



OFFICE OF THE UNITED STATES COMMISSIONER GENERAL  
CANADIAN WORLD EXHIBITION, MONTREAL, 1967  
800 VICTORIA SQUARE, SUITE 2022  
MONTREAL 3, P.Q., CANADA. AREA (514) US 1-1776

DESTINATION: MOON EXHIBIT

Situated on the next highest platform in the United States Pavilion is an exhibition devoted to the Apollo Program. The goal of Apollo is to place astronauts on the Moon and bring them safely back to earth. The Apollo lunar mission involves a spacecraft launch from the Earth, landing on the Moon, departure from the Moon, and a return to Earth.

APOLLO COMMAND MODULE

A major element of this exhibition is the suspended 11,000 pound Command Module which was actually launched into space, unmanned, on August 25, 1966. The 93-minute suborbital flight carried this particular spacecraft three-fourths of the way around the earth. This flight provided the first flight test of the guidance and navigation systems and the fuel-cell electrical power system.

(The Command Module will accommodate three astronauts in an environment where they will be able to work, eat and sleep in the module without wearing pressure suits. The module contains controls and instruments, including a space navigation system, which will enable the astronauts to pilot their craft.)

"Supporting" the Command Module are three open 63-foot diameter Mercury parachutes also suspended from the overhead dome frame. The parachutes shown here were used during the Mercury testing-training phases of the project.

SIMULATED LUNAR LANDSCAPE

Another major feature of this exhibition is a 3,500 square foot chunk of lunar landscape which has been constructed in full scale by the United States Army Map Service. This landscape is a realistic reproduction of the lunar surface in the vicinity of the Surveyor I landing site. The surface features show lunar detail as determined by Army Map Service scientists from the thousands of photographs taken by the spacecraft after it set down softly on the moon in June, 1966.

Located on the lunar surface is a full scale model of the LUNAR MODULE which will take two astronauts on the final portion of the flight to the Moon. Later, the Lunar Module will carry them from the Moon's surface back into lunar orbit for rendezvous with the Apollo Command and Service Module remaining in lunar orbit with the third astronaut.

Also shown on the simulated lunar surface is an authentic test model of SURVEYOR I which was launched on May 30, 1966 and landed in a relatively smooth barren area on the moon 63 hours later. During its first five days, the 2,200 pound Surveyor transmitted more than 3,500 photographs - some taken through special color filters.

Suspended above the lunar landscape is a full scale model of LUNAR ORBITER, the 850 pound flying photographic laboratory whose cameras photographed immense stretches of the lunar surface. The first Lunar Orbiter was launched to the moon in August, 1966. On the visible face of the moon, the Orbiter's wide angle and telephoto photographic equipment made pictures of thousands of acres of surface seeking possible sites for lunar landings.

Adjacent to the lunar landscape is a PHOTOGRAPHIC MOSAIC OF THE MOON illustration which was prepared from photographs taken by earth-based telescopes and which depicts the actual sites where the Surveyor spacecrafts landed on the moon as well as the sites photographed by Lunar Orbiter. On the reverse side of the mosaic is a MOON'S EYE VIEW OF THE EARTH which is the world's first photographic view of the earth from the vicinity of the moon taken by Lunar Orbiter I on August 23, 1966.

#### OTHER SUSPENDED SPACE COMPONENTS

Suspended by fine cable from the overhead dome frame in the vicinity of the lunar landscape is a variety of space components which relate to the lunar program: RANGER VII, which is presented by a full scale simulation, was launched on a historic 243,655 mile photographic mission to the moon on July 28, 1964. At about 17 minutes before impact on July 31, the full-scan TV cameras of the spacecraft sent back their first pictures of the lunar surface.

MARINER IV, also shown in full scale simulation, was designed to fly by Mars and Venus to supply data on the surfaces and atmospheric conditions of these planets and search for signs of life. Mariner IV approached within 6,118 miles of Mars in July, 1965 and supplied the first close-ups of a heavily cratered surface similar to a moon's.

Also suspended in the vicinity of the lunar landscape are four EXPLORER AIR DENSITY SATELLITES. These 12-foot spheres which are made up of alternating layers of thin aluminum foil and Mylar polyester film are used to study the upper atmosphere by gauging atmospheric drag on them. The satellites on display here are actual spheres such as those used in this program.

#### SPACE ACCESSORIES

Located on the same platform as the simulated lunar landscape is an area devoted to miscellaneous space equipment. Shown here are SPACE SUITS similar to those worn by the Mercury, Gemini and Apollo astronauts. These suits protect man from high vacuum, temperature

extremes, small meteoroids and radiation in space yet also permit reasonable freedom of movement. Six astronaut SPACE COUCHES from the Mercury program are also on display here. These couches were individually tailored to fit the particular astronauts who used them and each couch consists of a crushable aluminum honeycomb material and the glass fiber shell and liner. Couches from the Gemini and Apollo programs are featured as well. The Gemini couch, for example, was made in one complete unit which could also serve as an emergency ejection seat. The Apollo couch is the center couch from the Apollo 003, the spacecraft used in the critical thermovacuum testing program preliminary to the test launch of the first Apollo flight.

A special exhibit of SPACE FOODS demonstrates that food for space flight must be lightweight and/or compressed when possible because weight and space limitations are critical in the design of spacecraft. The Apollo food shown in this exhibit is packaged in 'three meal' packages per astronaut and comes in the form of dehydrated juices, dehydrated foods and compressed, non-crumbling, bite-sized foods.

Significant LUNAR PHOTOGRAPHS are also on display here. These are close-up photographs of the Crater Copernicus taken by Lunar Orbiter II's telephoto lens on November 23, 1966 and the photographs of the Crater Damoisean taken by Lunar Orbiter III on February 22, 1967.

An orange FLOTATION COLLAR used in the Gemini Program will be inflated and may be used as spectator seating. Such inflatable collars are used to support a spacecraft after splashdown. They permit safe entry into the craft and provide a relatively stable work area for retrieval operations.