

# ISGRI Energy Calibration Status

IUG January 2013, 22-24

# OSA 10 released in September 2012

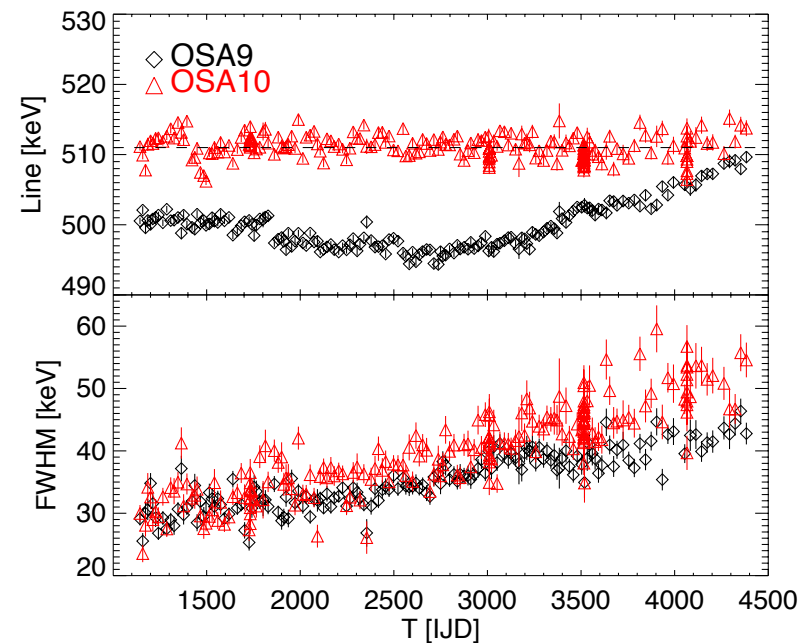
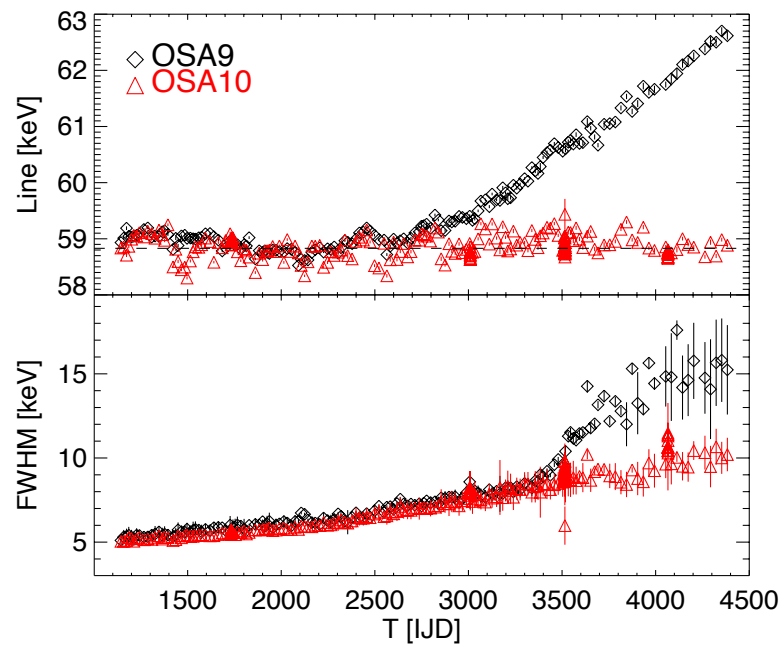
It includes the new ISGRI energy calibration, that contains:

- a new description for the gain depending on the time and the pulse rise time
- an improved temperature correction per module
- a varying shape of the low threshold, corrected for the change in energy resolution

Details of the new energy calibration have been presented at the INTEGRAL conference in Paris and submitted to PoS (Caballero et al.). Document available for the users at

