

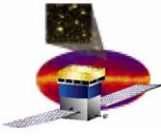
# **GLAST Large Area Telescope**

**GSFC Monthly Review  
30 June 2004**

**ISIS Development Status**

**Eric Hansen  
Stanford Linear Accelerator Center**




**[hansene@slac.stanford.edu](mailto:hansene@slac.stanford.edu)  
(650) 926-4057**

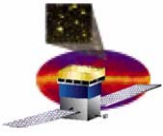


# ISIS Hardware Chunks

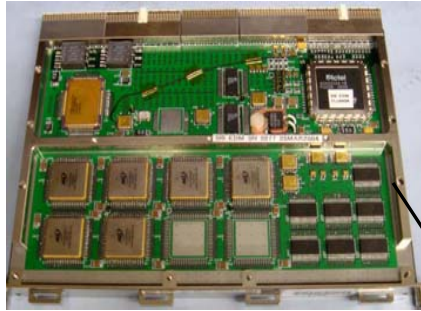
- Three phases of hardware completion
  - In progress
  - Commissioning/Testing (C/T)
  - Complete
- **Note: All hardware items have been previously prototyped and tested**

Copy of Object for ISIS	Status	Remaining in Phase	Relative Effort
SIU	C/T	75%	Medium
RAD750	Complete	0%	None
SIB	Complete	0%	None
LCB	C/T	50%	Large
Backplane	C/T	25%	Large
RS-232 Serial Board	Complete	0%	None
Ethernet Board	Complete	0%	None
GASU	In progress	50%	Large
PDU	Complete	0%	None
Heater Control Box	Complete	0%	None
PDU Load Box	In progress	25%	Small
Heater Loads	In progress	75%	Medium
Cables	In progress	75%	Small
Temp. Sensor Box	In progress	50%	Medium
Miscellaneous	In progress	25%	Small

