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The entire world has entered the New Space Era. Advances in technology have decreased the costs of entry into the space industry. This has opened the door to outer space exploration and utilization for private entities including large commercial corporations, innovators, and start-ups. Consequently, in the last decade, the states have effectively lost their previous monopoly on space activities. This robust process of space commercialization and privatization is not limited to space tourism, which has garnered the most media attention. It includes a myriad of other space activities; for example, providing connectivity for the Internet of Things (IoT) and the production of pharmaceuticals in space (space pharmacy). At the same time, extraction of materials from asteroids and other minor planets, including near-Earth objects (space mining), has recently become the subject of intensive discussions. These developments have led to intense legislative activity. Over the last decade, national space acts have been adopted in various European states and beyond. Further, on June 25, 2025, a proposal for a Regulation of the European Parliament and of the Council on the safety, resilience, and sustainability of space activities in the Union (hereinafter EU Space Law)1 was published. These recent developments have sparked a significant surge in interest in legal scholarship. The book *Prawo* kosmiczne międzynarodowe, europejskie i krajowe [International, European, and National Space Law], published in Warsaw by C.H. Beck in 2025,



¹ Brussels, 25 June 2025 COM(2025) 335 final.

represents a timely contribution of Polish legal science to the flourishing scholarship of space law.

This book review argues that the newly published *Prawo kosmiczne międzynarodowe, europejskie i krajowe* represents a comprehensive study of all significant aspects of space law, which may serve as a template for similar future publications in Central Europe. In my book review, I would like to first present the content of the reviewed book to the readers of this journal. A few critical observations on the content of the reviewed book will follow this part.

The newly published *Prawo kosmiczne międzynarodowe, europejskie i krajowe* was edited by K. Myszona-Kostrzewa and Z. Kulińska-Kępa from the Faculty of Law and Administration at the University of Warsaw. The book is a result of the joint efforts of nineteen authors from various universities in Poland. The book contains 390 pages, including an introduction and an index. As is usual with books published by C.H. Beck, the reviewed book is carefully divided into chapters and sub-chapters, with each chapter beginning with a summary of existing literature on the selected topic.

The reviewed book is divided into six chapters. The first of them is dedicated to "Kosmos i prawo międzynarodowe" ["Space and International Law"].2 This first chapter opens with an outline of international space law as an academic discipline, written by K. Myszona-Kostrzewa. Here, the author explores various scholarly approaches to the delimitation of this subject, citing both eminent Polish and foreign scholars. For a reader from the Czech Republic, it is very pleasing to read a reference to the work of Vladimír Mandl, who is being referred to as a "grandfather" of space law. K. Myszona-Kostrzewa also authored the following two sub-chapters, dealing with the legal status of outer space on one hand and with the legal status of space objects (that is, human-made objects in outer space) on the other. With respect to the legal status of space, the author outlines both the delimitation of space vis-à-vis airspace and the basic concepts that currently govern the exploration and utilization of outer space. The author pays considerable attention to the non-appropriation principle, which is significant for the prospective space mining projects. This outline is followed by a sub-chapter dedicated to the environmental protection of outer

At pp. 1–149.

space and celestial bodies. Here, D. Kuźniar first analyses the concept of space environment and identifies the primary sources of its pollution. In this respect, the author addresses the existing legal framework, as adopted to combat space pollution and its most significant gaps. While extensively dealing with international and EU tools to address this issue, the author does not mention that all the national space acts adopted in Europe over the last decade also contain provisions on mitigating space debris. The next sub-chapter is dedicated to the concept of international responsibility of the states in space and is co-authored by K. Myszona-Kostrzewa and M. Matusiak.

The second chapter of the reviewed book is on the institutional form of cooperation in outer space.³ This chapter is opened by the sub-chapter on space diplomacy from A. Misztal. He also authored the following text, outlining the role of the United Nations in establishing the legal and regulatory framework for outer space. The fact is, however, that international cooperation among the states in outer space is not limited to the United Nations. Therefore, the following sub-chapters deal with the International Telecommunication Union (ITU) (authored by S. Rudnik), the organizations providing satellite communication (INTELSAT, INMARSAT, and EUTELSAT) (written by A. Gubrynowricz), and with the European Space Agency (ESA) (written by K. Myszona-Kostrzewa). The final sub-chapter addresses the role of the European Union in space exploration and utilization. Here, M. Beer and A. Kosińska pay attention firstly to the historical developments of the EU's activities in outer space. Then, he analyzes competences and activities of the Agency for the EU Space Programme (EUSPA) and the components of this Programme. The authors also very briefly deal with the most recently launched component IRIS2 (Infrastructure for Resilience, Interconnectivity, and Security by Satellite), which was commenced in December 2024. The reviewed book was published in May 2025. Consequently, the second chapter does not contain information on the newly proposed EU Space Law, which was disclosed in June 2025.

