

Lockheed Martin Progress

X-LAT Plate Assy and Radiators

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The logo for the GLAST LAT Project, featuring a stylized satellite or probe with a colorful circular base and a black rectangular component on top.

Flight Hardware Status - Radiators

- **+/-Y Radiator**
 - **Both panels have been delivered to the acoustic test facility**
 - **After acoustic testing will:**
 - **Remove acoustic instrumentation (strain gages and accels)**
 - **Install FOSR, none flight test heaters and thermal instrumentation**
 - **Re-bond thermostats on reservoirs (see DR)**

Radiator Heater/Sensor Installation



Both radiators delivered to
Acoustic Test Facility



The logo for the GLAST LAT Project, featuring a stylized satellite or probe with a circular base and a rectangular top section.

Flight Hardware DR Status - Radiators

- **Thermostat disbond on the -Y Panel heatpipe reservoir cans**
 - **NuSil CV-2943 used for good thermal conductivity**
 - **Running bonding tests to:**
 - **evaluate the effect of using SP-121 primer (LAC 40-4746-2000) that has been exposed to air for several minutes on the structural strength of NuSil CV-2943 Silicone adhesive (LAC 40-4730-0200)**
 - **compare the structural strengths of NuSil CV-2943 Silicone adhesive w/ SP-121 primer and Hysol EA 9394 epoxy adhesive (LAC 30-8025-0007)**
 - **This issue puts a cloud on the thermal sensor installation under the tape also until the cause is resolved**

The logo for the GLAST LAT Project, featuring a stylized satellite dish or antenna structure with a colorful rainbow-like arc at its base.

GLAST Vibration/Acoustic Test Planning

- **Acoustic Test**
 - **Test reinstated after temporary stop work**
 - **We are currently in Cell 1**
 - **One radiator panel is installed to the test fixture (7/23/05)**
 - **Second panel installation is on hold for crane intermittent failure**
 - **Looking at crane repair as well as portable lifting fixture options**
- **Sine vibration test cancelled**



Shaker Availability Issue

- **Best guess is at the earliest, SBIRS will be out about the 20th of July. (they were supposed to be done 7/8/05)**
- **After that total time for checkout and fixture trials, assuming no issues, about 2 weeks.**
- **Looking at early August - best case.**
- **There is a Commercial Space test that is supposed to happen early August. If that happens, and that is "if", it will consume all the test services resources (people) because they run 24/7 until they are done. It could take about 7 or 8 days if all goes well. Our test would have to work around the Commercial Space test.**

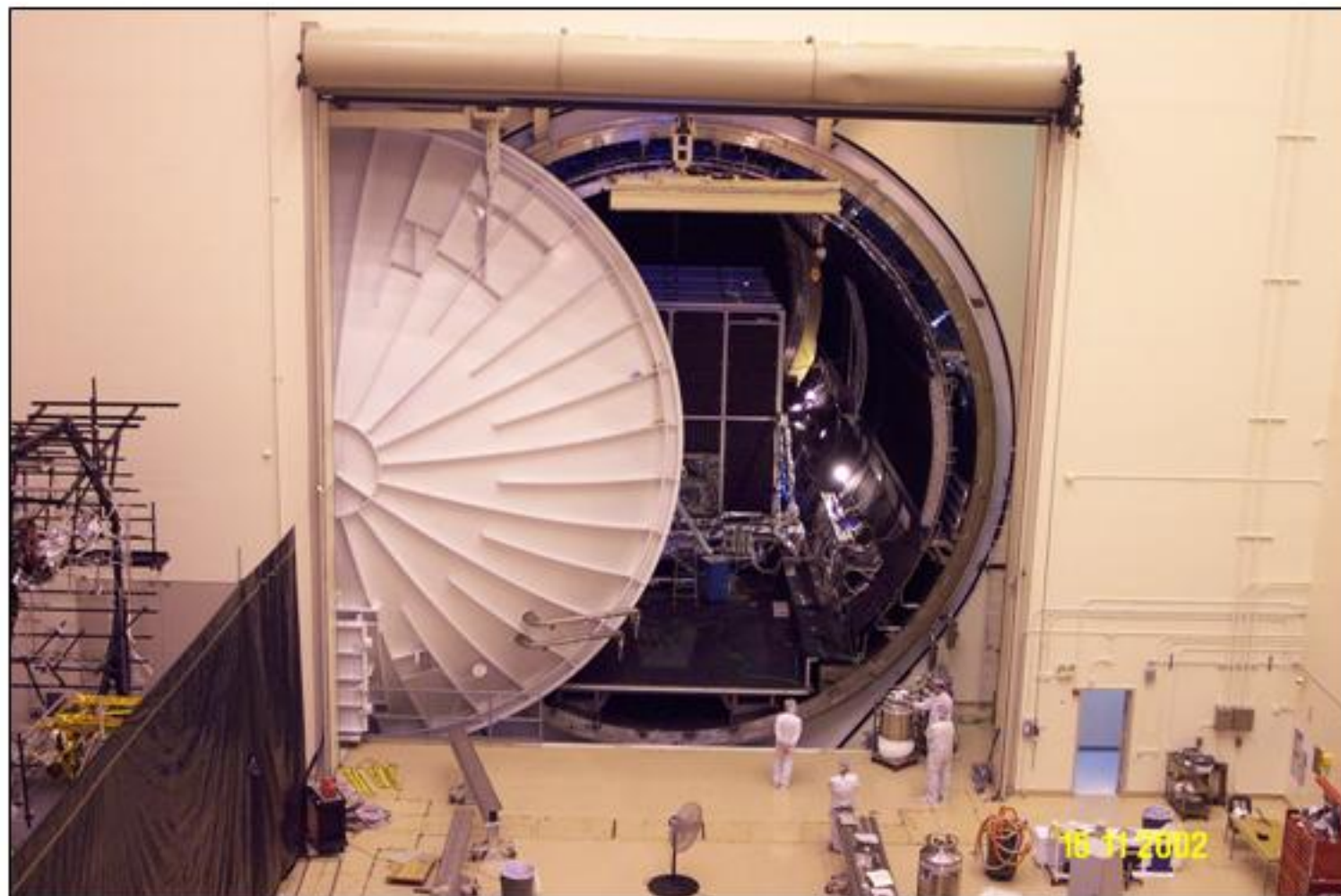
Shaker access not likely in the near term

