

Emerging Space Powers The New Space Programs Of Asia The Middle East And South America Springer Praxis Books

This book examines the rise of great power competition in space, including the relevant and practical space strategies for China, Russia, the United States, and other countries. The work discusses the concepts and writings of past strategists, such as Thucydides, Sun Tzu, and Clausewitz, in relation to warfare initiated in or extending into space. This analysis underscores why polities initiate war based upon an assessment of fear, honor, and interest, and explains why this will also be true of war in space. Based upon the timeless strategic writings of the past, the book uncovers the strategy of space warfare, along with the concepts of deterrence, dissuasion, and the inherent right of self-defense, and outlines strategies for great, medium, and emerging space powers. Additionally, it highlights changes needed to space strategy based upon the Law of Armed Conflict, norms of behavior, and Rules of Engagement. The work also examines advancements and emerging trends in the commercial space sector, as well as what these changes mean for the implementation of a practical space strategy. Given the rise of great power competition in space, this work presents a space strategy based upon historical experience. This book will be of much interest to students of space policy, strategic studies, and International Relations.

This book discusses the need for national space legislation in India in the wake of private stakeholders entering the field and the expansion of outer space activities. Highlighting India's commitment to responsibly pursuing its outer space ambitions through rule of law, the book discusses the rationale behind national space legislation and addresses the requirements of both international and domestic law. In order to suggest draft framework national space legislation for India, it examines and compares the legislations of twenty major space-faring countries to identify the best practices. One of the few scientific studies in India that proposes draft framework legislation for space activities in India, this book summarizes the three main reasons why national space legislation is necessary – to fulfill international obligations, to address India's specific requirements and to enable non-governmental entities to participate. A must read for anyone interested in international space law and India's role and responsibility toward it, it is a valuable resource for academics, scientists, policymakers, industry executives, lawyers and students as well as amateur space enthusiasts.

Russia has been re-emerging as a major political and economic power during the last decade. The leadership of Russia claims that the objectives of transition from the former one-party socialist system to a plural multiparty democratic system and centralised planning to market economy are largely achieved. Russia is politically stable and has demonstrated how new political institutions, multiparty system are functioning under three presidents. In the initial years after the disintegration of the Soviet Union, the Russian economy passed through different phases such as crisis, boom and recovery. Russia has largely succeeded in managing its political and economic relations with "Near Abroad" which have witnessed considerable complexities over the last two decades. Russia has demonstrated that its bilateral ties with India in the political and defence sectors have been consistently cordial and close. However, trade and economic relations need to be strengthened. Notwithstanding its major achievements, Russia has been facing several problems, both in its domestic front and in its foreign relations. Some of the major problems on the domestic front are: over centralisation of power, nexus between state authorities, oligarchs and the bureaucracy, growing menace of corruption, surging political reactions by political parties and some former powerful leaders on various political issues, growing social discontent, issues between different ethnic groups, widening economic disparities among various sections of society and regions. On the external front, Russia has conflicts of interest with some former Soviet republics such as Georgia, Moldova, Ukraine and the Baltic states. Russia's relations with the US and NATO have been highly critical on political and security related issues. There is a need for an objective and critical evaluation of how Russia has managed its domestic and foreign affairs after the collapse of the Soviet Union. What were the successes and failures of Russia in its policies and performance with regard to the social, political and economic developments in the country? This book is an attempt to assess those developments.

This book examines the background and context of Latin America's political and socioeconomic landscape with a focus on space activities. Firstly, it discusses Latin America's contribution to this sector from an international relations perspective, and explores the debates around the establishment of a Latin American Space Agency. It then highlights space-related capacity building, Latin America's participation in UNCOUOS, and international space activities, agreements, and initiatives in Latin America. The second part is devoted to the national space infrastructures and space activities of Latin American states. It analyzes various spacefaring countries in the context of their intra-regional space relations and initiatives as well as their bi-lateral cooperation programs. This timely book is of interest to scholars and professionals working in the space field, especially those in Latin America and other emerging countries.

In this book the background and context of Africa's political and socio-economic landscape is presented and unpacked through a primary needs approach which focuses on climate, biodiversity, health, water, education, and space-related capacity building. African theoretical contributions from the International Relations field are discussed, and Africa's new Space Policy and Strategy, along with debates around the establishment of an African Space Agency, are explored. The African International Space Ecosystem is then analyzed, including its dimensions of intra-African space relations and initiatives, African participation in COUOS, and international space activities, agreements, and initiatives in Africa. The final part is dedicated to the national space infrastructure and activities of African states.