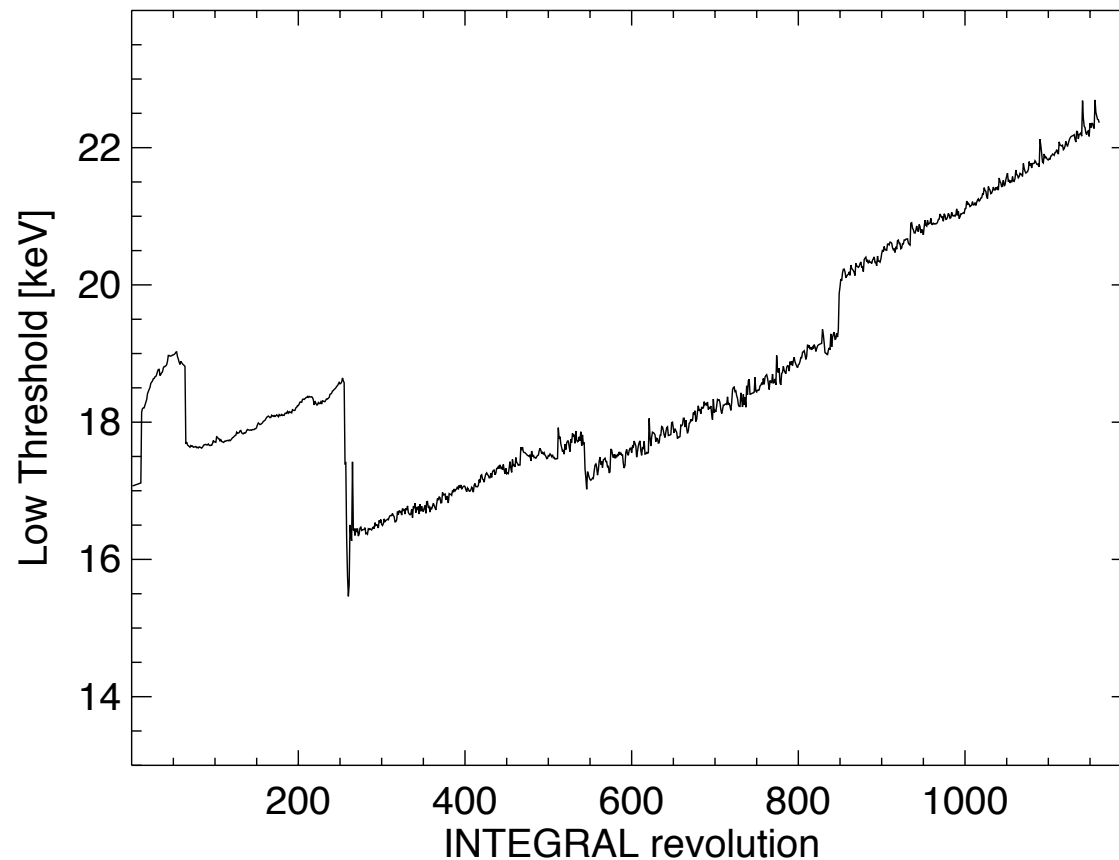
[http://www.isdc.unige.ch/integral/download/osa/doc/10.0/isgri\\_energy\\_calib.pdf](http://www.isdc.unige.ch/integral/download/osa/doc/10.0/isgri_energy_calib.pdf)

