From Rodinia To Pangea The Lithotectonic Record Of The Appalachian Region Memoirs Geological Society Of America

The Sedimentary Basins of the United States and Canada, Second Edition, focuses on the large, regional, sedimentary accumulations in Canada and the United States. Each chapter provides a succinct summary of the tectonic setting and structural and paleogeographic evolution of the basin it covers, with details on structure and stratigraphy. The book features four new chapters that cover the sedimentary basins of Alaska and the Canadian Arctic. In addition to sedimentary geologists, this updated reference is relevant for basin analysis, regional geology, stratigraphy, and for those working in the hydrocarbon exploration industry. Features updates to existing chapters, along with new chapters on sedimentary basins in Alaska and Arctic Canada Includes nearly 300 detailed, full-color paleogeographic maps Written for general geological audiences and individuals working in the resources sector, particularly those in the fossil fuel industry

In this book the editors strive to cover all primary (i.e. non-applied) topics in Precambrian geology in a non-partisan way, by using a large team of international authors to present their datasets and highly divergent viewpoints. The chapters address: celestial origins of Earth and succeeding extraterrestrial impact events; generation of continental crust and the greenstone-granite debate; the interaction of mantle plumes and plate tectonics over Precambrian time; Precambrian volcanism, emphasising komatiite research; evolution and models for Earth's hydrosphere and atmosphere; evolution of life and its influence on Precambrian ocean chemistry and chemical sedimentation; sedimentation through Precambrian time; the application of sequence stratigraphy to the Precambrian rock record. Each topic is introduced and a non-partisan closing commentary provided at the end of each chapter. The final chapter blends the major geological events and rates at which important processes occurred into a synthesis, which postulates a number of "event clusters" in the Precambrian when significant changes occurred in many natural systems and geological environments. Also available in paperback, ISBN: 0-444-51509-7

This book provides a vivid account of the evolution of the Australian continent over the last 4400 million years.

In the early 1960s, the emergence of the theory of plate tectonics started a revolution in the earth sciences. Since then, scientists have verified and refined this theory, and now have a much better understanding of how our planet has been shaped by plate-tectonic processes. We now know that, directly or indirectly, plate tectonics influences nearly all geologic processes, past and present. Indeed, the notion that the entire Earth's surface is continually shifting has profoundly changed the way we view our world.

Plate Tectonics, Volcanoes, and Earthquakes

Ancient Supercontinents and the Paleogeography of Earth

The Transantarctic Mountains

A Keystone in a Changing World

The Origin of Continents and Oceans

Continents and Oceans

Proterozoic Orogens of India: A Critical Window to Gondwana provides a unique opportunity to understand a cross-section of the well-exposed and best-studied part of Earth's crust and the processes of continental collision. It covers pulses of reworking processes and their impact on magmatism, metamorphism and deformational history of Proterozoic orogens vis-à-vis the supercontinental formation. The details of structural architecture, crustal blocks, shear zone systems, magmatism, metamorphism, geochemical and isotopic signatures, mineralization and tectonic models of all the Proterozoic orogens of India are discussed along with excellent illustrations reflecting the field-based, multi-scale structural and geological data sets. The spatial distribution, geometry, kinematics and transpressional strain of the shear zone systems (mostly suture zones), which are critical to all conceptual models dealing with tectono-metamorphic history of Proterozoic orogens of India, are also covered. The book summarizes and integrates the state-of -the art understanding of the structural architecture, lithological assemblages, petrological, geochemical, geochronological and geophysical aspects of the Proterozoic orogens of India. Includes a much needed state-of-the-art tectonic summary of the voluminous data that has emerged from the Protrozoic orogens of India in the last 2-3 decades Authored by a well-established expert with more than 30 years of experience in the field based, multi-scale structural geological studies of the ancient orogens of India Covers up-to-date reviews and models of Proterozoic orogens developed in the Indian shield over the past 2.5 billion years of Earth history

This abundantly illustrated book provides a concise overview of our understanding of the entire mantle, its evolution since early differentiation and the consequences of superplumes for earth surface processes. The book's balanced authorship has produced a state-of-the-science report on the emerging concept of superplumes. This presents a new concept to explain catastrophic events on Earth through geologic time.