The third chapter of the reviewed book deals with commercial activities in outer space.⁴ This chapter is opened by a sub-chapter, authored by

³ At pp. 69–148.

⁴ At pp. 149–245.

M. Lutek and devoted to the financing of space activities. The next subchapter, written by K. Malinowska, deals with the insurance of space activities. Here, the author presents a very concise analysis of the role of insurance in the space industry. Also, she analyses various space activities and the specifics of their insurance. Lastly, K. Malinowska points out some existing national space acts and insurance obligations arising in this respect. While she deals with the content of those national space acts, issued more than a decade ago, she is not paying attention to those issued very recently. Regarding the planned spaceport on the Azores Archipelago, the national space act adopted in Portugal in 2019 may be of significant interest to readers. Neither K. Malinowska is dealing with special provisions in the recently adopted national space acts, which relieve operators from an insurance obligation in the case of space activities being conducted for research and educational purposes. The subsequent chapters address further topical aspects of commercial activities in outer space, including space traffic management (authored by M. Lutek and M. Matusiak), suborbital flights (authored by M. Piotrowski), and satellite technologies (authored by K. Myszona-Kostrzewa). The last sub-chapter is devoted to the very topical issue of space mining. Here, B. Skardzińska firstly outlines prospective space mining projects and explains which minerals could be extracted in outer space in the future. Then, she addresses the two sensitive issues the relation of space mining to the non-appropriation principle and the issue of ownership of the minerals. It is a matter of fact that there are four states worldwide that have already enacted their own national space mining acts - the USA, the Grand Duchy of Luxembourg, the United Arab Emirates, and Japan. The author briefly analyses the content of this legislation and points out the way forward.

The fourth chapter of the reviewed book is entitled "Kosmos i człowiek" ["Space and the Human Being"] and deals with various aspects of human presence in outer space. The fourth chapter is opened by a sub-chapter, written by Z. Kulińska-Kępa, which deals with the legal status of astronauts and space tourists. Addressing the legal issues arising from the growing popularity of space tourism is particularly timely, given current developments. Z. Kulińska-Kępa also authored the subsequent sub-chapter, which

⁵ At pp. 245–81.

deals with the international protection of human rights with respect to new space technologies. Here, the author addresses the protection of human rights in relation to satellite navigation and tele-detection. M. Pietkiewicz writes the last sub-chapter of the fourth chapter. It addresses the issue of criminal jurisdiction over activities in outer space. In the same vein as space tourism, the issue of extraterritorial applicability of criminal law in outer space is also very topical. In this respect, M. Pietkiewicz analyzes the Intergovernmental Agreement of 1998, outlining the framework for handling criminal matters on the International Space Station (ISS), which gives each participating country jurisdiction over its nationals. The fact is that the prospective utilization of outer space will not be limited to the ISS. Projects for lunar human settlements are currently under discussion worldwide - see, for example, the Moon Village, which has been under development by ESA. However, the reviewed sub-chapter does not address the issues of criminal law application vis-á-vis future permanent human settlements in outer space. Having said this, I would like to add one remark here. The fourth chapter addresses the issue of human existence in outer space from a purely human perspective. The fact is, however, that current scholarship has already addressed space activities from other perspectives, beyond the human perspective.⁶

In its fifth chapter, the reviewed book examines issues related to military activities in outer space. This chapter is composed of two sub-chapters. The first one, written by M. Polkowska, deals with the outline of existing military (defense) activities in outer space. Here, the author outlines the applicability of existing international control regimes to military activities in outer space. Additionally, the author briefly discusses the space military programs of the USA, China, and Russia. The second sub-chapter addresses the applicability of international humanitarian law in the context of a military conflict in outer space. M. Lutek authors this sub-chapter. Among other issues, he also addresses the highly topical concern of the use of artificial intelligence in space warfare.

⁶ See, for example, Michael Bohlander, Contact with Extraterrestrial Intelligence and Human Law (Leiden: Brill, 2023).

⁷ At pp. 281–329.

The last chapter of the reviewed book is devoted to the current legal framework for space activities in Poland.⁸ In stark contrast to many European countries, Poland had not adopted its own national space act at the time the reviewed book was published. However, a proposal of such national legislation exists and is subject to analysis in the first sub-chapter of this last chapter. Here, Z. Kulińska-Kępa briefly outlines the content of this proposal and perspectives of its future adoption. In the next sub-chapter, M. Lutek addresses the integration of Poland into the existing institutions of international cooperation in space exploration and utilization. Z. Kulińska-Kępa also authored the next sub-chapter of the reviewed book, outlining the Polish Space Agency (POLSA), which was established in 2014 and functions as an executive agency under the Polish Ministry of Economic Development and Technology. The very last sub-chapter was written by A. Okniński. It deals with space research and development under the Łukasiewicz Research Network – Institute of Aviation.

