Team Near Infinity

Quick Look Presentation

Lara Buri, Luke Tafur, Madison Junker, Logan Megginson, Chase Pellazar, Evan Finkelstein

11/12/15
Mission Overview

Hypothesis:

1. Cosmic radiation will increase as a function of altitude.
2. The strength of the magnetic sphere will decrease as a function of altitude.

Mission Objective

To use a BalloonSat to investigate the interaction between the magnetosphere and cosmic rays at increasing altitudes.

Why

We are doing this mission to measure the radiation levels higher up in the atmosphere to be able to better protect pilots and astronauts who are exposed to this high altitude radiation.
Design: Concept of Operations

Launch:
- Went smoothly

Flight:
- Heater died
- Only 1hr 30mins of mission data
- Camera turned off

Landing:
- Went as planned
Results and Analysis
External Temperature with Altitude

- BalloonSat leaves troposphere and temperature increases until burst.
- Temperature decreases until about 15 km.
- Green is for ascent, blue is for descent.

Internal Temperature with Altitude

- Temperature increases after leaving Troposphere.
- Temperature decreases through the Troposphere.
- Purple for ascent, orange for descent.
- Burst.
Pressure decreases exponentially with altitude.
Failure Analysis

Early turn-off

Geiger Counter

Camera

Temperature Issues

Internal Temperature reached 0°F

Repeat cold test to same temperature to see if instruments shut down again

Humidity Sensor

Strange readings from sensor
What’s our Plan?

- Repeat cold test
- Analyze all data
- Make sense of Magnetometer readings
- More Geiger counter tests
- Prepare for Design Expo
  - Will need more dry ice and batteries
  - Will need the physics lab once again