

2015 Preparation Meeting in view of  
the beam run on the H2/H4 beam lines

---



# **Cosmic Ray Energetics And Mass Beam Test (Aug. 26<sup>th</sup>-Sept. 1<sup>st</sup>)**

Nicolas PICOT-CLEMENTE

Institute for Physical Science and Technology

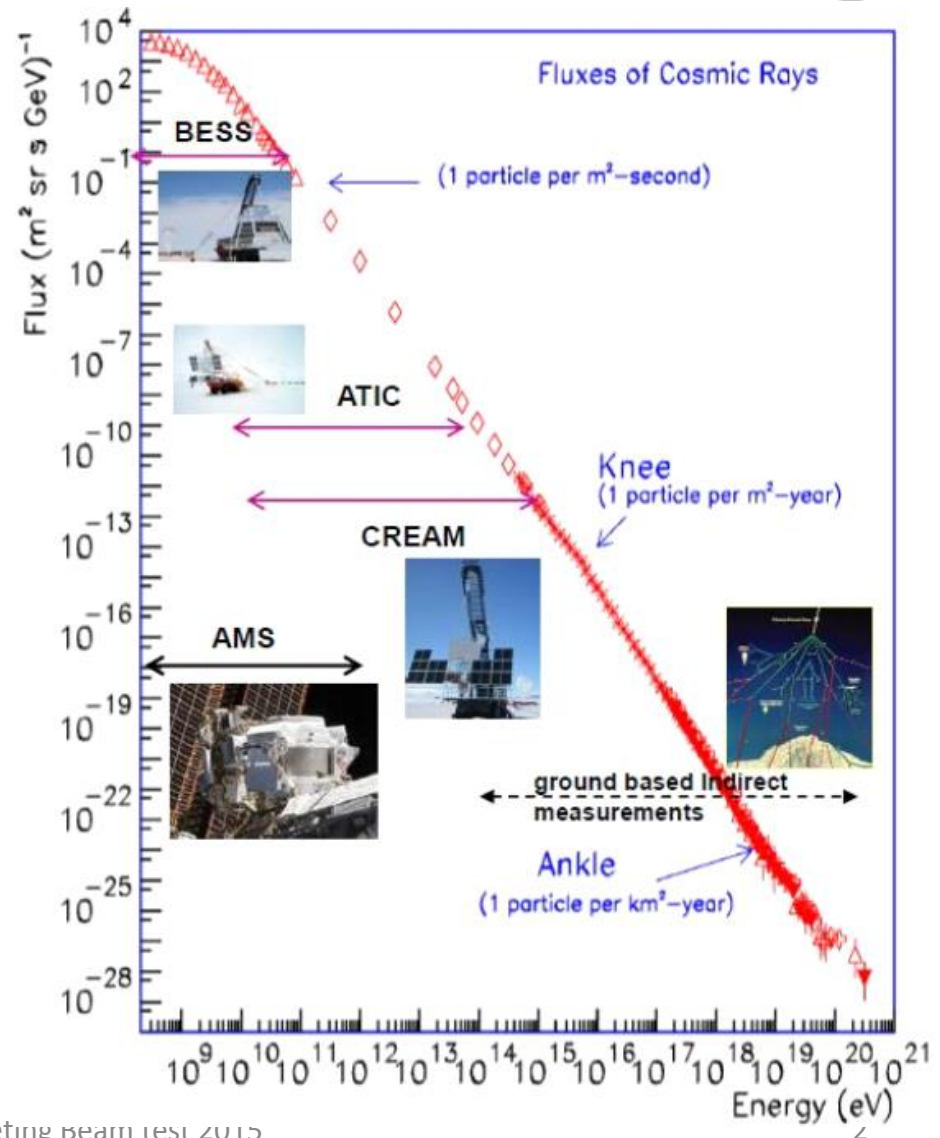
University of Maryland



# Purpose/Physics

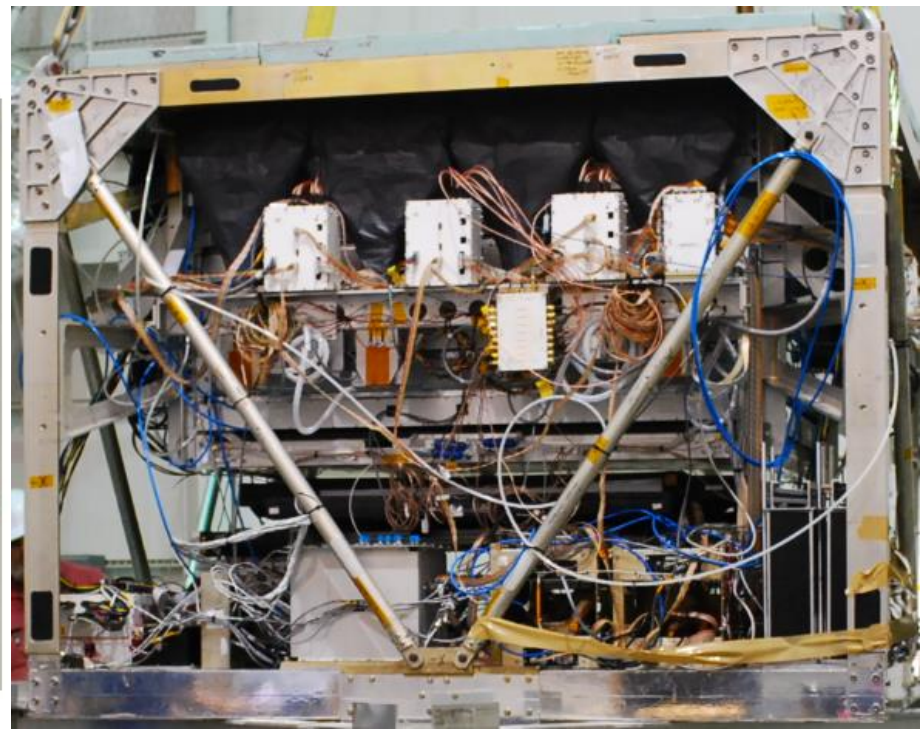
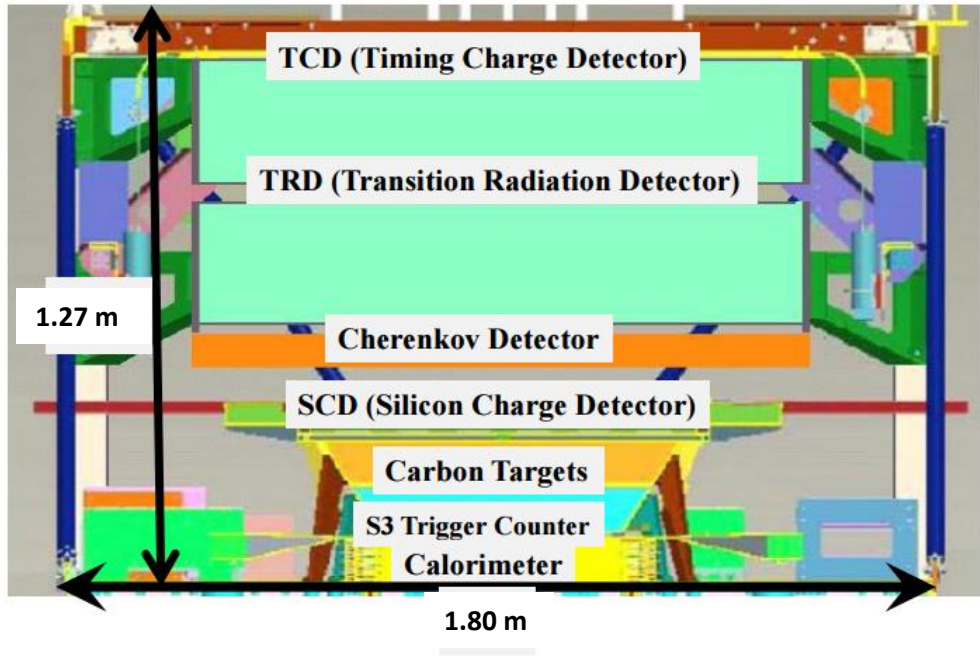