At this point, I would like to highlight the quality of the formal arrangements in the reviewed book, which fully reflects the high standards of publications published by C.H. Beck. I consider the reviewed book a significant contribution to the academic scholarship of space law. Having said this, however, I would like to offer some critical remarks on the reviewed book, which are largely conceptual.

The first remark concerns the EU Space Law. As already outlined above, the reviewed book couldn't cover the content of the newly proposed EU Space Law, which was published in June 2025 – that is, a month after the reviewed book was published. This proposal represents a significant step in EU Space Law, as it marks the first time in history that the European Union has proposed a directly applicable legal framework for space activities. For the time being, EU Space Law is treated in a single sub-chapter of the second chapter, which means that it is one of the forms of international cooperation in space exploration and utilization. However, it is crystal clear that the nature of cooperation within the European Union differs significantly from that of other institutions mentioned in this chapter. For example, in contrast to the European Space Agency (ESA) or the International Telecommunication Union (ITU), the European Union has the competence to

⁸ At pp. 329–72.

issue legally binding acts and thus establish a harmonized legal framework for its member states. When analyzing the current available proposals for EU Space Law, we clearly see that the establishment of a robust governance scheme within the EU is being envisaged for the future. Under this governance scheme, competences in the field of space activities will be shared between competent national authorities and EUSPA. This highlights the need to address EU Space Law in a separate and distinct chapter in the next edition of the book under review.

The second remark concerns the work with existing literature. As outlined above, each chapter is introduced by an overview of academic sources relevant to the issues discussed. This is a standard approach in the publications by C.H. Beck. After reviewing the literature, however, I have the impression that while older sources are well-represented, the most current ones are scarce. This remark explicitly concerns the legal issues that have become topically relevant in recent years. The issue of space mining could serve as a good demonstration of my argument. While B. Skardzińska refers to classical scholarly works from the 1960s and 1970s in the literature overview, the current published literature on this topic is not mentioned in the same overview. To be concrete: In 2024, M. Johnson published an outstanding study on property rights in outer space with Routledge. 9 In the same year, Gabrielle Leterre published a monograph on space mining and environmental sustainability in Wolter Kluwer's Aerospace Law and Policy Series.¹⁰ The previous year (2023), another book on space mining was published in the very same series. It focused on the governance of space mining and was authored by Antonino Salmieri.11 The fact is, however, that neither of these recently published books has been added to the literature overview. Consequently, I would urge the authors to provide a serious update of the literature review and to include more contemporary literature in the next edition.

Matthew Johnson, Property Rights in Outer Space: Mining, Techno-Utopian Imaginaries, and the Privatisation of the Off-World Frontier (London: Routledge, 2024).

Gabrielle Leterre, Protecting the Last Frontier: Space Mining and Environmental Sustainability (Alphen aan den Rijn: Wolters Kluwer, 2024).

Antonino Salmieri, The Multi-Level Governance of Space Mining (Alphen aan den Rijn: Wolters Kluwer, 2023).

My last critical remark concerns the terminology. In 2025, *Elgar Concise Encyclopedia of Space Law*, edited by M. Hofmann and P.J. Blount, was published by Edward Elgar Publishing. ¹² In the same year, Routledge published *The Future of Outer Space Law*, edited by Anna Brennan. ¹³ Lastly, the *Greek Space Law* was published in 2025 by Springer. ¹⁴ All these recently published books address international, EU, and national aspects of the law of space exploration and utilization. However, neither of them is entitled *International, European, and National Space Law*. The references to "international," "European," and "national" in the title of the reviewed book are somewhat redundant. It is crystal clear that *space law* represents a multidisciplinary phenomenon, cumulating aspects from both international public law, EU law, and domestic (national) law. Thus, calling the next edition of the book simply *Prawo kosmiczne* (Space Law) will better fit the terminology used recently in international scholarship.

The reviewed book makes a valuable contribution to the current scholarship in space law. It can serve both as a handbook for students and a basic introduction to the field of space law for interested professionals. It contains both theoretical viewpoints and chapters, addressing topical issues such as space mining or the use of artificial intelligence. The overall composition of chapters and sub-chapters covers all the significant problems in contemporary space law. Thus, the book can also serve as an inspiration for similar works, which will be written in other jurisdictions. At the same time, it is clear that a future update of the book will be necessary in the near future, particularly with respect to the prospective EU Space Law.

Mahulena Hofmann and P.J. Blount, eds., Elgar Concise Encyclopedia of Space Law (Cheltenham: Edward Elgar, 2025).

¹³ Anna Brennan, ed., *The Future of Outer Space Law* (Abingdon: Routledge, 2025).

Anthi Koskina and Manolis Plionis, *Greek Space Law. Collaborating with a Growing Space-Faring Country* (Cham: Springer, 2025).