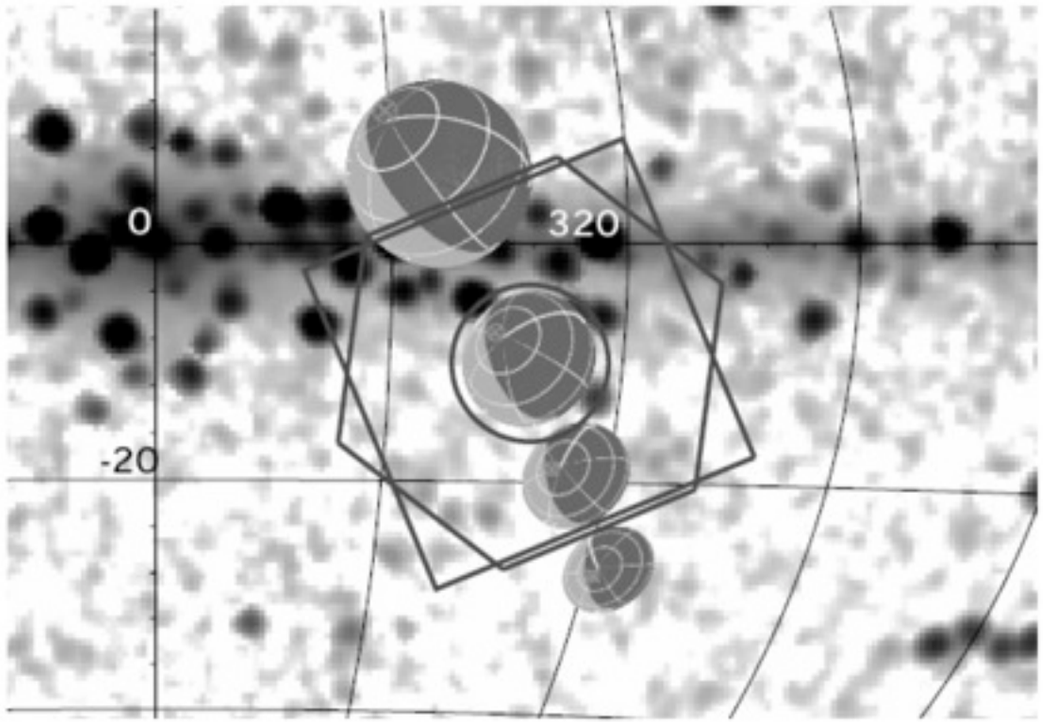
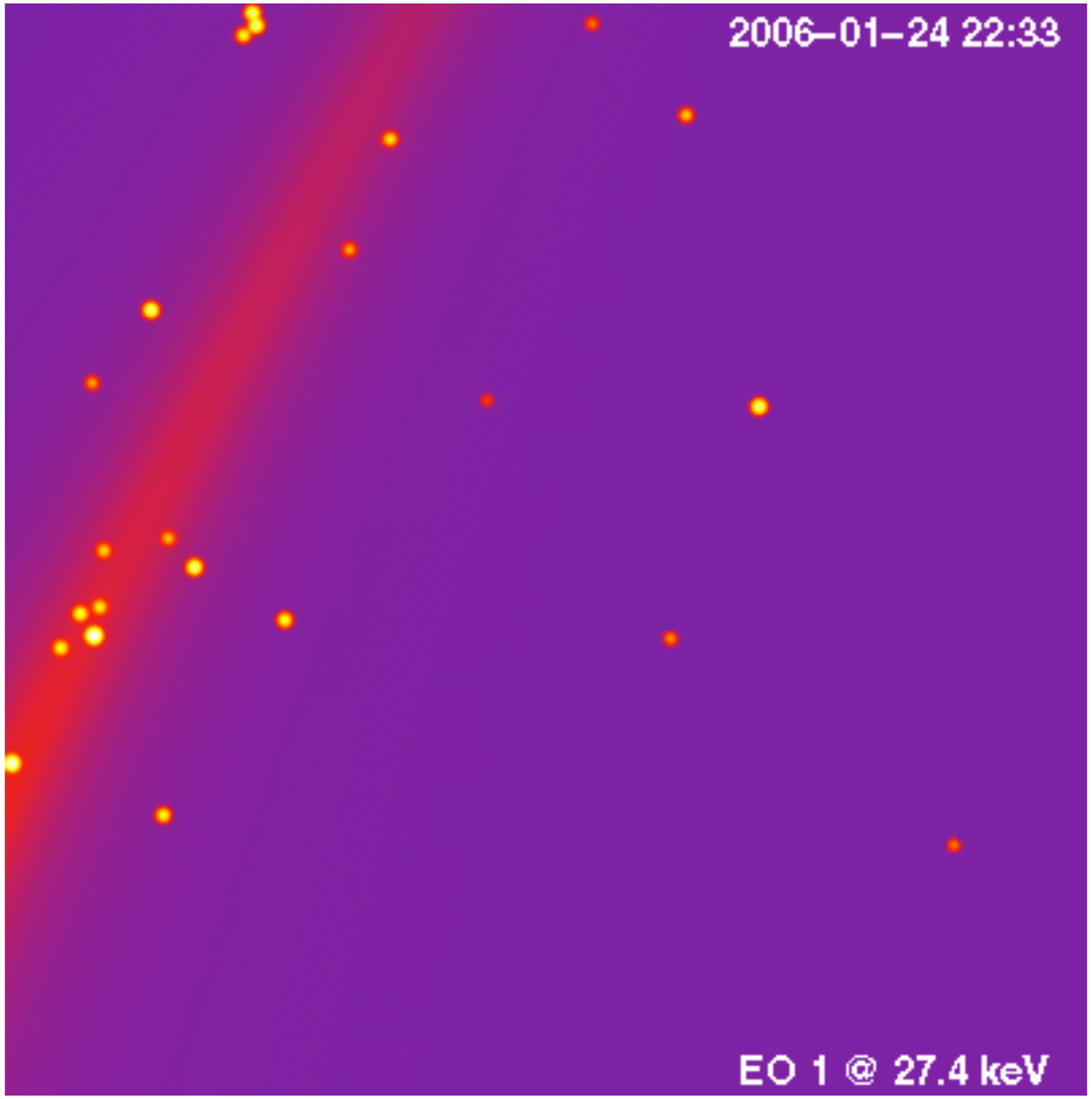
INTEGRAL's Earth Observations