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GLAST Radiator Panel TV Testing

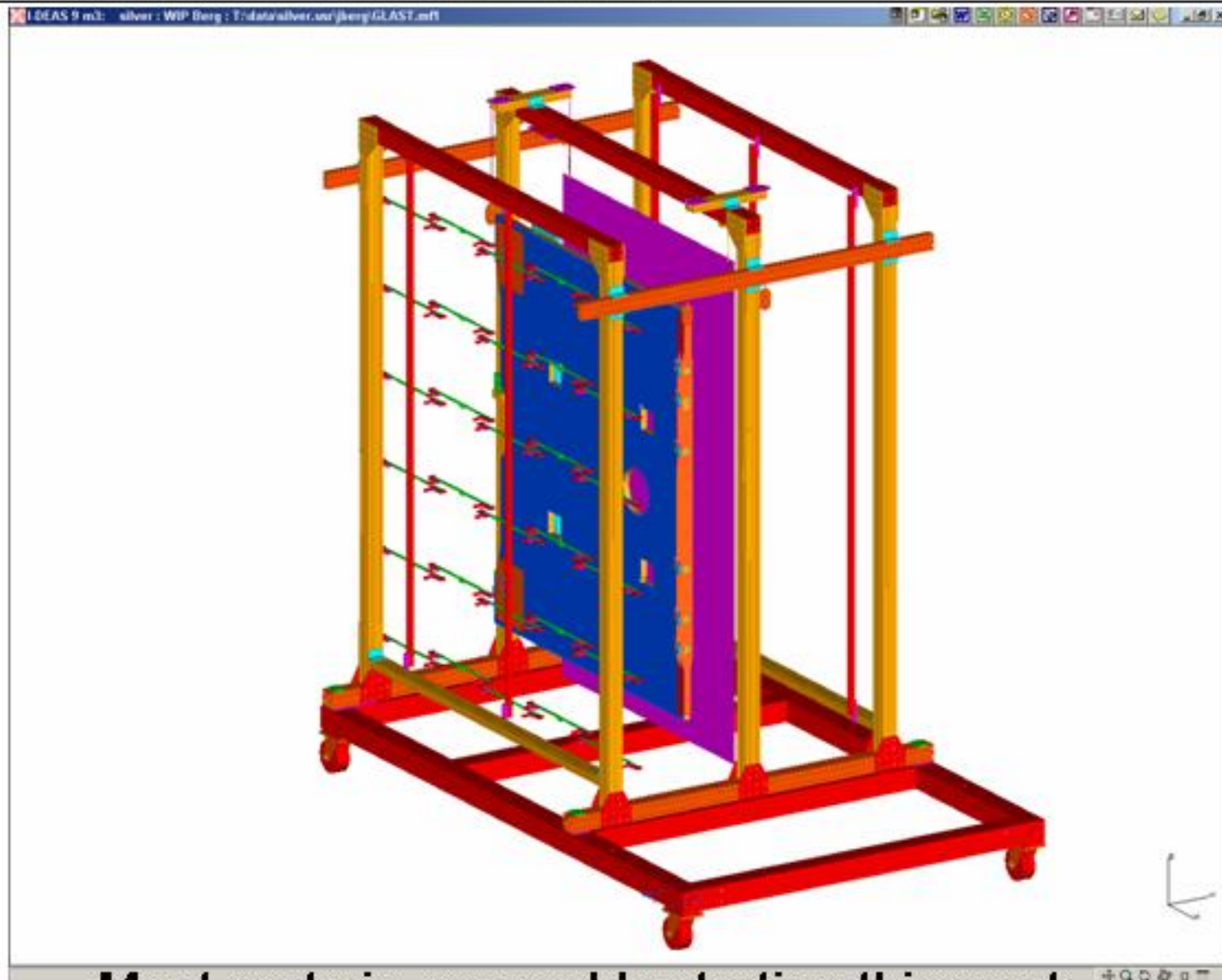
- **Changing test location to the DELTA chamber**
 - **Resolves software upgrade delay issue with SEP III and alleviated security constraints**
- **Test Planning needs to reflect facility change**
 - **Test plan has been completed**
 - **Procedure needs to reflect facility change**
- **GSE design completed**
 - **SLAC rack delivered**
 - **LM providing thermal simulators and MGSE and EGSE cabling to SLAC rack and facility control I/F**

