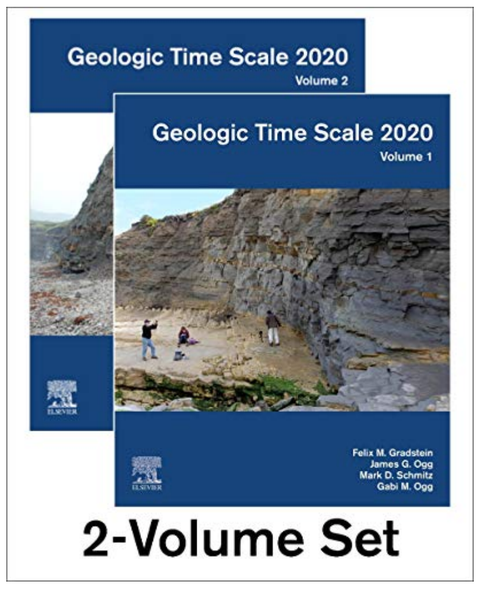

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Geologic Time Scale 2020-Felix M. Gradstein 2020 Geologic Time Scale 2020 (2 volume set) contains contributions from 80+ leading scientists who present syntheses in an easy-to-understand format that includes numerous color charts, maps and photographs. In addition to detailed overviews of chronostratigraphy, evolution, geochemistry, sequence stratigraphy and planetary geology, the GTS2020 volumes have separate chapters on each geologic period with compilations of the history of divisions, the current GSSPs (global boundary stratotypes), detailed bio-geochem-sequence correlation charts, and derivation of the age models. The authors are on the forefront of chronostratigraphic research and initiatives surrounding the creation of an international geologic time scale. The included charts display the most up-to-date, international standard as ratified by the International Commission on Stratigraphy and the International Union of Geological Sciences. As the framework for deciphering the history of our planet Earth, this book is essential for practicing Earth Scientists and academics. • Completely updated geologic time scale • Provides the most detailed integrated geologic time scale available that compiles and synthesize information in one reference • Gives insights on the construction, strengths and limitations of the geological time scale that greatly enhances its function and its utility

Geologic Time Scale 2020-F. M. Gradstein 2020-06 Geologic Time Scale 2020 contains contributions from leading scientists, with information presented in an easy-to-understand way including numerous color charts, maps, and photographs. Including recent information from such projects as GTSNext, Earth Time Europe, and Chronos, this updated edition explains in detail how and why the time scale is being updated and offers expanded coverage of paleontology and stratigraphy with an all-new atlas of index taxa at the end of each time period. The authors of Geologic Time Scale 2020 have been at the forefront of chronostratigraphic research and initiatives to create an international geologic time scale for many years, and the charts in this book present the most up-to-date, international standard as ratified by the International Commission on Stratigraphy and the International Union of Geological Sciences. As the framework for deciphering the history of our planet Earth, this book is essential for practicing Earth Scientists and academics.

A Concise Geologic Time Scale-J G Ogg 2016-05-13 A Concise Geologic Time Scale: 2016 presents a summary of Earth's history over the past 4.5 billion years, as well as a brief overview of contemporaneous events on the Moon, Mars, and Venus. The authors have been at the forefront of chronostratigraphic research and initiatives to create an international geologic time scale for many years, and the charts in this book present the most up-to-date international standard, as ratified by the International Commission on Stratigraphy and the International Union of Geological Sciences. This book is an essential reference for all geoscientists, including researchers, students, and petroleum and mining professionals. The presentation is non-technical and illustrated with numerous colour charts, maps and photographs. The book also includes a detachable laminated card of the complete time scale for use as a handy reference in the office, laboratory, or field. Presents a summary of Earth's history over the past 4.5 billion years Includes a brief overview of contemporaneous events on the Moon, Mars, and Venus Includes full-color figures including charts, stratigraphic profiles, and photographs to enhance understanding of each geologic period Correlates regional geologic stages to the standard definitions approved by the International Commission on Stratigraphy Offers an explanation of the methods used to create the time scale

