

NASA sounding rocket successfully launches into alaskan night

January 30 2017, by Keith Koehler







Credit: NASA/Jamie Adkins

An experiment to measure nitric oxide in the polar sky was successfully launched on a NASA sounding rocket at 8:45 a.m. EST, Jan. 27, 2017, from the Poker Flat Research Range in Alaska.

The Polar Night Nitric Oxide experiment or PolarNOx was launched on a Black Brant IX <u>sounding rocket</u> to an altitude of nearly 176 miles. Preliminary information shows that good data was collected.

Phil Eberspeaker, Chief of the NASA Sounding Rocket Program Office, said, "The sounding rocket, science and range team worked through previous payload and ground system issues to launch this payload, not to mention the extremely cold weather (as low as -50 degrees). The team did a great job to conduct a successful launch."

Scott Bailey, the principal investigator for PolarNOx from Virginia Tech in Blacksburg, said, "The rocket team did a great job of pointing us at the star and our spectrograph saw it clearly throughout the flight. We got plenty of data to work through."

Bailey said, "The aurora creates nitric <u>oxide</u>, but in the <u>polar night</u> there is no significant process for destroying the nitric oxide. We believe it builds up to large concentrations. The purpose of our rocket is to measure the abundance and altitude of peak abundance for the <u>nitric</u> <u>oxide</u>."







The Polar Night Nitric Oxide or PolarNOx experiment from Virginia Tech is launched aboard a NASA Black Brant IX sounding rocket at 8:45 a.m. EST, Jan. 27, from the Poker Flat Research Range in Alaska. PolarNOx is measuring nitric oxide in the polar night sky. Nitric oxide in the polar night sky is created by auroras. Under appropriate conditions it can be transported to the stratosphere where it may destroy ozone resulting in possible changes in stratospheric temperature and wind and may even impact the circulation at Earth's surface. Credit: NASA/Jamie Adkins

"Nitric oxide under appropriate conditions can be transported to the stratosphere where it will catalytically destroy ozone," Bailey said. Those changes in ozone can lead to changes in stratospheric temperature and wind and may even impact the circulation at Earth's surface.

PolarNox was the first of five rockets scheduled for launch between January and March from the Poker Flat Research Range operated by the University of Alaska, Fairbanks.

PolarNOX will be followed with the launch of two additional missions that will study the interaction of the solar wind, the magnetosphere, Earth's upper atmosphere and the structure of the resulting aurora. The magnetosphere is the region of Earth's magnetic field where solar energy is stored and processed. The release of this energy drives aurora.

The launch window for both missions, which include 2 sounding rockets each, is Feb. 13 through March 3.

The five launches from Alaska are supported through NASA's Sounding Rocket Program at the agency's Wallops Flight Facility at Wallops Island, Virginia, which is managed by NASA's Goddard Space Flight



Center in Greenbelt, Maryland. NASA's Heliophysics Division manages the sounding-rocket program for the agency.

Provided by NASA

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