National Aeronautics and Space Administration

Rocket Report

4 1 3 2 2015

Sounding Rockets Program Office

What's inside...

In Brief...

The launch of 52.002 UE Lessard concludes the Norway campaign for 2015.

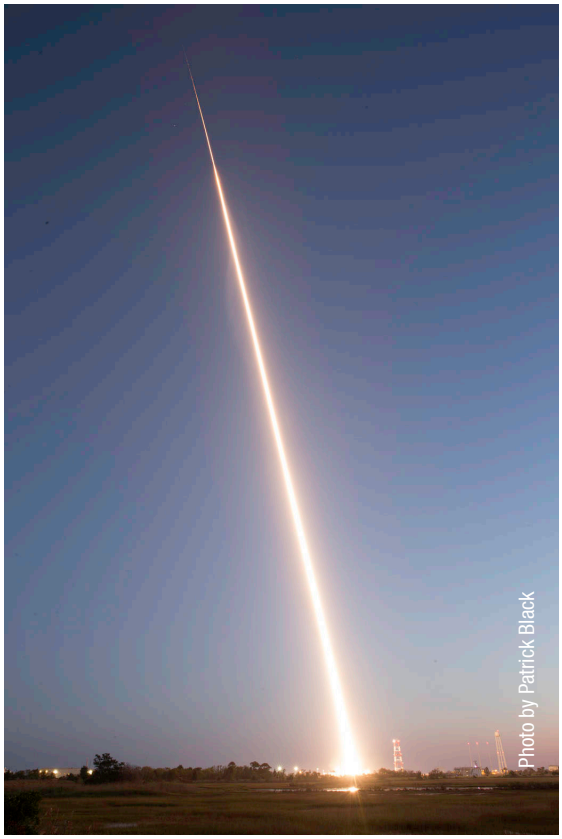
46.011 NT Milliner, originally scheduled for launch in December 2015, has been re-schedule for January 2016.

The Peregrine project was awarded a NASA innovation award. Team members attended a video conference with the NASA Administrator.

Structural components for the new Medium Mobile Launcher (MML) have been delivered to Wallops. Major construction effort will start in early 2016.

The Extreme Ultraviolet Normal Incidence Spectrograph (EUNIS), PI Dr. Douglas Rabin/Goddard Space Flight Center made number 14 on the Discover Magazine top 100 stories for 2015. Dr. Rabin's research points to nanoflares as the reason for the Sun's corona being hotter than the underlying layers. See: http://discovermagazine.com/2016/janfeb/14-hot-answer-to-a-solar-mystery

36.310 GT Hesh/NASA GSFC WFF - Technology Test Flight Launched October 7, 2015



36.310 Lift–off from Wallops Island, VA.

The first flight of the Black Brant Mk 4 was successfully conducted from Wallops Island, VA on October 7, 2015.

While the primary purpose of this flight was to verify the performance of the new motor, a payload with technology development experiments were also onboard this mission.

The experiments included a new updated ejection systems for sub-payloads, an experiment to evaluate materials for radiation and thermal heat shields was provided by Orbital ATK, NASA Langley's Advanced Near Net Shape Technology (ANNST) project flew a payload skin section (ORSA adapter) created using spin- and flow-forming manufacturing processes. Several NSROC technologies also were flown.

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36.293 UG Chakrabarti/ University of Massachusetts Lowell- Planet Imaging Coronagraphic Technology Using a Reconfigurable Experimental Base (PICTURE-B), launched on November 24, 2015

PICTURE-B was designed to look at the dusty ring around the star Epsilon Eridani and develop technologies needed to one day image Earth-like exoplanets.

It is possible that Epsilon Eridani contains at least one planet and several substantial dust disks. A dust ring, similar to the Kuiper belt, was discovered around this star in 1998. Astronomers have inferred that colliding asteroids and shedding comets are producing another dusty debris ring, similar to our asteroid belt.

