

# Volcanism and the Earth's Atmosphere

**Alan Robock**  
**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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<b>Preface</b>	
<i>Alan Robock and Clive Oppenheimer</i> .....	vii
<b>Introduction: Mount Pinatubo as a Test of Climate Feedback Mechanisms</b>	
<i>Alan Robock</i> .....	1
<b>Section I: Sources of Volcanic Emissions</b> .....	9
<b>Petrological and Volcanological Constraints on Volcanic Sulfur Emissions to the Atmosphere</b>	
<i>Bruno Scaillet, James Luhr, and Michael R. Carroll</i> .....	11
<b>Degassing of Trace Volatile Metals During the 2001 Eruption of Etna</b>	
<i>Alessandro Aiuppa, Gaetano Dongarrá, Mariano Valenza, Cinzia Federico, and Giovannella Pecoraino</i> .....	41
<b>Section II: Atmospheric Observations of Volcanic Gases and Aerosols</b> .....	55
<b>Surface-Based Observations of Volcanic Emissions to the Stratosphere</b>	
<i>Dave Hofmann, John Barnes, Ellsworth Dutton, Terry Deshler, Horst Jäger, Richard Keen, and Mary Osborn</i> .....	57
<b>Global, Long-Term Sulphur Dioxide Measurements From TOVS Data: A New Tool for Studying Explosive Volcanism and Climate</b>	
<i>A. J. Prata, D. M. O'Brien, W. I. Rose, and S. Self</i> .....	75
<b>Characterization of Stratospheric Aerosol Distribution for Volcanic and Non-Volcanic Aerosols Observed Through 16 Years of SAGE II Data (1984-2000)</b>	
<i>Christine Bingen, Didier Fussen, and Filip Vanhellemont</i> .....	93
<b>The February-March 2000 Eruption of Hekla, Iceland From a Satellite Perspective</b>	
<i>W. I. Rose, Y. Gu, I. M. Watson, T. Yu, G. J. S. Bluth, A. J. Prata, A. J. Krueger, N. Krotkov, S. Carn, M. D. Fromm, D. E. Hunton, G. G. J. Ernst, A. A. Viggiano, T. M. Miller, J. O. Ballentin, J. M. Reeves, J. C. Wilson, B. E. Anderson, and D. E. Flittner</i> .....	107
<b>Real-Time AVHRR Thermal Monitoring and Ash Detection: The Case of Colima Volcano (Mexico)</b>	
<i>Ignacio Galindo and Tonatiuh Domínguez</i> .....	133
<b>Section III: Ice Core Records of Past Volcanism</b> .....	151
<b>High-Resolution Ice Core Records of Late Holocene Volcanism: Current and Future Contributions From the Greenland PARCA Cores</b>	
<i>Ellen Mosley-Thompson, Tracy A. Mashiotta, and Lonnie G. Thompson</i> .....	153
<b>The Number and Magnitude of Large Explosive Volcanic Eruptions Between 904 and 1865 A.D.: Quantitative Evidence from a New South Pole Ice Core</b>	
<i>Drew Budner and Jihong Cole-Dai</i> .....	165

# CONTENTS

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<b>An Automatic Statistical Methodology to Extract Pulse-Like Forcing Factors in Climatic Time Series: Application to Volcanic Events</b> <i>Philippe Naveau, Caspar M. Ammann, Hee-Seok Oh, and Wensheng Guo</i> .....	177
<b>Section IV: Volcanic Eruptions and Atmospheric Chemistry</b> .....	187
<b>Tropospheric Volcanic Aerosol</b> <i>T. A. Mather, D. M. Pyle, and C. Oppenheimer</i> .....	189
<b>Aerosol Chemistry Interactions After the Mt. Pinatubo Eruption</b> <i>Claudia Timmreck, Hans-F. Graf, and Benedikt Steil</i> .....	213
<b>Effects of Volcanic Eruptions on Stratospheric Ozone Recovery</b> <i>Joan E. Rosenfield</i> .....	227
<b>Section V: Climatic Effects of Volcanic Eruptions</b> .....	237
<b>Surface Climate Responses to Explosive Volcanic Eruptions Seen in Long European Temperature Records and Mid-to-High Latitude Tree-Ring Density Around the Northern Hemisphere</b> <i>P. D. Jones, A. Moberg, T. J. Osborn, and K. R. Briffa</i> .....	239
<b>Dendroclimatological Evidence for Major Volcanic Events of the Past Two Millennia</b> <i>Rosanne D'Arrigo, Gordon Jacoby, and David Frank</i> .....	255
<b>The Laki Eruption and Observed Dendroclimatic Effects of Volcanism</b> <i>Gordon Jacoby and Rosanne D'Arrigo</i> .....	263
<b>Surface Atmospheric Circulation Over Europe Following Major Tropical Volcanic Eruptions, 1780-1995</b> <i>M. J. Prohom, P. Esteban, J. Martín-Vide, and P. D. Jones</i> .....	273
<b>Predictions of Climate Following Volcanic Eruptions</b> <i>Matthew Collins</i> .....	283
<b>The Campanian Ignimbrite Eruption, Heinrich Event 4, and Paleolithic Change in Europe: A High-Resolution Investigation</b> <i>Francesco G. Fedele, Biagio Giaccio, Roberto Isaia, and Giovanni Orsi</i> .....	301
<b>Color Plate Section</b> .....	329