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978-0-521-03022-9 - A New Force at a New Frontier: Europe's Development in the Space Field in the Light of its Main Actors, Policies, Law and Activities from its Beginnings Up to the Present

Kevin Madders

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This is the first comprehensive work on the European space sector. Written by an acknowledged expert and former space agency official, the work opens up a vital component of Europe's technostructure and the world's space programmes. Its mass of information will serve the insider as a handy reference while its lively analysis will assist public judgement of European space efforts.

The book first explores the Space Age's origins and Europe's response up to the 1970s. It then devotes its bulk to the present scene by investigating ESA, Eutelsat, Arianespace, Eumetsat, ASTRA, national agencies and other bodies. How this scene works, what has been achieved, how space technology is made and used and how policy is formed are main concerns, but of interest too are various crises, including recently in connection with Europe's man-in-space programme. The book identifies challenges for the space community, business, and the EU and how they may be met.

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# A New Force at a New Frontier

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*Europe's development in the space field  
in the light of its main actors, policies, law and  
activities from its beginnings  
up to the present*

KEVIN MADDERS



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To my wife Susanne and my daughters  
Michelle, Louisa and Vivienne

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## Preface

Each age is shaped by particular expressions of power and by particular tools. The Athenian city-state's galleys and the Greek mastery of metals and alphabetic script gave rise to a vibrant maritime civilization whose gifts we still cherish. Later, coalescing nations, the Church, guns and the vessels of that time opened a period of unrelenting expansion that Europeans have labelled the Age of Discovery. That era's legacy of worldwide dominions would, in the industrial epoch, be joined together not only by ship and military might but also by commerce, aircraft and the telephone. As for our own age, this is still being defined by contexts of power and technology whose significance only our descendants will fully be able to gauge. But prominent among them must count two developments – the opening of a new and this time truly boundless realm, space, and the arrival of a new polyglot, polyform polity, “Europe”.

It is the intersection of these contexts that provides the subject for this book: Europe, as it has dealt with the challenge of space.

### PURPOSE

The aim is to provide within these covers the first reasonably comprehensive reference work on Europe's space field, an aim which deserves both explanation and qualification.

By way of explanation, it is common experience that lack of easy access to details concerning who does what in the field, let alone why, is a hindrance to insiders; and those outside have surprisingly little access at all. My goal is therefore to build up a sufficient picture of the main players and their activities, of how they are organized and have evolved, and of the principal issues currently facing the sector. This involves presenting a basic story of general interest and also the analysis of policy, legal and institutional aspects and the provision of information on infrastructure, programmes and international relations. Most of this subject matter has hitherto escaped treatment in a single source, and a good part has eluded research altogether.

Such a wide subject matter requires qualification firstly as to the depth of treatment. My goal calls for sufficiency – not exhaustiveness – and, while a concentration on policy and institutional issues gives the inquiry its backbone, I have been alive to the fact that the space field rests on the sum of many specializations, some technical, some scientific and some legal and administrative. My approach to selection in this context has been influenced both by the relevance of information to a broad presentation and by my own limitations as a generalist. I confine my presentation of technologies in particular to the



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level of programmes, and even there I felt it necessary to seek the help of experts in the technical and scientific domains concerned. A physicist or engineer would certainly be keen to add more detail, but it is also worth saying that an established journal literature does exist for several of the relevant areas. Similarly, an academic or administrative historian would include a more extensive and sophisticated historical analysis than I have attempted. But, for those seeking a detailed history, one is currently being prepared, in my estimation to the highest academic standards, by a team at the European University Institute in Florence. Reference is made to the team's work to the extent that it was available; if in doubt, I have also normally preferred its evidence.

### EMPHASES SERVING PARTICULAR READER INTERESTS

A book of wide scope about a field lends itself to serving the interested lay-person – and it is my first concern that the general reader will find the bulk of the material accessible – but such a book's analysis and information should also cater for the insider's main points of interest. Here, it is the space policy-maker and manager in the broadest sense whom I bore most in mind, then those in the space industry more broadly including the commercial/operational sectors, and finally those providing assistance to the space sector, among whom lawyers and other advisers benefit from a depth of discussion dealing with fundamental texts and aspects of practice. The format and extent of the content should, in addition, permit the book's working use in the academic sector. It is not, on the other hand, designed with any particular teaching curriculum in mind.

### RESEARCH

For developments prior to the creation of the European Space Agency (Chapters 2 to 10), I have relied to a considerable extent on published sources, including official reports, contemporary monographs, journal and some newspaper material, together with a limited amount of interview or correspondence research. I also had access to some ministry and ESA archive material, but by no means to the extent now being made available to researchers at the European University Institute archives. I have used material from Florence to fill remaining gaps and to verify my account, along with the published findings of the Institute team, as mentioned earlier.

For later developments, some published primary material is available, including some in database form; otherwise, one has a fragmentary quantity of journal material and the occasional monograph or unpublished thesis. I have relied on these sources, my earlier writings (which were mainly based on unpublished material), my own experience from practice and more recent sources in or close to the public domain, as well as on the comments and materials provided by reviewers.

