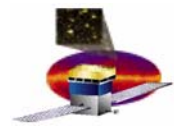


GLAST Large Area Telescope:

**Engineering Meeting
October 29, 02**

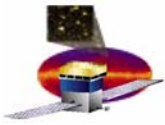
Gunther Haller, Mike Huffer, JJ Russell, Tony Waite

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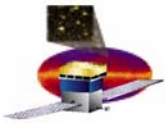
End-To-End Test (1)

- ❑ Present planned test completely tests all static features of the instrument (configuration, data taking at low rates, monitoring) with complete test-bed as well as with completed LAT
- ❑ Filtering performance will be tested with Monte-Carlo
 - ❑ Just with CPU (planted data in memory)
 - ❑ With Instrument Simulators and full EM2 DAQ (16 TEM's, GLT, Event-builder, SIU, EPU, etc), 12 ACD FREE boards, one set of TKR&CAL elx
- ❑ Spacecraft Interfaces are fully tested with Spacecraft Simulator



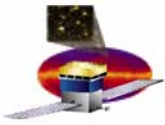
End-to-End Test (2)

- ❑ What is the only possible benefit of an Airplane Flight?
 - ❑ Event coherency and integrity at high rate
 - ❑ But ONLY for Front-ends, since rest of DAQ is fully tested with ISIMs
 - ❑ Issues are
 - ❑ Self-Triggering
 - ❑ CAL (can test in test beam)
 - ❑ TKR (see below)
 - ❑ Multi-level buffering in TKR (see below)
- ❑ How is that tested?
 - ❑ Is tested on single tower, don't need full LAT
 - ❑ Options are: beam-test with spill (random, can't be done at SLAC)
 - ❑ Test board to generate known non-static pattern into input of MCM
 - ❑ Built-in calibration does not generate over-lapping events
 - ❑ Can't do with flight-components, but for TKR is the same electronics



End-to-End Test (3)

- ❑ **What is the only possible benefit of an Airplane Flight?**
 - ❑ **Event coherency and integrity at high rate**
 - ❑ **But ONLY for Front-ends, since rest of DAQ is fully tested with ISIMs**
 - ❑ **Issues are**
 - ❑ **Self-Triggering**
 - ❑ CAL (can test in test beam)
 - ❑ TKR (see below)
 - ❑ **Multi-level buffering in TKR**
- ❑ **How is that tested?**
 - ❑ **Is tested on single tower, don't need full LAT**
 - ❑ **Options are: beam-test with spill (random, can't be done at SLAC)**
 - ❑ **Test board to generate known non-static pattern into input of MCM**
 - ❑ **Built-in calibration does not generate over-lapping events**
 - ❑ **Can't do with flight-components, but for TKR is the same electronics**



End-to-End Test (4)

- **Present tests are designed to test every feature**
- **Airplane flight is nice but not required from Elex and FSW point of view**
 - **So if free, then fine, but is it?**
 - **Is there list of detailed cost and schedule for specific people for I&T, Mechanical, Thermal,**
 - **Risk to instrument, etc**
 - **If there is concern, then should do test earlier, and one tower would suffice (reason above)**