

Treasure Hunt in Earth's Attic

Text-Only Version

Clues to Earth's history are valuable treasures.

Do you have family treasures that record your history? Can old letters, diaries, photographs, and other heirlooms help you discover more about your heritage?

The Moon has treasures of its shared history with Earth, going back 4.5 billion years. Early in our solar system's history, a small planetary body – about half the size of Earth – slammed into our home planet. The Moon formed from the debris of that collision and has evolved alongside Earth since that time.

Just as an attic stores heirlooms that record your family's history, the Moon preserves the history of Earth and the rest of our own solar system.

Like an attic of ancient treasures, the Moon preserves Earth's lost history.

The Earth's surface is constantly recycled. Dynamic forces tear apart and shove together the plates that make up Earth's outer layer. This motion destroys older plates and their rocks in some places. In others, like here in Iceland, the forces create new crust. Wind, water, and ice wear down the surface.

These processes prevent ancient rocks from being preserved. Earth has no geological record of its early history.

The Moon's static environment preserves rocks from its origin. There are no active volcanoes to hide the Moon's features under lava flows. There is no atmosphere, so there is no wind to erode the Moon's ancient landscape. No flowing water or glaciers wear away the surface. Other than asteroid and comet impacts, no geologic activity has altered the Moon's surface for at least a billion years.

Because the oldest rocks on Earth were recycled long ago, we must turn to the Moon for clues about our own origins. Indeed, Moon rocks might hold answers to questions about when and how life began on Earth!

**Lunar scientists are treasure hunters
who are piecing together the story of our common beginnings.**

Miriam Galenas is a graduate student at the University of Maryland. Working alongside her advisor, Dr. Richard Walker, Miriam studies ancient rocks from the Moon.

These lunar rocks were stored naturally in pristine condition in Earth's attic for about 4.5 billion years until they were brought to Earth by Apollo astronauts. New techniques used by Miriam are revealing a snapshot of the chemical make-up of the debris that shaped the young Moon and Earth.

Miriam, together with her NASA Lunar Science Institute partners at the Lunar and Planetary Institute and Johnson Space Center, is taking a closer look at the lunar samples - national treasures that hold answers about our own beginnings!

*This exhibit was developed by the Center for Lunar Science and Exploration
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