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Yearbook on Space Policy 2009/2010 Space for Society Springer Science & Business Media The Yearbook on Space Policy is the reference publication analysing space policy developments. Each year it presents issues and trends in space policy and the space sector as a whole. Its scope is global and its perspective is European. The Yearbook also links space policy with other policy areas. It highlights specific events and issues, and provides useful insights, data and information on space activities. The Yearbook on Space Policy is edited by the European Space Policy Institute (ESPI) based in Vienna, Austria. It combines in-house research and contributions of members of the European Space Policy Research and Academic Network (ESPRAN), coordinated by ESPI. The Yearbook is designed for government decision-makers and agencies, industry professionals, as well as the service sectors, researchers and scientists and the interested public. **Stamping the Earth from Space** Springer This unique book presents a historical and philatelic survey of Earth exploration from space. It covers all areas of research in which artificial satellites have contributed in designing a new image of our planet and its environment: the atmosphere and ionosphere, the magnetic field, radiation belts and the magnetosphere, weather, remote sensing, mapping of the surface, observation of the oceans and marine environments, geodesy, and the study of life and ecological systems. Stamping the Earth from Space presents the results obtained with the thousands of satellites launched by the two former superpowers, the Soviet Union and the United States, and also those of the many missions carried out by the ESA, individual European countries, Japan, China, India, and the many emerging space nations. Beautifully illustrated, it contains almost 1100 color reproductions of philatelic items. In addition to topical stamps and thematic postal documents, the book provides an extensive review of astrophilatelic items. The most important space missions are documented through event covers and cards canceled at launch sites, tracking stations, research laboratories, and mission control facilities. **Emerging Space Powers The New Space Programs of Asia, the Middle East and South-America** Springer Science & Business Media This work introduces the important emerging space powers of the world. Brian Harvey describes the origins of the Japanese space program, from rocket designs based on WW II German U-boats to tiny solid fuel 'pencil' rockets, which led to the launch of the first Japanese satellite in 1970. The next two chapters relate how Japan expanded its space program, developing small satellites into astronomical observatories and sending missions to the Moon, Mars, comet Halley, and asteroids. Chapter 4 describes how India's Vikram Sarabhai developed a sounding rocket program in the 1960s. The following chapter describes the expansion of the Indian space program. Chapter 6 relates how the Indian space program is looking ahead to the success of the moon probe Chandrayan, due to launch in 2008, and its first manned launching in 2014. Chapters 7, 8, and 9 demonstrate how, in Iran, communications and remote sensing drive space technology. Chapter 10 outlines Brazil's road to space, begun in the mid-1960's with the launch of the Sonda sounding rockets. The following two chapters describe Brazil's satellites and space launch systems and plans for the future. Chapters 13 and 14 study Israel's space industry. The next chapters look at the burgeoning space programs of North and South Korea. The book ends by contrasting and comparing all the space programs and speculating how they may evolve in the future. An appendix lists all launches and launch attempts to date of the emerging space powers. **Skylab America's Space Station** Springer Science & Business Media Between May 1973 and February 1974 three teams of astronauts increased the American space endurance record from 14 days, set in 1965, to three months aboard the Skylab space station in missions lasting 28, 59 and 84 days. American astronauts did not surpass these records for over 20 years until the NASA Mir missions began in 1995. In "Skylab - America's space station", David Shayler chronicles the evolution of the station, its infrastructure on the ground including astronaut training, each of the three manned missions, summary of results, achievements and the lessons learned. The creation of the International Space Station is the real legacy of Skylab as American astronauts once again embark on extended missions around the Earth. **Solar Energy at Urban Scale** John Wiley & Sons Increasing urbanization throughout the world, the depletion of fossil fuels and concerns about global warming have transformed the city into a physical problem of prime importance. This book proposes a multi-disciplinary and systematic approach concerning specialties as different as meteorology, geography, architecture and urban engineering systems, all surrounding the essential problem of solar radiation. It collects the points of view of 18 specialists from around the world on the interaction between solar energy and constructions, combining territorial, urban and architectural scales to better regulate energetic efficiency and light comfort for the sustainability. The main subjects covered are: measures and models of solar irradiance (satellite observations, territorial and urban ground measurements, sky models, satellite data and urban mock-up), radiative contribution to the urban climate (local heat balance, radiative-aerodynamics coupling, evapotranspiration, Urban Heat Island), light and heat modeling (climate-based daylight modeling, geometrical models of the city, solar radiation modeling for urban environments, thermal simulation methods and algorithms) and urban planning, with special considerations for solar potential, solar impact and daylight rights in the temperate, northern and tropical climates, and the requirement of urban solar regulation. Contents 1. The Odyssey of Remote Sensing from Space: Half a Century of Satellites for Earth Observations, Théo Pirard. 