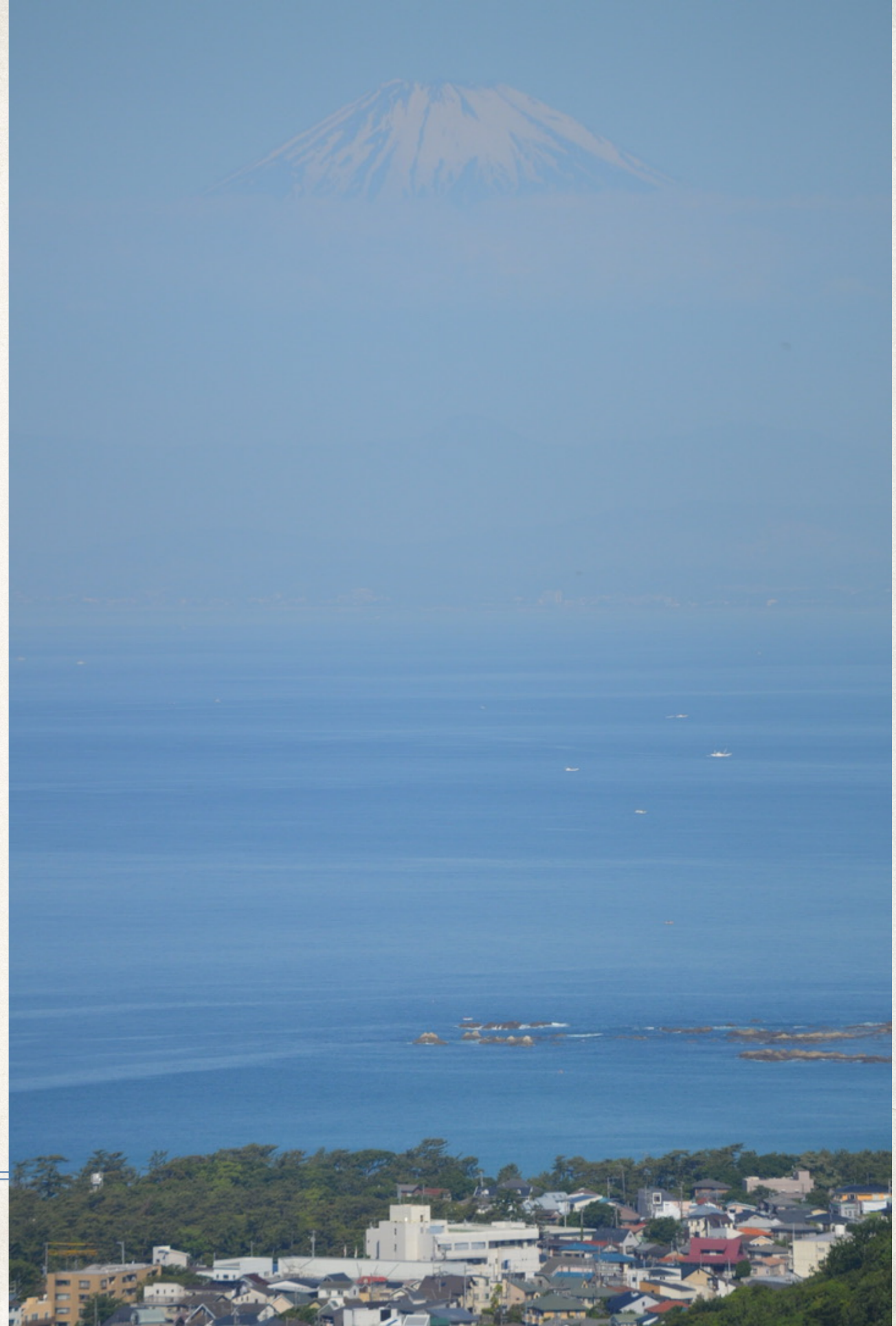


Coordinated Observations WG

Herman L Marshall, Lead

5/23/19



Working Group Objectives

- ❖ General
 - ❖ Coordinate new joint observations
 - ❖ Analyze joint observations
 - ❖ Publish results
- ❖ This meeting
 - ❖ Status of cross-cal projects
 - ❖ Planning for new coordinated observations

16:30

XMM-Newton / Chandra cross calibration with blazars

Speaker: Michael Smith (ORNL)



IACHEC14_XMM_C...