Antarctica is the center from which all surrounding continental bodies separated millions of years ago. Antarctica: A Keystone in a Changing World, reinforces the importance of continual changes in the country's history and the impact of these changes on global systems. The book also places emphasis on deciphering the climate records in ice cores, geologic cores, rock outcrops and those inferred from climate models. New technologies for the coming decades of geoscience data collection are also highlighted. Antarctica: A Keystone in a Changing World is a collection of papers that were presented by keynote speakers at the 10th International Symposium on Antarctic Earth Sciences. It is of interest to policy makers, researchers and scientific institutions.

Earth as an Evolving Planetary System, Second Edition, examines the various subsystems that play a role in the evolution of the Earth. These subsystems include such components as the crust, mantle, core, atmosphere, oceans, and life. The book contains 10 chapters that discuss the structure of the Earth and plate tectonics; the origin and evolution of the crust; the processes that leave tectonic imprints in rocks and modern processes responsible for these imprints; and the structure of the mantle and the core. The book also covers the Earth's atmosphere, hydrosphere, and biosphere; crustal and mantle evolution; the supercontinent cycle; great events in Earth history; and the Earth in comparison to other planets. This book is meant for advanced undergraduate and graduate students in Earth Sciences, with a basic knowledge of geology, biology, chemistry, and physics. It also may serve as a reference tool for specialists in the geologic sciences who want to keep abreast of scientific advances in this field. Kent Condie's corresponding interactive CD, Plate Tectonics and How the Earth Works, can be purchased from Tasa Graphic Arts here: http://www.tasagraphicarts.com/progptearth.html Two new chapters on the Supercontinent Cycle and on Great Events in Earth history New and updated sections on Earth's thermal history, planetary volcanism, planetary crusts, the onset of plate tectonics, changing composition of the oceans and atmosphere, and paleoclimatic regimes Also new in this Second Edition: the lower mantle and the role of the post-perovskite transition, the role of water in the mantle, new tomographic data tracking plume tails into the deep mantle, Euxinia in Proterozoic oceans, The Hadean, A crustal age gap at 2.4-2.2 Ga, and continental growth

Our Wandering Continents; an Hypothesis of Continental Drifting

When Did Plate Tectonics Begin on Planet Earth?

The Geology of Australia

Origins

Paleomagnetism

A Journey Through Two Billion Years of Plate-Tectonic History

"These ten field guides were written for the 2014 GSA Southeastern Section Meeting, which will take place in Blacksburg, Virginia. They cover such varied topics as the 2011 M5.8 Mineral, Virginia, earthquake; Mesozoic fauna from the Solite Quarry; and geology of the Coles Hill uranium deposit"--

"The chapters in this guidebook are organized according to major geologic themes, starting first with field trips in the Knoxville area that highlight, in some way, local carbonates, and then by ending with field trips focused on regional tectonics that include travel to North and South Carolina and Georgia"--

It has been 25 years since publication of the most recent English language summary of the geology of Japan. This book offers an up-to-date comprehensive guide for those interested both in the geology of the Japanese islands and geological processes of island arcs in general. It contains contributions from over 70 different eminent researchers in their fields and is divided into 12 main chapters.

