

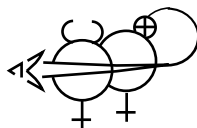
MARINER VENUS / MERCURY 1973 STATUS BULLETIN

FANTASTIC!!



This picture of the densely cratered surface of Mercury was taken by Mariner 10 when the spacecraft was 18,200 kilometers (8085 miles) from the planet on 29 March. The dark line across the top of the picture is a "dropout" of a few TV lines of data. At lower left, a portion of a 61-kilometer (38-mile) crater shows a flow front extending across the crater floor and filling more than half of the crater. The smaller, fresh crater at center is about 25 kilometers (15 miles) in diameter. Craters as small as one kilometer (about one-half mile) across are visible in the picture.

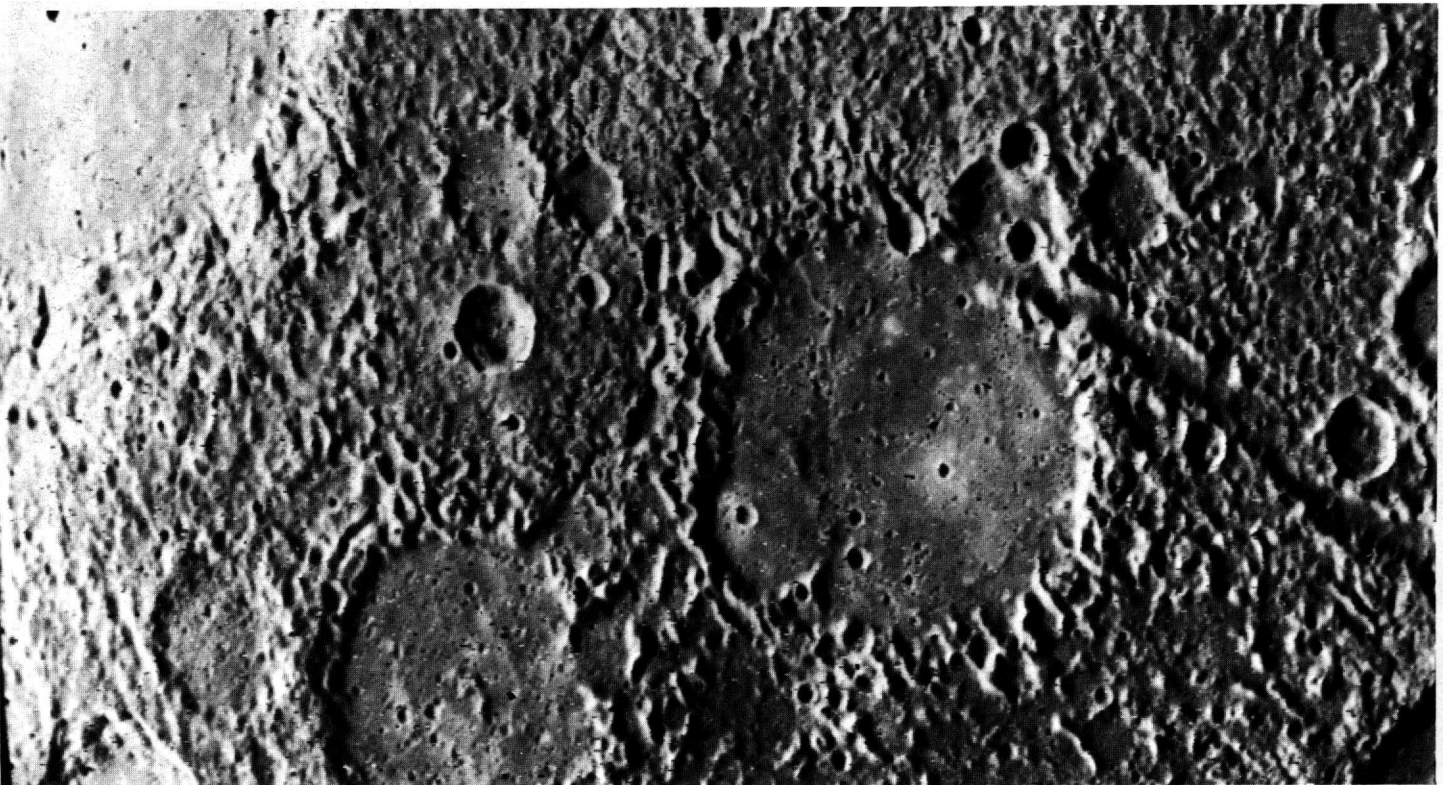
MARINER VENUS/MERCURY 1973 PROJECT OFFICE
Jet Propulsion Laboratory California Institute of Technology
National Aeronautics and Space Administration
Pasadena, California