The primary goal of the PICTURE mission was to measure the reflected light from the inner asteroid belt, which is important for the design of future space telescopes to image reflected light from exoplanets

Photos by White Sands Missile Range

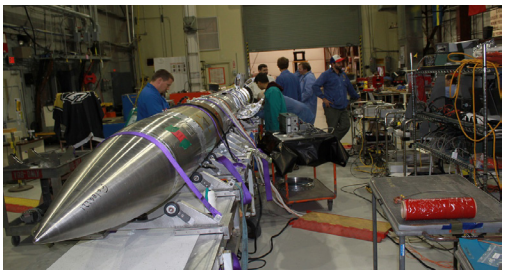
PICTURE–B recovery.

49.003 UE Labelle/Dartmouth College - Cusp Alfven and Plasma Electrodynamics Rocket (CAPER), launched on November 30, 2015

The CAPER mission was designed to investigate the complex interactions between planetary magnetospheres and their underlying ionospheres. These interactions are most easily studied at high magnetic latitudes of the Earth, where magnetosphere-ionosphere (MI) coupling gives rise to the aurora.

No science data was recorded during this flight due to a vehicle anomaly.

36.305 UH Galeazzi/University of Miami - Diffuse X-ray emission from the Local galaxy (DXL), launched on December 5, 2015



DXL being prepared for flight at White Sands.

The purpose of the DXL mission was to better understand the nature and characteristics of the local hot bubble, a cavity in the interstellar medium (ISM) in the Milky Way galaxy, and solar wind charge exchange. The goal is to understand the fundamental physics and improving the modeling capability to use in the interpretation of past, present and future X-ray missions.

Diffuse x-ray emissions have long been believed to be from remnants of a supernovae which formed the local hot bubble.

52.002 UE Lessard/University of New Hampshire - Rocket Experiment for Neutral Upwelling II (RENU), launched on December 13, 2015

RENU 2 launched on December 13, 2015 from the Andøya Space Center was designed to transit the magnetospheric cusp region during a neutral upwelling event. The Black Brant XII-A rocket was equipped with a suite of instruments that build on previous observations of neutral upwelling in the thermosphere. This mission acquired new types of data to provide a fresh perspective on neutral upwelling. Successful data acquisition provides fundamental information, essential for the advancement of our understanding of upwelling in the cusp region.

Photo by Bruce Fritz

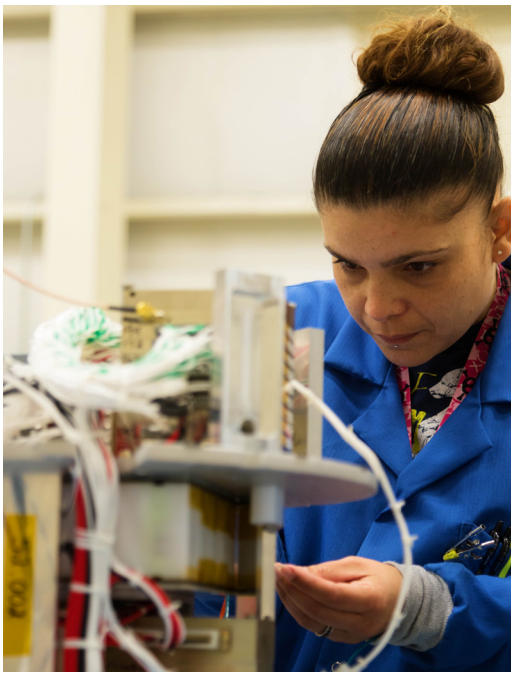
RENU launches from Andoya Space Center.

Integration and Testing

52.002 Lessard – Rocket Experiment for Neutral Upwelling II (RENU)

RENU went through testing and integration at Wallops before being shipped to Andoya Space Center, Norway for launch. This multi-instrument payload had experiments from several organizations. In addition to the PI's home institution University of New Hampshire, instruments were also provided by Cornell University, Dartmouth College, and the Aerospace Corporation.

