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SURVEYOR I

The Surveyor spacecraft were designed to make soft landings on the moon, televise the nearby lunar terrain, take samples of the lunar surface material and report back to earth the chemical and physical properties of the material inspected by its instruments.

May 30, 1966, Surveyor I was launched from Cape Kennedy. The Spacecraft properly executed all commands for mid-course landing maneuvers and gently landed on the moon on June 2, 1966.

The spacecraft is some 10' high and its tripod landing gear fits within a 14' circle. Weighing 2,194 lbs. at launch, after all propellants had been burned and parts such as the main retro-rocket casing (a model of this is displayed on the Lunar Landscape near the Surveyor model) jettisoned, it landed with a weight of only 596 lbs.

The basic structure is constructed of thin-walled aluminum tubing with the members interconnected to form a triangle. A shock-absorbing landing leg is attached by a hinge to each of the 3 lower corners of the structure. The legs were folded into the nose during launch. As additional protection against landing loads, blocks of crushable aluminum honeycomb are placed on the bottom of each corner of the frame. The radio link incorporates decoders that address commands received from earth to the proper subsystems aboard the spacecraft.

Surveyor I touched down on a part of Oceanus Procellarum at a speed of approximately 10 miles per hour. The surface contact of all three landing pads was almost instantaneous. The record shows that the

spacecraft then rebounded about $2\frac{1}{2}$ " above the surface and settled back on the lunar terrain about 1 second after the initial impact. A picture of a depression under one of the cylindrical blocks indicates that it also made contact with the surface.

Four thousand pictures were taken with the Surveyor I television camera during the first five days after landing. Further details of the lunar surface around Surveyor I will be described in the section on the Lunar Landscape.

Surveyor II crash landed. But on April 17, 1967, Surveyor III was launched and made another successful soft landing in Oceanus Procellarum. Surveyor III is equipped with a hinged arm which scoops up samples of lunar surface material for analysis by the spacecraft instruments.