

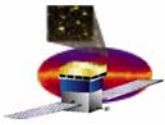
Design Engineering

GLAST Large Area Telescope Engineering Meeting

Flight Hardware Buys before CDR

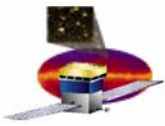
February 4, 2003
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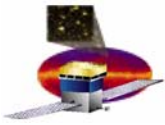
Flight Hardware Buys -- ACD

- Composite Shell
- Composite Shell to Base Frame Flexures
- TDA's including connectors
- TDA tiedowns (flexures between shell and TDA's) with fasteners
- Micrometeoroid Shield and Thermal Blanket standoffs and caps
- Micrometeoroid Shield and Thermal Blanket materials
- Base Frame (channels, closeout covers, mid-span snubbers, connector brackets & fasteners)
- Electronics Chassis mechanical components (Frame, HVBS covers, FREE board standoffs, HV rail cover, fasteners)
- PMT housing with Resistor Network (RN) enclosure
- Fiber Cables (fibers, wrappings, springs, PMT bushings, cookies, & PMT caps)
- HVBS's
- PMT's
- FREE PCB's
- All FREE Board electrical components including ASICs (GAFEs and GARCs)
- Resistor Network PCBs and electrical components
- Bulkhead connectors
- All electrical wiring



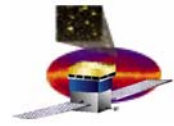
Flight Hardware Buys -- TKR

Item	Lead Time	Date Needed
SSDs	NA	ongoing
Carbon-Carbon blanks	NA	ongoing
Sidewall Material (Italian responsibility)	2 to 4 weeks	Combined EM, 2/14/03, and Flight purchase
Aluminum cores	3 to 4 weeks	March 3
Face sheet prepreg (Italian responsibility)	Sandro plans to start with materials already in hand	March 3
Aluminum inserts, 3mm and 4mm (Italian responsibility)	2 to 4 weeks	March 3
Bias flex circuits	4 to 6 weeks	April, May?
Tower-assembly sidewall fasteners	NA	Not urgent but already procured
Thin tungsten (Italian responsibility)	4 weeks	April, May?
Thick tungsten	4 weeks	April, May?
Pitch-adaptor flex circuits	4 to 6 weeks	January 27
MCM printed wiring boards	4 to 6 weeks	January 27
MCM SMT parts		February 10
Nano Connectors	8 weeks	February 10
Connector savers (not flight hardware)	8 weeks	March 28
Poly fuses		February 10
HV caps		February 10
GTFE ASICs	NA	March 31
GTRC ASICs	NA	March 31



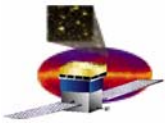
Flight Hardware Buys -- CAL

- 1. Csl crystals, LAT-DS-00820-02, The contract w/ amcrys-H has been in place since April,2001 for em and flt crystals. the referenced spec are the negotiated changes from the original contract. deliveries of flt crystals scheduled in mid march.
- 2. Dual PIN Photodiode, LAT-DS-00209-11. We need to start the order in mid Feb.
- 3. Fasteners from the CAL Inorganic Materials List, long lead items.
- 4. PrePreg carbon composite material for structure from CAL Polymeric materials list.
- 5. VM2000 optical wrap material. This is to capture the material before 3M changes it.
- 6. ASICs, GCFE and GCRC - perhaps the flight orders have already been placed.
- 7. Flight AFEE-TEM electrical cables (manufactured from parts on the EEE parts list)
- 8. All EEE Parts on the CAL EEE parts list (attached below).



Flight Hardware Buys -- Mechanical

- 4x4 grid raw mat'l, 2 plates planned
- downspout & X-LAT heat pipe extrusions LM has ordered
- custom bolts for CAL baseplate to grid attachment planned
- Top flange extrusions LM Contract
- VCHP extrusions LM Contract
- VCHP reservoirs LM Contract
- SS thermostats LM Contract



DAQ Electronics Flight Buys

- Tower Power Supply Modules
- BAE RAD750 Processor Board
- Other Electronics components (Partslist to be submitted 2-7-02)
 - **ACTEL FPGA**
 - RT54SX32S-CQ208B
 - RT54SX72S-CQ208B
 - **Others**
 - Regulator OMNIREL OMR9601SCK
 - LVDS UTMC UT54LVDS032LV/UT54LVDS031LV
 - Inverter Intersil HCS14KMSR
 - UTMC 1553 5962R9466311QYA
 - Intersil POR IS-705RH
 - Honeywell SRAM IDT71256SA25Y
 - **Connectors**
 - Cristek MCR-1-069-1B1
 - Cristek MCR-1-051-1B1
 - ITT Cannon DDMA78PNM