GLAST

LAT Status

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GLAST User's Committee
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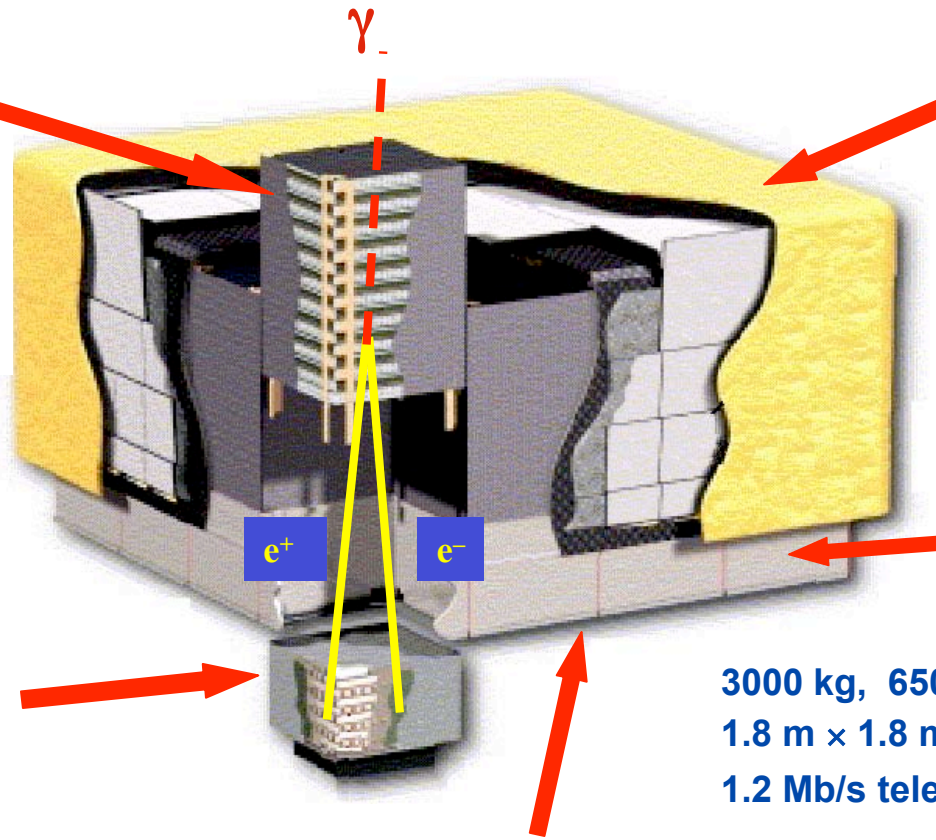
GLAST Large Area Telescope



Si Tracker
pitch = 228 μm
8.8 x10^5 channels
12 layers _ 3% X_0
+ 4 layers _ 18% X_0
+ 2 layers

ACD
89 Segmented scintillator tiles
0.9997 efficiency
⇒ minimize self-veto

Grid & Thermal Radiators

CsI Calorimeter
1536 CsI(Tl) bars
Hodoscopic array
8.4 X_0 8 _ 12 bars
2.0 _ 2.7 _ 33.6 cm
⇒ cosmic-ray rejection
⇒ shower leakage correction

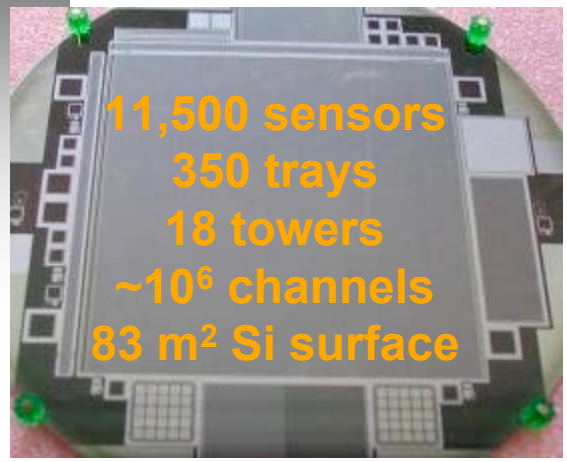
3000 kg, 650 W (allocation)
1.8 m × 1.8 m × 1.0 m
1.2 Mb/s telemetry data rate

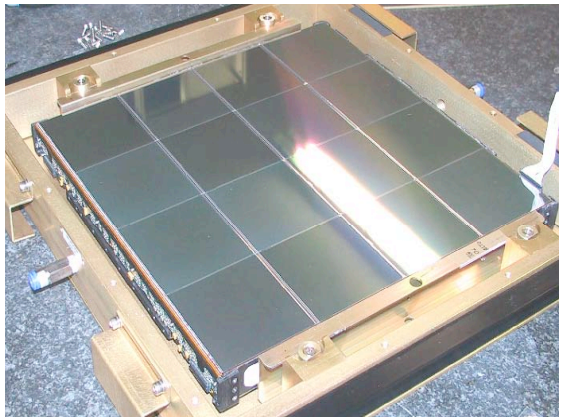
Data acquisition
Flexible hardware Trigger + Software filters

