

Why the Earth turns

SCRIPT:

A collision of two worlds may be the reason the Earth is turning. It sounds fantastic, but it's the best explanation we have for why the world turns, and for where the Moon came from..! And we didn't find out about it until we went to the Moon. We discovered Moon rocks are very similar to Earth rocks...so much so... that scientists figured the Moon must have been part of the Earth at one time, and something terrific must have torn them apart. How..? Well, in the early days of the solar system, a lot of things crashed into each other. Remember the broken-up comet that crashed into Jupiter a few years ago..? Same idea. Except whatever crashed into the Earth was big. Scientists say it was the size of another planet...something the size of Mars. The collision set the Earth turning like it had never turned before...and the impact tore off a huge chunk of the Earth, a chunk that got blasted into space...and eventually became the Moon. Unbelievable..? It's now the leading scientific theory to explain why the world goes around...and to explain why there's a big piece of Earth floating around up there... a piece of Earth called the Moon.

Relevant NSES Standards

NSES Content Standard A: Understanding about scientific inquiry.

(Grades K-4) Scientific investigations are based on evidence.

(Grades 5-12) New evidence leads to new investigations (moon rocks created a new line of inquiry concerning the earth/moon system and its history).

NSES Content Standard B: Physical science.

(Grades K-4) Objects are composed of materials (earth and moon are compared on the basis of containing the same materials).

(Grades 9-12) Objects change their motion when a force is applied.

NSES Content Standard D: Earth and space science.

(Grades K-4) Objects in the sky. Moon.

(Grades 5-8) Earth's history; ancient impacts.

(Grades 9-12) Origin of the earth/moon system.

NSES Content Standard E: Understanding about science and technology.

(Grades K-8) Using science to understand the natural world.

(Grades 5-12) New technology (for space exploration) can introduce new fields of study (moon rocks).

NSES Content Standard G: History and nature of science.

(Grades 5-12) Where evidence is incomplete, scientists develop theories.

Credits: Dr. Andrew Fruchter, Hubble Space Telescope; Dr. Robin Canup, Southwest Research Institute

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