Relative Effective Area and Calibration Campaigns

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Drivers

- Count rate limits --> sources can’t be used
- Energy range (e.g. WDs, NSs)
- Sensitivity
- Optical light leaks
- Pileup

Point sources and hard sources vary
- catch ToOs (at help of XTE ASM, Swift)
  - need some blazars when bright
- variability is too fast
  - few sec is too fast
  - few days is ok, usually

Observing restrictions
- Timing calibration
- Line lists (e.g. coronal sources)
- All issues apply to internal cross-cal
Some campaigns

- **Cen A**
  - Suzaku, Integral, Swift, RXTE
- **Crab for timing**: RXTE, Suzaku, Swift
- **Blazars**
  - PKS 2155: XMM, Suzaku, Swift, Chandra
  - Mk 421: XMM, Swift
  - 3C 273
    - Chandra, ASCA, BeppoSAX
    - XMM, Chandra
    - XMM, Integral, Swift (?)
- **1H1426+428**
  - XMM, Chandra
  - XMM, Galex
What's been done

**Swift**
- Low E EA adjusted 15% based on 3C 273
- Spectral parameters agreed after fix
- Added a fast timing mode

**RXTE**
- Differences — spectral slopes & norms
- Need agreement on “correct” values

**Chandra**
- Internal fixes mostly done
- Issues now cropping up in XMM cross-cal

**Suzaku**
- Internal adjustments only

**XMM**
- Changed RMFs to match NH from LETGS
- Many adjustments due to internal cross-cal
- Issues now in Chandra cross-cal
Need to Do

- Agree on Crab spectrum (see NT SNR WG)
- Complete check using Cen A (RR)
- Prepare for cross-cal with other missions
  - GLAST: Madejski (SLAC) (RR)
  - Astrosat: Will call (AB)
  - AGILE: (TBD)
- Continue XMM-Chandra cross-talk (MS, HLM)
- Joint analysis
  - Mission cal scientists support
  - Start with e-mail support
  - Put points of contact on IACHEC web page
Points of Contact

- RXTE: Rick Rothschild
- Chandra: Herman Marshall
- XMM: Martin Stuhlinger
- Suzaku: Moto Kokubun
- Swift: Andy Beardmore
- INTEGRAL: TBD
- New missions: TBD