

# 9<sup>th</sup> IACHEC MEETING SUMMARY

Matteo Guainazzi  
ESAC/ESA

# Evolution of participants



| IACHEC year            | Number of participants | Number of talks        |
|------------------------|------------------------|------------------------|
| 2006 (Iceland)         | 36                     | 26                     |
| 2007 (California)      | 35                     | 30                     |
| 2008 (Germany)         | 36                     | 26                     |
| 2009 (Japan)           | 35                     | 34                     |
| 2010 (Massachusetts)   | 45                     | 50                     |
| 2011 (Italy)           | 44                     | 38                     |
| 2012 (California)      | 40                     | 29                     |
| 2013 (UK)              | 36(+6 seq.ed)          | 48 (20 plenary)        |
| <b>2014 (Virginia)</b> | <b>51</b>              | <b>54 (24 plenary)</b> |

## Paper status



5 IACHEC papers published on refereed journals between 2013-4:  
Timing, Galaxy Clusters (EPIC/ACIS, EPIC/XIS), G21.5-0.9, PKS2155-304

2 new calibration-related papers published in 2014: Read et al. (2014, A&A, 564, 75; EPIC); Schellenberger et al. (2014, arXiv1407.7130; EPIC/ACIS)

| Paper           | Status                                   | Submission by: |
|-----------------|--|----------------|
| 1E0102-7219     | Wrapping-up                              | May 2014       |
| Blazar sample   | Wrapping-up                              | 2014           |
| Capella         | High-resolution spectroscopy line census | ?              |
| Crab            | Advanced draft                           | 2014           |
| G21.5-0.9 II.   | To be started                            | ?              |
| N132D           | Fitting the model                        | ?              |
| PKS2155-304 II. | First draft                              | 2014           |
| WD              | To be started                            | ?              |

# Main trends



- New “Golden era” of X-ray astronomy, 4 missions to be launched in the next 18 months
- New missions see the IACHEC as *the* forum to increase quality and efficiency of calibration work
  - Forster: 3C273 observation ~1 month after the NuSTAR launch arranged at IACHEC
- The IACHEC is gaining visibility and credibility in the community at large (COSPAR talk, talks on calibration at scientific conferences, IACHEC-related activities in general-purpose astronomical proposals, Astro-H SWG interested the IACHEC experience ...)
- After more than a decade, it is increasingly difficult for “old missions” to be creative on how to improve the cross-calibration status
- IACHEC WGs are not always consistent <10 keV, we still do not understand why
- Instruments age, and become whimsical with age
- Calibration teams of “old” mission shrink
- The community requires more ambitious calibration goals
  - Claim that calibration uncertainties limit cosmology is a serious trouble (to me)
- The community does not want to deal with systematics (“*Tell me which instrument I can trust*”), and we do not tell it how to do it (yet) – PyBLocXS being an outstanding counter-example

# Agreement#1: the future of cross-calibration



1. Get an update of the global picture of the true cross-calibration status
  - *Guainazzi* to ask the WG to verify by June 15 the measurements on the cross-calibration status and prepare a summary of the current status for the 2014 IACHEC report
2. Compile a list of astronomical topics on which cross-calibration uncertainties are a limiting factor
  - *Guainazzi* to activate a discussion among the IACHEC WG Chairs on how to compile this information
3. Propose a mechanism allowing each astronomer to easily assess the impact of and remove the cross-calibration uncertainties with existing spectral analysis tools
  - *Marshall* to coordinate a Technical Note detailing the requirements
4. Extend the pool of IACHEC cross-calibration sources to objects originally observed for scientific purposes
  - *Forster* to distribute the results of his study to the IACHEC Working Group Chairs

## Agreement#2: bridging past and future



1. Organizing a (at least) half-a-day session on in-flight calibration plans for Astrosat, Astro-H, HXMT, eRosita, at the next IACHEC
2. Choose venue of future meetings that facilitate the contact between calibration teams of missions close to be launched and the IACHEC community
3. Fulfill the Working Group activities related to future mission: Contamination WG (contamination prevention White Paper), Heritage (in-flight calibration White Paper, collection of ground-based calibration papers), Uncertainties (PyBLocXS extension to NuSTAR and, hopefully, XMM-Newton)

**Our warmest thanks to ...**



Our warmest thanks to the LOC members:

**David Burrows, Laurie Ebertowski,  
Michael Stroh and Jamie Kennea**

and to the sponsors for their generous financial contribution:

**GSFC, Swift and Chandra projects**