Geologic Time Scale 2020-Felix M. Gradstein 2020-08-01 Geologic Time Scale 2020 contains contributions from leading scientists, with information presented in an easy-to-understand way including numerous color charts, maps, and photographs. Including recent information from such projects as GTSNext, Earth Time Europe, and Chronos, this updated edition explains in detail how and why the time scale is being updated and offers expanded coverage of paleontology and stratigraphy. Twelve mini chapters in Geologic Time Scale 2020 address Evolution and Biostratigraphy in key (micro-) fossil groups. These chapters assist readers of the Geological Period chapters to better understand and appreciate the role played by paleontology in describing and understanding life on Earth in Deep Time. The authors of Geologic Time Scale 2020 have been at the forefront of chronostratigraphic research and initiatives to create an international geologic time scale for many years, and the charts in this book present the most up-to-date, international chronostratigraphic standard as ratified by the International Commission on Stratigraphy and the International Union of Geological Sciences. As the framework for deciphering the history of our planet Earth, this book is essential for practicing Earth Scientists and academics. The most detailed international geologic time scale available that contextualizes information in one reference Gives insights in the construction, strengths, and limitations of the geological time scale that greatly enhances its function and its utility Aids understanding by combining mathematical and statistical methods to create scaled composites of the global succession of events Meets the needs of a range of users at various points in the workflow (researchers extracting linear time from rock records, students recognizing the geologic stage by their content) Completely updated time scale including research from projects such as GTSNext, Earth Time Europe, and Chronos Addresses Evolution and Biostratigraphy in key (micro-) fossil groups with atlas style range charts which provide detailed explanation of the index fossils and key zonations building the stratigraphic framework of the Geological Periods

The Geologic Time Scale 2012 2-Volume Set-F. M. Gradstein 2012-07-31 The Geologic Time Scale 2012, winner of a 2012 PROSE Award Honorable Mention for Best Multi-volume Reference in Science from the Association of American Publishers, is the framework for deciphering the history of our planet Earth. The authors have been at the forefront of chronostratigraphic research and initiatives to create an international geologic time scale for many years, and the charts in this book present the most up-to-date, international standard, as ratified by the International Commission on Stratigraphy and the International Union of Geological Sciences. This 2012 geologic time scale is an enhanced, improved and expanded version of the GTS2004, including chapters on planetary scales, the Cryogenian-Ediacaran periods/systems, a prehistory scale of human development, a survey of sequence stratigraphy, and an extensive compilation of stable-isotope chemostratigraphy. This book is an essential reference for all geoscientists, including researchers, students, and petroleum and mining professionals. The presentation is non-technical and illustrated with numerous colour charts, maps and photographs. The book also includes a detachable wall chart of the complete time scale for use as a handy reference in the office, laboratory or field. The most detailed international geologic time scale available that contextualizes information in one single reference for quick desktop access. Gives insights in the construction, strengths, and limitations of the geological time scale that greatly enhances its function and its utility. Aids understanding by combining with the mathematical and statistical methods to scaled composites of global succession of events. Meets the needs of a range of users at various points in the workflow (researchers extracting linear time from rock records, students recognizing the geologic stage by their content).

The Anthropocene as a Geological Time Unit-Jan Zalasiewicz 2019-03-07 Reviews the evidence underpinning the Anthropocene as a geological epoch written by the Anthropocene Working Group investigating it. The book discusses ongoing changes to the Earth system within the context of deep geological time, allowing a comparison between the global transition taking place today with major transitions in Earth history.

