

The Only Earth: The Origins of Plate Tectonics, Part 2

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Could plate tectonics be tied to the development of life on Earth?

Earth is the only planet known to sustain life. It is also the only planet with active plate tectonics. Coincidence? Most geoscientists think not. In part two of EARTH Magazine's feature on plate tectonics, EARTH correspondent Mary Caperton Morton examines the links between two phenomena that are unique to our planet.

Although other planets in our solar system possess active volcanoes, faults, and other evidence of surface deformation, Earth's global plate tectonics is "a very rare animal," according to Chris Hawkesworth, a geochemist at the University of Bristol in England. And life beyond our planet is rarer still.

The key ingredient for both seems to be water: Aqueous environments spawned the first single-celled organisms, and minerals become weaker when water is embedded in their crystalline structure - weak enough for Earth's eggshell crust to crack. The development of complex life appears even more closely tied to tectonics, and that may just be a missing piece in the evolutionary puzzle.

Read part two of the plate tectonics double-feature in EARTH Magazine, now online. (Read part one to get the full picture.)

The July issue of EARTH is now available online. Read the cover story, "Burying the Sky," to learn how two projects - one in Iceland, the other in eastern Washington state - are taking advantage of their common underlying geology to capture and store greenhouse gases as carbonate rock. Or head south to Chile to meet the dust devil's grittier cousins — "gravel devils" — and learn how they manifest in the geologic landscape. For these stories and more, subscribe to EARTH Magazine.

About EARTH Magazine

Keep up to date with the latest happenings in Earth, energy and environment news with EARTH Magazine online at www.earthmagazine.org. Published by the American Geosciences Institute, EARTH is your source for the science behind the headlines. Now available on Kindle.

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