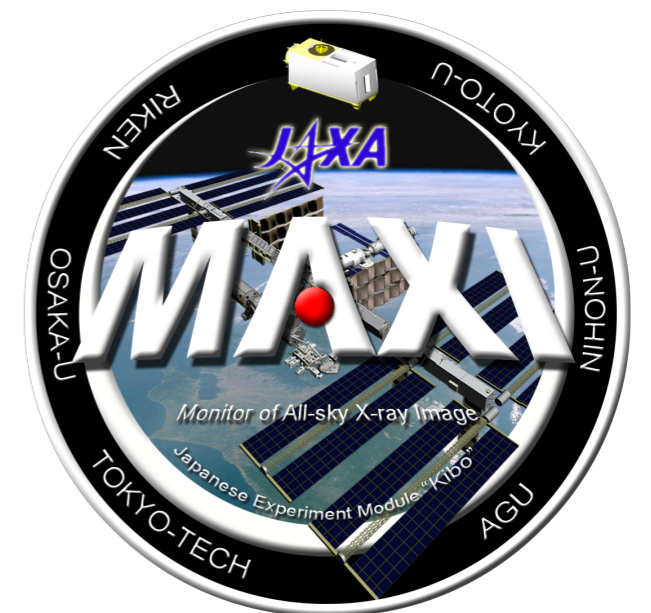
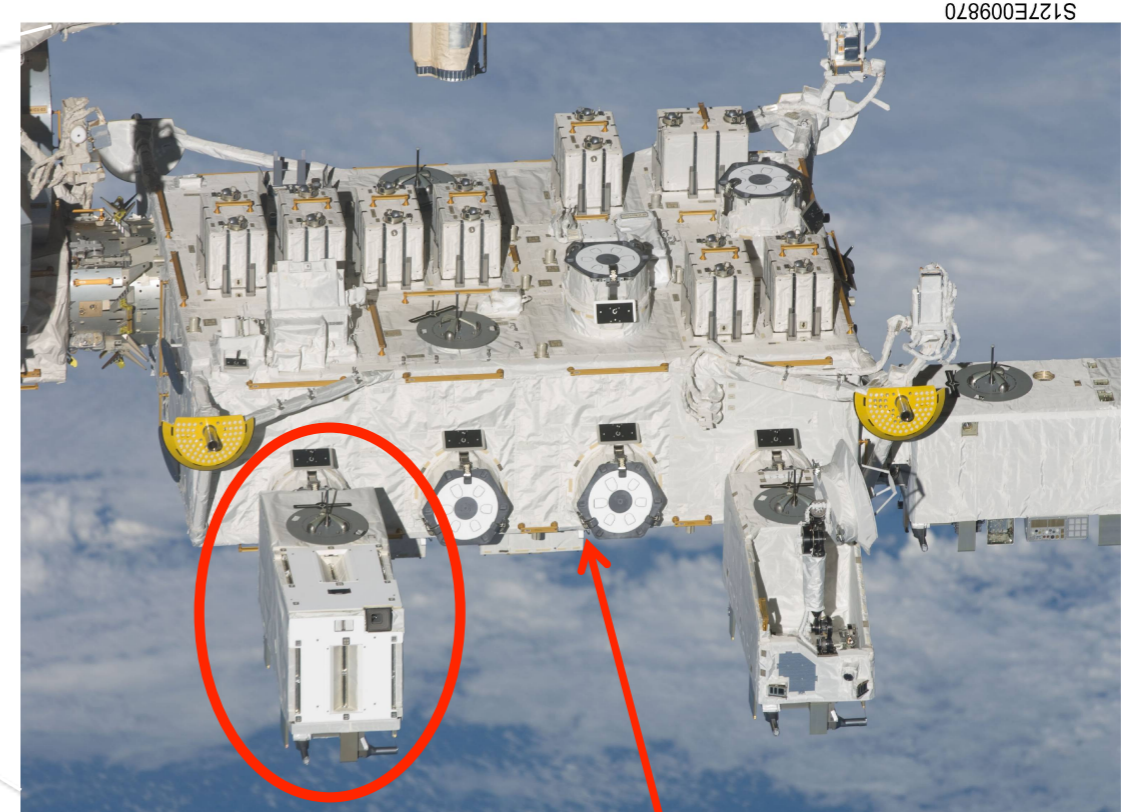
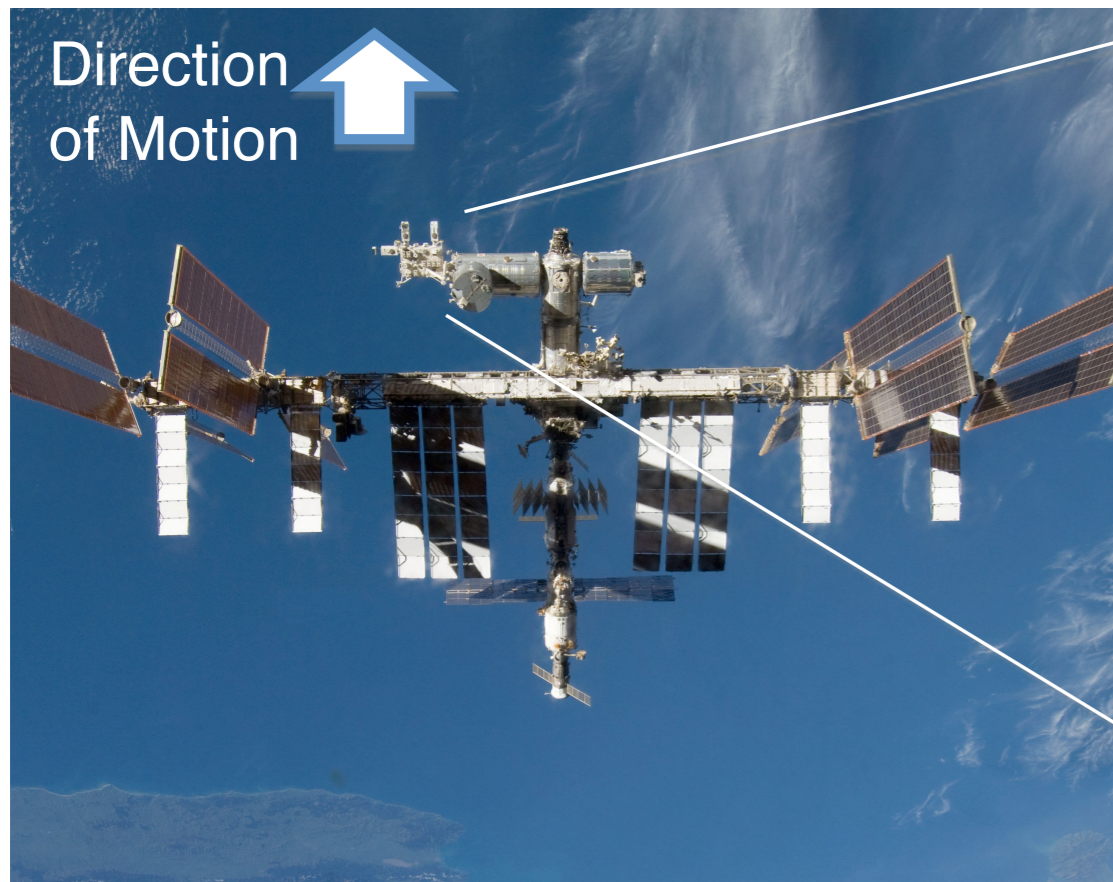