4 similar CXB occultation observations in Jan-Feb 2006



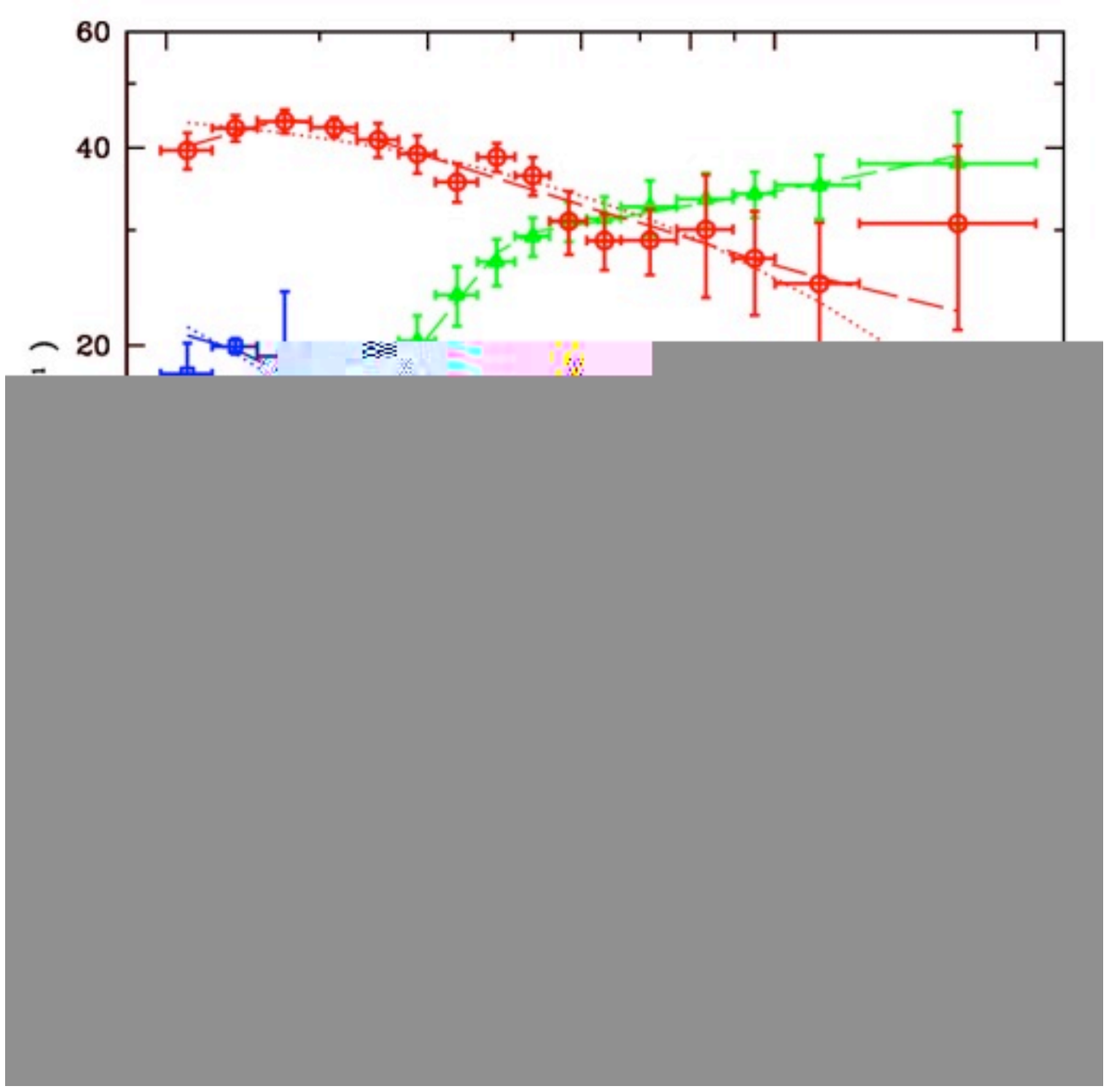


INTEGRAL Earth observation

Spectral shapes could be independently derived for

