

Volcanic activity can have a profound effect on the Earth's atmosphere and environment across many spatial and temporal scales. From being the source of most gases in the atmosphere, to producing climate change, to threatening aviation, volcanic eruptions as well as non-eruptive volcanic gas and particle emissions provide a strong link between the lithosphere and the impact of the atmosphere on human activities.

—from the Preface

Volcanism and the Earth's Atmosphere presents new perspectives on volcanic emissions in the atmosphere from a diversity of disciplines. Volcanologists, atmosphere and environmental scientists, geologists, glaciologists, dendrochronologists, researchers in ground-based and satellite remote sensing, atmospheric hazards forecasters, and others interested in the connection between the solid Earth and the atmosphere will find this work an important resource.

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Volcanism and the Earth's Atmosphere

Alan Robock and Clive Oppenheimer Editors

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Front cover: Gunung Bromo (left, steaming), Gunung Batok (closest), and Gunung Semuru (on horizon, erupting), eastern Java, Indonesia. Photo was taken at sunrise on July 24, 2000 during a field trip after the IAVCEI General Assembly in Bali. Bromo was continuously emitting water, sulfur gases, and other material, which filled the larger, older crater, trapped by the crater walls and an atmospheric inversion. Within this layer, the smell of sulfur was very strong. Semeru was erupting every 5-10 minutes. Very sadly, three days later, as another field trip was visiting the rim on the summit of Semeru, an unexpectedly large eruption killed two volcanologists, Wildan and Mukti, and injured six others, including Kris, Amit Mushkin, Mike Ramsey, Lee Siebert, and Paul Kimberly. Photograph copyright by Alan Robock, taken on July 24, 2000.

Back cover: Lava from the Kilauea volcano on the island of Hawaii burning its way to the sea. This eruption has been nearly continuous for 20 years, producing massive sulfate emissions and contributing to local pollution called "vog." Photograph copyright by Alan Robock, taken on July 27, 2002.

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