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Best view of moon crash will be on TV or online

By Tom Beal

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Your best shot at seeing Friday's early morning crash of a NASA rocket into the moon is on your television or computer.

NASA will broadcast images of the crash in a program on NASA-TV and online. Coverage begins at 3:30 a.m. Tucson time on Friday.

There is a chance that, with a decent telescope (10-inch mirror or better) and a dark sky, you may be able to see something when the spent fuel stage of NASA's latest mission to the moon hits the crater Cabeus at 4:31 a.m., but even the pro astronomers with the giant telescopes aren't promising anything.

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certain they'll see the aftermath of the bid to uncover water on the moon.

The size of the plume of dust and (with any luck) ice ejected from the crater's surface depends on a number of variables, but NASA is predicting it will be 25 miles wide and 6.25 miles high.

How much of the plume is visible and how much remains hidden behind crater walls is also a guess. Astronomers hope that a significant portion will be sunlit against a backdrop of crater wall and deep space.

Even at that, the illumination will be no brighter than a planet and very small — five arc-seconds, about 0.25 percent of the moon's diameter.

In Southern Arizona, astronomers atop Mount Hopkins in the Santa Rita Mountains and Mount Graham in the Pinalenos will be officially observing the crash for NASA. Telescopes in the Santa Catalina Mountains will also be observing the event, but no public viewing of the images is planned.

The closest look at the collision will come from cameras and other instruments aboard the Lunar Crater Observing and Sensing Satellite (LCROSS), which will follow its spent second-stage rocket to the lunar surface, taking readings from the ejecta cloud as it passes through and relaying them to Earth before it, too, crashes into the crater four minutes later.

The Lunar Reconnaissance Orbiter (LRO), now in orbit 50 kilometers above the lunar surface, has also positioned itself for a good oblique view of the crater, but it will concentrate on its LAMP (Lyman-Alpha Mapping Project) instrument, which was designed to look specifically for water and will look for a hydrogen in the plume, said Alfred McEwen of the University of Arizona's Lunar and Planetary Laboratory.

"If it's enough water, the plume could glow in the ultraviolet wavelength of hydrogen," McEwen said.

McEwen is a co-investigator for the LROC team based at Arizona State University, which is operating the optical cameras aboard the orbiter.

MORE ONLINE

- Watch the lunar crash in a broadcast beginning at 3:30 a.m. on NASA TV or at nasa.gov/ntv
- For tips on viewing the 4:31 a.m. crash through a telescope, go to: lcross.arc.nasa.gov/observation/amateur.htm

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Those cameras will try to catch pictures of the crash, he said, but were designed to map the moon's surface over time and "not designed to image an event like this that is very short-lived," McEwen said.

In addition, the orbiter's proximity to the moon's surface makes it tougher "to fly exactly over the right place at the right time," he said. The high walls of a crater could block its view.

"We'll try," he said, "and see what we get."

In addition to the LRO, five other orbiting telescopes and an array of ground-based scopes will aim a variety of scientific instruments at the plume, hoping to detect the telltale signatures of water on our moon.

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