

报告题目：

The End-Triassic Mass Extinction: Dawn of the Modern World on Land

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报告人单位： 美国哥伦比亚大学

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主 办： 国家重点实验室、科技处

报告人简介：

Paul Olsen is professor of Earth and Environmental Sciences at Columbia University in New York and member of the United States National Academy of Sciences. Having an undergraduate degree in Geology and PhD in Biology, both from Yale University, he is geologist and paleontologist who explores patterns of evolution and extinction in relation to climate change, especially in continental ecosystems in the Age of Dinosaurs. He pioneered mapping the chaotic history of the Solar System using Earth's record of climate and has led or been part of expeditions in the United States, Atlantic Canada, Europe, China, and Africa. He and his postdocs, graduate students, and interns take a multidisciplinary approach using scientific drilling as well as field and lab work to obtain deep-time environmental records of evolution, mass extinction and climate change. His special focus is on the rise of dinosaurian dominance, and the extinction that ushered in dinosaur's 136-million-long rule.

报告摘要：

The end-Triassic mass extinction at 202 million years ago wiped out most of animal diversity on land allowing modern forms to take over, with dinosaurs becoming especially dominant until another mass extinction at 66 million years ago wiped them all out, except birds. Why? Why did dinosaurs, minor parts of the land community of the Triassic, take over? I will show that the reason was that the seasonally freezing, polar regions of the Earth were incubators of land life where animals evolved adaptations, especially insulation, for surviving extreme cold as a normal part of existence. When giant eruptions covering parts of four continents produced intense volcanic winters from sulfur aerosols perhaps freezing even the tropics, the cold killed off all medium- to large-sized land reptiles except the insulated dinosaurs. I will show how evidence of freezing winters from the Junggar Basin, Xinjiang, which was above the Arctic Circle at the time, holds the key to this mystery.

