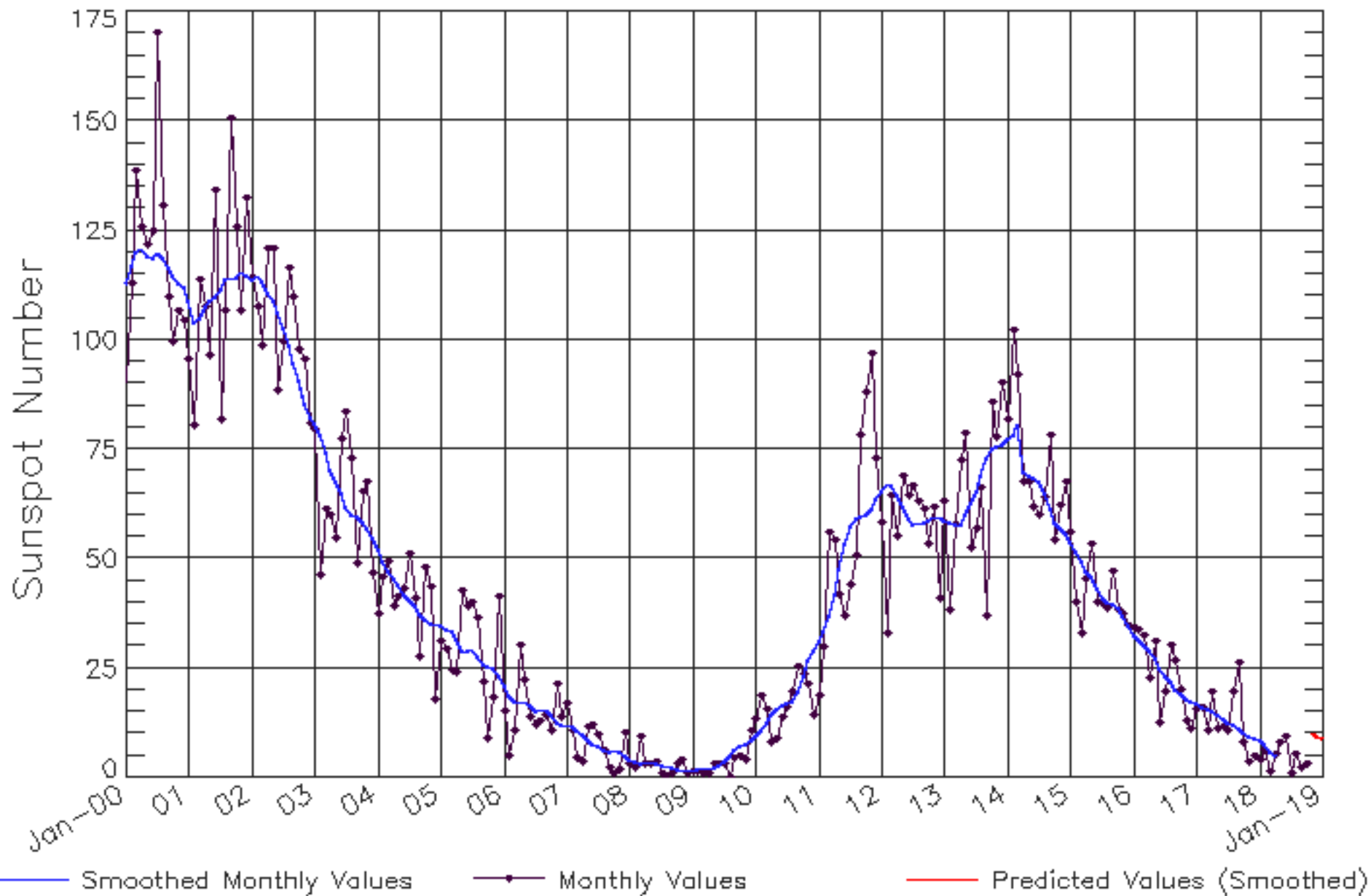


ISES Solar Cycle Sunspot Number Progression

Observed data through Oct 2018



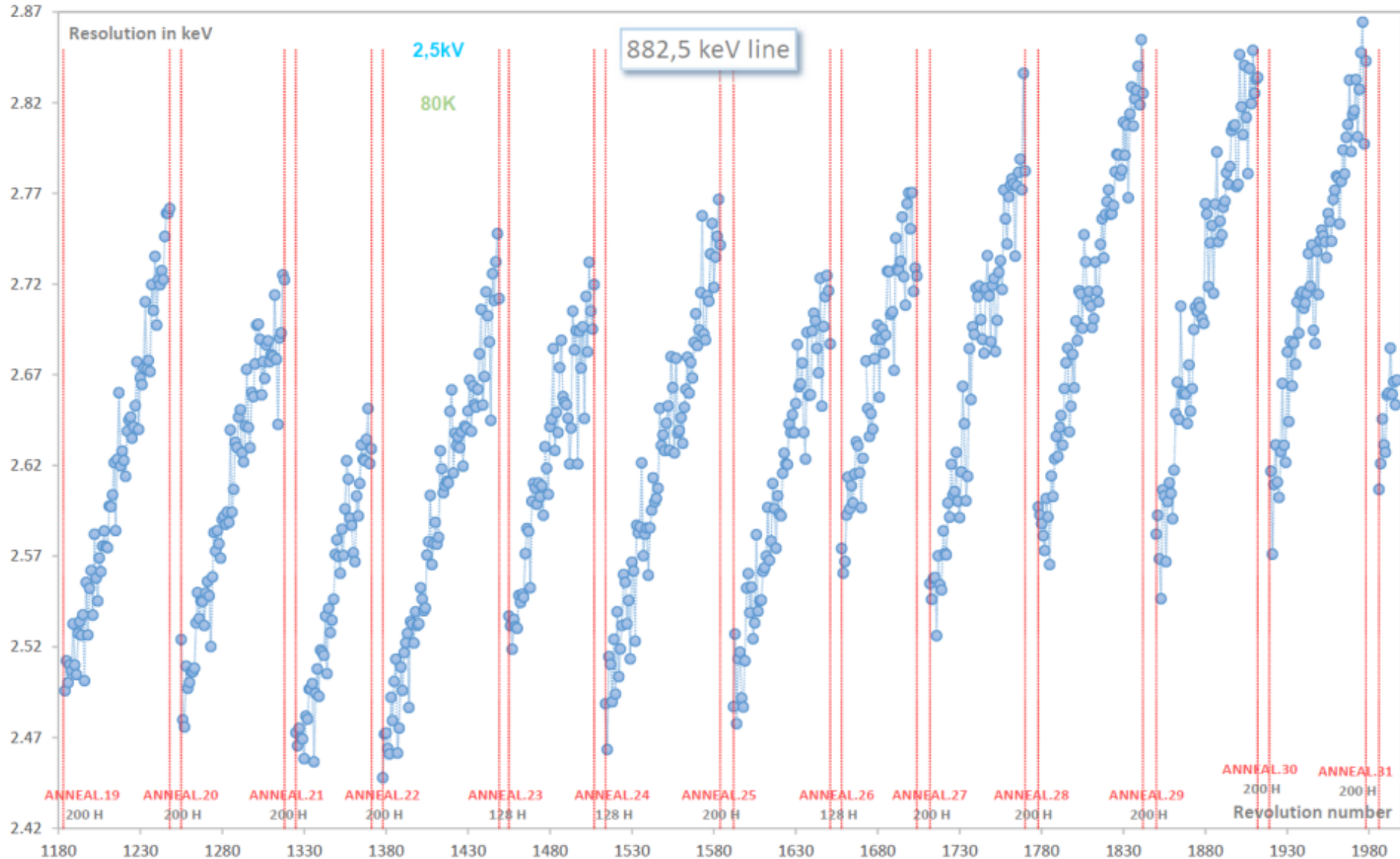
SPI CAMERA STATUS

ANNEALING 31th

- Annealing 31th July 21 – Aug 7
- Duration 200hrs
- Satisfactory recovery.

