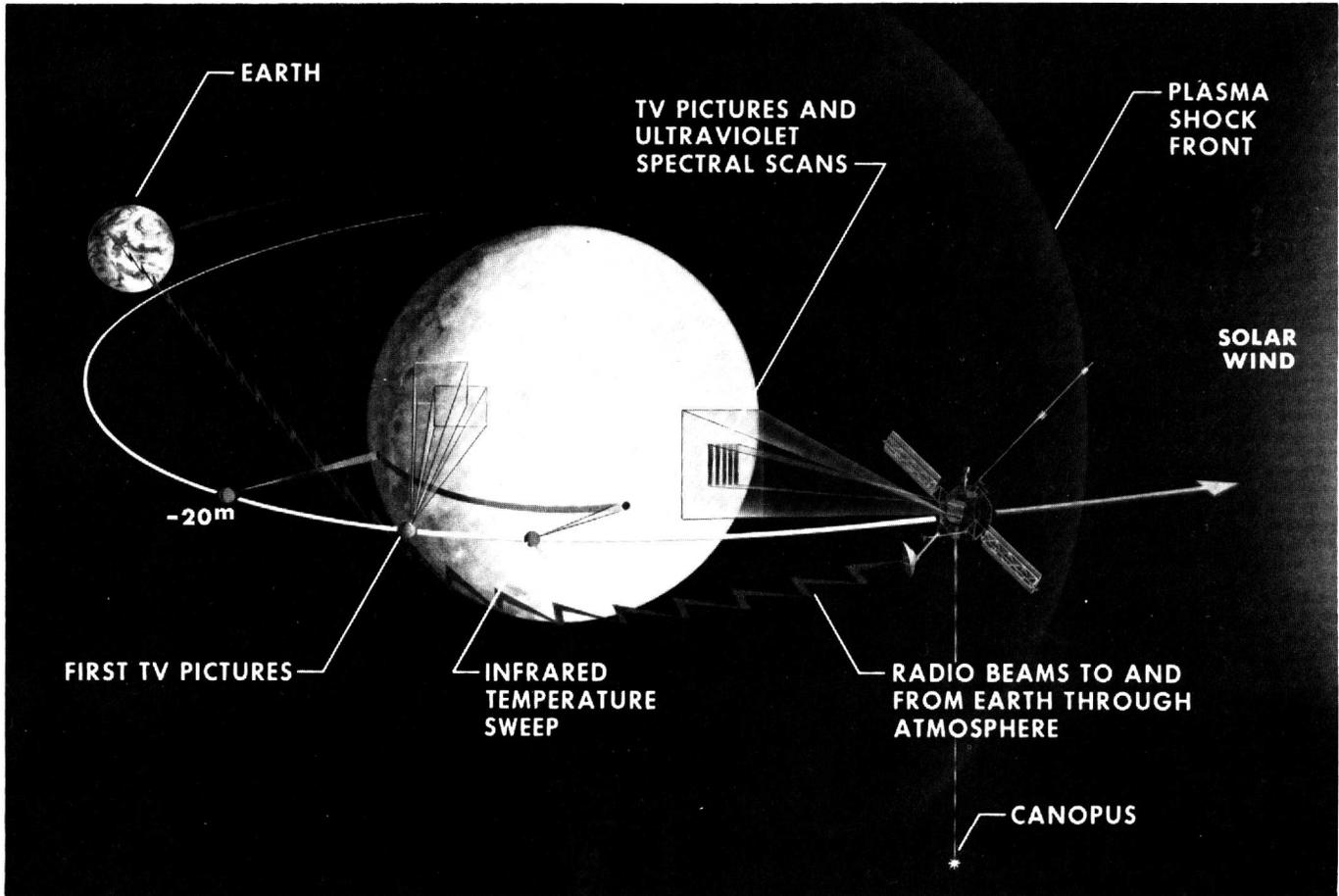


MARINER VENUS / MERCURY 1973

STATUS BULLETIN

MARINER 10 to Take First Closeup Photographs of Venus



Mariner 10 is now 400,000 miles from Venus and approaching the planet at a speed of over 18,400 miles per hour. Earth is more than 27 1/2 million miles from the spacecraft.

