

The International Astronomical Union

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The International Astronomical Union

Uniting the Community for 100 Years



 Springer

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Cover illustration: IAU members voting on the Pluto / Dwarf Planet resolution at the IAU General Assembly in Prague 2006.

Credit: IAU/Robert Hurt (SSC)

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Foreword

Throughout the ages, humanity has been fascinated by the night sky. Questions concerning the nature and evolution of the Universe appeal to a deep human desire to understand our origins and place in the Universe, as we begin to learn that our Solar System—and probably life itself—is not unique.

In search for answers to questions such as these, Western astronomers came together in 1919 in Brussels to found the International Astronomical Union (IAU). A century later, both the science and the world have changed beyond recognition. By combining observations from the entire electromagnetic spectrum and of particles and very recently also gravitational waves, the Universe has revealed itself to be more diverse and dynamic than anyone then imagined. All these discoveries have been made possible by crucial technological advancements and international collaboration. The IAU itself has become fully global, with members from more than 100 countries, but its mission remains the same: to promote and safeguard astronomy in all its aspects through international cooperation. On the way, it has evolved from a Union that was primarily concerned with astronomical research to one that is engaged in society: educational, outreach, and development programmes have been added to its portfolio.

The IAU's 100th anniversary provides an opportunity to highlight the science, technology, and inspiration that astronomy has brought us, with the IAU involved in making all this happen. Today, our emphasis is on making our face to the world more explicit, showing that astronomy is an exciting topic that is not just important for astronomy's own sake, but is important for stimulating young people's interest in the sciences in general. We also realise the growing need for a multidisciplinary approach to some of the questions that we astronomers ask.

This book highlights the major milestones in the IAU history in this century, culminating in its efforts to bring the worldwide community together while also opening our science to the wider public. Unlike Blaauw's 1994 archival history of the IAU, it is written on the combined backgrounds in contemporary astronomy, history of astronomy and science in general, communication, science policy, and insight in the IAU machinery. Numerous interviews with living IAU Presidents, General Secretaries, and others bring the role of the IAU in advancing astronomy worldwide alive. The book thus shows the gradual transformation of the IAU from a Union that was focused exclusively on astronomical research to one that is firmly engaged with society. Enjoy this fascinating book!

President of the IAU, Paris, France
October 2018

Ewine van Dishoeck

Acknowledgements

The book is based on a wide range of sources. It is mainly based on the IAU archives and the Transactions, Information Bulletins, GA Newspapers, etc. But we have also gratefully used the work of many astronomers and historians who went before us, as is illustrated by the bibliography, although many more authors contributed indirectly by providing general background or provoking new thoughts. We should especially mention the Centenary Symposium *Under One Sky* (IAU Symposium 349), held in Vienna in 2018. Its proceedings will be published at the same time as this book.

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Many people and institutions have provided pictures for selection in this book. Their identity is given in the captions, and we thank every one of them for their willingness to make these images available for the book and thus for its readers.

Introduction

The International Astronomical Union (IAU) turns 100 years in 2019, and this book is written to celebrate that event. Many popular astronomy books recount the historical evolution of the fascinating science of astronomy, from the earliest times to today's understanding of the world in which we live. Some books focus on specific projects, and quite a few deal with individual scientists. The progress of astronomy has many parents, including not only the stubborn pursuit of good ideas, the advance of technology, and meticulous and painstaking work, but also the support of funders and enthusiasts. Astronomy has a unique power to fascinate laymen and professionals alike, to spellbind children and adults, and to foster curiosity and the urge to embark on a voyage of discovery—the greatest that is still left for us, inhabitants of a small planet in the vast sea that we call the Universe.

At least as important was the institutional framework within which scientific research is conducted and which makes it possible. This includes universities and observatories, but for astronomy also the one international organisation that aims to unite the worldwide scientific community. As the IAU sets out to celebrate its centenary and plan for the future, this book describes its evolution and the role it has played in the scientific community. In doing so, it attempts to answer three central questions: *What* is the IAU for? *Who* is the IAU for? *What* has been its role in the intellectual fabric of world astronomy?

