HEX2 a success: 4-rocket aurora experiment launches from Poker Flat

An experiment called HEX2 that consisted of four NASA suborbital sounding rockets, launched from Poker Flat Research Range during an aurora display over northern Alaska this morning. Each rocket emitted vapor trails in an experiment to learn more about winds associated with the aurora. Researchers saw the vapor trails from Poker Flat; about 30 miles north of Fairbanks, and aurora watchers at clear locations throughout northern Alaska should have been able to see them.

John Craven, a professor of physics at the University of Alaska Fairbanks Physics Department and the Geophysical Institute, was lead scientist for HEX2, in which four rockets took off from Poker Flat in a span of 16 minutes, beginning at 12:22 a.m. Alaska Standard Time. Three rockets followed a traditional arcing trajectory, reaching an altitude of approximately 125 miles. Following the first-stage burnout of the second rocket, an onboard control system turned the experiment section of the rocket to a nearly horizontal position. It flew through the aurora about 95 miles up. Each of the rockets carried an experiment that released puffs of trimethylaluminum, a harmless substance that glows when exposed to oxygen. The flights lasted for about seven minutes.

Scientists on the ground in different northern locations photographed the chemical trails. Two were in Fort Yukon, one each at Toolik Lake and Coldfoot, and two were in Old Crow, in the Yukon Territory. Their images and digital recordings will be used to determine the motion of upper atmospheric winds.

“We are excited to analyze the data,” Craven said after the launches. The aurora display and excellent launch conditions exceeded scientists’ expectations at the rocket range.

This morning’s launches brought the total to nine rockets launched during three aurora events at Poker Flat in the last few weeks. NASA plans to launch a total of 10 sounding rockets during this winter’s campaign.

The final mission involves one rocket that is now on the launch rail and will be carrying an experiment for Jim LaBelle of Dartmouth College. The launch is scheduled to go any night conditions are right.

NASA Wallops Flight Facility in Virginia manages NASA’s Suborbital Sounding Rocket Program. UAF’s Geophysical Institute operates and maintains Poker Flat Research Range under contract to NASA. The range is located 30 miles north of Fairbanks off the Steese Highway.

Source: University of Alaska Fairbanks