2. Territorial and Urban Measurements, Marius Paulescu and Viorel Badescu. 3. Sky Luminance Models, Matej Kobav and Grega Bizjak. 4. Satellite Images Applied to Surface Solar Radiation Estimation, Bella Espinar and Philippe Blanc. 5. Worldwide Aspects of Solar Radiation Impact, Benoit Beckers. 6. Local Energy Balance, Pierre Kastendeuch. 7. Evapotranspiration, Marjorie Musy. 8. Multiscale Daylight Modeling for Urban Environments, John Mardaljevic and George Janes. 9. Geometrical Models of the City, Daniel G. Aliaga. 10. Radiative Simulation Methods, Pierre Beckers and Benoit Beckers. 11. Radiation Modeling Using the Finite Element Method, Tom van Eekelen. 12. Dense Cities in the Tropical Zone, Edward Ng. 13. Dense Cities in Temperate Climates: Solar and Daylight Rights, Guedi Capeluto. 14. Solar Potential and Solar Impact, Frédéric Monette and Benoit Beckers. Appendix 1. Table of Europe's Platforms (Micro- and Minisatellites) for Earth Observations, Théo Pirard. Appendix 2. Commercial Operators of Earth Observation (EO) Satellites (as of January 1, 2012), Théo Pirard. Appendix 3. Earth's Annual Global Mean Energy Budget, Benoit Beckers. **Tropical Fire Ecology Climate Change, Land Use and Ecosystem Dynamics** Springer Science & Business Media The tropics are home to most of the world's biodiversity and are currently the frontier for human settlement. Tropical ecosystems are being converted to agricultural and other land uses at unprecedented rates. Land conversion and maintenance almost always rely on fire and, because of this, fire is now more prevalent in the tropics than anywhere else on Earth. Despite pervasive fire, human settlement and threatened biodiversity, there is little comprehensive information available on fire and its effects in tropical ecosystems. Tropical deforestation, especially in rainforests, has been widely documented for many years. Forests are cut down and allowed to dry before being burned to remove biomass and release nutrients to grow crops. However, fires do not always stop at the borders of cleared forests. Tremendously damaging fires are increasingly spreading into forests that were never evolutionarily prepared for wild fires. The largest fires on the planet in recent decades have occurred in tropical forests and burned millions of hectares in several countries. The numerous ecosystems of the tropics have differing levels of fire resistance, resilience or dependence. At present, there is little appreciation of the seriousness of the wild fire situation in tropical rainforests but there is even less understanding of the role that fire plays in the ecology of many fire adapted tropical ecosystems, such as savannas, grasslands and other forest types. **The Power of the Space Club** Cambridge University Press This book analyses the decisions of nations to develop indigenous space programs in order to become a leading world power. **Intraseasonal Variability in the Atmosphere-Ocean Climate System** Springer Science & Business Media This is the first comprehensive review of intra-seasonal variability (ISV); the contents are balanced between observation, theory and modeling. Starting with an overview of ISV and historical observations, the book addresses the coupling between ocean and atmosphere, and the worldwide role of ISV in monsoon variability. Also considered are the connections between oscillations like the Madden-Julian and El Niño/Southern and short-term climate. **Tropical Rainforest Responses to Climatic Change** Springer Science & Business Media The goal of this book is to provide a current overview of the impacts of climate change on tropical forests, to investigate past, present, and future climatic influences on the ecosystems with the highest biodiversity on the planet. Tropical Rainforest Responses to Climatic Change will be the first book to examine how tropical rain forest ecology is altered by climate change, rather than simply seeing how plant communities were altered. Shifting the emphasis onto ecological processes e.g. how diversity is structured by climate and the subsequent impact on tropical forest ecology, provides the reader with a more comprehensive coverage. A major theme of this book that emerges progressively is the interaction between humans, climate and forest ecology. While numerous books have appeared dealing with forest fragmentation and conservation, none have explicitly explored the long term occupation of tropical systems, the influence of fire and the future climatic effects of deforestation, coupled with anthropogenic emissions. Incorporating modelling of past and future systems paves the way for a discussion of conservation from a climatic perspective, rather than the usual plea to stop logging. **The