The IAU now has 83 national members and more than 13,500 individual members—a significant share of all professional astronomical researchers. It hosts conferences, coordinates the names of astronomical objects, and recommends standards that facilitate the exchange of data. But the IAU does much more than this. It also includes professional offices for astronomical

outreach, for young astronomers and for ‘astronomy for development’. It thus provides an international platform for scientific discussions and also actively promotes astronomy in many different ways. But behind the facts and numbers, personal contacts are still at the heart of the IAU’s function. The story of the IAU is essentially the story of the people who made it happen, and the many interviews which form the backbone of this book show importance of these connections: a remarkable number of personal friendships and many research collaborations have originated at IAU meetings.

The IAU was founded in 1919 ‘*to facilitate the relations between astronomers of different countries where international co-operation is necessary or useful*’ and ‘*to promote the study of astronomy in all its departments*’. These aims have led the IAU throughout the century of its existence, but the way it has tried to fulfil them has changed. The first aim has been a resounding success: the IAU General Assemblies have become major conferences, with up to 3000 participants—a significant fraction of the global astronomical community. The General Assemblies cover the complete spectrum of astronomy. The proceedings of the IAU Symposia, now approaching 350 volumes, allow specific topics to be addressed in depth, are also a testimony to the development of front-line astronomical research.

In the first period of its existence, one could describe the IAU as a parliament of national representatives, who came together to discuss issues of mutual interest. That has changed radically. Today, the IAU aims to *include* the entire research community, undivided along national lines, with individual membership in the Union and increasing attention to diversity and the crucial role of young researchers.

The IAU has constantly striven—and occasionally struggled—to protect international scientific cooperation across the deep political divides that characterised the twentieth century, while maintaining an important function in the context of the rapidly evolving science itself and the changing fabric of institutions involved in astronomy.

But the role of the IAU in the astronomical community has also changed. We will demonstrate how the emphasis of the IAU’s activities has shifted from facilitating collaboration by organizing meetings and defining common standards to promoting astronomy within society at large. The Pluto controversy of 2006 and the successful International Year of Astronomy in 2009 were important turning points. The Union is now mostly aimed at the outside world: the IAU is the *representative* of the global astronomical community. In other words, its audience is no longer just astronomers, but the entire world population, from policymakers to school-age children. An ambitious and comprehensive Strategic Plan 2020–2030, setting this out in more detail, was approved by the 2018 General Assembly in Vienna and will

be its guide for the future. In other words: the way the IAU is serving astronomy has changed fundamentally, although it has historically been characterised by great continuity. In this book, we will trace this history in the context of the turbulent scientific and political history of the past century.

This is the second book on the history of the IAU. In 1994, former IAU President Adriaan Blaauw (1914–2010) published his history of the IAU up to 1970, based on the IAU archives. Accordingly, his book focused mainly on the efforts of the IAU to adapt to the two World Wars and the Cold War. Blaauw also provided a detailed account of the discussions about the organisation of the IAU. We have made thankful use of his work, but we all had the common vision to write a broader book, which includes the context in which the IAU has operated. Thus, we adopt a different perspective: we attempt to describe the development of the IAU on the scientific, technological, and political background of its time. For that reason, our book also covers the period that he has treated so expertly. It also means that not all officials or meetings will be mentioned in this book and that there will be little attention to financial issues. We therefore emphasise that inclusion or exclusion does not reflect importance.

This book originated at a symposium commemorating Adriaan Blaauw's centennial in 2014. This gave former IAU General Secretary Johannes Andersen an idea, which he immediately discussed with David and Claus. The volume naturally focuses on the second half of the century, when the majority of the key players are available for interview. The text is our joint responsibility, with the following rough division of labour: Claus collected the interviews with former and current IAU officials and some other key figures, who offer their personal perspectives on the historical developments, while David focused on the institutional history and the political context, and Johannes wrote sections on the scientific developments. Throughout, Johannes has been untiringly the promoter of this project, although his interview in this book states that 'looking back is not in the nature of Andersen'.

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