

Geowissenschaftliches Kolloquium

How strange was the Strangelove Ocean?

New insights from boron isotopes

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Immense volcanism and extraterrestrial impact are the two main suspects in driving the Cretaceous-Palaeogene (K-Pg) Mass Extinction. However, incontrovertible empirical evidence for how either caused ecological collapse is still scant. Our new boron isotope data reveal rapid fluctuations in ocean pH and atmospheric $p\text{CO}_2$ at the K-Pg, indicating ocean acidification caused by impact, not volcanism, prompted marine mass extinction. Coupled with earth system models, our pH estimates allow us to solve a longstanding geological puzzle: the post-extinction 'Strangelove Ocean'.



Michael Henehan is an isotope geochemist at the GFZ Potsdam. He previously worked at the University of Southampton (UK) and Yale University (US), primarily on the reconstruction of ocean pH and atmospheric CO_2 levels over geological time. Today, his research deals with how these CO_2 levels are continually shaped by the chemical weathering of the Earth's surface.

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