

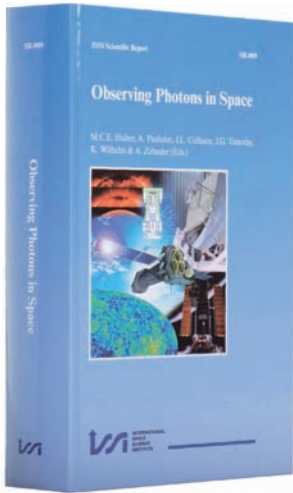


Observing Photons in Space

edited by

Martin C.E. Huber, Paul Scherrer Institut, Villigen PSI, Switzerland
Anuschka Pauluhn, Paul Scherrer Institut, Villigen PSI, Switzerland
J.L. Culhane, UCL/Mullard Space Science Laboratory, Holmbury St. Mary, U.K.
J.G. Timothy, Nightsen Inc., Tiverton RI, USA
Klaus Wilhelm, Max-Planck-Institut für Sonnensystemforschung,
Katlenburg-Lindau, Germany
Alex Zehnder, Paul Scherrer Institut, Villigen PSI, Switzerland

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Written by leading practitioners, «Observing Photons in Space» explains the basic and up-to-date principles of experimental space astronomy, and conveys the hands-on knowledge gained — since the inception of the field more than 40 years ago up to the present.

The number of astronomers whose knowledge and interest is concentrated on interpreting observations has grown substantially in the past decades. At the same time, the number of scientists who are familiar with, and capable of dealing with instrumentation has dwindled.

The book «Observing Photons in Space» makes an effort to escape from this hardly sustainable situation: it preserves knowledge and experience gained over half a century, and provides a record of sound practice needed for future generations of instrument builders. 'Observing' implies detecting and imaging, achieving spectroscopic and polarimetric analysis of the photons, and accurately measuring radiance or irradiance.

The authors of this book have been involved in building, testing, calibrating and operating instruments early in the space age, or are right now working with the first results of their instruments. Additional authors cover methods and techniques to be used in future space observations, namely interferometry and polarimetry. The general implications of the space environment, the elements of space cryogenics, the modus operandi of laser-aligned structures in space, and the special considerations that apply to Earth observations are addressed as well.

The readers being envisaged are space researchers in general, but also advanced under-graduates and post-graduates interested in space research. In view of younger readers, there is an introductory chapter, which describes the physical principles underlying the interaction of photons and matter, i.e., the generation, transmission and detection of photons.

The book also contains concise information on the history of the field, supported by appropriate references. Moreover, scientists working in other fields will be able to get a quick overview of the salient issues of observing photons in any one of the various energy, wavelength and frequency ranges accessible in space.

This book for 60 Euros is available directly from the ESA Publications Divisions: <http://www.spacebooks-online.com/index.php?cPath=113>. More information about the ISSI Scientific Reports and the International Space Science Institute (ISSI) can be found on www.issibern.ch.