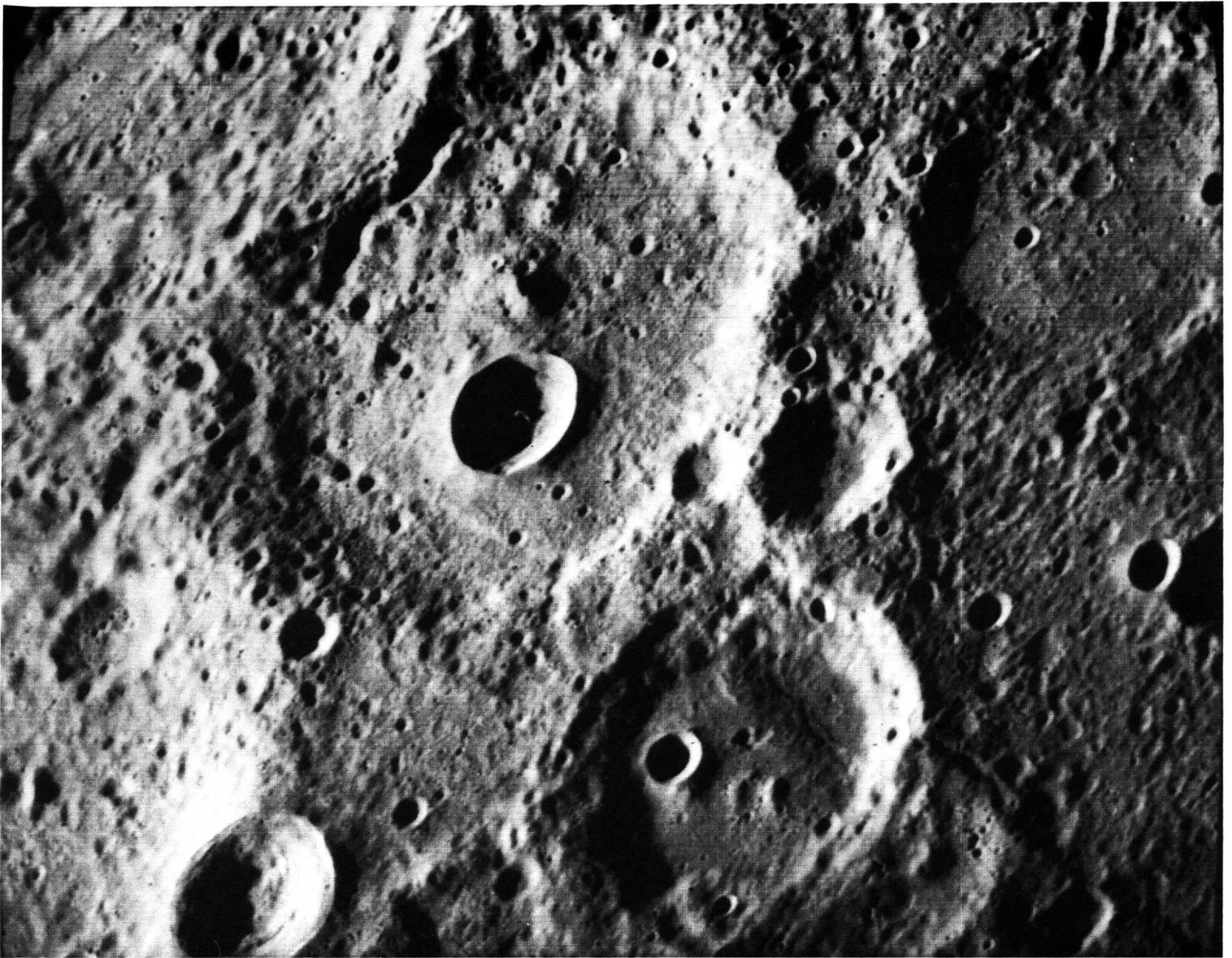
ENCOUNTER DAY
29 MARCH 1974
BULLETIN NO. 27



