

Weekly Report for the week ending May 3, 2001

\*\*\* CALORIMETER (N. Johnson)

#### 4. 1. 5. 1 CAL Management

After IDT video, two Level III requirements reviews and preparation of the quarterly report, no useful work was performed.

Nothing to report from France also, due to Holidays and internal meetings.

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#### 4. 1. 5. 3 Performance Assurance

- Prepared contamination control plan for calorimeter.
  - Prepared Quarterly report for Jan 1-March 31-2001.
  - Finalized the specification of silicon detector.
  - Continuous risk management plan draft for CAL will be circulated for comments next week.
  - List of Approved QML Manufacturers, Assembly/Test, Fabrication, Test labs, and PEM manufacturer was distributed. This list will be updated as and when new vendors are approved. ASAT Hong Kong, China can be used for ASIC Packaging.
  - WIP in process for locating ASIC test house.
  - Reliability plan for CAL will be circulated for comments during week of May 14, 2001.
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#### 4. 1. 5. 5. 2 CAL CsI Scintillation Crystal

First new batch of crystals from Amcryst arrived in Sweden this week. This batch contains 12 real GLAST crystals and 2 boule samples. First crystal optical test station sent from NRL to Sweden this week. Reference crystals have been machined to new dimensions and polished. The light tapering is now being applied and fine-tuned.

Continue thermal cycling and light yield studies of GLAST crystal with BM custom diodes and Masterbond flexible epoxy.

The first version of the data acquisition and analysis software packages for the Crystal Optical Testing Station should ship electronically to Sweden early next week. Work on the user interfaces is nearing completion. Updates and additional releases will follow. (NRL)

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#### 4. 1. 5. 6 CAL Pre Electronics Module

A flexible cable design which fits the calorimeter balloon flight PIN diode has been submitted for fabrication. This design is similar to what would be needed for flight, but would solder to the balloon flight diodes. Expect delivery the week of May 14th.

After some initial setup problems, we got the Analog Devices AD7475 analog to digital converter working. Performed differential non-linearity measurements at a few different clock rates. Results are that the DNL is worse than that of the Maxim devices, but better than that of the Burr-Brown devices. The DNL is noticeable worse at a 20 MHz ( maximum spec ) clock rate as compared to a 10 MHz clock rate.

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4. 1. 5. 4. 5 CAL Software/Design Verification

CAL-HI trigger study is still in progress. Simple discriminators are not adequate to reject protons that suffer deep inelastic nuclear interactions and at the same time accept 90% of photons depositing 10 GeV in the CAL. Some logical combination of discriminators is required. We are using both glastsim and GEANT3 to simulate proton interactions. (Chekhtman and Grove).

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