- Cosmic X-ray background
- Earth emission
- Galactic X-ray background
- Point sources

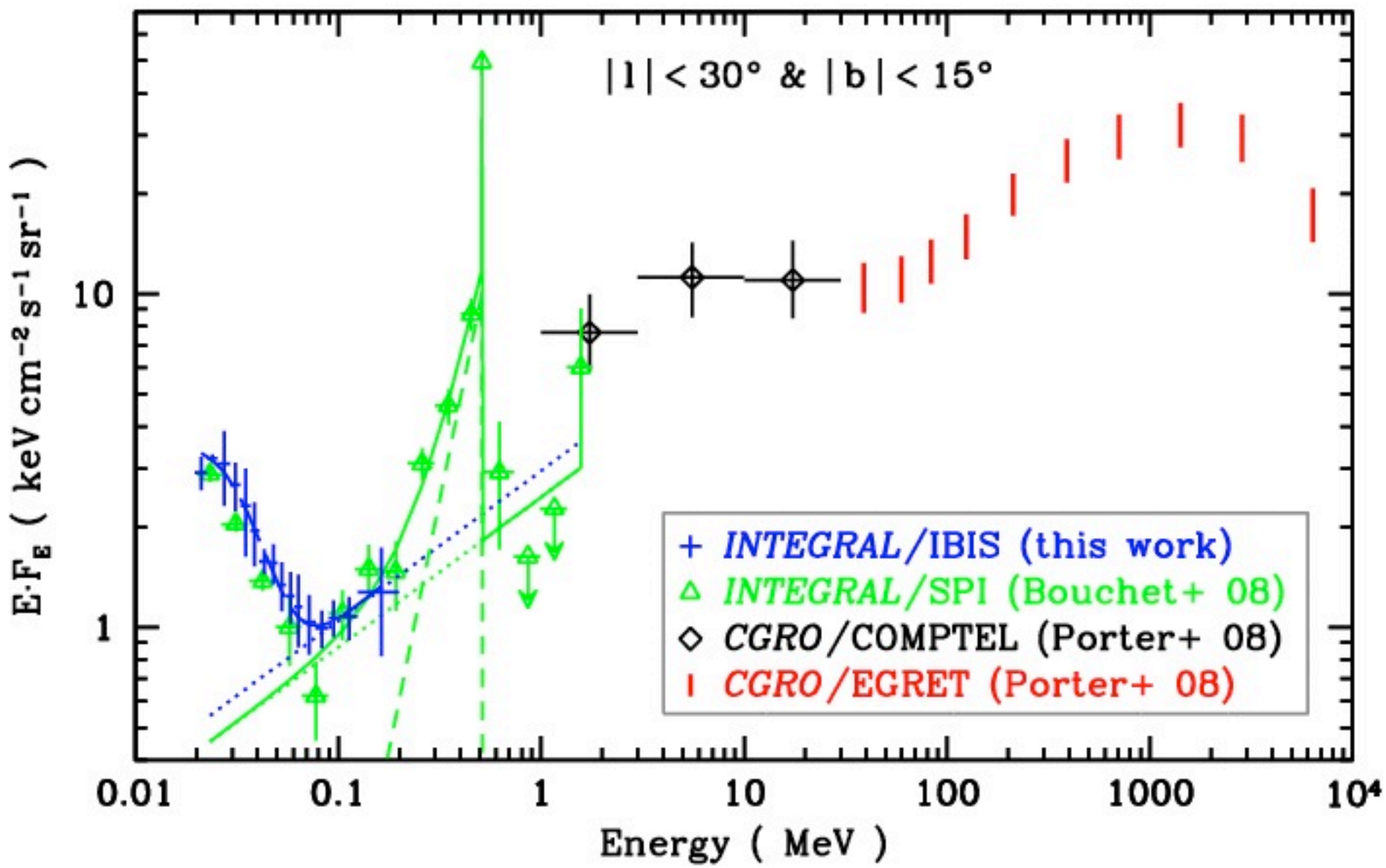
This is the result of 1 day of observation (rev 401-406)



