

MARINER



MARS

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This is a second of a series of bulletins to keep you informed of the Deep Space Network activity associated with the Mariner IV spacecraft during the period 1 October 1965 until a nominal reacquisition time in the middle of 1967. On February 3, 1966, the Venus station once again detected the Mariner IV spacecraft signal, indicating that the spacecraft transmitter was operating in its normal mode and that telemetry modulation was present. The received signal level was -178.1 dbm, and the transmitter frequency was 2,297,587,365 cps. At this time the Deep Space Network, in collaboration with Mariner Project personnel, sent a radio command to update the cone angle of the Canopus sensor. This command is the first in a series of commands to be sent over the next 18 months at periodic intervals that will maintain the Mariner IV spacecraft attitude stabilized mode using the Sun and Canopus as references. If this command was received and acted upon properly by the spacecraft, the latter will remain attitude stabilized as we assume it has been since October 1, 1965, and as we know it was during mission sequence from shortly after launch through encounter and up to the October 1, 1965, antenna switchover. After the command operation was completed, the Venus station resumed the listening mode and continued to receive the Mariner IV spacecraft signal. Analysis of this signal indicated that we have achieved uplink lock with the 100 KW transmitter operating through the 85-foot dish at the Venus site.

It is interesting to note that the spacecraft responded to a Earth-based signal over a distance of 213.53 million miles; and because the Earth probe distance will not be of this magnitude again until October of 1968, this may be a long standing record. It should be further noted that the round trip radio transmission time on the 3rd of February was 38 minutes and 12 seconds.