DELTA Chamber for TVac



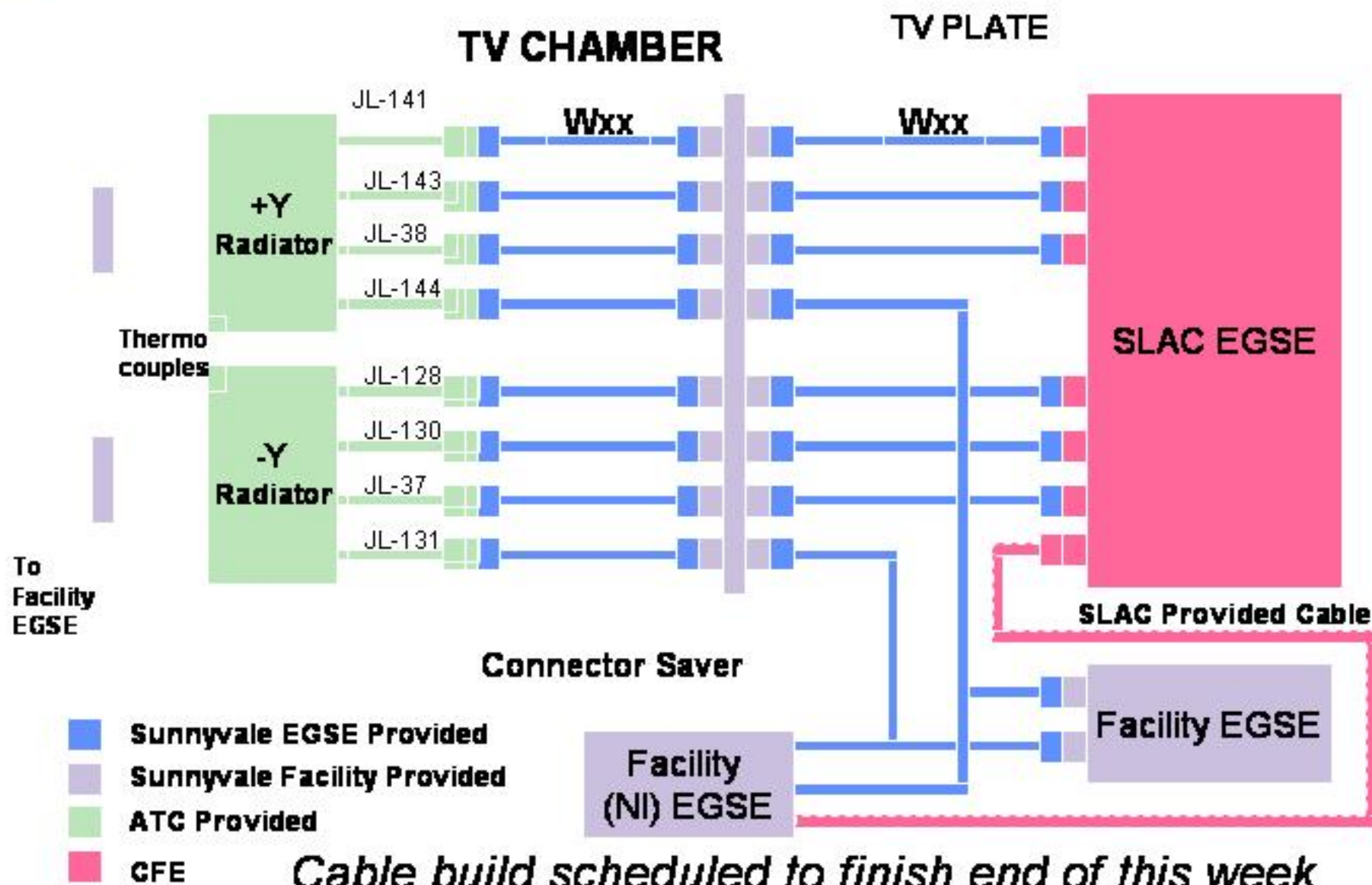
About Same operating cost as SEP III for LN2
Support fixture and Feed thru plates will fit

