

# Science Support Status

Maria Santos-Lleo

EPIC Calibration & Ops Meeting, MPE

25-26 March 2014

- Science Support Team
- Annual proposal cycle
- Instruments: RGS & OM
- Data: SAS, Pipeline, Archive
- Users Group recommendations
- Workshops

## EPIC:

- **Matteo Guainazzi**: gradually moving to Astro H (complete on 1 Sep 2014)
- **Michael Smith will take over as EPIC Calibration Scientist**
- New scientist: **Jacobo Ebrero (21 April 2014)** shared USG and Instrument tasks

## RGS:

- **Rosario Gonzalez-Riestra**: RGS Calibration Scientist since 1 Sep 2013, (after Andy Pollock moving to different project)

## Pipeline:

- **Edward Chapin**, pipeline software engineer, left December 2013
- New pipeline software engineer (Jose Vicente Perea, 7 April 2014)

Matteo leave will mean a severe loss of expertise

His early notice has allowed us to take some measures to minimize (as much as possible) the impact:

- Michael Smith future EPIC Calibration Scientist
- Matteo to close high priority open EPIC calibration tasks:
  - pn Timing mode energy scale
  - pn-MOS cross-calibration (with external support)
- assignment of open EPIC calibration tasks within the team:
  - pn Burst mode calibration (J.U.Ness, USG scientist)
  - Vignetting (I de la Calle)
  - Support for pn-MOS cross-calibration

MOS: transfer to SOC (R.Saxton) of contamination and redistribution, with support from S.Sembay (thank you!)

➤ **AO-12**, as of 21 March 2014, end of rev 2614

- A+B ~ 9977.9 ks, 92%
- C: ~ 5268.0 ks, 65.46%

➤ **AO-13**, to start 1 May 2014

- Call deadline 11 October 2013
- Oversubscription 5.4
- 452 proposals

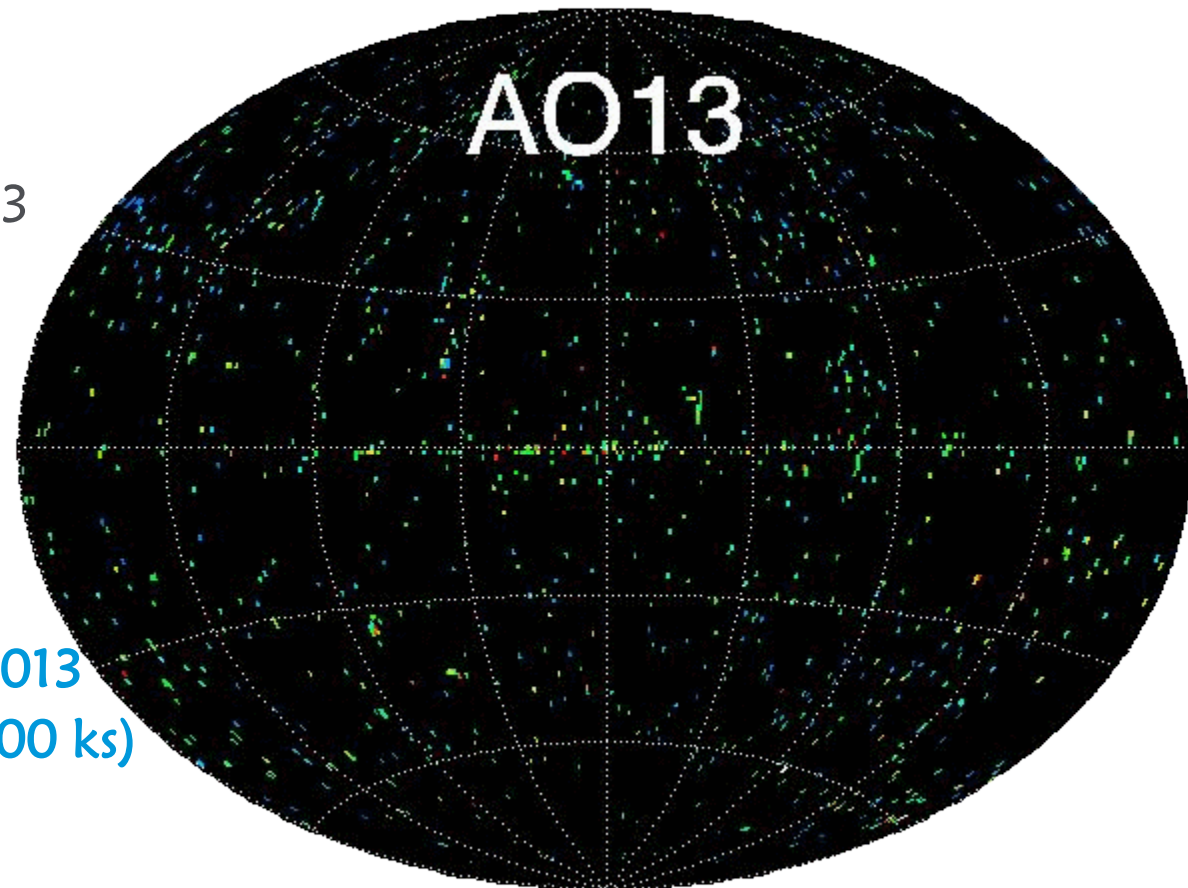
Still high interest

New: NuSTAR

OTAC:

- Results published on 9 Dec 2013
- One VLP cluster outskirts (1200 ks)

Phase II finished 31 Jan 2014

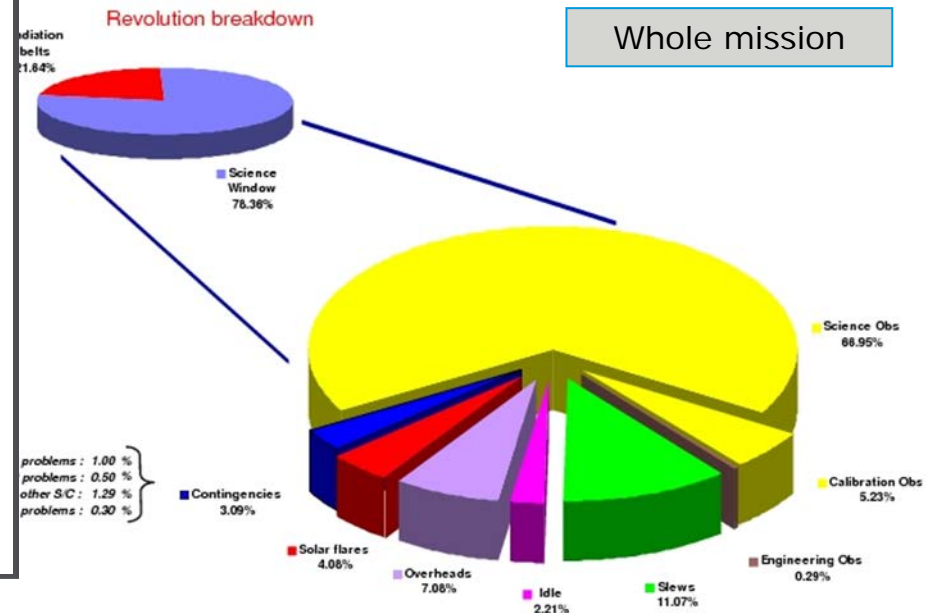
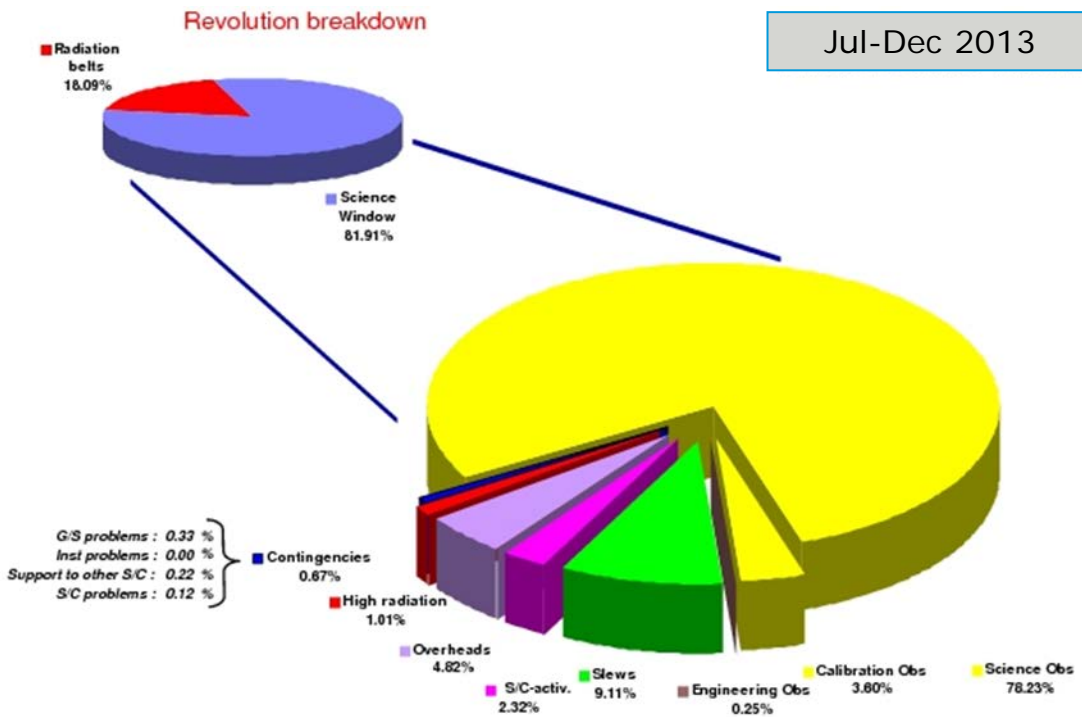


