



Rock No.	Observed	Horizontal	Vertical	Distance from Lander
1	2.4m	2.4m	2.4m	2.4m
2	2.4m	2.4m	2.4m	2.4m
3	2.4m	2.4m	2.4m	2.4m
4	2.4m	2.4m	2.4m	2.4m
5	2.4m	2.4m	2.4m	2.4m
6	2.4m	2.4m	2.4m	2.4m
7	2.4m	2.4m	2.4m	2.4m
8	2.4m	2.4m	2.4m	2.4m
9	2.4m	2.4m	2.4m	2.4m
10	2.4m	2.4m	2.4m	2.4m
11	2.4m	2.4m	2.4m	2.4m
12	2.4m	2.4m	2.4m	2.4m
13	2.4m	2.4m	2.4m	2.4m
14	2.4m	2.4m	2.4m	2.4m
15	2.4m	2.4m	2.4m	2.4m
16	2.4m	2.4m	2.4m	2.4m
17	2.4m	2.4m	2.4m	2.4m
18	2.4m	2.4m	2.4m	2.4m
19	2.4m	2.4m	2.4m	2.4m
20	2.4m	2.4m	2.4m	2.4m

DESCRIPTION OF SCENE

On the border-strewn plains west of the lander, the rock distribution is extremely broad and uniform. Most of the rocks appear to lie on fine-grained soil. The rock debris which covers the Lander 2 site may be part of an impact flow lobe from the large impact crater, Mic, about 170 km east of the lander. Wind erosion has removed the fine material leaving the larger blocks in relief; some even appear to stand on pedestals (line 410, sample 3800). Small drifts of fine-grained material (line 300, sample 4250) similar to drifts seen at the Lander 1 site, are distributed among the large blocks. The drifts probably are remnants of a thicker layer of material that mantled the area and subsequently was swept away by the martian winds. Parts of the spacecraft visible at the bottom of the picture are the cover of the Radiosonde Thermometric Generator (RTG) (line 500, sample 2800) and the mounting structure for leg 2 of the lander (line 1100, sample 4200). The headed object above leg 2 (line 900, 4300) is a stroke page used to measure the amount of force sustained by the leg during landing.

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 elliptic orbit around the planet at a periastron altitude of nearly 1500 km. The orbiter camera was 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 1 touched down on the surface of Mars at lat. 22°48' N, and long. 47°56' W. (Morris 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 264.9° 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 14.6° clockwise from north along the horizon. The viewing direction of camera 1 was 14.6° clockwise from north along the horizon. The first picture from the surface of Mars, of an area near the lander's footpad 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.

VIKING LANDER MOSAICS

The Viking Lander cameras acquired many high-resolution pictures of the Chryse Planitia and Utopia Planitia landing sites. Each picture is a product of computer processing of Earth of digital image data transmitted from Mars as a result of "camera events" carried out by one of the lander cameras. Further computer processing of data from a selected number of these events yielded a total of 18 mosaics. Two pairs of mosaics from Lander 1 data (one mosaic from each camera) consisted of one pair made from data taken in the morning (0700-0800 hours) and one pair made with data acquired in midafternoon (1400-1510 hours). Similarly, three pairs of mosaics for the Lander 2 site consisted of one pair between 0700 and 0800 hours, one pair at noon, and one pair between 1700 and 1800 hours. Procedures used for processing the Viking Lander camera data were described by Levinthal and others (1977). The individual camera events used in each mosaic are identified in the outline of the accompanying camera view. Detailed descriptions and reproductions of these camera events were given by Tucker (1978). Copies of the Viking Lander pictures can be obtained from the National Space Science Data Center, Goddard Space Flight Center, Greenbelt, MD, 20771. The Lander camera system (Fluck and others, 1975a) has selectable focus settings for a depth of field from 1.2 m to infinity in the high-resolution (0.94" instantaneous field of view) mode. The survey (low-resolution) mode has an instantaneous field of view of 0.12"; this mode was used in the mosaic only where no high-resolution data were acquired. Each complete mosaic extends 34.2° in azimuth, from approximately 5° above the horizon to 60° below. A complete mosaic incorporates approximately 15 million picture elements (pixels). In order to manage the processing of such large data bases, each mosaic was compiled from four individual azimuthal sectors.

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VIKING LANDER 2 RECTIFIED PHOTOMOSAIC
EVENING SCENE - CAMERA 1 - SECTOR 2