16:50

Swift-NuSTAR cross-calibration update

Speaker: Kristin Madsen (Caltech)



coordinated_obs_...

17:10

XMM-Newton and NuSTAR cross-calibration studies

Speaker: Felix Fuerst



xmm_nustar_cross...

17:30

Swift Operations and Calibration

Speaker: Jamie Kennea



Kennea_IACHEC_S...

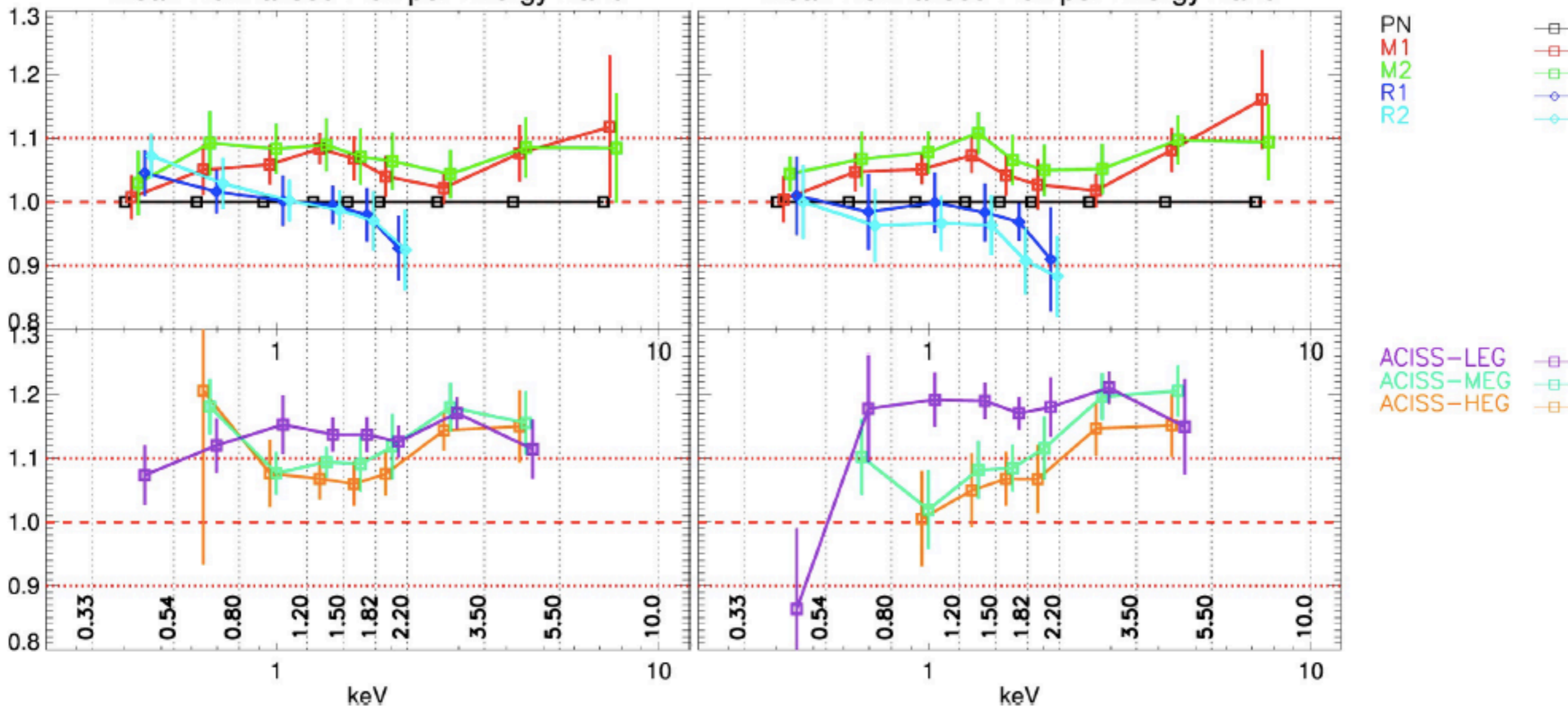
XMM/Chandra Blazars (M. Smith)