## AO14 anticipated timeline

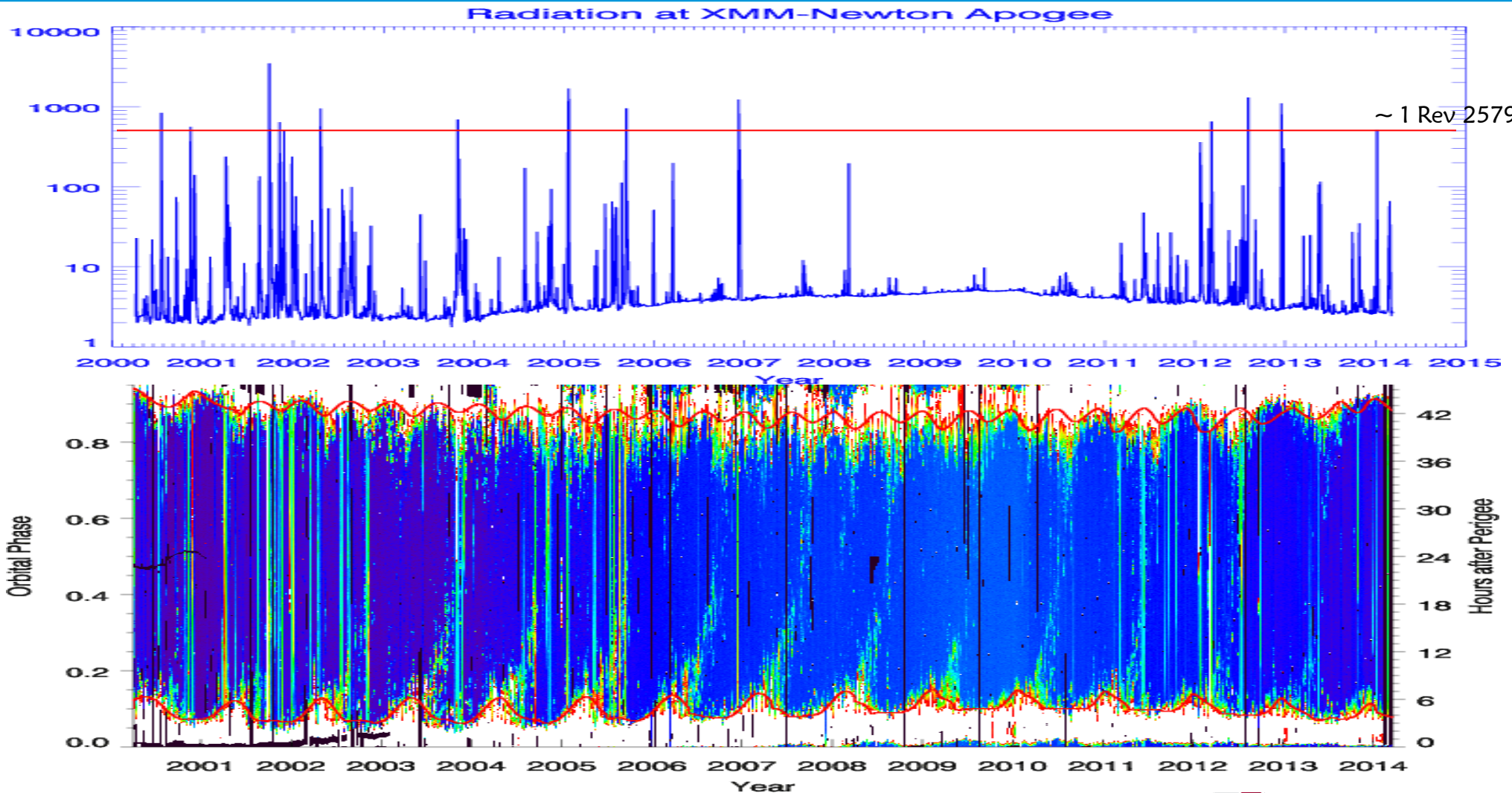
- **Call open: 26 August 2014**
- **Deadline: Friday 10 October 2014 (12:00 UT)**
- OTAC results: mid-December 2014
  