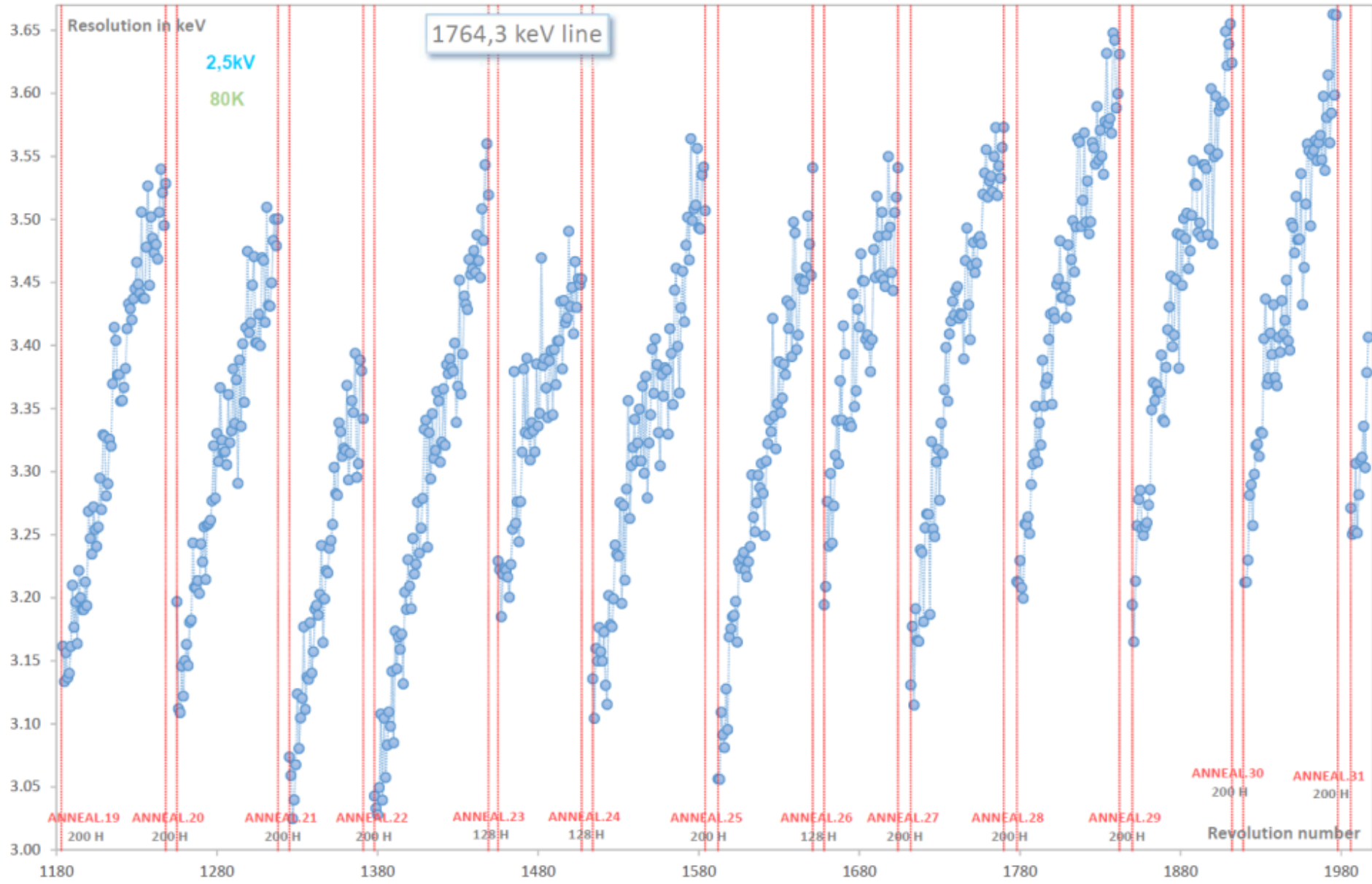
ENERGY RESOLUTION HISTORY: 882.5 keV

- Regular annealing (GeD at 105C) restore GeD energy resolution.

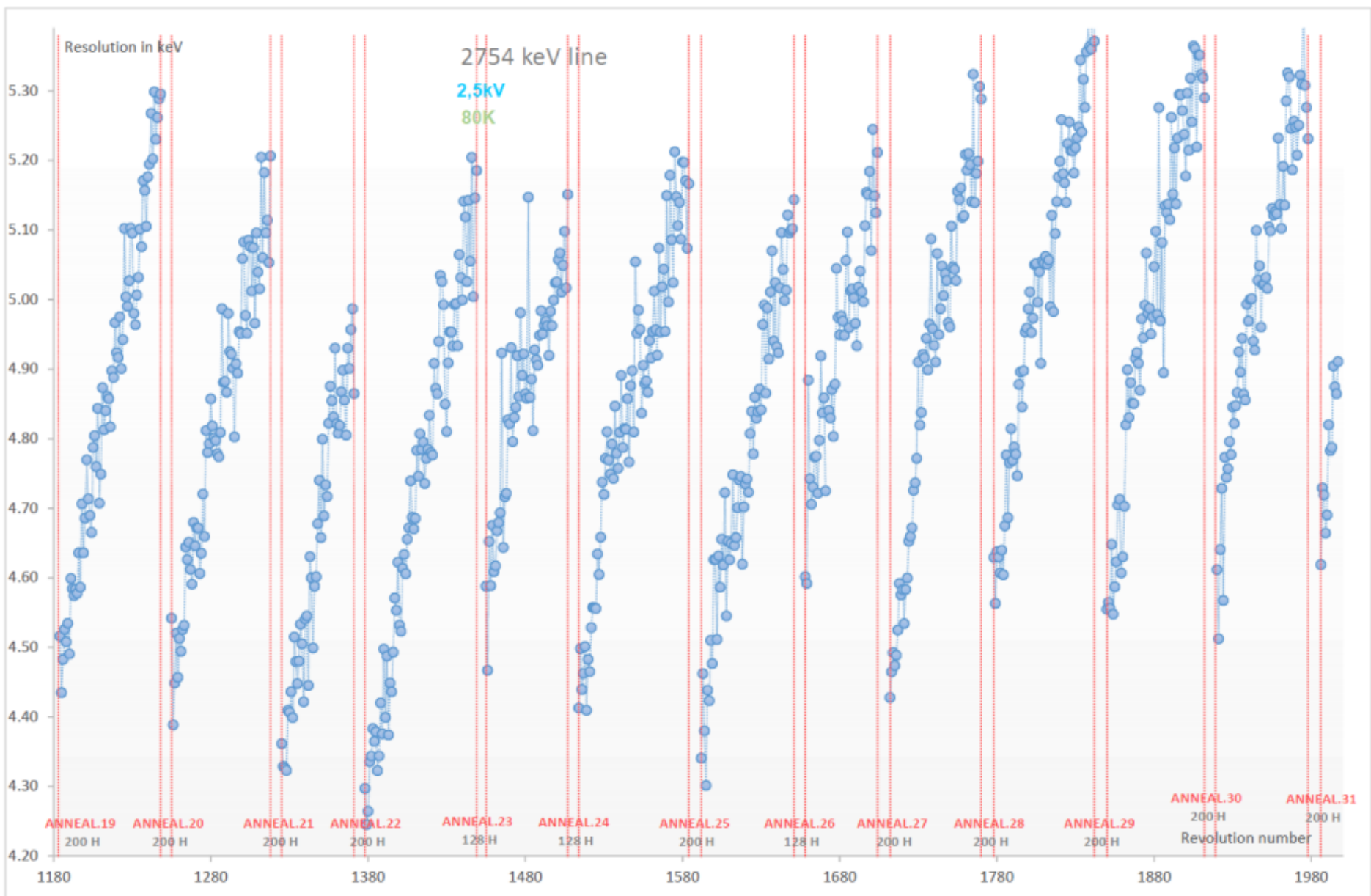


ENERGY RESOLUTION HISTORY: 1764.3 keV

- Regular annealing (GeD at 105C) restore GeD energy resolution.