As the high-gain radio antenna was being moved during calibration today, the problem with its feed cone system which originally occurred 25 December, suddenly disappeared for two minutes, and then recurred—but not as badly as before.

Three good Venusian radar tracks were obtained at DSS 14 at Goldstone on Thursday, Friday and Saturday by Dr. Richard Goldstein and his brother, Dr. Samuel Goldstein, a radio astronomer at the National Radio Astronomical Observatory at Greenbank, West Virginia.

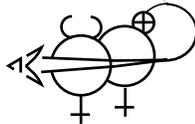
At the pre-encounter press conference today, Mr. Walker E. Giberson, Project Manager, stated the general conditions of the spacecraft and all ground systems were satisfactory.

Dr. Bruce Murray, Chief Television Scientist for the Television subsystem, discussed the unique capabilities of viewing the extreme ultraviolet features in the clouds of Venus. The ultraviolet markings seem to repeat with a four-day rotation period. If this is true, it is a rather "mind boggling" property of Venus, and it would be the same as if the weather map of Earth were to repeat itself every four days.

The Venus atmosphere has a coherent rotation and is not just random clouds. This may not be the case; it may be an artifact from the way the observations were taken from Earth. With the powerful television cameras of Mariner 10, we have an unprecedented opportunity to acquire the basic data describing the ultraviolet markings and their changes with time. If the Venus clouds are not just white haze, but are layered and contain pattern structures, the television cameras will show them clearly.

MARINER VENUS/MERCURY 1973 PROJECT OFFICE

Jet Propulsion Laboratory California Institute of Technology
National Aeronautics and Space Administration
Pasadena, California



4 February 1974

BULLETIN NO. 16

SCHEDULED VENUS ENCOUNTER SEQUENCE OF EVENTS

Day 36—Tuesday, 5 February 1974

- 09:21 PDT Start Venus TV (Dark limb). Picture every 42 seconds.
- 09:46 PDT First TV picture showing lighted portion of planet (twilight cusp).
- 10:01 PDT Closest approach to Venus: 3600 miles.
Range to Earth: 28 million miles.
Venus' disc is about 75% illuminated.
- 10:07 PDT Enter occultation.
Slew high-gain antenna in "tear drop" pattern to track planet limb (radio science data).
Record 36 TV frames and other science on tape recorder.
No "real-time" TV.
- 10:28 PDT Exit occultation. Resume real time high rate TV.
- 11:08 PDT Helium scan of planet by Ultraviolet Spectrometer (about 7 minutes).
- 11:20 PDT Start planet strip photography, 163 frames in six strips. Average resolution one kilometer.
- 12:00 PDT Turn off Infrared Radiometer (IRR).
- 13:15 PDT Ultraviolet Spectrometer (UVS) airglow scan of Venus for hydrogen. About 12 minutes.
- 13:25 PDT Start TV mosaic, 238 frames (UV filters), average resolution: 3 kilometers.
- 14:30 PDT Transfer tracking from Goldstone to Canberra. End JPL receive pictures at 42-second intervals. Begins 33/4-minute intervals. (spacecraft to Earth data rate remains at 117 kbps, but station to JPL relay at 22 kbps).
- 16:06 PDT 2nd UVS airglow hydrogen experiment. About 6 minutes.
- 16:12 PDT Start TV mosaic, 180 frames (UV filters), average resolution: 4 1/2 kilometers.
- 18:20 PDT Start full planet TV mosaic (UVs and orange filters), 169 frames, average resolution: 5.7 kilometers.
- 20:16 PDT Start full planet TV mosaic (UV and UV polarizing filters), 169 frames, average resolution: 7 kilometers.
- 22:15 PDT Start full planet TV mosaic, 169 frames (UV and orange filters), average resolution: 8 kilometers.
- 24:00 PDT Transfer tracking station from Canberra to Madrid.
*PICTURES OBTAINED TO THIS POINT: APPROX. 1200. Of the total, about 470 received at Goldstone and transmitted directly to JPL; 700 received at Canberra, 150 of which relayed to JPL via high-speed data lines; 36 frames stored on spacecraft tape recorder.