Calibration Status of MAXI (SSC)

Masashi Kimura (JAXA)
on behalf of MAXI team



MAXI (Monitor of All-sky X-ray Image) on ISS

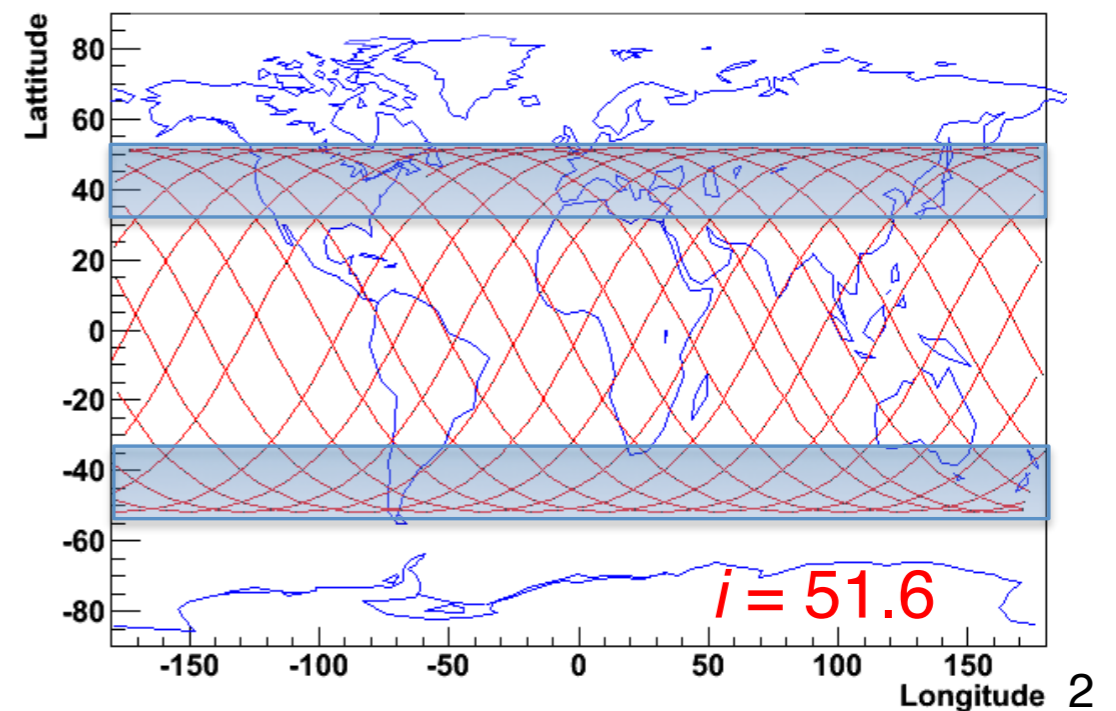


028600E7ZLS
S127E009870

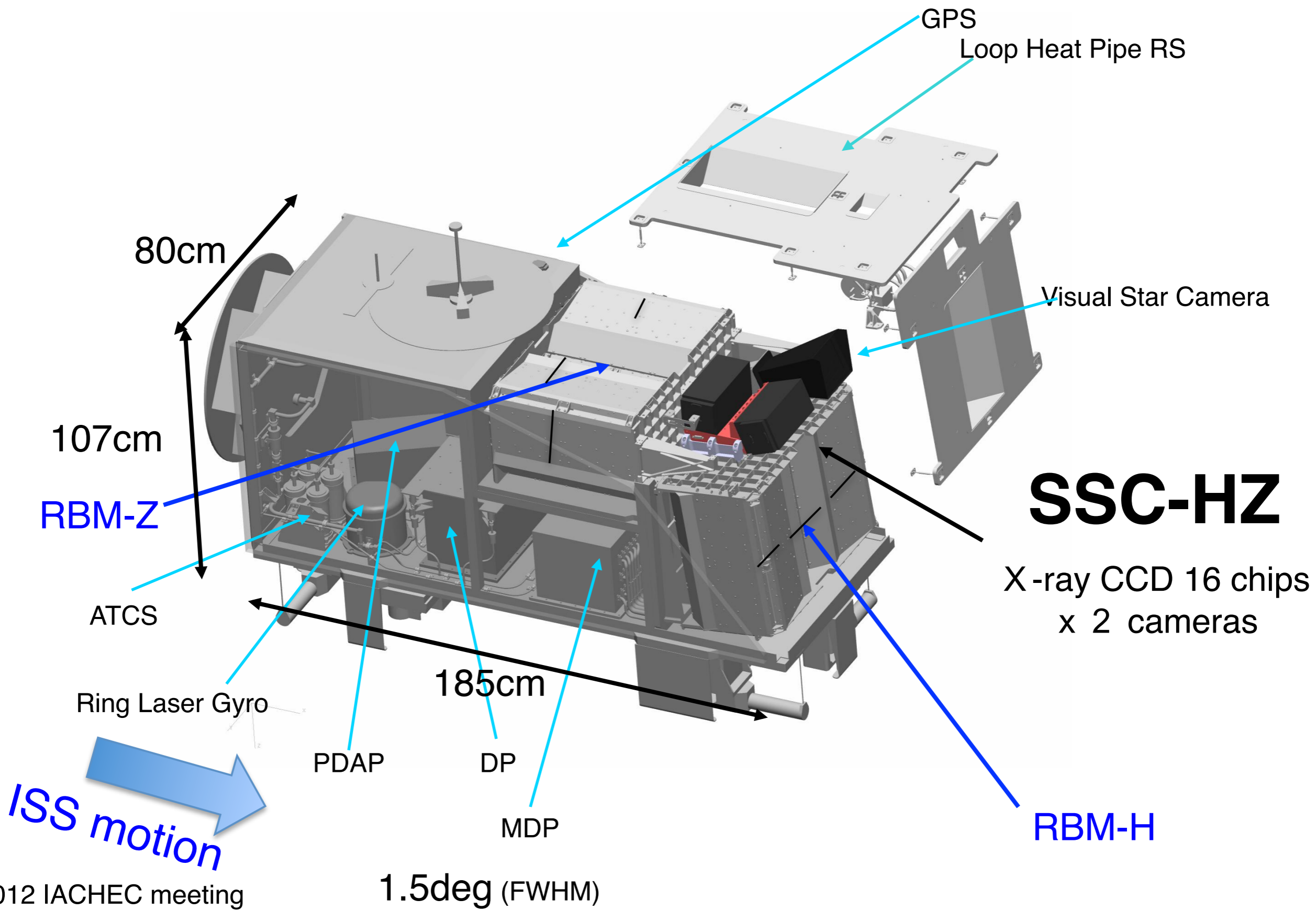
MAXI

JEM EF

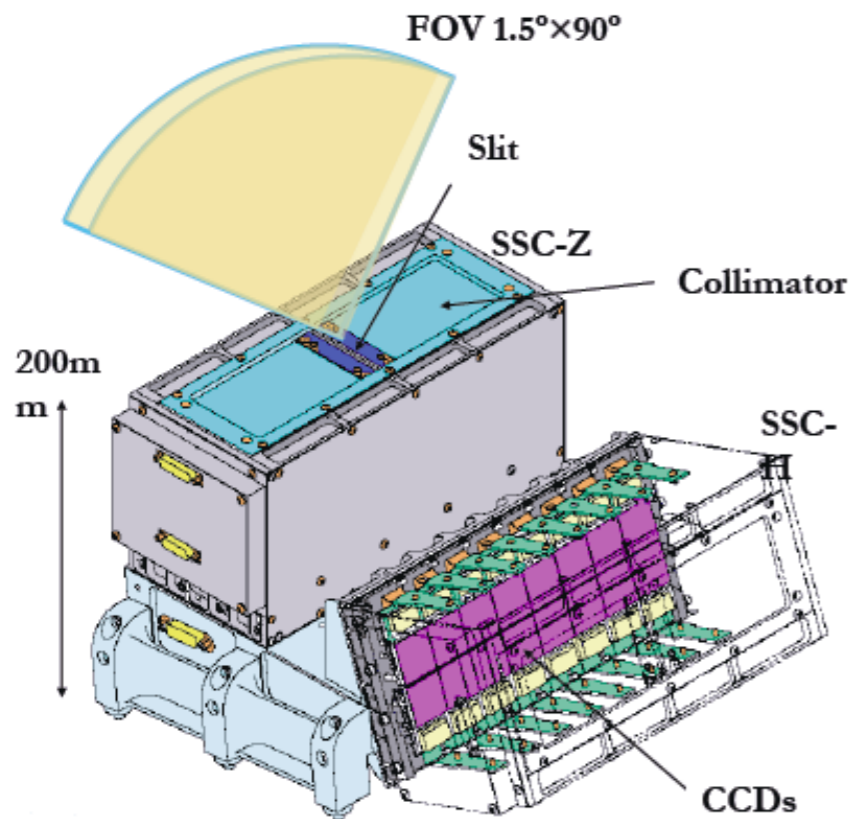
- The first astronomical mission on ISS