ENERGY RESOLUTION HISTORY: 2754 keV



SPI DPE status

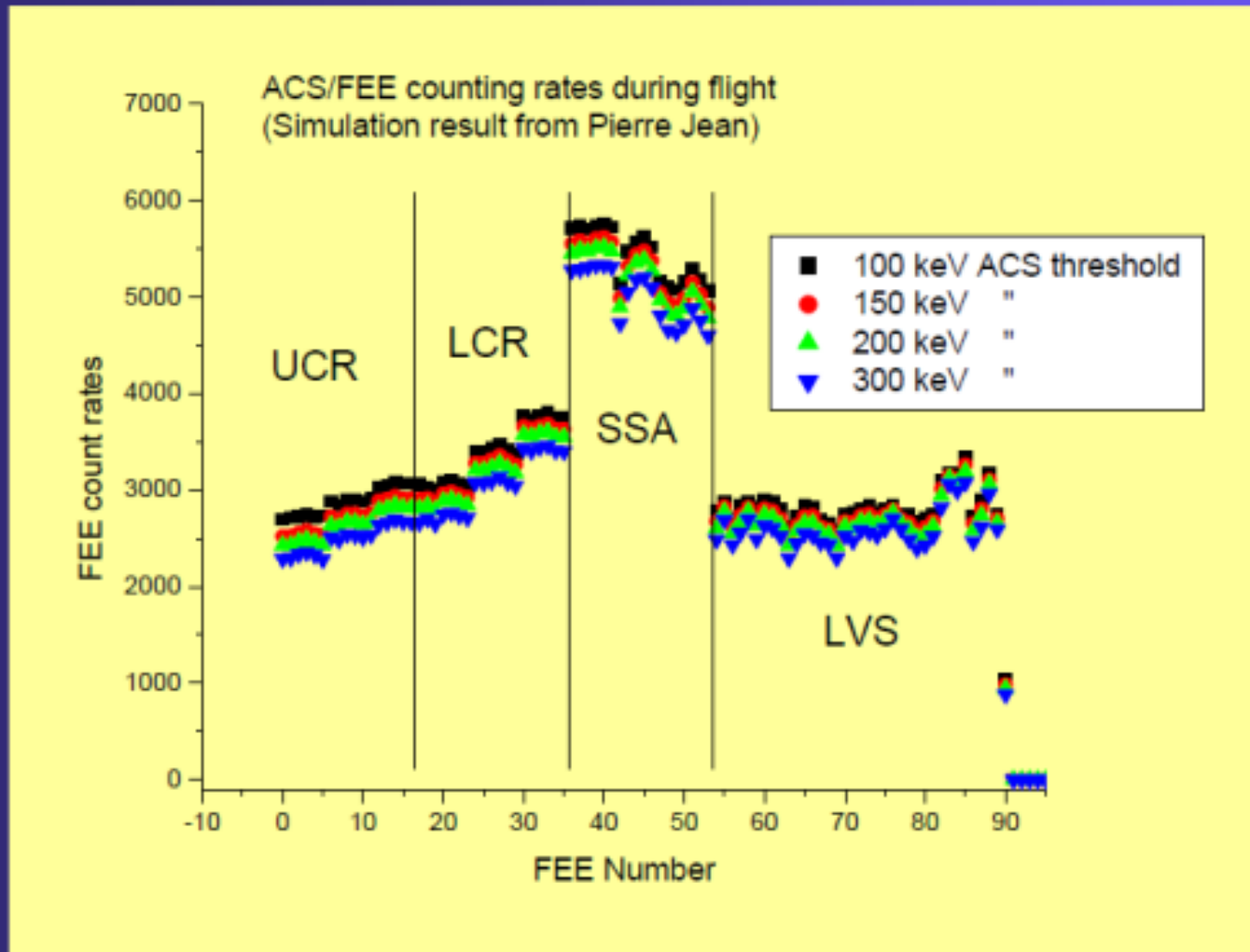
-
- Last week, DPE crashes...
- Problem in two memory locations.
- Problem is solved by disabling the building and transmission of on-board spectra.
- These spectra were used (in the current configuration) to store the vetoed events.
- No impact on science.
- Investigations are continuing...

- DPE2 has been successfully started.

