

Cosmic Ray Energetics And Mass (CREAM) launch and operations, PSU Co-I

Active Technology Project (2016 - 2021)



Project Introduction

This proposal covers the activities of the Penn State group on the BACCUS high-altitude balloon experiment in Antarctica and on the CREAM mission to the ISS. These projects together will achieve definitive measurements of the cosmic-ray elemental spectra into the PeV range (nuclei) and of cosmic-ray electrons into the TeV range, as well as detailed studies of secondary nuclei (such as B or the sub-Fe elements). These are the experimental measurements needed to sort out the details of cosmic-ray acceleration and propagation in the Galaxy, a long standing puzzle in particle astrophysics.



Cosmic Ray Energetics And Mass (CREAM) launch and operations, PSU Co-I

Table of Contents

Project Introduction	1
Organizational Responsibility	1
Project Management	1
Technology Maturity (TRL)	2
Technology Areas	2
Target Destination	3

Organizational Responsibility

Responsible Mission Directorate:

Science Mission Directorate (SMD)

Responsible Program:

Astrophysics Research and Analysis

Project Management

Program Director:

Michael Garcia

Continued on following page.



Project Management (cont.)

Program Manager:

Dominic J Benford

Principal Investigator:

Stephane Coutu

Co-Investigators:

Megan F Meinecke

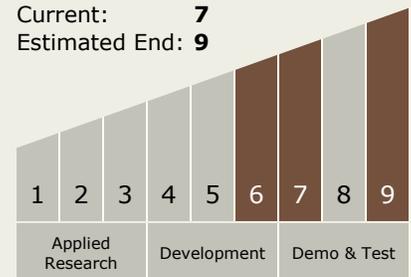
Isaac Mognet

Technology Maturity (TRL)

Start: 6

Current: 7

Estimated End: 9



Technology Areas

Primary:

- TX08 Sensors and Instruments
 - └ TX08.1 Remote Sensing Instruments/Sensors
 - └ TX08.1.4 Microwave, Millimeter-, and Submillimeter-Waves



Target Destination

Outside the Solar System