Before 2008

After 2008

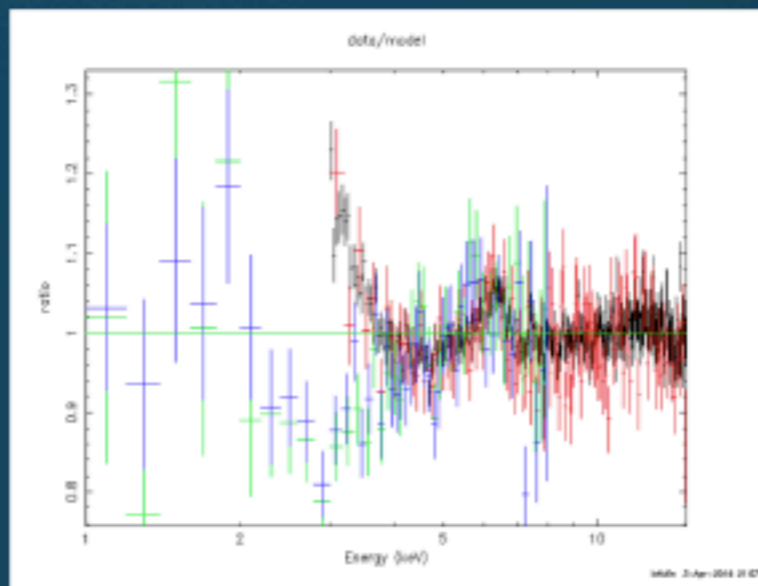
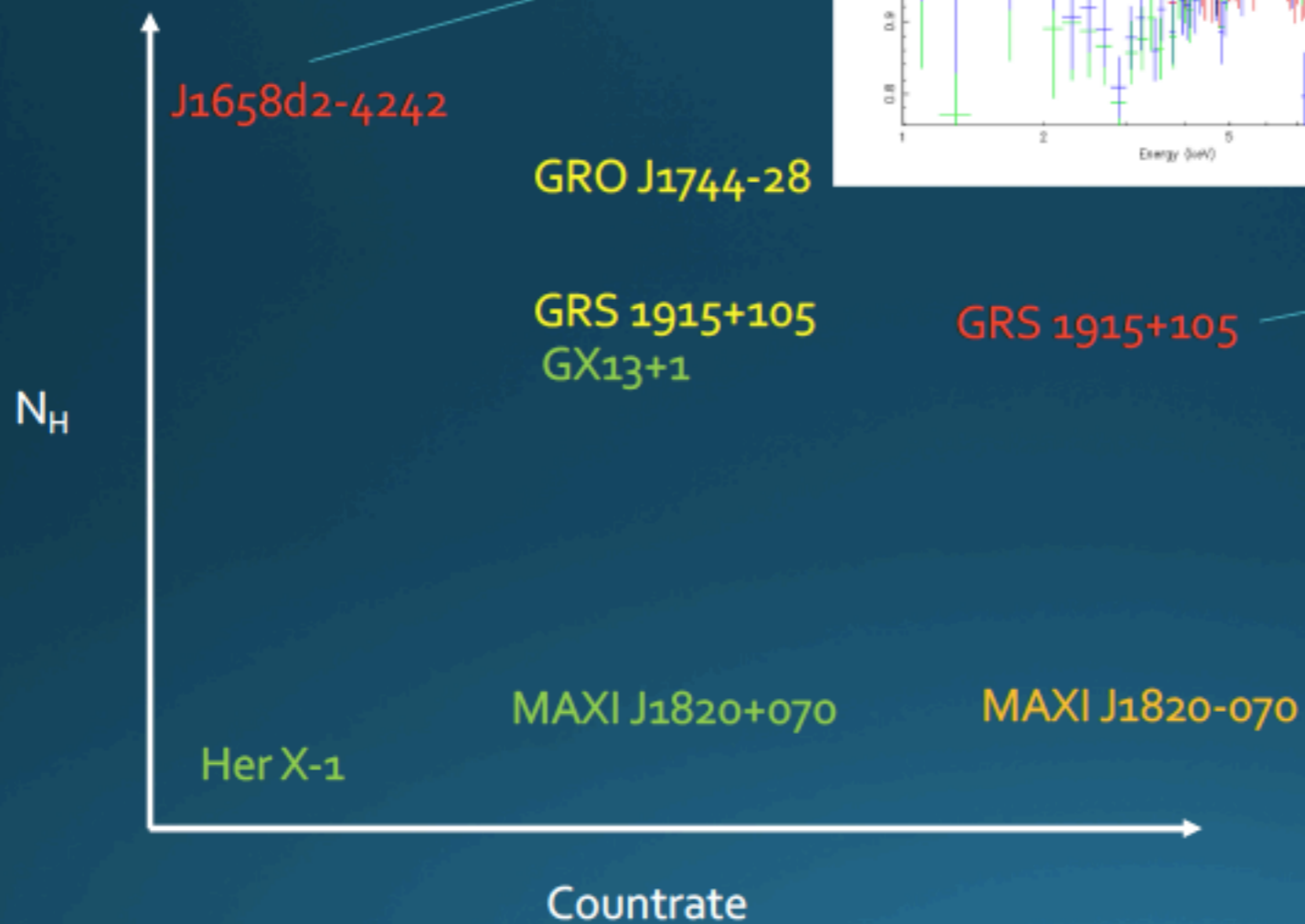
Mean Normalised Flux per Energy Band

