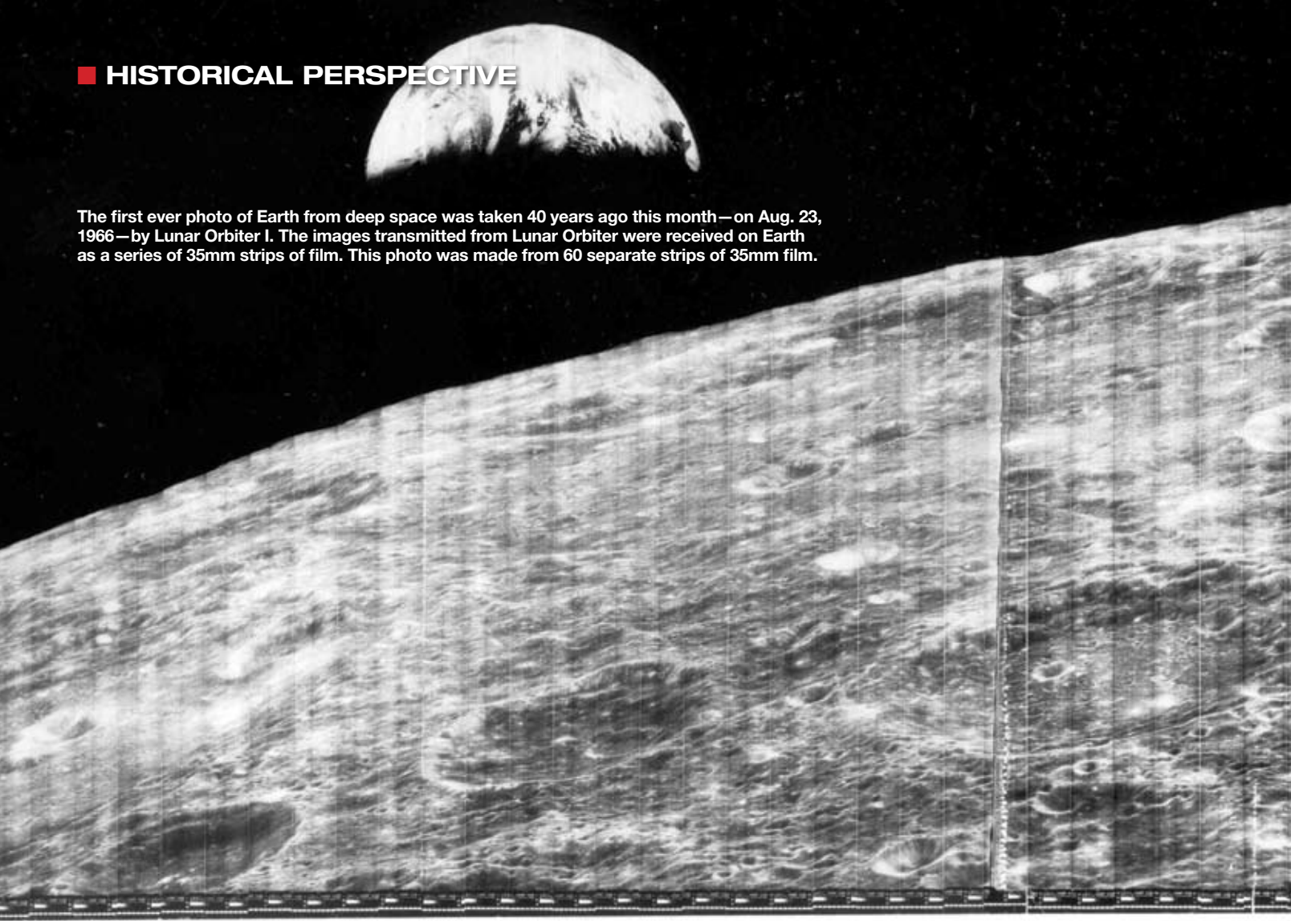


The first ever photo of Earth from deep space was taken 40 years ago this month—on Aug. 23, 1966—by Lunar Orbiter I. The images transmitted from Lunar Orbiter were received on Earth as a series of 35mm strips of film. This photo was made from 60 separate strips of 35mm film.

A great view from above

40 years ago, a Boeing-built Lunar Orbiter took a very memorable photo

By Michael Lombardi

A picture taken 40 years ago this month was hailed at that time as the greatest photograph of the 20th century. It took three days and 232,000 miles to get the camera in the right position, but the results were absolutely stunning: It was the first-ever photograph of Earth from deep space, with the moon in the foreground.