A Vision for NSF Earth Sciences 2020-2030-National Academies of Sciences, Engineering, and Medicine 2020-08-31 The Earth system functions and connects in unexpected ways - from the microscopic interactions of bacteria and rocks to the macro-scale processes that build and erode mountains and regulate Earth's climate. Efforts to study Earth's intertwined processes are made even more pertinent and urgent by the need to understand how the Earth can continue to sustain both civilization and the planet's biodiversity. A Vision for NSF Earth Sciences 2020-2030: Earth in Time provides recommendations to help the National Science Foundation plan and support the next decade of Earth science research, focusing on research priorities, infrastructure and facilities, and partnerships. This report presents a compelling and vibrant vision of the future of Earth science research.

A Geologic Time Scale 2004-Felix M. Gradstein 2004 A new detailed international geologic time scale, including methodology and a wallchart.

Encyclopedia of Geology- 2020-12-16 Encyclopedia of Geology, Second Edition presents in six volumes state-of-the-art reviews on the various aspects of geologic research, all of which have moved on considerably since the writing of the first edition. New areas of discussion include extinctions, origins of life, plate tectonics and its influence on faunal provinces, new types of mineral and hydrocarbon deposits, new methods of dating rocks, and geological processes. Users will find this to be a fundamental resource for teachers and students of geology, as well as researchers and non-geology professionals seeking up-to-date reviews of geologic research. Provides a comprehensive and accessible one-stop shop for information on the subject of geology, explaining methodologies and technical jargon used in the field Highlights connections between geology and other physical and biological sciences, tackling research problems that span multiple fields Fills a critical gap of information in a field that has seen significant progress in past years Presents an ideal reference for a wide range of scientists in earth and environmental areas of study

The Book of Unconformities-Hugh Raffles 2020-08-25 From the author of the acclaimed Insectopedia, a powerful exploration of loss, endurance, and the absences that permeate the present When Hugh Raffles’s two sisters died suddenly within a few weeks of each other, he reached for rocks, stones, and other seemingly solid objects as anchors in a world unmoored, as ways to make sense of these events through stories far larger than his own. A moving, profound, and affirming meditation, The Book of Unconformities is grounded in stories of stones: Neolithic stone circles, Icelandic lava, mica from a Nazi concentration camp, petrified whale blubber in Svalbard, the marble prized by Manhattan’s Lenape, and a huge Greenlandic meteorite that arrived with six Inuit adventurers in the exuberant but fractious New York City of 1897. As Raffles follows these fundamental objects, unearthing the events they’ve engendered, he finds them losing their solidity and becoming as capricious, indifferent, and willful as time itself.

The Triassic Timescale-Spencer G. Lucas 2010 The Mesozoic Era begins with the approximately 50-million-year-long Triassic Period, a major juncture in Earth history when the vast Pangaean supercontinent completed its assembly and began its fragmentation, and the global biota diversified and modern-ized after the end-Permian mass extinction, the most extensive biotic decimation of the Phanerozoic. The temporal ordering of geological and biotic events during Triassic time thus is critical to the interpretation of some unique and pivotal events in Earth his-tory. This temporal ordering is mostly based on the Triassic time-scale, which has been developed and refined for nearly two centu-ries. This book reviews the state of the art of the Triassic timescale and includes comprehensive analyses of Triassic radio-isotopic ages, magnetostratigraphy, isotope-based and cyclostratigraphic correlations and timescale -relevant marine and non-marine bio-stratigraphy.

El Niño Southern Oscillation in a Changing Climate-Michael J. McPhaden 2020-11-24 Comprehensive and up-to-date information on Earth’s most dominant year-to-year climate variation The El Niño Southern Oscillation (ENSO) in the Pacific Ocean has major worldwide social and economic consequences through its global scale effects on atmospheric and oceanic circulation, marine and terrestrial ecosystems, and other natural systems. Ongoing climate change is projected to significantly alter ENSO’s dynamics and impacts. El Niño Southern Oscillation in a Changing Climate presents the latest theories, models, and observations, and explores the challenges of forecasting ENSO as the climate continues to change. Volume highlights include: Historical background on ENSO and its societal consequences Review of key El Niño (ENSO warm phase) and La Niña (ENSO cold phase) characteristics Mathematical description of the underlying physical processes that generate ENSO variations Conceptual framework for understanding ENSO changes on decadal and longer time scales, including the response to greenhouse gas forcing ENSO impacts on extreme ocean, weather, and climate events, including tropical cyclones, and how ENSO affects fisheries and the global carbon cycle Advances in modeling, paleo-reconstructions, and operational climate forecasting Future projections of ENSO and its impacts Factors influencing ENSO events, such as inter-basin climate interactions and volcanic eruptions The American Geophysical Union promotes discovery in Earth and space science for the benefit of humanity. Its publications disseminate scientific knowledge and provide resources for researchers, students, and professionals.

