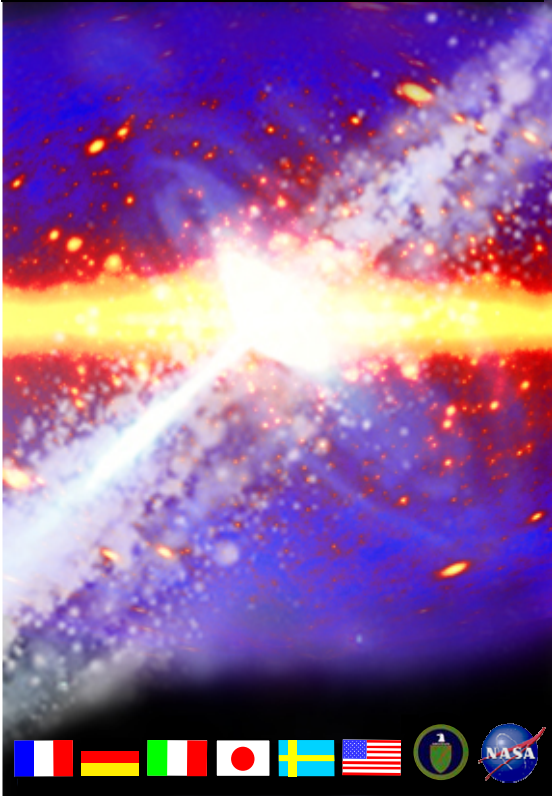**Gamma-ray Large Area Space Telescope**
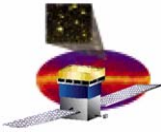
GLAST Large Area Telescope

GSFC Monthly Review
5 August 2004

ISIS Development Status

Jana Thayer
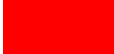**Stanford Linear Accelerator Center**

jana@slac.stanford.edu
**(650) 926-4956**

ISIS Hardware Chunks

- **Three phases of hardware completion**
  - **In progress**
  - **Commissioning/Testing (C/T)**
  - **Complete**

- **Note: All hardware items have been previously prototyped and tested**

Copy of Object for ISIS	Status	Remaining in Phase	Relative Effort
SIU	C/T	10%	Small
RAD750	Complete	0%	None
SIB	Complete	0%	None
LCB	C/T	10%	Small
Backplane	Complete	0%	None
RS-232 Serial Board	Complete	0%	None
Ethernet Board	Complete	0%	None
GASU	Complete	0%	None
PDU	Complete	0%	None
Heater Control Box	Complete	0%	None
PDU Load Box	Complete	0%	None
Heater Loads	C/T	10%	Small
Cables	In progress	25%	Small
Temp. Sensor Box	In progress	50%	Medium
Assembly, panels, etc.	In progress	0%	None

- 🟩 = Low Risk
- 🟨 = Medium Risk
- 🟥 = High Risk

ISIS

Heater Controls/Loads

GASU

PDU

PDU Load Box

Power Supply

ISIS

SIU Crate
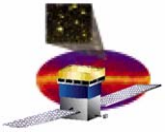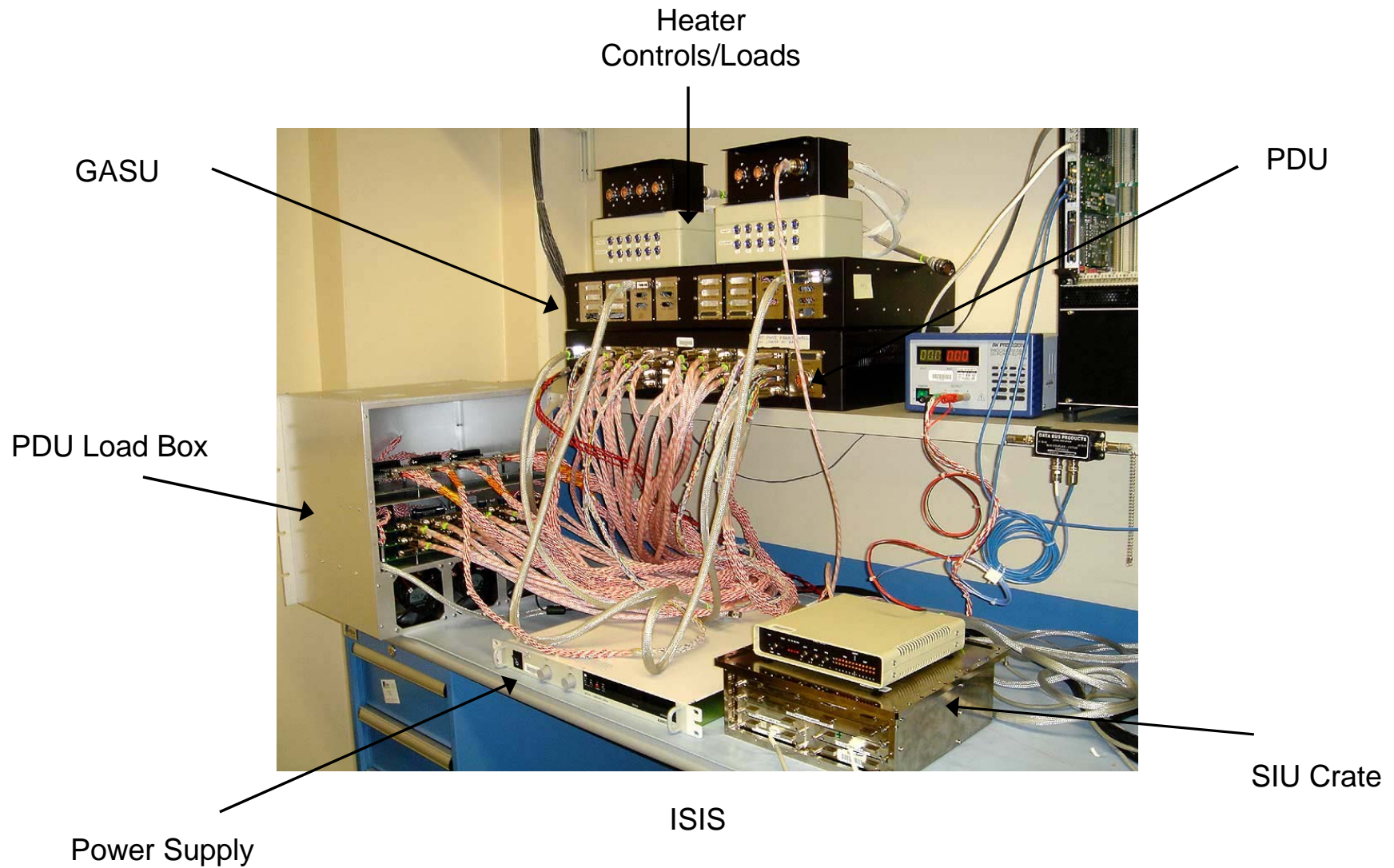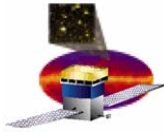
ISIS Major Software Components Provided by FSW