Story of the Space Shuttle** Springer Science & Business Media In spite of the Challenger and Columbia disasters, the US Space Shuttle, which entered service in 1981, remains the most successful spacecraft ever developed. Conceived and designed as a reusable spacecraft to provide cheap access to low Earth orbit, and to supersede expendable launch vehicles, serving as the National Space Transportation System, it now coexists with a new range of commercial rockets. David Harland's definitive work on the Space Shuttle explains the scientific contribution the Space Shuttle has made to the international space programme, detailing missions to Mir, Hubble and more recently its role in the assembly of the International Space Station. This substantial revision to existing chapters and extension of 'The Space Shuttle', following the loss of Columbia, will include a comprehensive account of the run-up to resumption of operations and conclude with a chapter beyond the Shuttle, looking at possible future concepts for a partly or totally reusable space vehicle which are being considered to replace the Shuttle. **China's Space Program - From Conception to Manned Spaceflight** Springer Science & Business Media This book is designed for publication straight after the launch of China's first manned spacecraft. The precursor mission, Shenzhou, flew unmanned in November 1999, in line with the predictions of The Chinese Space Programme: From Conception to Future Capabilities (1998) the first edition of this retitled book. China's Space Program: From Conception to Manned Spaceflight builds on the 1998 title to take account of the first manned flight in October 2003. It also brings the reader up to date with other developments in the Chinese space programme over from 1998 to the manned flight and looks forward to China's future plans and ambitions. **From Aspirin to Viagra Stories of the Drugs that Changed the World** Springer Nature From Aspirin to Viagra, insulin to penicillin, and vaccines to vitamin supplements, drugs have become part of our everyday lives. This staggering global industry wasn't born overnight; advancements in pharmaceutical science have been happening for a long while, over the course of decades and even centuries. This book tells the history of ten prominent substances and how they came to be common household names. It shows how the creation of such influential drugs often began with the right person at the exactly right—or wrong!—time. The chapters tell the stories of geniuses and charlatans; scholars and amateurs; advances won through hard work or pure luck; and ultimately, the handful of resounding successes that revolutionized a global industry. Beyond the pioneers of the most famous drugs in our culture, the book analyzes how our perspective on medical treatment has shifted over the decades. Modern standards for testing and administering substances have created a new set of advantages, setbacks, and stigmas, all of which are discussed herein. **Life on Other Worlds and How to Find It** Springer Science & Business Media SETI -- the search for extra-terrestrial intelligence -- is undergoing something of a renaissance, and alongside the work of the scientists almost a million PC users round the world are participating in the SERENDIP IV project through the "SETI at Home" initiative from Berkeley University in California. This

book is an up-to-date review of today's scientific thinking about where and how we might find life elsewhere in the universe, presented in Stuart Clark's easily read yet authoritative style. **The Origin of Injustice in Air and Space Law de facto property rights by virtue of the "first come, first served" rule** Mindthegap Publishing The most important resources in civil aviation and commercial use of the outer space are legal rights to occupy certain space in airports and geostationary orbits respectively. This book clarifies the nature of the rights called "slots" in both arena. It then reviews both the domestic and international slot distribution mechanisms and Common Law principles therein. **The Electric Century How the Taming of Lightning Shaped the Modern World** Springer This book is about how electricity has profoundly changed the way we live, work, and play. Some twenty topics are covered, with an abundance of graphs and images to build a comprehensive picture. Each looks at the developments, and the people who initiated them, together with how one led to the next and their subsequent impact on society. Topics include electric supply, lighting through X-rays, and all those appliances that make our homes so comfortable. Most homes at the end of the twentieth century were full of electrical equipment, much of which was regarded as essential. It ran from lights, washing machines, fridges, freezers, kettles, telephones and so on, to the more subtle things such as wipers and starter motors on cars. In 1900, in all but a tiny minority of houses, there were none of these things. It is very difficult for us now to imagine a world without electrical equipment everywhere, and yet it has only taken a century. The Electric Century examines how we got from then to now. The nineteenth is often described as the century of steam from the impact it had on employment and transport, and The Electric Century makes a similar claim as the description of the twentieth. Electricity and the equipment using it are so pervasive that they have affected every corner