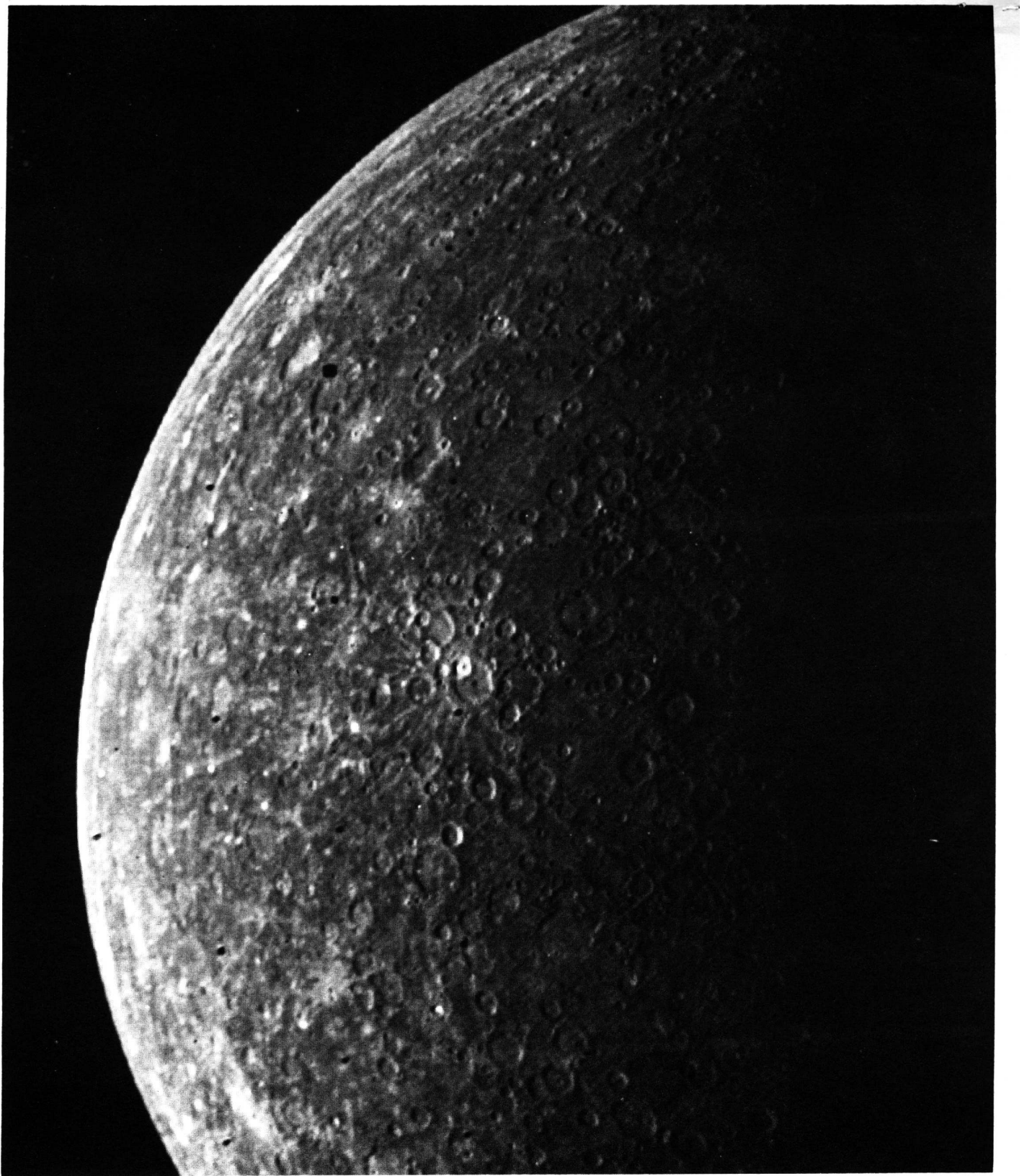
Cratered terrain very similar to that on the Moon is portrayed in this TV photo of Mercury taken by Mariner 10 on 29 March from a range of 31,100 kilometers (19,300 miles). The large flat-floored crater at right is about 100 kilometers (62 miles) in diameter — about the same size as the lunar crater Copernicus. Numerous small craters and linear grooves radial to the crater probably are ejecta thrown from the crater by impact. The surface is illuminated from the left.



