EPIC constraints on RGS calibration

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EPIC-RGS cross calibration ($\Delta \sim 3\%$)

- Assumption underlying the RGS contamination model
  - Pure carbon $\Delta N_C \rightarrow (\Delta f_X/f_X)_{RXJ1856-3754}$
- RXJ1856-3754$\star$EPIC-pn is variable
  - $\Delta N/N = 0.0456\%$ in 640ks
  - $\Delta N/N < 1\%$ in 1 hour
  - cf Sartore+ & TN-0096
    - $\Delta f_X < 3\% || \Delta r_X < 1.5\%$
- Complementary spatial methods
  - PSF models of the whole pn Small Window
- Short-term variability
  - EPIC-pn vs other instruments
- EPIC-pn SW stability from bright extended SNRs
  - 1E0102-7219 $\Delta$pn $< 0.5\%$
- RGS wish list for EPIC analysis
SW<PSF> count rates for zeta Puppis

 PN & MOS agree
SW<PSF> count rates for RXJ 1856-3754

Elapsed Time (days)

Count Rate (s)

XMM EPIC-PN

RXJ1856.6-3754
Constant sources for RGS contamination
EPIC-RGS cross-calibration

- XMM calibration targets in the refereed literature
  - Recent examples
    - RXJ1856-3754 (Sartore+ 2012)
    - ζ Puppis (Nazé+ 2011, 2012)
  - Should be our job
    - Objective: 1 paper per RCP target
- RXJ1856-3754 wish list (as discussed with Matteo)
  - S(RAWX,RAWY)
  - S(gain)
    - $N_i/\Sigma N_i = 3.4\%$ in 2062_0412601301 SW 5eV PI pattern==0 histogram
  - “Best” SW PSF
  - MHO about its variability
    - 0% is excluded
    - ±1% is about the right answer
    - RGS and XMM need to know