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# Rocket report

4 1 2009  
3 2

Sounding Rockets Program Office

## In Brief...

**The Inflatable Re-entry Vehicle Experiment (IRVE) III Mission Initiation Conference (MIC) has been conducted.**

**Potential future Australia campaign is under consideration and may be an option for the upcoming ROSES proposal cycle.**

**The final report for the Extended Duration Sounding Rocket was delivered to the Sounding Rockets Program Office and has been discussed with NASA HQ.**

**Marc Murbach, NASA Ames Research Center is proposing a high altitude parachute test using a single stage Orion.**

**The 36.225 Krucker mission, scheduled for October 2010, will apply new telescope techniques, previously used on astro mission, to solar studies. This enables x-ray observations of the Sun's polar regions.**



Photo by Visual Information Branch, White Sands, NM

36.252 UH team

## 36.252 UH Cash – successfully launched from White Sands

The Cygnus X-ray Emission Spectroscopic Survey (CyXESS) was successfully launched from White Sands Missile Range, NM on November 13, 2009. The scientific goal of this sounding rocket is to obtain x-ray spectral diagnostics of a nearby extended supernova remnant, the Cygnus Loop. This mission was a reflight of a previously flown payload (Cash 36.224).

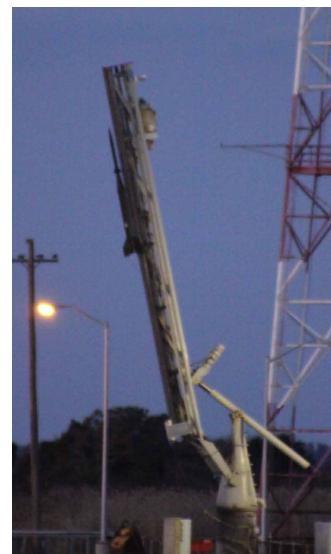
This instrument addresses the structure and dynamics of supernova remnants and the hot phase of the interstellar medium. The science team can obtain physical diagnostics of the galactic halo and possibly even detect emission from the intergalactic medium.

## 12.068 – Mesquito test flight

A third testflight of the Mesquito Mesospheric Dart system was conducted on December 16, 2009 from Wallops Island, VA. This is a continuation of the engineering effort aimed at developing a mesospheric sounder.

The 12.068 mission had a pinned dart, i.e. the dart did not separate from the booster and gathered flight characteristics data for further development of the vehicle.

Mesquito 12.068  
on the pad



## 36.252 UH Cash pictures



36.252 Cash on the rail in White Sands.



36.252 Cash launch November 13, 2009.

Photo by Visual Information Branch, White Sands, NM

## 41.086 UE Erdman - High Altitude Resolution of Hydroxyl (HAROH) launched December 17, 2009 from White Sands, NM

The mission objectives for 41.086 Erdman are to collect radiated emissions from the Hydroxyl (OH) in the Meinel Airglow region from 50–90 km altitudes. The payload consists of an instrument with an array of ten optical tubes (photometers) aligned parallel to the thrust axis.

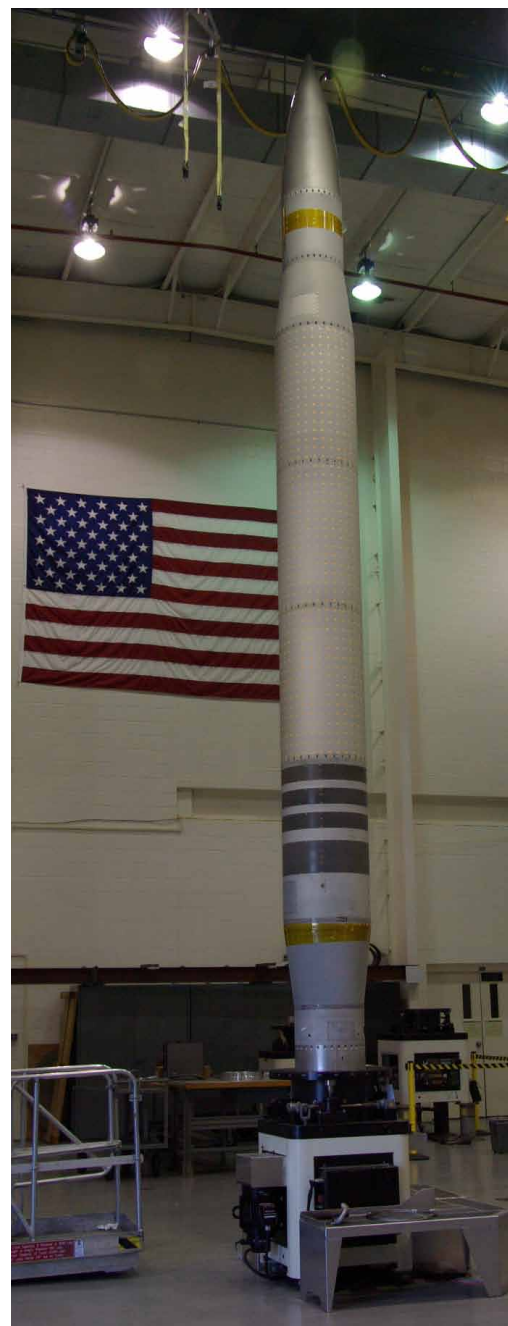
The increased number of observations made of polar mesospheric clouds at high latitude, and observations of noctilucent clouds at mid latitudes, have raised the scientific importance of understanding this mesospheric region. Aeronomy of Ice in the Mesosphere (AIM) was recently launched to study it more in depth. HAROH directly supports AIM's fundamental goal and will also aid in better understanding ground-based mesospheric temperature measurements that will be compared with those obtained from AIM.