This empirically and theoretically grounded book provides insights into the ascendance of powers such as Turkey, South Korea and Indonesia and their relationship with Africa. Leading scholars present case studies from the BRICS and beyond to demonstrate the constantly evolving and complex character of these ties and their place in the global capitalist order. They also offer new theoretical insights, as well as theorisation of the spatio-temporal dynamics involved in processes of accumulation within the African space. Their contention is that, despite their supposed anti-imperialism, these emerging powers have become agents for continued uneven development. This innovative edited collection will appeal to students and scholars of international relations, political science, development studies, area studies, geography and

economics.

Capital cities have been the seat of political power and central stage for their state's political conflicts and rituals throughout the ages. In the modern era, they provide symbols for and confer meaning to the state, thereby contributing to the "invention" of the nation. Capitals capture the imagination of natives, visitors and outsiders alike, yet also express the outcomes of power struggles within the political systems in which they operate. This volume addresses the reciprocal relationships between identity, regime formation, urban planning, and public architecture in the Western world. It examines the role of urban design and architecture in expressing (or hiding) ideological beliefs and political agenda. Case studies include "old" capitals such as Rome, Vienna, Berlin and Warsaw; "new" ones such as Washington DC, Ottawa, Canberra, Ankara, Bonn, and Brasília; and the "European" capital Brussels. Each case reflects the authors' different disciplinary backgrounds in architecture, history, political science, and urban studies, demonstrating the value of an interdisciplinary approach to studying cities.

"This volume explores some of the 21st century's most challenging questions in international peace and security, with a focus on a crucial region: South Asia. The authors have done a great public service by straightforwardly and lucidly presenting their penetrating analyses to a general readership." Lee H. Hamilton, President and Director of the Woodrow Wilson International Center for Scholars and former Vice Chairman of the 9/11 Commission. "South Asia at a Crossroads is an important contribution to the literature on global peace and security. The book brings together a broad range of perspectives - both global and regional - on complex security challenges, especially those underlined by science and technology. The book should be a valuable resource for all those who want to better understand the various dimensions of the conflict in South Asia." Professor Paolo Cotta-Ramusino is the Secretary General of the International Pugwash Conferences on Science and World Affairs, which was awarded the Nobel Peace Prize in 1995. He is a Professor of Physics at the University of Milan, Italy.

The Asian urban landscape contains nearly half of the planet's inhabitants and more than half of its slum population living in some of its oldest and densest cities. It encompasses some of the world's oldest civilizations and colonizations, and today contains some of the world's fastest growing cities and economies. As such Asian cities create concomitant imagery – polarizations of poverty and wealth, blurred lines between formality and informality, and stark juxtapositions of ancient historic places with shimmering new skylines. This book embraces the complexity and ambiguity of the Asian urban landscape, and surveys its bewildering array of multifarious urbanities and urbanisms. Twenty-four essays offer scholarly reflections and positions on the complex forces and issues shaping Asian cities today, looking at why Asian cities are different from the West and whether they are treading a different path to their futures. Their combined narrative – spanning from Turkey to Japan and Mongolia to Indonesia - is framed around three sections: Traditions reflects on indigenous urbanisms and historic places, Tensions reflects on the legacies of Asia's East–West dialectic through both colonialism and modernism and Transformations examines Asia's new emerging utopias and urban aspirations. The book claims that the histories and destinies of cities across various parts of Asia are far too enmeshed to unpack or oversimplify. Avoiding the categorization of Asian cities exclusively by geographic location (south-east, Middle East), or the convenient tagging of the term Asian on selective regional parts of the continent, it takes a broad intellectual view of the Asian urban landscape as a 'both...and' phenomenon; as a series of diverse confluences – geographic, historic and political – extending from the deserts of the Persian Gulf region to the Pearl River Delta. Arguing for Asian cities to be taken seriously on their own terms, this book represents Asia – as a fount of extraordinary knowledge that can challenge our fundamental preconceptions of what cities are and ought to be.

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. 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.

How does the spatial mind develop? In this book, Jodie Plumert and John Spencer bring together the leading researchers from the field of spatial cognitive development to examine how the spatial mind emerges from its humble origins in infancy and becomes its mature, flexible, and skilled adult form. The work presented sheds light on how the emerging spatial mind is fostered and shaped over time by our experiences of thinking about and interacting in the space around us. Each chapter presents cutting-edge research and theory that addresses the two pivotal questions of what changes in the spatial mind, and how these changes come about. The authors provide both conceptual and formal theoretical accounts of developmental process at multiple levels of analysis--genes, neurons, behaviors, social interactions--creating a contemporary overview of the general mechanisms of cognitive change. Commentary chapters show how the developmental advances discussed in these accounts fit into our understanding of not only spatial cognitive development, but also spatial cognition more generally.