Turler et al 2010

Galactic ridge emission

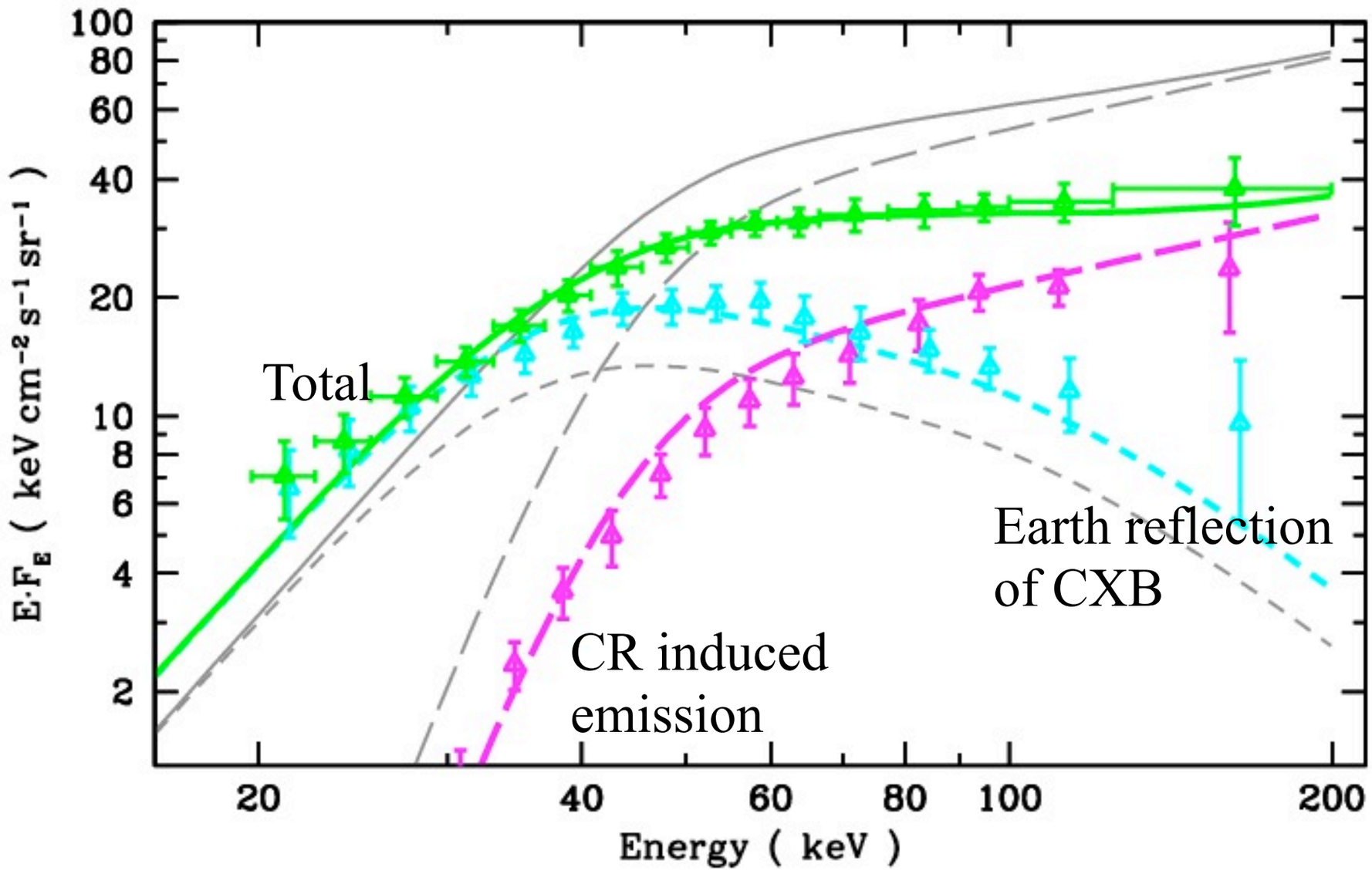
The broad-band view



Average mass of white dwarfs in the Galaxy : 0.6 $M_\odot$
INTEGRAL provides the best galactic ridge spectrum.
We can make it even better -> INTEGRAL legacy

Earth emission

Disentangling CXB reflection & cosmic-ray emission



