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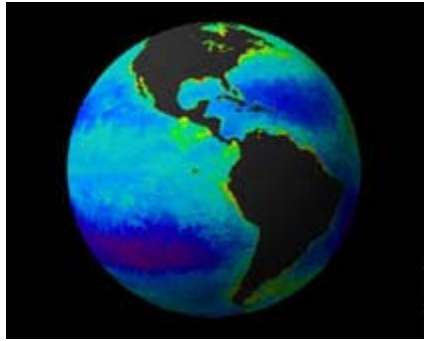
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Reports: Earth formed faster than estimated

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INDIANAPOLIS, Indiana (AP) -- Scientists have found evidence that Earth made its final step to planet status about 30 million years earlier than previous research had suggested.

Working independently, two groups of scientists analyzed meteorites that contain telltale clues about planetary formation and compared them to rocks from Earth.

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Both teams reached the same conclusion: Earth's metallic core formed about 30 million years after the solar system's birth.

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The findings contrast with 1995 research that suggested Earth's core formed about 60 million years after the sun condensed at the center of a swirling disc of gas and dust. The new date pinpoints the approximate time that Earth had nearly reached its current mass.

David Stevenson, a professor of planetary sciences at Cal Tech in Pasadena, California, said the new analyses fit well with current theoretical ideas about the pace of Earth's formation.

Stevenson, who wasn't involved with the research, said the new calculations give an approximate date for when Earth's metallic core finished separating from its silicate-based mantle. That event is considered the last major event of Earth's formation.

The research, which appears in Thursday's issue of the journal Nature, was done by a German team and Harvard University researchers who collaborated with French scientists.

Stevenson said the fact that the two groups of scientists reached the same results increases the weight of the findings.

The new date for Earth's core was reached through a series of complex calculations of the ratios of the radioactive elements hafnium and tungsten found in primitive chondrite meteorites left over from the solar system's formation.

These meteorites provide a baseline for determining the age of planetary cores because they come from planetary bodies that never formed a core, said

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Thorsten Kleine of the University of Munster in Germany, who led the German team.

Those results were then compared with rocks from the Earth, Mars and meteorites believed to have originated on the large asteroid Vesta, yielding evidence that each was older than previous estimates.

"Generally speaking this means that all of the planets, not just the Earth, formed much faster than we had assumed," Kleine said.

The refined figures yielded a precise date -- 4.530 billion years ago -- that marks Earth's unofficial status as a planet, he said.

The findings also push back the origin of Earth's moon because most scientists believe the moon formed from material ejected when a Mars-sized planet collided with the proto-Earth, Kleine said.

Geologist Alex N. Halliday, whose 1995 research produced the figure that Earth formed about 60 million years after the solar system's birth, said his team apparently made an error in one of its measurements.

"We do not have a clear explanation for the apparent error in our ... data at this time," Halliday, of the Swiss Federal Institute of Technology in Zurich, said via e-mail message.

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