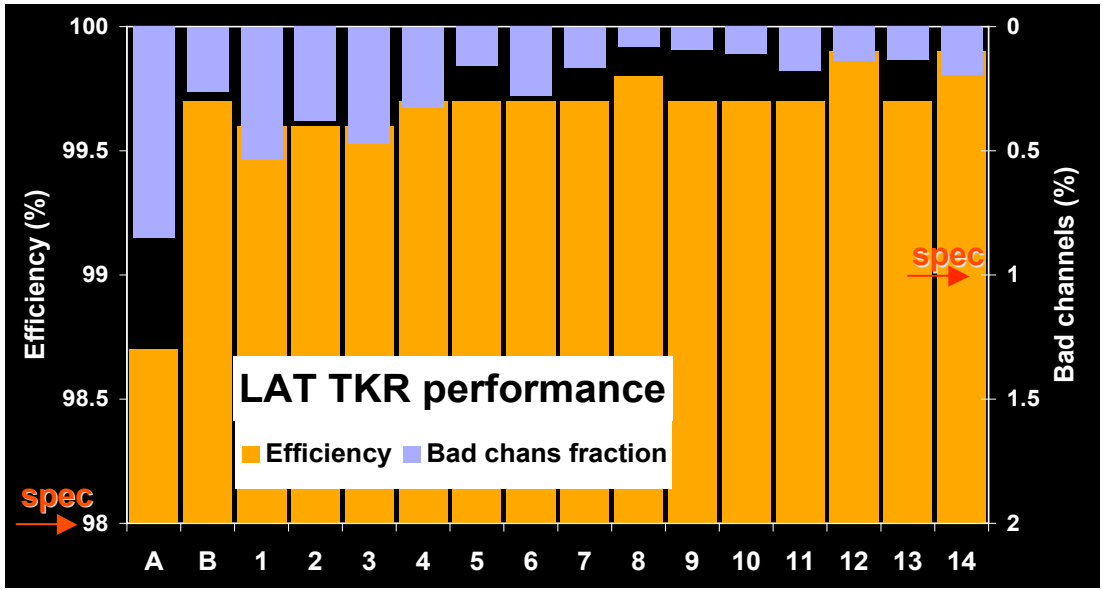
The largest area silicon detector in the world!
(and, eventually, above it)

LAT Silicon Tracker

team effort, led by UCSC, involving ~70 physicists and engineers from Italy (INFN & ASI), Japan, and the United States

