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Rocket report

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Sounding Rockets Program Office

40.026 Lessard in Norway

In Brief...

A Woomera, Australia, launch opportunity is in the works. The current plan includes the launch of two BB IX and two BB XI vehicles in August –September 2014.

The 2010 Annual Report can be downloaded on the SRPO website at <http://sites.wff.nasa.gov/code810/>

A Mission Initiation Conference (MIC) was held for the second test flight of the Terrier–Improved Malemute vehicle. The flight is currently scheduled for the first quarter in 2011.

The SRPO is working on establishing a Rocketry Education Lab at Wallops. Participation is sought from other NASA and contract organizations.

A Preliminary Design Review (PDR) was held for the Inflatable Re–Entry Vehicle Experiment (IRVE) 3 mission. IRVE 3 is currently scheduled for flight in 2012.



GPS checks during a snow storm.

The dedicated sounding rocketeers get the job done despite snow, wind and freezing rain! The Rocket Experiment for Neutral Upwelling (RENU) mission, launched from Andoya rocket range on December 12, 2010, experienced less than favourable weather early in the launch window. Quoting John Hickman, SRPO Operations Manager “The weather here is challenging!”

RENU has been designed to investigate further the phenomena associated with thermospheric upwelling in the cusp. This mission launched the experiment to an apogee of about 340 km into the cusp. RENU was designed to transit the cusp region during a neutral upwelling event, equipped with a suite of instruments that build on previous observations of this phenomenon, as well as acquire new types of data to provide a fresh perspective on these events. The payload included instruments to measure neutral gas, electric and magnetic fields, and precipitating particles.

Photo by Trond Abrahamse/ARR

40.026 Lessard

cont.

Below is an excerpt from Dr. Marc Lessard's excellent science blog about the RENU mission. To read the blog, visit:

<http://renurocket.blogspot.com/>
Posted November 27, 2010:

From the point of view of science goals, we are trying to see if the same things that cause the northern lights might also heat up the very high altitude part of the atmosphere and cause plumes of oxygen to stream upwards – something like 1000 km or maybe more. In order to do this, we have put a large rocket together which is now ready to go, from the north coast of Norway. We, on the other hand, are sitting in a place called Longyearbyen in Svalbard (VERY far north). We are sitting here so we can get a good look at the sky above to see aurora and decide when to launch. Once launched, the rocket will fly right over us, measuring many different things as it does so.



RENU on the rail in Norway.

41.087 Heyne launched

This mission is the first Hands-On Project Experience (HOPE) Training Opportunity (TO) selected for flight. The Terrain Relative Navigation and Employee Development (TRaINED), from the Jet Propulsion Laboratory is designed to advance Terrain-Relative Navigation (TRN) technology by collecting a set of correlated ground imagery, Inertial Measurement Unit (IMU) and Global Positioning System (GPS) data during a sounding rocket flight and performing post-flight data analysis.



41.087 during testing at Wallops.

Photo by Berit Bland

36.256 Bailey completes integration and testing

The Bailey payload, scheduled to be launched from Poker Flat, AK during a January – February 2011 launch window, completed integration and testing in November 2010.

The purpose of Polar Night Nitric Oxide “Polar NOx” experiment is to measure the concentration of nitric oxide in the mesosphere and lower thermosphere in the nighttime polar region.



36.256 GPS checks.



36.256 team.

Photo by Trond Abrahamse/ARR

Holiday Greetings!

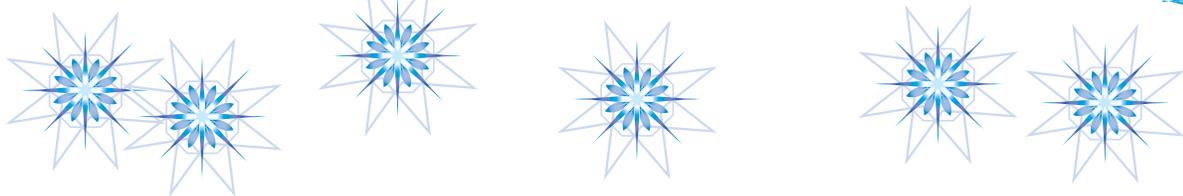


From Phil Eberspecker, Chief Sounding Rockets Program Office:

Another successful and very eventful year has come and gone. We supported a host of scientific missions, implemented new educational initiatives, and conducted several technology flights. As usual, we bounced around between New Mexico, San Nicolas, Norway, Poker, and Wallops doing what we do best – developing payloads and launching rockets. And we did all of this while transitioning from NSROC I to NSROC II, battling developmental issues, and contending with system problems. We were able to achieve our success because of the dedication of you – the "sounding rocketeers", the people who come in every day to pay the bills, order the stock, maintain the equipment, run the ground stations, shake the payloads, analyze the flights, fix the problems, build the payloads, and get the job done. I am very proud to work with everyone of you in accomplishing our important mission, and I'm sure that sentiment is shared by the entire SRPO staff. It's probably safe to say that 2011 will bring continued challenges, but I also know for a fact that we will have great successes and unique adventures at home and around the world. We should all look forward to the coming year with enthusiasm and excitement.

As we move into the new year, make sure you spend time with family and friends. Remember to take a break from time to time to recharge your batteries. And keep the fire burning! Once again, thank you very much and have a happy and safe holiday season.

