NASA Restores Historic Lunar Orbiter Image

November 13 2008

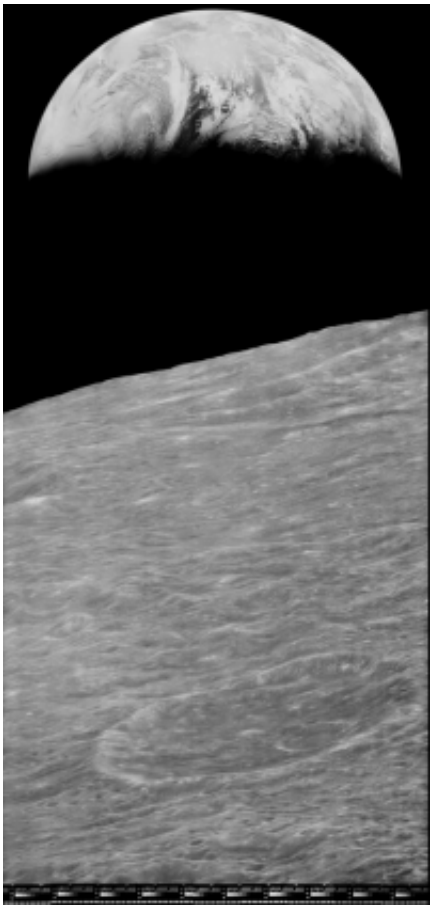

Image of the Earth recovered by the Lunar Orbiter Image Recovery Project. Image Credit: NASA / LOIRP

(PhysOrg.com) -- NASA released a newly restored 42-year-old image of Earth on Thursday. The Lunar Orbiter 1 spacecraft took the iconic

photograph of Earth rising above the lunar surface in 1966. Using refurbished machinery and modern digital technology, NASA produced the image at a much higher resolution than was possible when it was originally taken. The data may help the next generation of explorers as NASA prepares to return to the moon.

In the late 1960s, NASA sent five Lunar Orbiter missions to photograph the surface of the moon and gain a better understanding of the lunar environment in advance of the Apollo program. Data were recorded on large magnetic tapes and transferred to photographic film for scientific analysis. When these images were first retrieved from lunar orbit, only a portion of their true resolution was available because of the limited technology available.

The Lunar Orbiter Image Recovery Project, located at NASA's Ames Research Center at Moffett Field, Calif., is taking analog data from original recorders used to store on tape and 1,500 of the original tapes, converting the data into digital form, and reconstructing the images. The restored image released Thursday confirms data from the original tapes can be retrieved from the newly-restored tape drives from the 1960s when combined with software from 2008.

"I'm glad that we could offer our services to the project team and play a part in the recovery of such an historic image of the moon," said Ames Director S. Pete Worden.

Future images will be made publically available when they are fully processed and calibrated. The intent of this project is to facilitate, wherever possible, the broadest dissemination and public use of these images.

"It's a tremendous feeling to restore a 40-year-old image and know it can be useful to future explorers," said Gregory Schmidt, deputy director of

the NASA Lunar Science Institute at Ames. "Now that we've demonstrated the capability to retrieve images, our goal is to complete the tape drives' restoration and move toward retrieving all of the images on the remaining tapes," he added.

As the images are processed, they will be submitted to the Planetary Data System, which NASA's Space Science Mission Directorate in Washington sponsors in cooperation with NASA's Jet Propulsion Laboratory in Pasadena, Calif. The images also will be calibrated with standard mapping coordinates from the U.S. Geological Survey's Astrogeology Research Program in Flagstaff, Ariz.

NASA will launch the Lunar Reconnaissance Orbiter in 2009 to map the moon's surface. The restoration of the Lunar Orbiter images to high quality images will provide the scientific community with a baseline to measure and understand changes that have occurred on the moon since the 1960s. These data could help mission planners assess the long-term risk to lunar inhabitants from small meteor impacts and establish longitude and latitude lines for lunar mapping.

"This effort was made possible by the vision and dedication of Apollo-era NASA employees, independent researchers, and a true veteran team of engineers and young students," said Dennis Wingo, the program lead for the project.

NASA's Exploration Systems Mission Directorate and Innovative Partnerships Program Office in Washington provided initial funding for the project.

To view the image and for more information about the Lunar Orbiter Image Recovery Project, visit: www.nasa.gov/topics/moonmars/features/LOIRP/

Provided by NASA