Radiator TV Fixture Concept



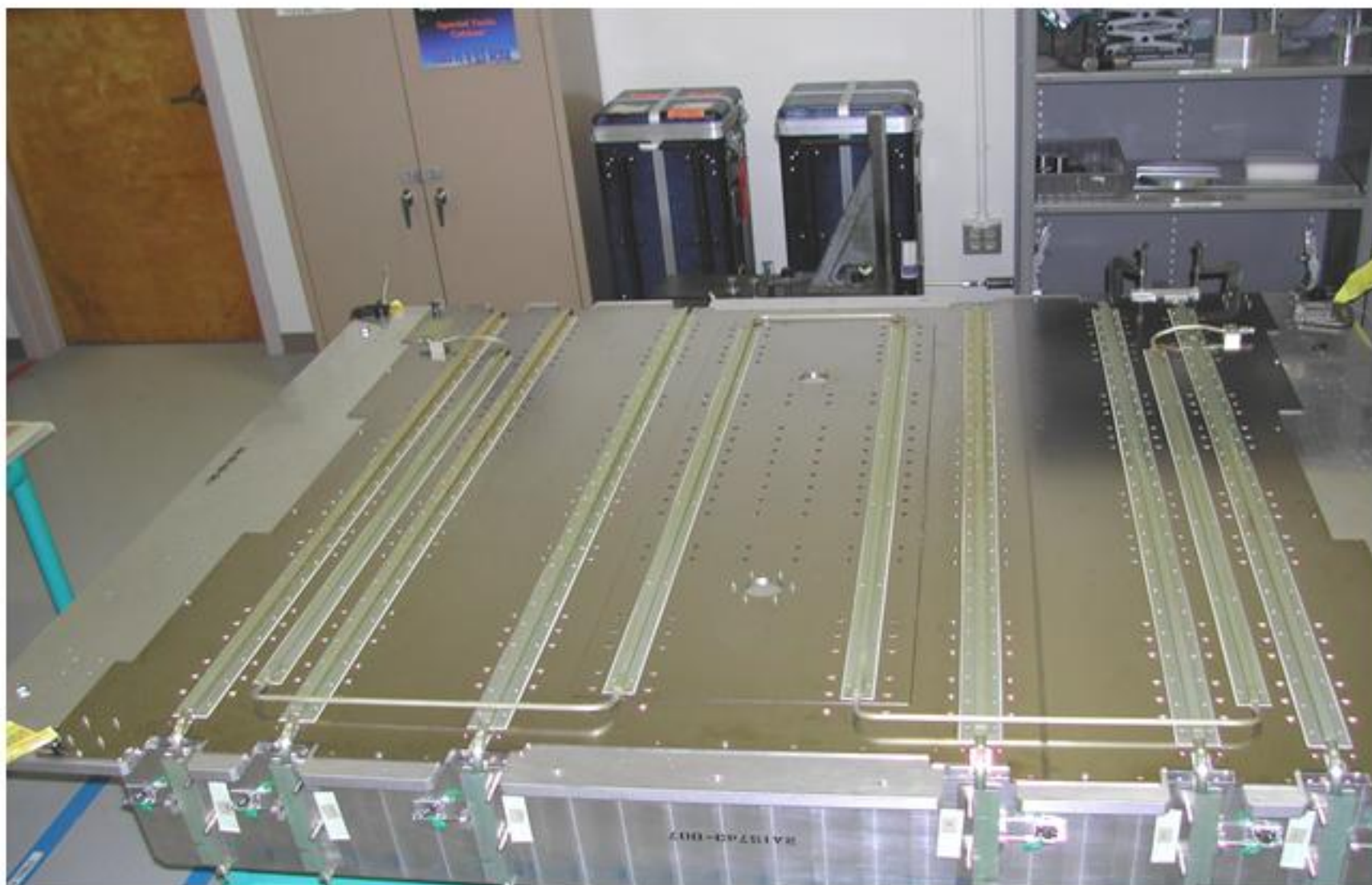
Most parts in, assembly starting this week

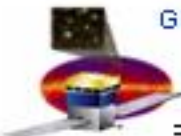
GLAST Radiator Thermal Vacuum Configuration





