

Coordinated Observations WG

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3/30/17

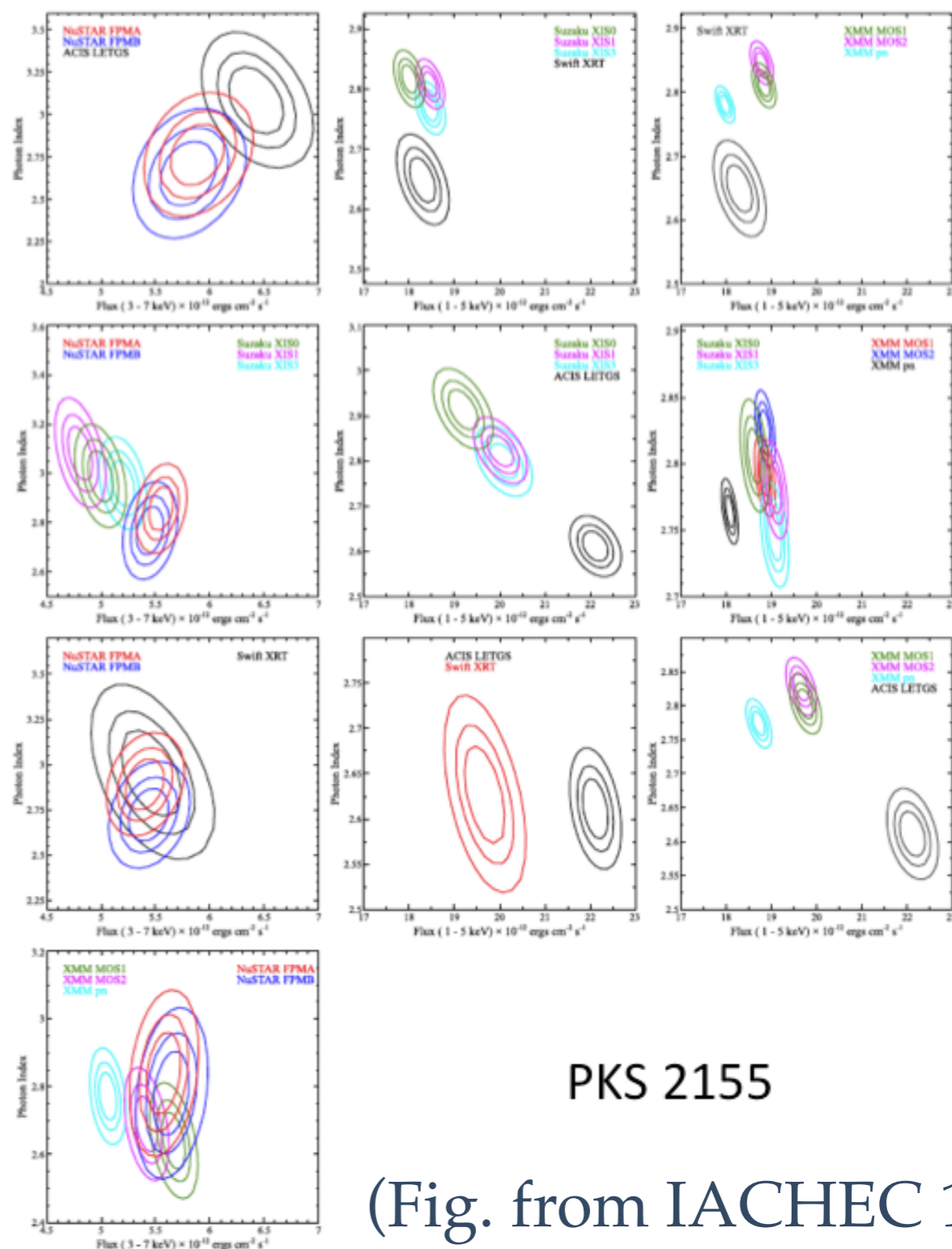
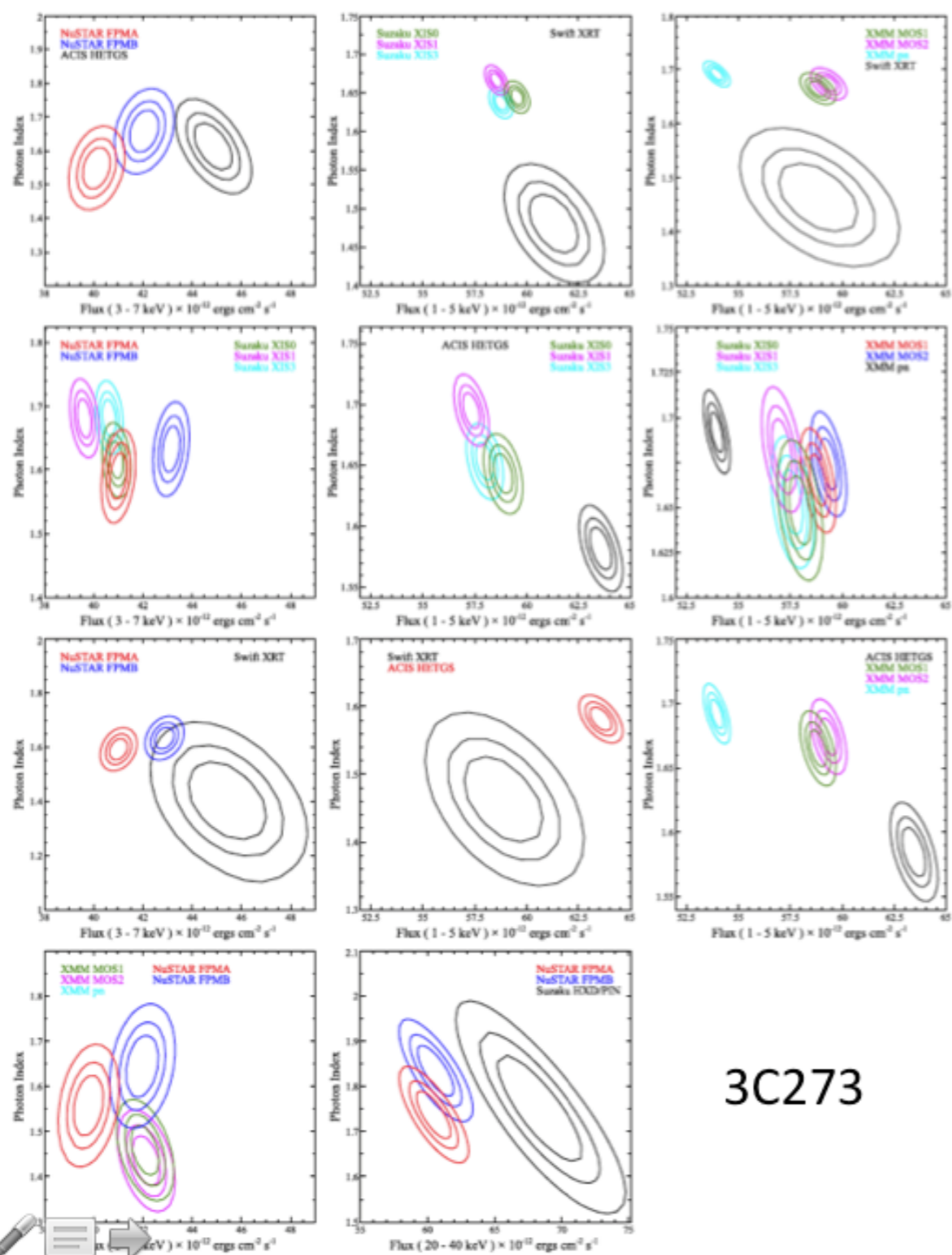
Working Group Objectives

