CONTENTS

Executive Editors’ Foreword to the Second Edition xvii
Contributors xxi
Volume Editor’s Introduction xxiii

VOLUME 6 THE ATMOSPHERE - HISTORY

6.1 Geochemical and Planetary Dynamical Views on the Origin of Earth’s Atmosphere and Oceans
   N Dauphas and A Morbidelli 1

6.2 Degassing History of Earth
   Youxue Zhang 37

6.3 Chemistry of Earth’s Earliest Atmosphere
   B Fegley Jr. and LK Schaefer 71

6.4 Geologic and Geochemical Constraints on Earth’s Early Atmosphere
   J Farquhar, AL Zerkle, and A Bekker 91

6.5 Paleobiological Clues to Early Atmospheric Evolution
   C Hallmann and RE Summons 139

6.6 Modeling the Archean Atmosphere and Climate
   IF Kasting 157

6.7 The Great Oxidation Event Transition
   DC Catling 177

6.8 Proterozoic Atmospheric Oxygen
   DE Canfield 197

6.9 Neoproterozoic Atmospheres and Glaciation
   Y Donnadieu, Y Goddér is, and G Le Hir 217

6.10 Oxygen and Early Animal Evolution
    S Xiao 231

6.11 Atmospheric CO₂ and O₂ During the Phanerozoic: Tools, Patterns, and Impacts
    DL Royer 251

6.12 The Geochemistry of Mass Extinction
    LR Kump 269

6.13 Greenhouse Climates
    M Pagani, M Huber, and B Sageman 281