

News flash: Earth still has only one moon

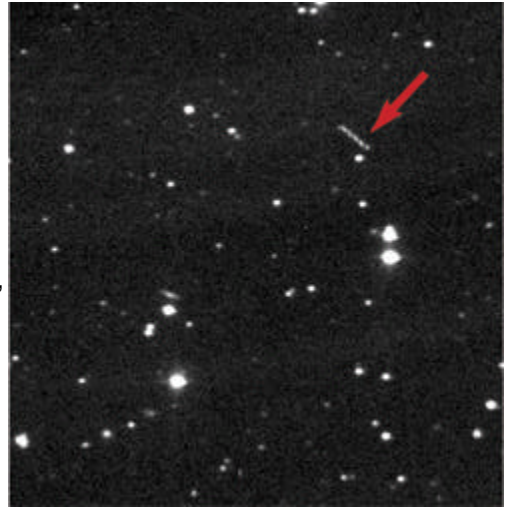
Ron Cowen

When California amateur astronomer Bill Yeung found a mysterious object circling Earth in early September, the buzz was that he might have discovered a second moon. Alas, it appears to be something much more mundane.

Analyzing the object's orbit, researchers from the Massachusetts Institute of Technology (MIT) and the University of Arizona in Tucson have concluded that the body is the third stage of the Saturn V rocket used in the Apollo 12 mission to the moon that was launched by NASA Nov. 14, 1969.

Gravitational tugs from the sun and the moon apparently nudged the body away from Earth and into an orbit around the sun in 1971. Paul W. Chodas of NASA's Jet Propulsion Laboratory in Pasadena, Calif., has determined that the body, designated J002E3, reentered an Earth orbit last April. The object will probably complete six orbits around Earth before returning to a solar orbit next summer, Chodas says.

Their curiosity piqued by Yeung's find, Richard P. Binzel and Andrew S. Rivkin of MIT used NASA's Infrared Telescope Facility atop Hawaii's Mauna Kea to determine the spectrum of the body. The spectrum looked unlike that of any known asteroid. The MIT duo then was contacted by Carl W. Hergenrother and Rob Whiteley of the University of Arizona, who had already recorded visible light reflected from J002E3.



NOT ANOTHER MOON. Image highlights an object—probably part of an Apollo rocket—that began orbiting Earth in April.
A. Aletti

Combining the data sets produced a single spectrum spanning visible and infrared wavelengths. That spectrum "looks a lot like [that from] titanium oxide paint," Rivkin says. The third stage of the Saturn V moon rocket was covered with white titanium oxide paint.

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Letters:

Concerning the Apollo rocket's third stage returning to Earth orbit: How did the researchers determine the source to be Apollo 12, since there were six other Apollo moon missions? Did they use some fancy orbital mechanics along with statistical probability?

George Richeson
Brenham, Texas

Yes, they did, and the orbit matched. Also, the researchers found no evidence of the object in images that had been taken before the launch of Apollo 12.—R. Cowen