Encyclopedia of Environmental Science-D.E. Alexander 1999-03-31 A strongly interdisciplinary and wide-ranging survey of the environment of life on Earth: the most authoritative and comprehensive source on environmental science to be collected together in a single volume. Unique in presenting both a basic overview and detailed information on environmental topics. Entries are arranged in an encyclopedic A-Z format and contain extensive cross-references to related entries, as well as references to primary and secondary literature. Over 370 separate entries prepared by 228 leading experts from 25 countries. Incorporates 25 substantial in-depth treatments of key areas and also includes biographies of leading scientists and environmentalists. Contains a comprehensive subject index and a citation index of all referenced authors. The Encyclopedia of Environmental Science is a multidisciplinary reference work, which crosses many fields of interest and includes a wide variety of scholarly and authoritative articles on mankind's environment. It provides information on the atmosphere, hydrosphere, biosphere and geosphere and is careful to focus on the connections between these realms and the Earth as a whole. Taken as a whole, the Encyclopedia surveys basic environmental science and applied areas of study, and is drawn from the physical sciences, life sciences and social sciences. The 228 authors from 25 different countries, many of whom are the leading authorities in their field, include biologists, ecologists, geographers, geologists, political scientists, soil scientists, hydrologists, climatologists, and representatives of many other disciplines and academic specialties. The work, which is amply referenced and cross-referenced, consists of substantial essays on major topics, medium-sized entries and short definitional entries. The shorter entries include useful biographies of leading scientists and environmentalists. The Encyclopedia will be invaluable to all readers interested in the environment of life on Earth, its past, present and future, and its physical and social dimensions. The text provides a source of well-classified basic information as well as covering the leading theories and important debates in the environmental sciences. In addition, the book also includes assessments of the future prospects for the Earth's environment in the face of pollution, population increases and the accelerating transformation of land, air, water and vegetational systems. The Encyclopedia is unique in presenting both a basic overview and detailed information on environmental topics and is suitable for the general scientific reader and the specialized environmental scientist in academic institutions, research laboratories or private practice.

Cyclostratigraphy and Astrochronology-Michael Montenari 2018-09-24 Stratigraphy and Time Scale, Volume Three in the Advances in Sequence Stratigraphy series, covers current research across many stratigraphic disciplines, providing information on the most recent developments for the geoscientific research community. This fully commissioned review publication aims to foster and convey progress in stratigraphy, including geochronology, magnetostratigraphy, lithostratigraphy, event-stratigraphy, isotope stratigraphy, astrochronology, climatostratigraphy, seismic stratigraphy, biostratigraphy, ice core chronology, cyclostratigraphy, palaeoceanography, sequence stratigraphy, and more. Updated chapters include topics such as the Cyclostratigraphy of shallow-water carbonates – limitations and opportunities, Muschelkalk ramp cycles, Orbital Control on Paleozoic Source Rock Formation, and Cyclostratigraphy in different Jurassic carbonate ramps (Iberian Basin, NE Spain). Contains contributions from leading authorities in the field Informs and updates on all the latest developments in the field Aims to foster and convey progress in stratigraphy, including geochronology, magnetostratigraphy, lithostratigraphy, event-stratigraphy, and more