X-LAT





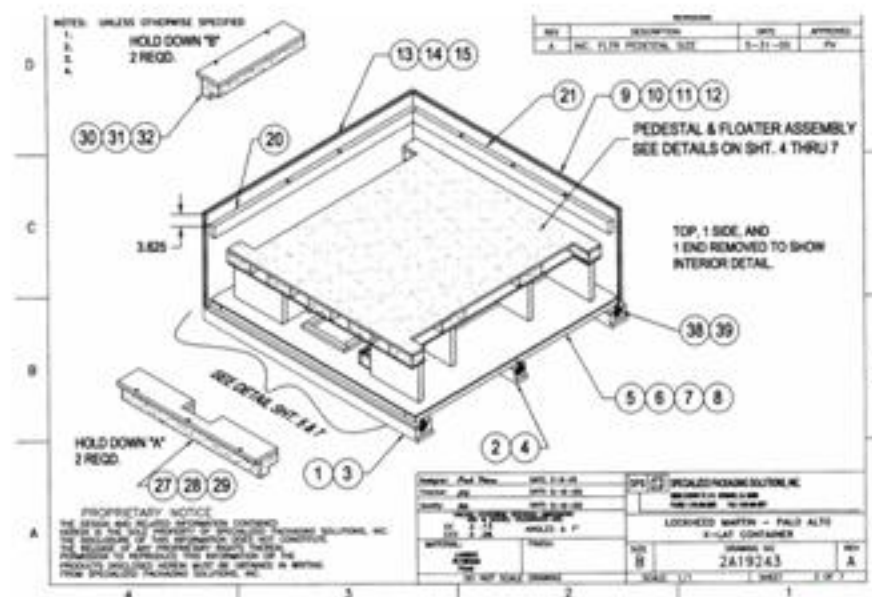
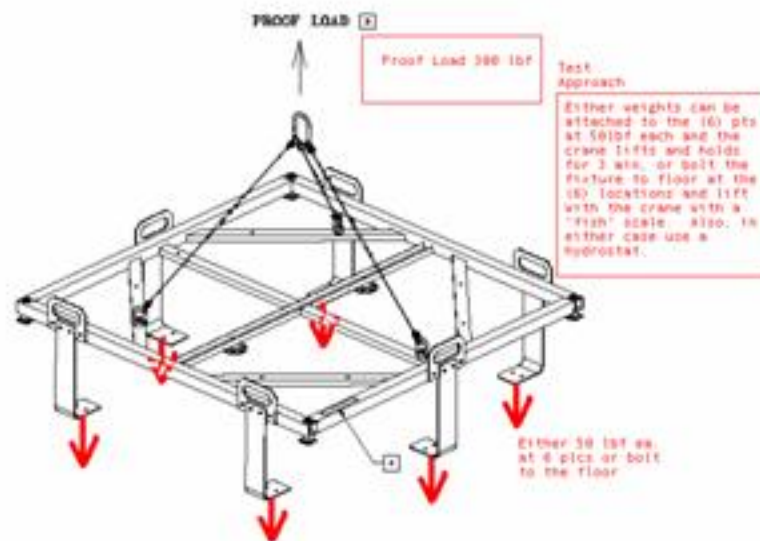
Flight Hardware Status – X-LAT

- **X-LAT**
 - **Complete**
 - **Pre-ship review held**
 - **X-LAT delivered to SLAC**

GSE being developed – X-LAT

- **Lift sling/strong back**
 - Strongback used for securing X-LAT for delivery
 - Needs to come back for opening two fastener holes and slotting one and reproofing

- **X-LAT shipping container delivered**





GLAST Risk Assessment Summary

Risk	Impact	Type of Risk (T/S/C)	Likelihood	Consequence	Mitigation Action	Status/ECD
Use of "Search" chamber for thermal testing	Console "red tag" status may not be resolved in time to support test. Chamber configuration not ideal for test requirements.	T, S & C	high	failure to meet delivery date	Have requested use of the SEP III chamber	SEP III chamber scheduled, planning and GSE approach being updated for test in SEP III
Failure to get agreement on reducing X-Lat testing to thermal cycling for workmanship	A full TV test with more extensive GSE would be needed if agreement is not reached	T, S & C	medium	will lengthen TV test and increase test complexity	get customer and mission success Ok to proceed	"Mission Success" review 4/21/05 recommended ultra sound NDI, Customer ok received for ambient pressure temp cycling
Fit Instrumentation/heater installation may drive schedule	could impact start of acoustic test	S & C	high	could force delay of rest of test program	have added more people resources; trying to work around EPDM issues	steady progress is being made