# Tungsten and $^{22}\text{Na}$ background lines stability in OSA 9 and OSA 10



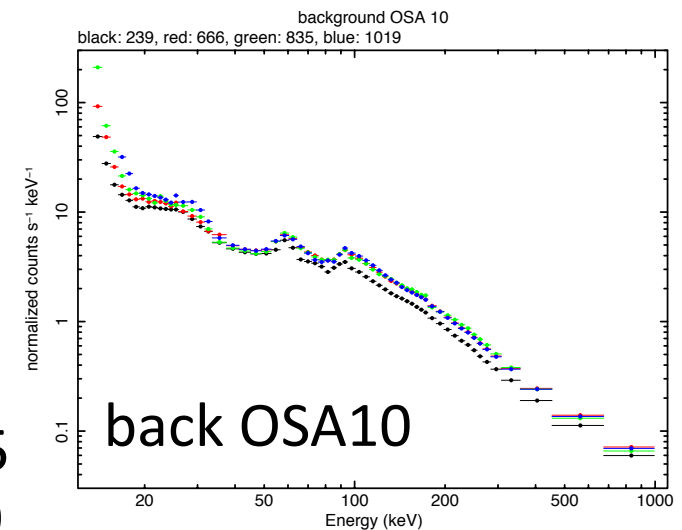
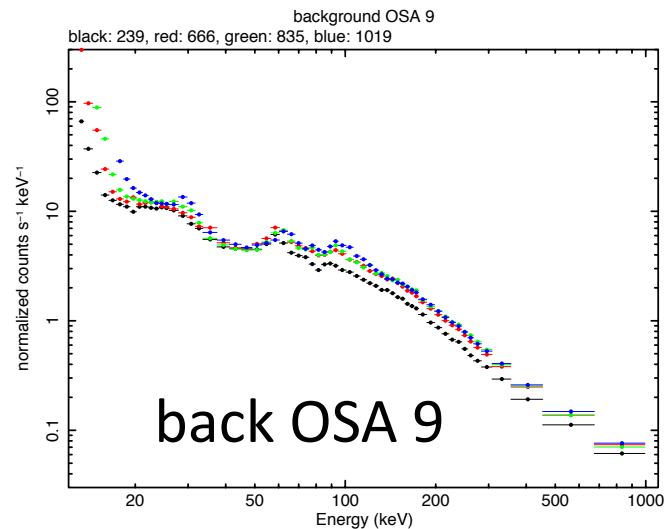
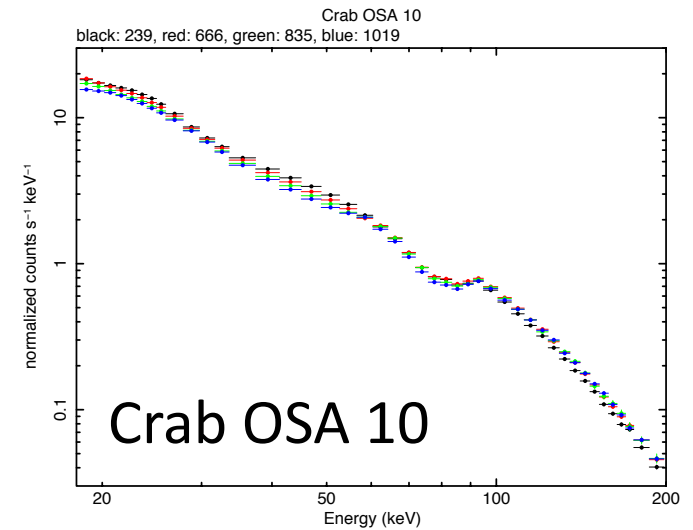
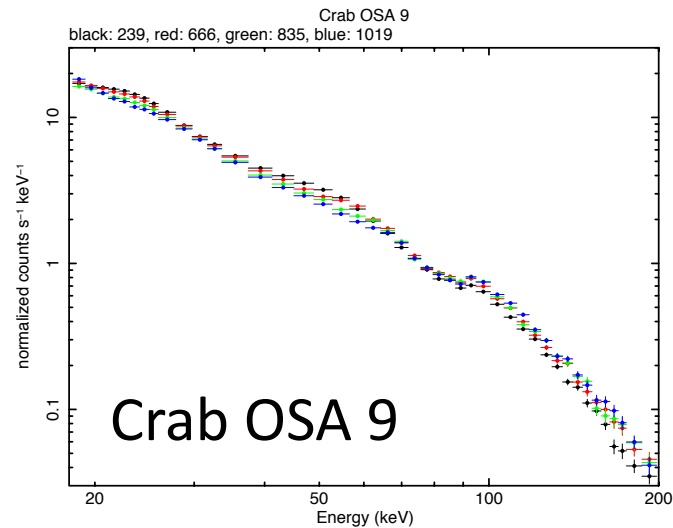
# Evolution of low threshold – OSA 10

The low threshold position is corrected with the new energy calibration, and its shape now follows the spectral resolution evolution, instead of being fixed at the W line resolution at the beginning of the mission