Seismoelectric Exploration-Niels Grobbe 2020-10-14 Seismoelectric coupling and its current and potential future applications The seismoelectric method—the naturally-occurring coupling of seismic waves to electromagnetic fields—can provide insight into important properties of porous media. With a variety of potential environmental and engineering uses, as well as larger scale applications such as earthquake detection and oil and gas exploration, it offers a number of advantages over conventional geophysical methods. Seismoelectric Exploration: Theory, Experiments, and Applications explores the coupling between poroelastic and electromagnetic disturbances, discussing laboratory experiments, numerical modeling techniques, recent theoretical developments, and field studies. Volume highlights include: Physics of the seismoelectric effect at the microscale Governing equations describing coupled seismo-electromagnetic fields Examples of successful seismoelectric field experiments in different geological settings Current and potential applications of seismoelectric coupling Noise removal techniques for seismoelectric field measurements The American Geophysical Union promotes discovery in Earth and space science for the benefit of humanity. Its publications disseminate scientific knowledge and provide resources for researchers, students, and professionals.

World Heritage and tourism in a changing climate-Markham, Adam 2016-06-06 Aucune information saisie

Footprints-David Farrier 2020-03-03 A profound meditation on climate change and the Anthropocene and an urgent search for the fossils—industrial, chemical, geological—that humans are leaving behind What will the world look like in ten thousand years—or ten million? What kinds of stories will be told about us? In Footprints: In Search of Future Fossils, the award-winning author David Farrier explores the traces we will leave for the very distant future. Modern civilization has created objects and landscapes with the potential to endure through deep time, whether it is plastic polluting the oceans and nuclear waste sealed within the earth or the 30 million miles of roads spanning the planet. Our carbon could linger in the atmosphere for 100,000 years, and the remains of our cities will still exist millions of years from now as a layer in the rock. These future fossils have the potential to reveal much about how we lived in the twenty-first century. Crossing the boundaries of literature, art, and science, Footprints invites us to think about how we will be remembered in the myths and stories of our distant descendants. Traveling from the Baltic Sea to the Great Barrier Reef, and from an ice-core laboratory in Tasmania to Shanghai, one of the world’s biggest cities, Farrier describes a world that is changing rapidly, with consequences beyond the scope of human understanding. As much a message of hope as a warning, Footprints will not only alter how you think about the future; it will change how you see the world today.

At the Mountains of Madness-H. P. Lovecraft 2016-06-16 Initially rejected by Lovecraft's publisher, 'At The Mountains of Madness' is now considered a classic of the horror genre. The disturbing, nightmarish story of a journey through Antarctica and a discovery of secrets hidden in a frozen mountain range has influenced writers and film-makers for decades.

Biogeochemical Cycles-Katerina Dontsova 2020-04-14 Biogeochemical Cycles: Ecological Drivers and Environmental Impact is a collection of the latest information on the techniques and methods currently used in this field, focusing on biological and/or ecological effects of biogeochemical elemental cycles including carbon, nitrogen, major and trace elements, chemical weathering on multiple scales of nanometers to watersheds, and advances in technology of studying these processes. Volume highlights include: - Remote sensing and modeling techniques used to quantify changes in the ecosystem/s productivity, and microscopic techniques to estimate the extent of weathering - Novel isotopic techniques to assess changes in trace elemental cycles as influenced by the changing climate, and plant-mediated effect of climate change on major elemental cycles - Impact of climate change and other anthropogenic influences in agricultural and extreme (frontier) environments Biogeochemical Cycles: Ecological Drivers and Environmental Impact is a valuable resource for students, researchers and professionals in the field of biogeosciences, hydrology, ecology, earth and planetary surface processes, volcanology, petrology, geochemistry, mineralogy, soil science, agricultural science, climate change and environmental science.

