3 billion years ago, a rock four times the size of Mount Everest hit Earth. Here's how this kickstarted evolution

Earth got beat up a lot, including one day 3.26 billion years ago when a rock four times the size of Mount Everest slammed into the planet. Scientists believe that the rock, which was much bigger than the Chicxulub object that ended the reign of the dinosaurs, probably landed in the ocean, since Earth had barely begun to form continents.

The collision was so violent it boiled off the top layer of that ocean and, near the impact site, created a tsunami as high as a New York skyscraper. Molten rock rained from the sky. The atmosphere was choked with ash and dust. The planet descended into darkness.

But it wasn't all bad.

For example, the tremendous tsunami that was probably created by the impact 3.26 billion years ago would have mixed up the water column in the global ocean and brought more iron, a key nutrient for metabolism, to shallow seas. Other nutrients would have eroded into the ocean from land masses, according to [geologist Nadja] Drabon.

Nick Wogan, a scientist at NASA Ames Research Center who presented at AGU, described how early impacts would have given Earth a "hot steam atmosphere" but also might have triggered life-relevant chemistry.

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