Sincerely,
Phil



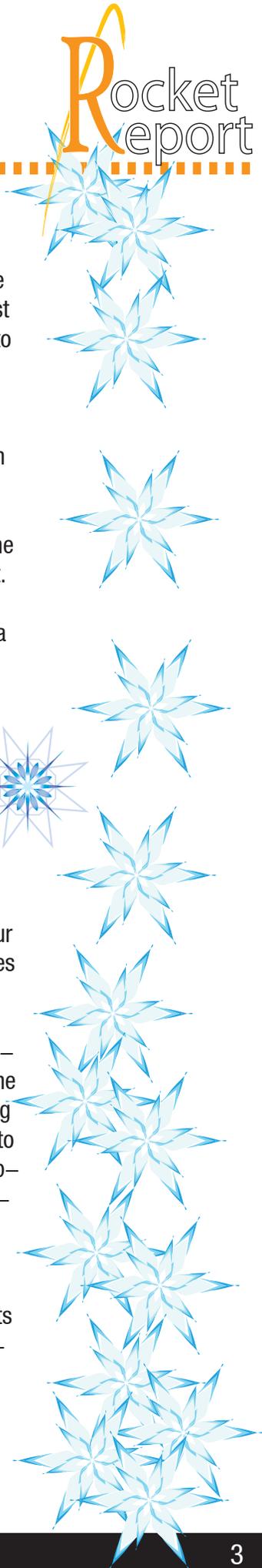
From Joe Schafer, NSROC Program Manager:

Orbital is delighted to be back supporting the NASA Sounding Rocket Operations Contract (NSROC.) Our mission is to safely, reliably and affordably provide NASA and NASA selected DOD and civilian agencies with best value hardware and services.

The NSROC program is constructed around rapid prototyping and development, frequent launch operations and lean staffing. Compounding the inherent program approach, the program is in the midst of the Flight Termination System and Capacitive Discharge Ignition system qualification activities and working through numerous issues associated with a key hardware subcontractor. The NSROC team continues to rise to the many challenges. We look forward to retiring the transient issues and initiating new developments to overcome product obsolescence, improve the stable of regularly used components and introduce new hardware that reduces program cost without reducing performance or reliability.

We believe in the intrinsic value of educating and training our nation's youth. We welcome inputs regarding schools and community events that would like our participation getting and keeping students involved in Science and Technology and students who are in the second half of their collegiate education who would like to spend a semester or summer in an intern or coop position.

Thank you, and God Bless you all,
/Joe Schafer/



Rocket Report

Picture Place...

- ① Cliff conducting alignment checks on the Bailey payload.
- ② Lessard ACS testing with Valerie, Cliff, and Ernie.
- ③ Shane and Wayne.
- ④ Robert and Brennan, University of Colorado, working in the cleanroom in F-7.
- ⑤ Charlie and PI Scott Bailey in the ACS lab with the Polar NOx instrument.
- ⑥ 36.256 Green Payload team.
- ⑦ Nate and Walt preparing the Bailey payload for balancing.



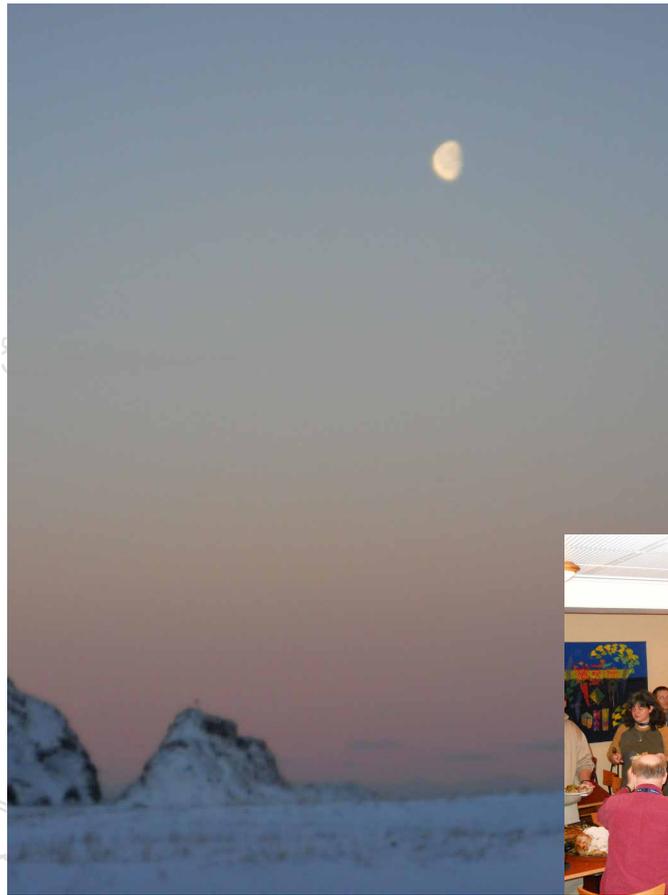
Want to contribute?

Working on something interesting, or have an idea for a story? Please let us know, we'd love to put it in print!

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Happy Holidays!

Tom Malaby's Norway pictures.



Andoya Moon.



Thanksgiving dinner.



Hot count – Bernita Justis



Hot count – Wayne Taylor.



Launcher shelter.



Roll out test.