

## We may owe our existence to plate tectonics

[T]here's more to plate tectonics than earthquakes and eruptions. A wave of new research is increasingly hinting that Earth's external motions may be vital to its other defining feature: life. That Earth has a moving, morphing outer crust may be the main reason why Earth is so vibrant, and why no other planet can match its abundance.

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In the past few years, geologists and astrobiologists have increasingly tied plate tectonics to [everything else](#) that makes Earth unique. They have shown that Earth's atmosphere owes its longevity, its components, and its incredibly stable Goldilocks-like temperature — not too hot, but not too cold — to the recycling of its crust. Earth's oceans might not exist if water were not periodically subsumed by the planet's mantle and then released. Without plate tectonics driving the [creation of coastlines and the motion of the tides](#), the oceans might be barren.

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[P]late tectonics might be necessary for the evolution of advanced species. [geologist Robert Stern] reasons that dry land on continents is necessary for species to evolve the limbs and hands that allow them to grasp and manipulate objects, and that a planet with oceans, continents and plate tectonics maximizes opportunities for speciation and natural selection.

"I think you can get life without plate tectonics. I think we did. I don't think you can get us without plate tectonics," he said.

**Read full, original post:** [Why Earth's Cracked Crust May Be Essential for Life](#)