

Table of contents

<i>List of contributors</i>	page viii
<i>Preface</i>	xiii

LINDA T. ELKINS-TANTON, ANJA SCHMIDT
AND KIRSTEN E. FRISTAD

Part One Large volume volcanism: origins, features and timing

1 Large igneous provinces and explosive basaltic volcanism	3
INGRID UKSTINS PEATE AND LINDA T. ELKINS-TANTON	
2 On the nature and consequences of super-eruptions	16
CLIVE OPPENHEIMER AND AMY DONOVAN	
3 Large igneous province locations and their connections with the core–mantle boundary	30
TROND H. TORSVIK AND KEVIN BURKE	
4 High-precision U–Pb geochronology of Phanerozoic large igneous provinces	47
SETH D. BURGESS, TERRENCE J. BLACKBURN AND SAMUEL A. BOWRING	
5 Volcanic pulses in the Siberian Traps as inferred from Permo-Triassic geomagnetic secular variations	63
VLADIMIR PAVLOV, FRÉDÉRIC FLUTEAU, ROMAN VESELOVSKIY, ANNA FETISOVA, ANTON LATYSHEV, LINDA T. ELKINS-TANTON, ALEXANDER V. SOBOLEV AND NADEZHDA A. KRIVOLUTSKAYA	

Part Two Assessing gas and tephra release in the present day and palaeo-record

- | | | |
|----|--|-----|
| 6 | Volcanic-gas monitoring
ALESSANDRO AIUPPA | 81 |
| 7 | Remote sensing of volcanic ash and sulfur dioxide
FRED PRATA AND GEMMA PRATA | 97 |
| 8 | Quantification of volcanic reactive halogen emissions
ULRICH PLATT AND NICOLE BOBROWSKI | 115 |
| 9 | Satellite and aircraft-based techniques to measure
volcanic emissions and hazards
DAVID PIERI | 133 |
| 10 | The origin of gases that caused the Permian–Triassic
extinction
ALEXANDER V. SOBOLEV, NICK T. ARNDT, NADEZHDA
A. KRIVOLUTSKAYA, DIMITRY V. KUZMIN AND STEPHAN
V. SOBOLEV | 147 |
| 11 | Volatile release from flood basalt eruptions: understanding
the potential environmental effects
STEPHEN SELF, LORI S. GLAZE, ANJA SCHMIDT AND
TAMSIN A. MATHER | 164 |
| 12 | Volatile generation and release from continental large
igneous provinces
HENRIK SVENSEN, KIRSTEN E. FRISTAD, ALEXANDER G.
POLOZOV AND SVERRE PLANKE | 177 |

Part Three Modes of volcanically induced global environmental change

- | | | |
|----|---|-----|
| 13 | Volcanism, the atmosphere and climate through time
ANJA SCHMIDT AND ALAN ROBOCK | 195 |
| 14 | Volcanic emissions: short-term perturbations, long-term
consequences and global environmental change
TAMSIN A. MATHER AND DAVID M. PYLE | 208 |
| 15 | Evidence for volcanism triggering extinctions: a short
history of IGP contributions with emphasis on
paleomagnetism
VINCENT COURTILOT, FRÉDÉRIC FLUTEAU AND JEAN BESSE | 228 |

17	The environmental and climatic impacts of volcanic ash deposition	260
	MORGAN T. JONES	
18	Oceanic anoxia during the Permian–Triassic transition and links to volcanism	275
	ELLEN K. SCHAAL, KATJA M. MEYER, KIMBERLY V. LAU, JUAN CARLOS SILVA-TAMAYO AND JONATHAN L. PAYNE	
19	Spatial and temporal patterns of ocean acidification during the end-Permian mass extinction – an Earth system model evaluation	291
	YING CUI, LEE R. KUMP AND ANDY RIDGWELL	
20	Environmental effects of large igneous province magmatism: a Siberian perspective	307
	BENJAMIN A. BLACK, JEAN-FRANÇOIS LAMARQUE, CHRISTINE SHIELDS, LINDA T. ELKINS-TANTON AND JEFFREY T. KIEHL	
	<i>Index</i>	321

Colour plates are to be found between pp. 176 and 177.