The contributions in this book reflect on the growing diversification of space law and is divided in two parts. The first part provides a look at the current developments in international space law and regulation and the second part investigates future perspectives of this process. It is only recently that international space law entered its third phase of development. While the first phase, between the 1960s and 1970s, was characterized by the elaboration of international conventions in the framework of the United Nations, the second phase saw the adoption of special legal regimes in the form of UN General Assembly Resolutions which were dealing with issues like direct broadcasting by satellites (DBS), remote sensing (RS) and the use of nuclear power sources (NPS) in outer space. The third and current phase received its impetus from the growing commercialization of space activities and their emerging privatization. Therefore the main characteristics of this period relate to the efforts of adapting international space law to these recent changes and of finding ways and means to reconcile State interests with commercial perspectives. This book forms a welcome addition to any collection in the field of space law and is a refreshing contribution to the discussion in the field.

Numerous countries and regions now have very active space programs, and the number is increasing. These maturing capabilities around the world create a plethora of potential partners for cooperative space endeavors, while at the same time heightening competitiveness in the international space arena. This book summarizes a public workshop held in November 2008 for the purpose of reviewing past and present cooperation, coordination, and competition mechanisms for space and Earth science research and space exploration; identifying significant lessons learned; and discussing how those lessons could best be applied in the future, particularly in the areas of cooperation and collaboration. Presentations and initial discussion focused on past and present experiences in international cooperation and competition to identify "lessons learned." Those lessons learned were then used as the starting point for subsequent discussions on the most effective ways for structuring future cooperation or coordination in space and Earth science research and space exploration. The goal of the workshop was not to develop a specific model for future cooperation or coordination, but rather to explore the advantages and disadvantages of various approaches and stimulate further deliberation on this important topic.

This book examines emerging defense technologies such as directed energy weapons, nanotech devices, and bioscience applications that have the potential to dominate international relations in the future, just as nuclear weapons and space infrastructure-assisted conventional weapons do now.

Making European Space crystallises and critically examines the key policy ideas emerging in the new field of European spatial planning, and explores the arguments surrounding policy themes such as polycentric development, sustainability,

This book analyses the rationale and history of space programs in countries of the developing world. Space was at one time the sole domain of the wealthiest developed countries. However, the last couple of decades of the twentieth century and the first decade of the twenty-first century have witnessed the number of countries with state-supported space programs blossom. Today, no less than twenty-five developing states, including the rapidly emerging economic powers of Brazil (seventh-largest), China (second-largest), and India (fourth-largest), possess active national space programs with already proven independent launch capability or concrete plans to achieve it soon. This work places these programs within the context of international relations theory and foreign policy analysis. The author categorizes each space program into tiers of development based not only on the level of technology utilised, but on how each fits within the country's overall national security and/or development policies. The text also places these programs into an historical context, which enables the author to demonstrate the logical thread of continuity in the political rationale for space capabilities generally. This book will be of much interest to students of space power and politics, development studies, strategic studies and international relations in general.

Technologies that enable powering a device without the need for being connected with a cable to the grid are gaining attention in recent years due to the advantages that they provide. They are a commodity to users and provide additional functionalities that promote autonomy among the devices. Emerging Capabilities and Applications of Wireless Power Transfer is an essential reference source that analyzes the different applications of wireless power transfer technologies and how the technologies are adapted to fulfill the electrical, magnetic, and design-based requirements of different applications. Featuring research on topics such as transfer technologies, circuit analysis, and inductive power transfer, this book is a vital resource for academicians, electrical engineers, scientists, researchers, and industry professionals seeking coverage on device power and creating autonomy through alternative power options for devices.

This project provides a general roadmap for nations to build space sector capacity. It discusses why various nations would want to pursue involvement in space, noting that different cultures can have vastly different rationales. It also addresses the opportunity losses of not developing a space sector. Next, the report discusses the dominant space powers, public and private markets, and recent trends to provide a clear picture of the global space landscape. It then present an analysis of thirteen established space nations, using examples from these case studies to build an evidence-based roadmap for space sector capacity building. ARESS includes general principles which are universally applicable, yet also provides a method for nations to identify specific steps based on existing strengths, geopolitical context, and rationales. The ARESS report will be an asset for nations wishing to engage in space sector development.

The book speaks to the need for a regulatory framework with regards to space resource utilization. In doing so, significant elements of the subject matter have been explored, taking into account the different phases of a space mission and the perspectives of the various actors and participants in the space arena. The book tackles the subject matter from a number of angles. An analysis of the current national and international governance frameworks is performed, with regards to resource extraction and utilization in space. The view of established and emerging space nations is analyzed next, specifically with extraction and utilization in mind, and in light of the new United State (US) Commercial Space Launch Competitiveness Act (CSLCA) of 2015. A brief analysis of the various budgets allocated to space exploration is given.

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