Mean Normalised Flux per Energy Band

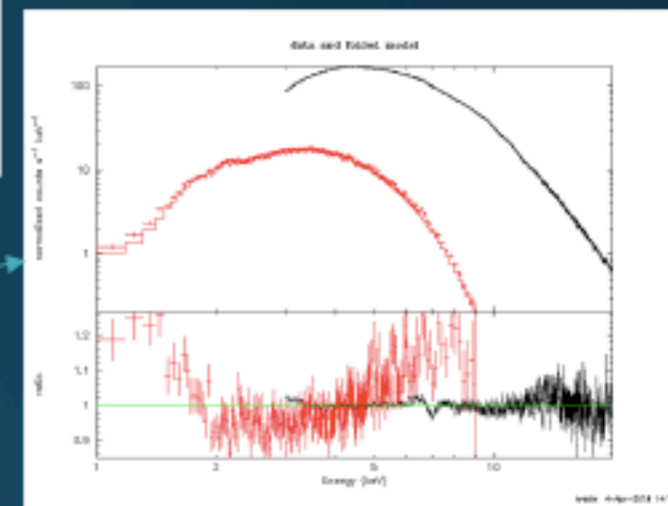


NuSTAR/Swift (K. K. Madsen)

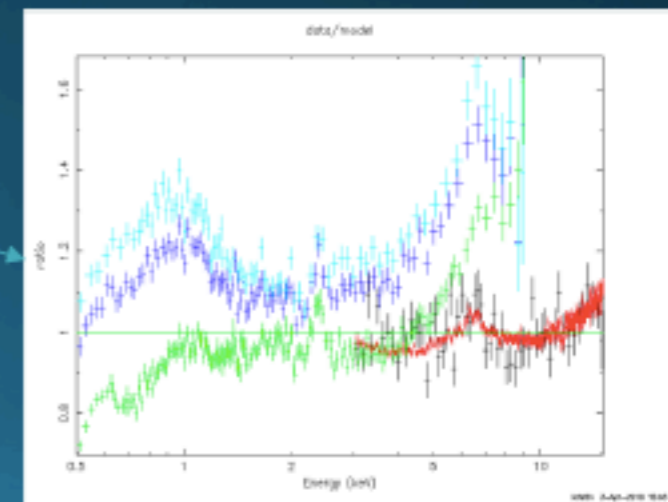
Phase space