☞ Important difference in normalization

Status

We derived state-of-the-art hard X-ray spectra of 3 fundamental components:

The Cosmic X-ray Background

The Galactic Ridge emission

The Earth reflection & emission

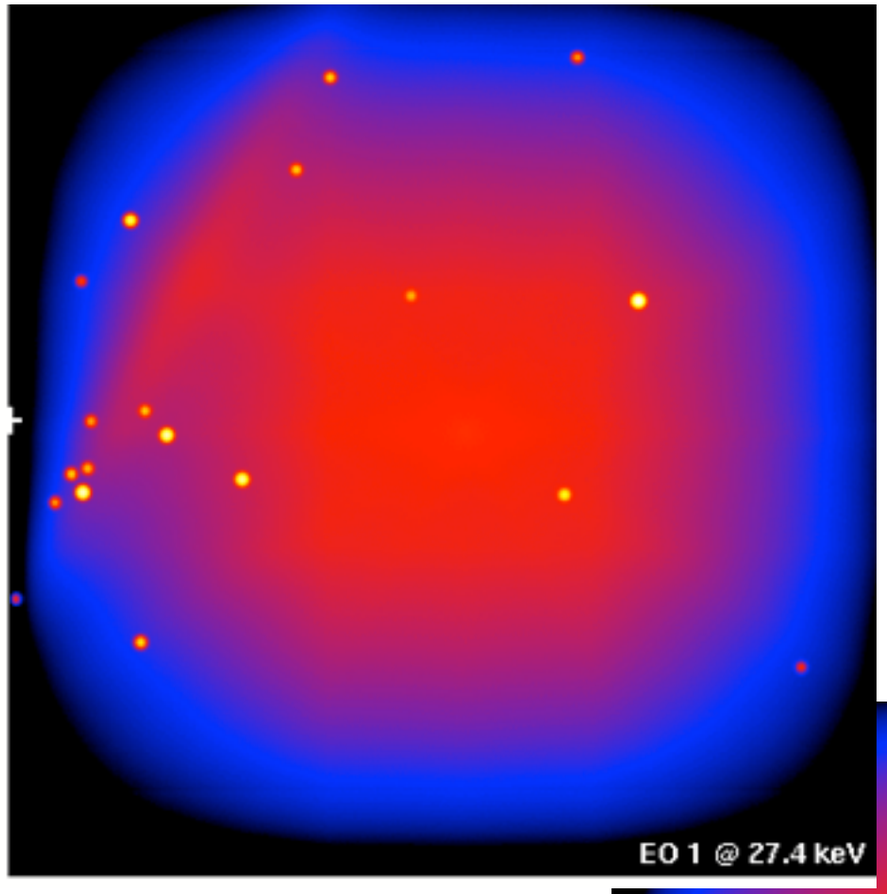
All this with only ~1 day of INTEGRAL observing time!

