



address topical issues related to the material in the text, of high appeal and that discuss advanced, especially quantitative, treatments. Features several computer modules available on the World Wide Web and free when packaged with the book. For Earth scientists who would like a formal introduction to Earth Systems Science.

Earth 's present-day environments are the outcome of a 4.5 billion year period of evolution reflecting the interaction of global-scale geological and biological processes. Punctuating that evolution were several extraordinary events and episodes that perturbed the entire Earth system and led to the creation of new environmental conditions, sometimes even to fundamental changes in how planet Earth operated. Volume 3: Global Events and the Fennoscandian Arctic Russia - Drilling Earth Project represents another kind of illustrated journey through the early Palaeoproterozoic, provided by syntheses, reviews and summaries of the current state of our understanding of a series of global events that resulted in a fundamental change of the Earth System from an anoxic to an oxic state. The book discusses traces of life, possible causes for the Huronian-age glaciations, addresses radical changes in carbon, sulphur and phosphorus cycles during the Palaeoproterozoic, and provides a comprehensive description and a rich photo-documentation of the early Palaeoproterozoic supergiant, petrified oil-field. Terrestrial environments are characterised through a critical review of available data on weathered and calcified surfaces and travertine deposits. Potential implementation of Ca, Mg, Sr, Fe, Mo, U and Re-Os isotope systems for deciphering Palaeoproterozoic seawater chemistry and a change in the redox-state of water and sedimentary columns are discussed. The volume considers in detail the definition of the oxic atmosphere, possible causes for the oxygen rise, and considers the oxidation of terrestrial environment not as a single event, but a slow-motion process lasting over hundreds of millions of years. Finally, the book provides a roadmap as to how the FAR-DEEP cores may facilitate future interesting science and provide a new foundation for education in earth-science community. Welcome to the illustrative journey through one of the most exciting periods of planet Earth!

A significant advance in climatological scholarship, Tectonic Uplift and Climate Change is a multidisciplinary effort to summarize the current status of a new theory steadily gaining acceptance in geoscience circles: that long-term cooling and glaciation are controlled by plateau and mountain uplift. Researchers in many diverse fields, from geology to paleobotany, present data that substantiate this hypothesis. The volume covers most of the key, dramatic transformations of the Earth's surface.

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*First published in 1975 and updated in 1992, Forensic Geology by Raymond C. Murray and John C. F. Tedrow was a classic in its field. Now Murray has thoroughly revised and updated that earlier work to produce Evidence from the Earth: Forensic Geology and C*

*"It is worse, much worse, than you think. If your anxiety about global warming is dominated by fears of sea-level rise, you are barely scratching the surface of what terrors are possible. In California, wildfires now rage year-round, destroying thousands of homes. Across the US, "500-year" storms pummel communities month after month, and floods displace tens of millions annually. This is only a preview of the changes to come. And they are coming fast. Without a revolution in how billions of humans conduct their lives, parts of the Earth could become close to uninhabitable, and other parts horrifically inhospitable, as soon as the end of this century. In his travelogue of our near future, David Wallace-Wells brings into stark relief the climate troubles that await -- food shortages, refugee emergencies, and other crises that will reshape the globe. But the world will be remade by warming in more profound ways as well, transforming our politics, our culture, our relationship to technology, and our sense of history. It will be all-encompassing, shaping and distorting nearly every aspect of human life as it is lived today. Like An Inconvenient Truth and Silent Spring before it, The Uninhabitable Earth is both a meditation on the devastation we have brought upon ourselves and an impassioned call to action. For just as the world was brought to the brink of catastrophe within the span of a lifetime, the responsibility to avoid it now belongs to a single generation"--*

*The air we breathe is twenty-one percent oxygen, an amount higher than on any other known world. While we may take our air for granted, Earth was not always an oxygenated planet. How did it become this way? Donald Canfield--one of the world's leading authorities on geochemistry, earth history, and the early oceans--covers this vast history, emphasizing its relationship to the evolution of life and the evolving chemistry of the Earth. Canfield guides readers through the various lines of scientific evidence, considers some of the wrong turns and dead ends along the way, and highlights the scientists and researchers who have made key discoveries in the field. Showing how Earth's atmosphere developed over time, Oxygen takes readers on a remarkable journey through the history of the oxygenation of our planet.*