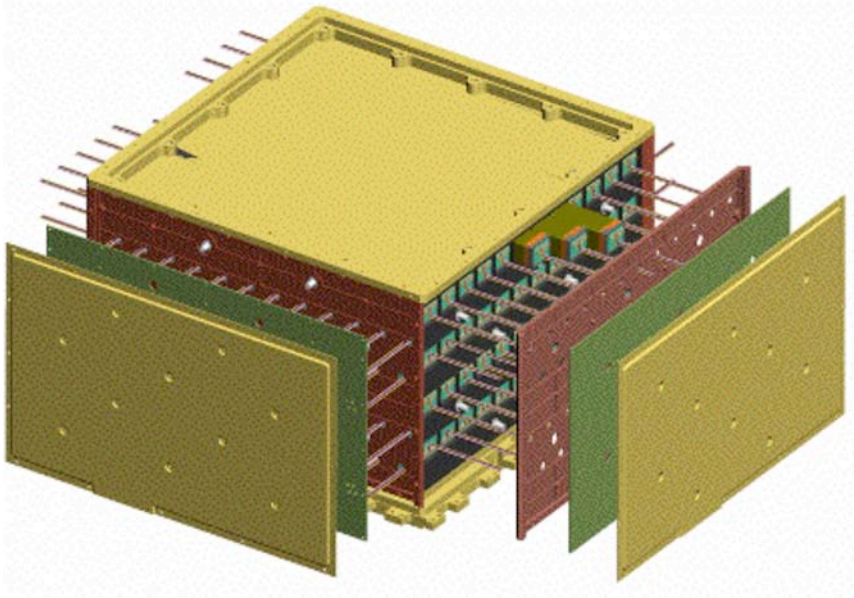


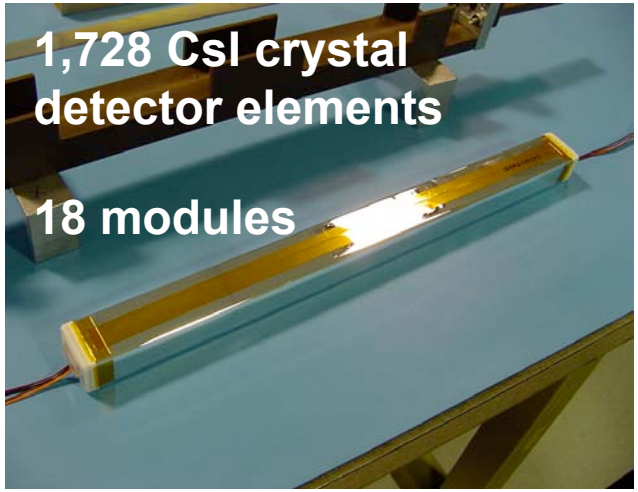


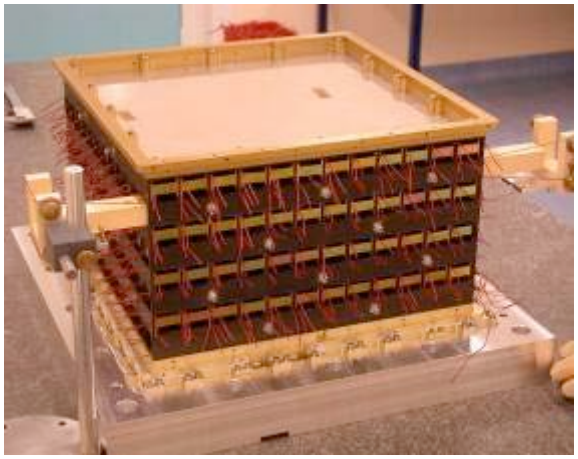


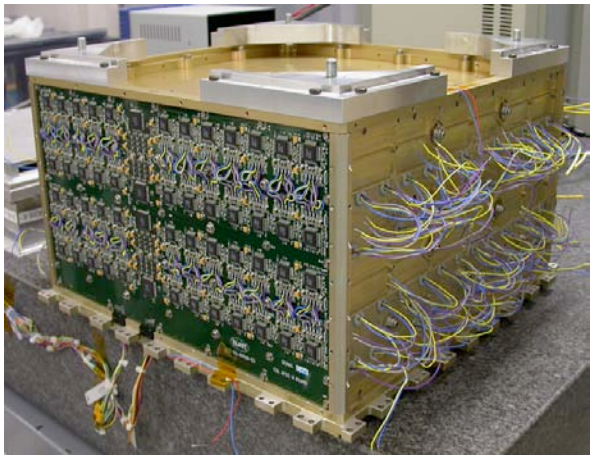
LAT Calorimeter

team effort, led by NRL, involving physicists and engineers from the United States, France (CNES, IN2P3 & CEA), and Sweden





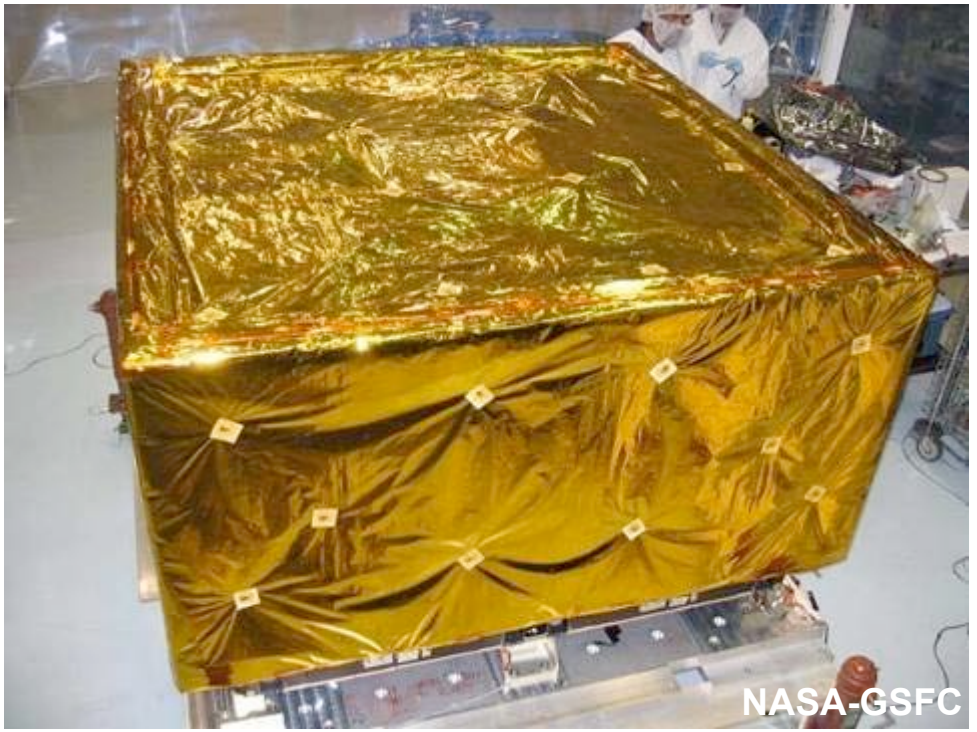




LAT Anti-Coincidence Detector

team effort, led by Dave Thompson (GSFC), involving physicists and engineers from Goddard Space Flight Center, SLAC, and Fermi Lab