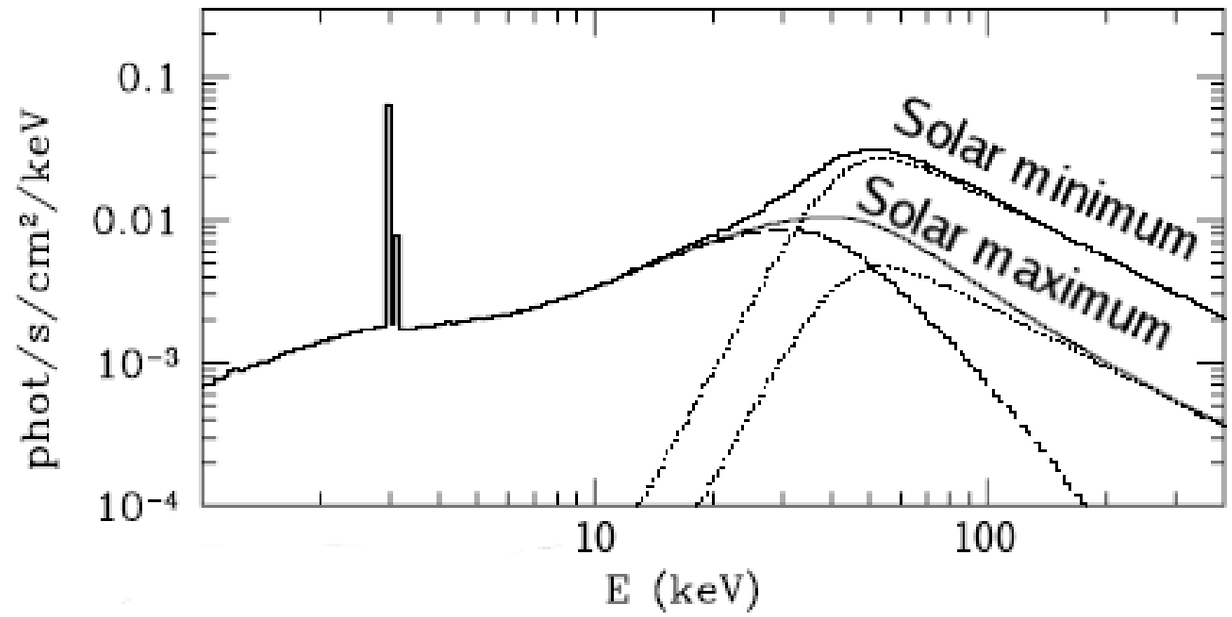
➠ INTEGRAL CAN DO BETTER

An AO proposal has been submitted by a large group lead by Roman Krivonos...