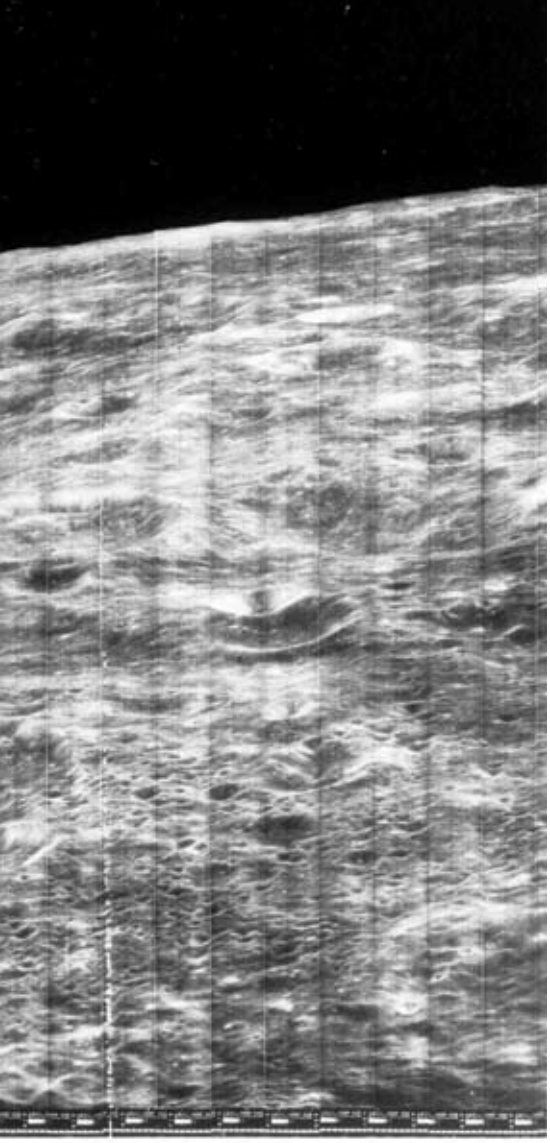
The photo was the first of many spectacular photos taken by the five unmanned space vehicles called Lunar Orbiters. The mission was one of the most successful space programs ever launched—and marked Boeing's first foray into space.

The primary mission of Lunar Orbiter was to obtain photographs of the moon's surface that would aid in the selection of suitable landing sites for the Apollo manned landings on the moon. Lunar Orbiter also had secondary objectives that included the collection of data on the moon's gravitational field, levels of radiation flux and micrometeorite density in the vicinity of the moon.

The Lunar Orbiter Project Office at NASA's Langley Research Center recommended that Boeing, along with its subcontractors Eastman Kodak and RCA, build the Lunar Orbiters. A final contract for eight orbiters (three test and five flight vehicles) was signed on May 7, 1964. Although Boeing came in with the highest bid, the company had many factors in its favor. Among them:

- A reputation for project organization and success built on a number of prior programs
- A design that used proven off-the-shelf hardware (in particular, the Kodak photographic system, a lightweight version of one developed for use on U.S. Air Force reconnaissance satellites)
- Its own on-site test facilities

The Lunar Orbiters were built at the Boeing Missile Production Center in Seattle. Testing took place there and at the space environment test chamber at the then-new



BOEING PHOTO

BOEING PHOTO

The Lunar Orbiter sits in a three-axis test rig at the Boeing Missile Production Center in Seattle. With the launch of the first Lunar Orbiter, Boeing entered the space age.

Boeing Space Center in nearby Kent, Wash. The Lunar Orbiter was an 850-pound structure that measured 5 feet wide and 5 feet 6 inches tall in its launch configuration. With its four solar panels and two antenna booms deployed, it measured 18 feet 6 inches wide.

The launch of Lunar Orbiter I on Aug. 10, 1966, aboard an Atlas–Agena D booster was Boeing's entry into the space age. So successful was the program that Orbiters I, II, and III fulfilled the program's original mission objectives—which allowed the last two Orbiters to be devoted to broader scientific studies of the moon.

Unlike the first three missions, Orbiters IV and V were placed into near-polar orbits. They performed broad photographic surveys of the lunar surface, photographing 99 percent of the moon's near side and 80 percent of the moon's far side with a resolution 10 times greater than what could be achieved by any earth-based telescope.

To this day, the photographs taken by the five Lunar Orbiters have provided the basis for all accurate maps of the moon.

The Lunar Orbiters paved the way for man's first steps on the moon by giving the Apollo project valuable data about the moon and its environment. They helped with landing site selection and verification. They also gave Apollo flight operations experience in tracking spacecraft in lunar orbit and saved NASA valuable time and money. The alternative to sending the orbiters had been a manned Apollo mission to lunar orbit. That single mission would have been considerably more expensive than the entire Lunar Orbiter program and probably would have forced Apollo to miss the goal proposed by President Kennedy for a manned landing on the moon before the end of the decade.

To commemorate the anniversary of the first Lunar Orbiter mission, members of the program will hold a reunion at the Museum of Flight in Seattle on Aug. 22. On Aug. 21, the significance of the Lunar Orbiter will be the topic of a panel discussion at the museum's William Allen Theater. For more details, contact Pat Itzen at 253-631-0113 or at pat.itzen@juno.com. ■

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