- Attached on ISS experimental module on **July 23 2009**.
- First Light on **August 15 2009**.
- Large inclination angle (51.6 deg)
- Heavy ISS structures



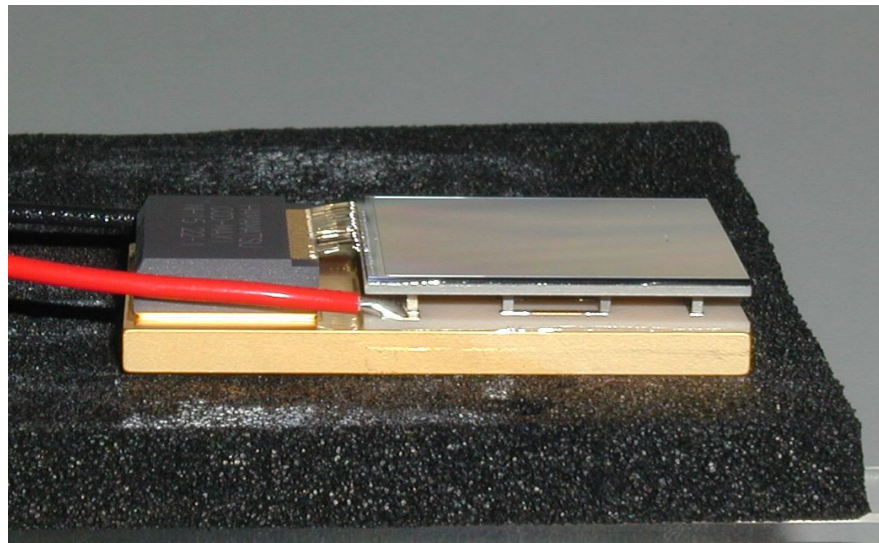
MAXI Payload



SSC instrument

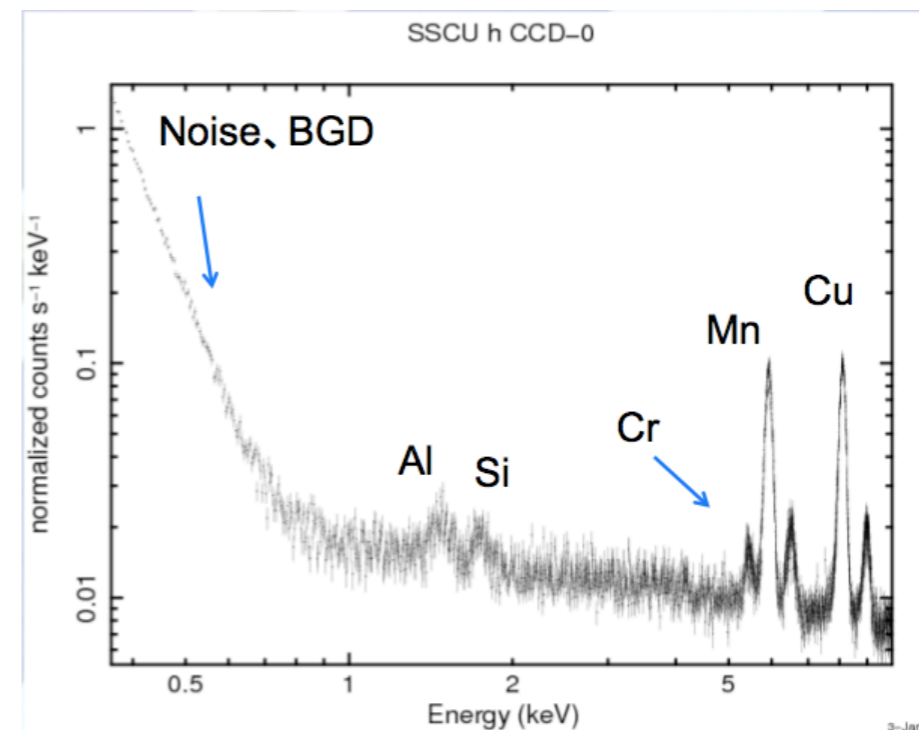
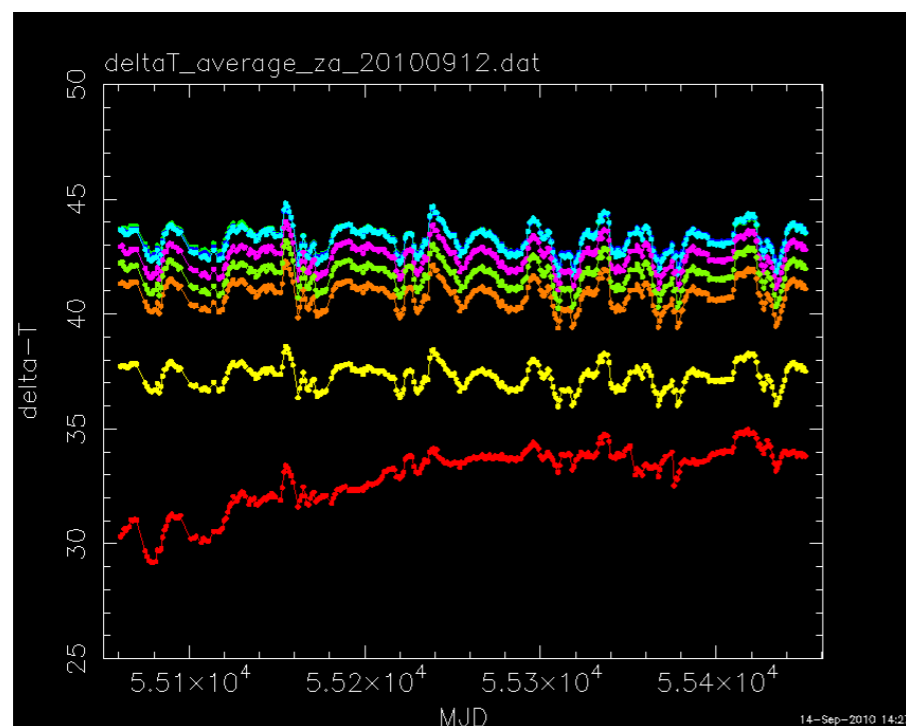