Regarding reviewers' contributions in general, seeking them was an important part of my research methodology. My aim was to check draft content as far as possible with those I considered, particularly from my own observation or acquaintance, to have expert or other special insight into particular events, issues or subject matter. This was a quality

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control measure, but some sections demanded in addition that, in the interests of fairness, my version of events be put to those on different sides of a question. I should remark that my requests for review were made solely at a personal level on grounds of independence (see below) and some reviewers indeed preferred their names not to be mentioned in acknowledgement. I have respected their wish. I have in general made specific reference to individual interviewees or reviewers in the main part of the book only where they are my sole source for an item of information or for a position I have adopted. On factual questions, I have sometimes accepted details provided by experts in preference to those appearing in published sources, including my own. The interpretation of events requires, though, a different kind of judgment, and, while in a number of cases reviewers' comments altered my own interpretation, sometimes substantially, I maintained a differing view in other cases.

I welcome, care of the publisher, any additional comments readers themselves may like to make.

Turning to other aspects of the research, I have, owing to the fundamental nature of my inquiry on this occasion, refined my information and revised my views in various instances with respect to earlier writings or positions taken. The present text therefore takes precedence over them in case of conflict, while – conscious of the imperfections that will attend this first edition – I also reserve the right to alter in the future positions taken on this occasion.

It is normal to give a cutoff date for the validity of a book's research. In this case, there is no single date. Most of the book's research and basic writing was completed before the beginning of 1994. After that, I exercised my best efforts to render an accurate account on matters of significant current interest for which I had sufficient information up to submission of the typescript in May 1995. The publisher then kindly allowed revision of the proofs in mid-1996 so as to accommodate significant intervening developments.

Lastly, I accept the sole moral responsibility for errors this work may contain, but no liability for its contents.

**INDEPENDENCE**

I wish to make clear that this book has been prepared on an entirely independent basis, with the aim of impartial analysis, and without funding support from any interested party or interference from any source. The views expressed herein are therefore my own and are not intended to represent those of any other person or entity. The independent nature of the project was also explicitly referred to when I requested information or comments. Moreover, on no occasion was an attempt made to exercise undue influence regarding my critique, despite differences of opinion. Those persons and bodies I approached were instead almost uniformly helpful, and only in one case was cooperation officially denied (as it happened, after I had already completed research on the relevant centre). Lastly, while I have not violated confidences, especially through the citation of documents to which public access is strictly denied, I have not on the other hand portrayed situations other than I know them to be.

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*Preface***STYLE**

My audience is international and multilingual and I have therefore attempted to use the more familiar word or concept wherever possible (e.g. the American “billion”); to translate into English rather than to quote passages in the original language; and to avoid jargon and unnecessary footnotes. Uncommon abbreviations are explained at their place of first occurrence (see also the List of Abbreviations).

Gender follows the current state of the professional and official vocabulary. This is to err on the side of simplicity and does not signify approval. My personal interpolations will avoid the first person singular so as not to interfere with the consistency of presentation.

**ACKNOWLEDGEMENTS**

My most heartfelt thanks go to my wife and children for their kindness and patience throughout a lengthy process of research, drafting and redrafting. Further back, I must also mention the lasting influence of my teachers at Yale Law School, especially Professors W. Michael Reisman and Jan Deutsch, who schooled me in theory, and thereafter Professor Derek Bowett at the University of Cambridge, who taught me when to keep theory out of sight, as I have tried to do in this book for the policy science and systems perspectives which nevertheless do inform my analysis. More recently, I owe thanks to Mr J.R. Iturriagoitia, to Ms M. Collart and Cremades et Associés, Brussels, and to Mr F. Lo Verde, former head of the ESA Brussels Office, for their valuable practical help and encouragement during the research phase.

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The Author and Cambridge University Press thank ESA, Arianespace, Inmarsat, Eumetsat, SES and NASA for kindly providing visual material for this book. My appreciation also goes to those not named above but who also provided assistance.

Finally, in opening such a work, I would like to offer a word of homage to those whose courage has made the space field in Europe and elsewhere a reality. Some have paid a heavy personal price. Their dedication and idealism remind us that the conquest of space is no ordinary activity, but a noble challenge, one that can bring out the best in humankind.

K.J.M.

Brussels, 20 July 1996

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## ABOUT THE AUTHOR

Kevin Madders, LL.B. (Lond.), LL.M. (Yale), Ph.D. (Cantab.), was born in 1955. His main current activity is as a law and policy adviser in the telecommunications and space fields operating from Brussels. He is also an English barrister practising in European law from Brick Court Chambers, Brussels, and a director with an Italian company active in science and technology projects. He represents various public and private interests and is co-founder of a professional network linking expertise in different disciplines, Systemics Network International. He has built up over several years a database on the space field, on which he has drawn extensively in preparing the present book.

His prior experience includes over six years as counsel at the European Space Agency headquarters in Paris. In that capacity, Dr Madders participated in several notable international negotiations, including those on the International Space Station and on trade in launch services; he in addition prepared positions on such questions as relations with the European Community. For a number of years he was the Agency's observer to the United Nations Space Committee's Legal Sub-Committee.

The breadth of his experience is recognized in the wider space community, where Dr Madders has presented papers at various international conferences and written several articles on subjects ranging from management questions to space insurance.

As an academic, Dr Madders took his master's degree at Yale Law School and his doctorate at the University of Cambridge. He was earlier for some years research fellow at the Max Planck Institute for Public International Law and Public Comparative Law, Heidelberg, where he was an editor for the *Encyclopedia of Public International Law* and wrote a number of articles on international legal themes.

He is a member of such bodies as the European Centre for Space Law – in which he has held various positions – and the International Institute for Space Law of the International Astronautical Federation. He retains a lifelong interest in science, and is a member of the Cambridge Philosophical Society.

The author can be contacted via the Publisher.