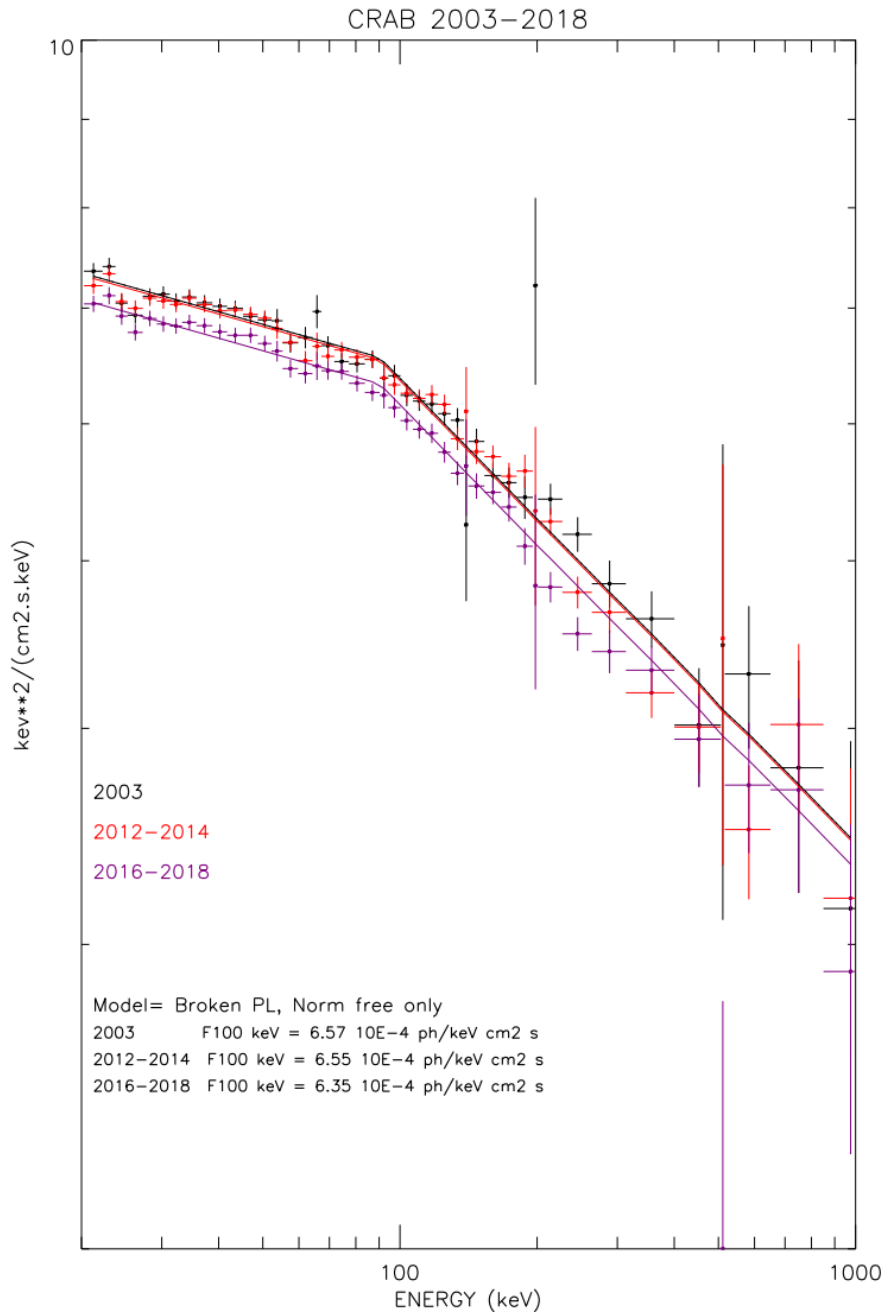
ACS status

- FEE of similar BGO blocks should have the same counting rate, they were aligned during commissioning.
- Now some significant deviations exist. (10-20%)
- This means that the thresholds are not “aligned”
- Rejection of bkg not “optimal”
- Background distribution not homogeneous.
- Tuning the ACS is a “simple” operation that I recommend to perform.

Simulated ACS/FEE counting rates during flight (Simulation performed by Pierre Jean)



SPI Crab calibration



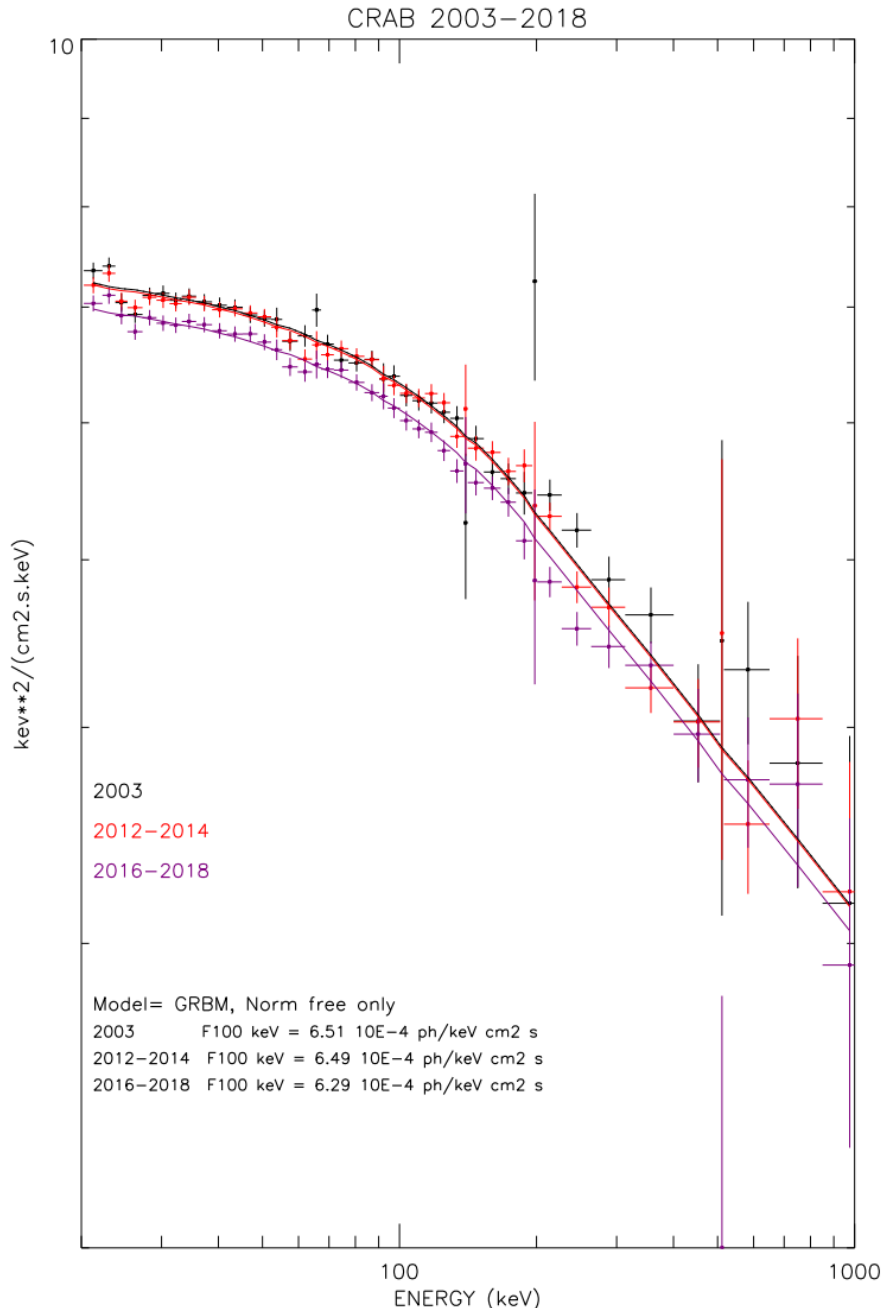
Broken Power-law

3 datasets fit simultaneously with shape parameters linked
0.7% of systematics

Best fit parameters

Alpha1	2.075	+/-	$0.5 \cdot 10^{-2}$
Alpha2	2.25	+/-	$1.2 \cdot 10^{-2}$
Ebreak	88	+/-	5 keV