of modern life. **Russian Spacesuits** Springer Science & Business Media This is the very first 'inside story' of a key part of the Soviet manned space programme, detailing the development of Soviet/Russian spacesuits. The authors, as participants in the programme, provide details of events, previously unknown in the West, including their technical development. These space suits were an important part of the many Soviet firsts in the space race – Yuri Gagarin's flight, Valentina Tereskova, the first woman in space, the first space walk by Alexei Leonov, and the first transfer on orbit from one spacecraft to another. All previous books on Soviet manned space flights focus on the spacecraft and cosmonaut teams. This book provides a total overview of the successful Soviet/Russian development of space suits and subsequent space walks from Vostok to MIR and ISS. **Mapping Antarctica A Five Hundred Year Record of Discovery** Springer Science & Business Media Everyone likes maps and maps are always used to illustrate the many books on the Antarctic. Here the focus is reversed with contemporary maps telling the story – one that should be attractive to the widest audience as it is a unique approach complimenting what has gone before and providing something different for all interested in Antarctica. **Soyuz A Universal Spacecraft** Springer Science & Business Media Rex Hall and Dave Shayler provide a unique history of the Soyuz spacecraft programme from conception, through development to its use, detailed in the only English language book available on this topic. Planned for publication in 2003, it will celebrate 40 years since the original concept of the Soyuz craft. **Intraseasonal Variability in the Atmosphere-Ocean Climate System** Springer Science & Business Media Improving the reliability of long-range forecasts of natural disasters, such as severe weather, droughts and floods, in North America, South America, Africa and the Asian/Australasian monsoon regions is of vital importance to the livelihood of millions of people who are affected by these events. In recent years the significance of major short-term climatic variability, and events such as the El Niño/Southern Oscillation in the Pacific, with its worldwide effect on rainfall patterns, has been all too clearly demonstrated. Understanding and predicting the intra-seasonal variability (ISV) of the ocean and atmosphere is crucial to improving long range environmental forecasts and the reliability of climate change projects through climate models. In the second edition of this classic book on the subject, the authors have updated the original chapters, where appropriate, and added a new chapter that includes short subjects representing substantial new development in ISV research since the publication of the first edition. **Evaporites A Geological Compendium** Springer The monograph offers a comprehensive discussion of the role of evaporites in hydrocarbon generation and trapping, and new information on low temperature and high temperature ores. It also provides a wealth of information on exploitable salts, in a comprehensive volume has been assembled and organized to provide quick access to relevant information on all matters related to evaporites and associated brines. In addition, there are summaries of evaporite karst hazards, exploitative methods and problems that can arise in dealing with evaporites in conventional and solution mining. This second edition has been revised and extended, with three new chapters focusing on ore minerals in different temperature settings and a chapter on meta-evaporites. Written by a field specialist in research and exploration, the book presents a comprehensive overview of the realms of low- and high-temperature evaporite evolution. It is aimed at earth science professionals, sedimentologists, oil and gas explorers, mining geologists as well as environmental geologists. **Outstanding Topics in Ocean Optics** MDPI Ocean optics is a branch of oceanography which is firmly embedded in studies of a great variety of ocean science and engineering questions. The interactive nature between radiative transfer of light and various dissolved and particulate constituents of seawater is at the core of ocean optics science and applications. The transfer of radiant solar energy has vital implications to life and climate on Earth, and the large variety of subjects of ocean optics ranges from the subtle problems of physical optics to optical remote sensing towards a better understanding of ocean biology, biogeochemistry and ecosystems and their roles in the Earth's system processes. The intention of this book is to present a collection of papers that generally share a common denominator of frontier topics in ocean optics which are unique, uncommon or outstanding in the literature, and to provide a balanced view of the extraordinary breadth of research in this field. Topics as diverse as measurements and modeling of radiative transfer, light fields, light scattering and polarization, ocean color, benthic optical properties, and the use of optics for characterizing seawater constituents are addressed in this book. The book is expected to be of interest and useful to a broad audience of professional ocean scientists, engineers and advanced students with an interest in ocean optics and applications of optical methods in oceanography. **Star Maps History, Artistry, and Cartography** Springer Science & Business Media