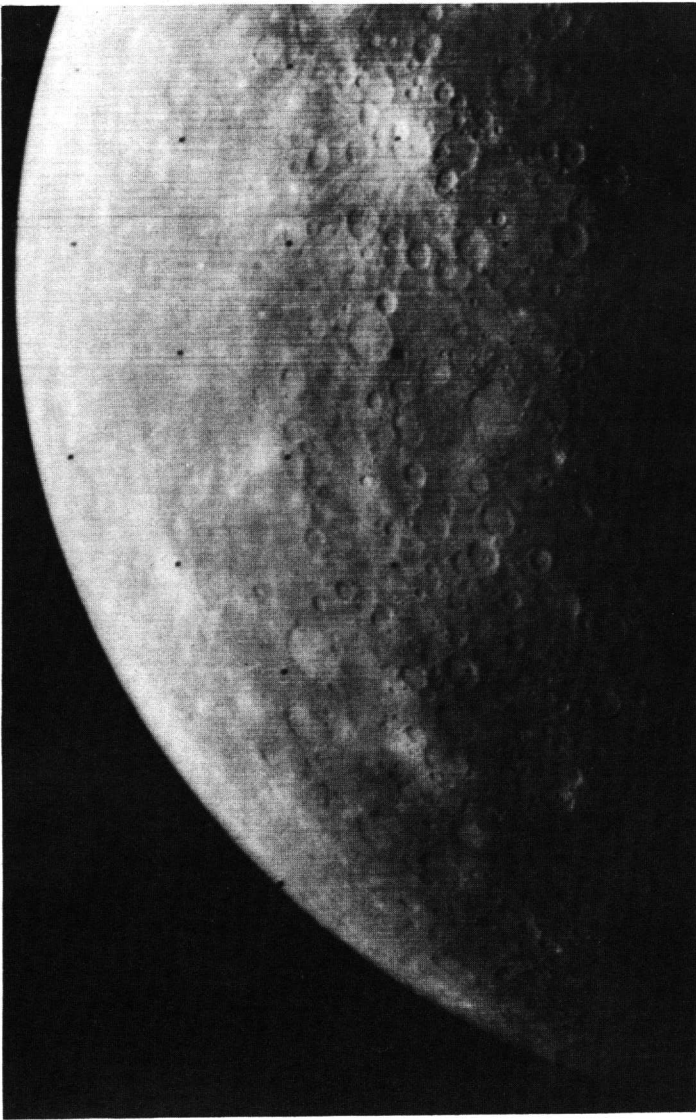
As Mariner 10 approached Mercury at nearly seven miles per second on 29 March, its TV camera took this picture from an altitude of 35,000 kilometers (21,700 miles). The picture, which covers an area of 290 by 220 kilometers (180 by 136 miles) shows a heavily-cratered surface with many low hills. The large valley to the right is seven kilometers (4 1/2 miles) wide and more than 100 kilometers (62 miles) long. The large flat-floored crater near the center is about 80 kilometers (50 miles) in diameter



A fresh new crater in the center of an older crater basin is shown in this picture of the surface of Mercury taken 29 March by the Mariner 10. The newer crater (almost centered in the photo) is about 12 kilometers (7 1/2 miles) across. The picture, which covers an area 130 by 170 kilometers (90 by 105 miles), was taken from a distance of about 20,700 kilometers (12,860 miles) a half-hour before Mariner 10 made its close flyby of Mercury.