SPI Crab calibration



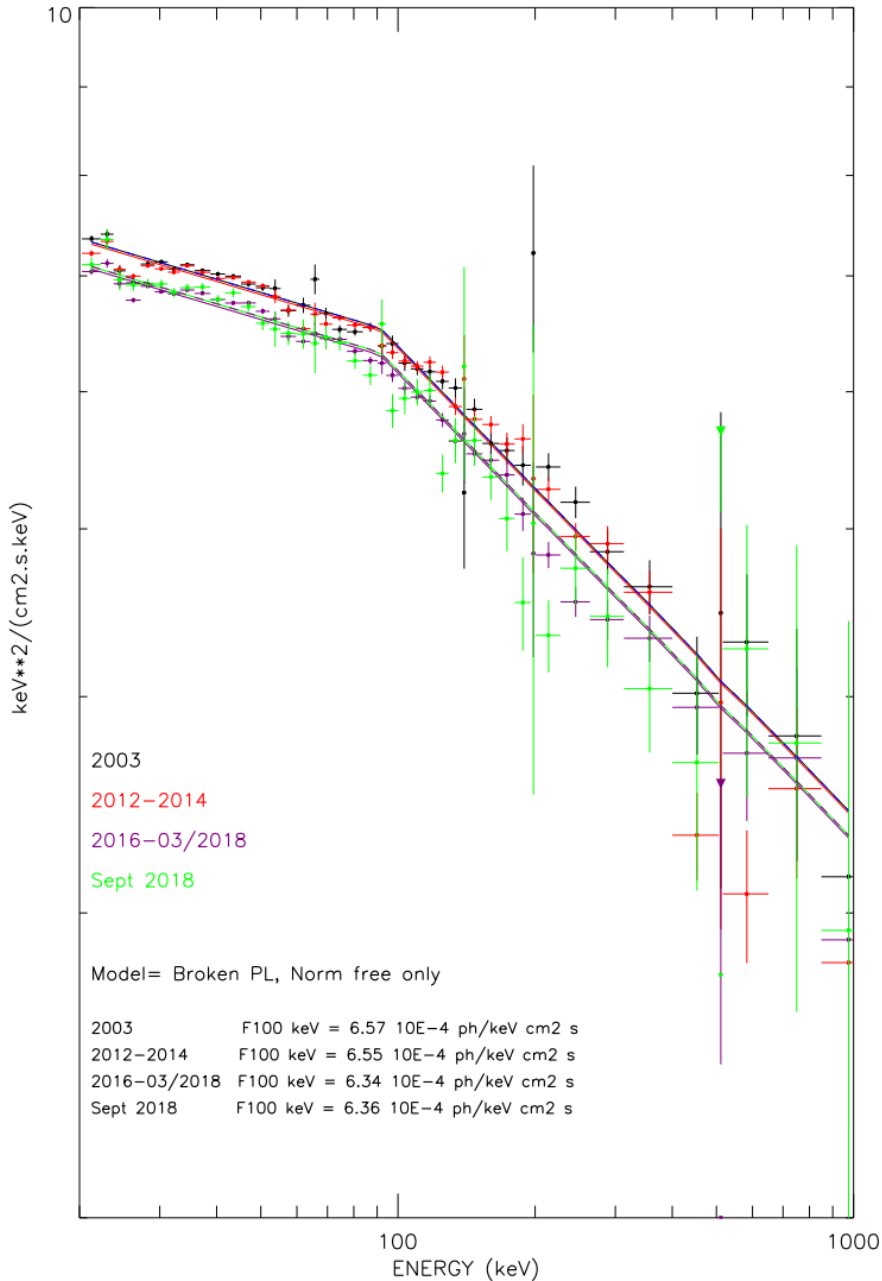
Band model
(2 power-laws joined by a smooth curvature)