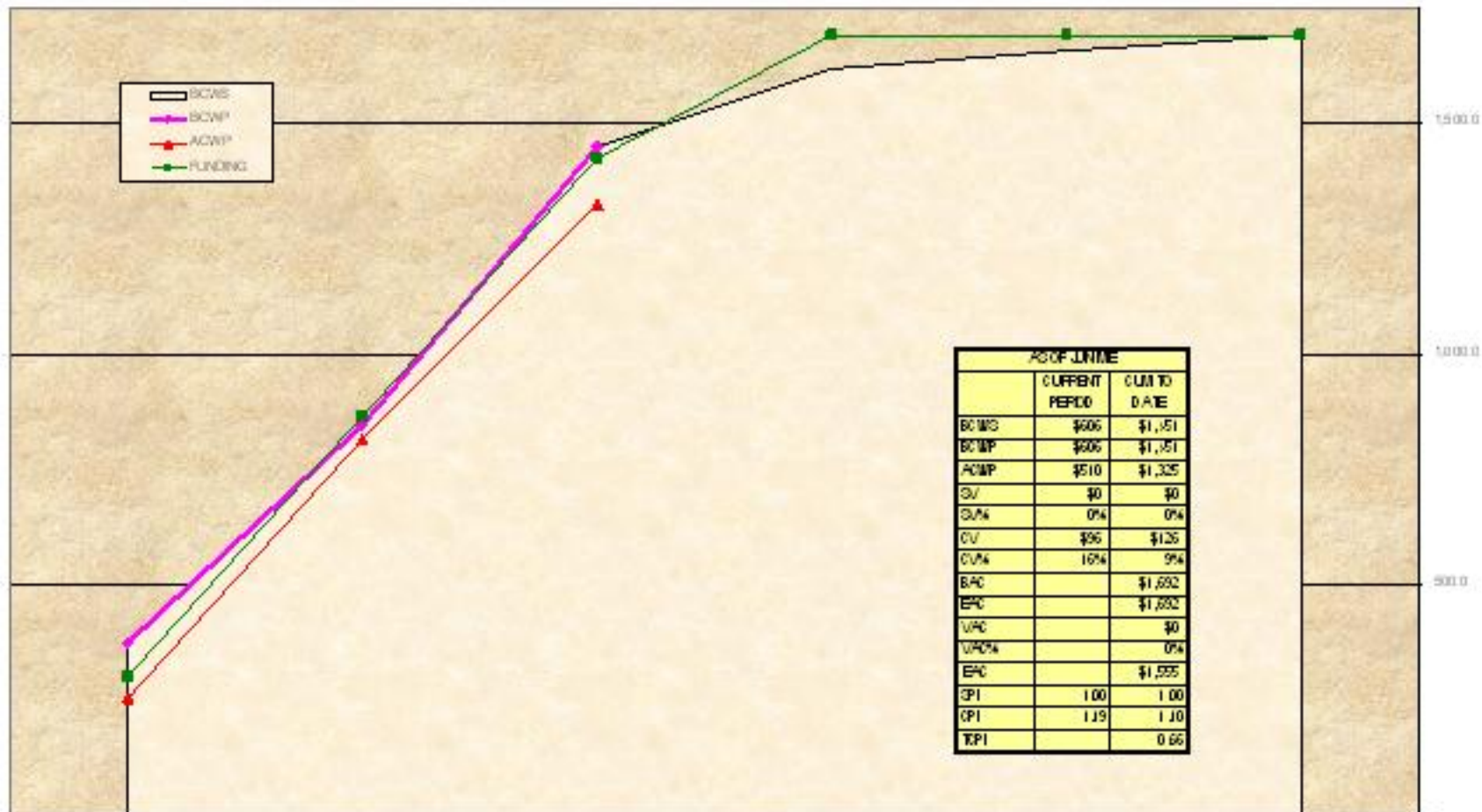
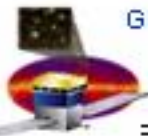
Summary Schedule – Radiators (Acoustic)

ID	Task Name	Duration	Start	Finish	Qtr 1, 2005			Qtr 2, 2005			Qtr 3,
					Jan	Feb	Mar	Apr	May	Jun	Jul
23	+Y Radiator	40 days	Thu 1/20/05	Wed 3/16/05	■						
24	Structure fab complete	40 days	Thu 1/20/05	Wed 3/16/05	■						
28	Build & Install Instrumentation & Verify (Htrs, Thermostats...)	57 days?	Tue 4/19/05	Wed 7/6/05				■			
29	part kitting	25 days?	Tue 4/19/05	Mon 5/23/05				■			
30	install & cure	32 days?	Tue 5/24/05	Wed 7/6/05				■			
31	+Y radiator ready for acoustic test	0 days	Fri 7/22/05	Fri 7/22/05							●
32	-Y radiator	40 days	Wed 2/2/05	Tue 3/29/05	■						
33	Structure Fab Complete	40 days	Wed 2/2/05	Tue 3/29/05	■						
37	Build & Install Instrumentation & Verify	65 days?	Tue 4/19/05	Mon 7/18/05				■			
38	part kitting	25 days?	Tue 4/19/05	Mon 5/23/05				■			
39	install & cure	40 days?	Tue 5/24/05	Mon 7/18/05				■			
40	-Y Radiator ready for acoustic test	0 days	Fri 7/22/05	Fri 7/22/05							●
41	Acoustic test	88 days?	Wed 3/30/05	Wed 7/27/05				■			
42	Acoustic test support fixture	34 days?	Fri 4/1/05	Wed 5/18/05				■			
43	fixture design	12 days?	Fri 4/1/05	Mon 4/18/05				■			
44	fixture build	22 days?	Tue 4/19/05	Wed 5/18/05				■			
45	Vibe/ Acoustic Test Plans/ Preps/ Opo's	72 days	Wed 3/30/05	Thu 7/7/05				■			
46	Acoustic/sine vib Instr Install (accels/strain gages)	42 days?	Wed 5/11/05	Thu 7/7/05				■			
47	Radiator Two point lift sling (existing spreader, new brackets for test) de	69 days	Fri 4/1/05	Wed 7/6/05				■			
50	Thermal isolator procurement (12, in receipt 6/14, mtg test tracking, 4 on the y	34 days	Thu 4/28/05	Tue 6/14/05				■			
51	Acoustic Test Readiness Review (delta TRR 6/23)	0 days	Tue 6/14/05	Tue 6/14/05							● 6/14
52	Acoustic cell shaping (#1)	1 day?	Wed 6/22/05	Wed 6/22/05							
53	Acoustic cell shaping (#2, due to time delay)	1 day?	Mon 7/11/05	Mon 7/11/05							
54	Acoustic cell shaping (#3 due to temporary stand down)	1 day	Thu 7/21/05	Thu 7/21/05							
55	Acoustic Test (pending crane problem resolution)	5 days	Sat 7/23/05	Wed 7/27/05							
56	Permission To Break Configuration Review	0 days	Wed 7/27/05	Wed 7/27/05							●