 = Low Risk  
 = Medium Risk  
 = High Risk



# ISIS SIU Crate



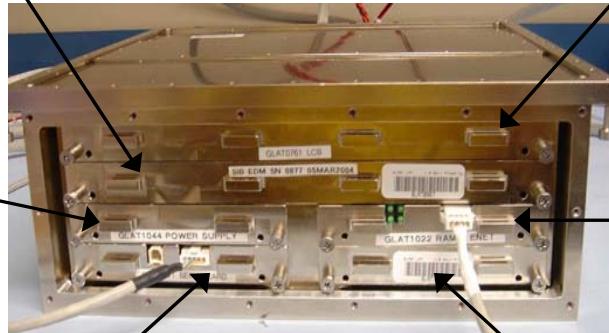
SIB



LCB



SIU Pwr Supply



SIU CRATE



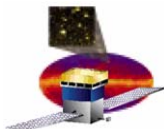
Ethernet Board



RS-232 Debug Board

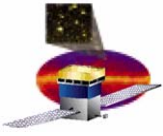


RAD750

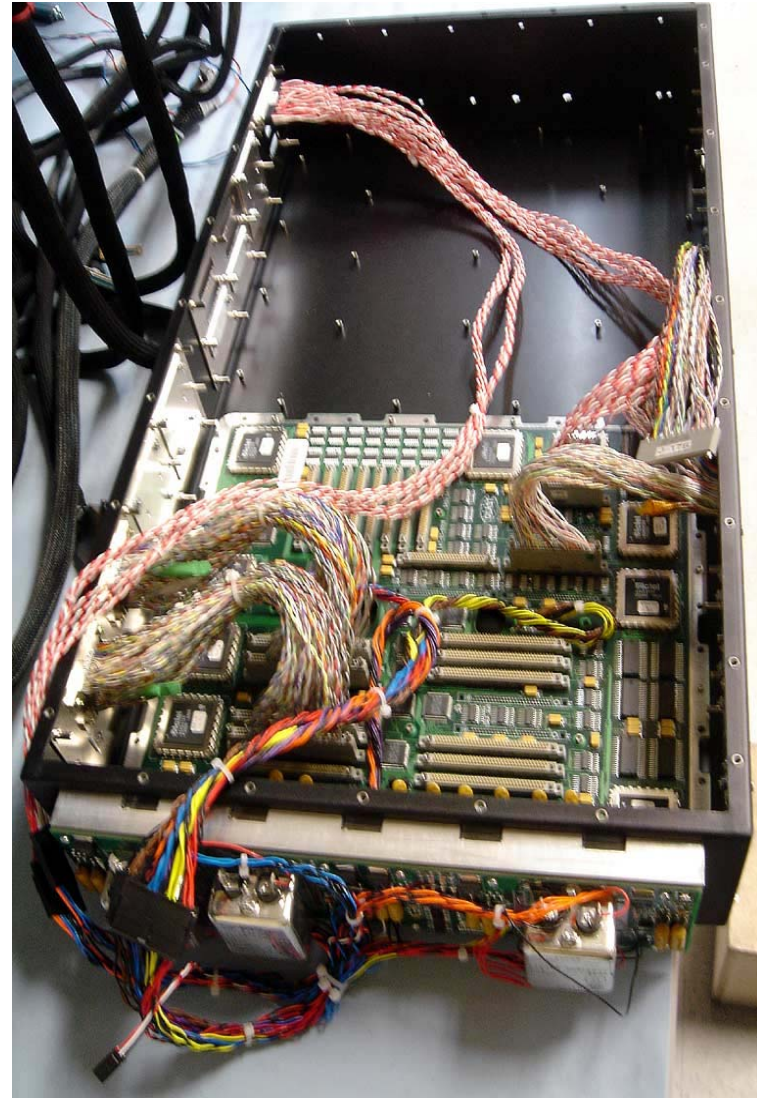
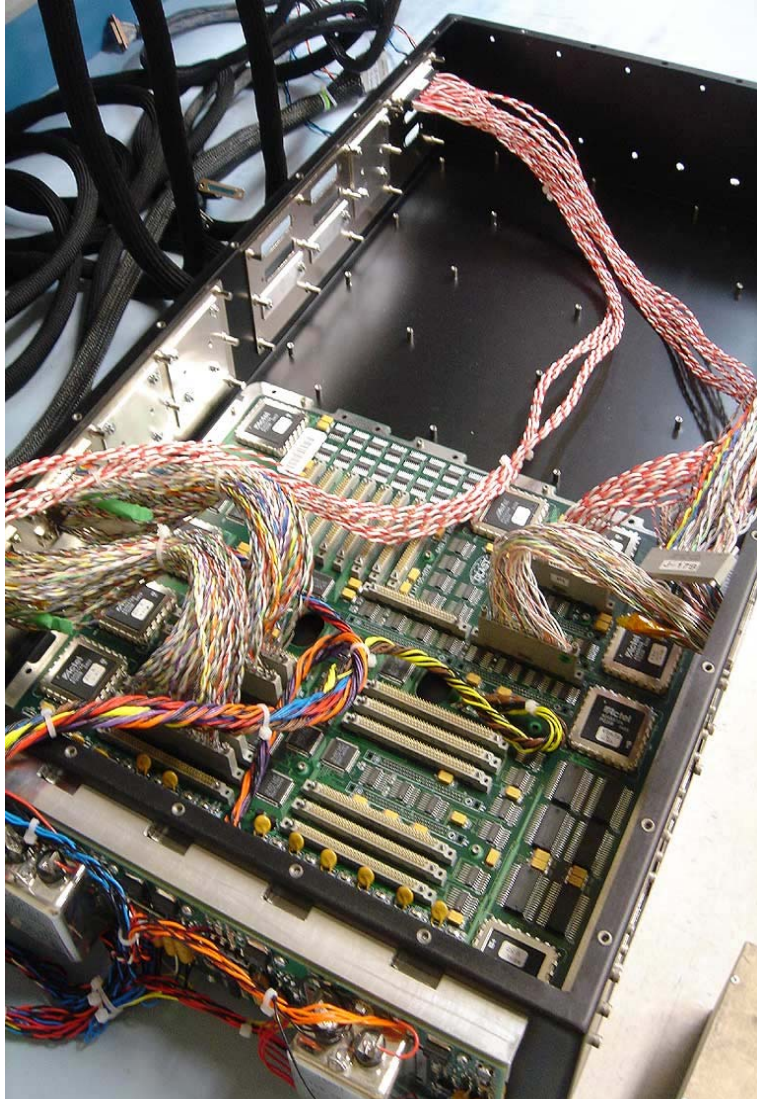