- 2<sup>nd</sup> phase: 13 – 6 Jan 2015
- Start observations: May 2015

## ➤ EPIC-pn (MOS1) efficiency:

- Performed science+cal per revolution Jul-Dec 2013: 115.5 ks (120)
- Jul 2000-Dec 2013: 100.2 ks (101)



# Performed Science and Radiation





## ➤ RGS

- Annual calibration meeting 6-7 Feb 2014 at SRON
- Presentations and minutes on XMM-Newton web
- RGS calibration paper, de Vries et al. underwork, to be submitted to A&A

## ➤ OM

- Version 2 of OM catalogue released in Feb 2014
  - > 5.5 M entries
  - > 4 M sources
- Calibration paper underwork
- Handover of OM SAS tasks to SOC

- **Two SAS releases** in 2013: (see CG presentation for plans in 2014)
  - SAS 13.0 in May, followed by 3 patches,
  - SAS 13.5 in December, no patch
- **XSA fully refurbished** in July: new web interface, more user friendly and faster
  - New release in December (mainly internal changes)
  - New release in Feb 2014 (access to OM and Slew catalogues)
- **3XMM catalogue** released by SSC in July, with full access from XSA
- **Pipeline responsibility fully transferred** from SSC to SOC in July
  - Operations continue smooth (at SOC since March 2012)
  - Screening (science validation) coordinated by SOC, done together with SSC(see PR presentation for plans in 2014)

## Calibration

This is an essential ingredient for the mission's scientific success, which requires a continued effort. The UG acknowledges, appreciates and applauds the achievements by the calibration teams both at the XMM-Newton's SOC and at the PI institutes, and hopes that this effort can continue in as much as possible under the very challenging existing conditions. Priorities in this area should be:

1. **MOS-pn EPIC cross-calibration** has to be the highest priority, including the time dependence of the cross-calibration. This is to guarantee that the full EPIC effective area can be reliably exploited.
2. Closely linked to the above, continue working in the improvement of the **cross-calibration of XMM-Newton's instruments with other missions**, in particular with Chandra, Suzaku and NuStar, provided these other teams also deploy the necessary matching resources for this very necessary joint effort.
3. Work towards completing the **EPIC-pn timing mode calibration**, including characterisation of the PSF at higher energies.
4. **Burst mode calibration**

- **Continuous monitoring of the EPIC-pn long-term stability including the energy scale, effects of contamination, RGS and OM characterisation etc, should be part of the normal house-keeping procedures with the highest priority.**
- A working group is to be appointed by the Project Scientist with the task of **updating the original mission calibration requirements**
- The Project Scientist agreed to draft **requirements for the post-operational phase**
- **Next UG chairperson: Prof. Martin Ward** (Durham University) accepted invitation by Prof. A Gimenez (ESA) to chair XMM-Newton UG from mid 2014 onwards.
- **2014 UG meeting: 10-11 April** , chaired by Prof. X. Barcons, M. Ward will join

## ➤ The X-ray Universe 2014

Trinity College Dublin, Ireland

16 – 19 June 2014

[Xrayuniverse.esa.int](http://Xrayuniverse.esa.int)

Abstract submission deadline was the 28 Feb , more than 350 abstracts received

Early registration until Monday 28 April

## ➤ Early notice: 2015 ‘The Extremes of Black Hole Accretion’ 8-10 June ESAC (TBC)

➤ The Fast and the Furious (...) isolated neutron stars, pulsar-wind nebulae and supernova remnants, 22-24 May 2013 at ESAC, AN proceedings in press

## ➤ 14<sup>th</sup> SAS Workshop 2-6 June 2014

# Thank you



Similar to the UG, the XMM-Newton SOC also “acknowledges, appreciates and applauds the achievements by the calibration teams (...) at the PI institutes”

Many thanks to the Instrument Team for your continuous efforts and support