Summary Schedule - Radiators (TVac)

ID	Task Name	Duration	Start	Finish	Qtr 2, 2005			Qtr 3, 2005			Qtr 4,
					Apr	May	Jun	Jul	Aug	Sep	Oct
57	Thermal blanket procurement (Marcell)	74 days?	Mon 4/25/05	Tue 8/2/05	[Bar]						
58	blanket design update/build (2 sets), Exhaling set OK for Test?	73 days?	Mon 4/25/05	Tue 8/2/05	[Bar]						
59	Install MLI/FOSR +/- Y radiators (also create "gasket" for I/F?)	4 days	Thu 7/28/05	Tue 8/2/05				[Bar]			
60	Radiator Thermal Vac/Thermal Balance test	110 days?	Fri 4/1/05	Tue 8/30/05	[Bar]						
61	Test Proc	87 days?	Fri 4/1/05	Fri 7/29/05	[Bar]						
62	Radiator/SLAC GSE I/F Cabling (2 connector saver types wrong..order)	82 days?	Mon 4/11/05	Fri 7/29/05	[Bar]						
63	Cabling Design	45 days?	Mon 4/11/05	Fri 6/10/05	[Bar]						
64	Cabling proc/build (MR placed 6/17/rapid proc. parts in exception type)	28 days?	Tue 6/23/05	Fri 7/29/05	[Bar]						
65	Feed thru plate design	8 days?	Mon 4/11/05	Wed 4/20/05	[Bar]						
66	Feed thru plate build	18 days?	Tue 4/21/05	Mon 5/16/05	[Bar]						
67	SLAC EGSE arrival	0 days?	Tue 7/12/05	Tue 7/12/05				7/12			
68	SLAC EGSE transfer to Delta Chamber	1 day?	Mon 8/1/05	Mon 8/1/05							
69	Thermal Simulators/Mechanical GSE	51 days?	Fri 5/6/05	Fri 7/15/05	[Bar]						
70	Design	30 days?	Fri 5/6/05	Tue 6/16/05	[Bar]						
71	Parts Maching (MR ordered 6/24, ok on machined parts, question on cr)	16 days	Fri 6/24/05	Fri 7/15/05	[Bar]						
72	Radiator T-Vac Preps at SEP III	5 days	Mon 7/18/05	Fri 7/22/05	[Bar]						
73	Install radiators & Test TIC's (look at TIC list earlier in 152, verify instrument)	2 days	Wed 8/3/05	Tue 8/4/05				[Bar]			
74	Radiator Thermal Vac Test Readiness Review	0 days	Tue 8/4/05	Tue 8/4/05				[Bar]			
75	Radiator T-VAC Testing	8 days	Fri 8/5/05	Tue 8/16/05				[Bar]			
76	Permission To Break Configuration Review	0 days	Tue 8/16/05	Tue 8/16/05				[Bar]			
77	T-VAC Write-up/paper closeout	10 days	Wed 8/17/05	Tue 8/30/05				[Bar]			
78	Radiator shipping containers (temp on hold for spec clarification, Marcell..)	60 days	Wed 4/27/05	Tue 7/19/05	[Bar]						
81	Combined Pre ship/Cert Review	0 days	Mon 8/15/05	Mon 8/15/05				[Bar]			
82	Deliver Radiators	0 days	Tue 8/30/05	Tue 8/30/05				[Bar]			