Physical Geology-Steven Earle 2019 "Physical Geology is a comprehensive introductory text on the physical aspects of geology, including rocks and minerals, plate tectonics, earthquakes, volcanoes, glaciation, groundwater, streams, coasts, mass wasting, climate change, planetary geology and much more. It has a strong emphasis on examples from western Canada, especially British Columbia, and also includes a chapter devoted to the geological history of western Canada. The book is a collaboration of faculty from Earth Science departments at Universities and Colleges across British Columbia and elsewhere"--BCcampus website.

Climate Model Application in Paleoenvironmental Analysis-Eric J. Barron 1994 Focuses on the application of numerical models to the study of pre-Pleistocen environments, emphasizing the integration of observation and models. Introdu the climate system, climate models, and factors governing climate on geologi time scales, and describes the application of climate models to inve

Fundamentals of Invertebrate Palaeontology-Sreepat Jain 2019-12-12 This book provides practical morphological information, together with detailed illustrations and brief explanatory texts. Each chapter starts with a brief introduction, and goes on to describe the respective organism’s morphology in detail through numerous illustrations. This is followed by a brief note on its classification, and concludes with illustrated examples of stratigraphically important organisms through time with their major distinguishing characteristics. Featuring over 2500 clearly labelled, hand-drawn and classroom-friendly illustrations, the book offers a fundamental resource for budding palaeontologists, petroleum geologists and palaeobiologists.

Facing the Anthropocene-Ian Angus 2016-07 Science tells us that a new and dangerous stage in planetary evolution has begun—the Anthropocene, a time of rising temperatures, extreme weather, rising oceans, and mass species extinctions. Humanity faces not just more pollution or warmer weather, but a crisis of the Earth System. If business as usual continues, this century will be marked by rapid deterioration of our physical, social, and economic environment. Large parts of Earth will become uninhabitable, and civilization itself will be threatened. Facing the Anthropocene shows what has caused this planetary emergency, and what we must do to meet the challenge. Bridging the gap between Earth System science and ecological Marxism, Ian Angus examines not only the latest scientific findings about the physical causes and consequences of the Anthropocene transition, but also the social and economic trends that underlie the crisis. Cogent and compellingly written, Facing the Anthropocene offers a unique synthesis of natural and social science that illustrates how capitalism's inexorable drive for growth, powered by the rapid burning of fossil fuels that took millions of years to form, has driven our world to the brink of disaster. Survival in the Anthropocene, Angus argues, requires radical social change, replacing fossil capitalism with a new, ecosocialist civilization.

Nicolaus Steno-Troels Kardel 2012-12-13 This is by far the most exhaustive biography on Niels Stensen, anatomist, geologist and bishop, better known as "Nicolaus Steno". We learn about the scientist’s family and background in Lutheran Denmark, of his teachers at home and abroad, of his studies and travels in the Netherlands, Belgium, France, Italy, Austria, Hungary, Bohemia and Germany, of his many pioneering achievements in anatomy and geology, of his encounters with Swammerdam, Malpighi and with members of the newly established Royal Society of London and the Accademia del Cimento in Florence, and with the philosopher Spinoza. It further treats Stensen’s religious conversion. The book includes the full set of Steno's anatomical and geological scientific papers in original language. The editors thoroughly translated the original Latin text to English, and included numerous footnotes on the background of this bibliographic and scientific treasure from the 17th century.

The Permian Timescale-S.G. Lucas 2018-03-12 This volume brings together state-of-the-art reviews of the non-biostratigraphic and biostratigraphic data that are used to define and correlate Permian time intervals. It includes analyses of Permian radio-isotopic ages, magnetostratigraphy, isotope-based stratigraphy and timescale-relevant biostratigraphy. It is the first book devoted to this subject and represents the cutting edge of Permian time-scale research.

Anthropocene Reading-Tobias Menely 2017 "Considers the implications of the Anthropocene, the proposed geological epoch in which a human "signature" appears in the lithostratigraphic record, for literary history and critical method. Explores the status of reading in the history of geology, and of geohistory in literature"--Provided by publisher.

