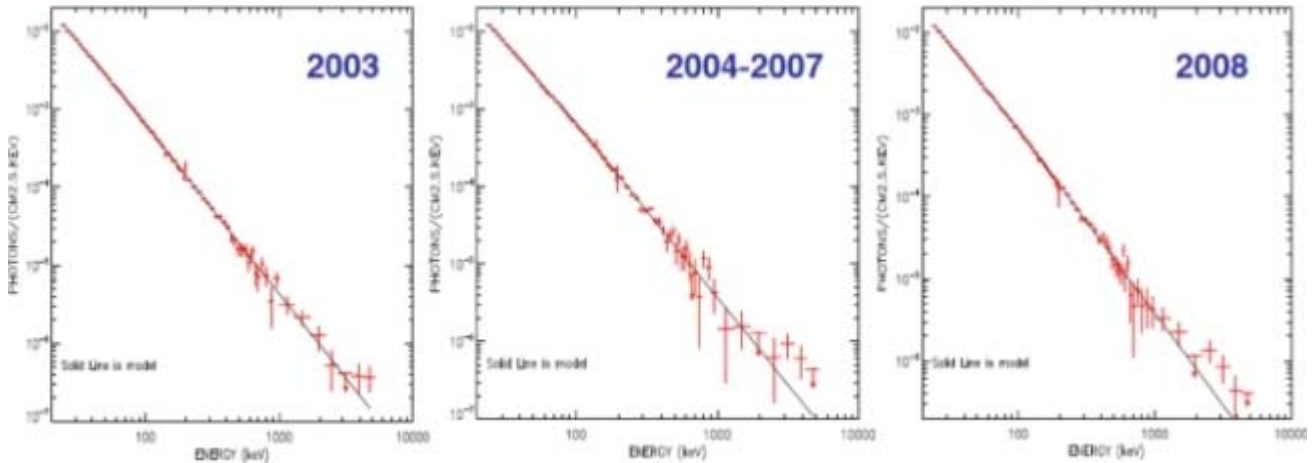


Picture of the Month

November 2009



The High-Energy emission of the Crab Nebula with Integral SPI

The spectral shape of the Crab nebula emission between 20 keV and 5 MeV brings new important information in a spectral region where the data are rather scarce.

The 3 spectra presented here correspond to SPI observations of the Crab Nebula during three periods between February 2003 and September 2008.

While the emission in the X-ray domain and above the MeV region follows simple power laws (photon index of 2.06 and 2.23 respectively), the SPI data show, that the hard X-ray regime can be seen as a transition region with a smooth curvature around 100 keV. In addition this work point out the remarkable constancy of the Crab nebula spectrum.

These data have been obtained thanks to regular Crab observations by INTEGRAL. The analysis of these observations demonstrates the stability of the SPI instrument over 6 years.

Finally, thanks to an extensive pre-launch calibration work and to the instrument behaviour, the obtained spectrum can be considered as absolute as it only relies on the ground calibration work.

Related links:

- The High Energy Emission of the Crab Nebula from 20 keV to 6 MeV with INTEGRAL, Jourdain, E. and Roques, J.P., 2009, ApJ, 704 (<http://arxiv.org/abs/0909.3437>)

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