Contents

OPPENHEIMER, C., PYLE, D. M. & BARCLAY, J. Introduction

Part I Magma degassing: models and experiments

SPARKS, R. S. J. Dynamics of magma degassing

SCAILLET, B. & PICHAVANT, M. Experimental constraints on volatile abundances in arc magmas and their implications for degassing processes

FREDA, C., BAKER, D. R., ROMANO, C. & SCARLATO, P. Water diffusion in natural potassic melts


MORETTI, R., PAPALE, P. & OTTONELLO, G. A model for the saturation of C-O-H-S fluids in silicate melts

Part II Characterizing volcanic emissions

THORDARSON, T., SELF, S., MILLER, D. J., LARSEN, G. & VILMUNDARDÓTTIR, E. G. Sulphur release from flood lava eruptions in the Veidivötn, Grímsvötn and Katla volcanic systems, Iceland

OBENHOLZNER, J. H., SCHROETTNER, H., GOLOB, P. & DELGADO, H. Particles from the plume of Popocatépetl volcano, Mexico – the FESEM/EDS approach

McGONIGLE, A. J. S. & OPPENHEIMER, C. Optical sensing of volcanic gas and aerosol emissions

GERLACH, T. M. Elevation effects in volcano applications of the COSPEC


EDMONDS, M., OPPENHEIMER, C., PYLE, D. M. & HERD, R. A. Rainwater and ash leachate analysis as proxies for plume chemistry at Soufrière Hills volcano, Montserrat

Part III Field investigations of degassing volcanoes

YOUNG, S. R., VOIGHT, B. & DUFFELL, H.J. Magma extrusion dynamics revealed by high-frequency gas monitoring at Soufrière Hills volcano, Montserrat
CONTENTS

WARDELL, L. J., KYLE, P. R. & CAMPBELL, A. R. Carbon dioxide emissions from fumarolic ice towers, Mount Erebus volcano, Antarctica


VARLEY, N. R. & TARAN, Y. Degassing processes of Popocatépetl and Volcán de Colima, Mexico

BURTON, M., ALLARD, P., MURÉ, F. & OPPENHEIMER, C. FTIR remote sensing of fractional magma degassing at Mount Etna, Sicily

Part IV Atmospheric, climatic and environmental impacts of volcanic emissions

STEVENSON, D. S., JOHNSON, C. E., COLLINS, W. J. & DERWENT, R. G. The tropospheric sulphur cycle and the role of volcanic SO₂

TEXTOR, C., SACHS, P.M., GRAF, H.-F. & HANSTEEN, T.H. The 12 900 years BP Laacher See eruption: estimation of volatile yields and simulation of their fate in the plume

GRAINGER, R. G. & HIGHWOOD, E. J. Changes in stratospheric composition, chemistry, radiation and climate caused by volcanic eruptions


BLAKE, S. Correlations between eruption magnitude, SO₂ yield, and surface cooling

DELMELLE, P. Environmental impacts of tropospheric volcanic gas plumes

GRATTAN, J., DURAND, M. & TAYLOR, S. Illness and elevated human mortality in Europe coincident with the Laki Fissure eruption

INDEX

It is recommended that reference to all or part of this book should be made in one of the following ways:
