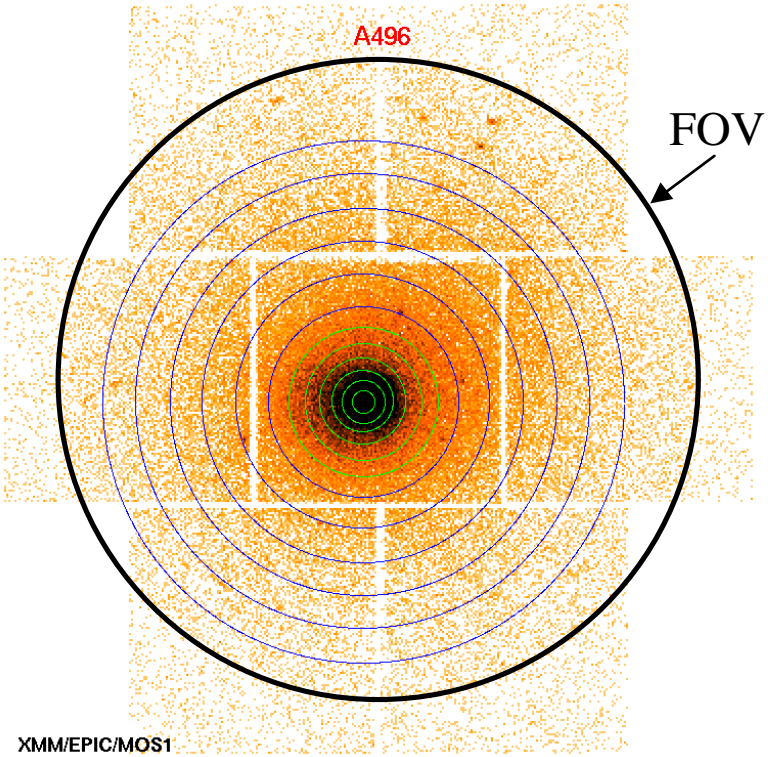

Good background determination essential:

- At low E (X-ray background)
- At high E (particle background)

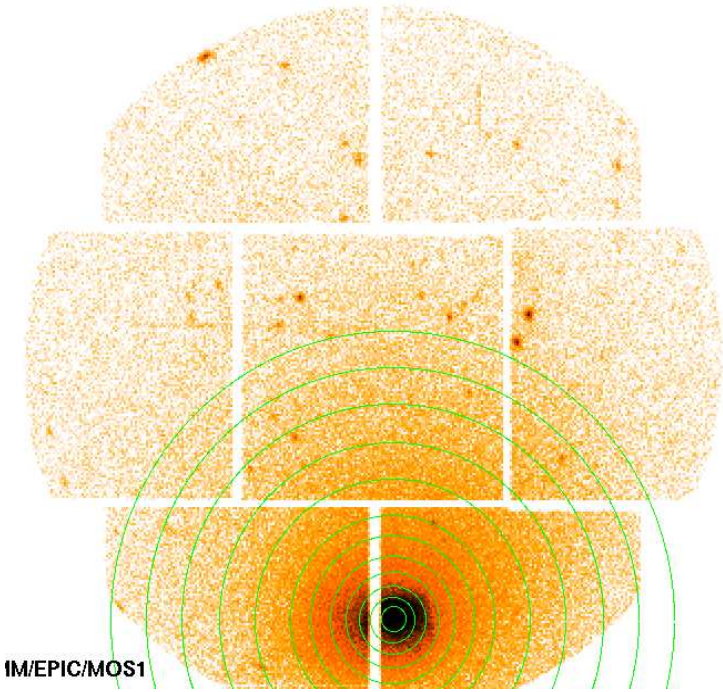
Need separate 2 components

need to do better than use LH!