3 datasets fit simultaneously with shape parameters linked
0.5% of systematics

Best fit parameters

Alpha	-1.99542	+/- 1. E-02
Beta	-2.33	+/- 3.6 E-02
Echar	568	+/- 50 keV

CRAB 2003-2018



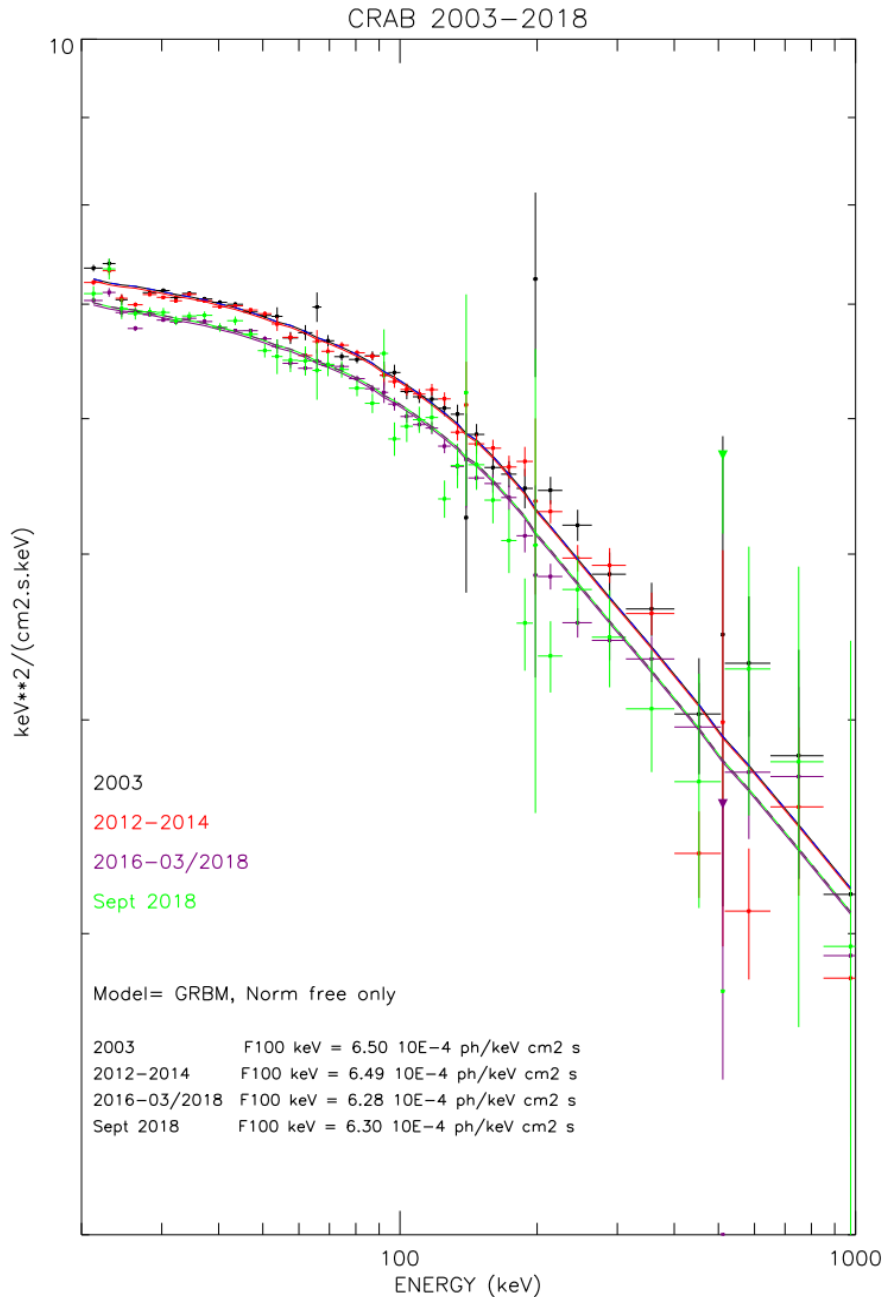
Broken Power-law

4 datasets fit simultaneously with shape parameters linked
0.7% of systematics

Best fit parameters

Alpha1	2.078	+/- 0.5 E-02
Alpha2	2.27	+/- 1.2 E-02
Ebreak	91.5	+/- 5 keV

SPI Crab calibration



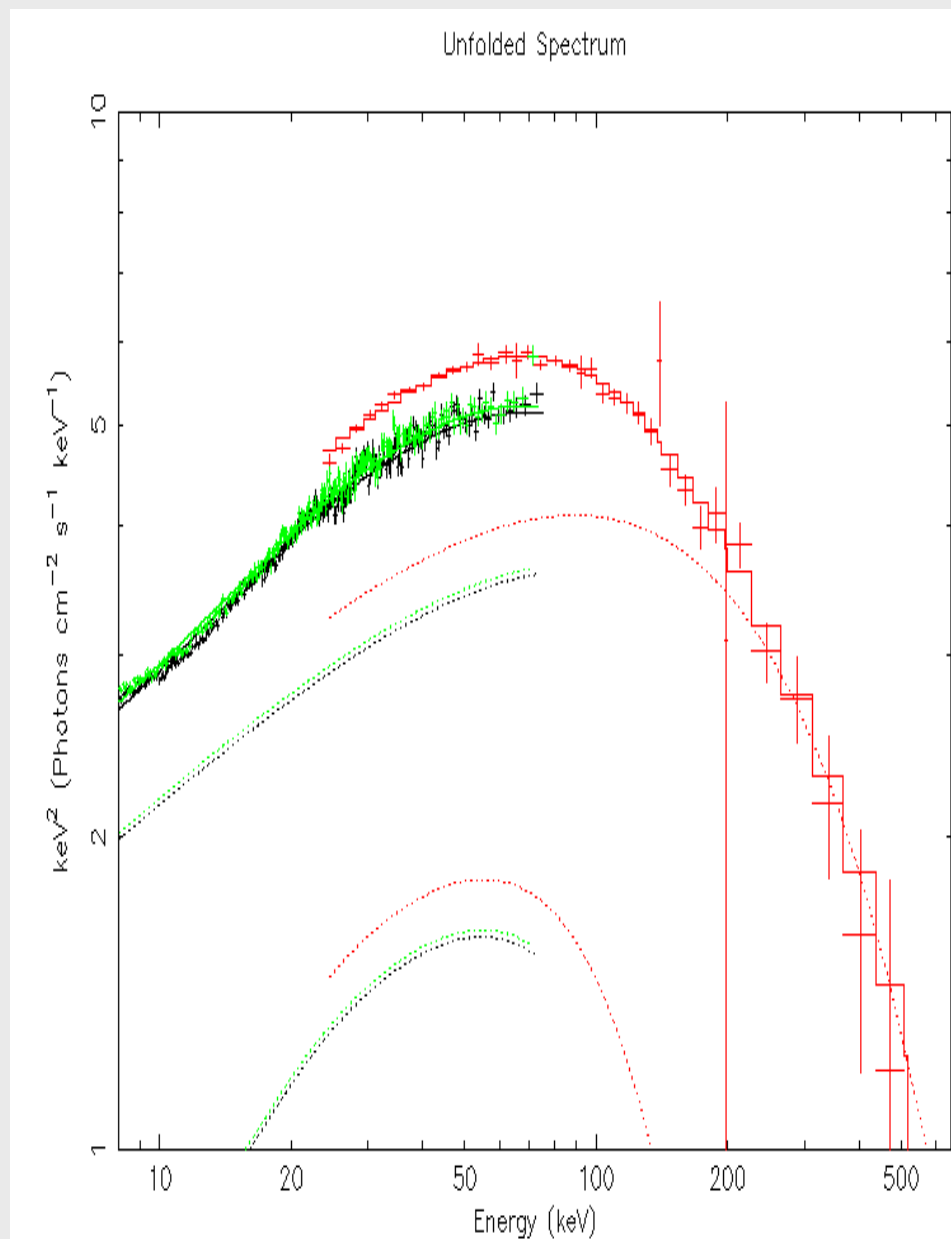
Band model
(2 power-laws joined by a smooth curvature)
4 datasets fit simultaneously with shape parameters linked
0.5% of systematics