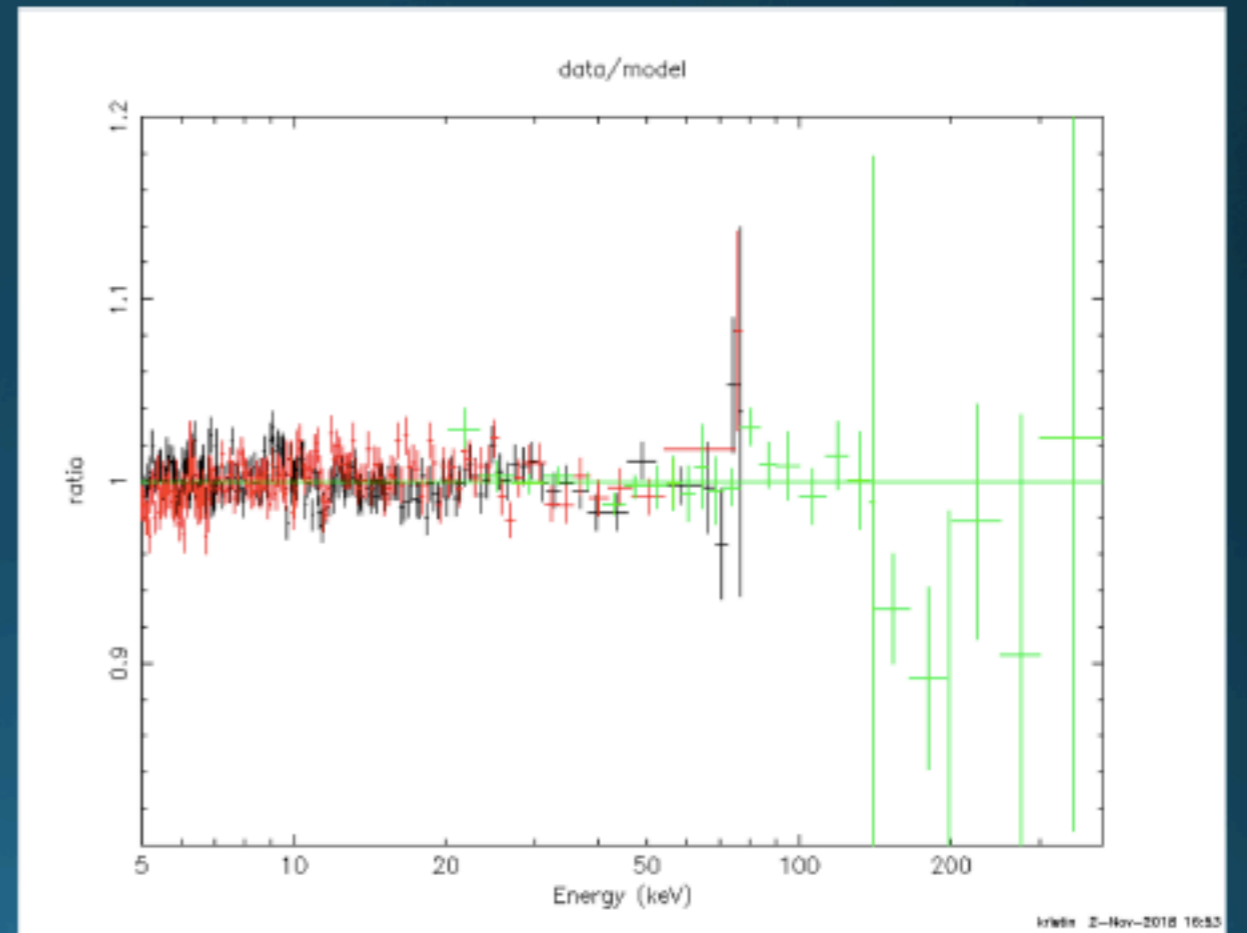
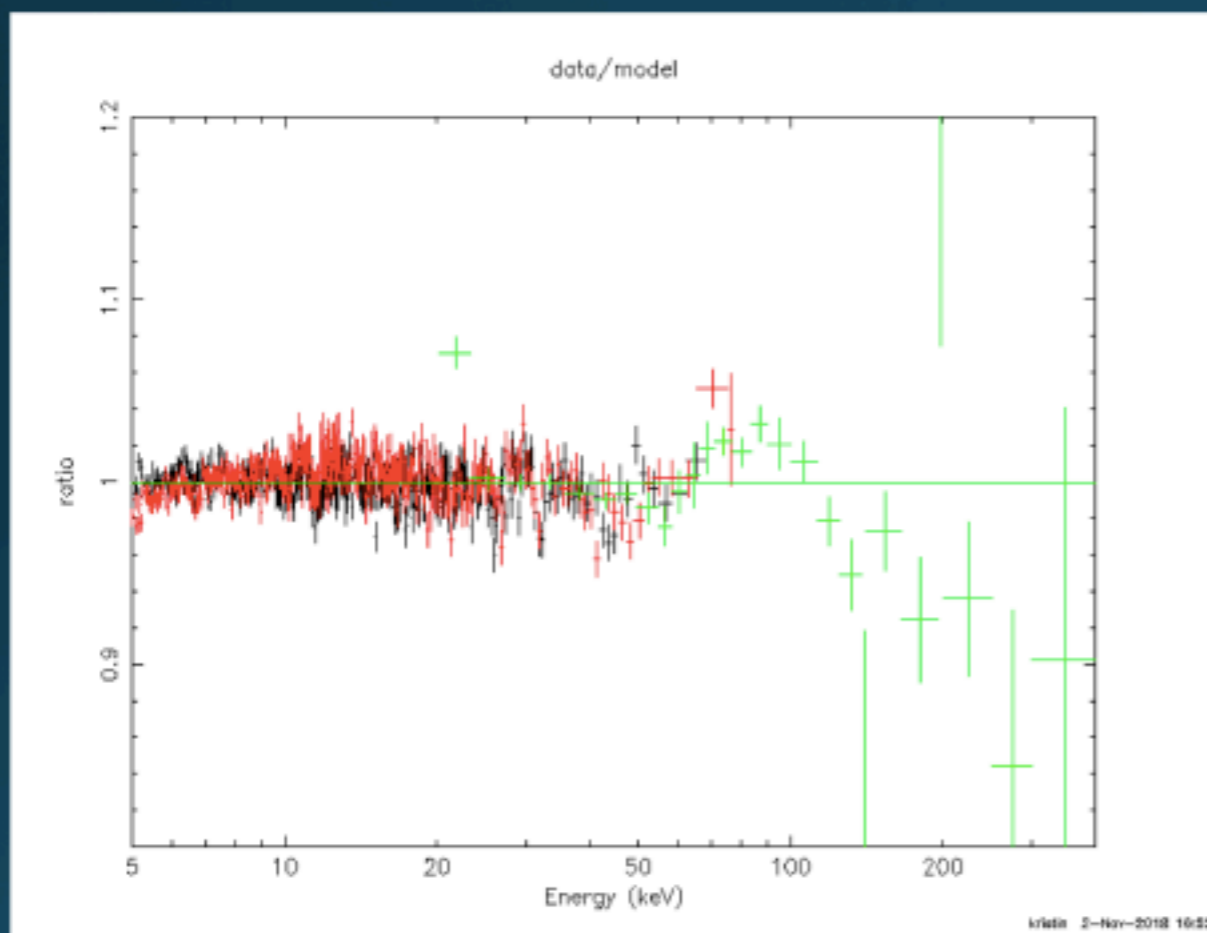
GRS 1915+105



