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Space Commercialization and the Development of Space Law from a Chinese Legal Perspective

Legal Aspects of Space Commercialization

Space Law:Views of the Future

Journal of Space Law

While decades of space ventures have led to significant technological advances, space activities have also brought increasing environmental problems. This book examines the current international legal regimes in space law and environmental law in order to ascertain their applicability and efficacy in addressing environmental threats in the space sector. The research suggests mechanisms which could improve environmental protection in the sector and strengthen the environmental element in space law. These mechanisms include a variety of norm-setting strategies used in international environmental management. Special

attention is drawn to the potential of environmental impact assessment in the space sector and to dispute resolution procedures. Like other areas of human activities, the space sector should accommodate both economic interests and environmental protection in line with the principle of sustainable development

International Space Cooperation

Space Law

In contrast to the close cooperation practiced among European states, space relations among Asian states have become increasingly tense. If current trends continue, the Asian civilian space competition could become a military race. To better understand these emerging dynamics, James Clay Moltz conducts the first indepth policy analysis of Asia's fourteen leading space programs, concentrating especially on developments in China, Japan, India, and South Korea. Moltz isolates the domestic motivations driving Asia's space actors, revisiting critical events such as China's 2007 antisatellite weapons test and manned flights, Japan's successful Kaguya lunar mission and Kibo module for the International Space Station (ISS), India's Chandrayaan lunar mission, and South Korea's astronaut visit to the ISS, along with plans to establish independent space-launch capability. He investigates these nations' divergent space goals and their tendency to focus on national solutions and self-reliance rather than regionwide cooperation and multilateral initiatives. He concludes with recommendations for improved intra-Asian space cooperation and regional conflict prevention. Moltz also considers America's efforts to engage Asia's space programs in joint activities and the prospects for future U.S. space leadership. He extends his analysis to the relationship between space programs and economic development in Australia, Indonesia, Malaysia, North Korea, Pakistan, the Philippines, Singapore, Taiwan, Thailand, and Vietnam, making this a key text for international relations and Asian studies scholars.

Convention on Registration of Objects Launched Into Outer Space

Space, Legal and Commercial Issues

The opening of space to exploration and use has had profound effects on society. Remote sensing by satellite has improved meteorology, land use and the monitoring of the environment. Satellite television immediately informs us visually of events in formerly remote locations, as well as providing many entertainment channels. World telecommunication facilities have been revolutionised. Global positioning has improved transport. This book examines the varied elements of public law that lie behind and regulate the use of space. It also makes suggestions for the development and improvement of the law, particularly as private enterprise plays an increasing role in space.

Air and Space Law

Addressing the issues resulting from the gradual merger between the two previously isolated regimes of human conduct relating to air and space law, this volume is essential reading for international and national lawyers and academics specializing in space and air law, as well as industry executives concerned with the merging interests of aviation and aerospace business endeavour.

Orbital Debris

Guide to International Legal Research

Annales de Droit Aérien Et Spatial

Proceedings of the Fifty-Second Colloquium on the Law of Outer Space

When international rules and regulations governing space travel were first being developed, only a few countries had any space presence and commercial space activity was non-existent. Today, over 50 countries have on-orbit satellites and commercial space presence is essential to commercial telecommunications and broadcasting, yet international space law remains in its infancy. Space Safety Regulations and Standards is the definitive book on regulatory initiatives involving space safety, new space safety standards, and safety related to new space technologies under development. More than 30 world experts come together in this book to share their detailed knowledge of regulatory and standard making processes in the area, combining otherwise disparate information into one essential reference and providing case studies to illustrate applications throughout space programs internationally. They address the international regulatory framework that relates to traditional space safety programs as well as the emerging regulatory framework that relates to commercial space programs, space tourism, and efforts to create commercial space station facilities. . Fully endorsed by the International Association for the Advancement of Space Safety (IAASS) and provides the only definitive reference on regulations and standards for the field of space safety Combines the technical, legal and regulatory information in a clear and integrated reference work suitable for technical professionals, regulators, legal experts, and students in the field Presents a truly global insight from experienced space safety experts worldwide, with representatives from the leading associations, institutions and companies operating in the arena today

Handbook for New Actors in Space

The book deals with the main themes in implementing international space law vis-àvis private enterprise theme by theme, with a specific focus on Europe in view of the complicating roles of ESA and the European Union in this context.

