TWO SATELLITES LAUNCHED BY ONE SCOUT VEHICLE

The Scout launch vehicle, developed by the Langley Research Center, scored a first in NASA history on November 21 when two satellites - the Air Density and Injun Explorer Satellites - were put into orbit by one launch vehicle. On November 6, Scout also successfully launched the Explorer XXIII meteoroid detection satellite. This marked the first time that three Langley managed satellites had been put into orbit in a one-month period.

The Air Density and Injun Explorer Satellites, now designated as Explorers XXIV and XXV, were put into orbit by a four-stage Scout rocket from the Pacific Missile Range from Vandenberg Air Force Base, Lompoc, Calif.

Explorer XXIII was launched from Wallops Island by a four-stage solid propellant Scout vehicle.

Purpose of the dual satellite experiment was to provide more detailed information on complex radiation-air density relationships in the upper atmosphere.

Once in orbit, the 135-pound payload separated into a 12-foot polka-dotted sphere for air density and atmospheric heating measurements and a two-foot diameter satellite bearing particle detectors to measure the bombardment of the atmosphere by energetic particles from space.

The amount of energy brought into the Earth's upper atmosphere by these colliding energetic particles is not known, although there is evidence that this energy is one of the factors governing the atmosphere's density, temperature and composition at high altitudes.

Explorer XXIV will continue high altitude density measurements in the polar regions, determine the sources of atmospheric heat by comparing data with that of Injun and other satellites, and determine density and temperature variations of the atmosphere as a function of latitude.

Explorer XXV will measure the flux of corpuscular radiation into the atmosphere (the atmospheric bombardment by charged particles from space) and will sample the concentration and energy distribution of the charged particles.

The research experiments are part of the program of NASA's Office of Space Science and Applications. Project management is assigned to the Langley Research Center where the project was conceived.

The following Langley Center scientists and engineers have had active roles in the development of the satellites and the experiments:

Scientific Investigators for Air Density Spacecraft - William J. O'Sullivan, Principal Investigator; Gerald M. Keating, and Claude W. Coffee, Jr.

Project Participants - Claude W. Coffee Jr., Project Manager; Charles V. Woerner, Air Density Explorer Spacecraft Manager; Gerald M. Keating, Project Scientist; and Robert E. Johnson, Technical Project Engineer.

A two-in-one satellite experiment to probe simultaneously the density and radiation characteristics of the upper atmosphere were launched by a Scout vehicle by the Langley Research Center on November 21. Left photograph - The 12-foot diameter air density spacecraft is shown in front of huge vacuum spheres at the Langley Center. These spheres are part of several modern laboratories used to investigate problems of very high-speed flight and reentry.

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