Damon Burke, Embry Riddle University with the HAROH payload.

## MARTI integration and testing

Several High Power MARTI payloads were integrated and tested at Wallops with staff from Lincoln Labs MIT in attendance. The primary objective of these missions is to provide a diagnostic target for the AirBorne Laser aircraft. The launches will take place from San Nicholas Island.



36.247 MARTI on the Moments of Inertia table in the T&E Lab.

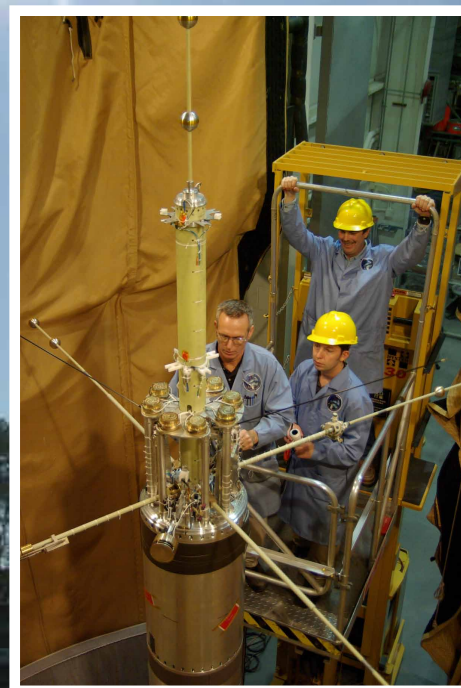
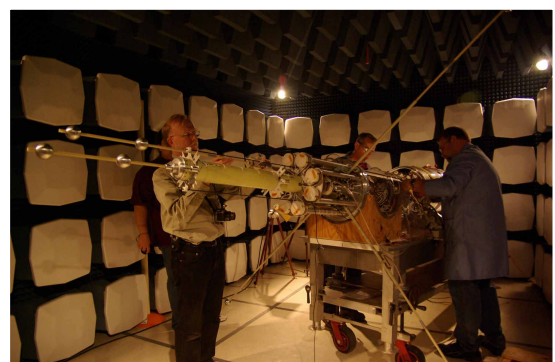


# Integration and Testing

## 40.025 UE Labelle – Correlations of High Frequencies and Auroral Roar Measurements II

The CHARM II mission will investigate the aurora relating to the physics of high frequency waves and their relationship to theoretical predictions on wave growth, electron bunching and resulting wave evolution. The payload includes a new sophisticated all-digital receiver which, together with dedicated high frequency probes and amplifiers will allow, for the first time on a sounding rocket, the detection of the relatively weak electromagnetic “auroral roar” signals emitted by auroral upper hybrid waves.

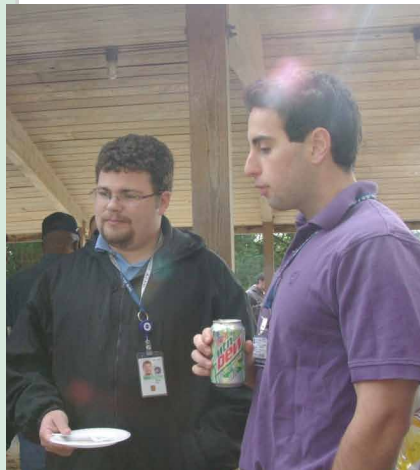
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## Picture Place...

NSROC and SRPO employees enjoy burgers and hotdogs at a meet & greet for new hires.



## 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!*

## Upcoming Launches

### January

12.067 GT HALL/NASA-WFF WI

### February

41.084 UE CONDE/UNIVERSITY OF ALASKA FB

12.069 GT HICKMAN/NASA-WFF WI

12.070 GT HICKMAN/NASA-WFF WI

40.025 UE LABELLE/DARTMOUTH COLLEGE FB

36.265 UG BOCK/CAL TECH UNIVERSITY WS

### March

36.173 UG NORDSIECK/UNIV. OF WISCONSIN WS

36.219 US HASSLER/SWRI WS

36.225 UG CHAKRABARTI/BOSTON UNIVERSITY WS

### April

36.257 UG GREEN/UNIV. OF COLORADO WS

### May

12.071 GT HICKMAN/NASA-WFF WI

36.258 UE WOODS/UNIV. OF COLORADO WS

12.072 GT HICKMAN/NASA-WFF WI

### June

36.213 NS DAVIS/MSFC WS

36.253 US HASSLER/SWRI WS

36.239 DS KORENDYKE/NRL WS

41.087 NT HEYNE/JPL WS

41.088 UO KOEHLER/UNIV. OF COLORADO WI

### July

36.261 UG CLARK/BOSTON UNIVERSITY WS

### August

36.263 US JUDGE/USC WS

36.235 US HARRIS/UNIV. OF CALIFORNIA, DAVIS WS

36.264 UH MCCAMMON/UNIV. OF WISCONSIN WS

### September

36.268 UG MCCANDLISS/JHU WS

36.269 GS RABIN/NASA-GSFC WS