

SEE Launch – Preston – PR Volume

Contact: Tom Woods (303) 492-4224
tom.woods@lasp.colorado.edu
Preston Dyches, (303) 492-4352

Nov. 29, 2001

CU SOLAR ULTRAVIOLET EXPERIMENT TO BE LAUNCHED ABOARD NASA CRAFT DEC. 7

A University of Colorado at Boulder experiment designed to gather precise data on the sun's ultraviolet output and the response of Earth's upper atmosphere to solar radiation will be launched aboard a NASA spacecraft in December.

The Solar Extreme Ultraviolet Experiment, or SEE, is one of four instruments on NASA's Thermosphere-Ionosphere-Mesosphere-Energetics-Dynamics, or TIMED, spacecraft. TIMED will be launched aboard a Delta vehicle on Dec. 7 from Vandenberg Air Force Base, Calif. for a planned two-year mission.

SEE was designed and built at CU-Boulder's Laboratory for Atmospheric and Space Physics under principal investigator Tom Woods. Schaeffer Magnetics, Inc. of Chatsworth, Calif. also assisted with the SEE development by providing the pointing platform hardware.

The purpose of the mission is to study a part of the atmosphere located approximately 40-110 miles above Earth's surface. This tenuous region of the atmosphere is where energy from the sun is first deposited into Earth's environment.

The sun's energy can have profound effects on Earth's upper atmospheric regions, heating it and changing its chemical composition. These effects are particularly strong during solar maximum – the peak of the sun's 11-year cycle when it releases enormous amounts of UV radiation, said Woods.

SEE will use a spectrometer and a suite of photometers to measure the highly variable solar UV radiation, one of the primary types of energy deposited into the upper atmosphere. The spacecraft will orbit the Earth at an altitude of 388 miles, allowing SEE to accurately measure the sun's UV output before it strikes Earth's atmosphere.

SEE will observe the sun once per orbit, for about three minutes each, while the sun's entire disk is in full view. At other times, it will help scientists measure the atmosphere's density by viewing the solar light during sunsets.

-MORE-

SEE LAUNCH/2

The sun puts out a range of different frequencies of UV light, including far-UV, extreme-UV and soft X-rays – which are less energetic than those used in a doctor’s office.

Scientists know little about the sun’s output of soft X-rays and have not been able to measure this part of the solar spectrum with much accuracy until now. Therefore, the soft X-ray photometer, an instrument on SEE, is especially important as it will study this difficult region of the solar soft X-ray spectrum.

The primary objectives of SEE are to precisely measure the sun’s UV output, to study how it varies, and how it affects Earth’s atmosphere. The instrument will help establish a baseline of observations for improving solar and atmospheric models and on which future experiments can be based. The SEE science team includes several scientists from the University of Colorado, the National Center for Atmospheric Research in Boulder, the Naval Research Laboratory in Washington, D.C., the University of Alaska in Fairbanks, and the Space Environment Technologies in Pacific Palisades, Calif.

Total cost for the SEE instrument is \$6.5 million, with funding provided by the Johns Hopkins University Applied Physics Laboratory in Laurel, Md.

TIMED is sponsored by NASA Headquarters, Office of Space Science, Washington, D.C., and is managed by the NASA Goddard Space Flight Center's Solar Terrestrial Probes Program Office, Greenbelt, Md. The Johns Hopkins University Applied Physics Laboratory designed, built, and will operate the spacecraft and lead the project's science effort during its 2-year, on-orbit mission.

Photos and additional information may be found at the official website, <http://lasp.colorado.edu/see/>.