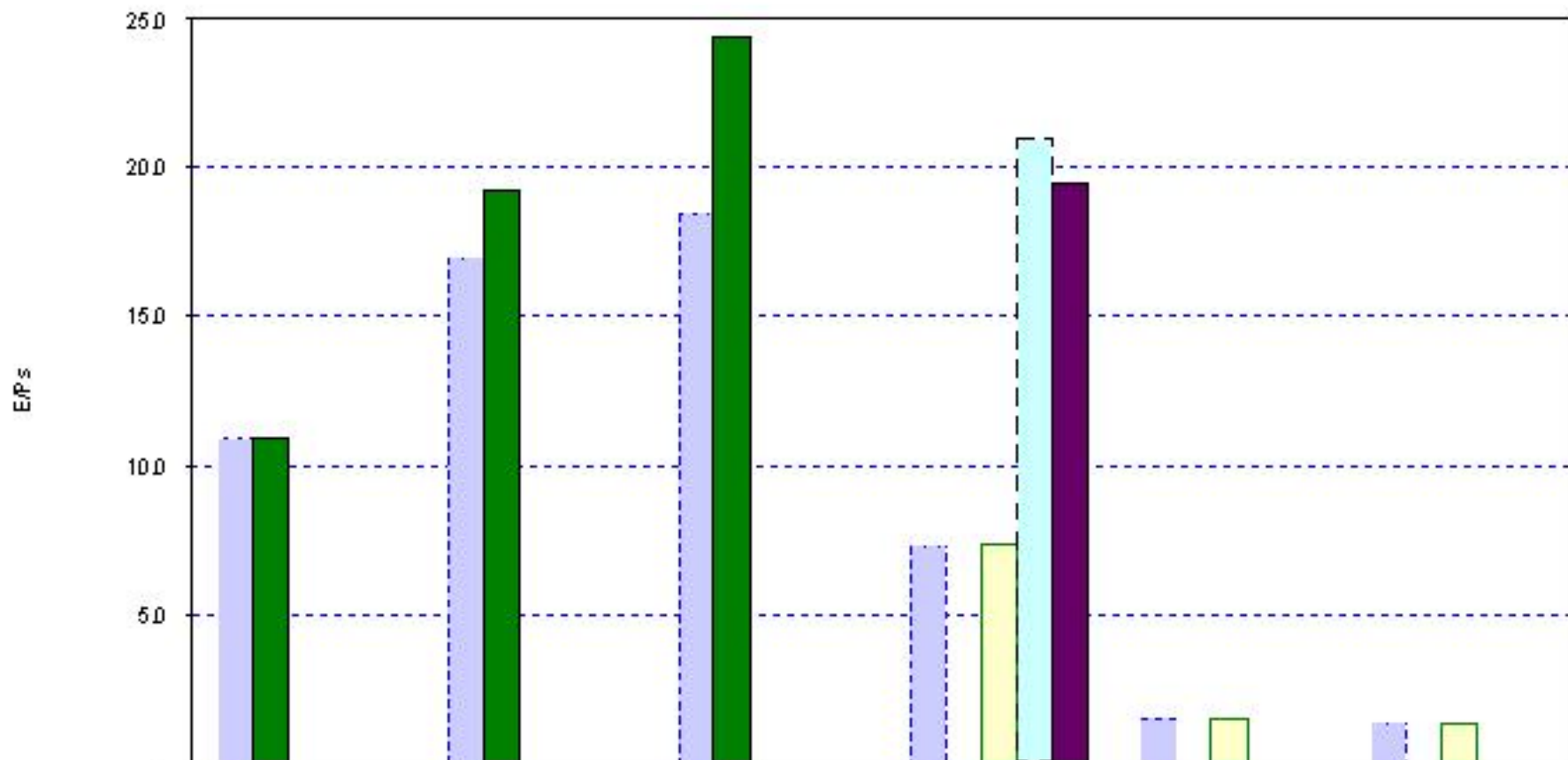
June GLAST Program Financials



AS OF DATE		
	CURRENT PERIOD	CUM TO DATE
BCWS	\$906	\$1,351
BCWP	\$906	\$1,351
ACWP	\$510	\$1,325
CV	\$0	\$0
CV%	0%	0%
EV	\$96	\$126
EV%	16%	9%
BAC		\$1,692
EPC		\$1,692
VAC		\$0
VAC%		0%
EPC		\$1,692
CPI	1.00	1.00
SPI	1.19	1.10
TPI		0.66

	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05
BCWS	374.7	845.0	1,480.9	1,617.4	1,657.0	1,692.0
BCWP	374.7	845.0	1,480.9			
ACWP	289.1	814.3	1,324.7			
FUNDING	303.7	884.5	1,426.2	1,602.9	1,602.9	1,692.0

GLAST LAT



	Apr-05	May-05	Jun-05	Jul-05	Aug-05	Sep-05
UM Budget EPR	109	17.0	185	73	15	1.3
UM Actual EPR	109	19.3	244			
UM ETD				73	15	1.3
UM LTD				210		
UM Current Week				19.5		

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Plan Forward-Financials

- **Executing per new LOE contract as of April 1 for radiator heater/instrumentation installation, GSE build and environmental testing**
 - **Contract through end FY 05**
 - **END OF JUNE WE WERE RUNNING OUT OF FUNDS MUCH QUICKER THAN TASKS**
 - **Reached agreement on fixed price to go costs for acoustic and TVac tests**

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Summary

- **X-LAT Delivered**
- **Radiators are in Acoustic Test Phase**
- **TVac facility changed to DELTA chamber to get around SEPIII data system software and security issues**