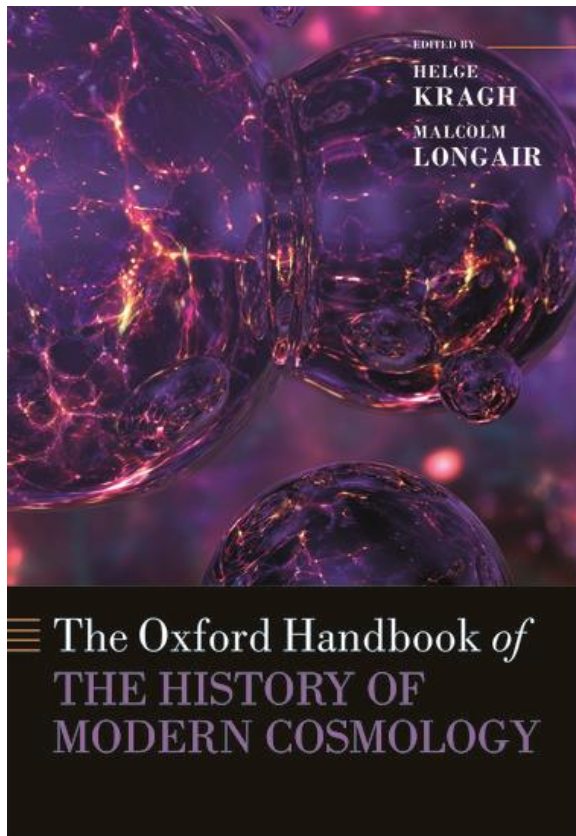


***The Oxford Handbook of the History of Modern Cosmology*, edited by Helge Kragh and Malcolm S. Longair (Oxford, Oxford University Press, 2019). Pp. xvii + 608. ISBN 978-0-19-881766-6 (hardback), 175 × 252 mm, €110.**

Although I may have published a paper on the origin of the dark matter concept, in collaboration with Australian colleagues (Montgomery et al., 2009), cosmology is certainly not my research forté. But if I wanted to start researching this field, or if someone asked me to recommend a book that provides a succinct but up-to-date overview of "... how our present understanding of the universe has emerged through a long and complex series of investigations with roots back in the nineteenth century and even earlier." (page v), I could do no better than direct them to this new book edited by Helge Kragh and Malcolm Longair. Both are now Emeritus



Professors, and Helge will be well known to our readers through papers he has published in this journal (see Kragh, 2012; 2017; Pedersen and Kragh, 2008).

Denmark's Helge Kragh penned two of the book's 13 chapters, while Britain's Malcolm Longair wrote three solo chapters and shared a fourth with the Canadian Chris Smeenk. Associate Professor Smeenk also wrote the final chapter, while other authors of individual chapters are fellow Canadian Professor Robert W. Smith (the latest recipient of the LeRoy E. Dog-

gett Prize from the Historical Astronomy Division of the American Astronomical Society), the Dutch-based Italian Dr Matteo Realdi, Spain's Dr Silvia De Bianchi, Serbia's Professor Milan Ćirković and America's Emeritus Professor Bruce Partridge. It is interesting to note that only Longair, Ćirković and Partridge are astronomers; the other authors are historians of science. It is also illuminating that only one of the eight is female (12.5%). It is lucky that this is not an IAU-sanctioned book since it would likely not be approved given this conspicuous gender imbalance!

Be that as it may, the 13 chapters in this book range from pre-Einstein and non-Einstein cosmology (by Helge Kragh in Chapter 1) through to Chapter 13 (by Chris Smeenk) on philosophical aspects of cosmology. Along the way, there are four chapters on various cosmological models (by Robert Smith, Matteo Realdi and Helge Kragh), while two excellent chapters by Malcolm Longair that span observational and astrophysical cosmology from 1940 to 2018, a chapter on the cosmic microwave background by Bruce Partridge, and a chapter by Longair and Smeenk on inflation, dark matter and dark energy collectively provide an excellent overview of recent developments in observational cosmology. In Chapter 9, Silvia De Bianchi discusses cosmology research during the 'Cold War', and in the penultimate chapter Milan Ćirković takes us into the fascinating field of multiverses, string theory and other concepts that not so long ago were regarded as nothing more than science fiction.

The length of the chapters in this book range from 32 pages to 54 pages, and most are well illustrated (with Longair's 1940–1980 and 1980–2018 chapters containing the greatest numbers of figures, at 20 and 21 respectively). All chapters are accompanied by notes and references, ranging from just half a page in the case of one of Longair's chapters to typically 4 or 5 pages for most other chapters. Meanwhile, the number of numbered equations varies from zero in Robert Smith's chapter, to >18 in chapters by Helge Kragh (two of them) and Malcolm Longair (three of them). There seems to be no overall correlation between chapter length, the number of figures and the number of equations.

Rounding out this book are 61 pages of References—an invaluable resource for anyone wanting to read up on any of the topics of the 13 chapters—followed by Subject and Author Indices.

All in all this is a splendid book that does indeed take you on a tour of "The history of modern cosmology", just as the title suggests. The chapters are all written by experts and for the most part are easy reading, with added

value offered by the assorted figures and equations. This, then, is the idea book for people like me who want to broaden their horizons, but more than this, it is also an idea 'refresher course' for those deeply involved in specialised areas of cosmological research. This book will undoubtedly remain a basic reference work over the next few years, but given the current pace of research in all areas of observational and theoretical cosmology, we can anticipate the appearance of an up-dated edition in the not too distant future.

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