



DESCRIPTION OF SCENE

This view southwest over the top of the lander shows the same flat-level surface of Utopia Planitia as is viewed in all directions from the lander. The distribution of the large, subangular pitted or vesicular blocks is nearly uniform in all directions out to the horizon. The large blocks appear to be mostly on the surface of fine-grained material. Distributed among the blocks are a few small drifts of the fine-grained material from between the blocks and atop the drifts. Parts of the lander that are seen in the view are from the left - cover cover, a Radioisotope Thermoelectric Generator (RTG) (line 350, sample 2380); mounting structure for Leg 1 (line 500, sample 2800); three calibration test charts for the camera (line 600, sample 2600); a parabolic mirror for viewing the magnets on the surface-sampler backhoe (line 690, sample 3080); the mast that supports the high gain S-band antenna, (line 530, sample 3380); the cover over the other RTG (line 450, sample 4050); tubes and cables that connected the lander to the orbiter during transit to Mars (line 200, sample 3850). Upon command from Earth, the lander separated from the orbiter and performed all of its pre-programmed landing maneuvers under its own power.

THE VIKING MISSION

Two Viking spacecraft, each consisting of an orbiter and lander, were launched from Kennedy Space Center on August 20 and September 9, 1975. The Viking 1 spacecraft arrived at Mars on June 19, 1976, and was placed in a highly elliptical orbit around the planet at a pericapsis altitude of nearly 1500 km. The orbiter cameras were used in conjunction with other instrumental methods to find a suitable landing site for the lander. After about 30 days in orbit, the lander was separated from the orbiter, and on July 20, 1976, Viking Lander 2 touched down on the surface of Mars at lat. 22°42'N, 101°42'W, in the (Mason and Jones, 1980) on the west edge of a large basin called Chryse Planitia. It landed in a stable position at a 3° tilt downward in the direction 284.9° clockwise from north.

The side of the lander on which the two cameras are mounted faces southeast. When the cameras are pointed in a direction normal to the front of the lander, the viewing direction is 141.6° clockwise from north along the horizon. The first picture from the surface of Mars, of an area near the lander's footprint 3, was taken immediately after landing by camera 2. During the ensuing 43 days, the cameras responded to all commands and successfully carried out their assigned mission. On September 2, the activities of Lander 1 were reduced to accommodate the planned receipt of data from Viking Lander 2.

On September 3, 1976, Viking Lander 2 successfully landed on Utopia Planitia of Mars (47°36'N, 225°35'W), more than 6500 km northeast of Lander 1 (Mayo and others, 1977; Davies and others, 1978). Lander 2 flew approximately north and tilted 8.2° downward in the direction of 273.4° clockwise from north. The viewing direction of its cameras when pointed in a direction normal to the front of the lander is 29.0° clockwise from north along the horizon. The cameras on Viking Lander 2 operated successfully for 61 days until the primary mission of both landers was completed on November 15, 1976, at solar conjunction.

During the primary mission, 454 pictures of the martian surface were processed from Viking Lander 1 data and 582 pictures from Viking Lander 2 data. The extended mission of Viking Lander 2 began December 15, after solar conjunction, and ended in June 1978. During this period, an additional 1038 pictures were obtained from Lander 1 data and 1311 pictures from Lander 2 data. A comprehensive description of the Viking primary mission and the results of eight scientific experiments on board the landers were published in the Journal of Geophysical Research, v. 82, no. 26, Sept. 30, 1977; see References.

*Latitude is areographic (see de Vaucouleurs and others, 1973).

REVISIONS AND REVIEWS

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