- 16 CCDs per camera x 2 (H, Z view) achieve 200 cm²
- 24x24μm x1024x1024 pixels
- Front Illuminated (FI) chip
- One readout per camera (16 CCDs)
- Parallel-sum mode 64 binning
 - for 1-D sensitivity and fast readout of large CCD.
- 6sec time resolution.
- Charge-Injection functionality for radiation tolerance.
- Cooled by radiator (~-20°) and Peltier (~-60°) device
- FOV of 90deg × 1.5deg × 2

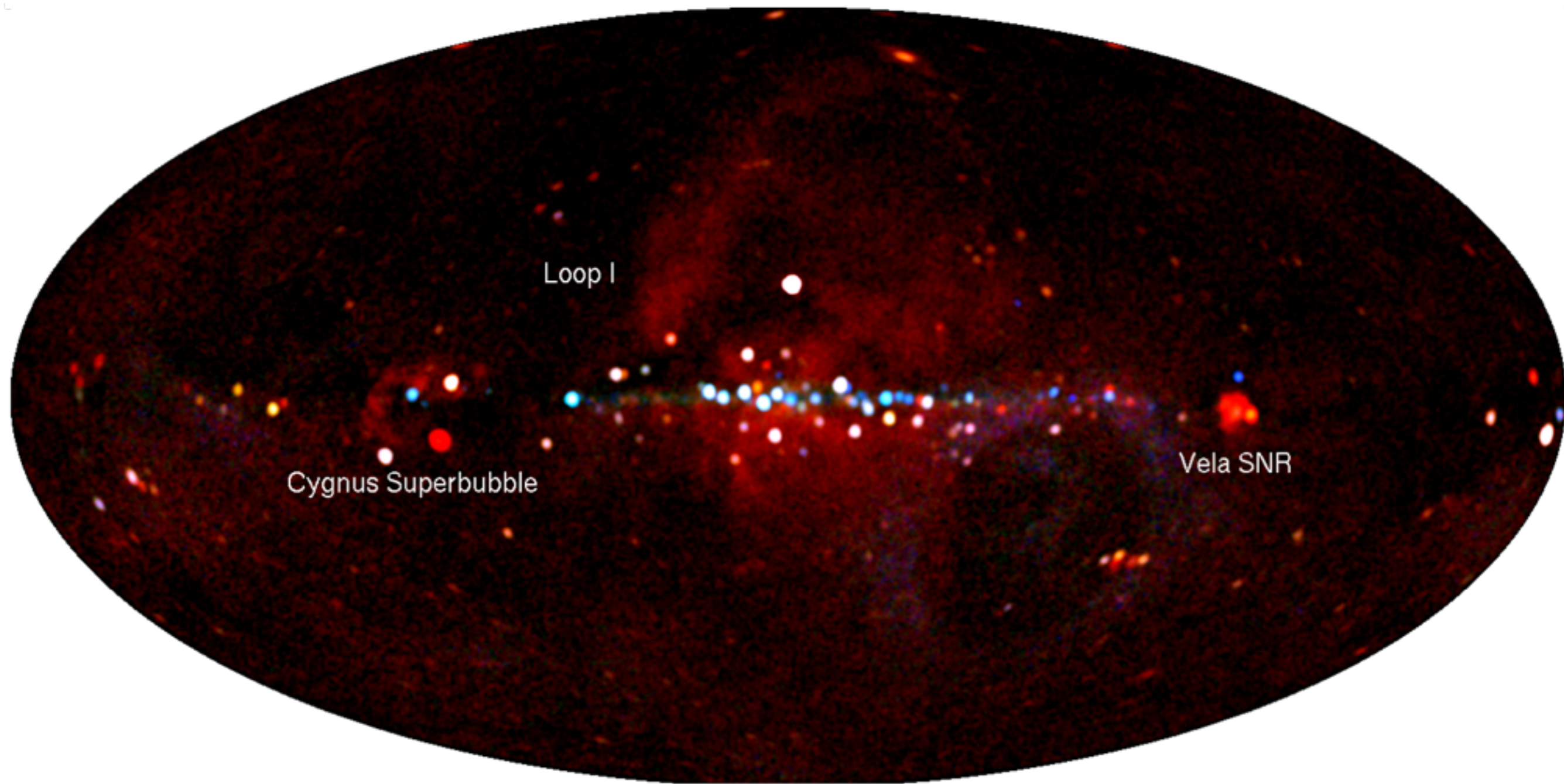


Status of SSC

- Operation
 - After 3.5 years, All 32 CCD's are operational.
 - Observation time is limited to the time when the ISS is in the night.
 - Observation efficiency is about 30-40%.
- Calibration
 - Energy – PHA gain correction
 - CTE degradation by radiation damage
 - QE calibration
- Background Study

