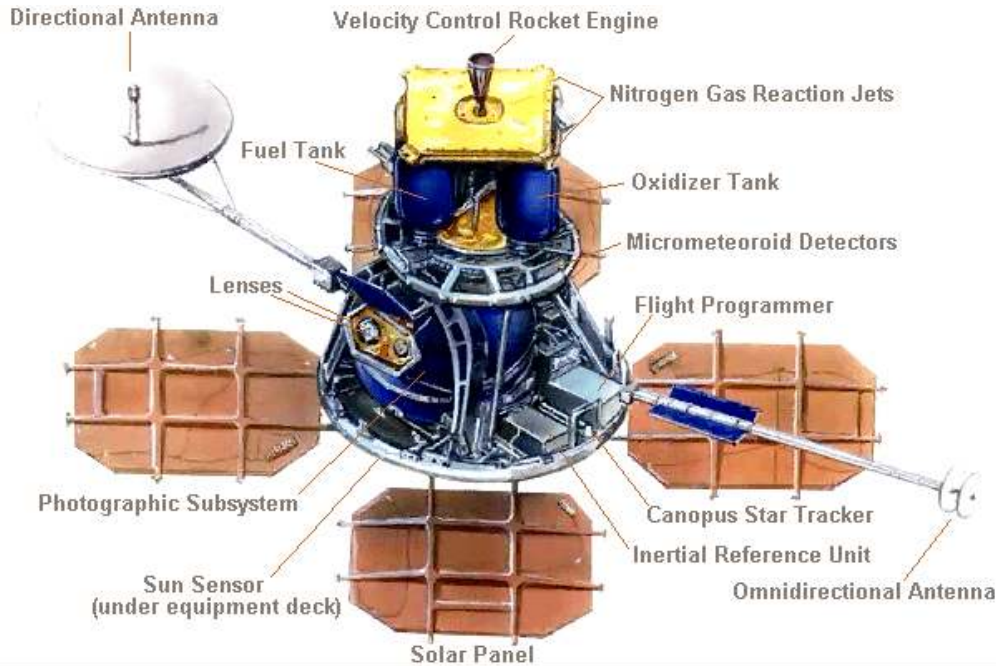


## THE LUNAR ORBITER SPACECRAFT



### A BRIEF DESCRIPTION

The Lunar Orbiter, 1.7 m (5.5 ft) tall, carried a 69-kg (152-lb) photographic laboratory to assist in the selection of landing sites for the U.S. Apollo program. The Orbiter's primary structures were a 454-kg (1,000-lb) thrust velocity control engine; attitude control thrusters; an upper structural module weighing 321 kg (708 lb); an oxidant tank; micrometeoroid detectors; an omnidirectional, low-gain antenna; a flight programmer; a Canopus star tracker (for orientation); an inertial reference unit; and a Sun sensor beneath the instrument deck. The lower structural module contained a photographic laboratory; solar panel; telephoto and wide-angle cameras, each with film for 212 exposures; a high-gain dish antenna; attitude control thrusters; a fuel tank; and a heat shield.

(from NSSDC Lunar Orbiter photograph support data)

The Lunar Orbiter 2 spacecraft was designed primarily to photograph smooth areas of the lunar surface for selection and verification of safe landing sites for the Surveyor and Apollo missions. It was also equipped to collect selenodetic, radiation intensity, and micrometeoroid impact data.

The spacecraft was placed in a cislunar trajectory and injected into an elliptical lunar orbit for data acquisition. It was stabilized in a three-axis orientation by using the sun and the star Canopus as primary angular references. A three-axis inertial system provided stabilization during maneuvers and when the sun and Canopus were occulted by the Moon.

Communications were maintained by an S-band system which utilized a directional and an omnidirectional antenna.

[THE CAMERA](#)   [Back to THE DEBRIS](#)   [VGL HOME PAGE](#)

VGL