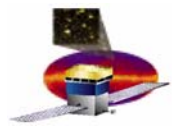**Gamma-ray Large Area Space Telescope**

GLAST Large Area Telescope:

Electronics, Data Acquisition & Flight Software W.B.S 4.1.7

Jan 26 Monthly Review

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TEM8 (1)

- **NCR 783**
  - **Issue is that TEM8 was going busy (in other words received Trigger Requests) after power-up when using the redundant GASU**
  - **Was mitigated by sending a separate hardware reset (issued by the GASU to TEM8)**
- **Cause**
  - **After power-up the primary Command link input and the primary Trigger Request inputs are selected on the TEM**
  - **A following Look-at-me command received on the redundant TEM Command link (which comes from the redundant GASU) switches the TEM to listen to the redundant command link**
  - **Note that the Trigger input is not automatically switched at that time to listen to the redundant input signal, but still listens to the primary Trigger input until a command switches it to the redundant Trigger input input (via a configuration bit).**
    - **The reason that the command and Trigger input link are separate is that originally the plan was to have the GEM and CRU independently powered (cross-connected). Later it was decided not to implement that while leaving the TEM FPGA untouched.**
  - **In the script used to run the LAT, the TEM was configured to listen to the redundant command link but before sending the command to listen only to the redundant Trigger input, the ACD supplies in the GASU were turned on.**
  - **Turning on the 28V supply to the ACD causes a brief power-on of the ACD since the individual switches on the GASU are temporarily connecting (but turn-off within < 1msec). That causes the 28V ACD input line to have an AC signal on. The 28V input wire is close to the TEM8 primary Trigger input line which is undriven (since the primary GASU is powered off). The TEM receives Trigger input signals because it is still listening on its primary line.**
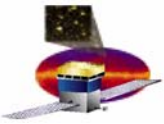
TEM8 (2)

– **No issue with the electronics, since the TEM should be configured to listen to its redundant Trigger input when the redundant GASu is powered.**

– **Can either just**

- **send Reset to TEM after powering on the ACD supply, or**

- **configure the TEM to listen to redundant Trigger input before power-on of ACD supply, or**

- **first turn ACD supply on before turning on/configuring the TEM's**
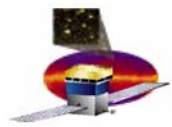
RAD750

- **#12: was used in proto-flight testing**
  - **Then was removed to use in flight SIU/EPU spare**
  - **Visual inspection shoed cracks on stacking of bus-bridge chip**
  - **Returned to BAE for analysis/fix (1 week ago)**
  - **No feedback yet**
- **#31: last CPU received**
  - **Assembled in flight SIU/EPU spare**
  - **Failed test after vibration (flight acceptance level)**
  - **Visual inspection showed all 3 EEPROM's have broken pins**
  - **Looks like stacking underneath chips is in-sufficient on #31 (when compared to e.g. #12)**
  - **Returned to BAE for analysis/fix (1 week ago)**
  - **No feedback yet**
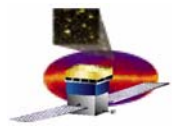
EPU

- **Issue:**
  - **Programming SIU's went fine.**
  - **Programming of first EPU failed**
    - **After burning PBC, files were burned to SIB, script failure after n files were uploaded**
    - **One could add the files missing (done that before on non-flight), but decided to put this EPU aside**
      - **Procedure would need to be changed or first burn SIU-PBC into this crate (to start from same starting point)**
  - **Wrote scripts to**
    - **First program SIB before burning EPU PBC (so retain SIU PBC until files are burned)**
    - **Then burn EPU PBC**
  - **Works fine on EM crate**
    - **Equipment ready in Building 33 to validate procedure and program next EPU**
  - **Need to decide how to proceed on first EPU**
    - **Either try to reproduce, but then need to burn SIU-PBC back into it**
    - **Just add files missing**
    - **etc**
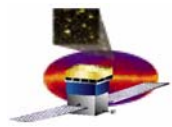
GLTC3

- **Issue:**
  - **On spare flight GASU one GLTC3 ASIC was found to be not working (weeks ago) when first checking GASU**
  - **Found that two outputs of GLTC3 were shorted**
    - **Xray's at GSFC showed two wire-bonds shorted**
- **Discovered that one test which covered the those two pins was commented out in test script (still trying to find out why that was done)**
- **Chips was replaced and all was fine**
- **GSFC FRB was held today**