

8th annealing report

For this eighth annealing, the annealing duration has been extended at 192 hours instead of 125 hours.

The major events concerning this annealing are described below:

- o The 8th of June around 00h50, the annealing heaters have been switched on.
- o The 9th of June around 12h00, the annealing Ge detectors temperature reached 105 °C. This temperature was maintained during 192 hours.
- o The 17th of June around 12h00, the annealing heaters have been stopped.
- o The 20th of June around 18h00, the cryocoolers have been switched on.
- o The 24th of June at 15h00, the camera has been switched on at 109K.

5.1. GeD 4 and GeD 12 anomaly

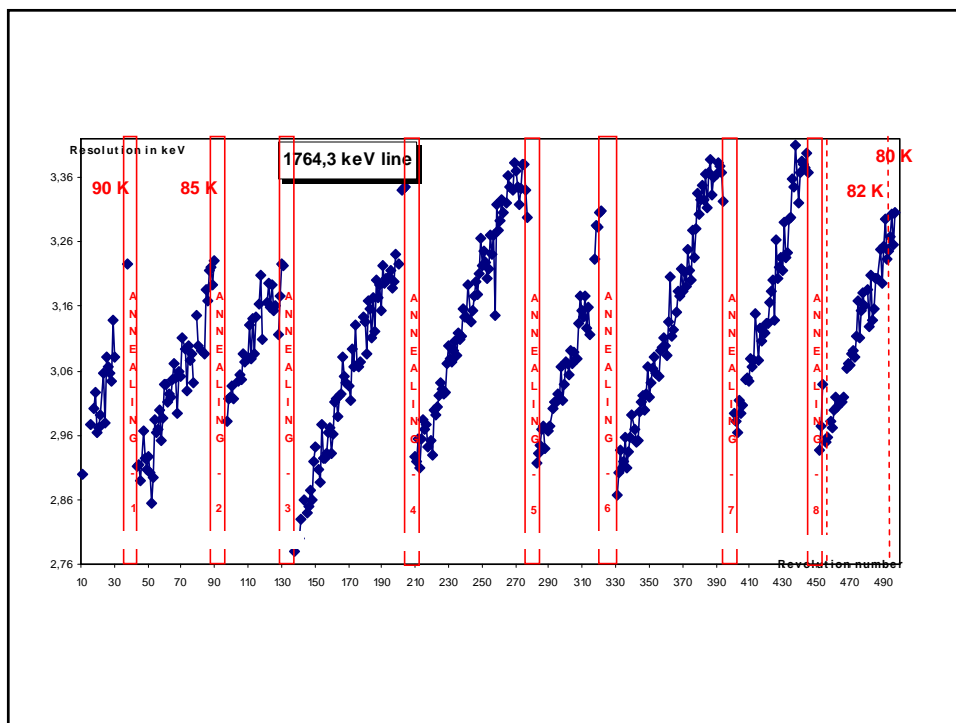
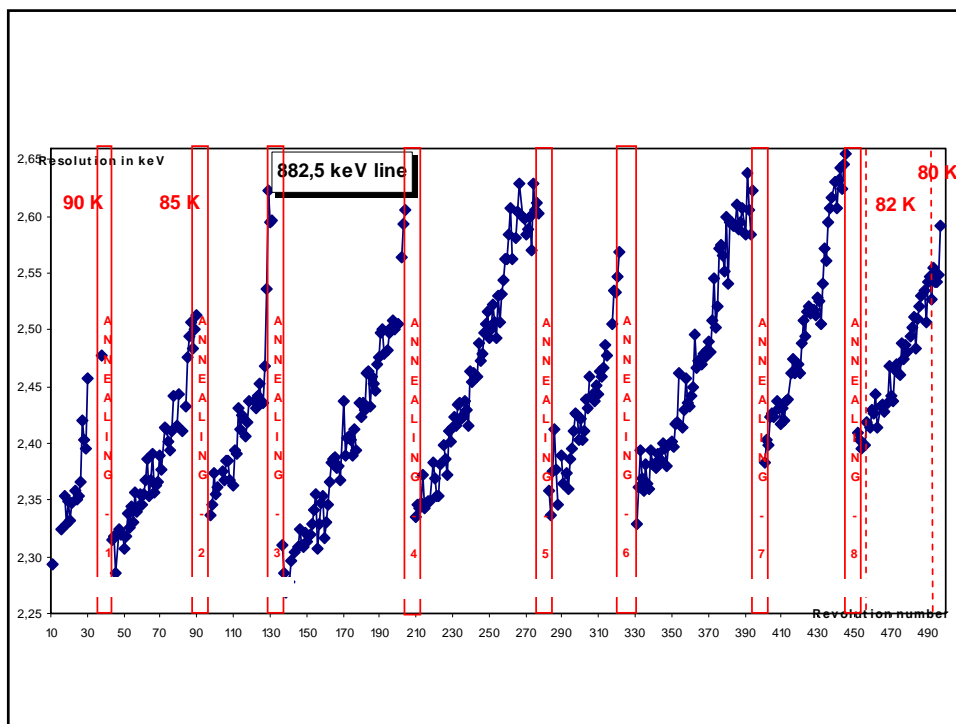
The GeD 4 and GeD 12 have the same behaviour than after the 6th annealing:

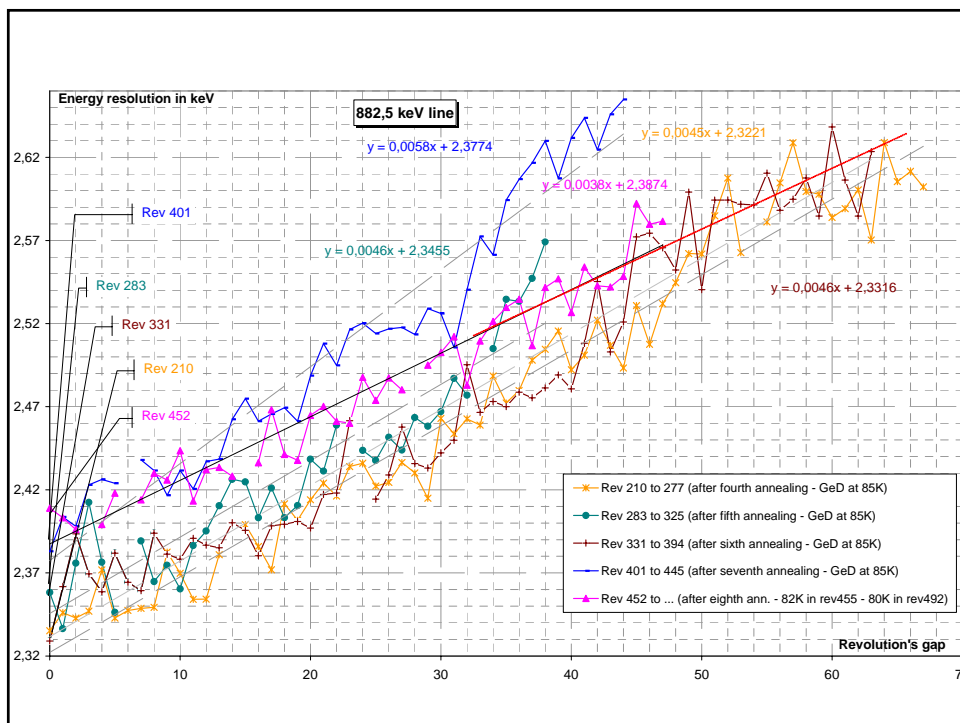
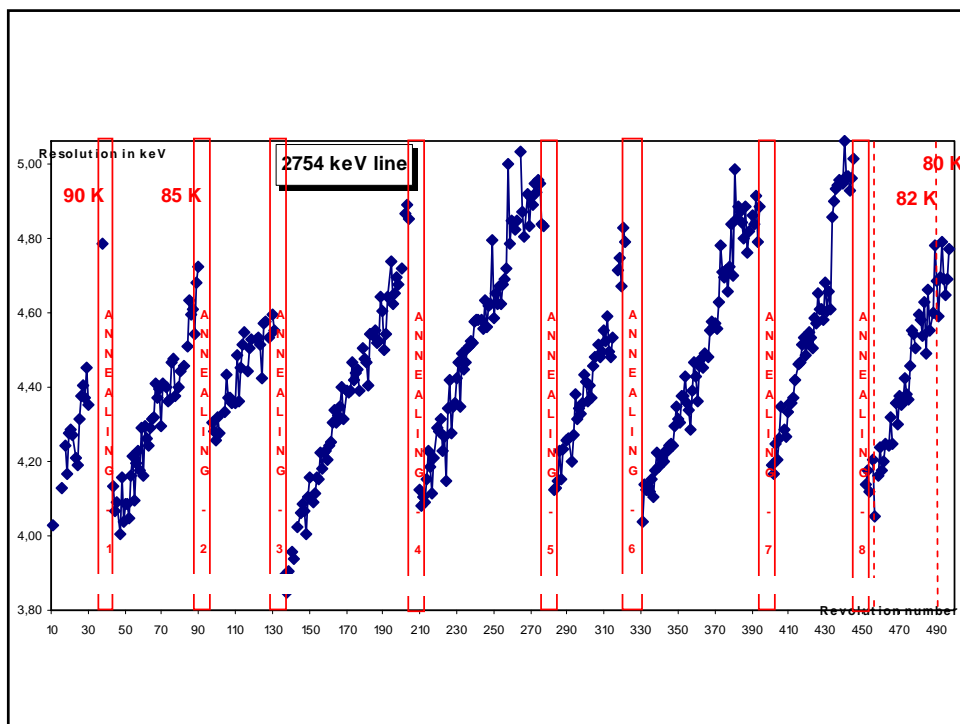
Temperature in Kelvin	108,8 to 108,3	107,6	91,4 to 90,4	90,3	90,2 to 90	89,9 to 87,5	87,4 to 85,7
High Voltage	2 kV	3 kV	GeD#12 at 1,5 kV	GeD#12 at 3 kV	GeD#12 at 3,5 kV	GeD#12 at 3 kV	4 kV
Resolution in keV for GeD#12	3,12	5,93	2,08	2,29	2,29	2,12	2,24