Best fit parameters

Alpha	-1.99542	+/- 1. E-02
Beta	-2.33	+/- 3.6 E-02
Echar	568	+/- 50 keV

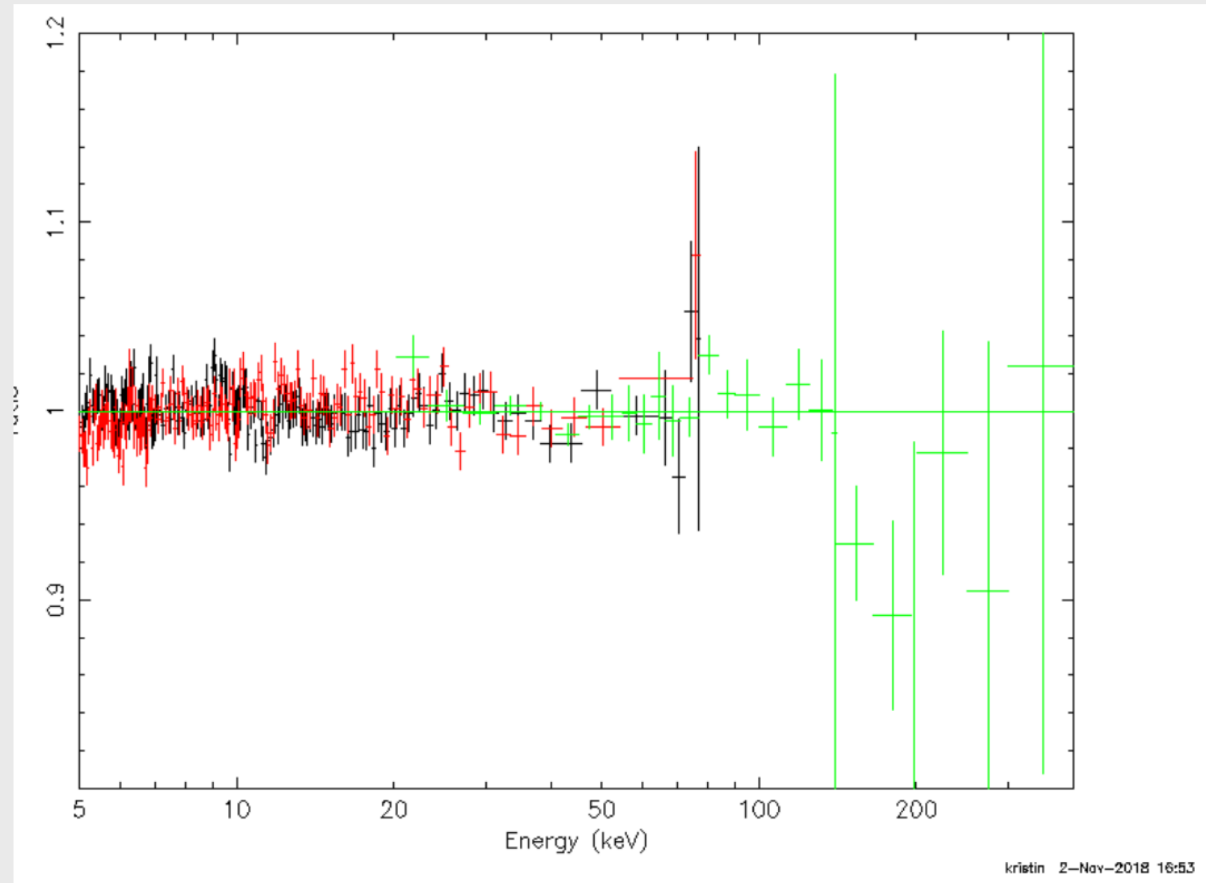
Cygnus X1: SPI / NuStar cross calibration

- Common fit :
 - $E > 20$ keV
- Shapes are similar
- Normalisation differs by 12-16% depending on models
- 35ks NuStar (20/05/2014)
- 256ks SPI (5-6/05/2014 and (20/05/2014)



MAXI J1820: SPI / NuStar cross calibration

IACHEC



- Common fit :
 - $E > 20$ keV
- Shapes are similar
- Normalisation differs by 20%.

SPI budget in France

- Operation support – performance monitoring will continue on best effort basis.
- Calibration activities will be maintained (E. Jourdain and JPR)

