National Aeronautics and Space Administration

2018 POKER FLAT

SOUNDING ROCKET CAMPAIGN

Quick Look

January 15 — 31, 2018

Four launches from the Poker Flat Research Range in Alaska

Super Soaker

three rockets

LAUNCH WINDOW:
January 15 – 31, 2018

LAUNCH TIME:
5 – 8 a.m. AKST
All 3 rockets launched within a 32 minute period

LAUNCH VEHICLES:
NASA Terrier-Improved Orion
1st stage: Terrier
2nd stage: Improved Orion

VEHICLE LENGTHS:
Vehicles 1 and 3: 36 feet
Vehicle 2: 34.5 feet

APOGEES:
Vehicles 1 and 3: 100 miles altitude reached in about 3.3 minutes
Vehicle 2: 61 miles altitude reached in about 2.6 minutes

TOTAL FLIGHT TIMES:
Vehicles 1 and 3: 7 minutes
Vehicle 2: 5.5 minutes

PRINCIPAL INVESTIGATOR:
Irfan Azeem
Atmospheric & Space Technology Research Assoc.
Boulder, Colorado

MISSION:
"Super Soaker is a sounding rocket experiment designed to determine how large quantities of water could affect the upper atmosphere and form Polar Mesospheric Clouds (PMCs). Water vapor is a common exhaust product of space traffic. Super Soaker will fly to the upper atmosphere carrying about 50 gallons of water, about the amount in a bathtub. We will release the water canister at about 53 miles, dispersing and vaporizing the water. We will measure the basic state of the upper atmosphere before, during and after the release to determine the impact. These measurements include temperature, winds and high-altitude layers of ice particles known as PMCs."

– Irfan Azeem

A Super Soaker payload is tested for its ability to operate while experiencing vibrations during flight.

One of the three Super Soaker payloads undergoes spin/balance testing in the Sounding Rocket Payload Processing Facility at NASA's Wallops Flight Facility.

Diffuse X-Rays from the Local Galaxy (DXL)

LAUNCH WINDOW:
January 15 – 31, 2018

LAUNCH TIME:
2 – 5 a.m. AKST

LAUNCH VEHICLE:
NASA Black Brant IX
1st stage: Terrier
2nd stage: Black Brant

VEHICLE LENGTH:
57 feet

APOGEES:
143 miles in about 4 minutes

TOTAL FLIGHT TIME:
About 16 minutes

PRINCIPAL INVESTIGATOR:
Massimiliano Galeazzi
University of Miami, Florida

MISSION:
"Very low energy diffuse X-rays from space are believed to come from two sources. The first source is located outside our solar system and is generated by remnants of multiple supernovae explosions forming what is now called the Local Hot Bubble region of our galaxy. The second source is within the solar system and is generated by the solar wind charge exchange. DXL seeks to gain a better understanding of the nature and characteristics of these sources."

– Massimiliano Galeazzi

Personnel at the Wallops Flight Facility test the DXL payload's ability to connect with the Global Positioning Satellite (GPS) network which will be used to determine the location of the payload during flight.

The DXL payload is assembled at NASA's Wallops Flight Facility in Virginia prior to its shipment to the Poker Flat Research Range in Alaska.

www.nasa.gov

THESE SOUNDING ROCKET CONFIGURATIONS WILL BE USED FOR THE FOUR LAUNCHES