

SPACE AND COSMIC RAY PHYSICS SEMINAR

*University of Maryland
Computer & Space Sciences Building, Room 2400
4:30 PM Monday, March 7, 2005
Coffee, Tea & cookies 4:00-4:30 PM*

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University of Maryland, College Park

Cosmic Ray Energetics and Mass Project: First Flight of 42 Days

The Cosmic Ray Energetics And Mass (CREAM) Project is investigating the composition of ultra high energy cosmic-rays at energies up to 1000 TeV (= 10^{15} eV) with a series of ultra long duration balloon (ULDB) flights. It will measure cosmic-ray spectral features and/or abundance changes that might signify a limit to supernova acceleration. The charges (Z) of incident particles are measured with both a timing charge detector made of segmented plastic scintillator counters and a pixelated silicon charge detector to minimize the effect of backscattering from the calorimeter. The particle energies are measured with a transition radiation detector (TRD) for $Z > 3$ and a sampling tungsten/scintillating fiber calorimeter for $Z \geq 1$ particles, allowing in-flight cross calibration of the two detectors. The first flight in Antarctica took place from Dec. 15th 2004 to Jan. 26th 2005 (EST) for about 42 days. The three circumnavigations around the South Pole broke the duration and distance records for a long duration balloon (LDB) flight. During the flight the instruments were monitored and controlled from the Science Operation Center at the University of Maryland through telemetry. The amount of data recorded at the center was about 19 GBytes. Another 36 GBytes of heavy nuclei data were recorded with an onboard flash disk. The payload including the disk has been recovered and is in transit back to the university. In addition to the construction, test and integration of the CREAM experiment, preliminary results from the flight monitoring data will be presented.

<http://space.umd.edu/seminars>

Sponsored by: Department of Physics and the Institute for Physical Science and Technology, University of Maryland. For information call Matthew Hill at (301) 405-6237 or go to the website given above. (A PDF file of this announcement is available for download and posting it at your institution is encouraged and appreciated.)

For free parking please park in lot DD or anywhere on levels 1-2 in lot B (the big parking garage) after 4:00 pm. Make sure that you park in a spot WITHOUT a parking meter. More parking information is at the website.