The beauty and awe generated by the celestial void captures our imagination and delights our aesthetic sense. Antiquarian map societies are prospering, and celestial maps are now viewed as a specialty of map collecting. This book traces the history of celestial cartography and relates this history to the changing ideas of man's place in the universe and to advances in map-making. Photographs from actual antiquarian celestial atlases and prints, many previously unpublished, enrich the text. The book describes the development and relationships between different sky maps and atlases as well as demonstrating contemporary cosmological ideas, constellation representations, and cartographic advances. **Mission to Saturn Cassini and the Huygens Probe** Springer Science & Business Media Saturn is back in the news! The Cassini/Huygens spacecraft, a joint venture by NASA and the European Space Agency, is on its way to Saturn, where it will arrive in July 2004. During 2005 it will explore beneath the clouds of Titan, Saturn's largest moon and possible home for extraterrestrial life. There are, as yet, no books devoted to the Cassini/Huygens mission aimed at the 'space enthusiast' market. David Harland's book explains how the Cassini/Huygens mission was planned, how it operates, and how its observations will fit in with our existing knowledge of the Saturn system. **Space Politics and Policy An Evolutionary Perspective** Springer Science & Business Media Space Politics and Policy: An Evolutionary Perspective provides a comprehensive survey of Space Policy. This book is organized around two themes. Space Policy is evolutionary in that it has responded to dramatic political events, such as the launching of Sputnik and the Cold War, and has undergone dynamic and evolutionary policy changes over the course of the space age. Space Policy is an integral part of and interacts with public policy processes in the United States and abroad. The book analyzes Space Policy at several levels including historical context, political actors and institutions, political processes and policy outcomes. It examines the symbiotic relationships between policy, technology, and science; provides a review and synthesis of the existing body of knowledge in Space Policy; and identifies Space Policy trends and developments from the beginnings of the space age through the current era of the twenty-first century. **Sea-Level Science Understanding Tides, Surges, Tsunamis and Mean Sea-Level Changes** Cambridge University Press "Understanding Tides, Surges, Tsunamis and Mean Sea-Level Changes Sea levels change for many reasons and on many timescales, and extreme sea levels can result in catastrophic coastal flooding, such as the Katrina storm surge in 2005 or the Sumatra tsunami in 2004. As global sea level rises, and coastal populations increase, understanding sea-level processes becomes key to plan future coastal defence effectively"-- **Biotic Regulation of the Environment Key Issues of Global Change** Springer Science & Business Media It is not possible to understand the apparent stability of the Earth's climate and environment unless we can fully understand how the best possible environmental conditions may be maintained for life to exist. Human colonization of areas with natural biota, for industrial or agricultural activities, will lead to degradation of those natural communities and violation of the BRE (biotic regulation of the environment) principle. Thus to maintain an environment on Earth that is suitable for life it is necessary to preserve and allow the natural recovery of natural biotic communities, both in the oceans and on land. This book is devoted to a quantitative version of the BRE concept, and is built on a foundation of modern scientific knowledge accumulated in the fields of physics and biology. **Tectonic Geomorphology of Mountains A New Approach to Paleoseismology** John Wiley & Sons With a balance of theory and practical applications, Tectonic Geomorphology of Mountains is essential reading for research geologists and upper-level undergraduate and graduate students in the earth sciences. This book describes how tectonic events influence geomorphic processes and explores how landscapes respond to tectonic deformation in the ways in which they are weathered, washed, and abraded Uses new approaches to enhance theoretical models of landscape evolution and to solve practical problems such as the assessment of earthquake hazards Includes previously unpublished research and theory Examines how to use key landforms as reference levels in changing landscapes, estimate rates of mountain-range uplift, and map seismic shaking caused by prehistorical earthquakes Presents a diverse range of examples from around the world **Earth Sciences History Journal of the History of the Earth Sciences Society Collaborative Praxis and Contemporary Art Experiments in the MENASA Region** Springer Nature This book examines the ways in which artists and arts organizations today forge collaborative, socially engaged situations that involve non-professionals in the process of making art, often over a period of time, through creating opportunities to examine collective concerns and needs. Collaborative art praxis is gaining prominence in the Middle East, North Africa, and South Asia (MENASA) region. This is a discursive method that is experimental, with results that often expand the notions of what art is—and how it can be produced. After