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Apollo moon mission photos go online

Scientists, public will be able to see 36,000 pictures

By Eric Swedlund

ARIZONA DAILY STAR

ASU scientists, in conjunction with NASA, are scanning 36,000 photographs taken during the Apollo lunar missions and making the high-resolution images available to the public for the first time online.

The complete archive of Apollo images will be hosted on an ASU Web site — apollo.sese.asu.edu — that went live this week with five pictures from Apollo 15's July 1971 flight as a preview of what's to come.

"These pictures are very spectacular, and they're very important historically," said Mark Robinson, a geological sciences professor in Arizona State University's School of Earth and Space Exploration. "There are two major audiences here. One is the general public that wants to see the Apollo images up close, but there's also a huge amount of scientific value in these images."

Robinson, ASU's lead on the project, is also developing a high-resolution camera for the lunar orbiter mission launching next year.

Did you know ...

Arizona had roles in America's race to the moon in the 1960s:

• Apollo astronauts conducted training missions around Flagstaff from 1964 to 1973.

• The University of Arizona's Gerard P. Kuiper, a renowned astronomer, was lead scientist as NASA's Ranger 7 reached the moon on July 31, 1964, becoming the United States' first successful mission to another body in the solar system.

Digitizing the archive will take three years and will give the public and even many lunar scientists their first glimpse at high-quality images from the Apollo moon missions. The archive includes black-and-white and color pictures taken from lunar orbit and the lunar surface. Images will be added to the Web site monthly.

Between 1968 and 1972, NASA made duplicate sets of the images after each moon mission and sent the duplicates to various scientific libraries. The copies, and resulting third-generation copies, are all that have been seen by the public and even most scientists. The copies are not sharp and are at higher contrast than the originals.

The original Apollo film is archived in a zero-degree freezer at the Johnson Space Center in Houston. To scan the pictures, staff members transfer each canister from the freezer to a 55-degree refrigerated room, where it adjusts to the temperature for 24 hours. The canister then moves again, adjusting for another 24 hours to room temperature before being scanned and returned to the freezer vault.

The scans are being made with a wider brightness range and at a resolution of up to 200 pixels per millimeter, which is sharp enough to reveal the grain of the original film. The raw scanned images will be up to 1.3 gigabytes in size, though the processed images will be available in six download options. The resolution for the first online images ranges from each pixel representing 6 meters of lunar surface at the largest to each pixel showing 35 meters at the smallest file size.

The archive contains about 620 frames of 35 mm photographs, which were scanned first. Currently, more than 10,000 black-and-white frames from the Metric, or mapping, camera are being scanned from Apollo 15, 16 and 17. Later, 4,600 frames from the black-and-white panoramic camera will be scanned. The final phase will include about

20,000 Hasselblad black-and-white and color photographs.

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