Hobe

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by

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To the memory of my parents

Foreword

Why another book on space law? This is a very legitimate question. There are many good books on the market, which range from a depiction of space law from the early days of space-law making to the present day. This book represents an attempt to portray space law in a handy form and to provide the reader with the essential tools to understand the legal framework of human activities in outer space. With this, it is hoped that this work will complement the other treatises on space law in a welcome way.

Born out of the experience of my teaching in Beijing, Beirut, Cologne, Gujarat, Dhaka, Paris, Pretoria, Sofia, Vienna and Warsaw where I am regularly engaged, I thought it may be useful to draft something based on the relevant technological and scientific background of space law and to describe the history of space law and its central concepts in a concise way. In doing so, emphasis was given to describing the general legal picture in as complete a way as possible rather than following each argument of the discussion in full depth. The entire book thus is an attempt to highlight the "grand dessin" of the legal framework for human activities in outer space.

The endeavor to write a book of this caliber requires helping hands. First and foremost, I would like to thank my assistant Ms Rada Popova who, with her in-depth knowledge and extreme dedication as well as her enthusiasm, was very helpful in the process of writing and completing this book from the beginning. Regarding the technical part, namely the astrophysical details, Dr. Christian Fromm, University of Frankfurt, has conducted the necessary checks, which I gratefully acknowledge. Finally my secretary, Ms Daniela Scholz, has typed up the entire manuscript with her usual diligence. Student assistants Ms Hanna Keller, Mr Jonathan Badstieber, Mr Niklas Kaupert, Ms Lara Gräwe, Mr Michel Küppers, Ms Lisa Schöttmer and Mr Julian Zaschke also assisted in proofreading the text. It is, however, important to mention that I alone take full responsibility for any flaws and inaccuracies.

The book is dedicated to the memory of my parents who with their love laid the basis for everything. Unfortunately, I cannot undertake the promised trip to the Moon hotel with them anymore.

Critical and constructive comments can be directed to Stephan Hobe, Institute of Air Law, Space Law, and Cyber Law, University of Cologne, Albertus-Magnus-Platz, 50923 Köln, stephan.hobe@uni-koeln.de.

Cologne, February 2019 Stephan Hobe

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UNITED NATIONS TREATIES ON OUTER SPACE

Literature

Books

The following list encompasses the literature that serves at giving a comprehensive description of the development of space law.

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German Journal of Air and Space Law (Zeitschrift für Luft- und Weltraumrecht, ZLW) (since 1951). Originally published as Archiv des Gesamten Luftrechts (1926–1930) and Archiv für Luftrecht (1931–1950). Edited by the Institute of Air Law, Space Law and Cyber Law, Faculty of Law, University of Cologne and published by Heymanns.

Journal of Space Law (since 1973) published by the University of Mississippi (until 2003) and the National Center for Remote Sensing, Air and Space Law (since 2003).

Proceedings of the International Institute of Space Law (since 1959). Originally published as Proceedings of the Colloquium on the Law of Outer Space. Edited by the International Institute of Space Law since 1960 and published by Eleven International Publishing since 2011.

Revue Française de Droit Aérien et Spatial (since 1988). Originally published as Revue Française de Droit Aérien (1947–1988).

Revue Générale de l' Air et de l' Espace (since 1974). Originally published as Revue Générale de l'Air (1964–1974).

Space Policy (since 1985), published by Elsevier.

Yearbook on Space Policy (since 2008), edited by the European Space Policy Institute and published by Springer.