Launching Space Objects: Issues of Liability and Future Prospects

International Regimes for the Final Frontier

Al-Rodhan sheds new light on the debate about the geopolitics of outer space, going beyond applying traditional International Relations approaches to space power and security by introducing a multidimensional spatial framework. The metageopolitics framework includes space and expands classical power considerations to cover seven state capacities.

Meta-Geopolitics of Outer Space

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.

Crowded Orbits

Space Law

Asia's Space Race

United States Space Law

The Handbook of Space Law addresses the legal and regulatory aspects of activities in outer space and major space applications from a comprehensive and structured perspective. It fundamentally addresses the dichotomy between the state-oriented characte

Orbiting debris : a space environmental problem.

Challenges to Security in Space

Since the beginning of space flight, the collision hazard in Earth orbit has increased as the number of artificial objects orbiting the Earth has grown. Spacecraft performing communications, navigation, scientific, and other missions now share Earth orbit with spent rocket bodies, nonfunctional spacecraft, fragments from spacecraft breakups, and other debris created as a byproduct of space operations. Orbital Debris examines the methods we can use to characterize orbital debris, estimates the magnitude of the debris population, and assesses the hazard that this population poses to spacecraft. Potential methods to protect spacecraft are explored. The report also takes a close look at the projected future growth in the debris population and evaluates approaches to reducing that growth. Orbital Debris offers clear recommendations for targeted research on the debris population, for methods to improve the protection of spacecraft, on methods to reduce the creation of debris in the future, and much more.

National Space Legislation in Europe

Space has become increasingly crowded since the end of the Cold War, with new countries, companies, and even private citizens operating satellites and becoming spacefarers. This book offers general readers a valuable primer on space policy from an international perspective. It examines the competing themes of space competition and cooperation while providing readers with an understanding of the basics of space technology, diplomacy, commerce, science, and military applications. The recent expansion of human space activity poses new challenges to existing treaties and other governance tools for space, increasing the likelihood of conflict over a diminishing pool of beneficial locations and resources close to Earth. Drawing on more than twenty years of experience in international space policy debates, James Clay Moltz examines possible avenues for cooperation among the growing pool of space actors, considering their shared interests in space traffic management, orbital debris control, division of the radio frequency spectrum, and the prevention of military conflict. Moltz concludes with policy recommendations for enhanced international collaboration in space situational awareness, scientific exploration, and restraining harmful military activities.

Global Journal on Crime and Criminal Law

Handbook of Space Law

The Environmental Element in Space Law

This book is based on the findings, conclusions and recommendations of the Global Space Governance study commissioned by the 2014 Montreal Declaration that called upon civil society, academics, governments, the private sector, and other stakeholders to undertake an international interdisciplinary study. The study took three years to complete. It examines the drivers of space regulations and standards, key regulatory problems, and especially addresses possible

improvements in global space governance. The world's leading experts led the drafting of chapters, with input from academics and knowledgeable professionals in the public and private sectors, intergovernmental organizations, and nongovernmental organizations from all the regions of the world with over 80 total participants. This book and areas identified for priority action are to be presented to the UN Committee on the Peaceful Uses of Outer Space and it is hoped will be considered directly or indirectly at the UNISPACE+50 event in Vienna, Austria, in 2018. The report, a collective work of all the contributors, includes objective analysis and frank statements expressed without pressure of political, national, and occupational concerns or interest. It is peer-reviewed and carefully edited to ensure its accuracy, preciseness, and readability. It is expected that the study and derivative recommendations will form the basis for deliberations and decisions at international conferences and meetings around the world on the theme of global space governance. This will hopefully include future discussion at the UN Committee on the Peaceful Uses of Outer Space.