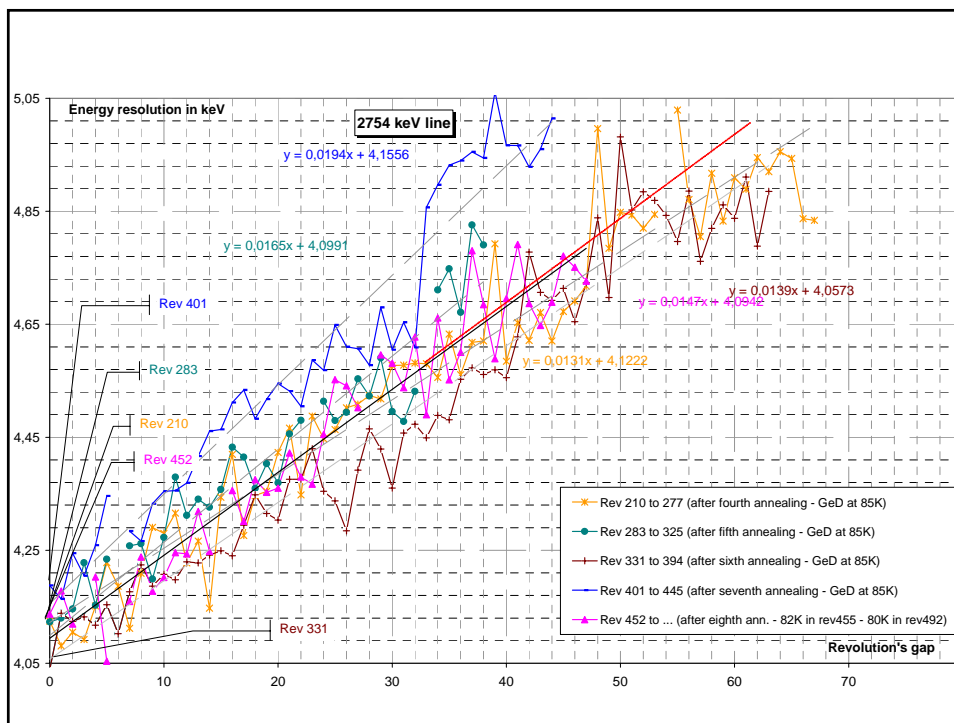
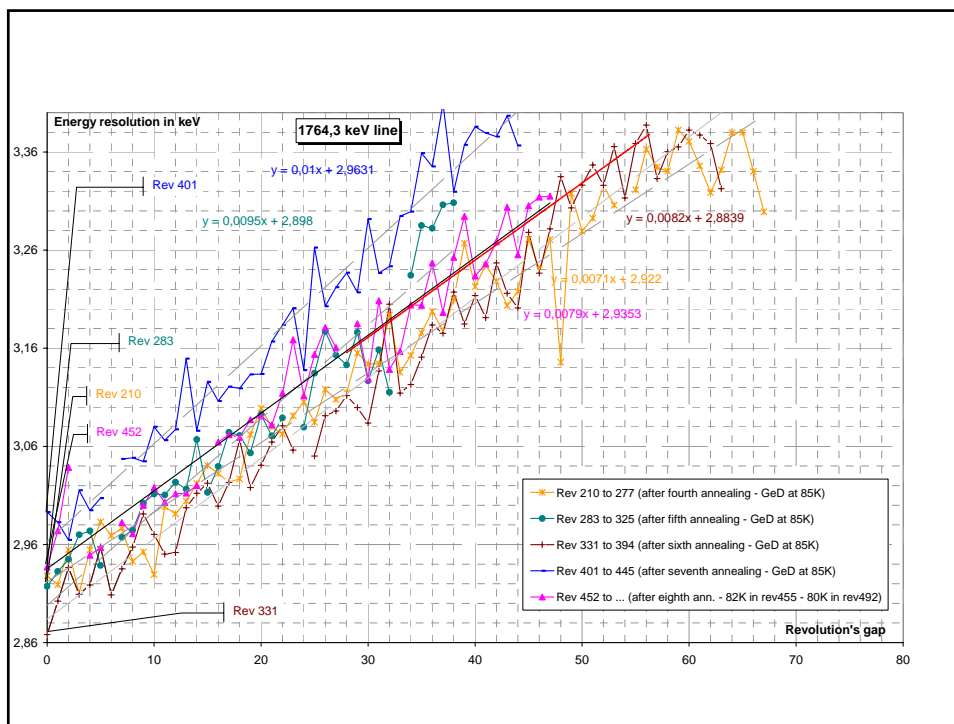
- GeD 12 does not have a good energy resolution at “high” temperature (around 110 K) and shows a clear degradation of the resolution with the High Voltage. At “low” temperature this abnormal behaviour is still significant. More tests will be required to optimize the HV. These tests will be done when the “final” temperature of 82K will be reached.
- GeD 4 is degraded at high and low temperatures (same behaviour than after the 6th and the 7th annealing)