MAXI J1820-070



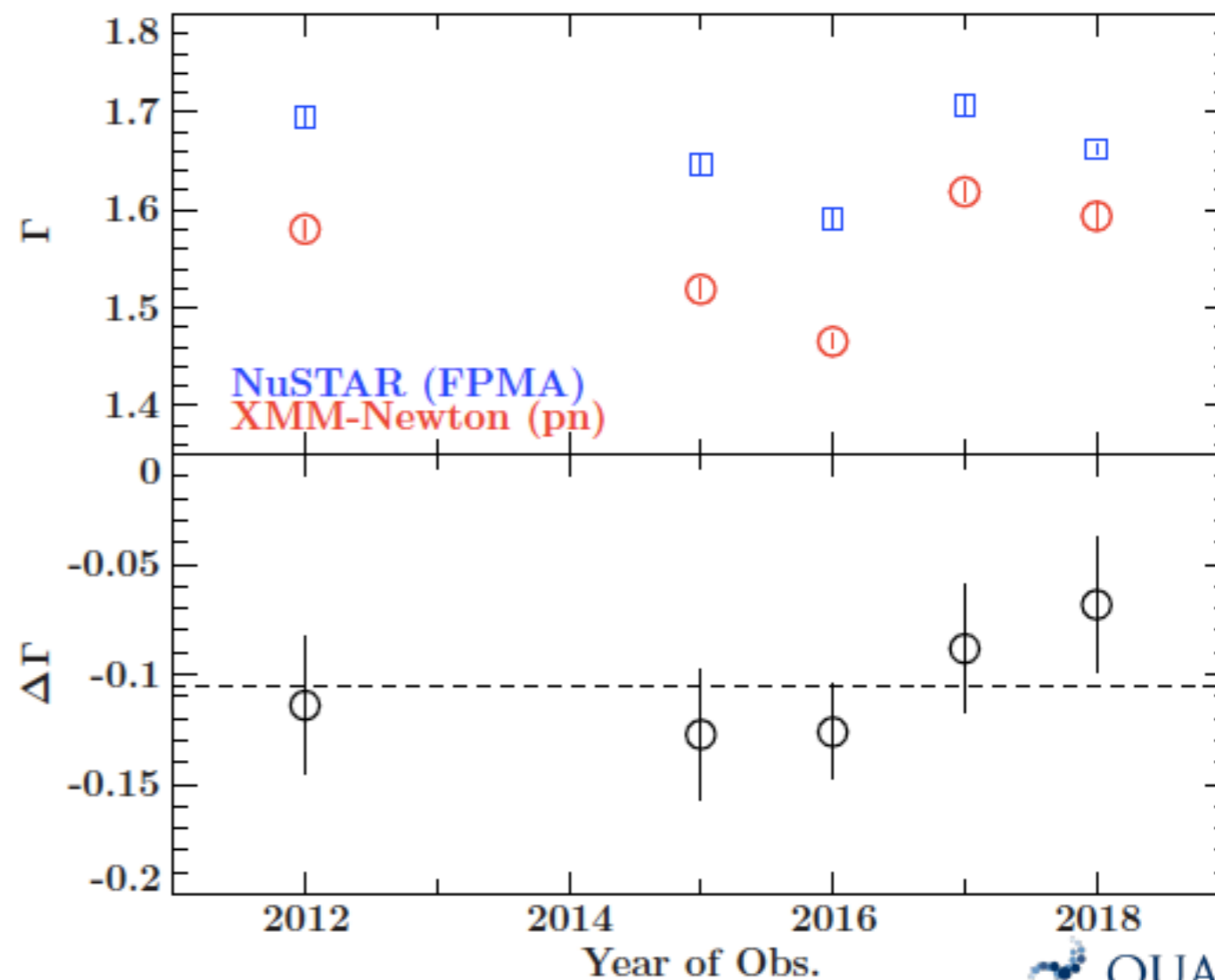
NuSTAR / INTEGRAL (K. K. Madsen)



XMM/NuSTAR (F. Fürst)

Photon Index of *NuSTAR* about 0.1 higher than *XMM-Newton* EPIC-pn.

Difference is relatively constant with time. But is it getting larger lately?



Swift/NuSTAR (J. Kennea)

- Swift observes all NuSTAR targets for 2ks.
 - Exceptions: XMM and Chandra coordinated observations where XRT data are deemed unnecessary
- Some targets observed longer
 - BAT detected AGNs and some other surveys 7ks
 - Swift time given out through NuSTAR GI panel
 - TOO's asking for more time
- Swift data provides vital $<3\text{keV}$ energy response to compliment NuSTAR data, but getting a good fit to both spectra can be troublesome.
 - Kristen's talk earlier

New Work on Coordinated Data

- ❖ Generally:
 - ❖ One person leads, collects GTIs, computes overlaps
 - ❖ Rest use overlap GTIs and provide spectra
 - ❖ Contacts: Chandra: HLM, SPI: EJ, IBIS: LN, XMM: MS, Swift: AB / JaKe, NuSTAR: KKM / KF, NICER: CM, HXMT: LS
- ❖ 2015, '16, '17 3C 273 with NuSTAR+; KKM will coordinate
- ❖ eROSITA cross-cal — V. Burwitz will coordinate
- ❖ Others (with analysis lead):
 - ❖ GX 13+1: NSS
 - ❖ MAXI J1820: EJ
 - ❖ Capella: VK & JeKa from many years
 - ❖ Her X-1: PK (XMM) lead