This book presents a summary of the geology of the Transantarctic Mountains for Earth scientists who may want to work there or who need an overview of the geologic history of this region. In addition, the properties of the East Antarctic ice sheet and of the meteorites that accumulate on its surface are treated in separate chapters. The presentation ends with the Cenozoic glaciation of the Transantarctic Mountains including the limnology and geochemical evolution of the saline lakes in the ice-free valleys. • The subject matter in this book is presented in chronological order starting about 750 million years ago and continuing to the present time. • The chapters can be read selectively because the introduction to each chapter identifies the context that gives relevance to the subject matter to be discussed. • The text is richly illustrated with 330 original line drawings as well as with 182 color maps and photographs. • The book contains indexes of both subject matter and of authors ' names that allow it to be used as an encyclopedia of the Transantarctic Mountains and of the East Antarctic ice sheet. • Most of the chapters are supplemented by Appendices containing data tables, additional explanations of certain phenomena (e.g., the formation and seasonal destruction of stratospheric ozone), and illustrative calculations (e.g., 38Cl dates of meteorites). • The authors have spent a combined total of fourteen field seasons between 1964 and 1995 doing geological research in the Transantarctic Mountains with logistical support by the US Antarctic Program. • Although Antarctica is remote and inaccessible, tens of thousands of scientists of many nationalities and their assistants have worked there and even larger numbers of investigators will work there in the future.

Tempos and Events

Antarctica and Supercontinent Evolution

Neoproterozoic and Paleozoic Orogenic Cycles in the Circum-Atlantic Region

Rodinia Pangaea

The Supercontinent Connection

Major Events that Formed the Sunshine State

"The Appalachians constitute one of Earth's major tectonic features and have served as a springboard for innovative geologic thought for more than 170 years. This volume contains 36 original papers reporting the results of research performed throughout nearly the entire length and breadth of the Appalachian region, including all major provinces and geographical areas. Memoir 206 was designed to commemorate the (near-)fortieth anniversary of the publication of the classic Studies of Appalachian Geology volumes that appeared just prior to the application of plate tectonic concepts to the region. Contributions concerning structural evolution, sedimentation, stratigraphy, magmatic processes, metamorphism, tectonics, and terrane accretion illustrate the wide range of ongoing research in the area and collectively serve to mark the considerable progress in scientific thought that has occurred during the past four decades."--pub. desc.

This is a long fantasy story about earth, environment, living things, mythological creatures, universe and human. Everything is based on the Rodinia Pangaea, the supercontinent from the very beginning of the earth. The Rodinia Pangaea is just like a point that everything would restart there after a cycle. And human beings play an important role in this process. Once there was a highly developed civilization created by human, but also destroyed by the monster created by human. Because of that, human beings even nearly died out. But that time, there was something happened at the universe, five planets guardians came to the earth and saved the human. The only five man who was survived from the war got the power of the five guardians and promised to pass generation to generation to protect the earth. After millions of years of the development, human beings has developed again. But they are also leading for the point which will make them restart everything again.The monster will come up, the war is coming again. How could human beings solve this problem again? What power are they from the five planet guardians? Would human beings die out this time? Hope all of you enjoy my story.Since I am not an English native speaker, I may get some grammar problems, but I think that would not be a factor to let you misunderstand my meaning. What I want is to share my thought, my story, my wish to all the reader. If you have found any problem or you are interested in my story after reading it, you can find your way to contact me, everyone is welcome.

The Proterozoic aeon involved at least three major continental readjustments. India and Antarctica appear in most models of supercontinent reconstructions, but their relative position has been the subject of debate. High-resolution petrological and geochronological data, especially from the Proterozoic mobile belts, provide the principal means of resolving this issue. The ice-covered nature of Antarctica allows only limited access to the rocks, and then only in coastal tracts, so detailed studies in more accessible Proterozoic terrains in India assume added significance. This volume, a follow-up to the XII International Symposium on Antarctic Earth Science, Goa (a SCAR symposium), provides new data from selected locations in east Antarctica (Enderby Land and Dronning Maud Land) and from India, including the Eastern Ghats Mobile Belt (EGMB), Chota Nagpur Gneissic Complex, the Khasi Hills and the Aravalli–Delhi Mobile Belt. The presented geochronological data, constrained by petrological studies, are expected to provide new insights, especially into the EGMB–east Antarctica connection and the rate of continental readjustments in the post-Rodinia break-up.