ACD before installation of Micrometeoroid Shield



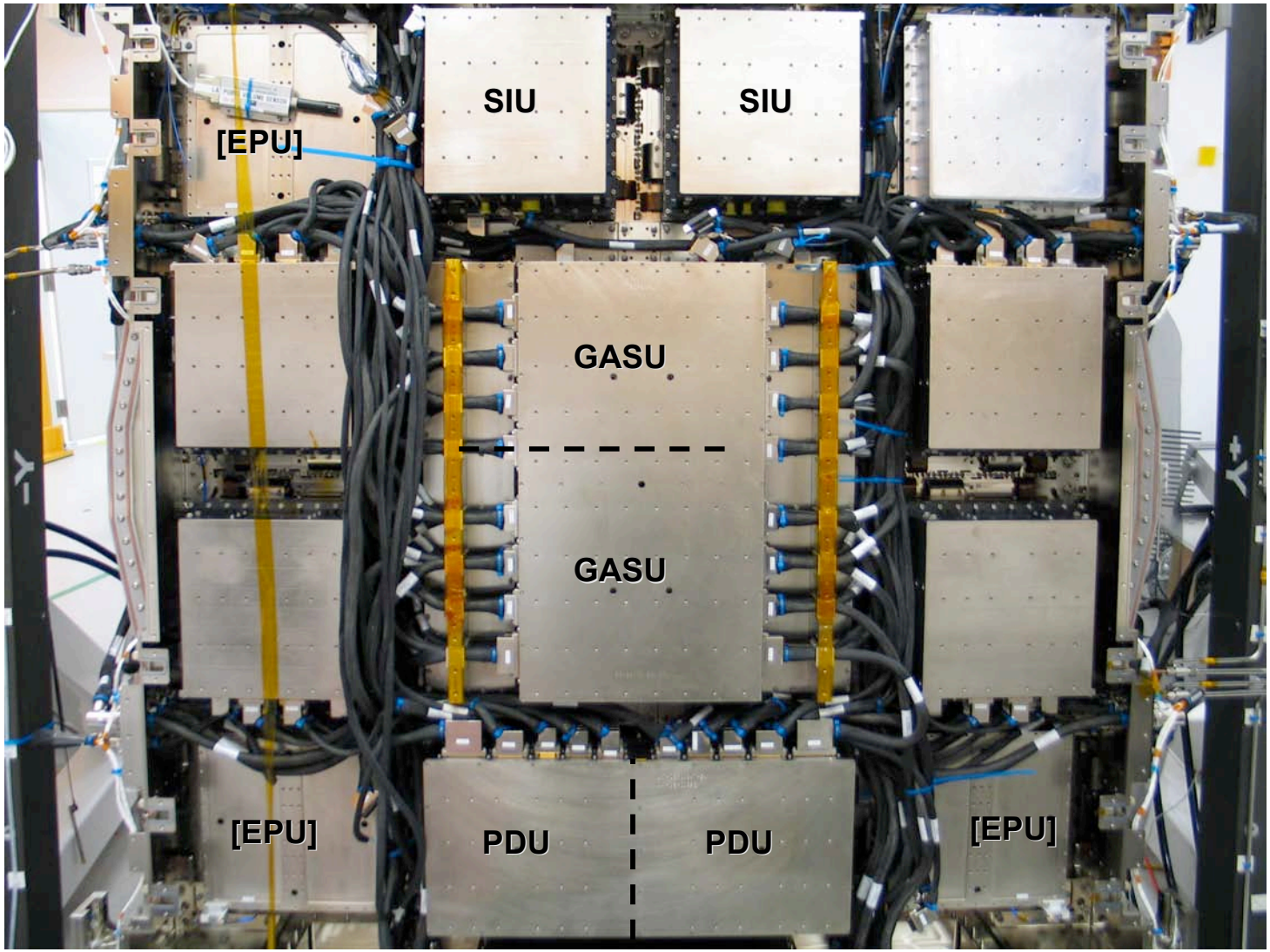
ACD with Micrometeoroid Shield and Multi-Layer Insulation (but without Germanium Kapton outer layer)

Large Area Telescope (LAT)

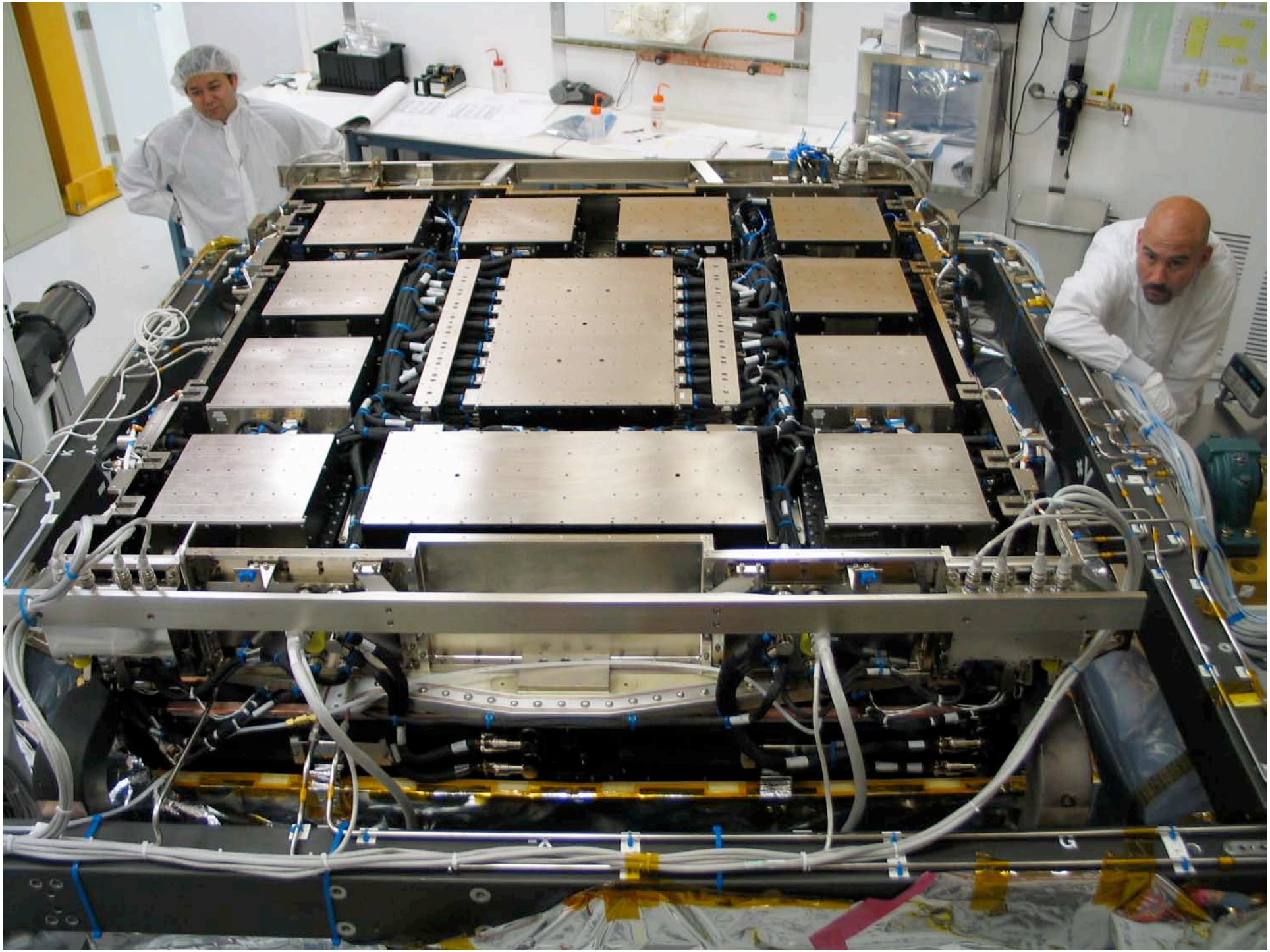
integration and initial testing of LAT at SLAC complete; ship to NRL for environmental testing on Thursday, May 11