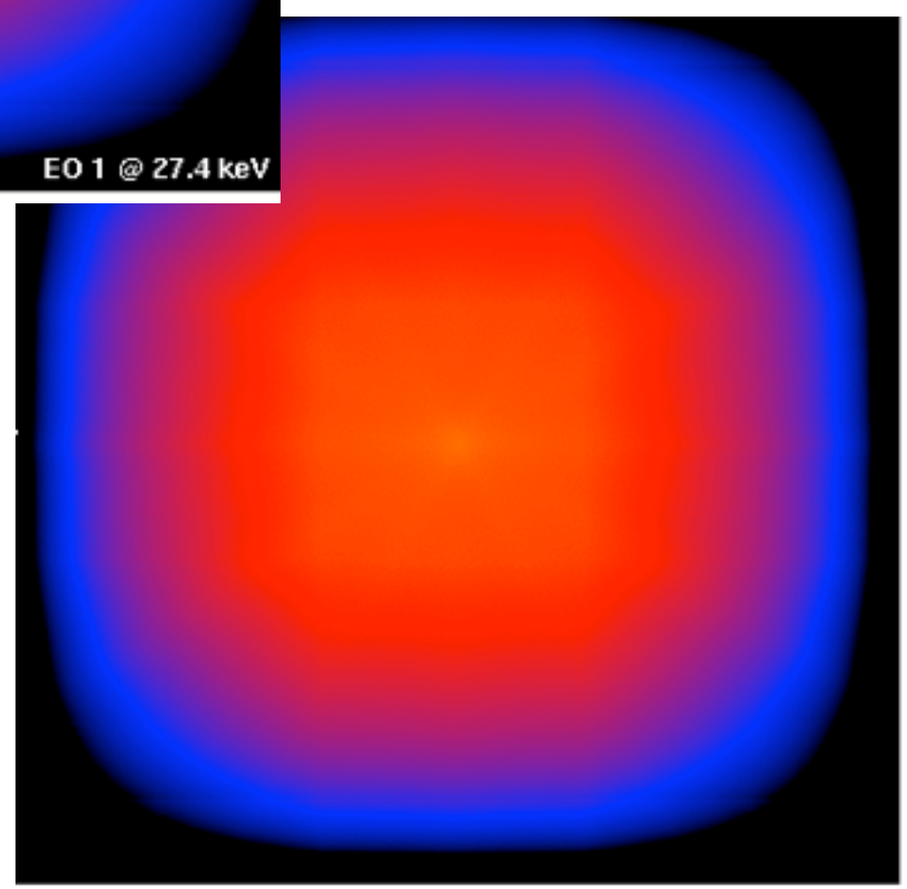
...but no decision yet to perform more Earth observations.

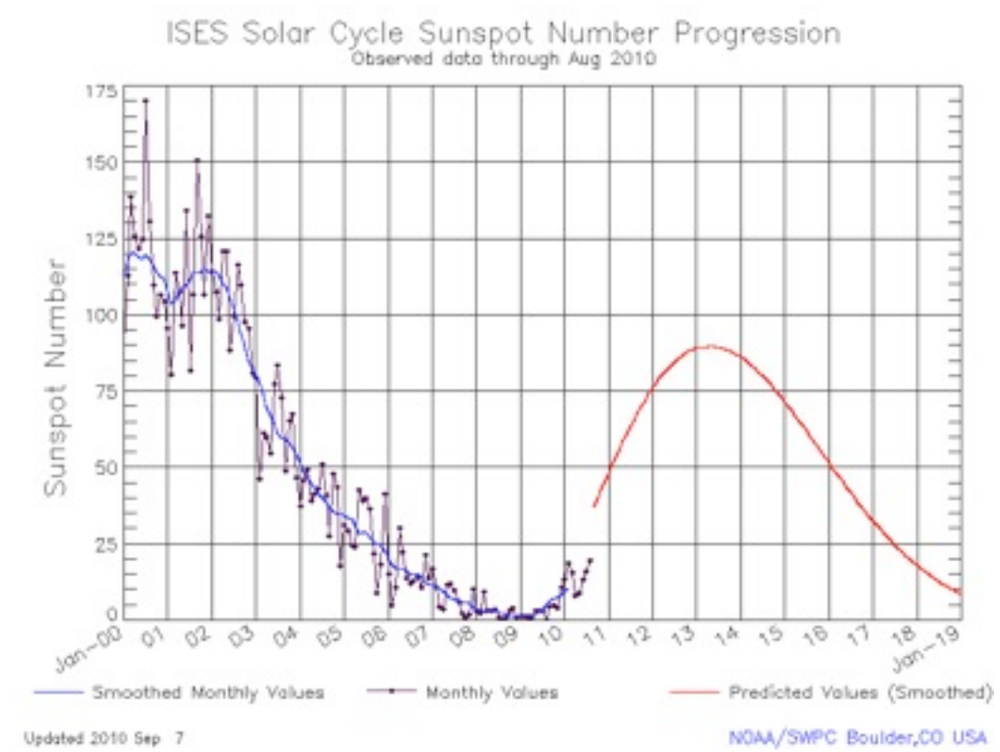
Gain on systematics
by looking away from the Galaxy with less cosmic-rays





