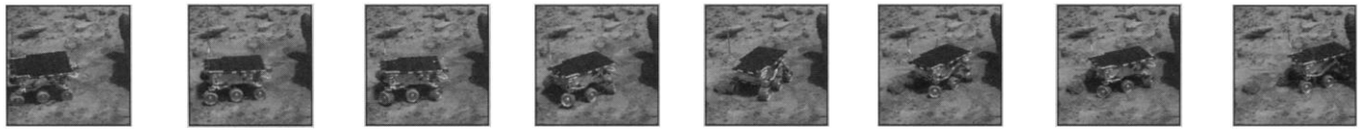

Mars Pathfinder

The following foldout presents images and analysis from the Mars Pathfinder Mission that are discussed in seven subsequent Reports. The center is a four-page panorama of the surface of Mars around the lander (Plate 1). The back of the foldout contains surface images (Plate 7), a different perspective of the landing site (Plate 2), rover targets (Plate 3), locations of rocks and other features (Plate 6) and data analysis (Plates 4, 5, 8, 9, and 10).

Plate Captions

Captions for Plates 3, 4, 6, 8, 9, and 10 are on the foldout.

Plate 1. (center, p.1737–1740) Panoramic views of landing site from Sagan Memorial Station. Features are identified in Plate 6. Each view is a controlled mosaic of ~300 IMP images covering 360° of azimuth and elevations from ~4° above the horizon to 45° below it; the vertical coordinate is tan (elevation), equivalent to a central-perspective projection in one dimension, for optimum stereo viewing (B). Simultaneous least-squares adjustment of orientations of all images has been performed to minimize discontinuities between images. Mosaics have been highpass-filtered and contrast-enhanced to improve discrimination of details without distorting relative colors overall. Cartographic image processing by U.S. Geological Survey

A (Top) Enhanced true-color image created from the "gallery pan" sequence, acquired on sols 8–10 so that local solar time (LST) increases near-continuously from about 10:00 at the right edge to about 12:00 at the left. Mosaics of images obtained by the right camera through 670 nm, 530 nm, and 440 nm filters were used as red, green, and blue channels. The composite product was then slightly highpass filtered and contrast enhanced. Grid ticks indicate azimuth clockwise from north in 30° increments and elevation in 15° increments.

B (Bottom) Anaglyphic stereoimage created from the "monster pan" sequence, acquired in four sections between about 8:30 and 15:00 LST on sol 3. Mosaics of images obtained through the 670 nm filter (left camera) and 530 and 440 nm filters (right camera) were used where available. At top and bottom, left- and right-camera 670 nm images were used. Part of the northern horizon was not imaged because of the tilt of the lander. This plate may be viewed stereoscopically through glasses with a red filter for the left eye and a cyan filter for the right eye. To emphasize local topographic variations, parallax for points on the mean ground surface (but not elsewhere) has been removed during projection. The mean surface therefore appears to lie in the plane of the page, with topographic highs closer and lows beyond the page.

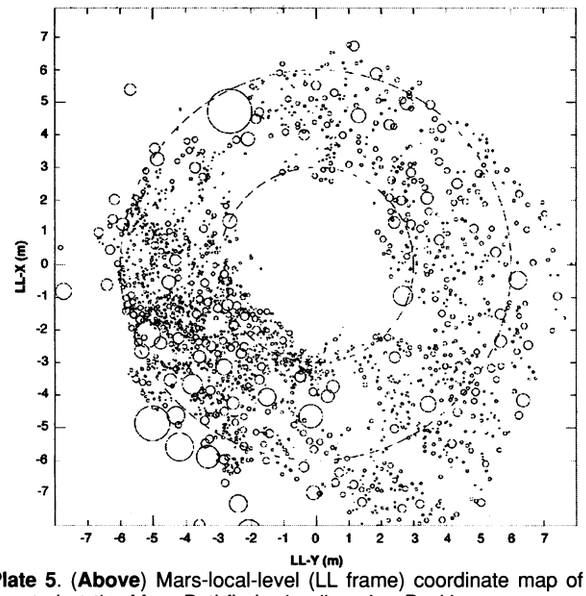

Plate 5. (**Above**) Mars-local-level (LL frame) coordinate map of rocks counted at the Mars Pathfinder landing site. Positions, apparent diameters (*D*), and heights (*H*) were measured to the nearest centimeter in the Marsmap virtual reality environment constructed from the "Monster Pan" set of IMP stereoimages. *D* is a perpendicular to a radial from the LL origin. All rocks with *D* 3 cm within a 3 m to 6 m annulus around the lander (total 1472) were used in the analyses. Rocks are assumed to be circular for coverage statistics estimates. Other rock counts were also made (DLR and Malin counts described in Smith *et al.*, p.1757).

Plate 2. (opposite, p. 1735–1736) Planimetric (overhead view) map of the landing site, to a distance of 20 m from the spacecraft. North is at the top in this and Plates 3–5. To produce this map, images were geometrically projected onto an assumed mean surface representing the ground. Features above the ground plane (primarily rocks) therefore appear displaced radially outward; the amount of distortion increases systematically with distance. The upper surfaces of the lander and rover also appear enlarged and displaced because of their height. Primary grid (white) is based on the Landing Site Cartographic (LSC) coordinate system, defined with *X* eastward, *Y* north, and *Z* up, and origin located at the mean ground surface immediately beneath the deployed position of the IMP camera gimbal center. Secondary ticks (cyan) are based on the Mars local level (LL) frame, which has *X* north, *Y* east, *Z* down, with origin in the center of the lander baseplate. Rover positions (including APXS measurements) are commonly reported in the LL frame. Yellow grid shows polar coordinates based on the LSC system. Cartographic image processing by U.S. Geological Survey.

Plate 7. (back, p. 1741–1742) Type areas of rocks and soils. (**A**) Dark rock type and bright soil type: Shown is the dark rock Barnacle Bill. Reflectance spectra typical of fresh basalt and APXS spectra indicating more silica-rich basaltic andesite compositions characterize this type. These rocks are typically the small boulders and intermediate-sized cobbles at the Pathfinder site. The bright soil type is very common and in this case comprises Barnacle Bill's wind tail and much of the surround soil area. This soil has a high reflectance and a strongly reddened spectrum indicative of oxidized ferric minerals. (**B**) Bright rock type: Shown is the bright rock Wedge. Reflectance spectra typical of weathered basalt and APXS spectra indicating basaltic compositions characterize this type. These rocks are typically larger than 1 m in diameter and many display morphologies indicating flood deposition. (**C**) Pink rock type: Shown is the pink rock Scooby Doo. APXS and reflectance spectra indicate a composition and optical characteristics similar to the drift soil. However, the morphology of the pink rock type indicates a cemented or rocklike structure. This material may be a chemically cemented hardpan that underlies much of the Pathfinder site. (**D**) Dark soil type: The dark soil type is typically found on the windward sides of rocks or in rock-free areas like Photometry Flats (shown here) where the bright soil has been striped away by aeolian action or in open areas. Other locations include the Mermaid Dune. (**E**) Disturbed soil type: The darkening of disturbed soil relative to its parent material, bright soil, as a result of changes in soil texture and compaction caused by movement of the rover and retraction of the lander airbag. (**F**) Lamb-like soil type: This soil type shows reflectance and spectral characteristics intermediate between the bright and dark soils. Its distinguishing feature is a weak spectral absorption near 900 nm not seen in either the bright or dark soils.