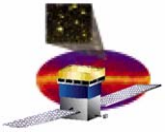
# ISIS PDU



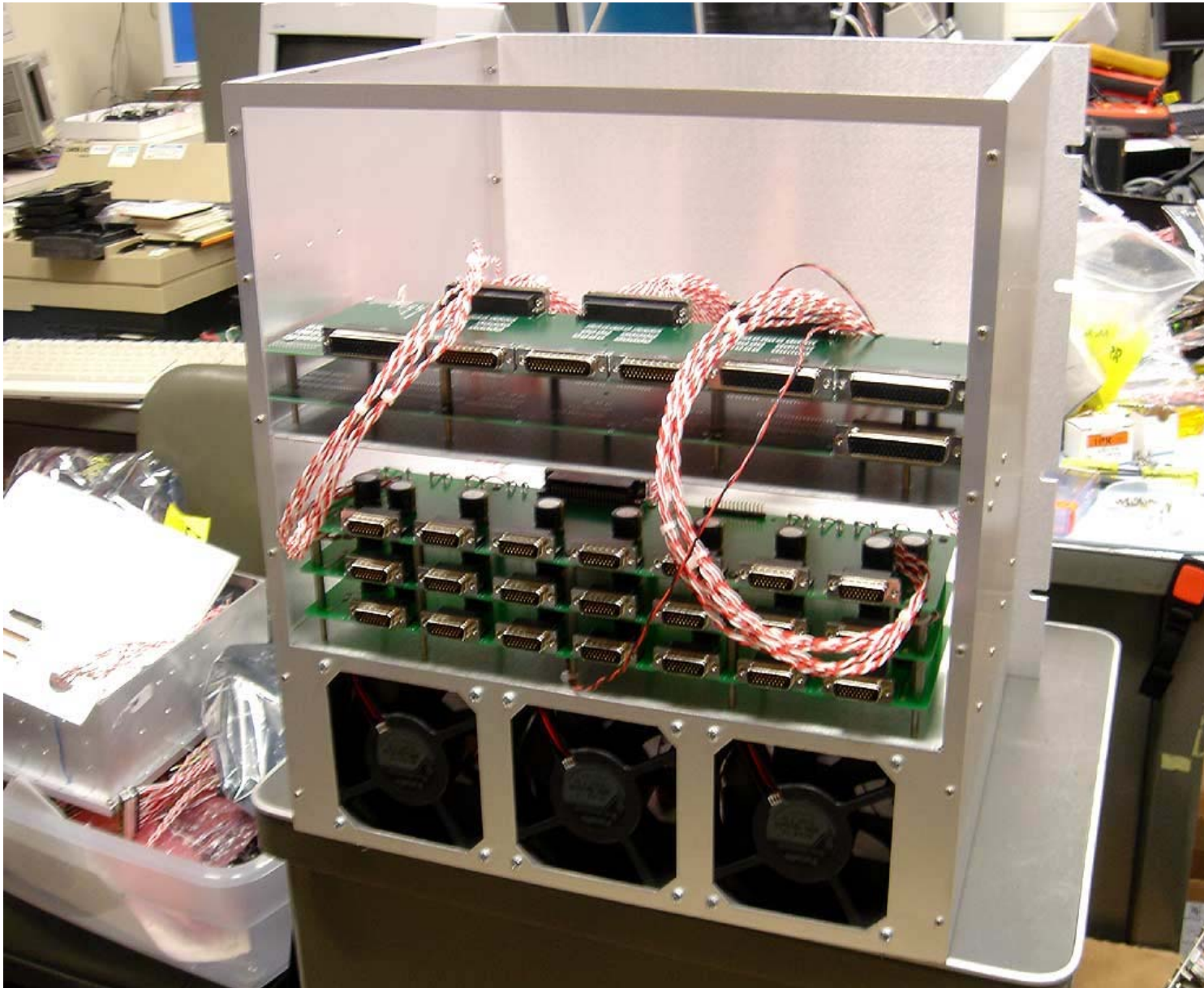


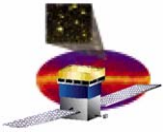
# ISIS GASU



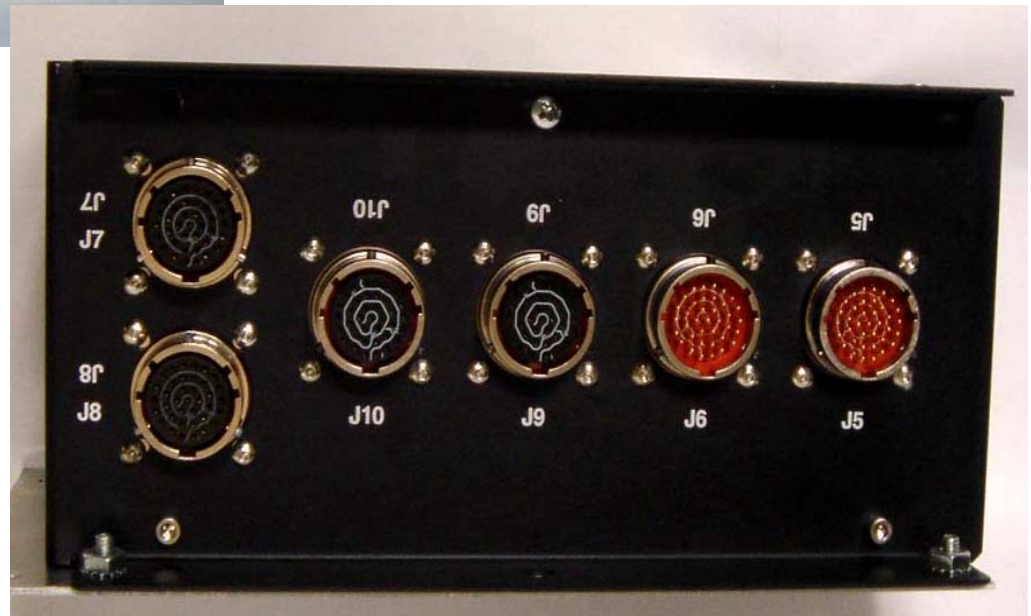


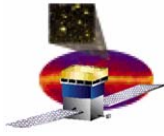
# PDU Load Box








# ISIS Heater Control Boxes



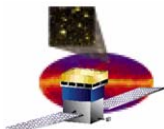


# ISIS Major Software Components Provided by FSW

	FSW Responsible Party and Remaining Work	Relative Effort Required
<ul style="list-style-type: none"><li>• <b>Telecommand Infrastructure</b><ul style="list-style-type: none"><li>– <b>Routing of commands</b></li></ul></li></ul>	Tony Waite – 25%	Large
<ul style="list-style-type: none"><li>• <b>Solid State Recorder (SSR) Infrastructure</b><ul style="list-style-type: none"><li>– <b>Science Data</b></li></ul></li></ul>	Ed Bacho – 50%	Medium
<ul style="list-style-type: none"><li>• <b>Power Management Infrastructure</b><ul style="list-style-type: none"><li>– <b>Ability to dynamically modify power profile</b></li></ul></li></ul>	James Swain – 75%	Medium
<ul style="list-style-type: none"><li>• <b>Telemetry Infrastructure</b><ul style="list-style-type: none"><li>– <b>Diagnostic</b></li><li>– <b>Housekeeping</b></li></ul></li></ul>	Tony Waite – 25%	Small
	Sergio Maldonado – 0%	None

-  = Low Risk
-  = Medium Risk
-  = High Risk






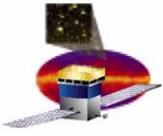


# ISIS Telecommands

- **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	25%	Small
No-op	Steve Mazzoni	25%	Small
Reboot	Steve Mazzoni	25%	Small
S/C Load Shed Notification	James Swain	75%	Medium
S/Ct Broadcast (TT/Att/Anc.)	Tony Waite	25%	Small
TCS Command HP Heater On/Off	Steve Mazzoni	25%	Small
