

## **Background on the Juno II**

America's growing interest in space exploration in the late 1950's led to the desire for launch vehicles able to lift increasingly larger scientific payloads. The modified Jupiter C (sometimes called Juno I) used to launch Explorer I had minimum payload lifting capabilities. In fact, Explorer I weighed slightly less than 31 pounds.

Juno II was part of America's effort to increase payload lifting capabilities. The vehicle successfully launched a Pioneer IV satellite on March 3, 1959, and an Explorer VII satellite on October 13, 1959. Pioneer IV was a joint project of the Army Ballistic Missile Agency and the Jet Propulsion Laboratory. It passed within 37,000 miles of the moon before going into permanent solar orbit. Explorer VII, with a total weight of 91.5 pounds, carried a scientific package for detecting micrometeors, measuring the Earth's radiation balance, and conducting other experiments.

Responsibility for Juno II passed from the Army to the Marshall Center when the Center was activated on July 1, 1960. On November 3, 1960, a Juno II sent Explorer VIII into a 1,000-mile deep orbit within the ionosphere. Explorer VIII was significant in Marshall's history since the Center was involved in the mission in at least three different ways. First, the Center had responsibility for the Juno stage of the vehicle. Second, it had responsibility for conducting the launch from the Launch Operations Directorate at Cape Canaveral. Finally, Marshall shared responsibility with Goddard Space Flight Center for designing, preparing, and testing the satellite.

Other launch vehicles later replaced the Juno II as the primary launcher for the Explorer satellite series. However, another Juno II provided by the Marshall Center was fired on 1961, and launched an 82-pound satellite into orbit to conduct a complex gamma-ray astronomy experiment.