In this important book El-Sherbini tackles key questions about how the new cataloging standard will be implemented by cataloging professionals, offering an orientation in the conceptual background and the structure of RDA: Resource Description and Access from a practical and technical perspective, including a detailed comparison with AACR2. Firmly rooted in the concrete application of RDA, with numerous sample records, this book Covers FRBR-driven tasks, FRBR-Group relationships, and principles of FRAD, including how FRAD impacts the RDA application Analyzes the roles of manifestations and items, such as pre-cataloging decisions, preferred sources of information, and mandatory elements of description Discusses works and expressions for specific library materials, from methods of recording primary relationships to constructing the authorized access point and recording relationships Offers advice for using RDA Toolkit, with tips for efficient navigation in RDA Toolkit using workflows and searching techniques Digs deeply into a variety of technical issues, including RDA's effect on OPAC displays, implementation of the new RDA fields that represent adding new elements, adjusting systems to accommodate the new MARC21 fields, integrating new records using RDA with older records, when to re-catalog a set of manifestations, exporting an RDA-based bibliographic record from OCLC into the OPAC, choosing RDA elements to describe your library materials (core vs. full elements), upgrading OCLC records to RDA, and many more Every cataloger will want this volume close at hand as a comprehensive roadmap to the changes already underway.

Supercontinent

Omar

Pannotia to Pangaea

The Lithotectonic Record of the Appalachian Region

Recent Advances in North American Paleoseismology and Neotectonics East of the Rockies

Geology of the American Southwest

In 1915 Alfred Wegener's seminal work describing the continental drift was first published in German. Wegener explained various phenomena of historical geology, geomorphy, paleontology, paleoclimatology, and similar areas in terms of continental drift. This edition includes new data to support his theories, helping to refute the opponents of his controversial views. 64 illustrations.

Antarctica preserves a rock record that spans three and a half billion years of history and has a remarkable story to tell about the evolution of our Earth, from the hottest crustal rocks yet found in an orogenic system, to the assembly and breakup of Gondwana in the Phanerozoic. This volume highlights our improved understanding of the tectonic events that have shaped Antarctica and how these potentially relate to supercontinent assembly and fragmentation. The internal constitution of the East Antarctic Shield is assessed using information available from the basement geology and from detritus preserved as Mesozoic sediments in the Trans Antarctic Mountains. Accretionary orogenesis along the proto-Pacific margin of Antarctica is examined and the volumes of intracrustal melting compared with juvenile magma additions in these complex orogenic systems assessed. This special volume demonstrates the diversity of approaches required to elucidate and understand crustal evolution and evaluate the supercontinent concept.

Paleomagnetism is the study of the fossil magnetism in rocks. It has been paramount in determining that the continents have drifted over the surface of the Earth throughout geological time. The fossil magnetism preserved in the ocean floor has demonstrated how continental drift takes place through the process of sea-floor spreading. The methods and techniques used in paleomagnetic studies of continental rocks and of the ocean floor are described and then applied to determining horizontal movements of the Earth's crust over geological time. An up-to-date review of global paleomagnetic data enables 1000 million years of Earth history to be summarized in terms of the drift of the major crustal blocks over the surface of the Earth. The first edition of McElhinny's book was heralded as a "classic and definitive text." It thoroughly discussed the theory of geomagnetism, the geologic reversals of the Earth's magnetic field, and the shifting of magnetic poles. In the 25 years since the highly successful first edition of Palaeomagnetism and Plate Tectonics (Cambridge, 1973) the many advances in the concepts, methodology, and insights into paleomagnetism warrant this new treatment. This completely updated and revised edition of Paleomagnetism: Continents and Oceans will be a welcome resource for a broad audience of earth scientists as well as laypeople curious about magnetism, paleogeography, geology, and plate tectonics. Because the book is intended for a wide audience of geologists, geophysicists, and oceanographers, it balances the mathematical and descriptive aspects of each topic. Details the theory and methodology of rock magnetism, with particular emphasis on intrepreting crustal movements from continental and oceanic measurements Outlines Earth history for the past 1000 million years, from the Rodinia super-continent through its breakup and the formation of Gondwana to the formation and breakup of Pangea and the amalgamation of Eurasia Provides a comprehensive treatment of oceanic paleomagnetism Provides a set of color pateogeographic maps covering the past 250 million years Written by two internationally recognized experts in the field