LAT Data Acquisition System

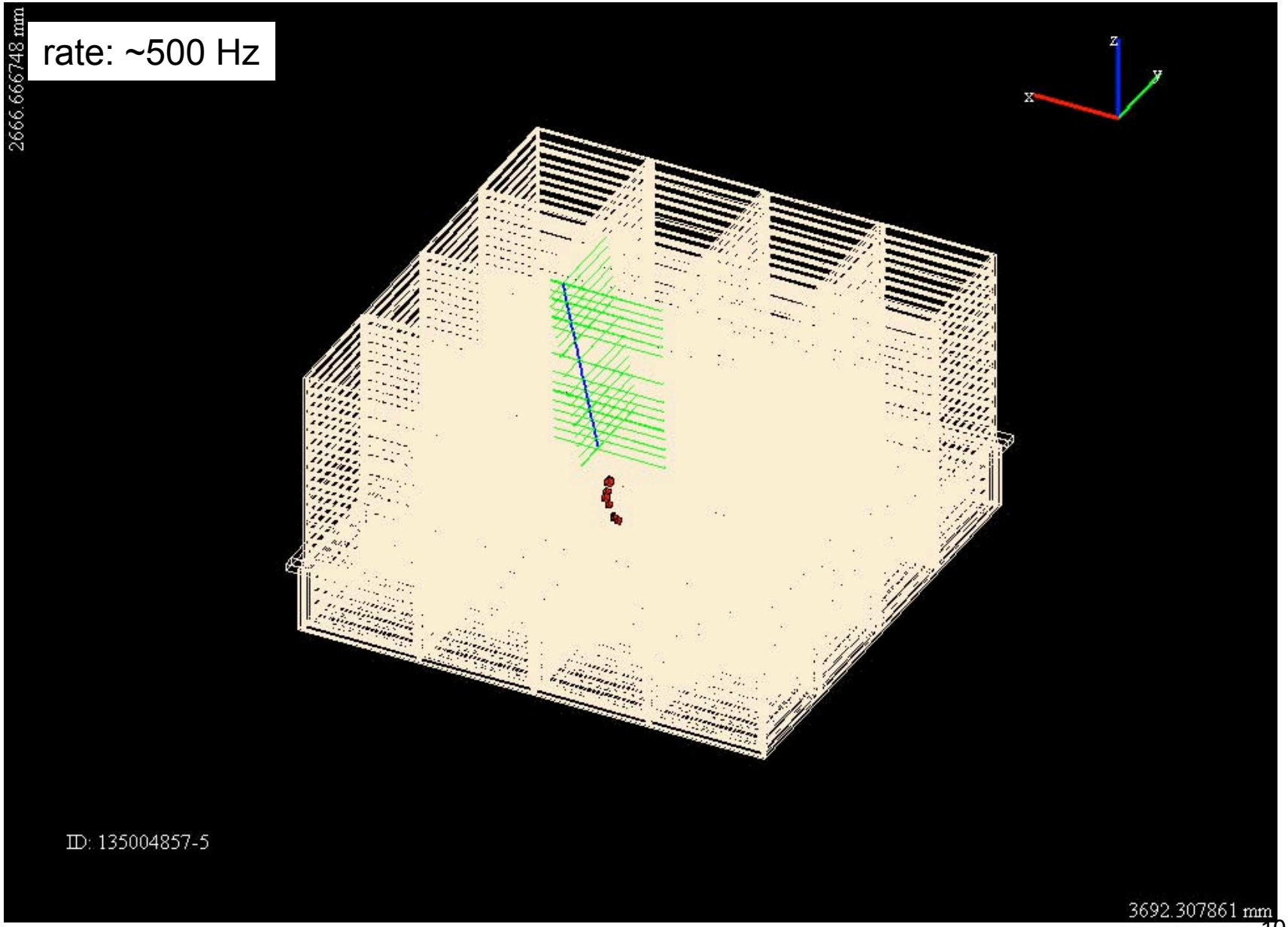
team effort, led by SLAC, with participation from NRL