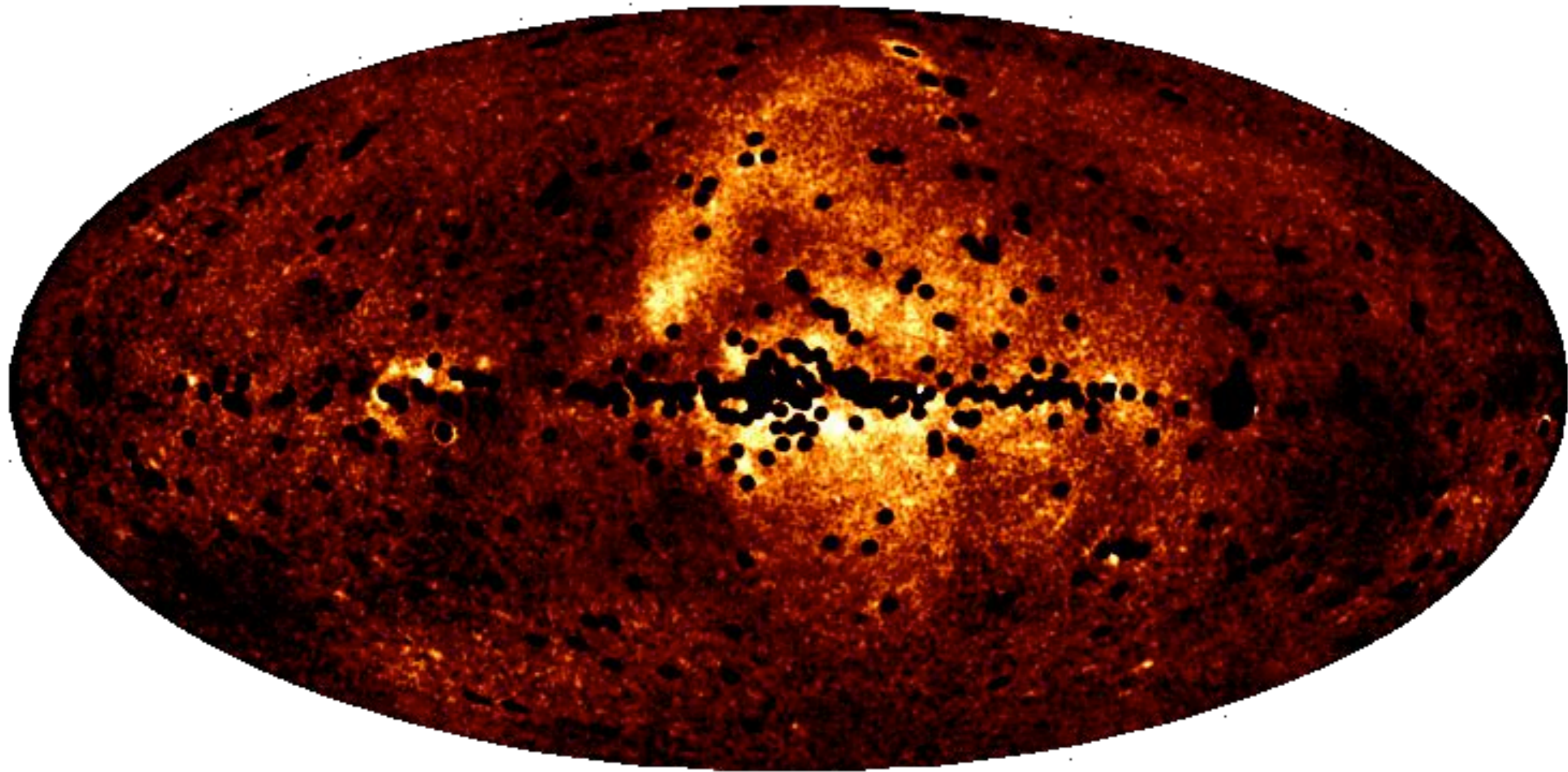


MAXI/SSC



0.7-1.7keV 1.7-4.0keV 4.0-7.0keV