This heavily-cratered area of the planet Mercury closely resembles the bright highlands of Earth's moon. Mariner 10 took this picture at about 3:30 a.m. PDT on March 29 from a distance of about 400,000 kilometers (240,000 miles). Largest craters in the photo are 120 kilometers (70 miles) across. The bright spot in the center can be resolved into several craters, the youngest of which has prominent bright rays similar to rays around fresh craters on the moon. Horizontal streaks along the terminator are artifacts of the computer processing. The picture was received from Mariner 10 by the Madrid, Spain, station of the NASA Deep Space Network and relayed to JPL where it was enhanced in the Laboratory's Mission Test Imaging System computer.

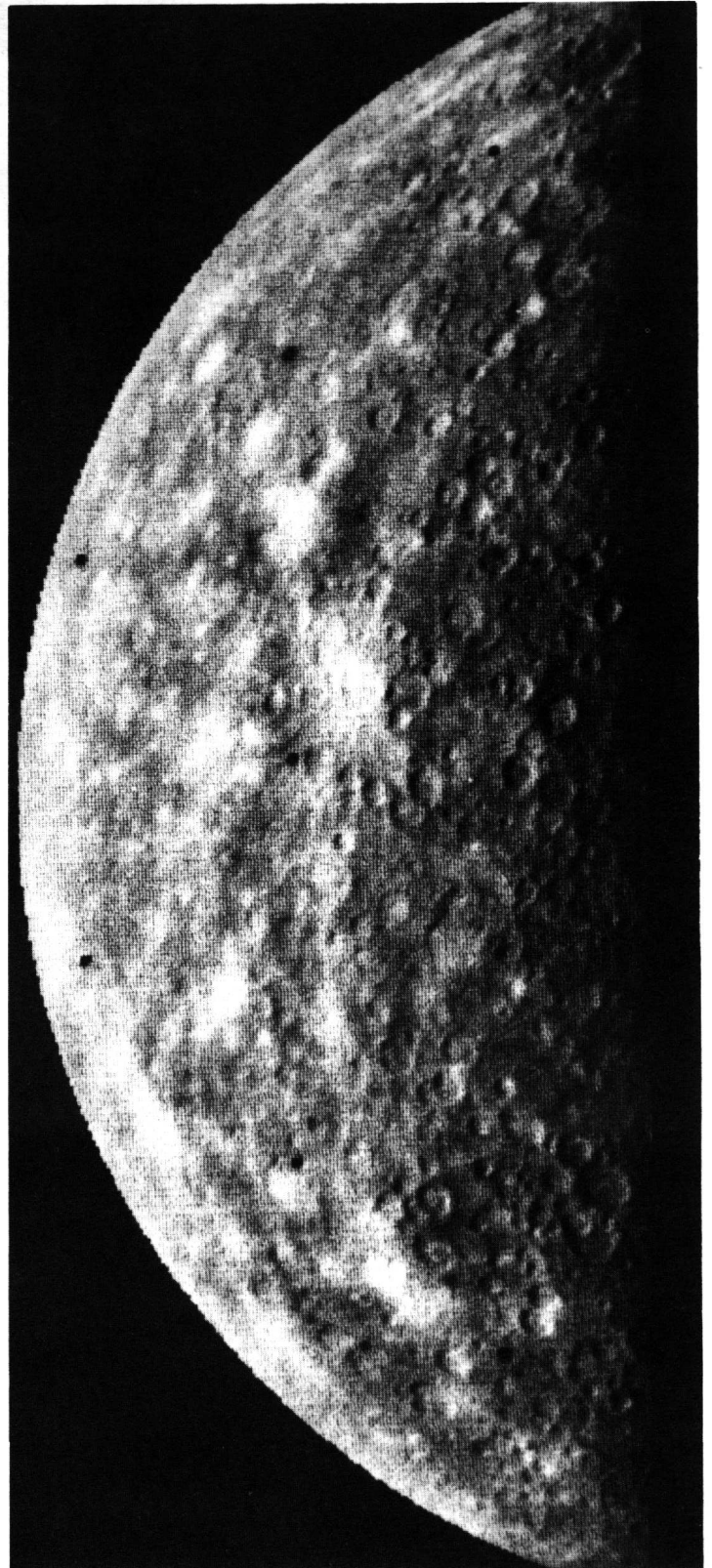


TOP

This picture of Mercury was taken by Mariner 10 from a distance of 500,000 kilometers (310,000 miles) about 13 hours before the spacecraft reached the planet on March 29. The lunar-like surface displays craters as large as 200 kilometers (120 miles) in diameter, and features as small as 11 kilometers (6.8 miles) can be detected. The South pole of Mercury is located on the day-light terminator near the bottom of the illuminated portion of the planet. The sun is shining from the left. The picture was processed and computer-enhanced automatically by the JPL Mission and Test Computer in real time as the radio transmission was received from the spacecraft.

BOTTOM

An abundance of craters near the evening terminator can be seen in this picture of Mercury taken by one of Mariner 10's two television cameras. The picture, taken shortly after 12 Noon PDT on March 28, was computer-enhanced at the Jet Propulsion Laboratory. Range to the planet was about 952,600 kilometers (590,240 miles). North is at the top with the illuminated hemisphere to the left.



MESSAGE FROM THE PRESIDENT TO DR. JAMES C. FLETCHER

The successful flight of Mariner 10 to the planet Mercury marks another historic milestone in America's continuing exploration of the solar system. With this mission, we will begin to end centuries of speculation about our planetary neighbor closest to the Sun.