Special Publication 503 celebrates the career of R. Damian Nance. It features 27 articles, with more than 110 authors based in 18 different countries. These articles include contributions on the processes responsible for the formation and breakup of supercontinents, the controversies concerning the status of Pannotia as a supercontinent, the generation and destruction of Paleozoic oceans, and the development of the Appalachian-Ouachitan-Caledonide-Variscan orogens. In addition to field work, the approaches to gain that understanding include examining the relationships between stratigraphy and structural geology, precise geochronology, geochemical and isotopic fingerprinting, geodynamic modelling, regional syntheses, palaeogeographic modelling, and good old-fashioned arm-waving! The wide range of topics mirrors the breadth and depth of Damian's contributions, interests and expertise. Like Damian's papers, the contributions range from the predominantly conceptual to detailed field work, but all are targeted at understanding important tectonic processes. Their scope not only varies in scale from global to regional to local, but also in the range of approaches required to gain that understanding.

Middle American Terranes, Potential Correlatives, and Orogenic Processes

Superplumes: Beyond Plate Tectonics

Petroleum Geology of Libya

From the Blue Ridge to the Coastal Plain; Field Excursions in the Southeastern United States

Continents and Supercontinents

The 2011 Mineral, Virginia, Earthquake, and Its Significance for Seismic Hazards in Eastern North America

This work has been selected by scholars as being culturally important and is part of the knowledge base of civilization as we know it. This work is in the public domain in the United States of America, and possibly other nations. Within the United States, you may freely copy and distribute this work, as no entity (individual or corporate) has a copyright on the body of the work. Scholars believe, and we concur, that this work is important enough to be preserved, reproduced, and made generally available to the public. To ensure a quality reading experience, this work has been proofread and republished using a format that seamlessly blends the original graphical elements with text in an easy-to-read typeface. We appreciate your support of the preservation process, and thank you for being an important part of keeping this knowledge alive and relevant.

"The 2011 Mineral, Virginia, earthquake, the largest to occur in the Appalachian region in more than 100 years, provided new seismologic, engineering, geologic, hydrologic, and geophysical data. This volume makes these results available for geoscientists, engineers, and decision makers interested in understanding earthquakes and seismic hazards in eastern North America and other intraplate settings"--

Consisting of papers that have appeared recently in International Geology Review, Middle American Terranes, Potential Correlatives, and Orogenic Processes focuses on Middle American terranes in which tectonic processes, including flat-slab subduction, for orogenic development are examined at various times since the late Mesoproterozoi

An explanation of the geological processes that formed Florida.

Rocks, Ice, Meteorites and Water

Field Excursions for the GSA Annual Meeting, Baltimore, 2015
Geologic History of Florida
Crustal Evolution of India and Antarctica
From Rodinia to Pangea
The Story of Plate Tectonics

Earth as an Evolving Planetary System, Third Edition, examines the various subsystems that play a role in the evolution of the Earth, including subsystems in the crust, mantle, core, atmosphere, oceans, and life. This third edition includes 30% new material and, for the first time, includes full color images in both the print and electronic versions. Topics in the great events chapters are now included in the beginning of the book, with the addition of a new feature of breakout boxes for each event. The second half of the book now focuses on a better understanding of Earth's history by looking at the interactions of the subsystems over time. The Earth's atmosphere, hydrosphere, and biosphere, crustal and mantle evolution, the supercontinent cycle, great events in Earth history, and the Earth in comparison to other planets are also covered. Authored by a world leader in tectonics who also authored the two previous editions Presents comprehensive coverage of the Earth's history that is relevant for both students and teachers Includes important section on Comparative Planetary Evolution, not found in other textbooks All illustrations presented throughout both the print and electronic versions in full color

The authors explore the late Precambrian and earliest Cambrian fossil record to explain the Cambrian phenomenon and discuss the possibility of a major turnover in marine ecology at the beginning of the Cambrian period or whether a new, improved type of animal appeared at this time. They support their often controversial conclusions with photos and illustrations of fossils, some never before published.

