Telemetry Antennas for Deep Space Probes

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Summary. The requirement for real time imaging telemetry and the continued increase in science payloads on deep space missions have played a major role in the evolution of deep space probe telemetry antennas. This paper describes the high data rate telemetry antennas that were flown on the Mariner Mars 1969 and 1971, the Mariner Venus Mercury 1973, the Viking 1975 and the Voyager spacecrafts. Performance parameters are reviewed and general design concepts are described. The Mariner Mars 1969 and 1971 antennas were single frequency (S-band), one meter diameter antennas. The Mariner Venus Mercury 1973, Viking 1975 and Voyager antennas were dual frequency (S and X-band), with diameters of 1.4 meters, 1.5 meters and 3.7 meters respectively.

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