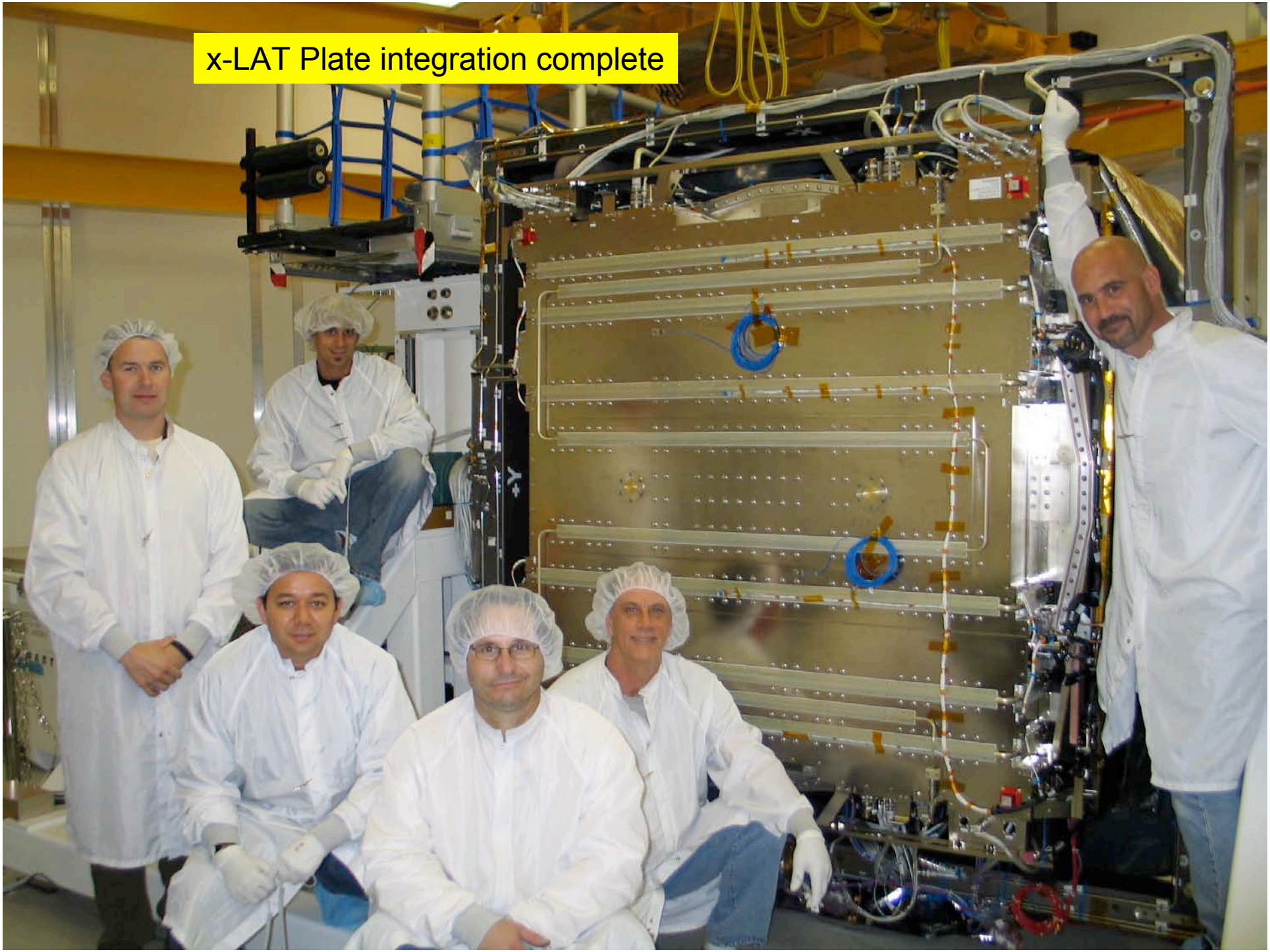


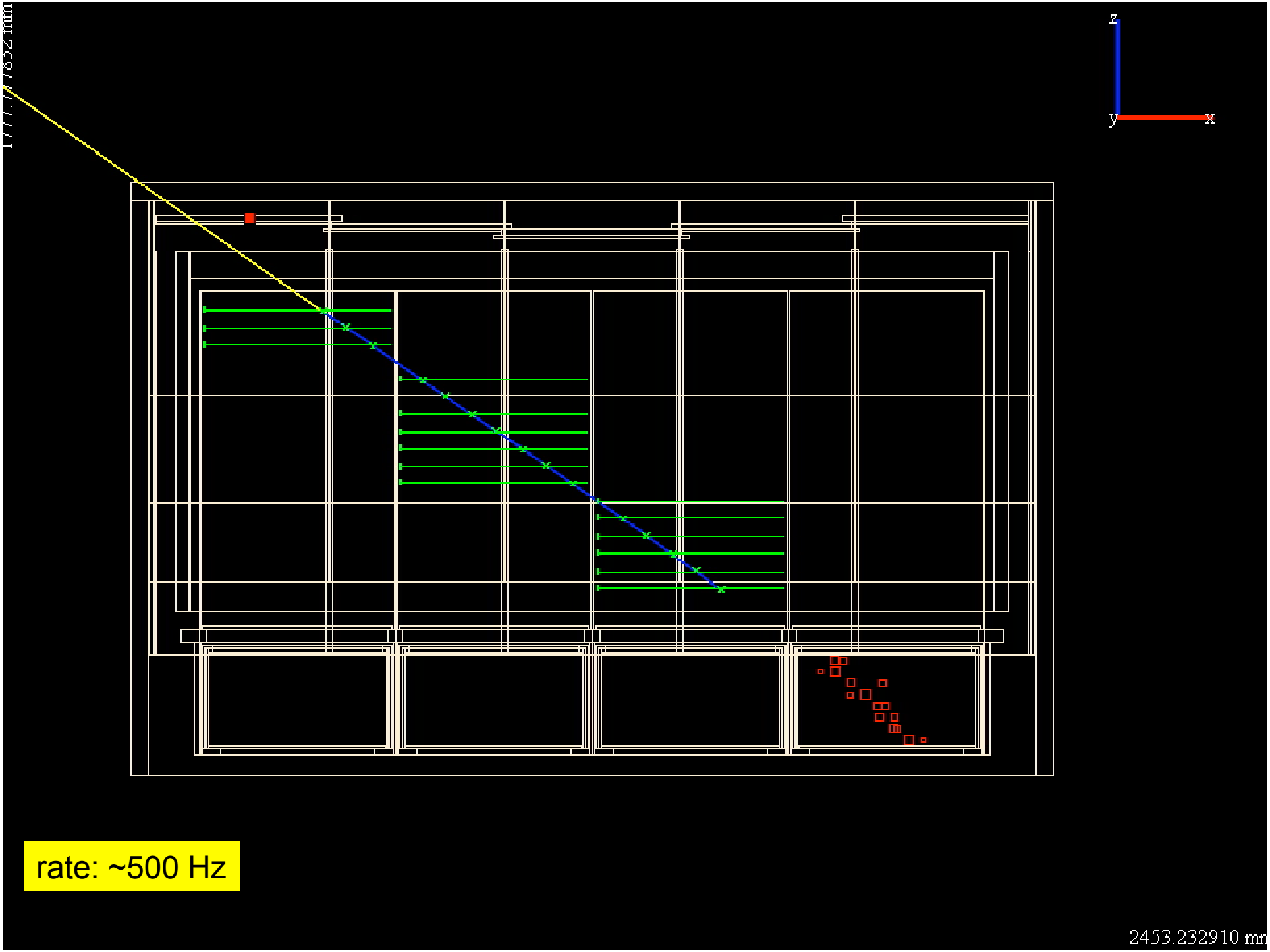

ACD integrated with instrument



16-tower movie

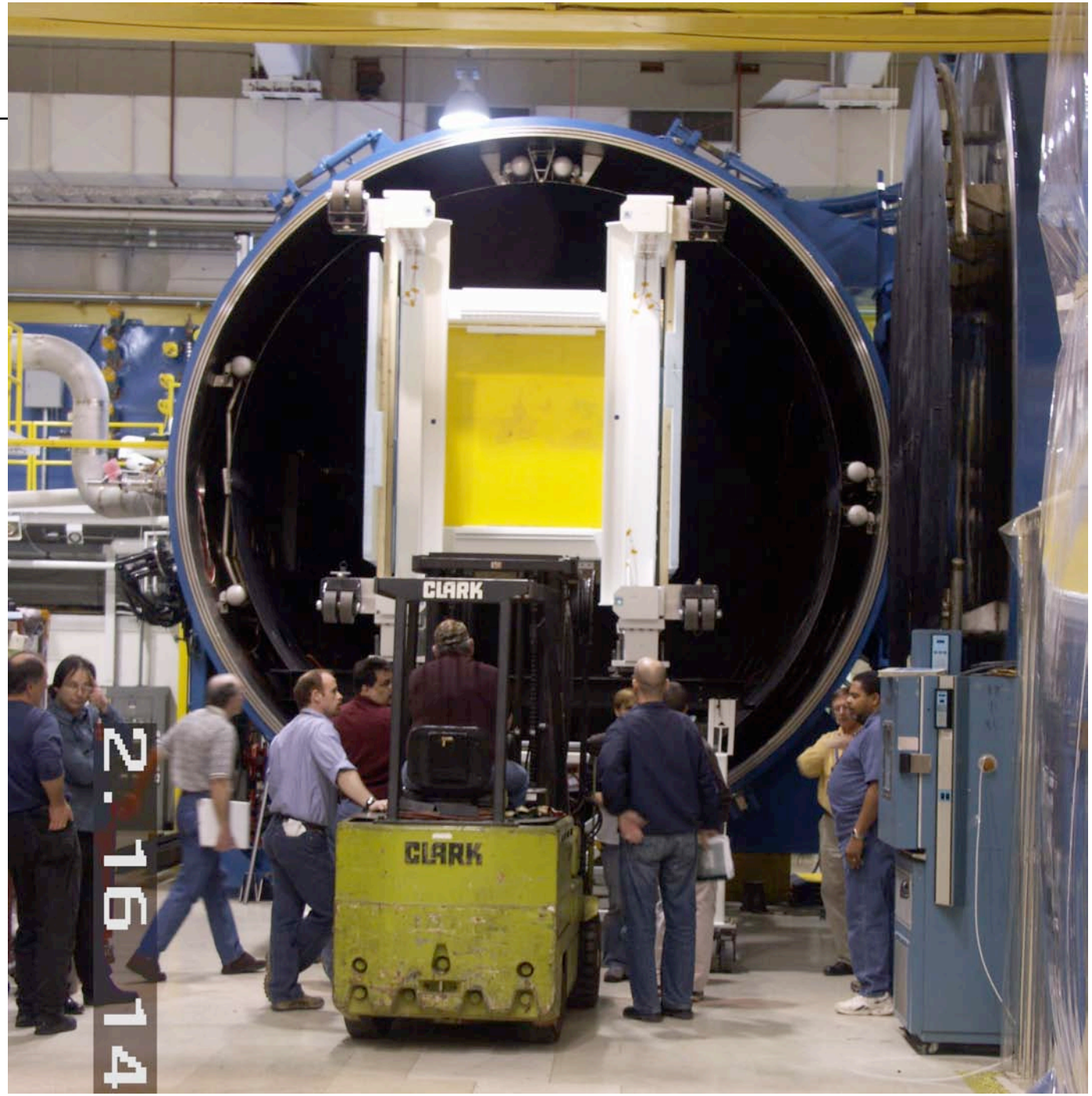