ISIS Request ARR Generation	Steve Mazzoni	25%	Small
ISIS Discrete Management	Steve Mazzoni	25%	Small
ISIS Science Data Commands	Ed Bacho	50%	Small
ISIS Report Counts	Tony Waite	75%	Medium
ISIS PDU-based Power Switching	James Swain	75%	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

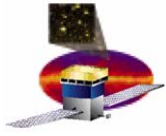
 = Low Risk  
 = Medium Risk  
 = High Risk



# Software Integration

---

- Having all necessary components of the software does not constitute ISIS software completion
- **ISIS Software Integration Process**
  - Involves packaging all necessary software into an “image” for both SUROM and EEPROM on RAD750 SBC
  - Must allow for debugging during software test phase
  - Steve Mazzoni is leading the ISIS Software Integration Process
    - Integration Plan written and being revised
- When SW infrastructure is delivered, ISIS testing can proceed while waiting for full build
  - Need date for infrastructure – 7/5/04
  - Need date for full build – 7/25/04



# ISIS Schedule Overview

---

- **High-level schedule items**
  - **Hardware**
    - All unit pieces complete – 7/14/04
    - Integration with other pieces – 7/21/04
    - Integration in ISIS rack enclosure – 7/30/04
  - **Software**
    - Infrastructure delivered – 7/5/04
    - Fully functional build delivered – 7/25/04
  - **Testing**
    - Integration Testing begins – 7/26/04
    - ISIS Acceptance Testing – 8/23/04 – 8/25/04
  - **Remaining Documentation**
    - ISIS Acceptance Test Procedures
    - Test Readiness Review documentation
    - ISIS Build Description
    - August Demo Documentation
  - This schedule represents an aggressive approach to ISIS production