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

Status of Current Projects

- ❖ PKS 2155 and 3C 273 with NuSTAR and others
 - ❖ Included Swift, XMM, Suzaku, Chandra
 - ❖ Published: K. Madsen+ 2017, AJ, 153, 2
- ❖ XMM-Chandra Blazar sample
 - ❖ Still in process
 - ❖ Chandra and XMM calibrations now stable
 - ❖ HLM & MS to nail down next month
- ❖ 2015,6 campaigns: KKM to take a first look

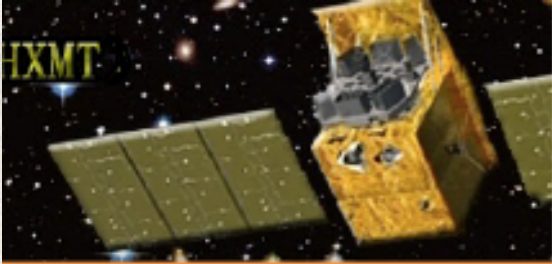
Plots for tables



(Fig. from IACHEC 11)

New Work

- ❖ NuSTAR's Direct Crab Data
 - ❖ Possible absolute calibration
 - ❖ Indicates 12% overall adjustment needed
 - ❖ Better agreement with Chandra, not others
 - ❖ More measurements planned
- ❖ Coordinated Crab Observations
 - ❖ Added INTEGRAL data of 3C 273 to joint NuSTAR analysis
 - ❖ Question about break or SSC-IC break at 30-40 keV
 - ❖ Considering use of archival data (e.g. H1743-322) — agree with NuSTAR
- ❖ Dust haloes around X-ray binaries (e.g. GX 13+1)
 - ❖ Problem in window timing mode
 - ❖ Can mimic incorrect NH



List of In-flight Calibration Sources

Source Name	RA	DEC	Usage
Crab	83.63	22.01	RMF, ARF, Timing, PSF, boresight, etc.
PSR B1509-58	228.48	-59.14	
Cas A	350.846	58.813	Data analysis, LE temperature drift
Tycho	6.334	64.150	
Cyg X-1	299.59	35.20	Data analysis, quick-look
Sco X-1	244.98	-15.64	
Mrk421	166.11	40.09	
Blank Sky #1	145.9975	4.3899	Background (include: night Earth)
Blank Sky #2	176.4366	-20.6326	
Blank Sky #3	232.5356	8.8014	
Blank Sky #4	251.8799	55.7135	
Blank Sky #5	322.4055	-24.2587	
Blank Sky #6	52.6687	-59.8347	
Blank Sky #7	312.2388	-11.8415	
Blank Sky #8	22.5767	-76.1370	

(Fig. from IACHEC 11)

Action Items

1. HLM: distribute HXMT schedule for potential coordinated observations of XRBs with NICER, etc.
2. KKM: check to see if 2015-6 campaigns can be readily analyzed
3. Astrosat team will work on joining 3C 273 campaign in 2018
4. NICER coordination on SS 433 (TBD as HETGS DDT?), 3C 273 (6 / 17), Crab, Mk 421 (6 / 17)
5. MS & HLM: complete XMM / Chandra blazar paper
6. HLM: develop contact scientist e-mail list