Glorious panoramic photography by the author, a specialist in interpretive landscape, reveals the physical legacy of the Earth's distant past. This exceptional book celebrates the inevitability of global change and highlights our need as human beings to recognize and adjust to it. Color and b&w illustrations.

This book provides a complete Phanerozoic story of palaeogeography, using new and detailed full-colour maps, to link surface and deep-Earth processes.

A Critical Window to Gondwana
Tripping from the Fall Line
Field Excursions for the 2018 GSA Southeastern Section Meeting in Knoxville, Tennessee
The Emergence of Animals
The Sedimentary Basins of the United States and Canada
Antarctica

"This volume focuses on the continental intraplate region of the United States and provides an update and overview of documented Quaternary faulting and paleoseismic liquefaction east of the Rocky Mountains, and of the application of these results to seismic hazard and risk assessments. Contributions include papers that describe zones of newly recognized Quaternary deformation such as the East Tennessee Seismic Zone, as well as reinterpretations of well-known areas such as the New Madrid Seismic Zone. The chapters make important contributions to the recognition of earthquake sources active during the Quaternary and assess the seismic hazards posed by these sources. This volume should interest a wide range of readers from geology, seismology, hazard assessment, and emergency management"--Provided by publisher.

Presents an introduction to volcanoes and earthquakes, explaining how the movement of the Earth's interior plates cause their formation and describing the volcanoes which currently exist around the world as well as some of the famous earthquakes of the nineteenth through twenty-first cenuturies.

"Emanating from the Fall Line city of Baltimore, site of the 2015 GSA Annual Meeting, these trips reflect the diversity of geological features in the mid-Atlantic region including the Piedmont, Appalachian Mountains, and Coastal Plain, and the importance of geology on the development and construction of the Baltimore-Washington, D.C., metropolitan area"--

Ancient Supercontinents and the Paleogeography of Earth offers a systematic examination of Precambrian cratons and supercontinents. Through detailed maps of drift histories and paleogeography of each continent, this book examines topics related to Earth's tectonic evolution prior to Pangea, including plate kinematics, orogenic development, and paleoenvironments. Additionally, this book discusses the methodologies used, principally paleomagnetism and tectonostratigraphy, and addresses geophysical topics of mantle dynamics and geodynamo evolution over billions of years. Structured clearly with consistent coverage for Precambrian cratons, this book combines state-of-the-art paleomagnetic and geochronologic data to reconstruct the paleogeography of the Earth in the context of major climatic events such as global glaciations. It is an ideal, up-to>date reference for geoscientists and geographers looking for answers to questions surrounding the tectonic evolution of Earth. Provides robust paleogeographies of Precambrian cratons based on high-quality paleomagnetic and geochronologic data and critically tested by global geological datasets Includes links to updated databases for the Precambrian such as PALEOMAGIA and the Global Paleomagnetic Database (GPMDB) Presents full-color maps of the drift histories of each continent as well as their paleogeographies Discusses key questions regarding continental drift, the supercontinent cycle, and the geomagnetic dipole hypothesis and analyzes palaeography in the context of Earth's holistic evolution

This Dynamic Earth
The Geology of Japan
The Evolution of Continents, Oceans, and Life
Geology at Every Scale
Ten Billion Years in the Life of Our Planet
Strategies for Implementation

Looks at the Supercontinent Cycle; explores the history of its discovery; and includes discussion of Pangaea, the fusing of all of Earth's landmasses, and the lesser-known Rodinia, which existed approximately one thousand million years ago.