5.2. GeD 15 case

The GeD 15 energy resolution is normal now.







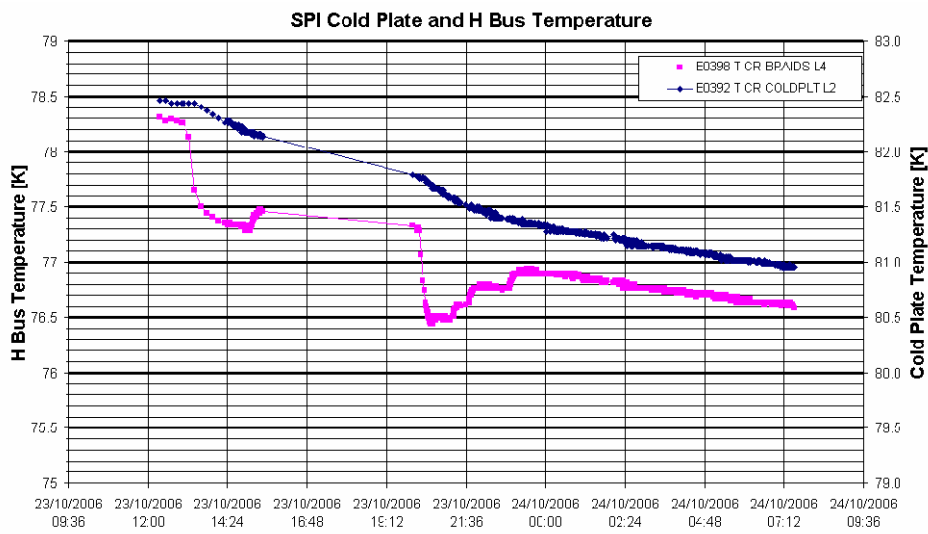
GedD degradation versus Temp

- Temp decrease lead to slower degradation approx 30%.
- This is due to the increase of charge carrier velocity: less trapping for the SAME physical degradation.
- Slope should reduce at 80K

Next annealing

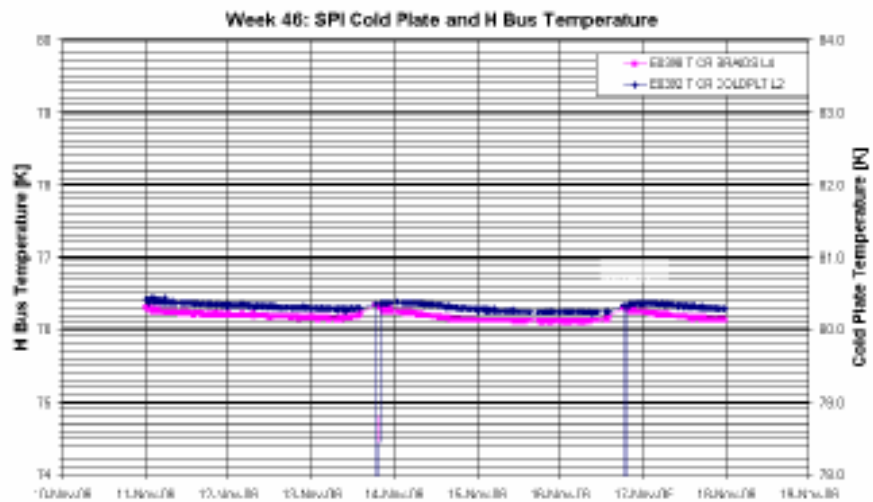
- Transition at 85K has been postponed:
 - Complex temp history of this period.
 - Will be requested for annealing 10
- We can anticipate a non perfect recovery
- Annealing December 4th to Dec 22th

