Mysterious Flash Photographed on Moon

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Among the most enigmatic astronomical occurences are lunar transient phenomena (LTP's), instances of areas on the Moon appearing to brighten, darken, or change color on a time-scale of minutes. The very existence of LTP's is controversial, though they have been reported for two centuries (S&T: November, 1988, page 478).

Now a most remarkable one seems to have been photographed. On May 23, 1985, G. Kolovos (University of Thessaloniki) was testing a 4 1/4-inch refractor by taking pictures of the four-day-old Moon from a small village in northern Greece. One of his seven photographs revealed a bright dot near the Moon's terminator.

Kovolos and colleagues from the university closely analyzed the image of the dot, near the crater Proclus C. They write in the December, 1988 "Icarus" that the oval spot is 22 kilometers across and seems to conform to the local topography.

What could causee such a bright flash on the Moon? The authors consider and dismiss several possibilities. Kodak Laboratories in Athens examined the film and concluded that the spot was not a film defect. It was not a surface reflection, because the illumination pattern implies that the flash occurred ABOVE the lunar surface. A volcanic eruption would have left an obscuring cloud on subsequent photos. So would a meteor impact.

Kovolos and co-workers hazard a guess that the intense heating of the lunar surface after sunrise might force cracks open, allowing trapped gas to escape. As the gas rises and expands, an electrical discharge could conceivably make it glow brightly. Many LTP sightings do occur near the lunar terminator within a day of sunrise. The researchers warn that their theory is far from being an explanation for all LTP's. "We present our results with caution," they write, "and we hope that additional data may lead to their indisputable explanation."

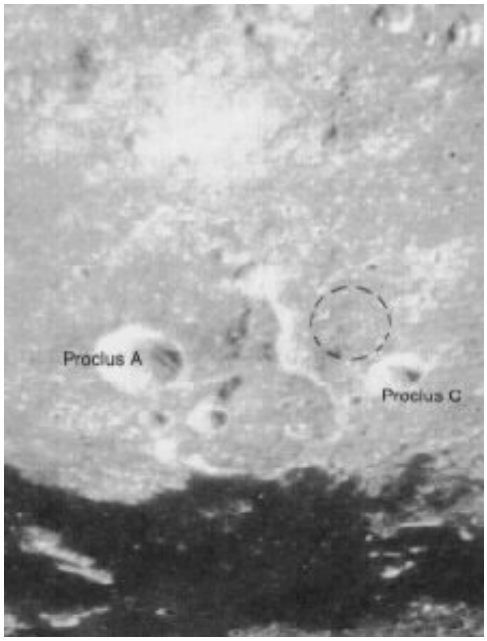

Photo 1 caption

: Researchers pinpointed this region of the Moon (circled), on the edge of Mare Tranquilitatis, as the location of the bright flash. Funnel-shaped craters, possibly implying a volcanic origin, lie in the area. This oblique view was taken by the Apollo 17 astronauts, courtesy F. Doyle and NSSDC.

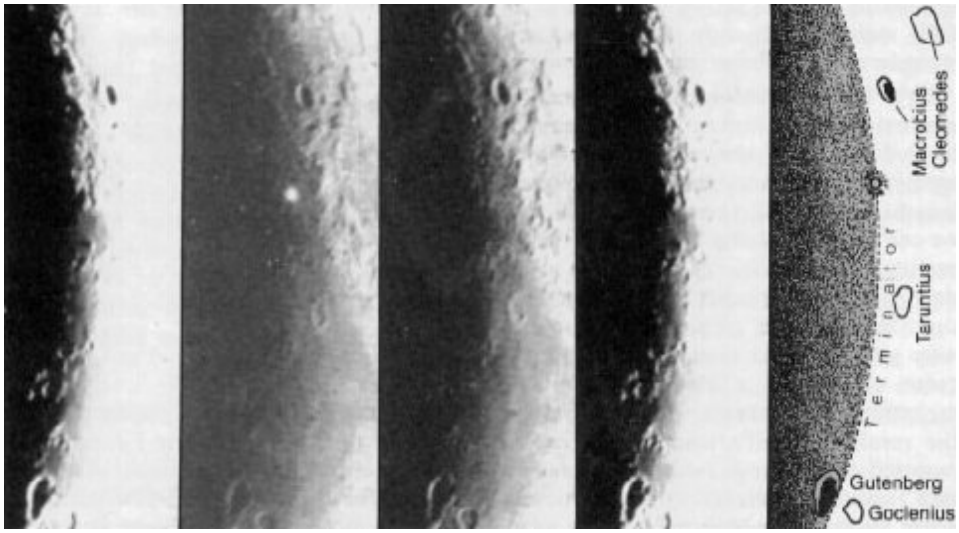

Photo 2 caption:

On the night of May 23, 1985, G. Kovolos snapped several photographs of the crescent Moon at approximately 8-second intervals. One of them had a surprise - a bright dot near the terminator. A detailed examination led Kovolos and others to conclude that the flash was a genuine event on the Moon. Adapted from "Icarus", courtesy J.H. Seiradakis.