On behalf of all Americans, I extend warmest congratulation to NASA and the Mariner 10 team on their outstanding performance. The hard work, skill, and ingenuity that contributed to the success of Mariner 10 is in keeping with that historical tradition which began when men landed at Plymouth Rock and has continued through the landing of men on the Moon.

Remarks by Dr. James C. Fletcher regarding the Mariner Mercury Encounter

The successful flight of Mariner 10 is a major step toward our fundamental goal to use the solar system as a laboratory with different species of planets — and, by comparison, to learn more about our own planet Earth, its evolution and — most importantly — its probable future.

We have now completed a reconnaissance of the inner planets. In just a few short years, we have seen Mariner 9 map Mars in great detail. We have taken the first closeup look at Jupiter. We have begun to unravel the enigma that is Venus; and now we have seen the surface of our most elusive neighbor, Mercury, for the first time.

Pioneer 11 is on its way to Jupiter and then Saturn. Two Viking spacecraft are scheduled to land on Mars in 1976, to search for life on the planet. Two Mariners will be launched to Jupiter and Saturn in 1977. And two Pioneer spacecraft will explore Venus in 1978.

Before the close of the century, American spacecraft should have explored all the planets of the solar system, many of their major satellites, and a variety of comets and asteroids.

Taken together, these missions will provide the information we need to understand the formation, evolution and future of our solar system, and thus to better understand the future of our own home planet.

Remarks by Dr. William H. Pickering, Director of the Jet Propulsion Laboratory

I think it is worthwhile to reflect how rapidly the growth of our ability to explore the solar system has occurred. Back in 1962, we made our first journey past Venus; in 1965, we took our first hesitant steps past Mars, and now Mars and Venus have been visited several times. We have gone to Jupiter — and with today's mission we have included Mercury among the planets that have been investigated.

The abstracts of the preliminary scientific results of Mercury Encounter
will be in the next issue of the Status Bulletin