|	FSW Responsible Party and Remaining Work	Relative Effort Required
Telecommand Infrastructure		
– **Routing of commands**	**Tony Waite – 10%**	Small
Solid State Recorder (SSR) Infrastructure		
– **Science Data**	**Ed Bacho – 50%**	Medium
Power Management Infrastructure		
– **Ability to dynamically modify power profile**	**James Swain – 10%**	Small
Telemetry Infrastructure		
– **Diagnostic**	**Tony Waite – 25%**	Small
– **Housekeeping**	**Sergio Maldonado – 0%**	None

 = Low Risk

 = Medium Risk

 = High Risk
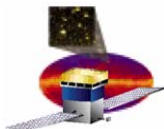
ISIS Telecommands

- **ISIS functionality is fundamentally defined by the telecommands available to the 1553 interface. Command progress gives insight into ISIS Software completion.**

Command	Responsible FSW Party	Remaining Work	Relative Effort
Boot Commands	Dan Wood	0%	None
Memory Commands	Dan Wood	10%	Small
No-op	Steve Mazzoni	10%	Small
Reboot	Steve Mazzoni	10%	Small
S/C Load Shed Notification	James Swain	10%	Small
S/Ct Broadcast (TT/Att/Anc.)	Tony Waite	10%	Small
TCS Command HP Heater On/Off	Steve Mazzoni	10%	Small
ISIS Request ARR Generation	Steve Mazzoni	10%	Small
ISIS Discrete Management	Steve Mazzoni	15%	Small
ISIS Science Data Commands	Ed Bacho	25%	Small
ISIS Report Counts	Tony Waite	75%	Medium
ISIS PDU-based Power Switching	James Swain	10%	Medium
Send Diagnostic Packet	Sergio M.	0%	None
Set Task-Level Command Verification	Tony Waite	100%	Small
GBM message from S/C (1553)	Tony Waite	100%	Small

■ = Low Risk

■ = Medium Risk

■ = High Risk
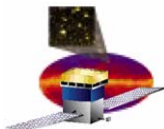
ISIS Integration

- **ISIS Hardware Integration Process**
  - Hardware collected on test bench for commissioning/testing
  - Upon arrival of panels and completion of testing, will be assembled in ISIS rack enclosure
- **ISIS Software Integration Process – Led by Steve Mazzoni**
  - All necessary software packaged into an "image" for both SUROM and EEPROM on RAD750 SBC
    - Will allow for debugging during software test phase
  - When SW infrastructure is delivered, ISIS testing can proceed while waiting for full build
    - Anticipated delivery of infrastructure – 8/20/04
    - Anticipated delivery of full build – 8/31/04
- **ISIS Documentation**
  - Safe-to-mate for ISIS in progress
  - Acceptance Test Procedure to be written as ISIS SW is delivered and tested
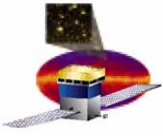
ISIS Schedule Overview

- **High-level schedule items**
  - **Hardware**
    - ✓ **All unit pieces complete – 7/19/04**
    - ✓ **Integration with other pieces – 7/26/04**
    - • **Integration in ISIS rack enclosure – 8/16/04 (scheduled 7/30/04) Does not delay ISIS delivery!**
  - **Software**
    - • **Initial build delivered – 8/20/04**
    - • **Fully functional build delivered – 8/31/04**
  - **Testing**
    - • **Integration Testing begins – 8/23/04**
    - • **ISIS Acceptance Testing – 9/20/04 – 9/22/04**
  - **Remaining Documentation**
    - • **ISIS Safe-to-Mate**
    - • **ISIS Acceptance Test Procedures**
    - • **Test Readiness Review documentation**
    - • **ISIS Build Description**
  - **This schedule represents an aggressive approach to ISIS production**