"Inspired by a GSA Penrose Conference held in Lander, Wyoming, June 14-18, 2006, this volume discusses the beginning and evolution of plate tectonics on Earth, and gives readers an introduction to some of the uncertainties and controversies related to the evolution of the planet. In the first three sections of the book, which cover isotopic, geochemical, metamorphic, mineralization, and mantle geodynamic constraints, a variety of papers address the question of when "modern-style" plate tectonics began on planet Earth. The next set of papers focuses on the geodynamic or geophysical constraints for the beginning of plate tectonics. The volume's final section synthesizes a broad range of evidence, from planetary analogues and geodynamic modeling, to Earth's preserved geologic record. This work provides an excellent graduate level text summarizing the current state of knowledge and will be of interest to a wide range of earth and planetary scientists."--Publisher's website.

This 2004 book provides a concise, accessible account of the geology and landscape of Southwest USA, for students and amateurs.

To this day, there is a great amount of controversy about where, when and how the so-called supercontinents--Pangea, Godwana, Rodinia, and Columbia--were made and broken. Continents and Supercontinents frames that controversy by giving all the necessary background on how continental crust is formed, modified, and destroyed, and what forces move plates. It also discusses how these processes affect the composition of seawater, climate, and the evolution of life. Rogers and Santosh begin with a survey of plate tectonics, and go on to describe the composition, production, and destruction of continental and oceanic crust, and show that cratons or assemblies of cratons became the first true continents, approximately one billion years after the earliest continental crust evolved. The middle part of the book concentrates on supercontinents, beginning with a discussion of types of orogenic belts, distinguishing those that formed by closure of an ocean basin within the belt and those that formed by intracontinental deformation caused by stresses generated elsewhere. This information permits discrimination between models of supercontinent formation by accretion of numerous small terranes and by reorganization of large old continental blocks. This background leads to a description of the assembly and fragmentation of supercontinents throughout earth history. The record is most difficult to interpret for the oldest supercontinent, Columbia, and also controversial for Rodinia, the next youngest supercontinent. The configurations and pattern of breakup of Gondwana and Pangea are well known, but some aspects of their assembly are unclear. The book also briefly describes the histories of continents after the breakup of Pangea, and discusses how changes in the composition of seawater, climate, and life may have been affected by the sizes and locations of continents and supercontinents.

The Precambrian Earth
Earth as an Evolving Planetary System
Proterozoic Orogens of India
The Cambrian Breakthrough
Field Guides for the GSA Southeastern Section Meeting, Blacksburg, Virginia, 2014

Petroleum Geology of Libya, Second Edition, systematically reviews the exploration history, plate tectonics, structural evolution, stratigraphy, geochemistry and petroleum systems of Libya, and includes valuable new chapters on oil and gas fields, production, and reserves. Since the previous edition, published in 2002, there have been numerous developments in Libya, including the lifting of sanctions, a new licensing system, with licensing rounds in 2004, 2005, 2006, and 2007, many new exploratory wells, discoveries and field developments, and a change of regime. A large amount of new data has been published on the geology of Libya in the past fourteen years, but it is widely scattered through the literature. Much of the older data has been superseded, and several of the key publications, especially those published in Libya, are difficult to access. This second edition provides an updated source of reference which incorporates much new information, particularly on petroleum systems, reserves, oil and gas fields, play fairways, and remaining potential. It presents the results of recent research and a detailed description of Libyan offshore geology. The book includes an extensive and comprehensive bibliography. Presents over 180 full colour illustrations including maps, diagrams and charts, illustrating the key concepts in a clear and concise manner Authored by two recognized world authorities on geology in Libya, with over 40 years ' experience in Libya between them Provides an expanded and updated version of the bestselling previous edition, nicknamed the Explorationist ' s Bible Lays the foundation for the post-revolution exploration age in Libya

Elevating Geoscience in the Southeastern United States: New Ideas about Old Terranes
RDA
Earth History and Palaeogeography