x-LAT Plate integration complete

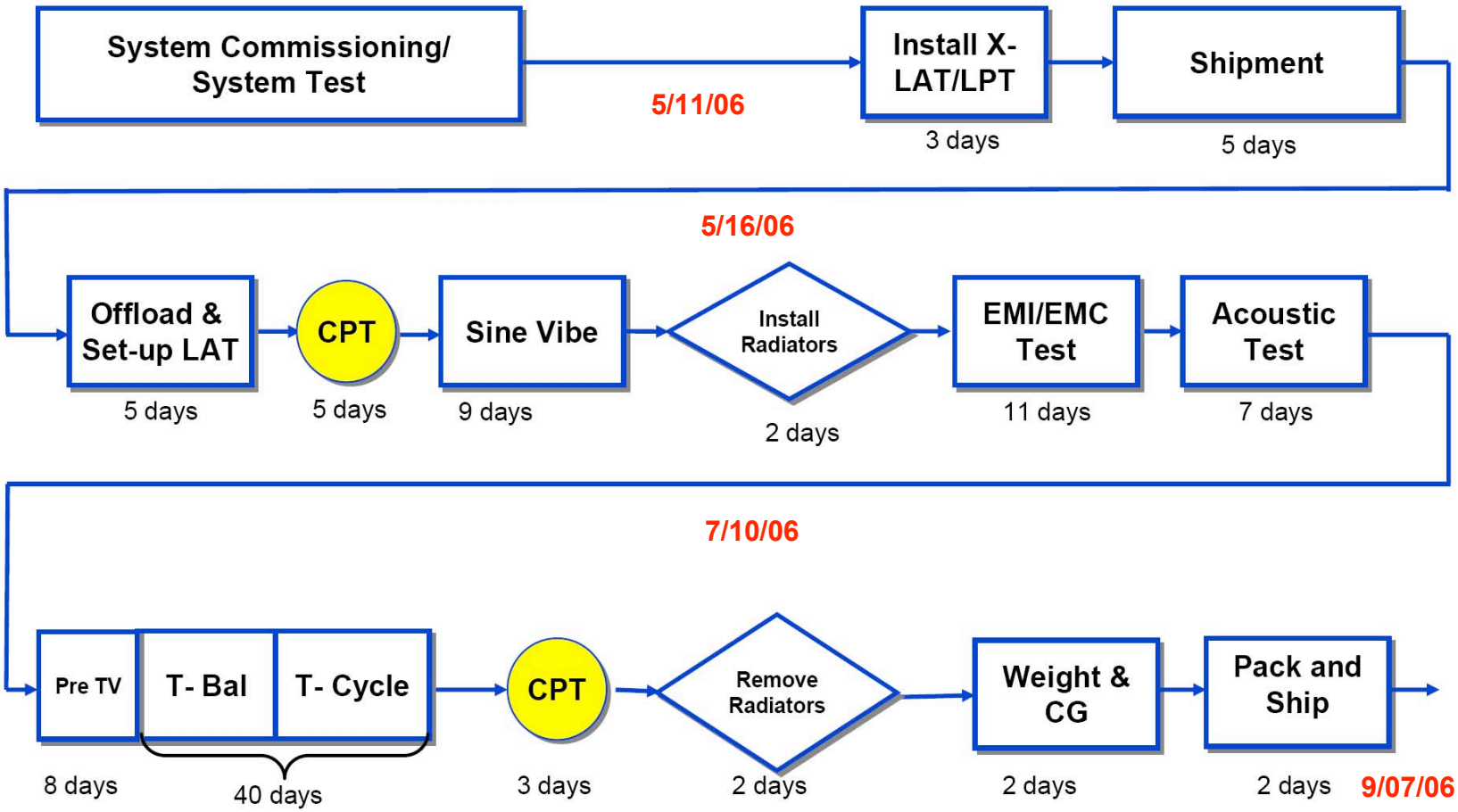

z
y
x
rate: ~500 Hz
2453.232910 mm

LAT on shipping container base

LAT Shipping Container


CLARK
CLARK
2.19.14

LAT Test Flow



NOTE: Durations for moving and setup have been incorporated into the total duration for the test. SIIS Verification will be worked in as appropriate.