# Crab and background spectra: OSA 9 vs OSA 10

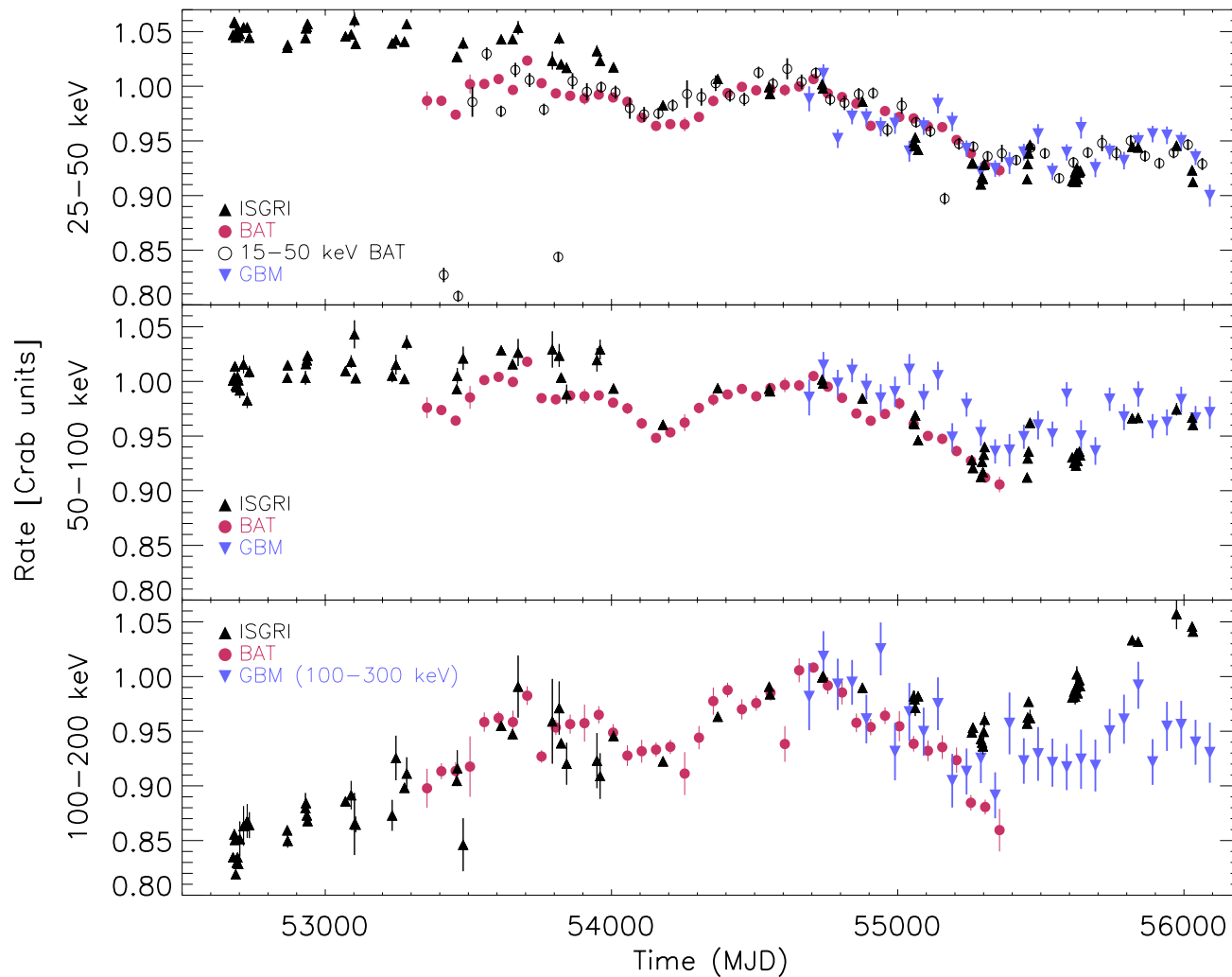
OSA 10 correction results in less variations of the count rate in the spectra along the mission compared to OSA 9



Black: rev. 239  
Red: rev. 666  
Green: rev. 835  
Blue: rev. 1019

# Inter-calibration

Crab light curves from ISGRI, Swift/BAT, Fermi/GBM:  
good agreement between the different instruments.



# Current work

- Current energy calibration requires the ARFs to be regularly updated.
- In collaboration with Lorenzo Natalucci (Rome), a new ARF using the Crab observations from revolution 1221 is being produced and will soon be delivered in the IC tree
- Long term project: new energy correction, LUT 2 3D...