Abstract

Medgar Evers College in Brooklyn, NY is the founder of MECSAT, where faculty and students investigate and learn the basics of high altitude balloon launches. The launch payloads usually consist of cameras and timer circuits, temperature/humidity loggers and/or ozonodetectors.

A recent workshop on November 29 through December 1, 2007, introduced participants to high altitude balloon research and education projects. The workshop included training in preparation, calibration and launch of an ozono monitoring instrument, and ozone data retrieval including analysis.

Balloon Launch

- Calibration of Ozonesonde
- Initializing & calibration of software
- Preparation & testing of communications
- Preparation of balloon & payload
- Setup of communication site
- Setup of launch site
- Launch

Data and Graphical Analysis

Altitude vs. Time

Results and Discussions

- Data reception to 1500 ft.
- Communications lost with balloon at 1500 ft.
- Strong winds believed to have carried balloon to Maine
- This was a training exercise, to eliminate problems with time and weather and other determining factors, launch must be repeated several times.

Acknowledgements

SCSU’s participation in the workshop was supported by NASA grant NNG04GD62G and a subaward from the University of Houston – Downtown under NSF grant GEO-0705585.

MUCESSThe Minority University Consortium for Earth and Space Sciences (MUCESSThe Minority University Consortium for Earth and Space Sciences (MUCESS)) is a collaboration, built on NASA investments, that has led to an expansion of ozone investigations to impact and encourage more minority students to pursue careers in Earth and Atmospheric Science. Student internships opportunities include astronomical research as well as atmospheric science. MUCESSThe Minority University Consortium for Earth and Space Sciences (MUCESSThe Minority University Consortium for Earth and Space Sciences (MUCESS)) also works directly with K-12 schools to build the pipeline into undergraduate studies and beyond.

MUCESSThe Minority University Consortium for Earth and Space Sciences (MUCESSThe Minority University Consortium for Earth and Space Sciences (MUCESS)) Partners

- Medgar Evers College, CUNY
- Norfolk State University
- South Carolina State University
- University of Houston-Downtown
- DePaul University

Workshop Agenda

DAY 1
- Workshop overview
- Ozone monitoring overview
- Instrumentation
- Sounding balloon and communications
- BalloonSATs and examples of student projects
- Data analysis

DAY 2
- Ozonesonde preparation (1st group)
- Balloon Launch
- Data retrieval (2nd group)
- Data analysis

DAY 3
- Ozonesonde preparation (2nd group)
- Data retrieval (1st group)
- Data analysis

Dr. John Merrill giving instruction for data analysis

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