List of abbreviations

ACAS	Airborne Collision Avoidance System
Art.	Article
ASAT	Anti-Satellite Weapons
BITs	Bilateral investment treaties
CFR	Code of National Regulations
CJEU	Court of Justice of the European Union
CNES	Centre National d'Ètudes Spatiales
CoD	Conference on Disarmament
DLR	German Aerospace Centre
Doc.	Document
DSB	Dispute Settlement Body
e.g.	for example
EAC	European Astronaut Centre
EASA	European Aviation Safety Agency
ECHR	European Court of Human Rights
ECSL	European Centre for Space Law
ed./eds.	Editor/editors
edn	Edition
ELDO	European Launch Development Organization
ENMOD	Environmental Modification Convention of 1976
ESA	European Space Agency
ESAC	European Space Astronomy Centre
ESCAT	European Centre for Space Applications and Telecommunications
ESOC	European Space Operations Centre
ESRIN	European Space Research Institute
ESRO	European Space Research Organisation
ESTEC	European Space Research and Technology Centre
etc.	*et cetera*
EU	European Union
EUMETSAT	European Organisation for the Exploitation of Meteorological Satellites
EUTELSAT	European Telecommunications Satellite Organization
FAA	Federal Aviation Administration
ff.	the following pages
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
GEO	Geostationary orbit
GGE	Group of Governmental Experts
GNSS	Global Navigation Satellite System
GPS	Global Positioning System
HAPS	High Altitude Pseudo Satellites
IAA	International Academy for Astronautics
IADC	Inter-Agency Space Debris Coordination Committee

List of abbreviations

Ibid.	*Ibidem*
ICBM	Intercontinental Ballistic Missiles
ICAO	International Civil Aviation Organization
ICC	International Criminal Court
ICJ	International Court of Justice
ICTY	International Criminal Tribunal for Yugoslavia
IGA	Intergovernmental Agreement
IISL	International Institute of Space Law
ILA	International Law Association
ILC	International Law Commission
IMO	International Maritime Organization
IMSO	International Mobile Satellite Organization
IRBM	Intermediate-range ballistic missiles
ISS	International Space Station
ITLOS	International Tribunal for the Law of the Sea
ITSO	International Telecommunications Satellite Organization
ITU	International Telecommunications Union
JAXA	Japan Aerospace Exploration Agency
LEO	Low Earth orbit
lit.	*litera*
MEO	Medium Earth orbit
mn	Marginal number
MRBMs	Medium-range ballistic missiles
no.	number
NASA	National Aeronautics and Space Administration
NPS	Nuclear power sources
OST	Outer Space Treaty
para	paragraph
PAROS	Proposed Prevention of an Arms Race in Space
PCA	Permanent Court of Arbitration
PCIJ	Permanent Court of International Justice
PNTBT	Partial Nuclear Test Ban Treaty
p./pp.	page/pages
Rep.	Report
Res.	Resolution
ROSCOSMOS	Roscosmos State Corporation for Space Activities
SDR	Special Drawing Rights
SETI	Search for Extraterrestrial Intelligence
SRBMs	Short-range ballistic missiles
SSA	Space Situational Awareness
STM	Space Traffic Management
UK	United Kingdom
UN	United Nations
UNCOPUOS	United Nations Committee on the Peaceful Uses of Outer Space
UNCLOS	United Nations Convention on the Law of the Sea
UNGA	United Nations General Assembly

UNIDROIT	International Institute for the Unification of Private Law
UNOOSA	United Nations Office for Outer Space Affairs
USA	United States of America
USSR	Union of Soviet Socialist Republics
VCLT	Vienna Convention on the Law of Treaties
WIPO	World Intellectual Property Organization
WRC	World Radiocommunication Conference
WTO	World Trade Organization

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The UN Headquarters in Vienna, Austria, where the sessions of UNCOPUOS and its two committees are taking place annually: https://en.wikipedia.org/wiki/United_Nations_Office_at_Vienna#/media/File:Vienna_International_Centre.jpg

Chapter 10

The mechanism of remote sensing: Kalina Hristova

An exemplary satellite navigation system: Kalina Hristova

Launch sites (active and historic ones): by kind permission of Dr. Christian Fromm

Chapter 11

Overview: Rada Popova

Overview: Rada Popova

Overview: Rada Popova

Chapter 12

PCA Rules: Rada Popova

"To confine our attention to terrestrial matters would be to limit the human spirit."

Steven Hawking