an introduction to global approaches to such a practice, Ali examines the foundation of contemporary art in the MENASA that is linked to a longer history of colonialism. The book analyzes artist-led initiatives and community-based organizations through themes including relational aesthetics, war and violence, blight in marginalized places around the world, in addition to questions associated with art and its value in the fields of global contemporary art and society. **Research on Soil Erosion** BoD – Books on Demand Soil loss for erosion is a natural phenomenon in soil dynamics, influenced by climate, soil intrinsic properties, and morphology, that can both trigger and enhance the process. Anthropogenic activities, like inappropriate agricultural practices, deforestation, overgrazing, forest fires and construction activities, may exert a remarkable impact on erosion processes or, on the other hand, contribute to soil erosion mitigation through a sustainable management of natural resources. The book is the continuation of previously published "Soil Erosion Studies"; it is organized in a unique section collecting nine chapters focusing on a variety of aspects of the erosion phenomena. **Global Land Ice Measurements from Space** Springer An international team of over 150 experts provide up-to-date satellite imaging and quantitative analysis of the state and dynamics of the glaciers around the world, and they provide an in-depth review of analysis methodologies. Includes an e-published supplement. **Global Land Ice Measurements from Space - Satellite Multispectral Imaging of Glaciers (GLIMS book for short)** is the leading state-of-the-art technical and interpretive presentation of satellite image data and analysis of the changing state of the world's glaciers. The book is the most definitive, comprehensive product of a global glacier remote sensing consortium, Global Land Ice Measurements from Space (GLIMS, <http://www.glims.org>). With 33 chapters and a companion e-supplement, the world's foremost experts in satellite image analysis of glaciers analyze the current state and recent and possible future changes of glaciers across the globe and interpret these findings for policy planners. Climate change is with us for some time to come, and its impacts are being felt by the world's population. The GLIMS Book, to be released about the same time as the IPCC's 5th Assessment report on global climate warming, buttresses and adds rich details and authority to the global change community's understanding of climate change impacts on the cryosphere. This will be a definitive and technically complete reference for experts and students examining the responses of glaciers to climate change. World experts demonstrate that glaciers are changing in response to the ongoing climatic upheaval in addition to other factors that pertain to the circumstances of individual glaciers. The global mosaic of glacier changes is documented by quantitative analyses and are placed into a perspective of causative factors. Starting with a Foreword, Preface, and Introduction, the GLIMS book gives the rationale for and history of glacier monitoring and satellite data analysis. It includes a comprehensive set of six "how-to" methodology chapters, twenty-five chapters detailing regional glacier state and dynamical changes, and an in-depth summary and interpretation chapter placing the observed glacier changes into a global context of the coupled atmosphere-land-ocean system. An accompanying e-supplement will include oversized imagery and other highly visual renderings of scientific data. **Catalog of Copyright Entries. Third Series 1977: January-June** Copyright Office, Library of Congress **Mars - A Warmer, Wetter Planet** Springer Science & Business Media Mars is the Solar System's other wild, wet, water world. Long believed to have become cold, dead, and dry aeons ago, we now having striking new proof, not only that Mars was a relatively warm and wet place in geologically recent times, but that even today there are vast reserves of water frozen beneath the planet's surface. This compelling new evidence may well boost the chances of a manned mission to Mars sooner, rather than later. The discovery is also forcing a

complete rethink about the mechanisms of global planetary change. What does the drastic turn of events on Mars mean for Earth's climate system? Could life have thrived on Mars very recently, and might it survive today in short-term hibernation? Will humans soon be capable of living off the natural resources that Martian hydrogeology has naturally offered us? Will humans one day be capable of setting off the same chain of events that nature has repeatedly triggered to set off warm, wet episodes on Mars? How could Mars be terraformed into a New World? (And should we even contemplate doing so?) This book offers a visually beautiful, scientifically detailed and accurate presentation of the evidence that has forced this new revolution in Mars science. From the reviews: "Long believed to have been cold, dead and dry for eons, there is now striking new proof that not only was Mars a relatively warm and wet place in geologically recent times, but that even today there are vast reserves of water frozen beneath the planet's surface. In this absorbing, beautifully illustrated book, Kargel describes the still-unfolding revolution in our knowledge about the Red Planet and how future concepts of Mars will continue