Crust of the earth-Arie Poldervaart 1963

Evolving the Geodetic Infrastructure to Meet New Scientific Needs-National Academies of Sciences, Engineering, and Medicine 2020-03-31 Satellite remote sensing is the primary tool for measuring global changes in the land, ocean, biosphere, and atmosphere. Over the past three decades, active remote sensing technologies have enabled increasingly precise measurements of Earth processes, allowing new science questions to be asked and answered. As this measurement precision increases, so does the need for a precise geodetic infrastructure. Evolving the Geodetic Infrastructure to Meet New Scientific Needs summarizes progress in maintaining and improving the geodetic infrastructure and identifies improvements to meet new science needs that were laid out in the 2018 report Thriving on Our Changing Planet: A Decadal Strategy for Earth Observation from Space. Focusing on sea-level change, the terrestrial water cycle, geological hazards, weather and climate, and ecosystems, this study examines the specific aspects of the geodetic infrastructure that need to be maintained or improved to help answer the science questions being considered.

Encyclopedia of Geochemistry-William M. White 2018-07-24 The Encyclopedia is a complete and authoritative reference work for this rapidly evolving field. Over 200 international scientists, each experts in their specialties, have written over 330 separate topics on different aspects of geochemistry including geochemical thermodynamics and kinetics, isotope and organic geochemistry, meteorites and cosmochemistry, the carbon cycle and climate, trace elements, geochemistry of high and low temperature processes, and ore deposition, to name just a few. The geochemical behavior of the elements is described as is the state of the art in analytical geochemistry. Each topic incorporates cross-referencing to related articles, and also has its own reference list to lead the reader to the essential articles within the published literature. The entries are arranged alphabetically, for easy access, and the subject and citation indices are comprehensive and extensive. Geochemistry applies chemical techniques and approaches to understanding the Earth and how it works. It touches upon almost every aspect of earth science, ranging from applied topics such as the search for energy and mineral resources, environmental pollution, and climate change to more basic questions such as the Earth’s origin and composition, the origin and evolution of life, rock weathering and metamorphism, and the pattern of ocean and mantle circulation. Geochemistry allows us to assign absolute ages to events in Earth’s history, to trace the flow of ocean water both now and in the past, trace sediments into subduction zones and arc volcanoes, and trace petroleum to its source rock and ultimately the environment in which it formed. The earliest of evidence of life is chemical and isotopic traces, not fossils, preserved in rocks. Geochemistry has allowed us to unravel the history of the ice ages and thereby deduce their cause. Geochemistry allows us to determine the swings in Earth’s surface temperatures during the ice ages, determine the temperatures and pressures at which rocks have been metamorphosed, and the rates at which ancient magma chambers cooled and crystallized. The field has grown rapidly more sophisticated, in both analytical techniques that can determine elemental concentrations or isotope ratios with exquisite precision and in computational modeling on scales ranging from atomic to planetary.

Meeting Challenges with Geologic Maps-William Andrew Thomas 2004

Basin and Range-John McPhee 1982-04-01 The first of John McPhee's works in his series on geology and geologists, Basin and Range is a book of journeys through ancient terrains, always in juxtaposition with travels in the modern world—a history of vanished landscapes, enhanced by the histories of people who bring them to light. The title refers to the physiographic province of the United States that reaches from eastern Utah to eastern California, a silent world of austere beauty, of hundreds of discrete high mountain ranges that are green with junipers and often white with snow. The terrain becomes the setting for a lyrical evocation of the science of geology, with important digressions into the plate-tectonics revolution and the history of the geologic time scale.

