

350 million years ago, a thinning atmosphere sparked a mass extinction. We're headed in the same direction

Scientists noticed that around the time of the Hangenberg Crisis, [fern] spores began to look strange.

Some were much darker in color. Others had spines that were clumped together or different sizes or crooked. These malformations were likely due to the plants' DNA becoming damaged [by UV].

"At that point, it sort of punches you on the nose," said palynologist [John Marshall](#), lead author of the [study](#), which appeared [May 27] in Science Advances. "Because malformed spores are [also] typical in the Triassic-Jurassic as a mass extinction effect."

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Today, the [ozone layer](#) protects us from UV-B radiation, but Marshall suggests it might not have always been that way. "Maybe [the ozone layer] is a bit more fickle than that," he said. "As a shield, it probably went down for eight or nine thousand years: It thinned, it was eroded, UV-B got in...it raises the possibility that it's happened a lot of times and we've just never detected it."

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Marshall and his coauthors hypothesize that the ozone depletion during the Hangenberg Crisis was driven by a warming climate. This warmer climate could have increased the amount of water vapor that reached the lower stratosphere, altering the chemistry of the stratosphere in a way that promoted ozone loss... In the study, the authors warn that "we should be alert for such an eventuality in the future warming world."

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