



What's Inside...

- 2 Features
- 3 NSROC & SRPO Reports
- 4 Picture Place
- 5 Schedules, Events & Miscellanea

Rocket report

4 1 2008
3 2

Sounding Rockets Program Office

36.240 Woods – Successful TIMED SEE calibration

In Brief...

36.223 McCammon launched from White Sands on May 1, 2008. More on page 2.

The crew module for the Max Abort Launch System test has arrived at Wallops. The test flight, from Wallops Island, is planned for later this year.

Inflatable Reentry Vehicle Experiment (IRVE) II has been approved. The NASA Langley team is proposing to fly in the summer of 2009. Additionally, Langley may test new Thermal Protection Systems with sub-orbital flights.

The US Army is interested in possibly flying Thermal Protection System tests on Sounding Rockets.

SRPO and NSROC supported the Ride Share Conference, hosted at Wallops by the Advanced Projects Office, with tours of F-10 and Pad 2 on Wallops Island. Approximately 200 people attended the conference.

College students and faculty from around the country launched experiments on 30.074 Eberspacher. More on page 2.

The second Thermosphere Ionosphere Mesosphere Energetics Dynamics (TIMED) Solar EUV Experiment (SEE) calibration flight was successfully completed on April 14, 2008.

This payload also tested an instrument for calibration of the Solar Dynamics Observatory (SDO) EUV Variability Experiment (EVE). SDO is scheduled to launch in December 2008 and the first calibration flight is planned for March 2009.



36.240 Recovery operations

Photo by Visual Information Branch/WSMR, NM

Mesquito test flights conducted



12.066 Mesquito

Photo by Berit Bland

Two test flights of the MLRS–Dart, a.k.a. Mesquito were conducted in May to evaluate the M–26 motor – Dart separation, vehicle aerodynamics, and thermal properties. With its very high acceleration, the vehicle proved difficult to track both optically and via radar and only limited data was obtained. At present, it cannot be determined if Dart separation occurred however the data does indicate booster anomalies occurred early in flight.

The team continues to evaluate the design and alternative options and will conduct additional test flights in the near future. Once a robust configuration is established, instrumented test flights with the Mesquito avionics suite will begin. Development of the miniaturized avionics system is progressing well.

39.008 LeClair

LeClair, 39.008, is a Missile Defence Agency (MDA) mission to test Next Generation Sensor Producibility (NGSP).



Jeff Cain and Mick Sharpe preparing the LeClair payload for a spin test.

Photo by Berit Bland

Sub-TEC II

Sub-TEC II, 41.075 Smith, integration and testing was nearing completion in June. Launch is currently scheduled for July 9, 2008.



Karl Haugh and Clay Merscham working on Sub-TEC II

Photo by Berit Bland

36.223 McCammon cont.

The McCammon X-ray Quantum Calorimeter is designed to measure the spectrum of the diffuse X-ray emission from the interstellar medium over the energy range 0.07 to 1 keV. New models suggest that some component of this emission may be originating from the interaction of our solar wind with interplanetary neutral gas. The mechanism for such heliospheric emission is called Solar Wind Charge Exchange (SWCX) and is thought to be responsible for X-ray emission observed from comets and the Earth's extreme outer atmosphere. This was the fourth flight for this instrument.

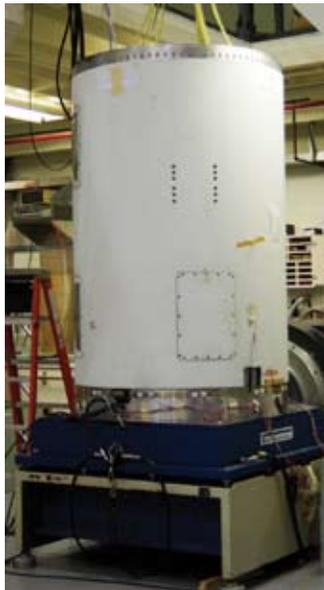


The McCammon science team with their payload during recovery operations at White Sands Missile Range.

Photo by Visual Information Branch, WSMR

ATK ALV X-1 Avionics testing

The ATK ALV-1 Avionics section underwent vibration testing at Wallops in May. ALV-1 is new launch vehicle developed by ATK and is scheduled to fly from Wallops Flight Facility in 2008. Experiments flying on the ALV include the NASA Langley Research Center developed Hypersonic Boundary Layer Transition Experiment (Hy-BoLT) and the SOAREX re-entry experiment from NASA Ames Research Center.



ATK ALV-1 Avionics and Guidance module on the vibration table in the Environmental Lab.