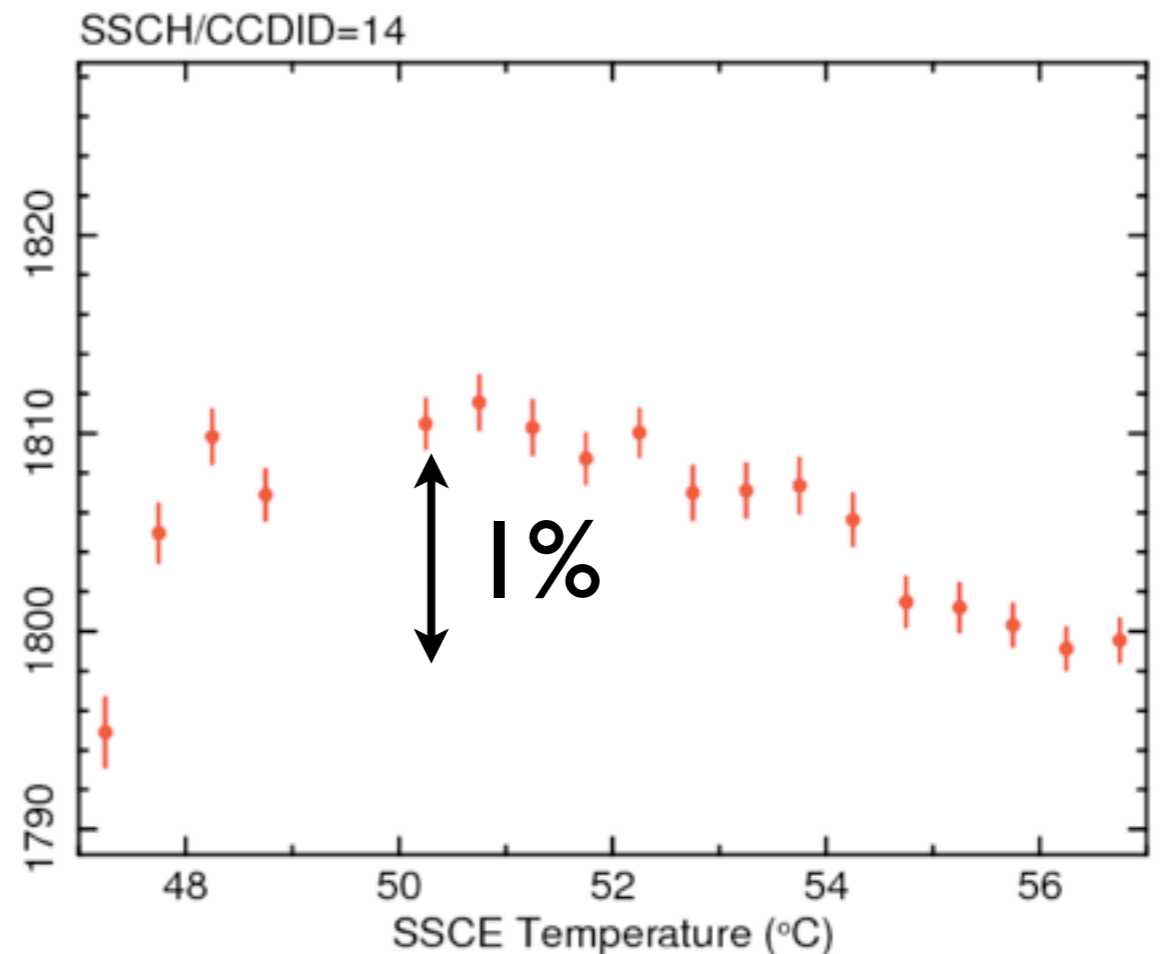
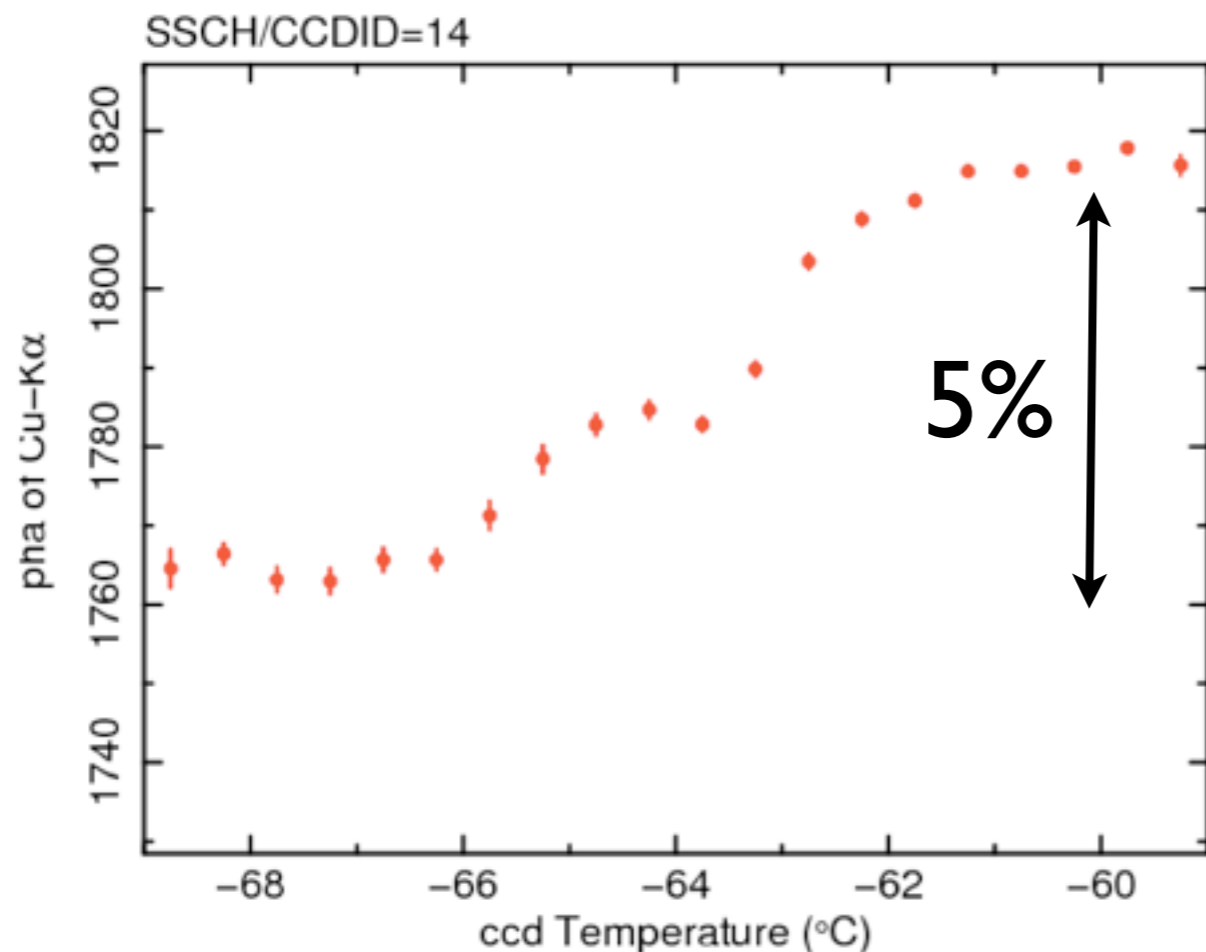
MAXI/SSC