80 K Operation : October 24th 2006



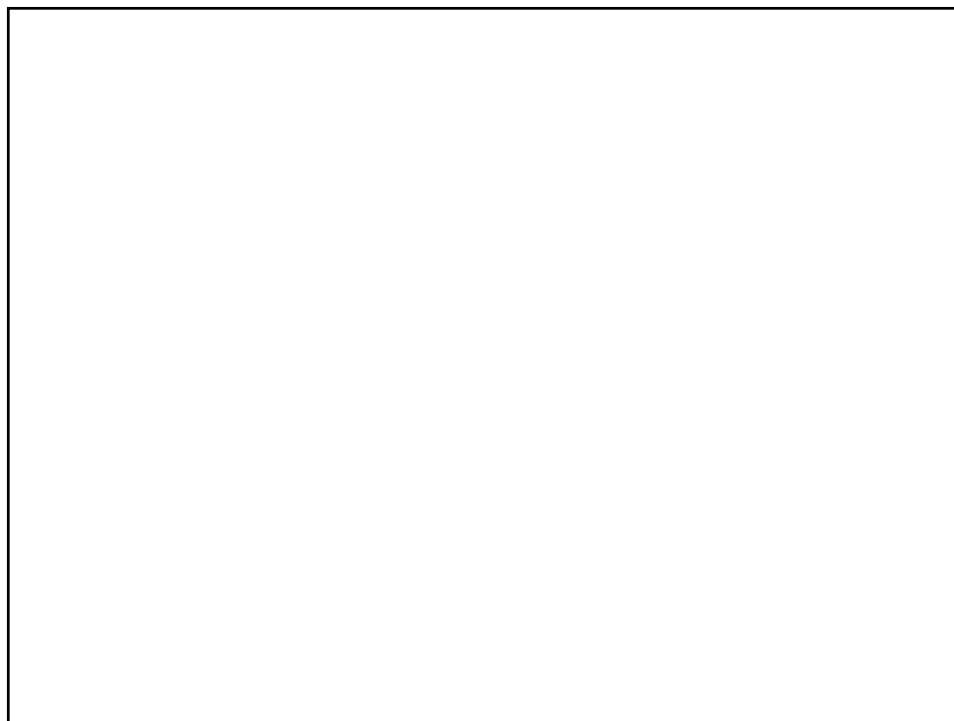
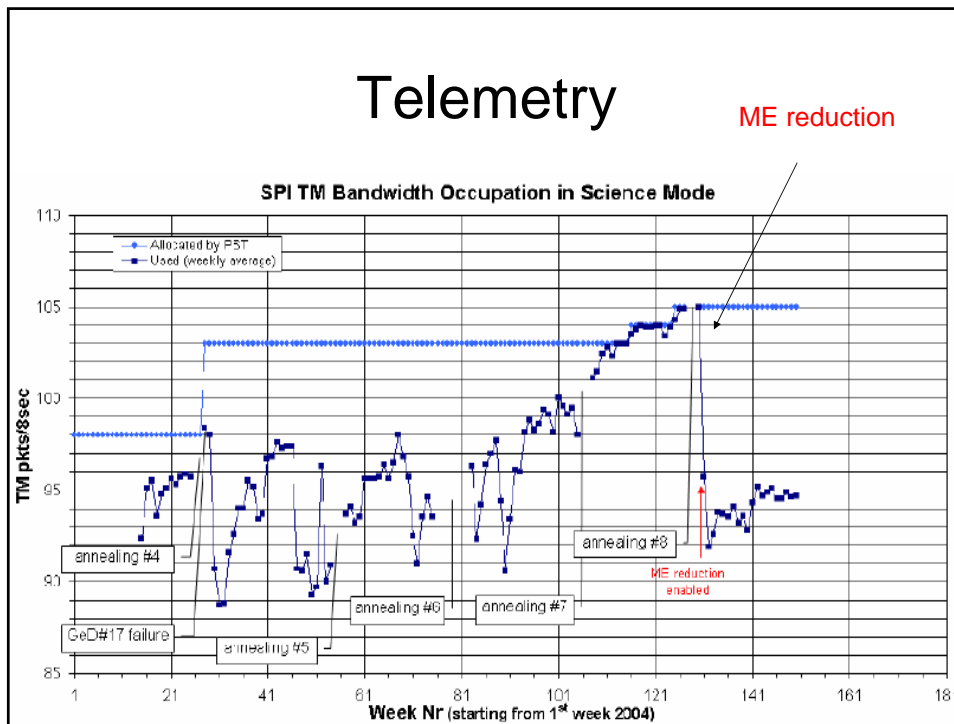
No problem to report.

It is too early to quantify the reduction of the degradation slope



Telemetry

ME reduction



FEE81 anomaly

- Alert from FEE81: HV outside limits:
 - Counting rate fluctuations:
- We reduce the HV to the minimum
 - Reduction of alerts are of fluctuations
- FEE81 HV has been switched-off
 - No impact on science

Software

- 2 anomalies probably connected to SEU
 - INT_SC-160 2006-10-11 To be closed
 - INT_SC-155 2006-07-26 To be closed
- Wrong on request
 - INT_SC-70 2003-11-20 : To be fixed next V

Next version

- Spectra scaling function: CPU saving
- 8s sampling rate for:
 - temp, HV, Preamp offset
- Reacquisition of 640/3840 HK after mode transition: improve MOC operation
- To be uploaded in January

Crab calibration: 5x5 Dither in 483 ??