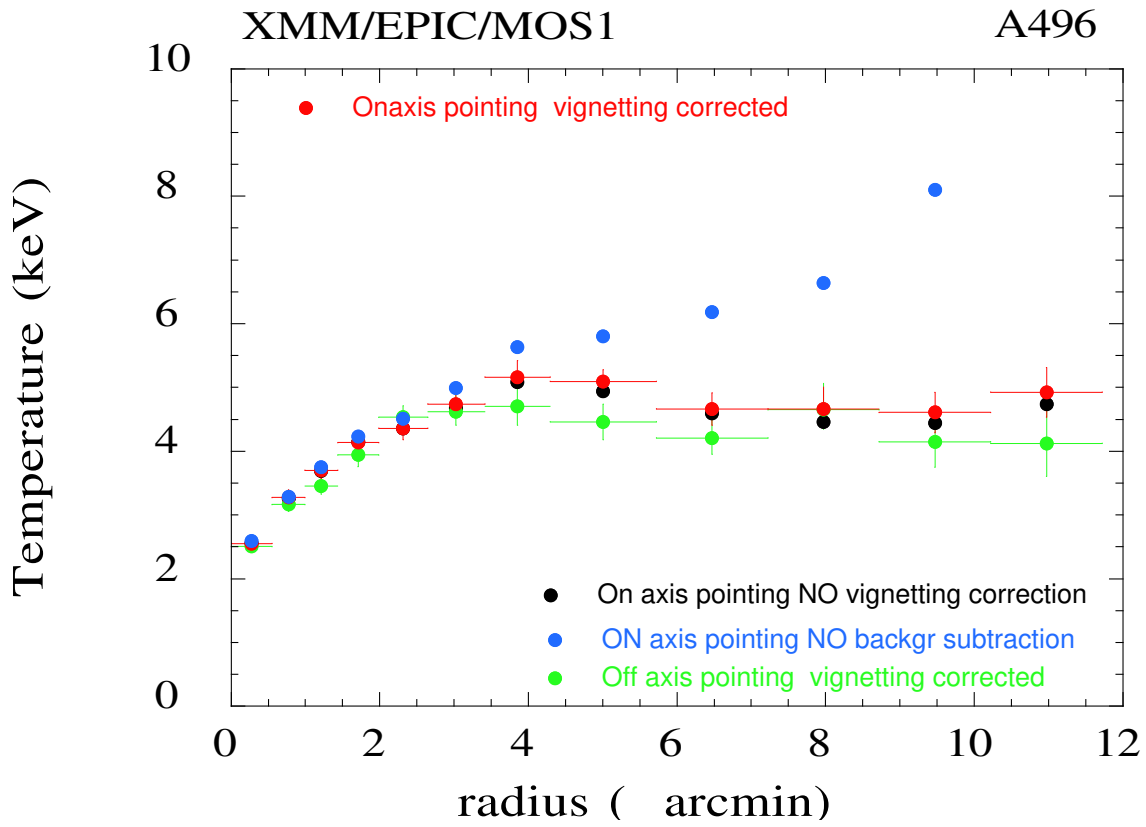
# Spectro-imagery of clusters



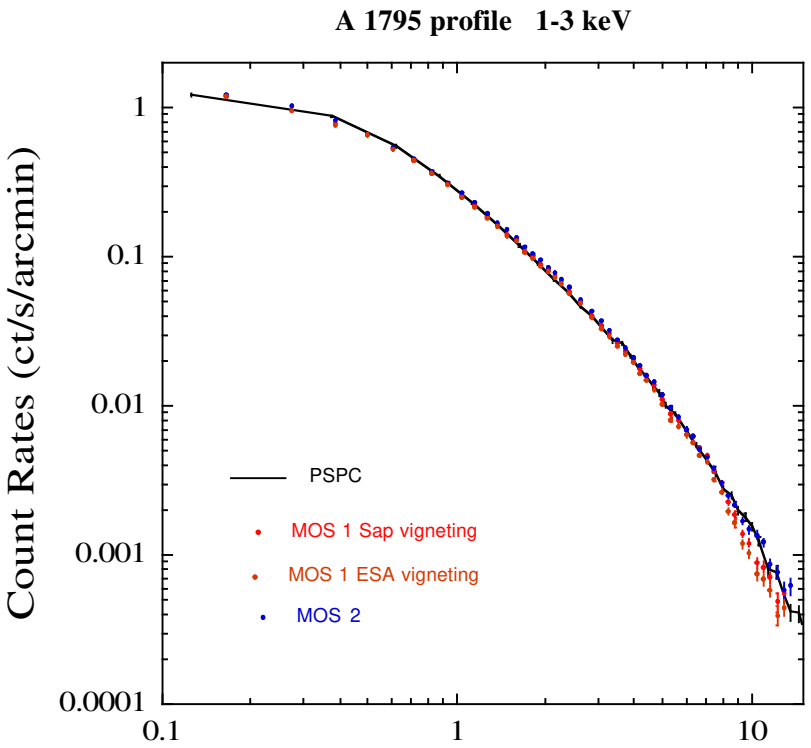

On axis pointing

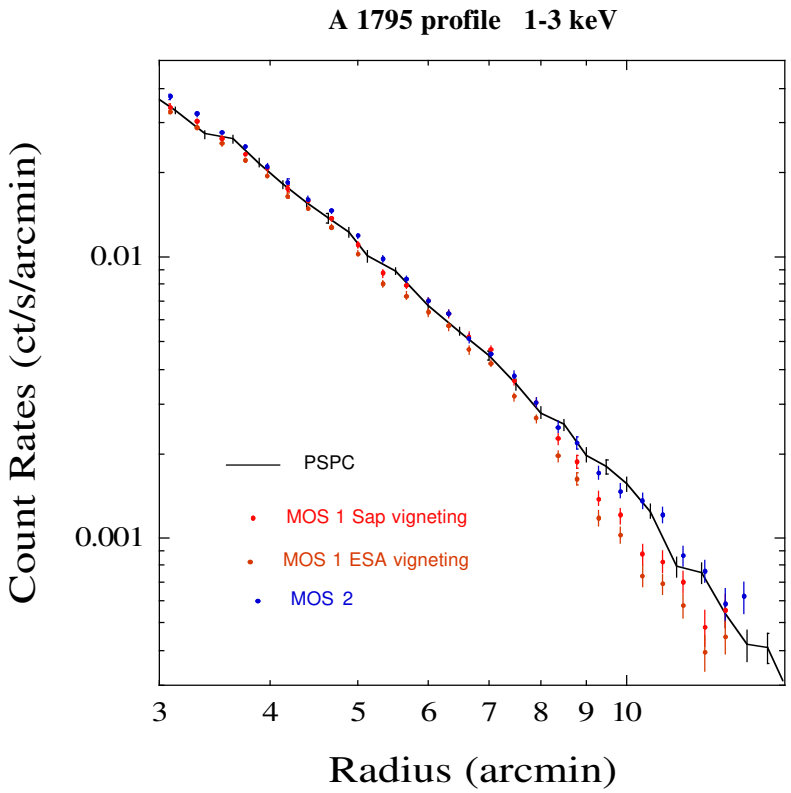



Off axis pointing




- small statistical errors
- Vignetting effect small within 12 ' circle
  (for kT=5 keV cluster!)
- dominated by systematics




Vigneting corrected profiles:

- Reasonable agreement with PSPC
- Still some systematics:

Still some understimate of vigneting above 8 ' ?