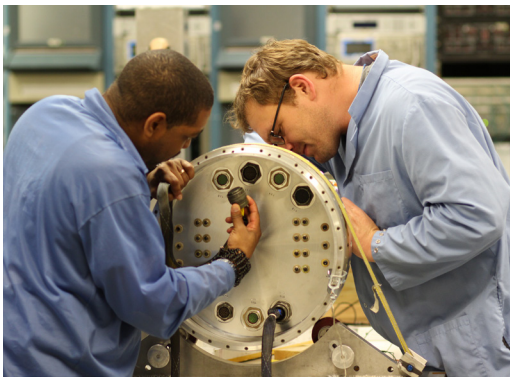
Steve preparing the Cornell sub–payload for integration.



Venus wiring RENU.

36.305 UH Galeazzi Diffuse X–ray emission from the Local galaxy (DXL)

In addition to the main instrument, the DXL, the payload also included the Cusp Plasma Imaging Detector (CuPID) and Ultrasoft X-ray Telescope (UXT) counters. The DXL payload was tested and integrated at Wallops prior to shipment to White Sands for launch operations.



Frank and Nick working on DXL.

Youaraj, Ted and Tom during DXL integration.

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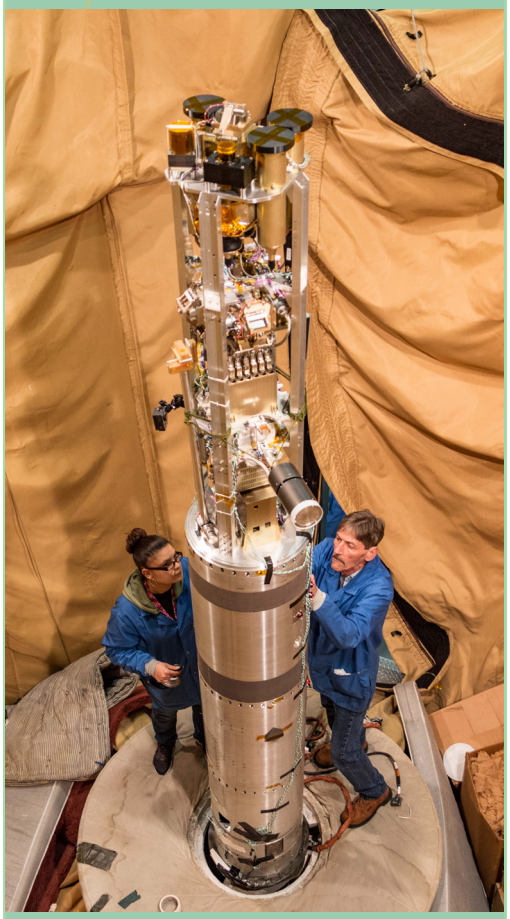

Venus and Clay with RENU in the deployment bay.

Rob with DXL payload section on the vibe table.

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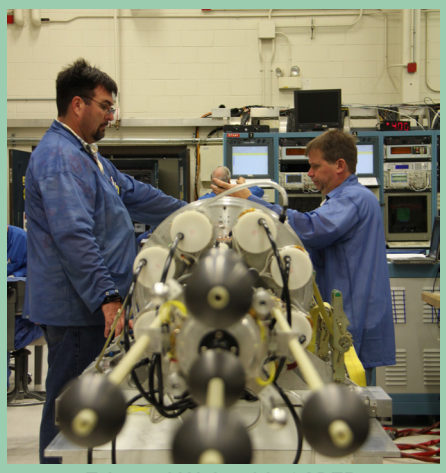
Picture Place



Eric and Walt with CAPER.

Belinda and Chris preparing for MagCal.

Marc and Youaraj working on DXL.

Frank is having a good time!

Henry sighting payload bending.

All images by Berit Bland

Mission 36.000 SC launching soon!

PI: Santa Claus

Organization: Santa's Workshop

Project: eXperimental Materials And Stuff - XMAS

Launch Range: North Pole

Date: December 25, 2015

Time: 00:00:01

Happy Holidays!

From your friends in the SRPO

(Santa's Rocket Program Office)