- CREAM is a multipurpose payload balloon-borne instrument intended to measure high energy cosmic rays from  $\sim 1$  TeV to  $\sim 100$  TeV, flying under NASA long duration balloon program over Antarctica.
- CREAM will give crucial information for the supernova shock acceleration model, source of cosmic rays and propagation history in the interstellar medium.



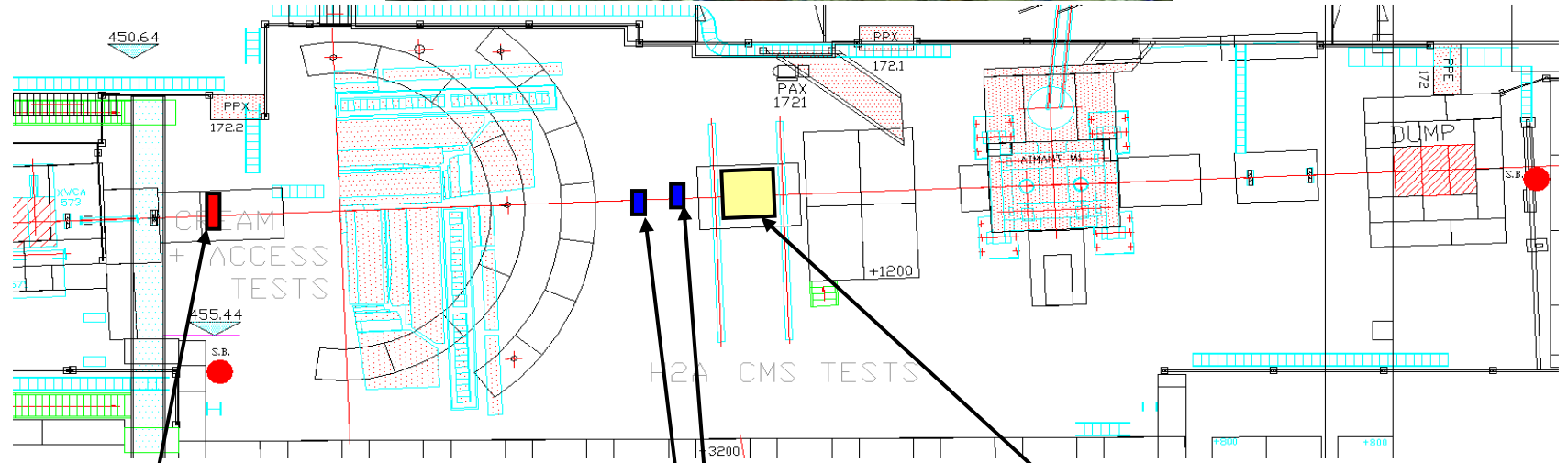
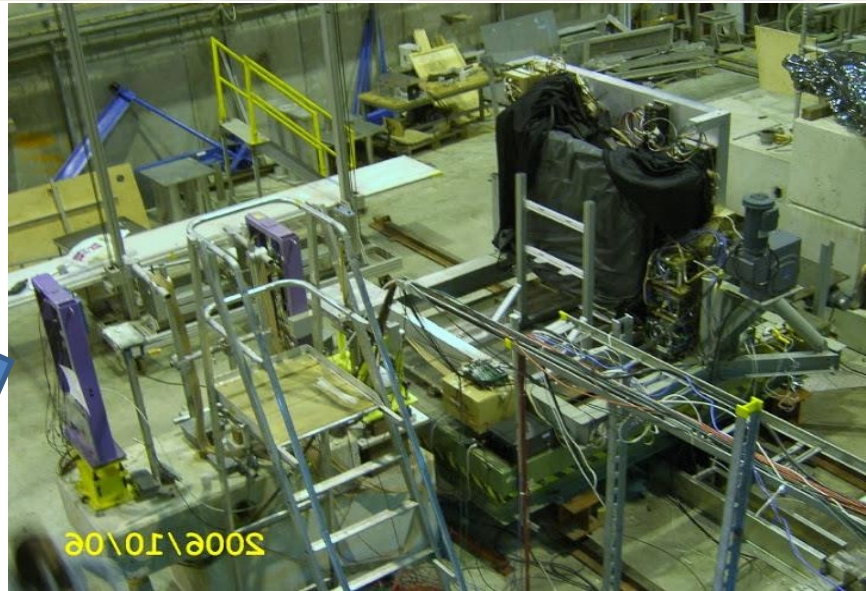
# Beam Test Purpose

