



# REQUEST FOR ACTION (RFA) RESPONSE

**GLAST LAT Project  
Calorimeter Peer Review**

**17 – 18 March 2003**

<b>Action Item:</b>	CAL – 019
<b>Presentation Section:</b>	Detector Elements
<b>Submitted by:</b>	Ron Ray

**Request:** Radiation damage to PIN diodes - Expose PIN diodes to protons or heavy ions during one of the upcoming beam tests. Measure the leakage current after exposure to see if it has increased.

**Reason / Comment:** BABAR has observed a factor of two increase in the leakage current of their PIN diodes after operation in their beam. They attribute the increase to a relatively small dose of neutrons. It is not clear to me that they really understand what is going on, but it is worth checking. GLAST can withstand approximately a factor of four increase in leakage current before they see an impact.

**Response:**

Acting on the recommendation of this RFA, on April 7 – 8, we exposed two diodes to proton irradiation along with CsI crystals in Sweden. The diodes will be returned to France for comparative measurements. Results of this irradiation will be provided in a summary report. Additional radiation testing will be performed as part of the flight diode evaluation and qualification program. Proton and neutron testing is being considered for inclusion in the evaluation of the flight prototype lot which will be received in April.