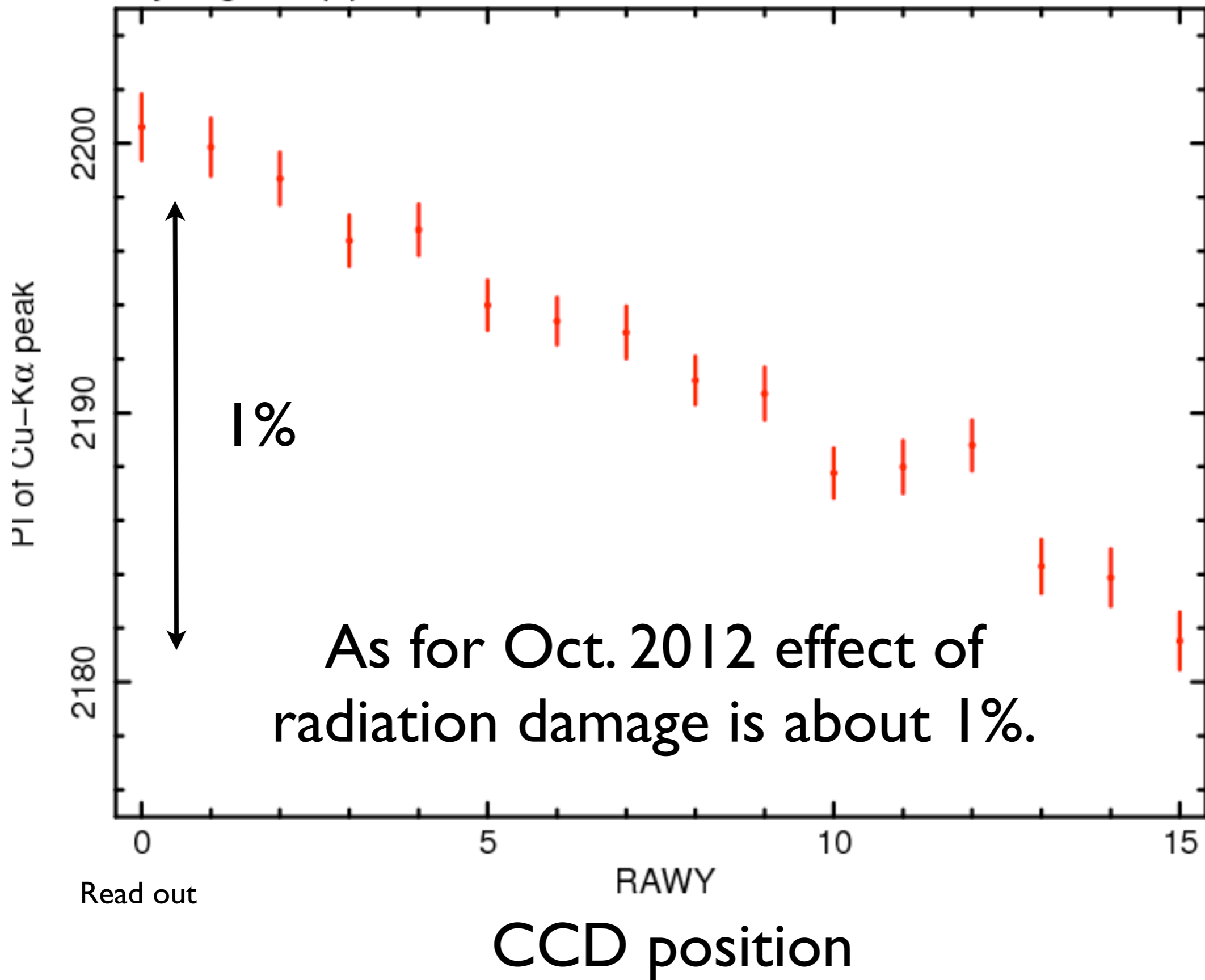
0.7-1.7keV without point sources

Gain Calibration for Temperature variation

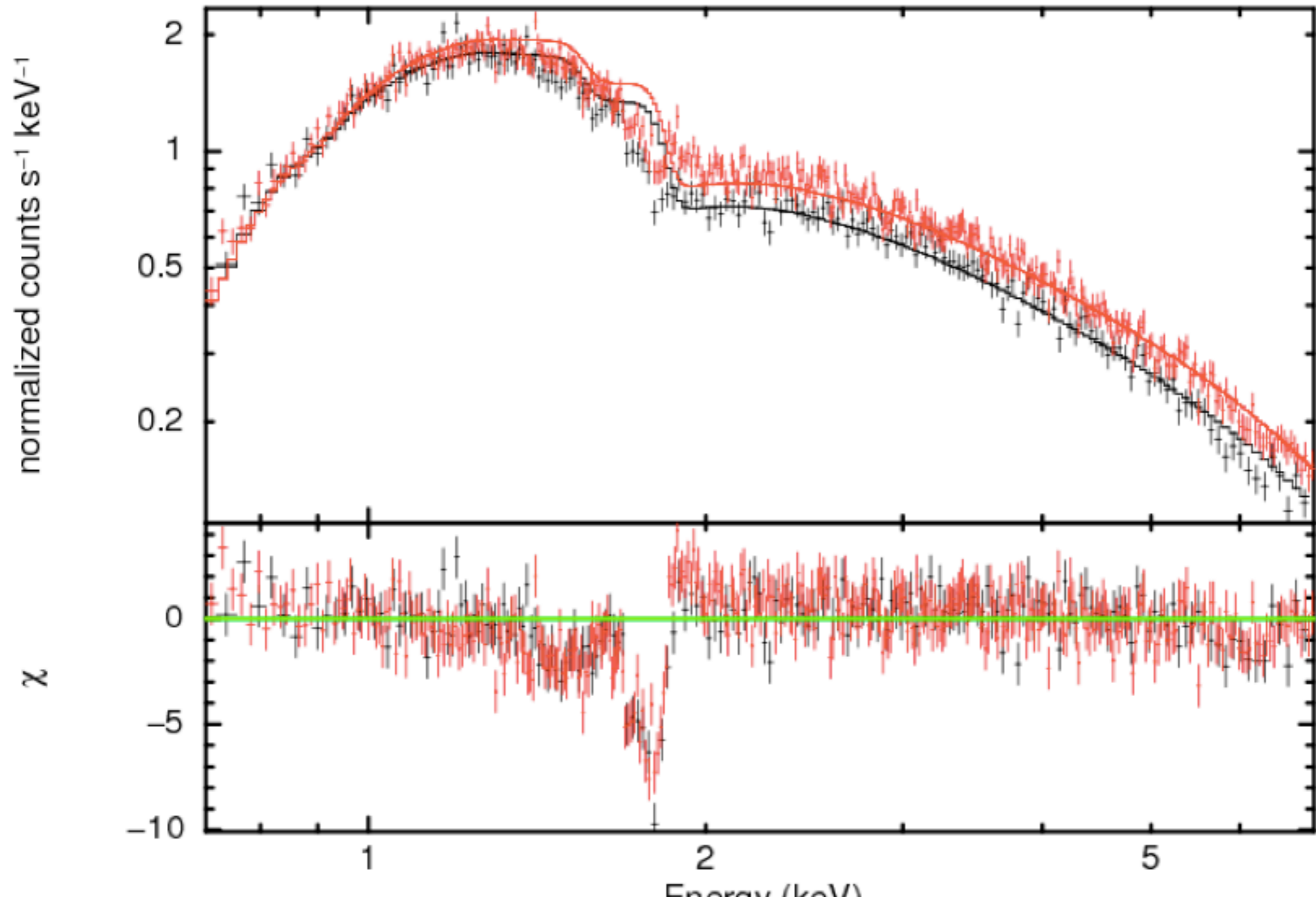
- Temperature is monitored in 3 places
 - CCD : $-65^{\circ} \sim -55^{\circ}$
 - Pre-amp: $-16^{\circ} \sim -8^{\circ}$
 - SSCE(A-D conversion): $45^{\circ} \sim 60^{\circ}$