Frontiers of Aerospace Law

Limiting Future Collision Risk to Spacecraft

Space Environmental, Legal, and Safety Issues

Examines the negotiations between nations that lead to international agreements regulating human activity in outer space. Neither rational choice theory, with its emphasis on interest calculation, nor sociological institutionalist theory, with its emphasis on identity-defined rule following, indicates how governments determine which of their multiple interests or identities are at stake in a particular situation or how they develop mutual comprehension of each other's goals. International Regimes for the Final Frontier addresses these gaps by tracing how governments approach an unfamiliar issue—in this case, international agreements regulating human activity in outer space between 1958 and 1988—and examines three ways situation definitions channel governments' approaches to issues or problems. M. J. Peterson is Professor of Political Science at the University of Massachusetts at Amherst and is the author of Recognition of Governments: Legal Doctrine and State Practice, 1815–1995.

Global Space Governance: An International Study

This book will be the first English on space law written by a Chinese scholar. With the rapid development of space activities in China, many space scientist and lawyers are keen to know Chinese Legal views on policies and laws on space activities. The book discusses new development of space law in view of the rapid development of space commercial activities from a Chinese legal perspective. The topics selected in the book reflect the author's teaching and research in space law at four different universities: Leiden University, Erasmus University Rotterdam, City University of Hong Kong and the University of Hong Kong. Six areas of space law issues have been selected: property rights, space registration and liability regime,

launching services, telecommunications services, national space legislation and international space co-operation. All the topics are closely related to current Chinese space legislation and practice. When dealing with the above six issues, the author will first briefly discuss the current rules and practice at the international level, followed by in-depth analysis of Chinese situation. This will be a unique book. Those who are researching on space law and/or in charge of formulating national space policy will be especially interested in the elaboration of Chinese attitude toward space commercialisation and of the current Chinese space policies and laws.

Singapore Journal of International & Comparative Law

Launch activities performed by private entities deal with a complex legal environment. The Space Treaties provide a general liability framework. Launch participants are subject to regulatory or institutional control, and to domestic liability laws. Specific contractual practice has developed due to insurance limitations, the inter-participants' waivers of liability and claims. This book synthesizes information on the norms of play, to allow the grasp of their relative weight and interactions in the assessment of liability risk for launch activities. It reveals a legal framework presently lacking sufficient predictability for an efficient liability risk management: the waivers of liability suffer weaknesses as do all such clauses, and lack uniformity and reliability; and the Space Treaties contain ambiguous terms preventing predictable determination of the States responsible for authorizing and supervising launch activities and for damage compensation, and do not reflect the liability of launch operators. This book offers suggestions of new approaches for: harmonizing waivers of liability to improve their consistency, validity and flow-down; and improving the Space Treaties for their implementation to non-governmental launch activities. In the launch community, the need for lawmaking is less compelling than in fields such as aviation. Nevertheless, adjustments to the present framework are proposed through model clauses and an international instrument, for further thinking and contribution by those sharing the opinion that creative lawmaking is needed now to prepare for tomorrow's endeavors.

Space Safety Regulations and Standards

Proceedings of the International Conference on Air and Space Policy, Law, and Industry for the 21st Century, held in Seoul from 23-25 June 1997.

The Utilization of the World's Air Space and Free Outer Space in the 21st Century:Proceedings of the International Conference on Air and Space Policy, Law and Industry for the 21st Century, Held in Seoul from 23-25 June, 1997

The Secure World Foundation developed the Handbook for New Actors in Space, which is intended to provide nations, established satellite operators, start-up companies, universities, and other space actors with a broad overview of the fundamental principles, laws, norms, and best practices for peaceful, safe, and responsible activities in space.

Revue de droit uniforme

Today, space has become a seamless part of many military and civilian activities. The advantages the United States holds in space capabilities will drive some nations to improve their abilities to access and operate in space. Moreover, some actors will seek counterspace capabilities that target the perceived United States and allied reliance on space, including the ability to use secure satellite communications, precision strike capabilities, and ISR assets. As the number of spacefaring nations grows and as some actors integrate space and counterspace capabilities into military operations, these trends will pose a challenge to U.S. space dominance and present new risks for assets on orbit.

