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Workshop participants

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 ozone detectors. 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 ozone monitoring instrument, and ozone data retrieval including analysis.

Students and faculty were also provided with information and demonstrations on student instrument projects.

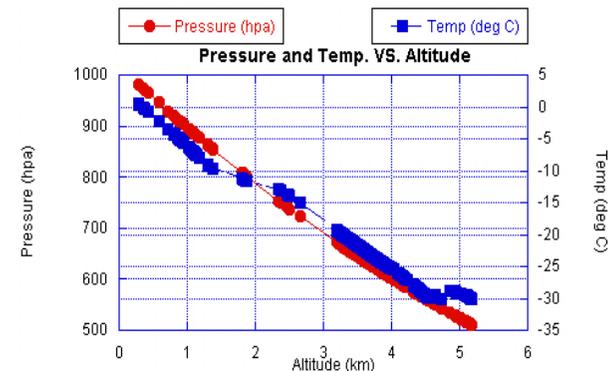
The purpose of this research is to measure the ozone concentration in the troposphere and the stratosphere. The ozonesonde is flown in a foam box attached to a weather balloon to collect data about the Earth's ozone concentrations at distances up to 100,000 feet or more above the launch base. The project has the added benefit of field experience for urban students. The launch crews are made up of students and faculty. MECSAT's launch base is in Paradox, NY and the launches take place in that area or in Milton, VT.

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



Balloon, parachute, and payload after launch



MUCESS

The 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. MUCESS also works directly with K-12 schools to build the pipeline into undergraduate studies and beyond.



SCSU workshop participants

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

MUCESS Partners

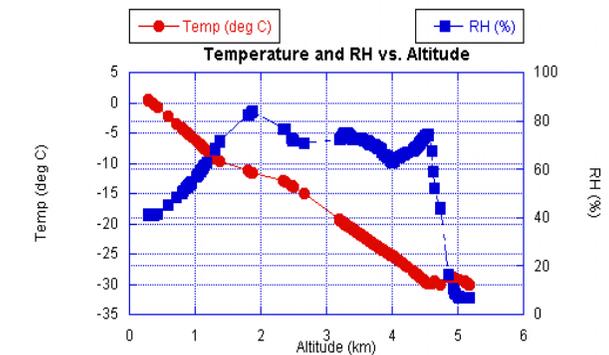
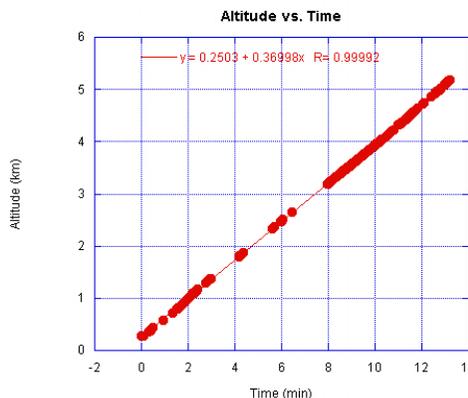
- Medgar Evers College, CUNY
- Norfolk State University
- South Carolina State University
- University of Houston-Downtown
- DePaul University



Dr. John Merrill giving instruction for data analysis



Data and Graphical Analysis



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 NNG04GD2G and a subaward from the University of Houston - Downtown under NSF grant GEO-0703585.