Verification of readout performances and calibration of the detectors.



# Layout of the setup (H2 beam)

Beam →



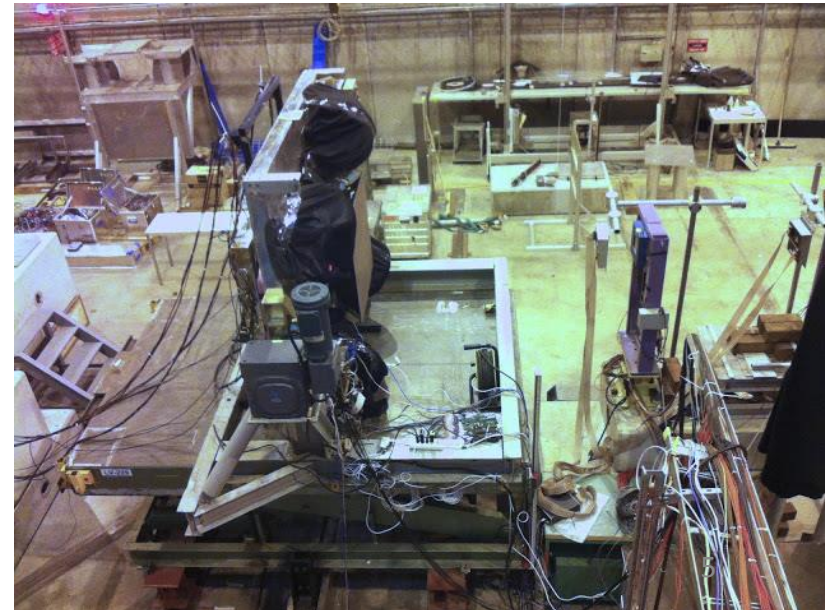
Trigger counters (i.e., 2x2cm<sup>2</sup>)

Si-Beam Trackers

CREAM

# Support/Supplies Needed

Same support and supplies than during our previous successful beam tests at CERN.



- Provision of H2 beam line.
- An assembly area of about 5x8m<sup>2</sup> in the beam building (bld 887).
- Use of the overhead crane for installation and de-installation (20 min each).
- A scissor table with up/down and right/left motion able to carry at least 2.5 tons (**remote control for moving table must work**).

# Support/Supplies Needed



- A set of standard beam counters available at H2B.
- A counting room with: IP addresses (at least 4), free rack space to install a NIM crate, desk and chairs.
- Power Requirements: 500W for the detector + some additional for PCs.





# Requested Beam Parameters



- High energy electron beams in the 50-200 GeV range for “Energy Scan” and “Position Scan”.
- Additional runs may be taken with protons and pions to the highest available energy (350 GeV).
- We will be running at low beam rates ( $< 1\text{kHz}$ , preferably between 100Hz and 500Hz), using the collimators.