



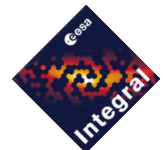
SPI Status

S. Fahmy ESA/ESOC
IOCG 23/02/2010

SPI Status: General



- **DPE/IASW:** Nominal. IASW 4.3.5 installed, SE compression only enabled.
- **ACS:** Nominal, except for failed FEEs 57 & 81 which are OFF
- **AFEE:** Nominal except for failed GeD #2, #5 & #17 (HV set to 0.5kV and disabled in PSD)
- **DFEE:** Nominal
- **PSD:** Nominal
- **Cryostat:** Degraded performance since CDE2 LCL trip-off on 4/11/09 (INT_SC-273)



SPI Status: New Anomalies



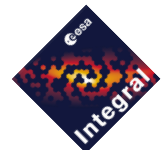
- **New but closed anomalies:**
- **19/2/09 INT_SC-246 SPI GeD#5 Anomaly**
- **14/6/09 INT_SC-262 SEU on PPDU board 2B GSW 2 causing switch off of SPI Camera Heater B**
- **5/10/09 INT_SC-269 Spurious Switch Off PPDU HLCL 4B2 affecting SPI ACS/Mask Heater B**
- **13/10/09 INT_SC-270 SPI AFEE Detector Line A LCL trip OPEN. Impact ~1 hour.**
- **16/10/09 INT_SC-271 PSD reset. Impact ~20min.**



SPI Status: Cryostat



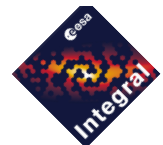
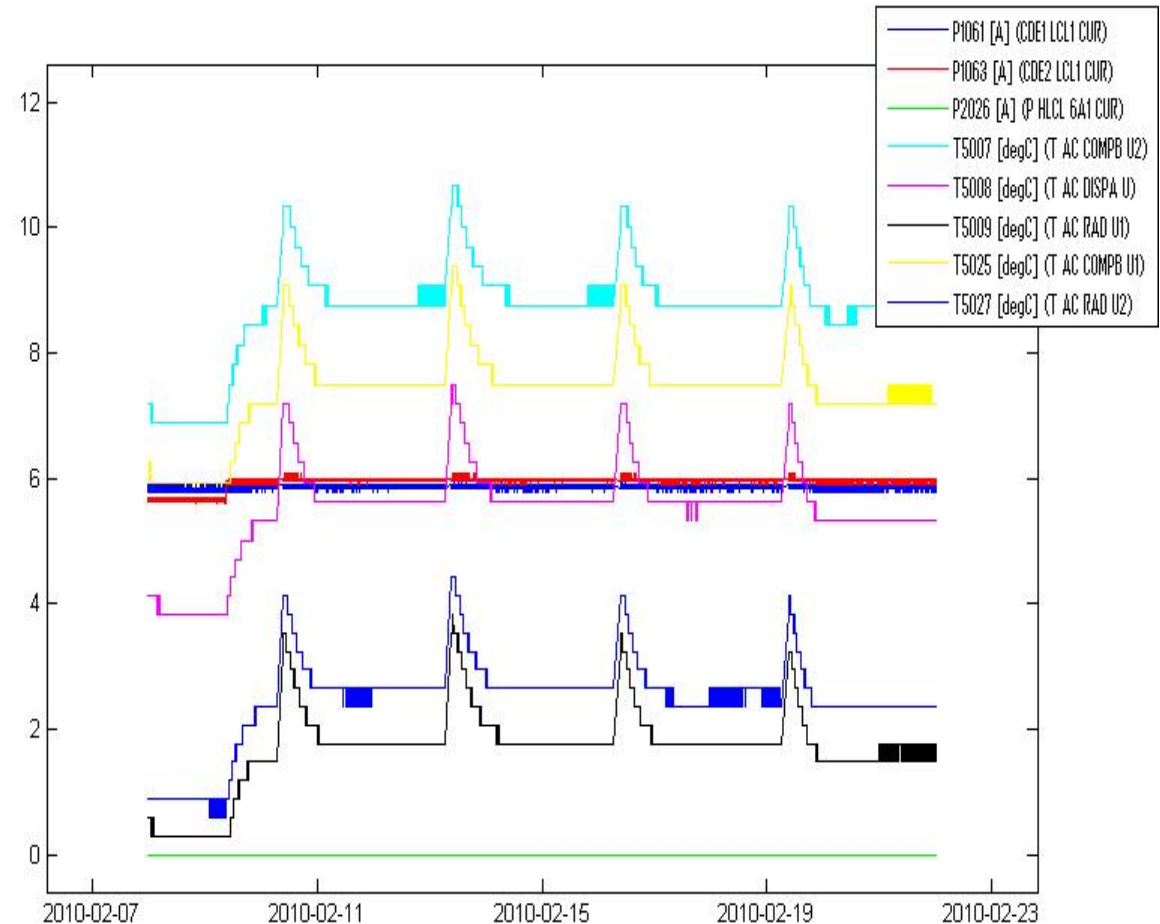
- **Cold Plate Temperature:**
 - Still maintained in 80K range but will be allowed to drift out of range before next annealing (OCR-265).
 - Drift is max $\sim 0.1\text{K/rev}$ therefore expected temperature is $\sim 82\text{K}$ before annealing.
- **Annealing:**
 - Next annealing planned for after eclipse season (end of March 2010).
 - Nominal annealing duration (6 revs), with outgassing of Cold Box.
 - Proposed change of procedure to maintain radiator compensation heater ON.



SPI Status: Cryostat



- **Compressor Stroke:**
 - **CDE1 stroke 43, LCL current 5.8A stable**
 - **CDE2 stroke 45, LCL current 5.9A stable (LCL trip off is at 7A)**
 - **Compressor temperatures in range and stable**



- **CDE relay:**
 - **Investigations** indicate several possible failure scenarios:
 - 1) RTU circuit: This would not affect CDE2 TC.
 - 2) Relay (e.g. fusion; cold sticking; physical damage):
Last scenario may mean risk of unrecoverable relay if attempt to command again fails.
- **Proposal**
 - 1) Try to change CDE2 relay position during next annealing.
 - 2) If this works, could set CDE2 as master (N.B. never used in flight).
 - 3) If possible, test RTU output via another relay TC.
 - 4) If works with CDE2 (esp. if >1 pulse needed), reconsider trying to move CDE1 relay.