Modeling, Simulation, and Verification of Space-based Systems

Derelict satellites, equipment and other debris orbiting Earth (aka space junk) have been accumulating for many decades and could damage or even possibly destroy satellites and human spacecraft if they collide. During the past 50 years, various National Aeronautics and Space Administration (NASA) communities have contributed significantly to maturing meteoroid and orbital debris (MMOD) programs to their current state. Satellites have been redesigned to protect critical components from MMOD damage by moving critical components from exterior surfaces to deep inside a satellite's structure. Orbits are monitored and altered to minimize the risk of collision with tracked orbital debris. MMOD shielding added to the International Space Station (ISS) protects critical components and astronauts from potentially catastrophic damage that might result from smaller, untracked debris and meteoroid impacts. Limiting Future Collision Risk to Spacecraft: An Assessment of NASA's Meteoroid and Orbital Debris Program examines NASA's efforts to understand the meteoroid and orbital debris environment, identifies what NASA is and is not doing to mitigate the risks posed by this threat, and makes recommendations as to how they can improve their programs. While the report identified many positive aspects of NASA's MMOD programs and efforts including responsible use of resources, it recommends that the agency develop a formal strategic plan that provides the basis for prioritizing the allocation of funds and effort over various MMOD program needs. Other necessary steps include improvements in long-term modeling, better measurements, more regular updates of the debris environmental models, and other actions to better characterize the long-term evolution of the debris environment.

The Comprehensive Guide to International Law

Space-based observations have transformed our understanding of Earth, its environment, the solar system and the universe at large. During past decades, driven by increasingly advanced science questions, space observatories have become more sophisticated and more complex, with costs often growing to billions of dollars. Although these kinds of ever-more-sophisticated missions will continue into the future, small satellites, ranging in mass between 500 kg to 0.1 kg, are gaining momentum as an additional means to address targeted science questions in a rapid, and possibly more affordable, manner. Within the category of small satellites, CubeSats have emerged as a space-platform defined in terms of (10 cm

x 10 cm x 10 cm)- sized cubic units of approximately 1.3 kg each called "U's." Historically, CubeSats were developed as training projects to expose students to the challenges of real-world engineering practices and system design. Yet, their use has rapidly spread within academia, industry, and government agencies both nationally and internationally. In particular, CubeSats have caught the attention of parts of the U.S. space science community, which sees this platform, despite its inherent constraints, as a way to affordably access space and perform unique measurements of scientific value. The first science results from such CubeSats have only recently become available; however, guestions remain regarding the scientific potential and technological promise of CubeSats in the future. Achieving Science with CubeSats reviews the current state of the scientific potential and technological promise of CubeSats. This report focuses on the platform's promise to obtain high- priority science data, as defined in recent decadal surveys in astronomy and astrophysics, Earth science and applications from space, planetary science, and solar and space physics (heliophysics); the science priorities identified in the 2014 NASA Science Plan; and the potential for CubeSats to advance biology and microgravity research. It provides a list of sample science goals for CubeSats, many of which address targeted science, often in coordination with other spacecraft, or use "sacrificial," or high-risk, orbits that lead to the demise of the satellite after critical data have been collected. Other goals relate to the use of CubeSats as constellations or swarms deploying tens to hundreds of CubeSats that function as one distributed array of measurements.

Achieving Science with CubeSats

Cogen (international law, Ghent U., Belgium) presents an overview of the history and current status of international law. Chapters discuss the sources of international law, the history of international law, states and territories, the rights and responsibilities of states, the global commons, international organizations, the individual, diplomatic and consular law, the law of treaties, and the laws regarding armed activities. The focus of the work is on the straightforward presentation of the principles and rules of international law in these key areas.--

Space, Legal and Commercial Issues, 1988

In the area of space law this service provides: U.S. regulations, important U.S. cases, reports of U.S. government agencies concerning space activity, international regulations, bilateral & multilateral treaties, agreements & conventions, UN resolutions selected, foreign regulations & more.

Proceedings

Summarizes the outcome of the activities of the fifth workshop in the AIAA series in preparation for the UNISPACE III conference.

ROMANCE ACTION & ADVENTURE MYSTERY & THRILLER BIOGRAPHIES & HISTORY CHILDREN'S YOUNG ADULT FANTASY HISTORICAL FICTION HORROR LITERARY FICTION NON-FICTION SCIENCE FICTION