SpaceX Rocket Crashes Into the Moon, Leaving Scientists Eager to Study Massive Impact

A discarded SpaceX Falcon 9 rocket stage unintentionally slammed into the moon after drifting through space for more than a year, according to The Guardian. While the collision was unplanned, scientists say it has created a rare opportunity to study the lunar surface and serves as another reminder of humanity's growing presence beyond Earth.

According to The Guardian, the Falcon 9 upper stage impacted the moon at an estimated 5,400 mph, creating what researchers believe is a crater approximately 60 feet wide and 12 feet deep. The impact occurred near Einstein Crater on the moon's far northern region, making it impossible to observe directly from Earth as it happened.

The rocket stage originated from a Jan. 2025 SpaceX mission that launched NASA's Blue Ghost lunar lander alongside Japan's Resilience lunar lander. The Guardian reported that because the mission required an unusually high velocity to reach its destination, there was not enough fuel remaining to dispose of the upper stage safely.

Instead, it drifted through cislunar space until the moon's gravity eventually pulled it into the lunar surface.

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Although the impact was accidental, scientists see it as an unusual scientific opportunity. According to The Guardian, researchers hope to study how the moon's dust, known as regolith, responded to the high-speed collision, compare the crater with naturally occurring meteor impacts and gain new

insight into the moon’s subsurface geology. NASA’s Lunar Reconnaissance Orbiter and South Korea’s Danuri lunar orbiter are expected to photograph the impact site in the coming days, allowing researchers to examine the newly formed crater more closely.

According to The Guardian, the collision posed no threat to Earth or the moon itself. Because the moon has no atmosphere, the rocket did not burn up before impact, and its surface already bears millions of craters formed by natural collisions over billions of years. The publication also reported that while NASA’s Blue Ghost mission successfully reached the lunar surface, Japan’s Resilience lander ultimately did not survive its landing attempt.

As scientists prepare to study the moon’s newest crater, this unexpected impact offers more than valuable scientific data. It also serves as a reminder that even as humanity reaches farther into space, the vastness of creation continues to point beyond itself to the majesty and wisdom of the One who spoke it into existence.

Abby Trivett *is a writer and editor for Charisma Media and has a passion for sharing the gospel through the written word. She holds two degrees from Regent University, a B.A. in Communication with a concentration in Journalism and a Master of Arts in Journalism. She is the author of the newly released book,* The Power of Suddenly: Discover How God Can Change Everything in a Moment. *For interviews and media inquiries, please contact media@*.