

Meteorites give planetary formation clues

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London researchers trying to understand how the planets formed have uncovered a new clue by analyzing meteorites that are older than the Earth.

The Imperial College London scientists say research shows the process that depleted planets and meteorites of so-called volatile elements -- zinc, lead and sodium -- must have been one of the first things to happen in our nebula.

The implication of that "volatile depletion" may be an inevitable part of planet formation -- a feature not just of the solar system, but also of many other planetary systems.

The scientists reached their conclusions after analyzing the composition of primitive meteorites -- coal-like rocks that are older than the Earth and that have barely changed since the solar system was formed.

Their analysis, published in the Proceedings of the National Academy of Sciences, shows all the rocks' components are depleted of volatile elements. That means volatile element depletion must have occurred before the earliest solids had formed.

Lead researcher Phil Bland said, "Our results answer one of a huge number of questions we have about the processes that converted a nebula of fine dust and gas into planets."

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