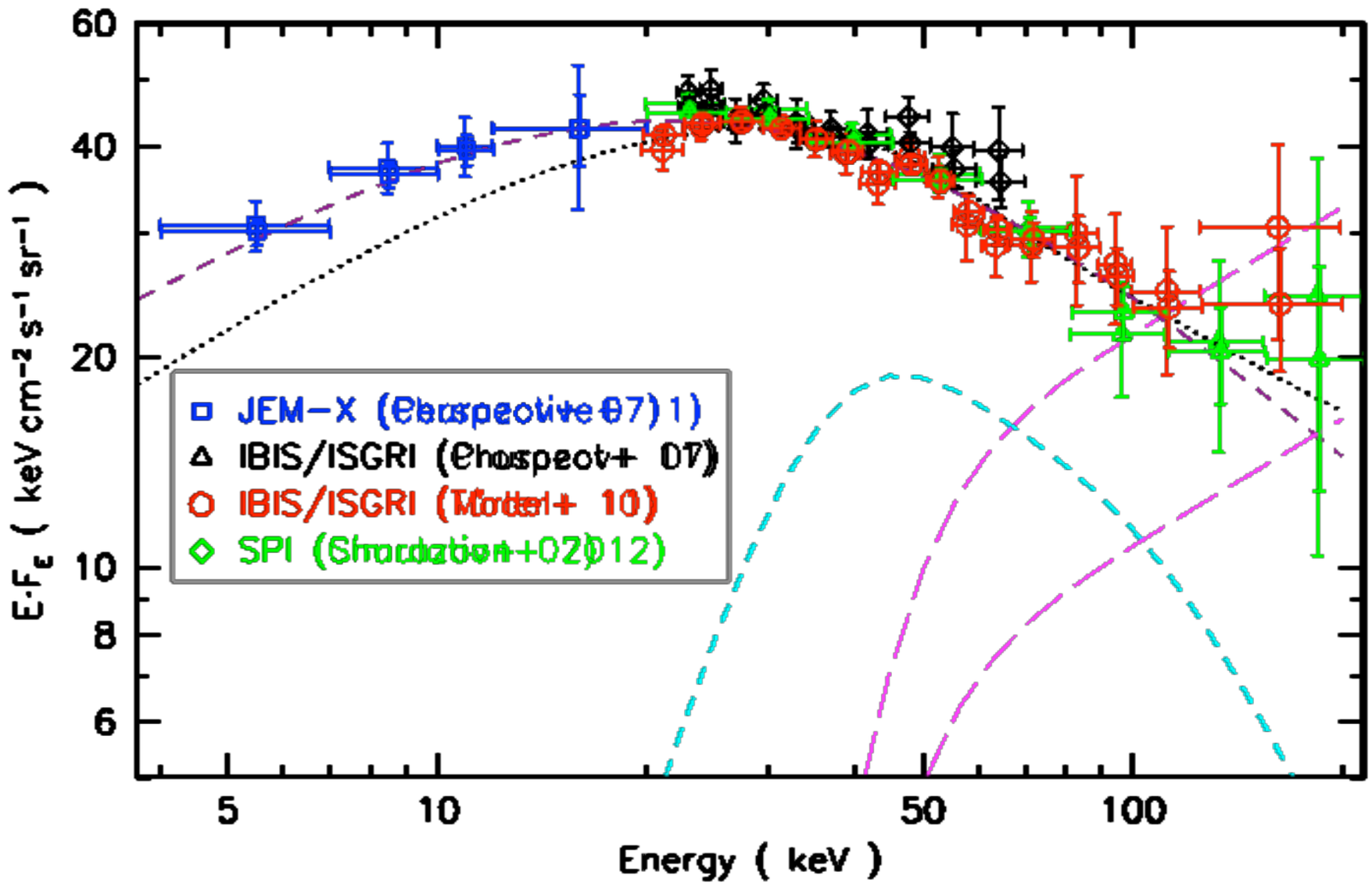
Sazonov et al. (2007)





Gain on statistics

by a factor 2 with 4x4 new Earth-occultation observations

(i.e. 4 days)

2011