to be molded by new revelations of four billion years of geology". (LUNAR AND PLANETARY INFORMATION BULLETIN) From the reviews: "This exhaustive, effusive, and enthusiastic book conveys the excitement of frontline scientific research about as well as can be done. Kargel describes himself as a member of the "Tucson Mafia," a group of scientists in full rebellion against the "Mars Establishment" and its belief in a cold, dry Mars. His ideas are presented in meticulous detail, supported by hundreds of superb pictures, many taken by the author himself. Some--perhaps most--of his ideas are controversial and may ultimately prove to be wrong, as he himself often points out, but we have to applaud the (sometimes career-risking) courage with which he has pursued them. In spite of the large amount of rather technical information, the reader is swept along by the author's enthusiasm in conveying it and ability to integrate it into a coherent vision. The reader also learns about the process of science: the thrill of having a new idea and discussing it with others at conferences and cafes (and bars), the drudgery often involved in pursuing the idea, the perils of the formal review process for publications and grant applications, and the roles played by personality conflicts and power politics. Summing Up: Enthusiastically recommended. All levels." (T. Barker, CHOICE, March 2005) **Iceland Geodynamics Crustal Deformation and Divergent Plate Tectonics** Springer Science & Business Media This book provides a summary of geodynamic results from Iceland that presently are found in a great number of scientific articles, but have not been collected before in a book. The ever increasing number of scientists interested in geology and geophysics of Iceland should find the book a "must" to gain knowledge about previous work and the status of knowledge about Iceland. **Energiya-Buran The Soviet Space Shuttle** Praxis This absorbing book describes the long development of the Soviet space shuttle system, its infrastructure and the space agency's plans to follow up the first historic unmanned mission. The book includes comparisons with the American shuttle system and offers accounts of the Soviet test pilots chosen for training to fly the system, and the operational, political and engineering problems that finally sealed the fate of Buran and ultimately of NASA's Shuttle fleet. **Women in Space - Following Valentina** Springer Science & Business Media Valentina Tereshkova was the first woman to orbit around Earth. Since this historic event, there has been approximately 100 female space explorers with spaceflight training or flight experience from America, Russia, Europe and Asia reflecting the evolution of the space program. **China in Space The Great Leap Forward** Springer Nature In 2019, China astonished the world by landing a spacecraft and rover on the far side of the Moon, something never achieved by any country before. China had already become the world's leading spacefaring nation by rockets launched, sending more into orbit than any other. China is now a great space superpower alongside the United States and Russia, sending men and women into orbit, building a space laboratory (Tiangong) and sending probes to the Moon and asteroids. Roadmap 2050 promises that China will set up bases on the Moon and Mars and lead the world in science and technology by mid-century. China's space programme is one of the least well-known, but this book will bring the reader up to date with its mysteries, achievements and exciting plans. China has built a fleet of new, powerful Long March rockets, four launch bases, tracking stations at home and abroad, with gleaming new design and production facilities. China is poised to build a large, permanent space station, bring back lunar rocks, assemble constellations of communications satellites and send spaceships to Mars, the moons of Jupiter and beyond. A self-sustaining lunar base, Yuegong, has already been simulated. In space, China is the country to watch. **Project Mercury NASA's First Manned Space Programme** Springer Science & Business Media Catchpole tells the fascinating story behind the development of the first American manned space program and its associated infrastructure. He provides accounts of the space launch vehicles, astronauts and their training, tracking systems and individual flights. **Gemini - Steps to the Moon** Springer Science & Business Media In Gemini - Steps to the Moon, David Shayler, the author, tells the story of the origin and development of the programme and the spacecraft from the perspective of the engineers, flight controllers and astronauts involved. It includes chapters on flight tests, Extra Vehicular Activity (EVA), rendezvous and docking, as well as information from NASA archives and personal interviews. **High Energy Cosmic Rays** Springer Science & Business Media Offers an accessible text and reference (a cosmic-ray manual) for graduate students entering the field and high-energy astrophysicists will find this an accessible cosmic-ray manual Easy to read for the general astronomer, the first part describes the standard model of cosmic rays based on our understanding of modern particle physics. Presents the acceleration scenario in some detail in supernovae explosions as well as in the passage of cosmic rays through the Galaxy. Compares experimental data in the atmosphere as well as underground are compared with theoretical models