



## Galactic encounters: Our majestic and evolving star-system, from the big bang to time's end

by William Sheehan & Christopher J. Conselice

Springer, 2014. ISBN 978-0-387-85346-8. Pp xiv + 385, £31.99 (hbk)

*Galactic Encounters* might be more correctly subtitled 'a history of our exploration of the galaxies', for it tells the story of our discovery of galaxies from Charles Messier's eighteenth-century catalogue of fuzzy objects in the sky that he thought might be confused with comets, to modern-day findings, such as the discovery that the galaxies are flying apart at an accelerating rate due to an as-yet mysterious 'dark energy'. The book is a partnership between a historian and a professional astronomer. William Sheehan, a medical doctor by profession, is a well-known historian of astronomy with several books to his credit, notably a highly-praised biography of Edward Emerson Barnard. Christopher Conselice is based at Nottingham University, where he specialises in galaxies and cosmology.

The book follows a roughly chronological timeline from the late eighteenth century to the present day. It might have been helpful to have set the scene with more about observations and speculations on the 'nebulae' before Messier. But one of the book's strengths is that, in addition to the oft-told stories of Messier, the Herschels and Hubble, we read of many lesser-known figures who made seminal contributions to our understanding of galaxies and how our own Milky Way relates to them.

For example, the authors describe how Lowell Observatory astronomer Vesto Slipher photographed the spectra of spiral nebulae – and thus discovered their rapid recession – by accident, because his autocratic boss Percival Lowell wanted to use them to test his theory that they were solar systems in the process of formation.

The text is aimed at the general reader, though there are plenty of references to scholarly sources for those who want to explore

further. The authors occasionally go into too much background detail. For example, when leading up to Slipher's discovery of the recession of spiral nebulae, they first devote many pages to the story of the illusory Martian canals and Venusian spokes. This is fascinating, but it feels somewhat out of place in a book about deep-sky astronomy and could have been summarised in a couple of paragraphs instead.

The text is accompanied by many fine illustrations, not only of astronomical objects but also of

the personalities who made the discoveries. Some of them are quite rare – such as the group photograph of participants at the 1914 American Astronomical Society meeting that shows a young Edwin Hubble, not yet a graduate student, in a more prominent place than the then better-known Slipher. It is unfortunate that some of these are not reproduced to a larger size, especially given the book's attractive large format.

All in all, *Galactic Encounters* is an excellent work that will appeal to everyone interested in the deep sky, as well as to historians of astronomy.

Lee Macdonald

Lee Macdonald is deputy Director of the BAA Historical Section, and is currently based at the University of Leeds, where he is completing a PhD on the history of Kew Observatory in the nineteenth century.

## Nearest Star: The surprising science of our Sun

by Leon Golub & Jay M. Pasachoff

Cambridge University Press, (2nd edn.), 2014. ISBN 978-1-107-67264-2. Pp xvi + 297, £17.99 (pbk).

The authors of this book are two American astronomers, Leon Golub, a senior astrophysicist at the Harvard-Smithsonian Centre for Astrophysics and Jay M. Pasachoff, a Field Memorial Astronomer at Williams College in Massachusetts. Their goal with this publication is to provide the non-scientific reader with knowledge of solar physics without resorting to explanations involving mathematics and equations. The book is therefore suitable for the amateur astronomer that neglected to pick up a degree in solar physics but who has more than a passing interest in how our Sun works.

The book is divided into eight chapters covering the usual solar features such as sunspots, prominences and flares, but also covers the more intriguing questions of the 'neutrino problem' and the science of solar helioseismology. I found the concluding chapters of particular interest, bringing the reader bang up to date with solar-related space missions, space weather and the climate change debate. The authors go into some detail about how to put a mission into orbit and the problems that routinely need to be overcome, and then go on to give a very comprehensive guide to current and near future mission plans. In addition there is a chapter dedicated to eclipse events including an understandable explanation of saros, the precise geometric relationship of the Sun–Moon–Earth system.

If you are expecting a book on practical observing techniques and how to observe the Sun, then you will be disappointed. If however, you

want to know a lot more about the structure of our Sun, the solar environment and its impact on the Earth, then you have made the right choice. The book is very readable and explains some complex issues in plain English, which I found to be its main achievement. I found the book quite difficult to put down once I started it, the pages seeming to turn with alarming frequency until suddenly the Appendices were upon me. The only frustration was that there is still so much we don't yet know and I so wanted this book to tell me about what hasn't yet been discovered. That aside, a great read!

Lyn Smith

Lyn Smith has been observing the Sun since the early 1970s and was appointed Director of the BAA Solar Section in 2006.

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