



August 25, 1972

# *Atlas Centaur rocket lifts OAO into orbit*

Under direction of Lewis' skilled team of launch vehicle engineers, an Atlas-Centaur lifted off from Cape Kennedy this past Monday, August 21, to put an Orbiting Astronomical Observatory closer to the heavens. From its vantage point in Earth orbit, it will study stars and interstellar matter.

The 4,900-pound automated observatory was launched at 6:28 a.m. Eastern Daylight Time. Reports from Cape Kennedy were that the flight was nominal all the way.

This mission was the 21st operational launch for Lewis' Atlas-Centaur. During 1972, the vehicle successfully launched two Intelsat IV commercial communications satellites into Earth orbit and a Pioneer spacecraft which is to fly by Jupiter. The Centaur upper stage is a high energy rocket using liquid hydrogen, liquid oxygen as a propellant. It develops a total of 30,000 pounds of thrust in flights.

Atlas-Centaur was called upon to put the observatory into a near circular earth orbit of about 460 statute miles. At this altitude, the spacecraft's telescopes can be pointed toward stars and in deep space without interference from the Earth's atmosphere. Earth-based telescopes are prevented from clear observation of heavenly bodies because the atmosphere shields portions of the light spectrum.

Over its lifetime, OAO-C (to be renamed

Copernicus in successful orbit) will study a number of stars in the ultraviolet part of the spectrum, viewing them with a precision and clarity never before possible. It also will seek to answer fundamental questions about the composition of interstellar gases, believed to be the matter from which stars are formed.

The last OAO launched by Centaur in 1970 failed when the shroud which covers the spacecraft did not completely separate. Since then, a new type of explosive bolt has been used on the shroud, and on subsequent missions no failures have occurred.

At the present time, Centaur is being upgraded for future missions. In the past it has been flown in combination with an Atlas booster. Now it is in the process of being improved for use with the Titan III booster to launch Viking spacecraft to Mars in 1975 and other large payloads.

For the OAO-C mission, a team of 25 launch vehicle engineers were on hand at Kennedy to help direct operations. Managers include: Bruce T. Lundin, Lewis Director, Edmund R. Jonash, Chief, Launch Vehicles Division, W. Russell Dunbar, Associate Chief, Launch Vehicles Division, Daniel J. Shramo, Manager, Atlas-Centaur Project Office, and Lawrence J. Ross, Project Engineer.