Photo by Berit Bland

RockOn! workshop

Students and educators from universities across the country attended a one week rocket workshop at Wallops. The workshop is a collaborative effort involving the NASA Space Grant Program, Colorado and Virginia Space Grant Consortia and the NASA Sounding Rockets Program.

60 people from 22 states built, tested, integrated and launched sensor boards during the five day stay at Wallops. The sensor boards were developed by students at the Colorado Space Grant Consortium and include a geiger counter, temperature sensor, pressure transducer and an accelerometer.

In addition to building and integrating hardware components, the participants wrote software to collect data from the sensors.

All experiments were launched on a single stage Orion, 30.074 Eberspacher on June 27, 2008.



Workshop participants testing sensors and writing software.



Photo by Berit Bland

NASA and the US Air Force are jointly funding Purdue and Penn State Universities to develop a nano–aluminum/ice propellant. Static firings and test flights of this new motor will be conducted from Wallops. Currently, the first flight is scheduled for January 2009.

The University Student Experiment Ride Share design review has been completed. The mission is on schedule for November 2008.

NASA Sounding Rockets Annual Report 2007 is available for download on the SRPO website (<http://sites.wff.nasa.gov/code810>) Thanks to all contributors! Work on the 2008 (FY) report has begun.



39.008 LeClair lift-off June 26, 2008.

Photo by Wallops Photolab



30.074 Eberspeaker lift-off June 27, 2008.

Photo by Berit Bland

The Testing and Evaluation (T&E) Lab has been busy with both sounding rocket payloads, the Hybolt payload including SOAREX and the ATK vehicle avionics testing.

Planned upgrades to the Mass Properties table in the T&E lab are underway. This upgrade will expand the lab's capabilities to include Products of Inertia measurements. This will achieve improved payload balance with booms out and longer science gathering flight times.

36.240 Woods payload flew a new ring laser gyro in the Solar Pointing Attitude Rocket Control System (SPARCS). Additionally, this mission included the latest version of the S–19 boost guidance system.



30.074 Eberspeaker recovery.

Photo by Dave Boulter

Rocket Report

Max Abort Launch System (MLAS)

MLAS is being developed as an alternate vehicle concept as risk mitigation for the Crew Exploration Vehicle (CEV) Launch Abort System (LAS). The NASA Engineering and Safety Center at Langley is leading this project.



Terrier Motor ready for static firing.

Photo by Chuck Brodell

The Max Launch Abort System (MLAS) team took advantage of an Indian Head Terrier firing. The Terrier motor was instrumented with thermal and acoustic sensors to collect data for the MLAS project.



Inert Terrier motor being prepared for Mass properties measurements, by Tom Russell, Rob Marshall, and intern Max King.

Photo by Berit Bland

Rocket Report

Picture Place...

- ① Clay Merscham and Sub-TEC II.
- ② Tom Malaby during LeClair deployment testing.
- ③ Rick Terwilliger machining an Oriole Vehicle System Module.
- ④ Rod Corson and Chris Bradley working on 30.074 Eberspaker
- ⑤ Charlie Lankford and Bill Dowdy discussing antenna placement for LeClair deployment testing.



Picture Place Special!

New furniture replaces flood damaged desks, chairs and cabinetry.

The new furniture makes work life easier by providing; better cabinets for organization, ergonomic chairs, and more open space.



Rick Paschak & Mark Hylbert



Giovanni Rosanova



Michael Tolbert



Brian Creighton

Tom Widmyear

Josh Yacobucci



Andrew Mandigo

Oz Hinton-Lee



John Daughton & Ken Walthall



Nate Empson

Shane Thompson

Alex Malone

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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Your thoughts...

Question: "What is the most interesting part of your job at Wallops?"

"The most interesting part of my job is both meeting the different experimenters and learning about their research as well as learning how our different attitude control systems work. There is always something new to learn here, and that's my favorite part of the job."

– Valerie Gsell/NSROC



Valerie Gsell at her work station.

Upcoming Launches – FY '08

July

41.075 NP SMITH/NASA WI
36.226 UG BOCK/CAL TECH WS

August

36.221 DS MOSES/NRL WS
36.213 NS DAVIS/MSFC WS

TBD

30.068 DR WINSTEAD/NAWC WS
30.069 DR WINSTEAD/NAWC WS



Roger Chandler, a long time employee at Wallops, passed away on June 5, 2008. Roger worked as an electronics technician for NSROC.

Greg Smith retired after 35 years of government service. Greg was a Technical Manager for SRPO.

Bruce Scott retired from his position as a NSROC Mission Manager. Bruce's career at Wallops spanned decades as both a civil servant and contractor.