Asteroid that wiped out the dinosaurs created perfect conditions for microbial life to thrive

The massive Chicxulub crater on Mexico's Yucatán peninsula is <u>the fingerprint of a killer</u>, probably responsible for the destruction of more than 75 percent of life on Earth, including all nonbird dinosaurs. In 2016, a team of scientists made a historic trek to the partially submerged crater, drilling deep into the rock to study the crime scene from numerous angles.

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The intense heat of the circulating seawater caused chemical reactions within the rock, transforming some minerals into others. By identifying the different types of minerals, the team determined that the initial temperature of the fluids was more than 300° Celsius, later cooling to about 90° C.

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Those conditions, the researchers say, may have also been capable of fostering life akin to the extremophiles that thrive in Yellowstone's boiling pools. In addition to the metal-rich fluids that could provide an energy source for microbes, the Chicxulub cores revealed that the rocks were both porous and permeable — in other words, filled with interconnected nooks and crannies that could have been cozy shelters for microbes.

"It looks like a perfect habitat," [planetary scientist David] Kring says.

Kring has previously suggested that the very same destructive impacts that annihilate life may also create appealing habitats — not just on Earth, but potentially on other planetary bodies such as Mars.

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