Principles of Geology-Sir Charles Lyell 1858

The Precambrian- 1963

The Age of the Earth-Arthur Holmes 1913

Assembling California-John McPhee 2010-04-01 At various times in a span of fifteen years, John McPhee made geological field surveys in the company of Eldridge Moores, a tectonicist at the University of California at Davis. The result of these trips is Assembling California, a cross-section in human and geologic time, from Donner Pass in the Sierra Nevada through the golden foothills of the Mother Lode and across the Great Central Valley to the wine country of the Coast Ranges, the rock of San Francisco, and the San Andreas family of faults. The two disparate time scales occasionally intersect—in the gold disruptions of the nineteenth century no less than in the earthquakes of the twentieth—and always with relevance to a newly understood geologic history in which half a dozen large and separate pieces of country are seen to have drifted in from far and near to coalesce as California. McPhee and Moores also journeyed to remote mountains of Arizona and to Cyprus and northern Greece, where rock of the deep-ocean floor has been transported into continental settings, as it has in California. Global in scope and a delight to read, Assembling California is a sweeping narrative of maps in motion, of evolving and dissolving lands.

Biology 2e-Mary Ann Clark 2018 Biology 2e (2nd edition) is designed to cover the scope and sequence requirements of a typical two-semester biology course for science majors. The text provides comprehensive coverage of foundational research and core biology concepts through an evolutionary lens. Biology includes rich features that engage students in scientific inquiry, highlight careers in the biological sciences, and offer everyday applications. The book also includes various types of practice and homework questions that help students understand -- and apply -- key concepts. The 2nd edition has been revised to incorporate clearer, more current, and more dynamic explanations, while maintaining the same organization as the first edition. Art and illustrations have been substantially improved, and the textbook features additional assessments and related resources.

The History of the World in Comics-Jean Baptiste de Panafieu 2020 "A paleontologist and a storyteller take two children through the birth of our planet to the present day, covering major geological periods and the evolution of life on Earth"--

Epigenetic Mechanisms of the Cambrian Explosion-Nelson R. Cabej 2019-10-12 Epigenetic Mechanisms of the Cambrian Explosion provides readers with a basic biological knowledge and epigenetic explanation of the biological puzzle of the Cambrian explosion, the unprecedented rapid diversification of animals that began 542 million years ago. During an evolutionarily instant of ~10 million years, which represents only 0.3% of the time of existence of life on Earth, or less than 2% of the time of existence of metazoans, all of the 30 extant body plans, major animal groups (phyla) and several extinct groups appeared. The work helps address this phenomena and tries to answer remaining questions for evolutionary biology, epigenetics, and scientific researchers. The book recognizes and presents objective representations of alternative theories for epigenetic evolution in this period, with the author drawing on his epigenetic theory of evolution to explain the causal basis of the Cambrian explosion. Both empirical evidence and theoretical arguments are presented in support of this thought-provoking epigenetic theory. Explains the Cambrian explosion from an entirely epigenetic view Takes a causal rather than descriptive approach to the phenomenon Allows for a broad readership, including those with only a basic biological knowledge, while maintaining scientific rigor

Gaia-James Lovelock 2016 First published 1979, first issued as an Oxford University paperback 1982.

The Great Ordovician Biodiversification Event-Barry D. Webby 2004-04-14 Two of the greatest evolutionary events in the history of life on Earth occurred during Early Paleozoic time. The first was the Cambrian explosion of skeletonized marine animals about 540 million years ago. The second was the "Great Ordovician Biodiversification Event," which is the focus of this book. During the 46-million-year Ordovician Period (489–443 m.y.), a bewildering array of adaptive radiations of

"Paleozoic- and Modern-type" biotas appeared in marine habitats, the first animals (arthropods) walked on land, and the first non-vascular bryophyte-like plants (based on their cryptospore record) colonized terrestrial areas with damp environments. This book represents a compilation by a large team of Ordovician specialists from around the world, who have enthusiastically cooperated to produce this first globally orientated, internationally sponsored IGCP (International Geological Correlation Program) project on Ordovician biotas. The major part is an assembly of genus- and species-level diversity data for the many Ordovician fossil groups. The book also presents an evaluation of how each group diversified through Ordovician time, with assessments of patterns of change and rates of origination and extinction. As such, it will become the standard work and data source for biotic studies on the Ordovician Period.