

Across the Cosmos October 2026: The Moon in Science and Art

Throughout human history, the Moon has been a source of fascination and speculation. My AI puts it this way: “The Moon serves as a universal mirror for human imagination, blending the measurable truths of astronomy with the emotional depths of art and poetry.” In 1975, Planetary Science Institute (PSI) Co-founders, William Hartmann and Don Davis, published a paper on the [Moon’s Origin](#) in the journal Icarus. More than 50 years later, their idea continues to be the leading hypothesis on the Moon’s formation. A renowned space artist, Bill Hartmann has also blended science and art throughout his career. His paintings of the Moon and its origin are part of the [William K. Hartmann Art Collection](#) at PSI Headquarters in Tucson, Arizona.

Although we can’t turn the clock back to the time our Solar System formed, the Atacama Large millimeter/submillimeter Array ([ALMA](#)) in Chile has captured high-resolution images of [planet formation around many other young stars](#). At the time the Earth formed 4.5 billion years ago, there were other growing planetary bodies. The Earth-Moon system is curious among the planets and moons in our Solar System in several ways. There are similarities and differences between the Earth and Moon that are difficult to explain if both worlds formed as separate bodies. Hartmann and Davis proposed that these features could be explained if a large body impacted the young Earth, blowing out rocky debris into orbit around the Earth, which then aggregated into the Moon.

Hartmann’s and Davis’ hypothesis explains why the Earth has a large iron core, but the Moon does not, since the debris came from the iron-depleted rocky mantles of the Earth and the impactor. It also explains why the Earth has a much larger density than the Moon. On the other hand, the Earth and Moon have exactly the same oxygen isotope compositions, whereas Mars rocks and meteorites from other parts of the Solar System do not, indicating that the Moon formed in close proximity to the Earth. The giant impact hypothesis also explains the size ratio of the Earth and Moon, which is much smaller than for other planets and their moons in our Solar System.

I encourage you to check out some of the fascinating [Lunar Research at PSI](#). You might also check out the personal website of PSI scientist, [Kirby Runyon](#), who leads several educational outer space experiences, including zero gravity flights.

Until next month,

Grace

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