

Elevated ultraviolet radiation at the end-Permian mass extinction.

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We present evidence for elevated ultraviolet-B (UV-B) radiation at the end-Permian, which coincides with a spike in mercury concentration and negative carbon isotope excursion. We propose this to be evidence for close linkages between global carbon and mercury cycles, large-scale volcanism, and perturbation of the stratospheric ozone layer (Liu et al, 2023). This work utilises a spore-based biogeochemical proxy for UV-B radiation, whereby plants are able to up-regulate specific UV-B absorbing compounds (UACs) in response to elevated flux of UV-B radiation. We propose this combination of perturbed environmental factors was a key ecological driver of the end-Permian mass extinction.

Reference:

Liu et al (2023) Dying in the sun: direct evidence for elevated UV-B radiation at the end-Permian mass extinction. *Science Advances* 9, eabo6102