Gain Calibration for CTE correction

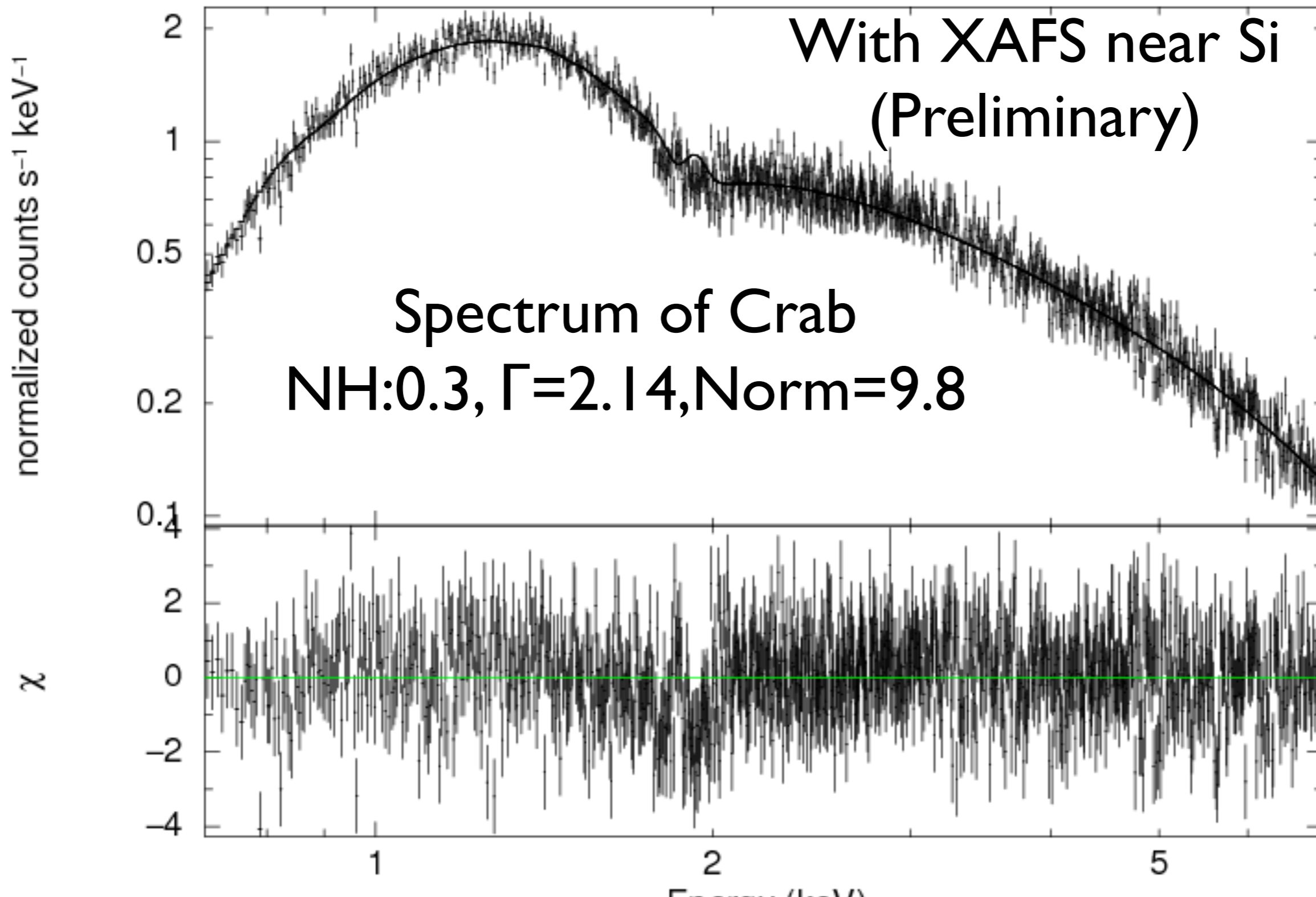


QE calibration

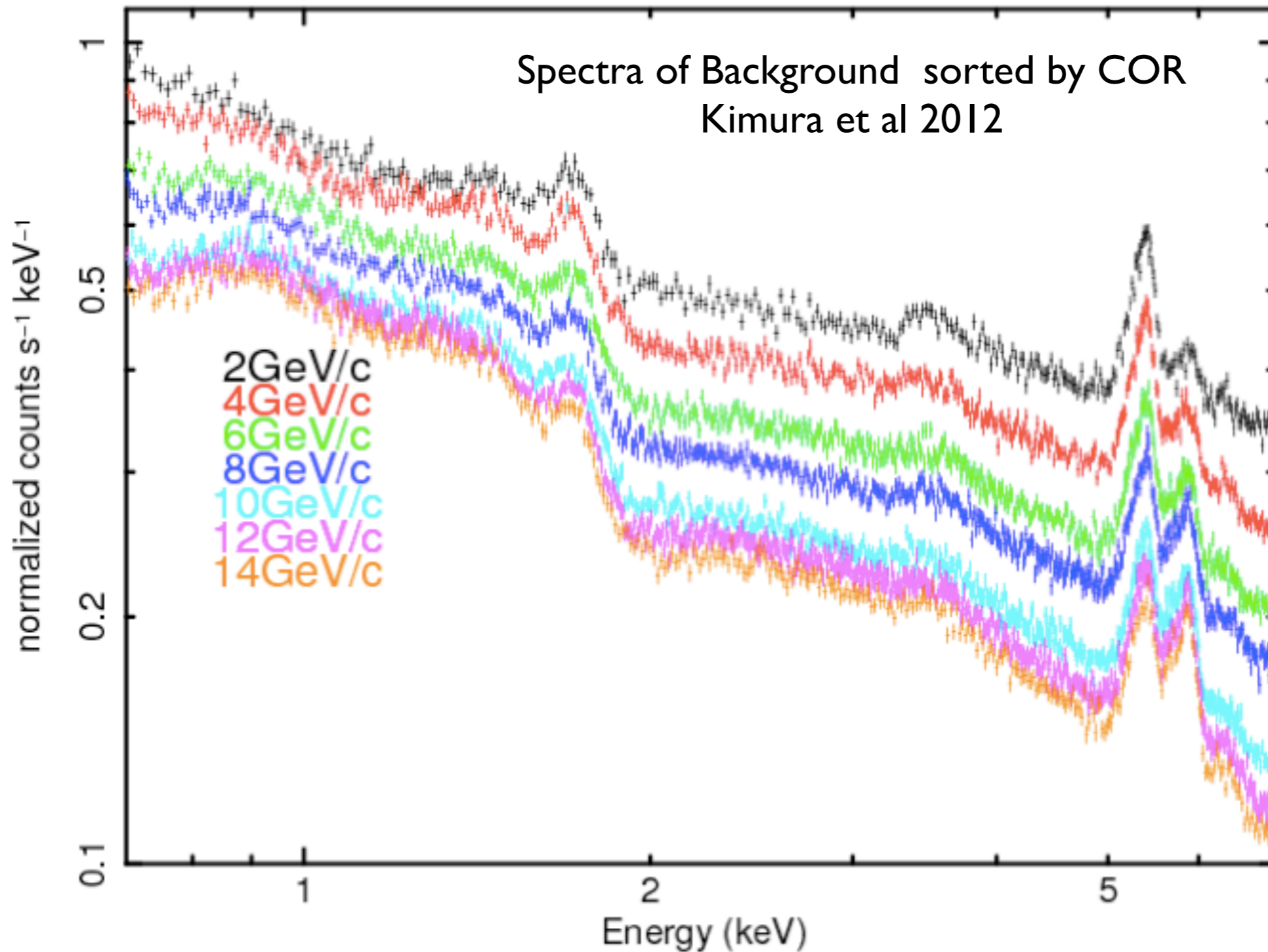


QE calibration

Crab



Background



Summary

- All 32 CCD's are operational
- We have performed gain calibration for temperature variation and CTE degradation
- Average spectral resolution of the SSC is about 230ev@8keV.
- No signs of contamination as for now.
- Visit <http://maxi.riken.jp> for science data!!